



Overlapping ontologies and Indigenous knowledge. From integration to ontological self-determination



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ABSTRACT

Current controversies about knowledge integration reflect conflicting ideas of what it means to “take Indigenous knowledge seriously”. While there is increased interest in integrating Indigenous and Western scientific knowledge in various disciplines such as anthropology and ethnobiology, integration projects are often accused of recognizing Indigenous knowledge only insofar as it is useful for Western scientists. The aim of this article is to use tools from philosophy of science to develop a model of both successful integration and integration failures. On the one hand, I argue that cross-cultural recognition of property clusters leads to an ontological overlap that makes knowledge integration often epistemically productive and socially useful. On the other hand, I argue that knowledge integration is limited by ontological divergence. Adequate models of Indigenous knowledge will therefore have to take integration failures seriously and I argue that integration efforts need to be complemented by a political notion of ontological self-determination.

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1. Introduction

The integration of Indigenous and Western scientific knowledge has become a widely discussed topic in anthropology, ethnobiology, conservation biology, and related disciplines (e.g. Bohensky and Maru 2011; Evering, 2012; Gratani, Bohensky, Butler, Sutton, & Foale, 2014; Lynch, Fell, & McIntyre-Tamwoy, 2010). While anthropologists and philosophers have often focussed on unbridgeable differences between knowledge systems, recent debates about knowledge integration shift attention towards complementarity. In part, this shift in perspective reflects a step from theory to practice. Philosophical debates about incommensurability and anthropological accounts of radical alterity may be theoretically intriguing but they are of little help in the development of collaborative practices in areas such as the co-management of local environments. In addition to the practical necessity to find common ground, proponents of

integration projects often argue for a shift in understanding of Indigenous knowledge.¹ Far from being just exotic and alien representations of reality, Indigenous knowledge reflects unique expertise in local environments. Integrating local Indigenous knowledge therefore promises “access [to] a large amount of information and experience that has been previously ignored, or treated as mysticism. This additional knowledge, with its empirically derived emphasis on the natural world, can provide us with scientifically testable insights into some of the most pressing problems facing humankind today” (Pierotti & Wildcat, 2000, p. 1339).

Despite these promises, there has also been growing skepticism about integration efforts. This skepticism is motivated both by epistemological and political concerns. On the epistemological side, integration projects seem to be either overly optimistic or narrow in scope. Even if it is true that Indigenous knowledge can be sometimes integrated with Western science, a focus on integration seems to neglect types of knowledge that resist integration efforts. Furthermore, this is not only an epistemological but also a political issue. Nadasdy (1999, 2005; Sillitoe and Marzano, 2009), for example, has argued that the project of integration tends to focus on convenient aspects of Indigenous knowledge that can be treated as just another type of data for scientific inquiry. Instead of empowering Indigenous communities, knowledge integration therefore often reproduces existing hierarchies by disregarding knowledge that does not meet the needs of Western scientists and resource managers.

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¹ The current literature uses a number of related concepts that include “Indigenous knowledge” (Agrawal 1995; McGregor 2005), “traditional ecological knowledge” (Berkes et al. 2000; Whyte, 2013), and “local knowledge” (Bicker et al. 2004; Cooper, 2007). Not only do these concepts have slightly different connotations but each of them can also be defined in different ways. The aim of this article, however, is not to engage in definitional questions but address the epistemological and political dimension of integration projects. Most of my arguments could therefore be reformulated in a different terminology.

The aim of this article is to develop an account that takes both the prospects and limitations of knowledge integration seriously. In a first step, I argue that philosophical debates about natural kinds provide a helpful starting point for optimistic interpretations of knowledge integration. Empirical evidence of cross-cultural convergence in ethnobiological taxonomies can be interpreted as involving recognition of the same empirically discovered property clusters. Assuming that different knowledge systems involve recognition of different properties of the same property cluster, integration is not only possible but also epistemically productive. While a simple model based on property clusters appears to favor an optimistic outlook on knowledge integration, I argue that such an account also helps to uncover substantial limitations of integration efforts. Recognizing such limitations does not only raise theoretical questions but has important implications for normative debates about knowledge integration. While knowledge integration is often epistemically productive and socially desirable, an appropriate model also needs to incorporate integration limits that reflect ontological divergence. Projects that focus exclusively on integration reproduce social hierarchies by recognizing Indigenous knowledge only insofar as it is useful in Western scientific contexts. I conclude by arguing that adequate accounts of knowledge integration need to be complemented by a political notion of ontological self-determination.

2. Knowledge integration and property clusters

The aim of this section is to show that philosophical work on natural kinds provides a simple but nonetheless effective model for many successful cases of knowledge integration. Especially in the field of ethnobiology, researchers often stress the prevalence of cross-cultural taxonomic convergence. For example, Tzeltal Maya and Western zoologists may have very different knowledge about jaguars and use different terms (*Balam* or *Panthera onca*) but it seems uncontroversial that they both refer to jaguars. Given co-reference to the same species and different knowledge about this species, both the possibility and the epistemic benefits of knowledge integration appear straightforward. Indeed, the idea that co-reference to biological kinds allows epistemically beneficial knowledge integration can be further motivated by classic accounts of natural kinds such as Mill's famous suggestion that "real kinds" have an inexhaustible number of properties: "Knowledge of the properties of a Kind is never complete. We are always discovering, and expecting to discover, new ones" (Mill, 1858, p. 310). Assuming that a natural kind has an inexhaustible number of properties and that different knowledge systems involve co-reference to the same natural kind, knowledge integration will often provide access to different subsets of properties and therefore lead to a more comprehensive account of a natural kind.

Even if philosophical accounts of natural kinds provide a helpful approach to knowledge integration, one may worry they come at the price of controversial metaphysical baggage. Mill's idea of an inexhaustible number of properties is now often considered overly restrictive (Magnus, 2012, pp. 16–18; Khalidi, 2013, pp. 48–55) and recent debates about natural kinds seem to create at least as many metaphysical problems as they solve. Not only does the very concept of natural kind remain controversial (Hacking, 2007) but philosophers have proposed a large variety of accounts of natural kinds and there is no sign of an emerging consensus.²

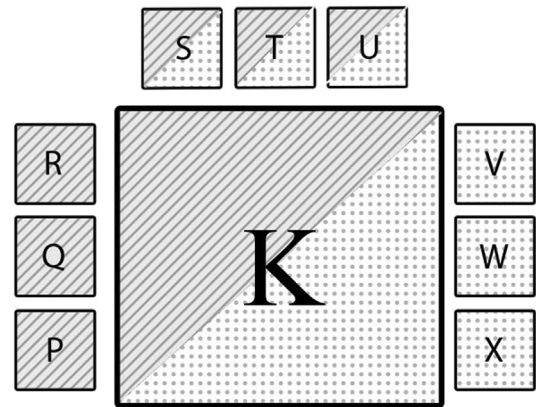


Fig. 1. A kind K comes with properties P-X that are partly recognized by knowledge system S1 (stripes), partly by S2 (dots), and partly by both knowledge systems (stripes and dots).

Although one may worry that any account of knowledge integration in terms of natural kinds will be hampered by metaphysical controversy, many problems can be sidestepped by focusing on a widely shared and largely uncontroversial assumption in the debate about natural kinds: Kind terms often refer to empirically discovered property clusters. Property clusters may not be necessary and sufficient for natural kinds (Ereshefsky and Matthen, 2005; Magnus, 2014; Reydon, 2009), but there can be no doubt that property clustering often grounds taxonomic practices both in Western science and Indigenous societies. For example, recall my earlier claim that Tzeltal Maya and Western zoologists use different kind terms *Balam* and *Panthera onca* but nonetheless both refer to jaguars. The recognition of the same species from different cultural perspectives is possible because jaguars share a distinct cluster of properties from bone structures and fur patterns to hunting behavior and ecological roles. Tzeltal Maya and Western zoologists may have different epistemic interests and cultural backgrounds but nonetheless recognize that members of the kind jaguar share a large variety of properties that distinguish them from other organisms.

Property clusters provide a simple but nonetheless effective account for explaining "ontological overlap" in the sense of shared commitments to the existence of jaguars. Furthermore, they are also of crucial importance for explaining the epistemic significance of kinds. While the presence of typical properties does not guarantee the presence of a kind (and vice versa), the connection is still stable enough to allow robust inferences. For example, if we know that an organism behaves in certain ways (or has a certain bone structure), we can predict that it is a jaguar. Furthermore, if we know that an organism is a jaguar, we can infer that it will probably have certain (e.g. behavioral or morphological) properties. Finally, probabilistic inferences are also possible from some properties to other properties. For example, knowledge about anatomical properties such as the structure of teeth and bones may allow us to predict types of hunting behavior.

The epistemic potentials of property clusters allow the formulation of a simple model of knowledge integration. For example, it is not only plausible that Tzeltal Maya and Western zoologists co-refer to jaguars but also that they have different knowledge about the properties of jaguars. Maybe only the Western zoologist knows about certain anatomical and genetic properties of jaguars while only the Tzeltal Maya knows the smell of jaguar excrement or the hunting habits of a local jaguar population. Integrating both knowledge systems will be epistemically productive by providing a more comprehensive account of the property cluster that is associated with jaguars and therefore also allowing a larger number of

² Examples include Brigandt (2009), Magnus (2012), Franklin-Hall (2014), Ereshefsky and Reydon (2015), Khalidi (2013), Slater (2015). While this article merely focuses on property clusters, many of these proposals could be employed in debates about knowledge integration. For a more detailed account of the relation between Indigenous and natural kinds, see Ludwig (2015a).

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