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CHAPTER 16

INDIGENOUS PEOPLES AND
CULTURAL LOSSES

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1 INTRODUCTION

In the international climate change discourse, distributive justice is often expressed through concern for intergenerational harms and measures needed to retrieve historical, present, and future compensation. Some common sentiment has identified First Nations, Indigenous Peoples, and a range of native populations¹ as the most vulnerable human communities to climate change. The Permanent Forum on Indigenous Issues and the Universal Declaration on Indigenous Rights echo what the United Nations Convention on Biological Diversity has made explicit: that 'Indigenous and local communities are among the first to face the direct adverse consequences of climate change, due to their dependence upon and close relationship with the environment and its resources (UNEP Convention on Biological Diversity 2007).' Of the distributive inequities in burdens and benefits, H. E. Miguel d'Escoto Brockmann, President of the United Nations General Assembly, admitted in his Statement to the 2009 Indigenous Peoples' Global Summit on Climate Change that 'climate change poses threats and dangers to the survival of Indigenous communities worldwide, even though they contribute the least to greenhouse emissions' (Galloway et al. 2009: 2). More extensively, the Preamble of the *Anchorage Declaration* drafted from the same indigenous summit elucidates, 'We are experiencing profound and disproportionate adverse impacts on our cultures, human and environmental health, human rights, well-being, traditional livelihoods, food systems and food sovereignty, local infrastructure, economic viability, and our very survival as Indigenous Peoples' (Galloway et al. 2009: 5).

Embedded in these climate justice accounts is the primary struggle of indigenous people to sustain their environmental identity and environmental heritage, in the face of threats to the physical resources that shape their living ecology and the threats to values, beliefs,

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behaviors, histories, and languages. By *environmental identity*, I mean the amalgamation of cultural identities, ways of life, and self-perceptions that are connected to a given group's physical environment. And, my use of *environmental heritage* pertains to the meanings and symbols of the past that frame values, practices, and places peoples wish to preserve as members of a community. Environmental heritage is the expression of an environmental identity in relation to the community viewed over time (Figueroa 2006: 371–2). Both environmental identity and environmental heritage are concepts that can work in and across scales—local, national, global. These concepts are also unrestricted by ethnic identity, but they are most often interfused to cultural identities that track ethnic, historical, and other situation-specific identities. Indigenous environmental identity and heritage can be described and explored by virtue of the close, often inseparable, relationship that many indigenous communities have between environmental and cultural values and behaviors. Nonetheless, in the wake of climate change non-indigenous communities find commonalities with indigenous environmental identity and heritage.

In this chapter, a variety of experiences and philosophical reflections on cultural loss will be discussed under an environmental justice framework, wherein 'environmental justice' is broadly construed as the conceptual connections, causal relationships, and strong correlations that exist between environmental issues and social justice. Environmental justice frames social issues (including cultural contexts and political economies) as environmental issues. Social and environmental issues are inseparable, co-causally related, and always in a context that requires a political interpretation; in particular, such a consideration of justice accounts for power dynamics and socio-environmental practices that maintain historical relations, as well as the remedies for injustices. The primary argument of this chapter is that the environmental justice framework is a proper theoretical and practical approach to understanding the cultural loss among indigenous peoples caused by climate change. Specifically, I employ an interpretative lens through which several dimensions of justice—distributive, recognition, participatory, and restorative—can be better enjoined to handle the extent and complexities of justice as it pertains to the cultural losses of both indigenous and non-indigenous peoples across the globe. Under this framework, considerations of traditional environmental knowledge, international policy, transformations of knowledge in climate adaptation and mitigation, relocation and loss of place, and general prescriptions for environmental justice are brought to bear on the trauma of cultural loss.

2 CULTURAL LOSS AND ENVIRONMENTAL
JUSTICE2.1 Indigenous Social-Ontology and Environmental
Colonialism

The social-ontology of indigenous peoples is one historically linked to colonialism, and can be traced to the cultural losses of recent centuries driven by global exploration and knowledge transfer. As numerous indigenous scholars, such as Donald Fixico (1998), Donald A. Grinde and Bruce E. Johansen (1995), Winona LaDuke (1999), and Jace Weaver (1996), have

described in explicit detail, the environmental resources, environmental knowledge, and subsequently the plight of environmental heritage for indigenous peoples was inspired by the designation of common heritage, which, ironically, invited the colonial exploitation and appropriation of natural resources found in indigenous lands. Hence, *environmental colonialism* best describes the environmental injustice common to most historical relations between indigenous and non-indigenous peoples since 1492 (Kleinman 2005).

In one sense, indigenous peoples have existed throughout human history, and in the abstract ontology of deep anthropological time, everyone links back to indigenous peoples. But does that make us all indigenous in the current social-ontology, the one in which climate change is an anthropogenic cause for cultural loss? No; indigeneity pertains to a dynamic set of non-essentialist, non-relativistic, historical, and self-identifying features that compose individual and community experiences. Cultural loss hangs in an odd balance for this social-ontology. On the one hand, cultural loss by assimilation and by agent-driven transformation is a fact of humanity's existence through deep anthropological time. Cultures survive by their abilities to change. Sometimes changing culture is an intended improvement and sometimes a more powerful society dominates another into changing its culture, perhaps intended by dominant actors as an improvement, albeit informed by prejudices against the subjected party. Alternatively cultural loss could be the aim for positive revolution. But, analogous to concepts of risk, when cultural loss is self-initiated it is quite different than other-initiated risk. Even apparently self-initiated loss could reveal a cascade of historical events in assimilation and cultural elimination that limits the survival of vital traditional lifeways. For instance, Australian aboriginal knowledge that has intimately connected environmental and genetic knowledge may be available only to elders who have gained such knowledge under strict rites of passage; in some cases the failure of non-elders to reach a passage causes the complete loss of this knowledge (Grasshoff et al. 1988). It is true that cultural loss is common in the history of humanity, and not always a bad thing, but there are important philosophical nuances that make the distinction between cultural injustice and cultural transformation. I am concentrating on the cultural loss that is compounded by overt and subversive injustices, as opposed to cultural transformation that encourages avenues for restoration of agency and environmental justice. More could be explored on the ontological conditions of indigenous peoples, in order to avoid any romanticizing or mythologizing the indigenous identity. My point is simply that we should avoid sliding the current social-ontology of indigenous peoples into abstractions of deep anthropological time. Instead, we should focus on the unwanted cultural losses faced by self-identified indigenous communities, especially given their extensive vulnerability to climate change.

2.2 An Environmental Justice Framework

Due to the dominance of the distributive justice paradigm in Western philosophical and legislative practice, especially regarding meanings of 'fairness' and legal interpretations of harms and punishment, it is nearly impossible to offer an appropriate definition of 'environmental justice' without some framing of commensuration between environmental burdens and benefits, or the distributive inequities of such burdens (United Church of Christ 1987, 2007; Bullard 2000; Figueroa 2003; Figueroa and Waitt 2008; Schlosberg 2007;

Shrader-Frechette 2005; Bryant 1995; Jamieson 1994). Climate justice has been wedded to environmental justice in accounts of intergenerational justice, distributive inequities, and active contribution to the causes of climate impacts. However, the embedded cultural dynamics of the above-mentioned UN conventions and global summits point to fundamental linkages between political participation and the cultural side of environmental justice. The references to 'traditional livelihoods' and 'dependence upon and close relationship with the environment' speak directly to issues concerning environmental identities and heritage; these, in turn, reflect upon the recognition justice paradigm. Thus, environmental justice is a 'bivalent' form of justice, requiring both distributive and recognition justice bridged by participatory forms of procedural justice. This is a widely accepted theoretical perspective from environmental justice scholars (Hunold and Young 1998; Peña 2005; Cole and Foster 2001; Figueroa 2003, 2006; Figueroa and Waitt 2008; Schlosberg 2007; Shrader-Frechette 2005).

In the myriad of environmental justice movements, this kind of bivalent framework has many representatives, from Lois Gibbs in Love Canal to Ken Saro-Wiwa in Nigeria, and from South Bronx to South Africa. Specific reasons for including the recognition paradigm vary according to specific theoretical architecture and historiographical conditions, but the explicit reasoning that is offered across the board is that conceptions of justice based solely in distribution and compensation are simply unable to provide a full description or full remedy for environmental injustices. This bivalence is particularly evident in indigenous peoples' claims requiring consideration of impacts upon the cultural and participatory features of justice that cannot be resolved by a strictly distributive framework. For instance, Native philosopher Dale Turner (2006) devotes his volume to documenting numerous indigenous writers who describe the critically fundamental aspects of the politics of recognition as part of the appropriate paradigm of justice. Identifying and repairing disparate distributive impacts according to a commonly shared human-environmental health metric is insufficient to *recognizing* both the community-specific losses that arise when traditional lifeways are dramatically disrupted and the need for solutions that flow from the community's agency decision making. Thus, the most promising environmental justice framework is one that simultaneously addresses distributive and recognition justice, including the subcategories of justice that fall under these paradigms.

2.3 Backgrounding Environmental Colonialism

A more useful discussion can be gleaned from Henry Shue's (1992) concept of *background injustices*, such as colonial practices of resource exploitation, relocation, land appropriation, and persistent economic exploitation, which compound an even greater moral crisis for indigenous peoples. For indigenous peoples, the legacy from environmental colonialism includes historical under-representation in environmental decision making and the gross historical distributive inequities in consumption and production. The argument continues that the terms distributive and procedural agreement are historically corrupted by the fact that nearly every sustaining indigenous population affected by climate change is affected by multiple magnitudes of background injustices. As a form of environmental colonialism, the background conditions capture the causal roots of precisely why indigenous groups are the most vulnerable and impacted by climate change. For instance, the background struggles

over sovereignty and self-determination play into the environmental colonialism of climate change. Indigenous communities must be able to exercise sovereign jurisdiction over their territories in order to maintain their lifeways and to protect them from overt and inadvertent non-indigenous peoples' colonial presumptions. Environmental colonialism continues to compromise indigenous jurisdictional authority and exclude indigenous leaders from participating on policy making about the very environments upon which their communities depend (Robyn 2002).

In the United States, for example, tribes are subject to the plenary power of the US Congress to determine matters as intimate as their political status and membership (Cohen 1971). Tribes that require good water quality for religious, cultural, and subsistence uses previously had no control over the discharges that came from non-reservation point-sources, as that policy was determined in Washington, DC. In the 1980s, when amendments were made to the US Clean Water Act, the solution was to 'treat tribes as states,' which would allow them some control in setting standards that fit their cultural, religious, and subsistence uses. But, of course, whether a tribe qualifies as a state depends upon the US Environmental Protection Agency's contrived criteria for determining a tribe's fitness for such treatment. Subsequently, the state-status language is received suspiciously by Indian nations and tribes, since indigenous participation 'as states' has the circular obstacle of achieving self-determination: the direct and absolute political power and participation over tribal matters (Ranco and Fleder 2005; Tweedy 2005; Suagee 2005). Climate policy in the US reflects a similar problem. For instance, the 2009 Waxman-Markey Bill is designed to generate funds for improved energy efficiency. Section 202's program to retrofit existing buildings for energy efficiency mentions state governments but not tribal governments, which raises suspicions over whether the climate change policy (if passed) will arrive in Indian country and be administrable by tribes (Cordalis and Suagee 2008; Suagee 2009).

Thus, environmental colonialism, as it pertains to the legacy of environmental injustice, is fused to many climate change impacts, both in terms of negative impacts and any positive ones, since indigenous peoples are part of a global economy that will include carbon-emitting technology (cars, boats, snowmobiles, planes, etc.). Many indigenous communities have assimilated to or adopted the dominant colonial cultures and/or political economy of the modern global market. Indigenous economies range the entire spectrum, where casinos dominate the political economy in some and nomadic hunting-gathering economies drive indigenous practices in others. Nothing in this vast spectrum entails that indigenous peoples desire to completely abandon their environmental heritage or traditional lifeways.

2.4 Participatory Parity, Adaptation, and Mitigation

Direct and robust participation in the decisions that affect a people is a matter for participatory justice, or parity, which serves to bridge the distributive and recognition dimensions of bivalent environmental justice. Thus, we find in the *Anchorage Declaration* from the 2009 Indigenous Peoples' Global Summit on Climate Change stipulating obligations upon high carbon-emitting parties, responsible nations, corporate agents, and international agencies to proactively ensure recognition in participatory parity:

4. We call upon the UNFCCC's decision-making bodies to establish formal structures and mechanisms for and with the full and effective participation of Indigenous Peoples. Specifically we recommend that the UNFCCC:

e. Take the necessary measures to ensure the full and effective participation of Indigenous and local communities in formulating, implementing, and monitoring activities, mitigation, and adaptation relating to impacts of climate change. (Galloway et al. 2009: 6)

And, to proactively engage the distributive dimensions of participatory parity:

7. We call for adequate and direct funding in developed and developing States and for a fund to be created to enable Indigenous Peoples' full and effective participation in all climate processes, including adaptation, mitigation, monitoring and transfer of appropriate technologies in order to foster our empowerment, capacity-building, and education. We strongly urge relevant United Nations bodies to facilitate and fund the participation, education, and capacity building of Indigenous youth and women to ensure engagement in all international and national processes related to climate change. (Ibid.)

Participatory parity is needed for fair agreements and appropriate epistemological representation between indigenous and non-indigenous, low carbon-emitting and high carbon-emitting, actors. Compensation, mitigation, and adaptive strategies may severely compromise cultural welfare and survival if parity in the decision-making process is ill-conceived. In climate science and policy, indigenous knowledge may have strong adaptive prospects and thus strong opportunities for indigenous participatory parity; but, mitigation still gets pared away as a technoscientific preference of dominant political economies. However, mitigation is more than justifying technological advances, since it simultaneously involves observation and prediction. Vital observations in weather changes, ice melt, sea level, and predictions for response are regularly made by local indigenous peoples (Leung 2005). Participatory parity in adaptation and mitigation would resemble the Nunavik Research Centre, an organization that responds to climate change, whose strategies include involving indigenous residents, non-indigenous scientists, participatory research, a method for addressing issues raised by residents, and checks along the process that are reviewed by elders (Woodard 2005).

3 TRADITIONAL ENVIRONMENTAL KNOWLEDGE

3.1 Traditional Environmental Knowledge and Climate Change

Article 8(j) of the UN Convention on Biological Diversity focuses specifically on traditional knowledge and indigenous peoples:

'[T]raditional knowledge' refers to the knowledge, innovations and practices of indigenous and local communities, developed and shared through experience gained over time and adapted to the local social structure, culture and environment. *Such knowledge tends to be collective in nature.* It is usually communicated through indigenous peoples' way of life, stories, songs, folklore, proverbs, cultural and religious values, beliefs, rituals, customary laws, practices and traditions, languages and other ways of transmission. This knowledge is normally of a practical nature, and covers areas such as traditional livelihoods, health, medicine, plants, animals, weather conditions, environment and climate conditions, and environmental management.

Moreover,

Such knowledge is not merely a collection of facts and observations; it includes analysis and understanding of the subject matter from a practical perspective. Consequently, adverse external impacts on indigenous and local communities' way of life, social structures, culture and habitat will also affect their knowledge, innovations and practices. (UN Convention on Biological Diversity, Article 8(j), 2007)

The Convention's use of 'indigenous and local communities' is worthy of attention in discourse about cultural loss, yet many indigenous peoples would argue that these definitions of knowledge are not appropriate. Many Western understandings of traditional knowledge simply see it as a repository of information that can be accessed (Berkes 1999; Johnson 1992; Nakashima 1993; Callicott 1994).

Anishnabe scholar Deborah McGregor (2004, 2008) advances a more aboriginal understanding of traditional knowledge for non-indigenous environmentalists, which she refers to as *traditional ecological knowledge* (TEK):

TEK is viewed as the process of *participating* (a verb) fully and responsibly in such relationships [between knowledge, people, all of Creation (the 'natural' world as well as the spiritual)], 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... Equally fundamental from an Aboriginal perspective is that TEK is *inseparable from the people who hold it*... This means that, at its most fundamental level, one cannot ever really 'acquire' or 'learn' TEK without having undergone the experiences originally involved in doing so. This being the case, the only way for TEK to be utilized in environmental management is to involve the people, the TEK holders... Once separated from its original holders, TEK loses much of its original value and meaning. (McGregor 2008: 145-6)

Here, TEK cannot be separated from environmental identity and environmental heritage and the performed lifeways (Hester et al. 2000; McGregor 2004; Berkes 1993). Even under the continuous threats of assimilation many indigenous peoples continue to sustain some significant ethos of environmental identity and heritage that remains embedded in the environmental imagination: the epistemological and phenomenological horizon of TEK. However, TEK is not to be equated with static knowledge. The lifetime of TEK depends upon factors of functionality, human relations, predictability, explanation, religious value, and a host of other applications. New challenges brought on by the remarkable speed of some climate impacts require that TEK must often undergo transformations or lose its most effective practicality for sustaining its peoples. The efforts to preserve TEK and address climate vary from the steadfast Traditional Seminoles of Florida (LaDuke 1999) to emerging programs, such as Oglala Lakota Community College's program for students to examine the effects (and future effects) of climate change on traditions of gathering medicinal herbs, vegetables, and berries; or the Confederated Tribes of the Umatilla Reservation's early efforts to anticipate climate change threats to traditional foods that have grown wild since time immemorial (LaDuke 1999; Melmer 2007; Associated Press 2008). There are at least six lessons that can be gleaned from this discussion: (1) Traditional indigenous knowledge is a lived experience rather than a storage of information; (2) Indigenous traditional knowledge is inherently wedded to the surrounding ecology and embedded in an ecological history; (3) Such knowledge is currently retrievable and capable of being sustained in present indigenous communities; (4) Climate change poses extensive

damage to the ecological relationships that bind TEK, which entails that climate change threatens the ability to sustain the knowledge and culture; (5) Embedded within TEK are substantial insights for observation and prediction of climate change impacts—extreme weather events, protecting biodiversity, and maintaining cultural survival; and (6) TEK is therefore valuable to the cultural survival of non-indigenous peoples and should be used to forge a wider epistemological spectrum about climate change and political agency. Effective knowledge sharing will occur only if indigenous communities experience self-determination over what, how, where, and with whom this vital knowledge is shared.

To further explore effective observation and prediction, as well as the exceptional vulnerability of TEK, consider the devastation of the 2004 Tsunami in the South Pacific, which left over 100,000 dead, extensive casualties, and unimaginable property destruction. Yet, in the epicenter several groups of extensively long-existing indigenous communities were found to be with minor, if any, casualties. The only available explanation for the high survival rate in the tsunami's epicenter is the long-term accruing of TEK about the warning signs of extreme weather events (Leung 2005). Local news observations, confirmation by recovery efforts and census counts, and even network journalism, such as *60 Minutes*, reported that the Moken people, a nomadic indigenous people of Thailand, observed signs in wind and tides, as well as insects and other land and sea animals that offered reliable evidence for predicting the stories describing 'hungry seas.' The TEK response to move to forests and higher ground proved quite effective (Leung 2005). In the *60 Minutes* report,

The Moken has a legend that is passed from generation to generation about the Laboon, the 'wave that eats people.' It is believed that the angry spirits of the ancestor brought the tsunami. The myth tells that, before the giant wave comes, the sea recedes. Then the waters flood the earth, destroy it, and make it clean again. On these islands the cicadas are usually loud, but suddenly went silent before the tsunami hit. Saleh Kalathalay (an interviewed Moken man) noticed the silence and warned everyone about the tsunami. The Moken started to flee toward higher ground long before the first wave struck and were saved. (Leung 2005)

Sustained knowledge of tsunami behavior in traditional explanation (that the sea is hungry) and the reliable reaction to TEK gives indigenous peoples an opportunity to reaffirm their heritage by adapting to climatic threats.

3.2 Sharing Knowledge

The *Anchorage Declaration* (2009) closes with a final clause,

We offer to share with humanity our Traditional Knowledge, innovations, and practices relevant to climate change, provided our fundamental rights as intergenerational guardians of this knowledge are fully recognized and respected. We reiterate the urgent need for collective action. (Galloway et al. 2009: 6)

What are appropriate conditions of environmental justice for sharing knowledge? A fine line triangulates the dire need for shared knowledge, collective action, and vulnerability by assimilation. The reality of such vulnerability is exemplified by a comparison between the tsunami survivors and their tribal cousins on neighboring islands. The latter were much more assimilated to Western economies, religions, and tourism. Their populations were

totally annihilated by the tsunami (Devraj 2005). Moreover, TEK, genetic and family group knowledge may not be easily pulled apart, since the peoples have been a vital element in the ecological web for a good long time (Robyn 2002). Meanwhile, the survivors living in secluded resistance are subject to the pursuit of those who desire to collect extensive TEK and experiential information—in any form (oral, written, experiential, empirical, historical, mythological) and about nearly any ecological connection (winds, tides, animals, foods, descendants, archival practices). At the same time, they are highly sought after by researchers who desire to study the genetic pool dating ancestry and knowledge at least 20,000 to 40,000 years back (Devraj 2005). If we are convinced that TEK is valuable to climate science and policy responses, we must remain cognizant of the grand cultural stakes that indigenous peoples face in this shared endeavor. Severe anthropogenic threats have confronted indigenous peoples over colonial histories and climate change is another anthropogenic threat caused largely by those former colonial powers. Self-determination and agency over the paths of traditional and ecological knowledge must be respected against the background of injustices wherein knowledge appropriation was a vital component of colonial oppression.

3.3 Endangered Languages

Language loss is another extraordinary threat to cultural sustainability and ensures a clear and direct move towards cultural assimilation. Comparatively many non-indigenous and dominant world languages already frame an environmental imagination in which relationships to plants and animals experienced by indigenous peoples are less significant, or non-existent (Kassam 2008). For the self-identifying indigenous peoples who desire to sustain environmental identity a language that no longer refers to an existing physical manifestation limits available cultural options: assimilate, lose a history, or sustain the cultural imaginary by readapting the place in cultural memory and environmental imagination.

Yet, even in the face of some language loss, other terms may reemerge in the environmental imaginary. Shari Gearhead (2005) discusses an oral history project led by Shari Fox and Ruby Irngaut in which, 'many Inuit have shared other interpretations and meanings of *Uggianaqtuq* with me such as a reference to people fighting, tension, extreme heat, something unseasonable or untimely, and the root of the word refers to a dog taking something in its mouth and shaking it' (Gearhead 2005: 1). Although not a very common expression, *Uggianaqtuq* is a term more widely found in the various media capturing the climatic impacts and cultural transformation. While indigenous survivors of the tsunami were able to draw appropriate responses from a fairly common environmental knowledge, these Inuit are drawing from a far less common term, though nonetheless appropriate for describing uncertain environmental future and impacts. In sum, TEK suffers vulnerability from several consequences of climate change. The background injustices and anthropogenic threats from colonial practices have had a history of its own to chisel away at sustaining traditional lifeways, vital environmental knowledge, cultural identity, and living languages. The acceleration of climate impacts subsequently exacerbates earlier injustices and threatens cultural loss on multiple fronts.

4 RESTORATIVE JUSTICE AND CLIMATE CHANGE

4.1 Climate Refugees

We are already witnessing one of the ultimate expressions of compounded climate impacts as cultural losses are seen in the total displacement of climate refugees. In the South Pacific, over 2,500 Carteret Islanders have been relocated to Papua New Guinea, and in the attempt to avoid complete loss of environmental identity residents of Tuvalu will be relocated to New Zealand. These relocation efforts dramatically compromise the cultural heritage of place and create remarkably different forms of socialization, environmental valuation, and environmental identity. Haulangi relates her current self-perception as a recently arrived climate refugee to New Zealand:

What really concerns me—because, like, at the end of the day—is I may be a Kiwi now, call myself a Kiwi, 'cause I'm living in New Zealand. But hey, people will still look at my color and go 'hey, where are you from? Which island?' And I'll say, 'Oh, I'm from Tuvalu.' They'll say 'and where is that?' What shall I say, 'oh, it has disappeared or submerged under the sea because of global warming?' So, like that's our identity, our culture. Everything will disappear. We may get together here as a community and celebrate when it's Independence Day, our successes and things, but it's different. Definitely, it's going to be really hard for us to accept that we're no longer on the map. (Berzon 2006)

Where goes the environment, so goes the culture. Haulangi describes a complete loss of place, a loss of the referent for her culture, history, and environment. Ecopsychologists regard this complete shift of environmental identity by loss of place to be a form of post-traumatic stress disorder (Khanna 2010). The distress of place-based nostalgia or solastalgia (though, 'atoposalgia' may be more linguistically consistent), is an emotional and psychological trauma that can be applied to indigenous and non-indigenous people alike. For the Tuvaluans, readapting place in cultural memory will occur against a background injustice of becoming the living example of a new, and soon to be undeniable, global environmental identity, the climate refugee.

Projecting into the next fifty years, or by 2060, there are estimates of up to 200 million environmental refugees, most of whom are expected to be relocated because of climate impacts (Myers 2002). At this scale, no easy formula of distributive justice will resolve the obligations of high carbon emitters to indigenous communities. Different background and current injustices mold nuances of justice on a case-to-case scalar basis. In another example, DeNeen Brown (2001) reports on the Inuvialuit people of Herschel Island in the Yukon, who witnessed the melting permafrost due to increasing temperatures over the past few decades. This has resulted in a spiritual, cultural, and environmental crisis. The background injustices include the denied recognition of the Inuvialuit peoples' heritage by changing the island's name, and the Western whalers who invaded the resources, generated cultural assaults through racism, violence, rape, and later introduced a devastating strain of influenza. Inuvialuit sacred tradition included raising the dead on platforms of honor, but since the epidemic, the deceased have been buried in the permafrost. These Inuvialuit believe that anyone who touches (and sometimes even is in the vicinity of) the possessions of the dead after they are buried will be cursed. This is a wise taboo, as some are concerned that frozen flu victims may have preserved the deadly strain (Brown 2001). The island is now a national heritage site, and its inhabitants relocated to the mainland of Canada.

These examples of indigenous climate refugees indicate that the available solutions to the ultimate loss of place may likely accelerate and intensify compromises to the whole web of TEK and cultural identity. The loss of whole identities for the gain of the new political identity of climate refugee and the loss of whole ways to communicate with and understand the surrounding ecology places further burden on sustaining both biological and cultural diversity. Moreover, indigenous climate refugees are much more likely to lose cultural sustainability than non-indigenous climate refugees who, though severely impacted in many similar ways, are often relocated within the dominant culture in which they originated. While climate refugees of Hurricane Katrina in the United States were severely impacted by great losses and inhumane conditions, many residents of the area were relocated to neighboring states in which the dominant culture remained intact. On the other hand, the local indigenous populations, in particular the Houma and Cajun communities, existed on the margins of dominant culture and either lose what they have of place or relocate to further marginalization from dominant culture.

4.2 Restorative Justice

The subcategory of recognition justice known as restorative justice may be the best procedural context for offsetting the cultural losses and the varieties of paternalism, such as debating the status of climate refugees, determining where to relocate refugees, and initiating services for refugees without their own active participation by those global citizens most responsible for climate change (Doyle and Chaturvedi in this volume). The primary virtues and function of restorative justice is that involved parties (victims, offenders, impacted relatives, and community members) voluntarily come 'face to face' in a participatory, mediation-based process of conflict resolution and healing, wherein the involved parties aim towards productive reintegration into the community. Rather than being punitive in the context of bureaucratic hierarchy of courtroom disputes, the exchanges and models of restorative justice bring much more self-realization and subjectivity exchange between parties (Johnstone and VanNess 2007). It pushes recognition justice from marginalized victim-offender relations, or adversarial self-other relations, to reconfigure the roles, histories, and subjective experiences (Figueroa 2006; Oliver 2001). In national contexts restorative justice is the context under which truth and reconciliation commissions exist. It has been used in a number of places to address procedures for conversation and full participation between the beneficiaries and recipients of historical harms, such as between Canada and First Nations Peoples, between the Australian Commonwealth and Aboriginal Peoples, and in the South African transition from apartheid (Chrunik 2009; Maepa 2005). Restorative justice has a variety of origins. It has been documented in religious traditions that favor forgiveness and community integration over brute retribution (Hadley 2001). It has other formal connections to juvenile criminal procedures, domestic abuse, and broader human rights claims (Johnstone and VanNess 2007). Truth and reconciliation proceedings are more than a blame-game for historical harms between people; the proceedings are representative of a form of justice historically utilized in a variety of indigenous traditions, international courts, and many communities (Mirsky 2004; Ulen 2010; Gibbs 2009).

However, background conditions must be heeded. Kelly Richards (2009) warns that the espoused virtues of restorative justice and the traditional indigenous connections that advocates point to should not underestimate the dominance of state criminal court systems. As

Richards argues, state-dominated courts are well entrenched and the integration of restorative procedures, or the presumption that contemporary indigenous peoples fundamentally endorse restorative justice according to some essentialist attribution, could easily underestimate the corrosive capacity state systems have upon attempts for restorative justice. Nonetheless, there are variations of indigenous restorative justice that can transform our understanding from strictly distributive responses that exclude indigenous peoples from full and effective participation in mitigation strategies to bivalent environmental justice in which TEK is legitimate for adaptation and mitigation strategies. Restorative justice, witnessing opportunities, inclusion and respect for TEK need to be brought in a transformative vision of justice in which we reassess the trajectory of the dominant environmental heritage.

In the context of cultural loss caused by climate change, restorative justice may be achieved in a variety of ways from mutual agreements for mitigation and adaptation to apologies, memorials, and bearing witness to a process of transformation between parties (Figueroa 2006; Figueroa and Waitt 2008; Oliver 2001). Moreover, restorative justice helps to better capture the ways in which all parties may mutually experience harms and mutually mend the individual and community wounds. For instance, restoring and reconciling the cultural wealth in TEK would aim at the recognition that epistemological diversity has benefits beyond the specific language community (Robyn 2002). As noted earlier, TEK can be seen as a climate adaptive strategy for whole regions, and reconciliation between the more-burdened populations and less-burdened populations can begin with the respect and acceptance of TEK in the epistemological framework.

5 CONCLUSION

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We are witnessing a global phenomenon in which differently situated peoples are facing in the same direction of the traumatic worry for the future of the planet and struggle for human survival. The moral magnitude of cultural loss to be faced by the most vulnerable indigenous communities is akin to the loss of cultural opportunity, knowledge, and legacy available to humanity. An environmental justice framework that includes recognition, participatory, and restorative justice for threatened indigenous cultures will demand that we change a causal trajectory in climate change by transforming not only the environmental colonialism long felt by such cultures, but also practices that contribute to the rise of climate change.

This chapter has discussed some of the vital dimensions in cultural loss for indigenous peoples, which is by no means comprehensive. Furthermore, the full breadth of connections to unique and specific biodiversity, cultural diversity, and language diversity that connects environmental knowledge important for adaptive and mitigation strategies could not be fully presented in any single chapter. Instead, this chapter takes the strategy of discussing cultural loss from climate change in an environmental justice framework. From this approach, the prescriptions I have suggested are both recognition and distributive, and I have emphasized restorative justice philosophies and procedures that can address the future consequences of cultural loss.

NOTES

1. Following the most common terminology in policies, declarations, documents, reports, literature, and self-referential citations and interviews, I will use the term 'indigenous people' in a general sense throughout this chapter. I will refer specifically to communities, civilizations, and societies by their name when case-specific points are made. I am aware that the general use of 'indigenous' may get over-extended or misrepresent peoples who do not self-identify as such. It is my intention to avoid any use or reference of 'indigenous' that is inappropriate, and for any failure on my part I humbly apologize in advance."

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