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Landscape and Law: Territoriality and Rights in Knowledge

Graham Dutfield*

Much of the debate on the protection of Indigenous peoples' knowledge is highly reductive, focusing on intellectual property rights. This means that much is left out of the conversation that might ensure that legal and policy responses to the lack of protection are realistic, feasible, and in line with Indigenous peoples' own perspectives. One of the major obstacles to progress in this regard is the legacy of ignorance about how Indigenous peoples relate to the living world and have radically transformed it through practices that imbue their own lifeworlds. The latter differ markedly from Western naturalism. The privileging of naturalism that informs not just scientific practice but also law and policy, including through colonialism, has been extremely harmful. This Article seeks to make an alternative case for the protection of Indigenous knowledge by fusing Western property theory that justifies natural rights in land and knowledge with an enhanced understanding of the landscape domestication practices of Indigenous peoples and a better appreciation of Indigenous lifeworlds. Whilst acknowledging that this is likely to encounter opposition from those who consider the universalization of naturalism to be essential for the future of humankind, this Article asserts that a process of dialogue that enhances mutual understanding and identifies ways forward is a necessary starting point. Given that we are seeing a modest increase in appreciation for the value of collaborations based on ontological pluralism, such dialogues could turn out to be fruitful.

* Professor of International Governance, University of Leeds, U.K. The underlying ideas this Article expresses were conveyed in presentations hosted by the University of Cambridge, Linköpings Universitet, Harvard University, Université Grenoble Alpes, Friedrich-Schiller Universität Jena, University of Queensland, University of Athens, and University of Hertfordshire; with Uma Suthersanen at Queensland University of Technology; at the Queen Mary Intellectual Property Research Institute Annual Conference on Intellectual Property and Sustainable Living, at the University of Oxford; to students on the Global Governance through Law module of the University of Leeds, and those who attended a class at King's College London. I am grateful to the organizers, inviters, and those present who posed challenging questions and shared comments. My thanks go especially to the following people: Uma Suthersanen, Ruth Okediji, Raphael Uchôa, Marc Stuhldreier, Martin Frederiksson, Berris Charnley, Brad Sherman, Henrietta Marrie, Fran Humphries, Matthew Rimmer, Stathis Arapostathis, Bukola Faturoti, Fabien Girard, Ingrid Hall, Nicolas Ellison, Eduardo Relly, Amrita Mukherjee, Eden Sarid, Kristina Plenderleith, and Maui Solomon. I thank Kelly Bannister for some helpful feedback and an anonymous reviewer of an earlier draft. Last but not least: Huge thanks to the Journal editors for their painstaking scrutiny of the submitted draft, without which the Article would have been a great deal poorer. The usual disclaimers apply.

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Introduction

Safeguarding knowledge is of the utmost importance to Indigenous peoples. Intellectual property ("IP") law forms the prevailing framework for the discussion on whether and how such knowledge should be extended legal protection. This framing, given its historical context, was probably unavoidable, and it has not been entirely without success.[1] However, what Indigenous peoples want most is territorial recognition and their control over that which emanates from territory, both tangible and intangible.[2] Safeguarding knowledge is, of course, central to that. Nevertheless, territorial recognition's inextricable link to land, livelihood, and so much else also matters enormously. Consequently, when offered as the only or best solution, IP rights fall far short of fulfilling Indigenous peoples' ambitions, useful as they can be for certain commercial endeavors that individuals and groups might choose to engage in. Indeed, some of them have used IP rights, such as trademarks, to generate income.[3] But many Indigenous peoples treat IP rights with understandable skepticism.

If IP law is not the answer, then what is? This Article makes no attempt to answer that question. Following John Locke's famous quote, "it is ambition enough to be employed as an under-labourer in clearing the ground a little, and removing some of the rubbish which lies in the way to knowledge,"[4] this Article's aims are tempered by there being so much that blocks the way to a true understanding of what is essential to just and effective laws and policies.

1. For both negative and positive experiences of intellectual property protection, see generally Terri Janke, True Tracks: Respecting Indigenous Knowledge and Culture (2021).

2. Anaya emphasizes the centrality of self-determination to the ways Indigenous peoples express their demands. S. James Anaya, Indigenous Peoples in International Law 75 (1996). ("It is self-evident that self-determination affirmations are nugatory without the right to possess a territory and its natural resources—and a territory for them to rightfully possess.").

3. *See generally* Janke, *supra* note 1.

4. John Locke, An Essay Concerning Human Understanding and a Treatise on the Conduct of the Understanding 13 (C.H. Kay ed., Kay & Troutman 1847) (1690) (the quote comes from the Epistle to the Reader at the beginning).

This is reflected in much of the writing on the subject and the scarcity of workable legal norms in existence.[5]

This Article instead aims to offer a clearer path to follow for those with good intentions and a better appreciation of the scale of the task that lies ahead. "Removing some of the rubbish" may therefore not be the kindest or most accurate metaphor. I respect prevalent assumptions and arguments, including ones that are less accurate or helpful. Instead, this Article seeks to offer original analyses and approaches. It starts by tracing the history of Indigenous peoples' international activism. This activism has always been focused on issues of land and resource rights, human rights, and sovereignty. However, in recent decades, it has become engaged in questions of knowledge protection and IP. Why and when this happened is explained below. One important factor is that forums opened where such matters came up and where, to some extent, at least, Indigenous peoples have had a voice.[6] The problem, beyond the limitations of IP "solutions," is that international IP discourse and deliberations commonly treat Indigenous peoples' rights and responsibilities in land, resources, culture, knowledge, and self-determination entirely separately, as if they were completely unrelated matters. Hence, this Article's purpose is to reinforce their interconnectedness in those many instances where it is a reality.[7] The concept of landscape is therefore explored in depth as a means to: (i) critique theoretical bases for the dispossession of Indigenous peoples' assets—primarily land, resources, and knowledge—simultaneous with the denial of the property rights of Indigenous peoples; and (ii) suggest how landscape domestication may form the moral and legal basis for alternative property claims, this time in Indigenous peoples' favor. In doing so, this Article reveals the existence of sharp ontological divergences between dominant naturalistic perspectives on nature and

5. The present author has written critically on the state of the debate on legal protection of TK protection. *See generally* Graham Dutfield, *Traditional Knowledge, Intellectual Property and Pharmaceutical Innovation: What's Left to Discuss?*, *in* Sage Handbook of Intellectual Property 649 (Matthew David & Debora Halbert eds., 2014); Graham Dutfield, *If We Have Never Been Modern, They Have Never Been Traditional: 'Traditional knowledge', Biodiversity, and the Flawed ABS Paradigm*, *in* Routledge Handbook on Biodiversity and the Law 276 (Charles McManis & Burton Ong eds., Routledge 1st ed. 2018).

6. Since the United Nations Economic and Social Council became open to Indigenous people and their representative organizations in the 1970s, the trend has continued. Two particularly important forums are the periodic meetings of the Conference of the Parties to the 1992 Convention on Biological Diversity and the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore of the World Intellectual Property Organization, which was established in 2001.

7. This essential interconnectedness is, of course, undermined as different knowledge and cultural expressions travel, cross paths, and hybridize. The problem I am seeking to highlight is the prevalent assumption of zero connectedness and the conclusion that follows from this: That the law treats each one (land, resources, knowledge, and cultural expressions) in virtual isolation from the other.

the 'lifeworlds' of many Indigenous peoples, which in themselves raise difficult questions as to how best to frame ongoing discussions on traditional knowledge legal protection and Indigenous rights more generally. This Article also reflects on how we might build upon the arguments put forward to enhance the quality of dialogue on Indigenous peoples' rights and advance what matters most to them.

I. From Land to Knowledge

Just over a century ago, the Director-General of the League of Nations received a letter; its sender was a leading member of the Six Nations of the Iroquois named Deskaheh. He was appealing against actions of the Dominion of Canada conflicting with their rights as sovereign self-governing nations.[8] Thus, between the World Wars, Indigenous peoples took the first steps toward intervening in international forums and engaging with international law to promote their interests.

Beginning in the 1970s through to the 1990s, Indigenous peoples gained much more attention as effective political actors, particularly in several countries and increasingly internationally. Internationalization going well beyond the occasional letter written to the head of an international organization was very much underway by this time. The two most important forums for this were the United Nations Economic and Social Council and the International Labour Organization, where the World Council of Indigenous Peoples was the first Indigenous peoples organization to hold consultative status.[9] Alongside the Indigenous organizations and some very impressive individual representatives, the increased involvement of international humanitarian NGOs and networks plus concerned academics, often working closely with these organizations, was certainly helpful to increasing advocacy for and representation of Indigenous societies in international fora.[10]

When one listens to Indigenous peoples, sovereignty, land, culture, racism and basic human rights have been, and remain, their most vital concerns.[11] Until quite recently, the idea of protecting their knowledge through law received

8. Letter from Levi General (Deskaheh), Sole Deputy and Speaker of the Six Nations Council, to James Eric Drummond, Sec'y Gen. of the League of Nations, Geneva. (Aug. 6 1923), https://cendoc.docip.org/collect/deskaheh/index/assoc/HASH9252/c582fe50.dir/R612-11-28075-30035-6.pdf [https://perma.cc/J7YE-QS5R].

9. *See* Pōkā Laenui & Hayden Burgess, *The World Council of Indigenous Peoples: An Interview with Pōkā Laenui (Hayden Burgess)*, 2 Contemp. Pac. 336 (1990).

10. Salvador Martí i Puig, *The Emergence of Indigenous Movements in Latin America and their Impact on the Latin American Political Scene: Interpretive Tools at the Local and Global Levels,* 37 Lat. Am. Perspectives 74, 79 (2010).

11. *See generally* Patrick Thornberry, Indigenous Peoples and Human Rights (2002).

little, if any, attention. This was despite the surge of interest in documenting and better understanding the practical uses of local knowledge in rural areas of the world. Much of this interest came from a core of engaged academics, conservationists and development workers.[12] However, starting in the early 1990s, legal demands over knowledge as 'intellectual property' began to feature in Indigenous peoples' discourse.[13] What processes precipitated this?

The answer, which might surprise legal scholars, begins with plants. Ethnobiologists, among other ethno-scientists had long been publishing academic texts revealing sophisticated Indigenous knowledge of plants.[14] Anthropologists, geographers, and political and historical ecologists were also publishing important and similar research.[15] This was in order to describe and explore how, as historian Richard Drayton explains, "what we may call the sciences of collection and comparison—among which we may include botany, zoology, and geology—depended on Europeans becoming exposed to the planet's physical and organic diversity, *and often to the scientific traditions of non-European people*."[16] For many, but certainly not all these researchers, landscape was a primary focus of their work, hence the popularity of the term "domesticated landscape:" an absolutely crucial concept in terms of linking rights in land to rights in knowledge.[17]

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12. *See, e.g.*, Robert Chambers, Rural Development: Putting the Last First (1983); Paul Richards, Indigenous Agricultural Revolution: Ecology and Food-Crop Farming in West Africa (1985); Traditional Knowledge and Renewable Resource Management in Northern Regions (Milton M.R. Freeman & Ludwig N. Carbyn eds., 1988); Common Property Resources: Ecology and Community-Based Sustainable Development (Fikret Berkes ed., 1989).

13. Darrell A. Posey & Graham Dutfield, Beyond Intellectual Property: Toward Traditional Resource Rights for Indigenous Peoples and Local Communities 189–225 (1996).

14. Such writing goes back to the nineteenth century. *See* J.W. Harshberger, *The Purposes of Ethno-botany*, 21 Botanical Gazette 146–54 (1896). According to Ellen (2000), "within anthropology, its tentative rise to academic respectability is largely linked to ethnoscience, the 'new ethnography' of the 1960s. In this context we see an indigenous knowledge innocent of its possible entanglement with intellectual property rights." Roy Ellen, *'Déjà Vu, All Over Again': Reinvention and Progress in Applying Local Knowledge to Development*, *in* Participating in Development; Approaches to Indigenous Knowledge 235, 237 (Alan Bicker, Johann Pottier & Paul Sillitoe eds., 2002).

15. This Article provides numerous citations to this literature; see especially those in footnotes 17 and 44–48.

16. Richard Drayton, Nature's Government: Science, Imperial Britain, and the 'Improvement' of the World xiv–xv (2000) (emphasis added).

17. Douglas E. Yen, *The Domestication of Environment*, *in* Foraging and Farming: The Evolution of Plant Exploitation 55 (David R. Harris & Gordon C. Hillman eds., 1989). *See also generally* Charles R. Clement, *1492 and the Loss of Amazonian Crop Genetic Resources. I. The Relation between Domestication and Human Population Decline*, 53 Econ. Botany 188 (1999); Clark L Erickson, *Amazonia: The Historical Ecology of a Domesticated Landscape*, *in* The Social Lives of Forests: Past, Present, and Future of Woodland Resurgence 199 (Susanna B. Hecht, Kathleen D. Morrison & Christine Padoch eds., 2014); Susanna B. Hecht, *Domestication, Domesticated Landscapes, and Tropical Natures*, *in* The Routledge Companion to the

Despite this growing interest in explaining the Indigenous roots of Western scientific and technical developments, there was scant consideration that the lack of protection of Indigenous,[18] or local, knowledge per se was a current legal lacuna requiring a solution.[19] Indeed, it is likely that the publications of ethnobiologists provided a good number of helpful leads for pharmaceutical corporations seeking to discover and develop plant-based or Indigenous-derived medicine. This was despite concerns about the extinction of knowledge and cultures becoming more widely expressed,[20] but mainstream academic and legal thinking was yet to link this issue to IP.

Africa was an exception to this, being the first continent to raise concern about pharmaceutical corporations patenting inventions derived from freely given plants used in traditional medicine, as well as the first to suggest a response to it. A 1979 article in *Nature* noted that the Organisation of African

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Environmental Humanities 21 (Ursula Heise, Jon Christensen & Michelle Niemann eds., 2017).

18. Early calls for protection were framed as compensation rather than some kind of positive legal protection. *See* 1988 Declaration of Belém, *in* Ethnobiology: Implications and Applications: Proceedings of the First International Congress of Ethnobiology 8 (Darrell A. Posey, William Leslie Overal, Charles R. Clement, Mark J. Plotkin, Elaine Elisabetsky, Clarice Novaes da Mota & José Flávio Pessôa de Barros eds., 1990); *see also* Richard J. McNeil & Michael J. McNeil, *Ownership of Traditional Information: Moral and Legal Obligations to Compensate for Taking*, 6 Ne. Indian Q. 30 (1989).

19. To the best of my knowledge, a 1996 volume I co-authored with Darrell Posey was the first monograph-form treatment of the subject. *See* Darrell A. Posey & Graham Dutfield, Beyond Intellectual Property: Toward Traditional Resource Rights for Indigenous Peoples and Local Communities (1996). It was followed by Tony Simpson, Indigenous Heritage and Self-determination: The Cultural and Intellectual Property Rights of Indigenous Peoples (1997). In 2000, two Indigenous authors from North America published another work. *See* Marie Battiste (Mi'kmaq) & James (Sa'ke'j) Youngblood Henderson (Chickasaw), Protecting Indigenous Knowledge and Heritage (2000). Three edited collections were published in the mid–1990s. *See, e.g.*, Intellectual Property Rights for Indigenous Peoples: A Source Book (Tom Greaves ed., 1994); Valuing Local Knowledge: Indigenous People and Intellectual Property Rights (Stephen B. Brush & Doreen Stabinsky eds., 1996). The following volume discusses the subject at some length too. Ethnobotany and the Search for New Drugs: Ciba Foundation Symposium 185 (Derek J. Chadwick & Joan Marsh eds., 1994). Numerous books followed these.

20. The following quotes evince such concerns: "Scientists are competing with extinction in their race to inventory what the world contains. Amerindians are the only societies with the necessary knowledge, expertise, and tradition to prosper in the Amazon jungle. Amerindians not only profoundly appreciate what exists, but also understand ecological interactions of the various components of the Amazonian ecosystem better than do modern ecologists.", R.J.A. Goodland & H.S. Irwin, Amazon Jungle-Green Hell to Red Desert? An Ecological Discussion of the Environmental Impact of the Highway Construction Program in the Amazon Basin 65 (1975); "With the extinction of each indigenous group, the world loses millennia of accumulated knowledge about life in and adaption to tropical ecosystems.", Darrell A Posey, *Indigenous Knowledge and Development: An Ideological Bridge to the Future*, 35 Ciência e Cultura 877, 891 (1983).

Unity ("OAU," now the African Union) "has gone so far as to urge secrecy in herbal medicine research to prevent just this."[21] In time, 'biopiracy', a word coined in the early 1990s by Canadian activist Pat Mooney to describe the practice, would become a huge global issue.[22] Yet, the OAU was aware of the issue two decades earlier.

This relative disinterest in Indigenous knowledge rights within the international legal academe is not surprising. As mentioned, Indigenous peoples' public statements historically mostly concerned land and resource rights, cultural rights including land, and freedom from racism and persecution.[23] Self-government and self-determination were very much at the core of their campaigning.[24] These were more than enough to fight for, particularly in a period when Indigenous peoples were still struggling to get a seat at the table.

However, change was happening. By the end of the 1980s, ethnobiologists were becoming early developers and advocates of the idea that Indigenous peoples should have rights over their knowledge—beyond merely exercising their right not to disclose it—and that it was unjust for the law not to provide these protections. For example, in 1990, ethnobiologist Darrell Posey published two short articles on the same subject: one in an anthropology review[25] and the other in an ethnobiology journal.[26]

In hindsight, especially given the timing, it seems almost inevitable that IP law discourse would come to shape the discussion and set the limits of Indigenous knowledge rights and protections. Three international processes, whether by design or inadvertently, catalyzed international attention and activity in this direction. One of these was the United Nations Conference on Environment and Development, popularly known as the Earth Summit, which took place in June 1992 in Rio de Janeiro. In addition to Indigenous peoples themselves, many newly politicized anthropologists, including ethnobiologists, played an important role in placing the rights of Indigenous peoples on the agenda.[27] As Puig (2010) notes, "It was they who produced studies and chronicles of the [I]ndigenous communities that created a definite perception of and knowledge about them. They also established interpretive frames including respect for these communities

21. Joseph Hanlon, *When the Scientist Meets the Medicine Man,* 279 Nature 284, 284 (1979).

22. *See generally* Ikechi Mgbeoji, Global Biopiracy: Patents, Plants, and Indigenous Knowledge (2006); Daniel F. Robinson, Confronting Biopiracy: Challenges, Cases and International Debates (2020).

23. *See generally* Thornberry, *supra* note 11.

24. Anaya, *supra* note 2, at 8–9.

25. *See generally* Darrell A. Posey, *Intellectual Property Rights and Just Compensation for Indigenous Knowledge*, Anthropology Today, Aug. 1990, at 13.

26. *See generally* Darrell A Posey, *Intellectual Property Rights: What is the Position of Ethnobiology?*, 10 J. Ethnobiology no. 1, 1990, at 93.

27. Puig, *supra* note 10, at 78–79.

and concern for their survival, linking cultural diversity with biodiversity."[28] Indigenous groups thus operated with these academics in a loose and informal, but quite effective, alliance.

The resulting Convention on Biological Diversity ("CBD"),[29] in consequence, has some important provisions concerning the interests of "Indigenous and local communities" in relation to their "knowledge, innovations and practices."[30] Without these provisions and the actions they inspired, it is unlikely that the recently adopted WIPO Treaty on Intellectual Property, Genetic Resources and Associated Traditional Knowledge providing for a disclosure of origin requirement in patent law would have been negotiated. The reason is that disclosure of origin requirements were initially proposed to resolve possible conflicts between emerging international patent law norms within the TRIPS Agreement that require the protection of biotechnological inventions and the national sovereignty and benefit sharing objectives of the CBD.[31] From as early as the mid-1990s, the CBD Conference of the Parties was open to having similar debates over the intersection between Indigenous knowledge and IP, and some progress was made in clarifying several positions.

Another catalyst for bringing Indigenous IP and knowledge rights to the international stage was the Uruguay Round ("Round") of trade negotiations of the General Agreement on Tariffs and Trade ("GATT"). The Round concluded in 1994 with the Agreement Establishing the World Trade Organization ("WTO").[32] The Round's ambitious negotiating agenda, which included matters hitherto outside the ambit of GATT, such as product regulation and trade in services, also comprised substantive IP norms like patents for inventions, copyrights for literary and artistic works, and trademarks for branding.[33] The substantive and far-reaching nature of the trade-related IP standards promulgated under the Uruguay Round proved highly controversial,[34] and they remain so. As a result, once expansions in patent law in the high technology countries had been enshrined in hard international law, critics asserted that big business dominance and its perceived harmful impacts on the global publics,

28. *Id.*

29. Convention on Biological Diversity, *opened for signature* June 5, 1992, 1760 U.N.T.S. 79.

30. *See especially id.* art. 8(j).

31. Disclosure of origin was first suggested in published form in 1993. *See generally* Frederic Hendrickx, Veit Koester & Christian Prip, *Access to Genetic Resources: A Legal Analysis*, 23 Env't Pol'y & L. 250 (1993).

32. Marrakesh Agreement Establishing the World Trade Organization, Apr. 15, 1994, 1867 U.N.T.S. 154; Michael Trebilcock, Robert Howse & Antonia Eliason, The Regulation of International Trade 24–26 (4th ed. 2012).

33. *See generally* Peter Van den Bossche & Denise Prévost, Essentials of WTO Law (2nd ed. 2021).

34. *See generally* Susan K. Sell, Private Power, Public Law: The Globalization of Intellectual Property Rights (2003).

especially the poor, would only intensify.[35] Campaigning for the protection of traditional knowledge therefore swiftly became the basis of a transnational alliance of highly critical views on the emerging international IP legal framework. Concerns felt by a growing number of academics, activists, and interested parties were succinctly put into words by a group of Critical Legal scholars in a 1993 statement: "Increasingly, traditional knowledge, folklore, genetic material and native medical knowledge flow out of their countries of origin unprotected by intellectual property, while works from developed countries flow in, well protected by international intellectual property agreements, backed by the threat of trade sanctions."[36] The WTO Agreement's requirements were perceived as an unfair imposition on the Global South, which commonly viewed the Agreement as a means to force those countries to respect the interests of transnational corporations whilst opening up their own traditional resources (biological, physical, and knowledge-related) as fair game for appropriation.[37] The resulting protests against biopiracy and campaigns in support of positive cultural and IP rights for Indigenous peoples were a backlash against the WTO.[38] Of course, pressure to confine Indigenous demands to IP rights was very strong, as evidenced by the shift of forum to the U.N. specialized agency for IP: the World Intellectual Property Organization. This has certainly mitigated complexity in ensuing discussions. But this has been at the cost of ambition, imagination, and substantiality.

A third catalyst was the decision to begin drafting a United Nations Declaration on the Rights of Indigenous Peoples, finally adopted in 2007.[39] Earlier in 1982, under the United Nations Economic and Social Council resolution 1982/34,[40] the Working Group on Indigenous Populations ("WGIP") of the U.N.'s Sub-Commission for the Prevention of Discrimination and the Protection of Minorities had been established. Without the active participation of the Working Group in this forum, work on the subsequent Declaration would have been significantly more difficult to begin. The Declaration drafting process, in which Indigenous peoples had an important say, unified activity towards developing an international document that authentically reflected Indigenous

35. *Id.*

36. Bellagio Declaration of the Society for Critical Exchange's conference: "Cultural agency/cultural authority, politics and poetics and poetics of intellectual property in the post-colonial era." The Declaration is reproduced in James Boyle, Shamans, Software and Spleens: Law and the Social Construction of the Information Economy 192–200 (Harv. Univ. Press 1996).

37. *See generally* Vandana Shiva, Protect or Plunder? Understanding Intellectual Property Rights (2001).

38. Vandana Shiva, Biopiracy: The Plunder of Nature and Knowledge 85–101 (1998).

39. *See* G.A. Res. 61/295 (Oct. 2, 2007).

40. *See* Economic and Social Council Res. 1982/34 (May 7, 1982).

peoples' broad interests. This initiative contrasted to the much narrower IP-focused framing of Indigenous rights that prevailed elsewhere.

Having covered the origins of Indigenous peoples' activism, the support they began to get from interested academics, and the emergence of an IP framing to traditional rights, this Article turns back to clearing the proverbial ground. It will do so by exploring Indigenous people's transformative impacts on land, which were for a long time almost entirely overlooked.

II. Landscape Domestication Without Farms

In 1982, the academic Darrell A. Posey conceived of an empirical research program in the Amazon that became known as Project Kayapó, after the Indigenous People from whom they learned. Initially, the project team's research focus was on identifying plants and animals used by local people with a view toward more effective conservation and development policy.[41] However, it became evident that the value of Indigenous science—and Posey insisted that it *was* science—was not just in their knowledge and use of individual plant and animal species but also in their management of whole ecosystems.[42] As scientists elsewhere using empirical, historical, and diachronic approaches were simultaneously discovering, Posey's findings suggested that the Kayapó, like many Indigenous peoples, were highly knowledgeable landscape ecologists and effective ecosystems managers, and they had been for generations.[43]

Scientists like Posey had rendered visible the complex and sophisticated Indigenous land management systems that were hitherto invisible to earlier generations of colonialists, explorers, and scholars, as well as to those who make law and policy today. Traces of such management practices are 'written' on the landscape but appear too faintly or ambiguously for people to notice. Typically, this is because many individuals who look for signs of human landscape management are looking for the unequivocal physical signatures of what we have since the 1700s called "farms."[44] For example, the assertation that rural populations that do not farm also do not domesticate animals was a default assumption for centuries. However, research by ethnobiologists and other academics have

41. *See generally* Graham Dutfield, *The Beyond-Intellectual-Property-Moment in Context*, 48 History Anthropology Rev. (Oct. 13, 2024), https://histanthro.org/notes/beyond-intellectual-property/ [https://perma.cc/2GFS-BW9J].

42. *See generally* Darrell A Posey, Kayapó Ethnoecology and Culture. Edited by Kristina Plenderleith 53–162 (2002).

43. *Id.*

44. "It was, in fact, during the 1700s that the term 'farm', which originally meant to lease out something (like a bull or plow) for profit, came to signify an actual site of production." Jason Hribal, *"Animals are Part of the Working Class": A Challenge to Labor History*, 44 Lab. Hist. 435, 435 (2003).

made evident that many Indigenous groups have done much more than eke out a desperate living in hostile landscapes. Instead, they shaped their surrounding landscapes to the extent of creating near co-evolutionary relationships with the landscape and its biota. Contrary to frequently expressed deterministic views on how this occurred, it is also well established that environmental conditions did not determine how Indigenous peoples should change their surroundings.[45]

As we will see below, Posey and his colleague's greatest innovation was not these findings in of themselves. Other scientists in various parts of the world were making similar discoveries about landscape transformation by Indigenous people not practicing agriculture in the fashion of Europeans. These included contemporaries of Posey, such as William Balée[46] and William Denevan,[47] each of whom approached the subject historically, as well as scholars who began their work later, including James Fairhead and Melissa Leach,[48] who identified anthropogenic forest islands in the West African savanna,[49] and Bill Gammage,[50] an Australian historian who focused on Indigenous land management.[51] It was becoming quite widely argued by this time that where Indigenous peoples had managed the landscape in positive ways sustainable development, the maintenance of biodiverse ecosystems, and ecological recovery had followed.[52] A growing consensus thus emerged that, as a matter of both justice and effectiveness, it was crucial that Indigenous groups be treated as

45. Meyer & Guss define environmental determinism as comprising "either of treating the environment as a factor that has an influence of a certain character regardless of the kind of society it acts upon, or of placing chief or sole emphasis on the environmental elements in a situation at the expense of social ones." William B. Meyer & Dylan M.T. Guss, Neo-Environmental Determinism: Geographical Critiques 41 (2017).

46. *See generally* William Balée, Footprints of the Forest: Ka'apor Ethnobotany – the Historical Ecology of Plant Utilization by an Amazonian People (1999); William Balée, Cultural Forests of the Amazon: A Historical Ecology of People and Their Landscapes (2013).

47. *See generally* William M. Denevan, *The Pristine Myth: The Landscape of the Americas in 1492*, 82 Annals of the Ass'n of Am. Geographers 369 (1992).

48. *See generally* James Fairhead & Melissa Leach, Misreading the African Landscape: Society and Ecology in a Forest-Savanna Mosaic (1996).

49. *See generally* Darrell A Posey, *Indigenous Management of Tropical Forest Ecosystems: The Case of the Kayapó Indians of the Brazilian Amazon*, 3 Agroforestry Sys. 139 (1985). It seems fair to point out that the anthropogenic nature of these forest islands (*apêtê*) has been disputed. Posey was unable to settle the argument before his untimely death. Suffice it to say that he produced much more relevant data than he published before his untimely death.

50. *See generally* Bill Gammage, The Biggest Estate on Earth: How Aborigines Made Australia (2011).

51. Some of these people were inspired by the much earlier work of the esteemed cultural geographer Carl O. Sauer (1889–1975). *See generally* Carl Sauer on Culture and Landscape: Readings and Commentaries (William M. Denevan & Kent Mathewson eds., 2009); Michael Williams, *Sauer and "Man's Role in Changing the Face of the Earth"*, 77 Geographical Rev. 218, 230–31 (1987).

52. *See generally* Conservation through Cultural Survival (Stan Stevens ed., 1997).

equal partners by conservationists and land managers. Ideally this included extending legal protections to their collective rights over land and resources, as this helps to ensure such partnerships are on an equal footing.

This re-imagination of landscape domestication is thus understood as a long-term co-evolutionary process that serves local populations over many generations,[53] but it is a paradigm that can be difficult for those outside the narrow scope of archaeology, historical ecology, or ethnoecology to detect, a trend which is exacerbated by historical prejudices against Indigenous peoples. Where this Indigenous domestication threshold lies can also be almost impossible to discern objectively. Between the wild and that which is completely domesticated by humans exists a whole spectrum of gradations that can be very subtle. Nevertheless, the ongoing search for historical traces of non-European style domestication seems likely to increase the proportion of known domesticated landscapes among the world's more isolated and sparsely populated landmasses.

If Indigenous communities have therefore turned pristine rainforests into anthropogenic landscapes, among other feats of large-scale domestication, then it naturally follows that this knowledge deserves considerable respect. Two related questions also arise: (i) is this knowledge worthy of legal protection, and (ii) should legal protection be the default response for Indigenous landscapes *whether or not* material traces of domestication are detectable? If the accepted answer to one or both these questions is 'yes', then Indigenous rights legal discourse can no longer be confined to land and resources claims but also extends to rights over knowledge. Legal rights to knowledge are of course familiar legal territory for most attorneys. Authors, inventors, designers, and businesses can already acquire knowledge rights for their mental productions, including those derived from the productions of others. While the legal design of these rights is supposedly utilitarian, their actual existence is largely derived from natural rights. The academic studies referenced above, in addition to many others, testify to the fact that a great deal of Indigenous knowledge has practical utility and has a local value which may have not have to do with commercial potential. Knowledge may have cultural or spiritual importance as well as being intimately connected to place and entailing responsibilities to land, life, community well-being, or supernatural entities. One might go so far as to suggest

53. Richard Norgaard's application of co-evolution to interactions between social systems and ecology is well worth exploring. For him, co-evolution is not just a powerful analytical approach but is a useful normative one too. *See* Richard B. Norgaard, *The Rise of the Global Exchange Economy and the Loss of Biological Diversity*, *in* BIODIVERSITY 206 (E.O. Wilson ed., 1988); *see also* RICHARD B. NORGAARD, DEVELOPMENT BETRAYED: THE END OF PROGRESS AND A CO-EVOLUTIONARY ENVISIONING OF THE FUTURE (1994).

that Indigenous peoples' knowledge rights may have a basis somewhat akin to European natural rights. Therefore, there are compelling reasons to extend legal protection to some or all these Indigenous knowledge rights, assuming the holders and holding communities are interested in acquiring legal status over their knowledge.

Does the right to self-determination in any case entail such an extended legal reach, that is, from ownership of land and resources to rights in knowledge of both as if they are all inextricably linked not just in fact but also in law? From a Western perspective, how might such an argument work logically? I am going to invoke John Locke's writings to help, but first, I must respond to a likely objection: that I am essentializing Indigenous peoples' lived experience by relying on narrow examples of landscape domestication, principally those of Indigenous Amazon peoples.

Few would assume that what was and is true for the Amazon must be true also for Indigenous peoples elsewhere. So let me bring to the discussion a landscape that is about as distant as possible from the Amazon: Australia. There, one finds the relationship between people and landscape to be different in many ways but conceptually parallel in the following sense: The culture-nature divide that post-Enlightenment social construct to which Western people are so accustomed means little to the Indigenous people who have continuously lived in Australia for tens of thousands of years.[54] However, Indigenous senses of obligation to land and biota are of a similar intensity to Amazonian peoples. In English, Aboriginal people frequently refer to their own meanings of 'Country' and "caring for Country."[55] Priorities concerning obligations and rights might diverge across Indigenous cultures, but their fundamental presence is reflected across societies.[56] Indigenous Australians regularly underline that knowledge of Country *is* part of Country, as is everything else tangible and intangible emanating from Country, including the people themselves who originate there—hence, the commonly expressed phrase, "we belong to Country."[57] It reasonably follows from this that having enforceable *rights* in land, resources, and knowledge

54. Veronica Strang, *Knowing Me, Knowing You: Aboriginal and European Concepts of Nature as Self and Other*, 9 Worldviews: Global Religions, Culture & Ecology 25, 31 (2005). *See also* Roslynn Haynes, *The Nature/Culture Divide: Aboriginal Lessons in the Anthropocene*, *in* Desertscapes in the Global South and Beyond: Anthropocene Naturecultures 207 (Sushila Shekhawat, Rayson K. Alex & Swarnalatha Rangarajan, eds., 2024).

55. *See generally* Margo Neale & Lynne Kelly, Songlines: The Power and Promise (2020).

56. *See* Justin McCaul, *Caring for Country as Deliberative Policymaking*, *in* Public Policy and Indigenous Futures 51 (Nikki Moodie & Sarah Maddison eds., 2023).

57. Terri Janke et al., *Indigenous: Country and Connections*, *in* Australia State of the Environment 2021, https://soe.dcceew.gov.au/indigenous/environment/country-and-connections [https://perma.cc/24NQ-VV6Z].

is the best way for Indigenous peoples to discharge their *duties* to care for Country. Additionally, given that care for Country can be of huge benefit to all who inhabit Australia,[58] there are utilitarian, justice-, and fact-based (in the sense that Indigenous law is a matter of fact) arguments for legal recognition of Indigenous knowledge rights.

The logic behind the legal protection of knowledge, whether specifically or as an element of the right to self-determination or land was hardly radical for Indigenous representatives.[59] However, from the perspective of the non-Indigenous person steeped in the assumptions of what we (somewhat problematically)[60] call "the West," one may ask how the connection between knowledge protection and land rights can be made. Land rights are one thing, but knowledge is quite another, whether it be knowledge *about* land or something distinct. From a conventional Western mindset, this distinction is common sense—that is, objective and unshakeable common sense, not *our* common sense that may not necessarily cross over into other cultures. Thus, in a 1998 Australian copyright dispute concerning the unauthorized reproduction of an Indigenous artist's work, the judge clarified that "the principle that ownership of land and ownership or artistic works are separate statutory and common law institutions is a fundamental principle of the Australian legal system which may well be characterized as 'skeletal.'"[61] He was, of course, right, but only from the perspective of one representing the title owners of the place depicted in the Indigenous artists' painting. By contrast, the separate treatment of place and knowledge of place surely flies in the face of *Indigenous* common sense, steeped as it is in a completely different worldview. Thus, for the litigants, it made no sense for their custodianship or ownership of a sacred site to be irrelevant to the question of who owned an artistic reproduction of that same place. To them, the law was wrong to treat the land and the painting as two different things with separate owners.[62]

58. *See generally* Charles Massy, Call of the Reed Warbler: A New Agriculture – A New Earth (2020).

59. A selection of such statements was published as appendices in Posey & Dutfield, *supra* note 13. See, for example, The Mataatua Declaration on Cultural and Intellectual Property Rights of Indigenous Peoples, 1993, which affirms that "Indigenous Peoples of the world have the right to self determination, and in exercising that right must be recognized as the exclusive owners of their cultural and intellectual property." *Id.* App. 7, at 205.

60. *See generally* Naoíse Mac Sweeney, The West: A New History of an Old Idea (2023).

61. *John Bulun Bulun v R & T Textiles Pty Ltd.* [1998] 85 FCA 244 (3 Sept. 1998) (Austl.).

62. *See generally* Russel L. Barsh, *How Do You Patent a Landscape? The Perils of Dichotomizing Cultural and Intellectual Property*, 8 Int'l J. Cultural Prop. 14, 15–18 (1999).

III. Standing John Locke on His Head

As is customary for English-speaking academics who are interested in patents and copyrights,[63] let me recruit John Locke for a similar, yet somewhat unorthodox, task: to bolster the claim that for Indigenous peoples, rights in knowledge and land are two sides of the same coin—perhaps even the same side—*and* that modern legal systems should be open to the possibility of accommodating these rights. At first glance, Locke is a most unlikely supporter of this cause. Locke's philosophy of government, which placed property at the heart of civil society, was constructed in a way that denied government or property to Indigenous Americans.[64] This was convenient insomuch as it gave ideological cover to those who would dispossess them of their lands and claim them as their own.[65]

At that time there was a cognitive bias of convenience that distinguished between European societies and tribal ones in order to compare the latter unfavorably. Accordingly, Europeans stood outside of nature and had limitless capacities to improve the land, whereas tribal peoples' 'primitive' lifestyles proved they were incapable of doing the same. According to Europeans, what Indigenous peoples should have been doing to their landscapes was farming full-time on land cleared for cultivation.[66] At a time when most Europeans continued to work on the land, productivity was increasing in the West as a result of new technologies, and elites felt increasingly confident that the European continent was more civilized than ever before, it is not surprising that agriculture was considered to be a necessary step towards a civilized society. As the historian J.G.A. Pocock put it, summarizing the views of European Enlightenment intellectuals, "it was only when man put his hand to the plough that his labour came to be mixed with the soil, and property and civilization could develop."[67] However, in the name of foregrounding the mission to improve land productivity, acts of heartless cruelty were perpetrated, first in Europe, where lands were enclosed

63. *See, e.g.*, Graham Dutfield & Uma Suthersanen, Dutfield and Suthersanen on Global Intellectual Property Law 29–34 (2020); *see generally* Justin Hughes, *The Philosophy of Intellectual Property*, 77 Geo. L.J. 287 (1988); Robert P. Merges, Justifying Intellectual Property (2011); Lior Zemer, *The Making of a New Copyright Lockean,* 29 Harv. J.L. & Pub. Pol'y 891 (2005).

64. James Tully, An Approach to Political Philosophy: Locke in Contexts 138–40 (1993).

65. *Id.* at 169.

66. *Id.*

67. J.G.A. Pocock, Barbarism and Religion: Volume Four: Barbarians, Savages and Empires 174 (2005).

and tenants lost their customary occupancy rights to ancestral lands.[68] Later on, of course, similar dispossessory acts were visited on Indigenous peoples elsewhere, starting in the Americas.[69]

Such biases are neither scientifically correct nor morally defensible. Once this is realized, rich possibilities come into being. If mixing one's labor with land by means of tilling the soil and cultivating domesticated plants could, in Lockean fashion,[70] constitute the archetypal property claim assertable against the world, then something else logically follows. Namely, the utility of Indigenous knowledge justifies a legal claim not only to the knowledge itself but also to the landscapes their applied knowledge had domesticated, or at least rendered permanently livable. No choice between claiming land or knowledge needed to be made. Claiming one becomes claiming the other. Just as farmers turning forests into farms were deemed to improve the land by 'working' it and thus lay claim to it, the earlier discussion of landscape domestication by Indigenous peoples reveals that they had long been performing their own improvements on the landscape from subsistence, economic, cultural, and sustainability imperatives. Whether or not these peoples plow the land and have permanent crop fields, or ever did, is legally irrelevant.[71] The general applicability of the propertyless state of nature to Indigenous peoples described by John Locke in the 1680s, and which for him *was* America, thus becomes as much a gross misrepresentation then as it is now.

Before going further, a few caveats are in order, especially for those who read utilitarianism into Locke's approach to property, which is ostensibly grounded in natural law.[72] First, for Indigenous peoples, knowledge has intrinsic and local

68. Robert Friedel, A Culture of Improvement: Technology and the Western Millennium 174 (2007); *see generally* Andro Linklater, Owning the Earth: The Transforming History of Land Ownership (2014).

69. *See generally* Linklater, *supra* note 68.

70. "Whatsoever then he removes out of the state that nature hath provided, and left it in, he hath mixed his labour with, and joined to it something that is his own, and thereby makes it his property. It being by him removed from the common state nature hath placed it in, it hath by this labour something annexed to it, that excludes the common right of other men: for this labour being the unquestionable property of the labourer, no man but he can have a right to what that is once joined to, at least where there is enough, and as good, left in common for others." John Locke, Second Treatise of Government ch. v, sec. 27 (1690). Locke goes on to clarify that property is not limited to the fruits of the Earth but to parts of the Earth itself: "As much land as a man tills, plants, improves, cultivates, and can use the product of, so much is his property. He by his labour does, as it were, inclose it from the common." *Id.* ch. v, sec. 32.

71. *See generally* Manuela Carneiro da Cunha, *Antidomestication in the Amazon: Swidden and its foes*, 9 HAU: J. Ethnographic Theory 126 (2019).

72. "Locke starts his justificatory journey for private property within natural law but increasingly progresses towards a consequentialist argument. He tempers his initial approach with his provisos to argue for a more societal-based property regime that has limits, especially where it conflicts with fundamental human entitlements." Dutfield & Suthersanen, *supra* note 63, at 29.

value whose worth cannot and should not be reduced to the utilitarian in a wider sense.[73] Why should it have to be utilitarian to be protectable? Can it not be protectable without it demonstrably being so? Who is to judge whether something is protectable?

Second, Indigenous people, like all human beings, have lives to live rather than being required to save a planet that others have trashed. Contrary to the stereotypical view,[74] while many Indigenous peoples do conform to sustainable values and practices and may choose to align with conservation organizations, it is inaccurate to assume[75] all Indigenous people are naturally disposed to what we consider conservationism,[76] or sustainability.[77] Some groups today do conform to the stereotype,[78] while others do not. Nevertheless, many Indigenous peoples, especially those in isolated areas like the Amazon, do have a far better record of sustainable land management than those seeking to settle their lands and use it for other purposes. However, it is wrong to assume Indigenous communities wishing to have their knowledge legally protected are happy for those legal rights to be conditioned on a willingness to serve as stewards of the natural landscape. Imposing on these peoples in this way would both not necessarily

73. Graham Dutfield & Uma Suthersanen, *Traditional Knowledge and Genetic Resources: Observing Legal Protection through the Lens of Historical Geography and Human Rights*, 58 Washburn L.J. 399, 426, 429 (2019).

74. Maurice Strong, Secretary General of the 1992 United Nations Conference on Environment and Development ("Earth Summit"), reportedly described Indigenous peoples at the time as "the guardians of the extensive fragile eco-systems that are vital to the well-being of the planet." Judith Hampson, *Native Wit is Key to our Survival*, The Observer, June 7, 1992, at 61 (quoting Maurice Strong) ("Having lived sustainably on those lands for millennia, they are truly the original ecologists.").

75. Roy Ellen, *What Black Elk Left Unsaid: On the Illusory Images of Green Primitivism*, Anthropology Today, Dec. 1986, at 8.

76. Anthropologist Kay Milton has argued that modern conservationism favors diversity, and thus rare species over abundant ones. It also treats nature and culture as separate, but favors the former, and it relies on science as an endeavor and a mode of discourse that impliedly separates it from culture. Generally speaking, Indigenous peoples simply do not share this perspective. *See generally* Kay Milton, *Nature, Culture and Biodiversity*, *in* Cross-Cultural Protection of Nature and Environment 71 (Finn Arler & Ingeborg Svennevig eds., 1997).

77. Willerslev's ethnographical study of the Yukaghir people in Siberia identified instances of overhunting—in which he participated—that, as with such practices among other Indigenous peoples in the cold North he discusses for comparison, had nothing to do with increased commercialisation or the easier availability of technologies like powerful rifles to kill animals much more easily. Some anthropologists posit functional explanations in light of the subsistence economy, but Willerslev in the Yukaghir case suggests that a better understanding of such behaviour is only possible by seeking to understand the conceptual world they inhabit. Rane Willerslev, Soul Hunters: Hunting, Animism, and Personhood Among the Siberian Yukaghirs 32–35 (2007).

78. One classic example is Reichel-Dolmatoff's study on peoples of the Northwest Amazon. *See generally*, Gerardo Reichel-Dolmatoff, Amazonian Cosmos: The Sexual and Religious Symbolism of the Tukano Indians (1972).

succeed in its objectives and harkens to a form of neo-colonial conditional rights extensions.

Before moving to the next Part, it seems fair to acknowledge that while Locke gets a lot of attention in today's English language scholarship about IP,[79] this may not entirely be warranted. It would be presumptuous to assume many European settlers taking possession of North American lands even knew who he was. However, the privileging of permanent, and commercial, agricultural ownership as an essential feature of civilization was very much the conventional wisdom of those contemporaries who sought a moral and legal basis for land colonization.[80] Thus, Emer de Vattel, in his 1758 classic work, *The Law of Nations*, had this to say:

> Those nations . . . who inhabit fertile countries, but disdain to cultivate their lands, and chuse rather to live by plunder, . . . deserve to be extirpated as savage and pernicious beasts. There are others, who, to avoid labour, chuse to live only by hunting, and their flocks. This might, doubtless, be allowed in the first ages of the world, when the earth, without cultivation, produced more than was sufficient to feed its small number of inhabitants. But at present, when the human race is so greatly multiplied, it could not subsist if all nations were disposed to live in that manner. Those who still pursue this idle mode of life, usurp more extensive territories than, with a reasonable share of labour, they would have occasion for, and have therefore no reason to complain, if other nations, more industrious, and too closely confined, come to take possession of a part of those lands. Thus, though the conquest of the civilised empires of Peru and Mexico was a notorious usurpation, the establishment of many colonies on the continent of North America might, on their confining themselves within just bounds, be extremely lawful. The people of those extensive tracts rather ranged through than inhabited them.[81]

My argument is this: Once we appreciate how much transformation has been achieved by those who work the landscape in ways other than permanent cultivation and who relate to their surroundings in ways that collapse the nature-culture divide, the property laws that have enabled dispossession are illegitimate and in fact contrary to natural laws of property. Of course, establishing the minimum degree of landscape transformation necessary to justify legalized property claims requires further consideration. Life science patenting has faced similar questions on distinguishing between what counts as a gift of nature and, thus, is nobody's property, and that which human ingenuity has turned into an artifact to be owned. Nevertheless, it has developed with workable rules.[82] This might suggest

79. Dutfield & Suthersanen, *supra* note 63, at 29–34.
80. Tully, *supra* note 64, at 166–71.
81. Emer de Vattel, The Law of Nations 129 (Liberty Fund 2008).
82. Dutfield & Suthersanen, *supra* note 73, at 411–61.

a resolution can likewise be found for Indigenous knowledge rights, but devising objective rules on where to draw the line regarding what in the landscape is artefactual will be difficult.

IV. What is Landscape?

If domestication matters in justifying legal rights, what is 'landscape' as a subject of human domestication? Notwithstanding its original visual artistic association,[83] landscape has been a geographical concept for about a century. In a famous article published in 1929, cultural geographer Carl Ortwin Sauer sought to make the study of landscape the "unit concept" of Anglophone academic geography.[84] Many continue to find this useful, including some anthropologists, like Clark Erickson, according to whom "the cumulative effects of human agency are permanently inscribed in specific landscapes as cultural signatures and patterns to be 'read.' This process is historical and dynamic: *once the environment is transformed into landscape, there is no going back to 'nature' even after removing people.*"[85]

As Sauer saw it, cultural landscape is a purely physical concept: "[W]e are not concerned in geography with the energy, customs, or beliefs of man but with man's record upon the landscape."[86] How did the natural and the cultural relate in his schema? Quite simply, the natural landscape "provides the materials out of which the cultural landscape is formed."[87] In other words, "culture is the agent, the natural word is the medium, the cultural landscape the result."[88] More recent scholarship, as we have seen with the work of Posey and others, has placed great emphasis on the transformative role of supposedly non- or pre-agriculture landscape domestication and human-ecosystem co-evolution. Indeed, the lack of previous knowledge about these phenomena meant that some long-held historical assumptions have had to be abandoned[89]—though they remain remarkably

83. *See generally* Denis Cosgrove, *Prospect, Perspective, and the Evolution of the Landscape Idea*, 10 Transactions Inst. British Geographers 45 (1985).

84. *See generally* Carl O. Sauer, *The Morphology of Landscape*, 2 Univ. Cal. Publ'ns Geography 19 (1925).

85. Clark L. Erickson, *Foreword*, *in* Methods in Historical Ecology: Insights from Amazonia i, xii–xx, xiv (Guillame Odonne & Jean-François Molino eds., 2021) (emphasis added).

86. Sauer, *supra* note 84, at 46.

87. *Id.* at 47.

88. *Id.* at 47.

89. *See generally* Douglas H. Erwin, *Fall of the World: Why Pristine Wilderness Is a Human-made Myth*, 632 Nature 974 (2024) (reviewing Sophie Yeo, Nature's Ghosts: The World We Lost and How to Bring it Back (2024)). With respect to the Amazon, see José Iriarte, The Archaeology of the Amazon: A Human History (2024).

persistent.[90] Today's landscapes often continue to bear the imprints of what they were in past times, whether perceptible to the untrained eyes and hands or not. Again, according to Erickson, "physical signatures and changes in landscape use and structure gradually accumulate as layers, or what we call palimpsest in landscapes, as an historical record of activities, strategies and design built up through accretion or accumulation, generation after generation."[91]

I argue that humans *occupy* that landscape by their activities, however *natural* the material manifestations of these activities might appear, *and* by their knowledge, cultural, and spiritual values imbued in the landscape. That said, considering humankind and the human-made world as a whole, there is considerable diversity, both cultural and geographical, and it feels important to be accommodating towards different meanings. According to sociologist John Law:

> In [Australian] Aboriginal cosmology land is not a volume or a surface with features, or a space that can be occupied by peoples. Instead it is a *process* of creation and re-creation. The world, including people, but also what Europeans would think of as topographical features, plants, animals, ritual sites, and ancestral beings, are all necessary participants in a process of continuing creation.[92]

For Inuit Arctic dwellers, who traditionally hunt, fish, gather, and garden (where possible) but do not farm,[93] landscapes are as cultural as those of, for example, Quechua farming communities in Peru who built massive agricultural terraces many centuries ago and continue to cultivate potatoes and maize.[94] In any case, occupying the land, knowing it, relating to it in such intimate ways as do many Indigenous peoples, and taking responsibility for it *is* domestication, irrespective of whether physical signatures of human transformations are detectable.

Thus, cosmology, worldview, and landscape are linked, albeit in diverse ways. Arguably, these immaterial aspects are just as much elements of the landscape as are the material impressions, with their impacts varying from the

90. See for example numerous quotes attributed to former Brazilian president Jair Bolsonaro in *What Brazil's President, Jair Bolsonaro, Has Said About Brazil's Indigenous Peoples*, Survival Int'l., https://www.survivalinternational.org/articles/3540-Bolsonaro [https://perma.cc/X5KM-PSPE] (last visited Apr. 17, 2025).

91. Erickson, *supra* note 85, at xiv.

92. John Law, *What's Wrong with a One-world World?*, 16 Distinktion: J. Soc. Theory 126, 126 (2015).

93. *See generally* Erica Oberndorfer, Todd Broomfield, Jeremy Lundholm & Gitta Ljubicic, *Inuit Cultural Practices Increase Local-scale Biodiversity and Create Novel Vegetation Communities in Nunatsiavut (Labrador, Canada)*, 29 Biodiversity Conservation 1205 (2020).

94. *See generally* Peng Zhang & Shuai Li, *Associative Cultural Landscape Approach to Interpreting Traditional Ecological Wisdom: A Case of Inuit Habitat*, 13 Frontiers Architectural Rsch. 79 (2024).

readily detectable to the barely perceptible, at least to the outsider. In short, the human-landscape relation is material and practical,[95] but it is also cultural, often laden with spirituality, and psychological.[96] This appears to be especially the case for Indigenous people, as succinctly expressed by Russel Barsh: "Indigenous peoples conceive of landscapes as socially constructed moral spaces, fashioned out of relationships among coexisting species that have developed over a very long time through marriages, treaties, and shared endeavors."[97]

How these scholars talk of landscape goes well beyond traditional academic conceptions of landscape, which distinguish between natural and cultural landscapes and regard landscape as purely physical spaces. For the anthropologist Tim Ingold, the nature-culture distinction is a false dichotomy between nature 'out there' and us 'in here'.[98] This conception leaves no space for 'cultural landscape' to serve a useful purpose. As Ingold puts it, "the landscape is the world as it is known to those who dwell therein, who inhabit its places and journey along the paths connecting them."[99] This metaphysical perspective (namely, naturalism, which we will consider further below) has been imposed on much of the whole world as if it forms the *only* possible reality. This is relevant because prevalent legal property norms likewise embody this naturalistic reality, of which the is nature-culture binary is an important element. Law has this to say of the distinction: "[I]f, as many claim, we live in the era of the Anthropocene, then it is starting to become obvious that the binary distinction between nature and culture is working poorly even within the North."[100] He further articulates that "the division reproduces a particular form of metaphysics which may be imposed on others."[101] Obviously, autochthonous knowledges are diverse in themselves. Nonetheless, "the division between nature and culture does not

95. Early German geographers' views as whether landscape is merely another word for area, or that immaterial phenomena form part of what landscape is, go back a very long time. That said, the majority preferred the first narrower meaning, i.e., that landscape is purely a physical, material entity. *See* Richard Hartshorne, The Nature of Geography 151–55 (1939) for a summary of these views.

96. The high psychological stakes are very much present in the writings of Scottish thinker and activist Alastair McIntosh. *See, e.g.*, Alastair McIntosh, *Psychospiritual Effects of Biodiversity Loss in Celtic Nature and its Contemporary Geopoetic Restoration*, *in* Cultural and Spiritual Values of Biodiversity 480 (Darrell A. Posey ed., 1999); *see also* Alastair McIntosh, Andy Wightman & Daniel Morgan, *The Scottish Highlands in Colonial and Psychodynamic Perspective*, 27 Interculture: Int'l J. Intercultural & Transdisciplinary Rsch. 1 (1994).

97. Barsh, *supra* note 62, at 17.

98. Tim Ingold, *The Temporality of the Landscape*. 25 World Archaeology 152, 154 (1993).

99. Tim Ingold, The Perception of the Environment: Essays in Livelihood, Dwelling and Skill 193 (2000) [hereinafter Ingold, Perception].

100. Law, *supra* note 92, at 134.

101. *Id.*

exist in Australian Aboriginal cosmology, and it works equally poorly for many others."[102]

The idea that humans—especially those of European origin—could and should harness nature by *consciously* and *personally* directing it to do our bidding is traceable also to the Enlightenment.[103] By the 18th century, as with plants, animal improvement through selective breeding could be monetized, so commerce became an important—yet by no means the only—driver of scientific endeavor and landscape cultivation.[104] Nowadays, practical discoveries about nature made by individuals can become patentable inventions once embodied in a physical substance or an article enjoying some novel character or effect, even if that article is a living thing;[105] novel, in this sense, meaning that the public did not have the invention before, and inventive because of a demonstrable conceptual distance from the thing found or already in circulation.

To generalize somewhat, those steeped in European thinking came to separate psychologically from their surroundings, including the rest of the biological world—particularly those untamed parts that lay beyond human control but within human understanding. This became what we might call nature, a concept invented by the Greeks which they named *physis* (φύσις). Europeans started drawing mental and legal boundaries around what we are, do, make, and own on the one side, and on the other, everything else considered natural and thus in need of improvement.[106] In time, belief in boundaries between the human and the natural, and in the intelligibility of the latter, drove legal changes that defined the scope of natural rights, entitlements, duties, and

102. *Id.*

103. *See generally* Anna Pavord, The Naming of Names: The Search for Order in the World of Plants (2005).

104. *See generally* Harriet Ritvo, *Possessing Mother Nature: Genetic Capital in Eighteenth-century Britain*, *in* Early Modern Conceptions of Property 413 (John Brewer & Susan Staves eds., 1996); Roger J. Wood & Vítězslav Orel, Genetic Prehistory in Selective Breeding: A Prelude to Mendel (2001).

105. In two earlier works I sought to explain how the extension of patent subject matter eligibility of living organisms depends on certain ways that science in Europe has come to envision nature, biota, and biotic elements, and the secular metaphorical and analogical discourse embedding these visions. One point I seek to make is that these ways are far from being set in stone, even if they appear to make a great deal of sense and have proven to be very powerful heuristic tools in scientific work. *See generally* Graham Dutfield, *Who Invents Life – Blind Watchmakers, Intelligent Designers or Genetic Engineers?*, 5 J. Intell. Prop. L. & Prac. 531 (2010); Graham Dutfield, *'The Genetic Code is 3.6 Billion Years Old: It's Time for a Rewrite': Questioning the Metaphors and Analogies of Synthetic Biology and Life Science Patenting*, *in* New Frontiers in the Philosophy of Intellectual Property 172 (Annabelle Lever ed., 2012).

106. This intellectual detachment is quite abnormal to members of other cultures. *See* Julian Baggini, How the World Thinks 142–45 (2018). Arguably, notwithstanding all the scientific achievements this perspective has enabled, it is indeed very odd. As Ingold, Perception, *supra* note 99, at 40, puts it, "the world can only be 'nature' for a being that does not inhabit it, yet only through inhabiting can the world be constituted, in *relation* to a being, as its environment."

exclusions. In Britain especially, landscape improvement was seen as involving such practices as cutting down forests, preparing land for cultivation, tilling the soil, harvesting produce, breeding better plants or animals, and, as a result, *domesticating* flora and fauna.[107] Land improved in this way could become valuable property whose exploitation represented significant capital opportunity for owners. In time, even improved plants—that is to say, *domesticated by design*—became IP as property.[108] As for the idea that people and communities had stewardship responsibilities towards nature, including flora and fauna, this would not have vanished entirely, but, as mentioned, the enclosure of land by property owners often involved the removal of the traditions and individuals involved in that stewardship.

The Scottish writer Andro Linklater, in his *Owning the Earth*, sought to find the origins and present-day impacts of the notion that individuals, by dint of applying their labor to land, were entitled to own land exclusively and without any accompanying social or spiritual responsibilities. He considered this development to be something completely formative and original to the modern era.[109] Linklater traced its origins to 16th century England, though the foundations were laid some centuries earlier.[110] From there, it was carried to Ireland and then to North America, where it became enshrined in the common law. Its impacts beyond Britain were thus relatively minor at first, but this changed in the centuries that followed as the British empire expanded to cover a large proportion of the globe. For Linklater, this development "is the great revolution of the last two hundred years. The idea of individual, exclusive ownership, not just of what can be carried or occupied, but of the immovable, near-eternal earth, has proved to be the most destructive and creative cultural force in written history."[111] Among its consequences, "it has eliminated ancient civilizations wherever it has encountered them, and displaced entire peoples from their homelands, but it has also spread an undreamed-of degree of personal freedom and protected it with democratic institutions wherever it has taken hold."[112] It is a mixed legacy indeed.

As we have just seen, what was true for land ownership eventually became the same for ownership of technical knowledge—the *artes mechanicae*—and thus the foundation for a patent system used to bestow exclusive property rights in inventions. From the 18th century onwards, this technical knowledge became

107. Friedel, *supra* note 68, at 174–77.

108. *See generally* Brad Sherman, Intangible Intangibles: Patent Law's Engagement with Dematerialised Subject Matter (2024) (for an extensive discussion on patent law's subject matter, including plant-related, evolution).

109. Linklater, *supra* note 68, at 13–32.

110. *Id.* at 18.

111. *Id*. at 5.

112. *Id.* at 5–6.

in effect, along with copyright, natural property entitlements bearing limited duties to society, the extent of whose availability and use in the marketplace was only rhetorically contingent on whether the public was better off having them.[113] This became most apparent during the Second Industrial Revolution, which heralded the competitive and aggressive acquisition and use of large patent portfolios as highly-prized business assets.[114] Consequently, the WTO-TRIPS Agreement, albeit with a few concessional provisions, effectively globalized this European rationale for IP rights and shaped its legal parameters as a de facto natural right to property with limited societal obligations.[115]

We are now ready to consider as an alternative Indigenous lifeworlds. Lifeworld, a term coined by the Austrian-German philosopher Edmund Husserl (1859–1938), is a useful term in this context.[116] Whereas worldview concerns how societies envision and find intelligibility in the same world but different ways, lifeworld is more ontological. It proceeds as if humankind lives in one of a multitude of worlds that depends upon the cultural or spiritual community into which one is born. So extreme are the divergences between lifewords that it is as if societies inhabit completely divergent planets. According to anthropologist Theresa Miller in *Plant Kin*, bio-sociocultural lifeworlds comprise "relational pathways between and among humans and nonhumans that evolve over time and in distinct places."[117] For many Indigenous peoples, such lifeworlds may involve experiences and meanings with some or all of the following: people, plants, animals, supernatural entities, land types, villages, soils, or specific geographical locations and landmarks of cultural or spiritual significance.[118] Such significance may have to do with, for example, creation narratives or the deities and spiritual entities that reside there. When not being undermined or threatened by outsiders, Indigenous lifeworlds can be effective and sustainable, providing long-term food security and generally healthy lives. They may be vulnerable, but one should not overstate their fragility either: Such is their resilience that they can be transformed positively, and perhaps

113. *See generally* Uma Suthersanen, *Towards a More Human, Equitable and Inclusive IP World Order?*, 73 GRUR Int'l 1109 (2024).

114. Graham Dutfield, That High Design of Purest Gold: A Critical History of the Pharmaceutical Industry 1880–2020, at 162–216 (2020).

115. *See generally* Sell, *supra* note 34.

116. *See generally* Edmund Husserl, *Elements of a Science of the Life-World*, *in* The Essential Husserl: Basic Writings in Transcendental Phenomenology 363–78 (Donn Welton ed., 1999).

117. Theresa L. Miller, Plant Kin: A Multispecies Ethnography in Indigenous Brazil 24 (2021).

118. *See, e.g.*, *id.*; *see also* Sophie Chao, In the Shadow of the Palms: More-than-Human Becomings in West Papua (2022).

even strengthened, *despite* close physical contact and social-economic interaction with local non-Indigenous communities whose livelihoods may be completely different.[119]

What underlies this great divergence in thinking between naturalistic views of landscape and Indigenous lifewords? Naturalism goes back to the Milesian School of Philosophy prior to Socrates, but only by the late 17th century time did European adherents have a serious sense of mission about its implications for property and ownership.[120] I take naturalism to mean the belief that the world and the universe—including both living and non-living elements—operate according to discoverable and universal laws of nature, and that understanding these laws makes it possible to find out how the natural world works. Naturalism is therefore materialist and eschews supernatural causes, though it is more secular than it is atheist.

Granted, naturalism has led to a wealth of amazing achievements and insights and is not necessarily a paradigm that can or should be abandoned. But looking at the world, it is clear that other 'realities' of landscape apply and satisfy needs and solve distinct problems, including problems which naturalism is poorly developed to solve.

V. Law

Whether law is the problem, the solution, or has the potential to be both requires further discussion. For meaningful consideration, we must again clear the path in the way of knowledge. Any attempt to universalize a single definition of law is problematic. If we think of law in terms of statutes, cases, or doctrines made and conceived by humans, then law is an institutional artifact designed *inter alia* for regulating human behavior.[121] It is not necessarily the case that only humans have rights under the law, nor that humans have duties only to other humans. Nonetheless, humans are the center of what law is, or at least what law is about, and are its principal creative agents

Indigenous Australians do not see law this way at all,[122] and it seems likely that many other Indigenous cultures share their perspective. For them, law is

119. *See generally* Miller, *supra* note 117.

120. Naturalism is by no means exclusively European. Albeit lacking the natural versus human-made dualism in its European form, it has deep roots in Chinese philosophy. Julian Baggini, How the World Thinks 133–35 (2018).

121. "Law seeks to regulate behavior when self-interest does not produce the correct results as measured by efficiency or fairness. If people behave well without regulation, law is superfluous and just creates extra costs." Richard H. McAdams & Eric B. Rasmusen, *Norms and the Law*, *in* Handbook of Law and Economics, Volume 2, at 1573, 1573 (A. Mitchell Polinsky & Steven Shavell eds., 2007).

122. *See generally* Marcia Langton & Aaron Corn, Law: The Way of the Ancestors (2023).

imbued with aspects of worldview broadly shared within a given culture, even if it contains borrowings from elsewhere or comprises rules and provisions that many within that culture may find alienating. According to the legal scholar Simon Roberts, this form of "[l]aw lays claim to a dual character: it furnishes the normative 'map' informing the life-world of a society's members as they experience it; and it provides one of the central means through which government exercises a steering role."[123] But law understood this way "may not always find counterparts in the small-scale and technologically simple societies which anthropologists have traditionally studied."[124] Moreover, "the institutional arrangements which we associate with law in the West … are all specific to a particular socio-political context."[125] Despite this, the trend of the past five centuries is that the juridical systems tending to prevail in many countries around the world are largely transplanted from, or modeled on, those of just one part of the world, namely Western Europe.[126] Indigenous law, which Glenn refers to as chthonic law,[127] persists sometimes in hybridized forms, but it tends to have a much lower status than European law.[128] It follows that it then fell on the formerly colonized peoples to adopt or to accept the dominance of legal regimes that, for them, had no basis in their own worldviews or their worldview-infused practices.[129] This dominance has persisted to the present. It does not, of course, follow that Indigenous peoples are incapable of understanding or navigating their way through imposed and culturally alien legal regimes. That was never the case. But these regimes undeniably remain a massive imposition on Indigenous peoples that should be mitigated. The present discussion suggests that acknowledging the existence of diverse lifeworlds helps to expose where imposed law is a persistent source of problems for Indigenous peoples.

What of landscape? Specifically, how does law relate to landscape? Not all law, of course, does. But those parts of the law addressing land, property, sovereignty, and relations between nations, commerce, and the rights of individuals and groups do. And, as I have argued in this Article, law should add knowledge

123. Simon Roberts, *Law and Dispute Processes*, *in* Companion Encyclopedia of Anthropology 962, 962 (Tim Ingold ed., 2002).

124. *Id.*

125. *Id.*

126. *See generally* Jean-Louis Halpérin, *The Concept of Law: A Western Transplant?*, 10 Theoretical Inquiries L. 333 (2009).

127. Chthonic is a contraction of 'autochthonous', which is derived from Greek and means sprung from the land.

128. Patrick Glenn, Legal Traditions of the World 61–63 (2014).

129. *See generally* Sally Engle Merry, *Law and Colonialism*, 25 L. & Soc'y Rev. 889 (1991). Admittedly, Indigenous peoples could sometimes use these laws to defend their rights. *See* Roberts, *supra* note 123, at 973.

and culture to this list of landscape relationships. There is an inextricable[130] link between land and knowledge that requires the two no longer be split asunder by the law. The fact that landscapes may be occupied and transformed by humans without being 'domesticated' is underappreciated by non-Indigenous peoples. This needs to change because, as far as law and landscape development *are* related, the stakes in terms of how landscape is conceived, and thus to what extent it is deemed to matter, are enormously high.

Conclusion

Indigenous resurgence has involved Indigenous peoples' abilities to use law in their favor, despite that law not being their constructs in either letter, spirit, or concept.[131] That is not to be construed as an argument favoring the status quo, as Indigenous rights would doubtless be better protected if Indigenous laws and customary norms relating to land, resources, and knowledge were given greater weight.[132] Learning to use the naturalist, European approach to law as it exists, for their own advantage is, however, something at which more peoples have become adept at wielding.[133]

Nevertheless, there must be far more space for pluralist approaches to law and legal rights that combine the best of what humanity has to offer, not just of the 'winners' but of those whose mindsets have for centuries been disparaged but that are now slowly gaining more respect. In detailing Indigenous perspectives on landscape, law, and lifeworld, I have attempted to identify what divides Indigenous worldviews and their comparative relationship to globally dominant views on land, space, and life. Doing so hopes to provide answers as to what gives the Indigenous perspective its current utility and how we might go about bridging sociocultural and legal divides.

Five centuries of colonial impacts has proven hard to correct. And yet, Indigenous peoples—to which one might add a few academics, jurists, and policymakers—have begun bridging the ontological divides between European and Indigenous perceptions of law and land.[134] That should give us hope, but there is much more to do in order to defeat these "monocultures of the mind."[135]

130. "According to senior Yolngu lawman James Gaykamangu from Arnhem Land in Northern Australia law is not only linked to the land it comes from the land." Brendan Tobin, Indigenous Peoples, Customary Law and Human Rights: Why Living Law Matters xix (2014).

131. *See generally e.g.,* Janke, *supra* note 1.

132. *See generally* Tobin, *supra* note 130.

133. *See generally* Janke, *supra* note 1.

134. *See generally* Chris Cunningham & Monica Mercury, *Coproducing Health Research with Indigenous Peoples*, 29 Nature Med. 2722 (2023).

135. *See generally* Vandana Shiva, Monocultures of the Mind: Perspectives on Biodiversity and Biotechnology (1993).

Pluralism is the only way in which humans are going to survive on a healthy planet. One way will just not do. As legal anthropologist Christophe Eberhard expressed succinctly:

> If we want to open ourselves up to dialogue (a meeting, confrontation, articulation of logics—*dia-logoi*), we must recognize the diversity of our standpoints (*topoi*) in the world and the original perspectives that stem from them. We are, therefore, necessarily invited to embrace a pluralist outlook on Reality, and our interpretation of the other must take into account his or her way of looking at things.[136]

One can anticipate resistance from those who would like the dominant worldview to persist. These advocates might argue that it is too late to be more pluralistic because most Indigenous peoples are already too assimilated for their traditional worldviews to persist other than on the margins, and they are thus failed or obsolete worldviews. I reject both objections. We need more dialogue enriched by mutual respect for diverse ontologies, including those that have been historically denigrated and displaced. Only through dialogue and negotiation at the ideological level will we ever achieve true justice for Indigenous peoples through better law and policy.

In this regard, Indigenous peoples have much knowledge of great value to the world to share.

136. Christoph Eberhard, *Towards an Intercultural Legal Theory: The Dialogical Challenge*, 10 Soc. & Legal Studs. 171, 175 (2001).