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Indigenous Science (Fiction) for the Anthropocene: Ancestral Dystopias and Fantasies of Climate Change Crises

2018. In *Environment & Planning E: Nature and Space* 1 (1-2): 224-242.

Portrayals of the anthropocene period are often dystopian or post-apocalyptic narratives of climate crises that will leave humans in horrific science-fiction scenarios. Such narratives miss the populations of people, such as Indigenous peoples, who approach climate change having already been through transformations of their societies induced by colonial violence. This essay discusses how some Indigenous perspectives on climate change can situate the present time as already dystopian. Instead of dread of an impending crisis, Indigenous approaches to climate change are motivated through dialogic narratives with their descendants and ancestors. In some cases, these narratives are like science fiction in which Indigenous peoples work to empower their own protagonists to address contemporary challenges. This view has important implications for climate and environmental justice allyship with Indigenous peoples.

Settler Colonialism, Ecology, & Environmental Injustice

2018. In *Environment & Society* 9: 125-144.

Settler colonialism is a form of domination that violently disrupts human relationships with the environment. This article investigates philosophically one dimension of how settler colonialism commits environmental injustice. When examined ecologically, settler colonialism works strategically to undermine Indigenous peoples' social resilience as self-determining collectives. To understand the relationships connecting settler colonialism, environmental injustice, and violence, the article first engages Anishinaabe intellectual traditions to describe an Indigenous conception of social resilience called collective continuance. One way in which settler colonial violence commits environmental injustice is through strategically undermining Indigenous collective continuance. At least two kinds of environmental injustices demonstrate such violence: vicious sedimentation and insidious loops.

Critical Investigations of Resilience: A Brief Introduction to Indigenous Environmental Studies and Sciences

2018. In *Daedalus: Journal of the American Academy of Arts and Sciences* 147 (2): 136-147.

Indigenous peoples are among the most active environmentalists in the world, working through advocacy, educational programs, and research. The emerging field of Indigenous Environmental Studies and Sciences (IESS) is distinctive, investigating social resilience to environmental change through the research lens of how moral relationships are organized in societies. Examples of IESS research across three moral relationships are discussed here: responsibility, spirituality, and justice. IESS develops insights on resilience that can support Indigenous peoples' struggles with environmental justice and political reconciliation; makes significant contributions to global discussions about the relationship between human behavior and the environment; and speaks directly to Indigenous liberation as well as justice issues impacting everyone.

What Do Indigenous Knowledges Do For Indigenous Peoples?

2018. In *Traditional Ecological Knowledge: Learning from Indigenous Practices of Environmental Sustainability*. Edited by M.K. Nelson and D. Shilling, 57-82. Cambridge University Press.

This essay is written to address conversations about the best ways to engage in knowledge exchange on important sustainability issues between Indigenous knowledges and fields of climate, environmental and sustainability sciences. Indigenous knowledges often play a crucial role in Indigenous planning processes. I have found that scientists often appreciate the value of Indigenous knowledges as inputs for adding data that scientific methods do not normally track. But it is also the case that Indigenous knowledges have governance-value. That is, they serve as irreplaceable sources of guidance for Indigenous resurgence and nation-building. Scientists should appreciate governance-value because it suggests that for some Indigenous peoples in knowledge exchange situations, we need to be assured that the flourishing of our knowledges is respected and protected. Scientists must understand governance value to improve their approaches to knowledge exchange with Indigenous peoples.

Way Beyond the Lifeboat: An Indigenous Allegory of Climate Justice

2018. In *Climate Futures: Reimagining Global Climate Justice*. Edited by D. Munshi, K. Bhavnani, J. Foran and P. Kurian. Zed Books. Forthcoming.

In my experiences, most Indigenous peoples have complicated stories to tell about anthropogenic climate change that often start with their being harmed by fossil fuel industries. Climate injustice against Indigenous peoples is insidious, as it involves years of coupled colonial and capitalist domination. Is there a succinct way to convey an Indigenous perspective on climate justice that makes the connections between capitalism and industrialization and colonialism? This short essay uses a story of vessels, in allegorical form, to describe the complexity of Indigenous climate justice. The allegory seeks to convey how decolonization and anti-colonialism, understood in senses appropriate to the allegory, cannot be disaggregated from climate justice for Indigenous peoples.

Indigenous Lessons about Sustainability are not just for ‘All Humanity’

2018. Written with Chris Caldwell and Marie Schaefer. In *Sustainability: Approaches to Environmental Justice and Social Power*. Edited by J. Sze, 149-179. NYU Press.

Indigenous peoples are widely recognized as holding lessons about how the rest of humanity can live sustainably. Yet it is rarely acknowledged that for Indigenous peoples living in the context of settler states, our efforts to sustain our peoples rest on our capacities to resist settler colonial oppression. *Indigenous planning* refers to a set of concepts and practices through which many Indigenous peoples reflect critically on sustainability to derive lessons about what actions reinforce Indigenous self-determination and resist settler colonial oppression. The work of the Sustainable Development Institute of the College of Menominee Nation (SDI) is one case of Indigenous planning. In the context of SDI, we discuss Indigenous planning as a process of interpreting lessons from our own pasts and making practical plans for staging our own futures in the face of oppression.

Indigenous Climate Change Studies: Indigenizing Futures, Decolonizing the Anthropocene

2017. In *English Language Notes* 55 (1-2): 153-162.

Indigenous and allied scholars, knowledge keepers, scientists, learners, change-makers, and leaders are creating a field to support Indigenous peoples' capacities to address anthropogenic (human-caused) climate change. Indigenous studies often reflect the memories and knowledges that arise from Indigenous peoples' living heritages as societies with stories, lessons, and long histories of having to be well-organized to adapt to seasonal and inter-annual environmental changes. At the same time, our societies have been heavily disrupted by colonialism, capitalism, and industrialization. I perceive at least three key themes reflected across the field that suggest distinct approaches to inquiries into climate change. Through discussing these themes, I will claim that Indigenous studies offer critical, decolonizing approaches to how to address climate change. The approaches arise from how our ways of imagining the future guide our present actions.

Is It Colonial Deja Vu? Indigenous Peoples and Climate Injustice

2017. In *Humanities for the Environment: Integrating Knowledges, Forging New Constellations of Practice*. Edited by J. Adamson, M. Davis, and H. Huang, pgs. 88-104. Earthscan Publications.

Indigenous peoples are among the most audible voices in the global climate justice movement. Yet, as I will show in this chapter, climate injustice is a recent episode of a cyclical history of colonialism inflicting anthropogenic (human-caused) environmental change on Indigenous peoples. Indigenous peoples face climate risks largely because of how colonialism, in conjunction with capitalist economics, shapes the geographic spaces they live in and their socio-economic conditions. In the North American settler colonial context, which I focus on in this chapter, U.S. settler colonial laws, policies and programs are 'both' a significant factor in opening up Indigenous territories for carbon-intensive economic activities and, at the same time, a significant factor in why Indigenous peoples face heightened climate risks. Climate injustice, for Indigenous peoples, is less about the spectre of a new future and more like the experience of *déjà vu*.

Climate Change and Indigenous Peoples: a Synthesis of Current Impacts and Experiences

2016. Author Team: K. Norton-Smith, K. Lynn, K. Chief, K. Cozzetto, J. Donatuto, M. Hiza Redsteer, L. Kruger, J. Maldonado, C. Viles, and K.P. Whyte. Gen. Tech. Rep. PNW-GTR-944. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. Pgs 1-138.

A growing body of literature examines the vulnerability, risk, resilience, and adaptation of indigenous peoples to climate change. This synthesis of literature brings together research pertaining to the impacts of climate change on sovereignty, culture, health, and economies that are currently being experienced by Alaska Native and American Indian tribes and other indigenous communities in the United States. This report defines

and describes the key frameworks that inform indigenous understandings of climate change impacts and pathways for adaptation and mitigation, namely, tribal sovereignty and self-determination, culture and cultural identity, and indigenous community health indicators. It also provides a comprehensive synthesis of climate knowledge, science, and strategies that indigenous communities are exploring.

Weaving Indigenous Science, Protocols and Sustainability Science

2016. Written with J.P. Brewer and J.T. Johnson. *Sustainability Science* 11 (1): 25-32.

Indigenous sustainability scientists often describe protocols as referring to attitudes about how to approach the world that are inseparable from how people approach scientific inquiry; they use the terms caretaking and stewardship to characterize protocols in their Indigenous communities and nations. Yet sustainability scientists may be rather mystified by the idea of protocols as a necessary dimension of scientific inquiry. Moreover, the terms stewardship and caretaking are seldom used in sustainability science. We elaborate on some possible meanings of protocols for sustainability scientists.

The Story of Rising Voices: Facilitating Collaboration Between Indigenous and Western Ways of Knowing

2016. Written with J. Maldonado, H. Lazrus, S. Bennett, K. Chief, C.M. Dhillon, B. Gough, L. Kruger, J. Morissette, S. Petrovic. In *Responses to Disasters and Climate Change: Understanding Vulnerability and Fostering Resilience*. Edited by M. Companion and M. Chaiken, Chapter 2. CRC Press.

Indigenous knowledges and adaptation strategies provide a crucial foundation for community-based adaptation measures to climate change-related transformations. Because of the unprecedented rates of environmental shifts precipitated by contemporary climate change, and circumscribed adaptive capacity of Indigenous communities, partnerships between experts with backgrounds in Indigenous and western knowledge may be particularly important. This chapter examines collaborations among scientific and Native American, Alaska Native, and Pacific Island communities to support climate solutions. Specifically, we draw examples from the Rising Voices: Collaborative Science for Climate Solutions program (Rising Voices) to examine how boundary organizations function cross-culturally.

Indigenous Masculinities in a Changing Climate: Vulnerability and Resilience in the United States

2016. Written with K. Vinyeta and K. Lynn. In *Men, Masculinities and Disaster*. Edited by E. Enarson and B. Pease, Chapter 12. Routledge.

Little research has focused on the impacts of climate change on Indigenous masculinity. We open this chapter by briefly describing pre-contact Indigenous conceptions of gender in the U.S., followed by a discussion of how settlement has affected gender roles, relations, and gendered traditional knowledge in Indigenous communities. We then describe some of the ways in which Indigeneity and masculinity are intersecting (or may intersect) with climate change in four key arenas: health, migration and displacement, economic and professional development, and culture. We follow this with

a discussion of Indigenous men's roles in political resistance and climate change resilience. We conclude by summarizing the key implications for Indigenous climate change initiatives and for the ongoing reconstruction and reassertion of Indigenous gender identities.

Climate Change Through an Intersectional Lens: Gendered Vulnerability and Resilience in Indigenous Communities in the United States

2015. Written with K. Vinyeta and K. Lynn. *General Technical Report PNW-GTR-923*. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, 1-74.

The role of gender in defining how indigenous peoples experience climate change in the United States is a research area that deserves more attention. The coupling of climate change with settler colonialism is the source of unique vulnerabilities. At the same time, gendered knowledge and gender-based activism and initiatives may foster climate change resilience. In this literature synthesis, we cross-reference international literature on gender and climate change, literature on indigenous peoples and climate change, and literature describing gender roles in Native America, in order to build an understanding of how gendered indigeneity may influence climate change vulnerability and resilience in indigenous communities in the United States.

A Concern about Shifting Interactions between Indigenous and non-Indigenous Parties in US Climate Adaptation Contexts

2014. *Interdisciplinary Environmental Review* 15 (2/3): 114-133.

Indigenous peoples everywhere are preparing for or already coping with a number of climate change impacts, from rising sea-levels to shifting harvesting seasons. It is plausible that the capacity for environmental protection of two political institutions will change in relation to certain impacts: treaties and indigenous governmental jurisdictions recognised by the federal governments of nations such as the USA or Canada. This essay explores critically whether current solutions for these changes depend far too crucially on non-indigenous parties' coming to an appropriate understanding of indigenous culture and self-determination.

Indigenous Women, Climate Change Impacts and Collective Action

2014. *Hypatia: Journal of Feminist Philosophy* 29 (3): 599-616.

For some indigenous peoples, climate change impacts can disrupt the continuance of the systems of responsibilities. Within this domain of indigeneity, some indigenous women take seriously the responsibilities that they may perceive they have as members of their communities. For the indigenous women who have such outlooks, responsibilities that they assume in their communities expose them to harms stemming from climate change impacts and other environmental changes. Yet at the same time,

their commitment to these responsibilities motivates them to take on leadership positions. I show why, at least for some indigenous women, this is an important way of framing the climate change impacts that affect them. I argue for the how this affects the political responsibilities of nonindigenous parties.

Indigenous Experiences in the U.S. with Climate Change and Environmental Stewardship in the Anthropocene

2014. Written with K. Chief, J. Daigle and K. Lynn. *Pinchot Institute for Conservation General Technical Report. U.S. Department of Agriculture Forest Service RMRS-P-71*: 161-176.

The recognition of climate change issues facing tribal communities and indigenous peoples in the United States is growing, and understanding its impacts is rooted in indigenous ethical perspectives and systems of ecological knowledge. Tribal communities and indigenous peoples across the United States are re-envisioning the role of science in the Anthropocene; working to strengthen government-to-government relationships in climate change initiatives; and leading climate change research, mitigation and adaptation plans through indigenous ingenuity. Unique adaptive capacities of tribal communities stem from their ethics and knowledge, and help frame and guide successful adaptation. This paper synthesizes key issues and case studies related to climate change impacts on tribally valued forest resources and tribal adaptive responses to climate change.

Justice Forward: Tribes, Climate Adaptation and Responsibility

2013. *Climatic Change* 120 (3): 517-530.

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. 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.