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Mutiny on the Boundary? Examining ILK-Based Conservation Collaborations through the Lens of Rubbish Theory

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Abstract Many conservation researchers and practitioners argue that knowledges traditionally conceptualized as non-academic are useful for guiding environmental decision-making and stewardship. As demonstrated by the articles in this special issue, bringing Indigenous and local knowledges to bear on environmental conservation requires forging new relationships and, de facto, new political arrangements. In this article, we seek to clarify what is at stake in such efforts to change (or maintain) what counts as knowledge by applying rubbish theory to the volume's case studies. Redrawing the boundaries of what counts as conservation knowledge in engagements between academic researchers and practitioners trained to "do conservation" according to western science traditions, on the one hand, and Indigenous peoples and local communities who possess knowledge generated in non-academic contexts, on the other, effects demarcations of expertise and so challenges existing social hierarchies. Unsurprisingly, tension emerges about *how far* such changes should go. By increasing awareness of the relationship between (re)defining knowledge and (re)configuring social and political hierarchies, we hope to make it easier for participants to manage such collaborations.

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Introduction

It is an exciting time in conservation and environmental sciences. Quite apart from the "excitement" of proliferating local and global environmental catastrophes, environmental and conservation sciences rooted in the western academic tradition appear to be opening up. Historically science has been viewed as the product of research based on academic disciplines performed by a distinct group of university-trained scholars, but today many argue that citizen science, Traditional Ecological Knowledge, Local Ecological Knowledge and Indigenous and Local Knowledge (hereafter ILK) are productive knowledge sources for conservation and environmental research and decision-making (e.g., Molnár and Babai 2021; Tengö et al. 2021). As shown in the articles that comprise this special issue, many research scientists and conservation practitioners trained in the western academy (including ethnobiologists and scholars with Indigenous backgrounds), local and Indigenous communities, and other interlocutors, stakeholders, and institutions are creating new relationships and, de facto, new political arrangements to harness more knowledge types for conservation and sustainability. Such initiatives often elicit tensions related to what counts as knowledge and who gets to decide which knowledges are useful and why (e.g., Gillette and Singleton 2022; Hill et al. 2020; McElwee et al. 2020; Sidorova 2020).

In this article, we seek to clarify what is at stake in such efforts to change (or maintain) what counts as knowledge by applying Michael Thompson's rubbish theory (2017) to the ILK-western science engagements presented in this special issue. Rubbish theory is a sociological theory of valuation exploring how objects (broadly defined) come to be accorded value, which in turn affects group identities and political configurations. Taking examples from the case studies included in this volume, we explore how knowledge objects are manipulated within and relate to the wider socio-political system to make visible the

relationship between redrawing the boundaries of knowledge/science and the socio-political formations within which such initiatives are located. ILK–western science collaborations, like all acts that extend the boundaries of knowledge, potentially alter or expand the category of expert and so challenge existing hierarchies. Unsurprisingly, tension emerges about *how far* such changes should go. By applying rubbish theory to the special issue's case studies, we hope to increase awareness of the relationship between (re) defining knowledge and (re)configuring social and political hierarchies, and so make it easier for participants to manage such collaborations.

Our text proceeds as follows. In the next section, we describe rubbish theory. We then characterize the ILK–western science initiatives included in the special issue according to rubbish theory's analytic framework, showing their relationship to broader socio-political dynamics. Here it is important to note that ethnobiology has an atypical status among western environmental and conservation sciences, as ethnobiology has insisted on the value of knowledges located outside the western academy since its inception. We conclude this contribution by discussing how an increased awareness of the relationship between knowledge production and socio -political order can facilitate ILK-western science conservation initiatives and ameliorate inherent tensions. Our hope is that this analysis will facilitate possibilities for creative and transformative solutions to the environmental problems we face.

Rubbish Theory

Rubbish theory models the general social processes by which some objects in human society gain or lose value over time (Thompson 2017). Thompson's basic idea is that objects "have certain important properties imposed on them as a result of processes of human social life, and, conversely, that if these properties were not conferred upon them then human social life itself would not be possible" (2017:288). *Object* in rubbish theory refers not only to things but also people and ideas. Recent studies have used rubbish theory to discuss apparently incommensurable environmental worldviews (Singleton 2021), archaeology (Marwoto 2019), cancer tumor donation (Morrell et al. 2011), heritage tourism (Fisher and Smiley 2015), and literary theory (Chappell 2013).

In simple terms, rubbish theory proposes that objects fit into three basic categories (see Figure 1)[1]. The categories *durables* and *transients* have value but different temporal characters. Durable objects, for example works of fine art, are considered to retain or gain value over time. Social actors consider durables to be largely eternal even if, ironically, they require material and symbolic maintenance work (Thompson 2017:113). In the case of fine art, this work is done by museums, connoisseurs, auction houses, art historians, dealers, and others (e.g., Duhem et al. 2019). In contrast, transient objects, for example cars, lose value over time, eventually becoming worthless and falling into the third category, *rubbish*. Rubbish differs from durables and transients in having no

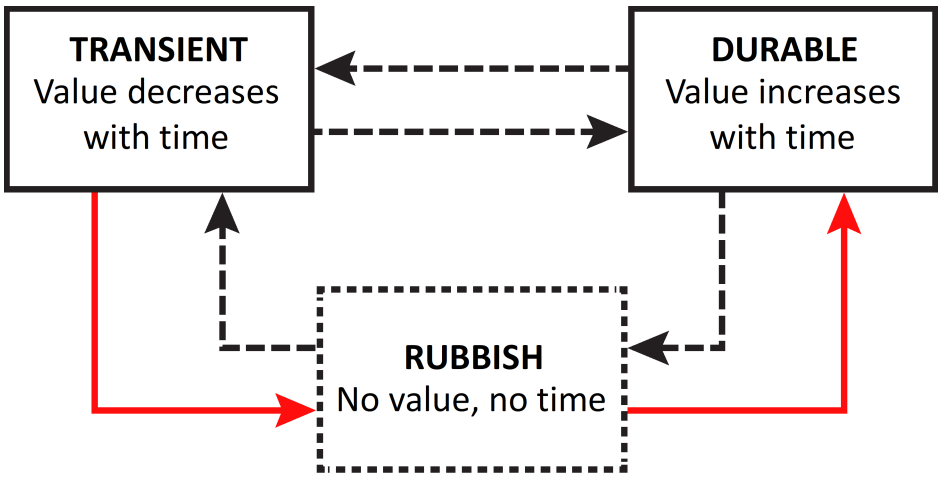

Figure 1 The basic Rubbish Theory Hypothesis. The solid boxes denote overt cultural categories; the broken-line box denotes a covert category. The solid, red arrows are the transfers that theoretically happen; the broken, black ones the transfers that theoretically do not happen because they contradict the value and/or time direction that define the various categories. Adapted from Thompson 2017:4.

value. A feature of rubbish is that it becomes most noticeable when it is in the wrong place according to the operative ordering system. *Rubbish* then evokes responses akin to those elicited by the breaking of taboos or social mores (Thompson 2017). Societies and institutions invest considerable social, political, and economic resources into ensuring that the proper orderings of objects are enforced and, in particular, that rubbish ends up in the correct place, namely the landfill in the rubbish theory's original articulation.

While transients eventually become rubbish, *rubbish* is not a category in the same way as *durable* or *transient*: it is residual and so outside the ordering system. However, rubbish is potentially a source of new durables. In what Thompson calls "class society," the control of transfers of objects from rubbish to durables is the privilege of particular social groups and indeed co-constructive of those groups. Who occupies this social position is not static: groups compete to be the ones defining *durables* and setting trends that others follow. Thompson classifies the groups who compete into three basic types, which he (irreverently) calls the "High Priests," "Crashers Through," and "Levellers" (Thompson 2003; 2017). The High Priests try to maintain the status quo: they act to preserve extant durables and prevent change. Thompson gives the example of literary critics defining and protecting an established canon of great (durable, feted) authors as the behavior of High Priests (Thompson 2003:325). By contrast, the Crashers Through are those who try to redefine what is durable and so modify the class system (Thompson 2003:325). Using the example of the literary canon, Crashers Through champion the authors of "new classics" as worthy of consideration amongst "the greats". The third classification, the Levelers, seek to eliminate hierarchies and push for an egalitarian approach. Returning to the literary canon example, Levelers would argue that all books are equally valuable and there are no sacred texts. Levelers thus "[flood] the Durable category" (Thompson 2003:325) and in doing so diminish the status and power of those maintaining the existing ordering system.

In this article we apply the language of rubbish theory, namely durables, transients, rubbish, High Priests, Crashers Through, and Levelers, to analyze the conservation initiatives discussed in this special issue. In other words, we take knowledges as objects that can be durable (feted), transient (temporary, less valuable), or rubbish (not knowledge), and regard actors, groups, and institutions as working to maintain or change the ordering system (see also Rayner 2004; Swedlow 2007; 2017). The participants in the conservation initiatives described here can thus be High Priests, Crashers Through, or Levelers: they may seek to maintain the status quo, reconfigure existing hierarchies but retain some form of hierarchical organization, or democratize knowledge (and status hierarchies) entirely. In other words, each of the case studies we discuss (re)defines what counts as conservation knowledge—e.g., what and which knowledge is valued and how durable it is—and thus enacts a social order, maintaining, reconfiguring, or eradicating different hierarchies of expertise and status.

The language of *durable*, *transient*, *rubbish*, *High Priests*, *Crashers Through*, and *Levelers* comes from rubbish theory. We emphasize that our use of these concepts is not a normative endorsement of any particular ordering or valuation system or socio-political formation. Rather, we use rubbish theory as a tool to illuminate the socio-political stakes in efforts to modify what counts as knowledge in conservation and environmental sciences, and what such initiatives say about the conservation community. In applying rubbish theory to the case studies from this special issue, we periodically write as if conservation science and ILK are distinct objects if that is how they are represented in the research we discuss (cf. Beaulieu-Guay 2020). This usage does not reflect a normative position: ILK-holders may be (and often are) conservationists, scientists, or conservation scientists with training in the western academy (e.g., Cajete 2020). Our goal is to illuminate the processes through which orderings of knowledge are enacted and spotlight their consequences for socio-political hierarchies. We purposely avoid arguing for or against particular knowledge hierarchies and strive to apply strategic essentialisms as seldom as possible (cf. Singleton et al. 2021).

The articles in this special issue focus upon processes of integrating ILK with western science, with *science* envisaged as the durable of focus. This is only part of the story. In other contexts, ILK—or, for that matter, other knowledges—are the durable, and actors other than western scientists thus may play the role of High Priests facing off against Levelers and Crashers Through. We draw readers' attention to this point because a) the rubbish theory hypothesis should pertain to any given context (cf. Singleton 2021),

making this discussion relevant to any and all orderings of knowledge and b) our application of rubbish theory is just that—an application of a theory that is intended to illuminate a particular set of social processes, and not an endorsement of any knowledge hierarchy or socio-political ordering.

ILK-Conservation Collaborations: Crashing Through and Levelling

Overall, participants in the research described in this special issue view ILK as durable and exemplify the positions of Crashers Through and Levelers. These positions characterize ethnobiology as a scholarly field while also reflecting a broader historical trend in (western) environmental and conservation scholarship. As a discipline, ethnobiology puts non-western ecological knowledge and ways of knowing at the center of its research agenda (see Turner et al. 2022). In rubbish theory terms, ethnobiologists depart from the presumption that ILK is not rubbish: it is collectively valued within particular communities and deserves attention from western scientists. Turning to the historical trend in western academic conservation and environmental sciences, academics and practitioners (such as the International Conservation Union) began paying attention to ILK in the 1980s, which in turn led to the formation of a global network of Indigenous knowledge resource centers in the 1990s (see Berkes 2018:23–25). Participants in these developments asserted the value of ILK, arguing that it had been disregarded in conservation and environmental management yet actually was key to understanding ecology and environmental stewardship. As the contributions to this special issue show, bringing ILK into conservation challenges the assumptions of reductionist environmental science and modifies how conservation is practiced (see also Berkes 2004, 2018; Turner et al. 2022; cf. Kashwan et al. 2021). In this special issue, the texts directly challenge what could be called a High Priest's position that western science is the only durable knowledge for conservation.

Several of this issue's authors and research participants can be classified as Crashers Through: they seek to redefine what counts as durable knowledge and reconfigure hierarchies of expertise. The articles by Keleman et al. (2023:10–21) and Shebitz et al. (2023:37–46) exemplify this orientation. Keleman et al. argue for the importance of overlooked sources of knowledge: they argue that Diola children (particularly boys) learn ILK of significance for biodiversity conservation, particularly the "sustainable exploitation of mangrove ecosystems" that respects "local bio-cultural identity" (2023:10). In other words, the ethnobiological knowledge of Diola children can contribute to better (western) science-based sustainability. Shebitz et al. (2023) is a second case of Crashing Through. In this article the authors argue that the dominant valuation system in conservation practice misses the ethnobiological importance of secondary forests to local communities and biodiversity. The authors seek to move secondary forests from transient to durable alongside primary growth forest, altering but not upending how land is classified.

A second group of articles that manifest a desire to Crash Through simultaneously articulate a wish to reshape the socio-political formations within which knowledges operate; in other words, they attempt to unmake boundaries between knowledge objects and exhibit a Levelling or egalitarian impulse. For example, Bolletin et al. (2023:47–55) describe several cases in which ILK informs research endeavors by oceanographers, ecologists, and other western-trained scientists and indeed reshapes the practice of western science. The authors argue that ILK-holding communities can combat the disregard of Brazilian and global society through these collaborations, from which they draw cultural strength and independence. The conservation collaboration affirms the expertise of local knowledge holders and scientists against other socio-political actors. Sandroni also imagines a reconfigured social order in her vision of "convivial… conservation" (2023:73). Employing discourse analysis, she interrogates the perspectives of environmentalists and indigenous people in the Brazilian Atlantic Forest, arguing that these two groups share more than is generally recognized. Yet while her analysis shows that "preservationist" and "Indigenous" positions on biodiversity are not necessarily opposed, she also writes that political change is needed for Tupinambá to exert significant influence over conservation. In other words, Sandroni sees the potential for "convivial" or more egalitarian conservation practices, not their implementation—perhaps because of opposition from national political powers (e.g., former President Bolsonaro) that counteract possibilities for local conviviality. A third article that Crashes Through while also advocating Levelling is McGuire and Mawyer (2023:22–36). These authors use the cases of sea salt and fresh water to demonstrate that ILK can provide environmental

indicators about coastal ecologies which mainstream conservation has failed to recognize. Local cultural practice thus hints at the possibility of alternative valuing systems and suggests ways to reconfigure conservation and stewardship to promote an ethics of care. ILK is durable because it addresses blind spots within the dominant practice of conservation science—and ethnobiologists can, by implication, help (other) conservationists to recognize these blind spots.

The authors of these five articles adopt the perspective that intercultural dialogue is possible and desirable for western scientists and ILK communities (see also Molnár and Babai 2021; Reyes-Garcia et al. 2022). Perhaps unsurprisingly, given the history of ethnobiology (see Turner et al. 2022), the researchers themselves play a crucial role in moving ILK into the category of *durable*. The authors vary, however, in the extent to which they explicitly consider the socio-political impacts of knowledge integration or pluralism. Their work suggests that hierarchies of expertise should be modified, and that new experts—Indigenous peoples and local communities—be included in conservation initiatives. At the same time, these texts depart from the premise that academic scientists should continue to have the status of expert, albeit in partnership with ILK-holders who are also recognized as expert. The possibility or specific nature of any potential hierarchy between these groups is left undiscussed. This has consequences for when and if conflicts arise between these diverging categories of *expert*.

A final paper takes a more radical levelling position: in this explicitly anti-colonial article, unmaking hierarchies takes center stage. Bosco and Thomas (2023:56–71) describe a community-based action research project in which academic researchers and Indigenous people came together to design and implement an initiative to vitalize Haudenosaunee culture through renewed attention to forest food crops. With an explicitly articulated desire to contribute to decolonization through food sovereignty and "reconciliatory" science, this project manifests a strong levelling or egalitarian impulse. In this article, western scientists recognize ILK as durable, and the project effectively seeks to dismantle social hierarchies that exclude or marginalize Indigenous knowledge-holders. This resonates with the argument that decolonization requires non-indigenous scientists accepting ILK on ILK-holders' terms (cf. Lopez-Maldonado 2022), which in turn requires overturning the socio-political legacies of colonialism that persist today.

Concluding Discussion

In this analysis we have drawn on rubbish theory to highlight the relationship between diversifying knowledges for conservation and modifying the socio-political order. In broad strokes, the contributions to this special issue manifest two trends in ethnobiology and ILK-western science collaborations: the desire to expand the epistemological community of conservation science (Crashing Through) and the desire to unmake hierarchies of knowledge in service of an anticolonial social order and new "community" (Levelling). Efforts to extend the epistemological community of science—a practice which arguably characterizes ethnobiology as a scholarly field—seek to redefine which knowledge is or is not durable, yet posit, if only implicitly, the continuing importance of expert status and thus social hierarchies in conservation practice. In the language of rubbish theory, advocates of this position want to modify the class society of conservation but retain a hierarchical order in which some knowledges (perhaps including their own) are more durable than others and some actors more expert than others. By contrast, advocates of anticolonial conservation projects problematize the politics and status of (western) "experts" who are granted the right to control the movement of knowledge into the durable category. In this framing, western science has played a central role in colonial projects of domination and is a state- and settler-serving institution at odds with an egalitarian (or more egalitarian) social order. ILK does not need western science or scientists to make it durable, although ethnobiologists may play a role in calling attention to the durability of ILK. However, in the more radical expressions of this levelling perspective, ILK does not need western science or scientists at all (see Lopez-Maldonado, 2022). In this special issue, participating authors offer different potential articulations of a more level or egalitarian social formation, but make it clear that radical change to the political order is needed. This includes changing the status of western science—now potentially rubbish—and (some) western scientists, whose expertise may be demoted or even unprivileged within alternative orderings (cf. Alfred 2005).

There are times that the agendas of Crashers Through and Levelers are not at odds; both may seek

to undermine the authority of particular High Priests. Arguably, this is one of the appeals lying behind calls to bring ILK and western science together and part of ethnobiology's scholarly mission. Our point, however, is that an implicit tension remains between Crashing Through and Levelling that may make itself felt within apparently collaborative relationships. In our view, the socio-political implications of redefining and expanding what counts as knowledge for conservation are underacknowledged in the literature (see Rayner 2012). Knowledge politics can never be separated from wider political struggles—they are one and the same thing. Rubbish theory allows us to highlight that ILK-conservation collaborations can be, intentionally or unintentionally, mutiny on the boundary. Such collaborations have social and political stakes. Reclassifying an object such as ILK or western science changes the socio-political order. Different actors manifest diverging views about what changes are necessary. Many Crashers Through want to modify the class society by acknowledging ILK as durable and ILK-holders as experts, while simultaneously retaining western science (including ethnobiology) as durable and western scientists as experts. Levelers by contrast tend to adopt a more radical position, questioning for example whether practitioners of western science should be accorded rights to evaluate and judge ILK's value and authenticity (its durability), and challenging the extent to which western science, including ethnobiology, should be accorded expert status. Behind ILK-western scientific collaborations lie crucial questions to confront: should there be experts and expert knowledge, and if so, who and what? Through what relationships or institutions should conservation initiatives be created, implemented, and evaluated? Who is conservation for, and what community gets to decide? These sorts of questions manifest most clearly when conflict emerges within western science–indigenous collaborations (e.g., Blaser 2009; Nadasdy 2011; West 2006).

Given that desires for more egalitarian knowledge practices and desires for expert knowledge hierarchies are in tension, with potential for conflict, we recommend that participants in ILK–western science collaborations (within ethnobiology and elsewhere) explicitly confront the contradiction between extending knowledge and maintaining hierarchies (cf. Thompson 2008). This includes confronting the differences between western science-based empirical validation and science derived from experience or practice, and the resultant hierarchies that exist in relation to these diverse knowledges in different contexts. As Thompson and others have argued, clashes between social orders and world views have the potential to engender more complete knowledge, leading to outcomes that transcend the possibilities enabled by a single perspective (see Verweij and Thompson 2011). Participants in ILK–western science collaborations who recognize and discuss their diverging understandings, goals, and visions have a better chance of identifying areas where they might form temporary alliances (see Singleton et al. 2021) and open their collaborations to the possibility of richer, more complete understandings that could ultimately result in better responses to the shared environmental challenges we face. We contend that participants in ILK–western science projects should speak openly about what their values are: what they prize as durable and how willing or eager they are to promote incremental (Crashing Through) or radical (Levelling) change to conservation as currently practiced, as well as to the broader socio-political formation within which conservation initiatives occur. Western scientists may need to demonstrate that they are cognizant of science's social status as feted (durable) knowledge, and the ways in which recognition of their expertise accords their pronouncements legitimacy (Rayner 2004:352). Since there is no value without its antithesis (see Thompson 2003), according to western scientists, particular ILK-holders, or any other group status as experts in turn necessitates that others are defined as non-expert or less expert within specific knowledge domains (cf. Lidskog and Sundqvist 2018). Similar valuations occur when Indigenous or other communities develop their own research protocols and methodologies, which may differ from western scientific methods and promote ILK-holders as experts (see Smith 2012).

Our experience and the case studies presented here suggest that in many ILK-science collaborations, all involved endorse both conservation and Indigenous rights. Left unaddressed, however, is what happens if these imperatives clash. Which values are more durable? One example of a path towards a resolution that contrasts with inevitable conflict that we imagine here emerges in the work of Mario Blaser (2016, 2018). Blaser seeks to mitigate persistent conflicts between western scientists backed by national and regional authorities and Indigenous Innu people in Labrador, Canada. These conflicts have occurred around caribou (or *atiku*) hunting and

conservation; as two distinct social systems ordering objects differently, Innu and settler-science inevitably clash. Blaser and colleagues' solution is to design institutional arrangements that keep the ordering systems of scientists and Innu apart. In this model, the need to determine where each party stands with regard to the durability or transience of one another's knowledge is elided and "equivocacy" maintained (Blaser 2016, 2018). The hope is that those involved can in this way avoid clashing over which values and concomitant social orderings are more durable.

Whatever model one adopts for ILK–western science conservation collaborations, calls for diversifying knowledges speak to what sort of society we want. As the contributions to this special issue show, researchers, Indigenous and local peoples, and other "communities" have argued persuasively that conservation and sustainability should not rely solely on western science. At the same time, western scientific facts—which, in the best tradition of the western academy, have themselves been subject to continuous challenge and reformulation—have been durables for over 100 years, and many who advocate using ILK for conservation and environmental stewardship acknowledge that western science has contributed, at least sometimes, to alleviating suffering and promoting positive change (e.g., Turner et al. 2022: 628–629; see also Ravetz 2006). Various actors may have their doubts about western science and scientific experts, but still wish to retain the existence of expert knowledge (cf. Gustafsson and Lidskog 2012; Rose 2018). Whether or if western science is rubbish and how far we wish to go with diversifying knowledges in a "post-truth" world (cf. Rose 2018) are crucial questions for collective deliberation. Put another way, knowledge-holders of all sorts may wish to consider at what point they wish to operate as Crashers Through, Levelers, or High Priests, and consider what consequences such choices have.

Notes

[1]Rubbish theory may be assimilated into Mary Douglas's (and Michael Thompson's) "cultural theory" (cf. Thompson 2003). We have kept the use of cultural theory terms to a minimum to avoid confusion.

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