#### SCIENCE, COLONIALISM, AND INDIGENOUS PEOPLES

At the intersection of indigenous studies, science studies, and legal studies lies a tense web of political issues of vital concern for the survival of indigenous nations. Numerous historians of science have documented the vital role of late-eighteenth- and nineteenth-century science as a part of statecraft, a means of extending empire. This book follows imperialism into the present, demonstrating how pursuit of knowledge of the natural world impacts, and is impacted by, indigenous peoples rather than nation-states.

In extractive biocolonialism, the valued genetic resources and associated agricultural and medicinal knowledge of indigenous peoples are sought, legally converted into private intellectual property, transformed into commodities, and then placed for sale in genetic marketplaces. *Science, Colonialism, and Indigenous Peoples* critically examines these developments, demonstrating how contemporary relations between indigenous and western knowledge systems continue to be shaped by the dynamics of power, the politics of property, and the apologetics of law.

Laurelyn Whitt received a Ph.D. in Philosophy, with a specialization in Philosophy of Science, from the University of Western Ontario. She teaches Native Studies and Philosophy at Brandon University and has held visiting appointments in the Department of Maori Studies, University of Auckland; the Department of Science and Technology Studies, Cornell University; the University of Notre Dame Law School; and Osgoode Hall Law School. Professor Whitt is the coauthor (with Alan W. Clarke) of *The Bitter Fruit of American Justice* and the author of *Interstices*, a collection of poetry that won the 2005 Holland Poetry Prize.

# Science, Colonialism, and Indigenous Peoples

## THE CULTURAL POLITICS OF LAW AND KNOWLEDGE

## Laurelyn Whitt

Brandon University



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This book is dedicated to Waerete Norman.

E te hoa o ngä wähine whänui o te ao, takoto mai rä i tö waka o te mate.

E te karanga maha, e te kaipupuri i te mana wahine o te Tai Tokerau, moe mai rä i waenga i ngä koiwi o öu mätua, tüpuna.

Ka tangi tonu atu rä mö te rironga horo atu, kähore nei i tatari kia rongo anö i te tangi a te pïpïwharauroa o te koanga, i te tangi a te tätarakihi o te raumati.

Kua moe rä to tinana, kua whakangaro atu to wairua ki tua o Te Arai, ki tua atu o Te Reinga, ki Hawaiki wairua.

Takoto mai rä, moea te moenga roa e Waireti, te moenga të whakaarahia.

Pai märire.

- Patu Hohepa

> The dream of reason did not take power into account. – Paul Starr<sup>1</sup>

<sup>1</sup> Paul Starr, The Social Transformation of American Medicine (New York: Basic Books, 1982): 3.

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of Law and Knowledge
Laurelyn Whitt
Frontmatter
More information

## Contents

Preface		page ix		
Acknowledgments				
First Words				
PART I. BIOCOLONIALISM AS IMPERIAL SCIENCE				
1	Imperialism Then and Now	3		
2	Indigenous Knowledge, Power, and Responsibility	29		
3	Value-Neutrality and Value-Bifurcation: The Cultural Politics of Science	57		
PART II. THE HUMAN GENOME DIVERSITY PROJECT: A CASE STUDY				
4	The Rhetoric of Research Justification	84		
5	Indigenist Critiques of Biocolonialism	105		
PART III. LEGITIMATION: THE RULE AND ROLE OF LAW		133		
6	The Commodification of Knowledge	136		
7	Intellectual Property Rights as Means and Mechanism			
	of Imperialism	157		
8	Transforming Sovereignties	179		
	Conclusion – The Politics of Knowledge: Resistance			
	and Recovery	219		
Bibliography		225		
Index		255		
		vii		

#### Preface

Since this book began many years ago, many lives have passed through mine and so through it. Before this book began, many others brought me to it. All of these are still with me, though some only in memory. Gratefulness is not enough, but it is what I have; I offer it now.

To my parents, and theirs, and theirs before them.

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of Law and Knowledge
Laurelyn Whitt
Frontmatter
More information

Х

Preface

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- Laurelyn Whitt, "Knowledge Systems of Indigenous America," in Helaine Selin (ed.), *Encyclopaedia of the History of Science*, *Technology and Medicine in Non-Western Cultures* (Dordrecht, The Netherlands: Kluwer Academic Publishers, 2008): 1184–94.
- Laurie Anne Whitt, "Sovereignty and Human Rights," *National Lawyers*' *Guild Practitioner*, 60:3 (Spring 2003): 90–4.
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Law and Knowledge	
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xii

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- Laurie Anne Whitt, "Indigenous Peoples, Intellectual Property Law and the New Imperial Science," *Oklahoma City University Law Review*, 23:1 & 2 (1998): 211–59.
- Laurie Anne Whitt, "Resisting Value-Bifurcation: Indigenist Critiques of the Human Genome Diversity Project," in Ann Ferguson and Bat Ami Bar-On (eds.), Daring To Be Good: Feminist Essays in Ethico-Politics (Oxford, UK: Routledge, Chapman and Hall, 1998): 70–86.
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- Laurie Anne Whitt, "Cultural Imperialism and the Marketing of Native America," Reprinted from *The American Indian Culture and Research Journal*, Volume 19, Number 3 (1995): 1–31, by permission of the American Indian Studies Center, UCLA © Regents of the University of California.
- Laurie Anne Whitt, "Indigenous Peoples and the Cultural Politics of Knowledge," in Michael Green (ed.), *Issues in American Indian Cultural Identity* (New York: Peter Lang, 1995): 223–71.
- Laurie Anne Whitt and Jennifer Daryl Slack, "Communities, Environments, and Cultural Studies," *Cultural Studies*, 8:1 (January 1994): 5–31. The Web site for *Cultural Studies* is http://informaworld.com.

#### **First Words**

This book speaks to political issues that lie at the intersection of indigenous studies, science studies, and legal studies, focusing in particular on the role of power in shaping the interaction of indigenous and western knowledge systems. Pursuit of knowledge of the natural world has long been politicized. In some cases this has been subdued, a matter of inflection; in others it has been more pronounced, a dominant and dominating agenda for research. The vital role of science as a part of statecraft has been underscored by numerous historians of science,<sup>1</sup> who, in the latter part of the twentieth century, began to document the "issues of cultural and economic domination involved in the pursuit of natural knowledge."<sup>2</sup> The rule of law, they argue, was identified with the scientific method and became, for the West, a vital means of extending empire.<sup>3</sup> The conduct

<sup>1</sup> See, especially, Nathan Reingold and Marc Rothenberg (eds.), Scientific Colonialism (Washington, DC: Smithsonian Press, 1987); Roy MacLeod and Philip F. Rehbock (eds.), Nature in Its Greatest Extent: Western Science in the Pacific (Honolulu, Hawaii: University of Hawaii Press, 1988); Roy MacLeod, "Reading the Discourse of Colonial Science," in Patrick Petitjean (ed.), Les Sciences Coloniales: Figures et Institutions (Paris: ORSTOM, 1996): 87–96; Roy MacLeod, "On Science and Colonialism," Science and Society in Ireland: The Social Context of Science and Technology in Ireland, 1800–1950 (Belfast: Queen's University, 1997) 1–17; Roy MacLeod, "On Visiting the 'Moving Metropolis': Reflections on the Architecture of Imperial Science," Historical Records of Australian Science, 5 (1982): 1–16; David Wade Chambers, "Locality and Science: Myths of Centre and Periphery," in A. Lafuents, A. Elena, and M.L. Ortega (eds.), Mundializacíon de la cencia y cultura nacional (Madrid: Ediciones Doce Calles, 1993): 605–17; David Wade Chambers, "Does Distance Tyrannize Science?" in R. W. Home and S. K. Kohlstedt (eds.), International Science and National Scientific Identity (Dordrecht, The Netherlands: Kluwer Academic Publishers, 1991): 19–38.

<sup>3</sup> As Roy MacLeod notes: "If imperial unity was the desired end, scientific unity was the one universally acceptable means... Scientific method would... unite empire, in unity of truth, of tradition and of leadership" (Ibid., 12).

<sup>&</sup>lt;sup>2</sup> MacLeod, "On Visiting," 14.

xiv

First Words

of imperial science by nation-states during the late eighteenth and nineteenth centuries, and its effect upon other nation-states, has led historians of science to conclude that the issue is no longer science *in* imperial history but science *as* imperial history.<sup>4</sup>

My concern here is with the continuation of one strand of that history into the present, with how a new imperial science impacts, and is impacted by, indigenous peoples rather than nation-states. Certain areas of contemporary bioscience, currently in the service of western pharmaceutical and agricultural industries, are enabling the appropriation of indigenous knowledge and genetic resources at a prodigious and escalating rate. Opposition to such biocolonialism has not only been vigorous, but international in scope. My aim is to further and deepen such resistance by demonstrating how biocolonialism arises from the ideology, the policies, and the practices of a new imperial science, marked by the confluence of science with capitalism – a relationship mediated by a distinctively American, increasingly international, intellectual property system.

The political role of imperial science – the ways in which it supports and sustains the complex system of practices that constitutes the oppression of indigenous peoples – figures prominently in indigenist critiques of biocolonialism.<sup>5</sup> These critiques directly challenge the ideology which sustains and provides the justificatory rhetoric for the policies and practices of certain areas of western bioscience. Reflecting its origins, this ideology is described in Part I as neopositivist. It relies heavily upon both assertions and assumptions of value-neutrality, wields an untenable distinction between pure and applied science, and readily and unreflectively engages in value-bifurcation, demarcating and separating the ethical from the political.

The result is an apolitical ethics of science, where issues of power in ethics are either overlooked altogether or are diverted. It has also in some cases produced an amoral politics of science, as well as a focus on science "policy" rather than on the politics of science. Talk of how politics and power enter into the origins and development of science, into

<sup>4</sup> Ibid., 2.

<sup>&</sup>lt;sup>5</sup> Indigenism critiques the diverse power relations and dynamics that facilitate and maintain the oppression of indigenous peoples. It stresses the existence, effectiveness, and potential of indigenous agency in resisting oppression and in formulating concrete proposals for securing justice.

#### First Words

XV

scientific knowledge production is effectively silenced, and the rhetorical props for legitimating biocolonialism are set in place. Part II looks closely at the operation of this neopositivist ideology, offering a case study of a recent biocolonialist research program – the Human Genome Diversity Project.

Part III takes up at greater length the pivotal role played by the rule of law, and specifically of U.S. intellectual property law, in this story. The latter enables, and provides a patina of justification for, scientific policies and practices that, directly or indirectly, service the needs of powerful corporations. The microworld "factories" of the new imperial science have become crucial outposts in the establishment of an international intellectual property rights regime primed to serve the interests of biocolonialism. The hope of ending such practices rests in part upon our ability to move past current oppressive, and well-entrenched, understandings of sovereign power. Indigenous responses to biocolonialism include efforts to transform the concept and practice of sovereignty. These are, as we will see, helping to unify and transform indigenous communities politically.

Some vexing terminological and conceptual issues will remain submerged in my discussion of these matters. I will, for example, often contrast indigenous with western knowledge systems, especially in Part I. To speak of a knowledge system is to abandon the idea that a single epistemology is universally shared by, or applicable to, all humans insofar as they are human.<sup>6</sup> It facilitates instead a cultural parsing of the concept of epistemology, suitable to the heterogeneity of knowledge. There are specific epistemologies that belong to culturally distinctive ways of knowing.<sup>7</sup>

There are multiple ways of comparing and contrasting knowledge systems. My own preference for western and indigenous, or alternatively, dominant and subordinated, as terms of contrast is a political one; it is responsive to the role of power within, and the power differential among, knowledge

<sup>&</sup>lt;sup>6</sup> I do not defend my adoption of this term here, but note that my use of it is itself at odds with the view of knowledge within the dominant knowledge system. Many who accept that system will insist on an extended defense. I will disappoint them here.

<sup>&</sup>lt;sup>7</sup> For further discussion of characteristics of knowledge systems, see Stephen A. Marglin, "Toward the Decolonization of the Mind" and "Losing Touch," in Frédérique Apffel Marglin and Stephen Marglin (eds.), *Dominating Knowledge* (Oxford: Clarendon Press, 1990), especially 232–3.

xvi

First Words

systems. Other commonly adopted options – articulate/tacit, theoretical/ practical, scientific/traditional – seem questionable if not objectionable, especially insofar as they are intended to reflect differences between forms of knowledge within indigenous and western cultures.<sup>8</sup>

Although speaking of a "dominant" knowledge system aptly captures the realities of power, for various reasons – including the exportation of this knowledge system beyond the geographic confines of the West – "western" is neither exact nor fully equivalent to it. By "dominant" knowledge system, I have in mind a fairly specific but enormously influential strain of the western intellectual heritage. Referred to as "positivism" in its earliest incarnation,<sup>9</sup> I am more concerned here with its current "neopositivist" manifestation.<sup>10</sup> Although purportedly dead as a movement, the spirit of positivism continues to haunt much of western science and philosophy.

Nevertheless, the diversity and non-unitary character of both "indigenous" and "western" must be acknowledged, and indeed, stressed. There are differences within, and similarities across, western and indigenous knowledge systems that confound any attempt to cast the contrast as a simple dichotomy. Indeed, after years of supposing otherwise, there is now growing acknowledgment among scholars "that there are no simple or universal criteria that can be deployed to separate indigenous

<sup>&</sup>lt;sup>8</sup> For some discussion of these issues, see Thomas Heyd, "Indigenous Knowledge, Emancipation and Alienation," *Knowledge and Policy*, 8 (1995): 63–73; Arun Agrawal, "Indigenous and Scientific Knowledge: Some Critical Comments," *Indigenous Knowledge and Development Monitor*, 3 (1995): 3–6; "Editorial," *Indigenous Knowledge and Development Monitor*, 4 (1996): 1; and "Comments on Article by Arun Agrawal," *Indigenous Knowledge and Development Monitor*, 4 (1996): 12–19.

<sup>&</sup>lt;sup>9</sup> A sprawling and lingering intellectual tradition, positivism has made itself felt in one guise or another for more than a century and a half. As one notable commentator of the phenomenon observes, it is, like any other tradition, "a diverse movement, with its dissidents and stalwarts, its ortho- and heterodoxies." Robert N. Proctor, *Value-Free Science? Purity and Power in Modern Knowledge* (Cambridge, Massachusetts: Harvard University Press, 1991): 162. There are positivist theories of law, of economics, of literature, of sociology, of religion, of ethics, and of science. There is the Comtean positivism of the 1830s, the neo-Kantian positivism of the last half of the nineteenth century, and the logical positivism of the early and midtwentieth century. Although recent developments have significantly undermined its hold on the academic community, the elements of it noted here are part of its thriving legacy.

<sup>&</sup>lt;sup>10</sup> References to the "legacy of positivism" abound. For two recent examples, see Dale Jamieson, "The Poverty of Postmodernism," University of Colorado Law Review, 62:3 (1991): 577–95 and Steve Fuller, Philosophy, Rhetoric and the End of Knowledge (Madison, Wisconsin: University of Wisconsin Press, 1993).

#### First Words

xvii

knowledge from western or scientific knowledge."<sup>11</sup> Such oppositions often oversimplify, blurring "the actual fluidity and permeability of knowledge and cultural boundaries."<sup>12</sup> Moreover, given the global presence of some 5000 distinctive indigenous cultures, reference to an "indigenous" knowledge system – even if one confined its scope to Native North America as I tend to do here – is empirically tenuous at best. It is crucial to acknowledge the specific circumstances that have shaped and differentiated the knowledge systems of indigenous peoples, and that continue to do so. As one commentator notes,

[I]ndigenous knowledge is formed from a complex intertwining of knowledge and traditions and practices through the engagement of indigenous and nonindigenous peoples. Far from being considered a unitary, homogenous entity... indigenous knowledge must instead be understood as contingent, historically situated, and particular to the specifics of locality, group dynamics, place and time.<sup>13</sup>

It would, however, be historically and politically myopic to see only differences. Concrete diversity does not preclude commonality or community; there is much that binds indigenous peoples together. There are shared conditions, shared responsibilities, and a shared struggle: "Indianness . . . is reinforced by the common experience of almost five centuries of [Eurocentric] domination . . . The differences between these diverse peoples (or ethnic groups) have been accentuated by the colonizers as part of the strategy of domination."<sup>14</sup> Or, as Gail Tremblay (Iroquois/Micmac) observes, each of us

comes from a people who has also had the experience of facing the forces of colonization by outsiders and has been subjected to

<sup>&</sup>lt;sup>11</sup> Arun Agrawal, "On Power and Indigenous Knowledge," in Darrell A. Posey (ed.), *Cultural and Spiritual Values of Biodiversity* (London: United Nations Environmental Programme Intermediate Technology Publication, 1999): 177.

<sup>&</sup>lt;sup>12</sup> Stephen B. Brush and Doreen Stabinsky (eds.), Valuing Local Knowledge: Indigenous People and Intellectual Property Rights (Washington, DC: Island Press, 1996): 6.

<sup>&</sup>lt;sup>13</sup> Michael Davis, "Bridging the Gap or Crossing a Bridge? Indigenous Knowledge and the Language of Law and Policy," paper presented to the "Bridging Scales and Epistemologies Conference," Bibliotheca Alexandrina, Alexandria, Egypt, 17–20 May 2004. Accessible online at: http://www.millenniumassessment.org/documents/bridging/papers/davis.michael.pdf.

<sup>&</sup>lt;sup>14</sup> Guillermo Bonfil Batalla, Utopia y Revolucion: El Pensamiento Politico Contemporàneo de los Indios en América Latina (Mexico: Editorial Nueva Imagen, SA, 1981): 37–8. Translation by Roxanne Dunbar Ortiz.

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of Law and Knowledge	
Laurelyn Whitt	
Frontmatter	
More information	

xviii

First Words

attempts at physical and cultural genocide. Each knows the pressure to assimilate to other cultural patterns, and the pain of loss that has been handed down across the generations of people since contact... So it is that coming from such diverse cultures, we can join together to say, *we are one.*<sup>15</sup>

<sup>15</sup> Gail Tremblay, "Statement for Exhibition of Contemporary Native American Art, 'We Are Many, We Are One,'" curated by Jaune Quick-to-See Smith (1997).