

Theorizing Scientific Tourism in Indigenous Community: A Horizontal Co-Production Approach to Research

Christine Buzinde
Arizona State University

David Manuel-Navarrete
Arizona State University

Follow this and additional works at: <https://scholarworks.umass.edu/ttra>

Buzinde, Christine and Manuel-Navarrete, David, "Theorizing Scientific Tourism in Indigenous Community: A Horizontal Co-Production Approach to Research" (2021). *Travel and Tourism Research Association: Advancing Tourism Research Globally*. 6.
https://scholarworks.umass.edu/ttra/2021/research_papers/6

This Event is brought to you for free and open access by ScholarWorks@UMass Amherst. It has been accepted for inclusion in Travel and Tourism Research Association: Advancing Tourism Research Globally by an authorized administrator of ScholarWorks@UMass Amherst. For more information, please contact scholarworks@library.umass.edu.

Theorizing Scientific Tourism in Indigenous Community: A Horizontal Co-Production Approach to Research

(2981 words)

Introduction

The link between science and tourism can be traced back to the 19th century when certain research divisions and academic disciplines dependent on scientific field research started to engage in travel exploration for the purpose of knowledge accumulation (Morse, 1997). Despite historical precedence, scholarly investigations of this phenomenon within tourism studies, across disciplines, have remained sparse and with key exceptions include Laarman and Perdue's (1989) inaugural work as well as Slocum, Kline, and Holden's (2015) seminal text, *Scientific Tourism*. Slocum, Kline and Holden's (2015) prolegomena generally positions scientific tourism as a broad term that encapsulates all travel done by researchers for research related activities such as fieldwork, conferences, professional research internships, scientific meetings, to a name a few. However, like Laarman and Perdue (1989), this paper highlights an aspect of scientific tourism that entails travel related to science-based *fieldwork* activities, specifically cultural and/or biological ecology related fieldwork in biodiversity rich communities of the periphery. According to Ilyina and Mieczkowski (1992) scientific tourism is growing due to increasing interest in "scholarly and popular-scientific expeditions [...] exploration travel, the popularity of tourist participation in archeological excavations and other scientific pursuits" (p.327). West (2008) argues that this phenomenon often occurs in destinations described by scientific tourists as "'unknown to science', 'remote', and perhaps even on the edge of change" (West, 2008, p.608). Indeed, some of the sites visited by scientific tourists tend to be isolated rural communities, as described by Holden (2015). Nonetheless, it is important to note that West (2008) alerts readers to the web of *power* entailed in knowledge production and through which taxonomies of place are crafted in scientific tourism. Accordingly, "science tourism...merits serious attention" (Laarman & Perdue, 1989, p.205), particularly the exploration of this phenomenon within *Indigenous communities*, whose histories are characterized by imposition of power over, by outside members, and appropriation of local knowledges. Thus, recognizing the history of exploitation of indigenous communities, particularly the role of researchers (Tuhiwai Smith, 1999), this paper explores forms of scientific tourism processes and their mapping on a typology that spans between knowledge extraction and knowledge co-production.

This conceptual paper explores theoretical linkages between scientific tourism and sustainability outcomes within indigenous communities. Drawing on sustainability science, boundary work theory, indigenous knowledge, and decolonial frameworks, we present a typology of scientific tourism situations mapped according to the degree in which they allow co-production of solutions that combine indigenous and scientific knowledge. This paper is based on the premise that co-produced solutions are essential for sustainability outcomes and they require effective boundary organizations capable of translating and coordinating across cultural paradigms. This paper focuses on how the nexus between science and collaborations with Indigenous communities. In particular, we questioned whether the approach to knowledge is one that involves Indigenous community members in the co-production of knowledge or whether it was merely extractive. This

distinction between forms of scientific tourism (travel related to research) based on *extraction* versus *co-production* requires both conceptual exploration and empirical evaluation. The purpose of this conceptual paper is to establish criteria with which to assess forms of scientific tourism operations and their mapping on a typology that spans between knowledge extraction and knowledge co-production. Criteria proposed are related to the ways in which the outcomes of scientific tourism are defined and by whom. Furthermore, the types of participation, of Indigenous communities in research co-production, and the degrees of inclusivity, of non-scientific forms of knowledge, point to epistemological flexibility as well as the (de)colonizing mentalities of the individual academics involved. The main contribution of the current paper is its proposal of fundamental criteria needed in the conceptualization of pathways within academia and education that aid in the cultivation of true co-production partnerships formulated within scientific tourism contexts. That is, the paper presents a conceptual mapping of scientific tourism types and practices that facilitate transparency on the ability to generate mutual benefits for indigenous communities and the techno-scientific communities. Knowledge co-production is an essential element for collaborations between academic and non-academic partners, particularly when the outcomes aimed for are related to sustainability (Pohl, Rist, Zimmermann, Fry, Gurung, Schneider, Speranza, Kiteme, Boillat, Serrano, Gadorn, & Wisemann, 2010) and over all community well-being.

Conceptual Model for Scientific Tourism

Two approaches to scientific tourism that can facilitate sustainability outcomes, particularly in indigenous communities, are proposed. The first approach is endogenous to the academy and requires cognition of knowledge plurality and researcher reflexivity. The second is exogenous to the academy and entails boundary organizations as well as tools and strategies necessary for horizontal co-production. Implications for future scholarship on scientific tourism in marginalized and/or global south communities are discussed.

As shown in Figure 1, this form of scientific tourism can be mapped on a typology on which one extreme depicts purely extractive research processes and the opposite end showcases horizontal co-production of knowledge. The goal of the typology is to compare ways in which scientific tourism engages with communities, and how this engagement can give voice and amplify alternative forms of knowledge or disregard them completely. This focus is important because amplification can help the co-creation of solutions that are adapted to local contexts. From this perspective, viable solutions can be enhanced through collaborations that connect local Indigenous knowledge and science, with full recognition that neither is sufficiently comprehensive (Berkes & Jolly, 2001; Davidson-Hunt & O’Flaherty, 2007; Robinson & Wallington, 2012) which, is particularly important in the context of sustainable development. In the 1992 United Nations conference held in Rio, the emergent directives indicate that “sustainable development requires...using the best scientific and traditional knowledge available” (article 35.5) and developing methods that “concentrate on the links between the traditional knowledge of Indigenous groups and corresponding...science” (article 35.7:h) (UN, online). Thus, participatory approaches to knowledge production offer a favorable approach to sustainable development, particularly as one considers the context of Indigenous communities.

In the top left quadrant of Figure 1.0, a purely extractive type of scientific tourism is depicted; it focuses on gathering of materials (*e.g.*, specimen, measurements, imagery, etc) from a given

community wherein research is taking place. Suffice to say, traditional scientific research “is often [characterized by] an extractive process” which can be attributable to the “publishing expectations that drive researchers to take deeply meaningful information, often from a marginal or “under researched” community, and present it to a third party,” such as academia or a government agency (Gaudry, 2011, p.113). In such cases of what Gaudry (2011) refers to as “intellectual colonialism” (p. 114), interactivity or involvement of local population is often limited to participation as informants or material collection and rarely is the local community considered an audience for whom research is undertaken and to whom it will be presented. According to Gaudry (2011), missing in such “extraction methodologies” are the “contexts, values, and on-the ground struggles of the people and communities that provide information and insight to the research” (p.113).

The second type of scientific tourism within the top left quadrant, closest to the axis, is also extractive in approach, given its focus on collection of materials however unlike the previous type, this one incorporates a degree of community involvement. The type of local involvement in this scenario is purely instrumental in that locals are only engaged to the extent that they can offer access to the sampled materials and aid in the identification of resources (*e.g.*, location of specimens, spaces to measure, spots to set transect traps). Community members are perhaps contracted to perform tasks related to access and identification of resources but this is the extent of their involvement. Under this scenario, local knowledge systems are not incorporated in the design nor in the implementation of the research project. Rather, local knowledge holders are temporarily engaged for access purposes, which can be interpreted as token participation. Both of the aforementioned types of scientific tourism are characterized by hierarchical multi-cultural relations that (un)consciously perpetuate colonial framings of Indigenous communities as unequal power holders when contrasted to the techno-scientific community (see Smith, 1999).

In the wake of the Indigenous political movement, the above described hierarchical approach to research is often contrasted to participatory approaches (Pain & Francis, 2003). The hierarchical approach has been criticized for extracting knowledge “from communities to the benefit of people elsewhere” and resultantly “the communities [are left] unchanged or worse off than they were before” (Wilmsen, 2008, p.135). Extractive research is directed by outsiders who in many instances may not possess a situated understanding of the community needs (Ivanitz, 1999). Drawing on decolonial theory, some scholars have warned against views of Indigenous communities as extraction sites or data factories at the disposal of scientists; these scholars have strived to highlight Indigenous communities as sites wherein sustained and mutual relationships of trust and respect are necessary and relevant (Swadener & Mutua, 2008). Thus, from this vantage point, the goal is to counter exploitation inertias whilst concurrently advocating for decolonial approaches to research (Tuhaiwai-Smith, 1999), which in many ways are aligned with co-production.

In the bottom right quadrant of Figure 1.0., the type of scientific tourism closest to the axis depicts an approach to research informed by a philosophy of co-production between the researchers and various community members. Co-production, refers to the “collaborative process of bringing a plurality of knowledge sources and types together to address a defined problem and build an integrated or system-oriented understanding of that problem” (Armitage, Berkes, Dale, Kocho-Schellenberg & Patton, 2011, p.996). In contrast to the previous two stages on the typology, local Indigenous knowledge systems in this scenario are considered valuable and complementary to the

research approach. Indigenous community members are actively involved in the co-production of the research design and the implementation of the study. In addition, other members of the community are contracted to perform various project related tasks; the goal of such approaches is strategic capacity building for the community. Boundary agents/individuals and boundary objects become essential at this stage.

The second type of scientific tourism under the bottom right quadrant (see Figure 1.0), illustrates the purely horizontal co-productive approach wherein the community has authority over the research process and works with researchers to address issues of interest to the community and to devise locally appropriate solutions. In this scenario, scholars work with the community to determine how, for instance, the establishment of a partnership between the university and the community can help solve pressing local problems; the outcome of the collaboration is socially robust knowledge (Nowotny, Scott, & Gibbons, 2001). A basic premise of this stage is that the practices of academics are seen as oriented by a Western techno-scientific culture analogous to Indigenous cultures (Nicolescu, 2014). The community in this sense holds authority to collaborate with university representatives to design the research project, apply for funds, implement the study and mobilize knowledge along the process of inter- or trans-cultural co-production. Indigenous ways of knowing are central in this scenario and they inform various aspects of the partnership. Both academics and Indigenous people have to be open to question and change their own cultural perspectives vis-a-vis the needs and outcomes of horizontal co-production.

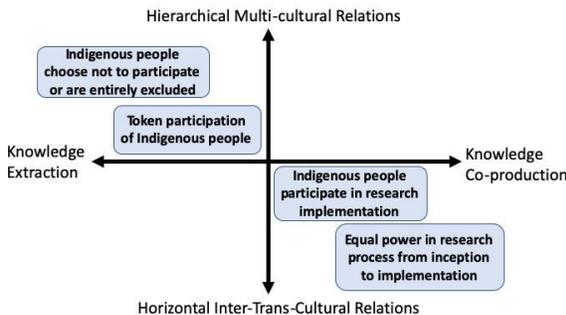


Figure 1.0. Scientific Tourism Architypes: The Context of Fieldwork Activities Occurring in Indigenous Communities. Sustainability outcomes are aligned with high horizontal and inter/trans-cultural relations centered on knowledge co-production rather than through hierarchical multicultural relations informed by knowledge extraction.

It is important to note that a bridging organization or what is referred to in the literature as a boundary organization is often necessary for co-production to be successful (Guston, 2001; Manuel-Navarrete & Gallopín 2012). The term boundary organization was introduced to sustainability science by Cash and Moser (2000) to describe entities that aid knowledge transference between the realms of policy and science. In the context of sustainable tourism, boundary-work has been analyzed as a pre-requisite for the meaningful participation of locals in tourism enclaves (Manuel-Navarrete, 2016). In the context of Indigenous and scientific tourism, boundary organizations can facilitate knowledge co-production and capacity building (Berkes, 2009). The role of boundary organization is to “function cross-culturally” to build diverse networks, based on trust and respect, which augment “communities’ adaptive capacity through knowledge exchange” (Maldonado, Lazrus, Bennett, Chief, Dhillon, Gough, Kruger, Morissette, Petrovic & Whyte, 2016, p.15). The term boundary implies a periphery of sorts. However, in this context it refers to a shared public space in which “science meets the public”, and in which

the “public speaks back to science” (Nowotny, Scott & Gibbons, 2001, p.247); a space in which knowledge exchange, co-production, and inclusion occur.

Application of Conceptual Model for Scientific Tourism: The Role of the Researcher and Boundary Organizations

Scholars adopting Indigenous and decolonial frameworks have indicated that meaningful and sustainable exchanges within community spaces, (*e.g.*, between the scientific tourist and Indigenous communities) require plurality of *knowledges*. From this perspective, the limitations of scientific knowledge needs to be acknowledged. Some scholars have taken issue with singular outlooks of knowledge that characterize western scientific knowledge as superior and universal and Indigenous knowledge (IK) as inferior and/or only locally valid (Briggs & Sharp, 2004; Escobar, 1995). Critics further argue that “western science and rationality [are often regarded as] more advanced or refined than other positions or, more simply, that they are the norm--‘knowledge’ in the singular form--from which others deviate in their fallibility” (Briggs & Sharp, 2004, p.662). The devaluing of IK is counter to co-production and in fact scholars have indicated that research or development approaches which “ignore local technologies, local systems of knowledge generally fail to achieve their desired objectives...with the resulting ‘advancement’ proving to be unsustainable or, tragically, destructive” (Grenier, 1998, p.x). Critics further argue that the deployment of “western science and technology” by development experts and scientists alike, “have failed to transform the lives of the majority in the global south” (Briggs, 2013 p.232). The problem, according to critical theorist Escobar (1995), is that development draws on models of industrialized societies and disregards endogenous narratives. Furthermore, development agencies tend to look to academics for research solutions to complex societal problems, which according to Briggs (2013) does not always yield beneficial results to global south communities. From a sustainability solutions-oriented perspective, scholars need to consider the potential horizontality of Indigenous and western scientific knowledge for development in general, and tourism development (*e.g.*, scientific tourism) in particular.

Scholars also need to revisit the cultural assumptions that inform the Western research paradigm, which many scientists erroneously deploy as a universal truth. Smith (1999) proposes the decolonization of research methodologies and she presents an edict for researchers to critically reflect on what they encode as truth. Her work is a clarion call for all scholars to recognize that research discourses are situated within a politicized western socio-cultural system that needs to be decolonized including decolonization of self (Smith, 1999). One approach in the process of decolonizing self is reflections on positionality, which refers to the power differential between scientist and participant (Rose, 1997). Positionality is even more significant “in the context of multiple axes of difference, inequalities, and geopolitics, where the ethics and politics involved in research across boundaries and scales need to be heeded and negotiated in order to achieve more ethical research practices” (Sultana, 2007, p.374); for instance, within Indigenous communities. The concept of *positionality* “vis-à-vis race, class, gender, culture and other factors” presents a more relevant lens “for understanding the dynamics of researching within and across one’s culture” (Merriam, Johnson-Bailey, Lee, Kee, Ntseane, & Muhamad, 2001, p.405). In the case of Indigenous communities, these encounters are often “fraught with tensions and misunderstandings” because they are akin to “[c]rossing borders from the academic to the real lives of people” (Brayboy & Deyhle, 2000, p.163).

According to England (1994) research occurs in shared spaces, by researchers and participants, wherein the identities of both parties complexly influence the research process. These domains, which are characterized by Mohanty (1989) as “imbrication of spaces” and referenced by Pratt (1992) as ‘contact zones,’ are the locales wherein scientific tourists should engage in self-analysis, discard views of themselves as the sole holders of power, critically reflect on past meanings, and reformulate new articulations that account for varying knowledge systems. Reflexive practices and tools are vital in helping scientific tourists to “reflect anticolonial sensibilities” (Swadener & Mutua, 2008, p.31) as they attempt to find common goals in the creation of “cross-cultural partnerships with, between, and among Indigenous researchers and allied others” (Rogers & Swadener, 1999, p.31). Furthermore, within the global south “fieldwork involves being attentive to histories of colonialism,” exclusionary development policies, “globalization and [other] local realities, to avoid exploitative research practices or perpetuation of relations of domination and control” (Sultana, 2007, p.375). Reflexive practices allow for the critical reflection of self and other and the complex web of power that defines both.

This paper is based on the premise that research collaborations with Indigenous communities need to gear towards co-production because these contexts have endured extensive abuse of extractive process. Co-production is challenging but necessary and it requires boundary organizations/agents. It is thus necessary to understand how boundary organizations operate. Members of boundary organizations include academic and non-academic participants, and in the context of Indigenous communities, partners from within and outside the community, “as well as professionals who serve a mediating role in the co-production of knowledge” (Guston, 2001, p.401). Accordingly, the functions enacted and strategies deployed by boundary organizations are vital because they assemble disparate stakeholder viewpoints with the goal of co-creating outputs that can be utilized by a plethora of users (Guston, 2001). Many scholars, like, Tribbia and Moser (2008) have written extensively about the functions enacted by boundary organizations to foster co-production of knowledge, many of these approaches are applicable to scientific tourism. Boundary-spanners’ cognition of the tenets of knowledge plurality and research positionality allow for personal shifts necessary in facilitating knowledge co-production, particularly within Indigenous communities. Only then can boundary-spanners become allies to agents on both sides of the boundary in co-production opportunities created through boundary organizations.

References

- Armitage, D., Berkes, F., Dale, A., Kocho-Schellenberg, E., & Patton, E. (2011). Co-management and the co-production of knowledge: Learning to adapt in Canada's Arctic. *Global Environmental Change*, 21(3), 995-1004.
- Berkes, F., & Jolly, D. (2002). Adapting to climate change: social-ecological resilience in a Canadian western Arctic community. *Conservation ecology*, 5(2), 18.
- Briggs, J. (2013). Indigenous knowledge: A false dawn for development theory and practice? *Progress in development Studies*, 13(3), 231-243.
- Briggs, J., & Sharp, J. (2004). Indigenous knowledges and development: a postcolonial caution. *Third World Quarterly*, 25(4), 661-676.
- Brayboy, B.M., & Deyhle, D. (2000). Insider-outsider: researchers in American Indian communities. *Theory into practice*, 39(3), 163-169.

- Cash, D.W., & Moser, S.C. (2000). Linking global and local scales: designing dynamic assessment and management processes. *Global Environmental Change*, 10(2):109-120.
- Davidson-Hunt, I.J., & Michael O'Flaherty, R. (2007). Researchers, Indigenous peoples, and place-based learning communities. *Society and natural resources*, 20(4), 291-305.
- England, K.V.L. (1994). Getting personal: Reflexivity, positionality, and feminist research. *Professional Geographer*, 46 80–9.
- Escobar, A. (1995) *Encountering development: the making and unmaking of third world* Princeton, NJ: Princeton University Press.
- Grenier, L. (1998). *Working with Indigenous knowledge: A guide for researchers*. Ottawa, Canada: IDRC.
- Guston, D.H. (2001). Boundary organizations in environmental policy and science: an introduction. *Science, Technology and Human Values*, 26(4), 399–408.
- Holden, A. (2015). Introduction (pp.1-6). In S. Slocum, C., Kline & A., Holden (Eds.), *Scientific tourism: Researchers as travellers*. London: Routledge.
- Ilyina, L., & Mieczkowski, Z. (1992). Developing scientific tourism in Russia. *Tourism Management*, 13(3), 327-331.
- Ivanitz, M. (1999). Culture, ethics and participatory methodology in cross cultural research *Australian Aboriginal Studies*, 2, 46–58
- Laarman, J.G., & Perdue, R.R. (1989). Science tourism in Costa Rica. *Annals of Tourism Research*, 16(2), 205-215.
- Maldonado, J., Lazrus, H., Bennett, S.K., Chief, K., Dhillon, C.M., Gough, B., Kruger, L., Morisette, J., Petrovic, S., & Whyte, K.P. (2016). The story of rising voices: Facilitating collaboration between Indigenous and western ways of knowing. In *Responses to Disasters and Climate Change: Understanding Vulnerability and Fostering Resilience* (pp.15-25). Taylor and Francis. Retrieved December 2018 from <https://doi.org/10.1201/9781315315928>
- Manuel-Navarrete, D. (2016). Boundary-work and sustainability in tourism enclaves. *Sustainable Tourism*, 24(4), 507-526.
- Manuel-Navarrete, D., & Gallopín, G. C. (2012). Feeding the world sustainably: knowledge governance and sustainable agriculture in the Argentine Pampas. *Environment, Development and Sustainability*, 14(3), 321-333.
- Merriam, S.B., Johnson-Bailey, J., Lee, M.Y., Kee, Y., Ntseane, G., & Muhamad, M. (2001). Power and positionality: Negotiating insider/outsider status within and across cultures. *International Journal of Lifelong Education*, 20(5), 405-416.
- Mohanty, S.P. (1989). Us and them: On the philosophical bases of political criticism. *Yale Journal of Criticism*, 2.2, 1–31.
- Morse, M.A. (1997). All the world's a field: A history of the scientific study tour. *Progress in Tourism and Hospitality Research*, 3(3), 257-269.
- Niculescu, B. (2014). *From modernity to cosmodernity: Science, culture, and spirituality*. SUNY Press.
- Nowotny, H., Scott, P.B., & Gibbons, M.T. (2013). *Re-thinking science: Knowledge and the public in an age of uncertainty*. John Wiley & Sons.
- Pain, R., & Francis, P. (2003). Reflections on participatory research. *Area*, 35(1), 46-54.

- Pohl, C., Rist, S., Zimmermann, A., Fry, P., Gurung, G. S., Schneider, F., Speranza, C.I., Kiteme, B., Boillat, S., Serrano, E., Hadorn, G.H., & Wiesmann, U. (2010). Researchers' roles in knowledge co-production: experience from sustainability research in Kenya, Switzerland, Bolivia and Nepal. *Science and public policy*, 37(4), 267-281.
- Robinson, C., & Wallington, T. (2012). Boundary work: engaging knowledge systems in co-management of feral animals on Indigenous lands. *Ecology and Society*, 17(2), 16.
- Slocum, S., Kline, C., & Holden, A. (Eds.). (2015). *Scientific tourism: Researchers as travellers*. London: Routledge.
- Swadener, B.B., & Mutua, K. (2008). Decolonizing performances: Deconstructing the global postcolonial. In N.K. Denzin, Y.S. Lincoln, & L. Tuhiwai-Smith (Eds.), *Handbook of critical and Indigenous methodologies* (pp.31-44). Thousand Oaks, CA: Sage Publications.
- Sultana, F. (2007). Reflexivity, positionality and participatory ethics: Negotiating fieldwork dilemmas in international research. *ACME: An international E-journal for Critical Geographies*, 6(3), 374-385.
- Tribbia, J., & Moser, S. C. (2008). More than information: what coastal managers need to plan for climate change. *Environmental science & policy*, 11(4), 315-328.
- Tuhiwai Smith, L. (1999). *Decolonizing methodologies: Research and Indigenous peoples*. London: Zed Books.
- United Nations Conference on Environment and Development in Rio - Agenda 21 chapter 35. Retrieved December 2018 from <https://sustainabledevelopment.un.org/content/documents/Agenda21.pdf>
- UN - United Nations Declaration on the Rights of Indigenous Peoples. Retrieved in December 2018 from https://www.un.org/esa/socdev/unpfii/documents/Declaration_IPs_31August.pdf
- West, P. (2008). Tourism as science and science as tourism: Environment, society, self, and other in Papua New Guinea. *Current anthropology*, 49(4), 597-626.
- Wilmsen, C. (2008). Extraction, empowerment, and relationships in the practice of participatory research. In *Towards quality improvement of action research* (pp. 135-146). Brill Sense.