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Unsettling the Faunal Record: Decolonizing North American Zooarchaeology

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Abstract

Efforts to decolonize archaeology have gained significant momentum in the last few decades, but have yet to extend robustly to zooarchaeology. Zooarchaeology is, however, well positioned to make unique contributions to decolonial practice. Drawing on insights from Indigenous studies, animal studies, and models of Indigenous science, we argue that North American zooarchaeology must engage in decolonization if reconstructions of past human–animal relationships are to be robust and ethically grounded. We identify some of the colonial legacies embedded in zooarchaeology’s methods, classifications, and interpretive frameworks, and highlight how these structures constrain knowledge production. We offer a series of interventions and actionable recommendations—from analytical protocols to disciplinary practice—that create pathways for zooarchaeologists to participate in the wider decolonial project.

Resumen

Los esfuerzos por descolonizar la arqueología han cobrado un impulso significativo en las últimas décadas, pero aún no se han extendido de manera contundente a la zooarqueología. Sin embargo, la zooarqueología se encuentra en una posición privilegiada para realizar contribuciones únicas a la práctica descolonial. Basándonos en las perspectivas de los Estudios Indígenas, los Estudios Animales y los modelos de la ciencia indígena, sostenemos que la zooarqueología norteamericana debe comprometerse con la descolonización para que las reconstrucciones de las relaciones entre humanos y animales del pasado sean sólidas y éticamente fundamentadas. Identificamos algunos de los legados coloniales arraigados en los métodos, las clasificaciones y los marcos interpretativos de la zooarqueología, y destacamos cómo estas estructuras limitan la producción de conocimiento. Proponemos una serie de intervenciones y recomendaciones prácticas —desde protocolos analíticos hasta la práctica disciplinaria— que abren caminos para que los zooarqueólogos participen en el proyecto descolonial en un sentido más amplio.

Keywords: decolonial; decolonizing; North America; zooarchaeology

Palabras claves: descolonial; descolonizando; América del norte; zooarqueología

Efforts to decolonize archaeology have amplified in the last few decades, as they have in other subfields (e.g., Atalay 2006, 2012; Bader et al. 2021; Barnes and Lepper 2018; Cipolla et al. 2019; Colwell 2016; Cowie et al. 2025; Davis 2017; Davis and Smalls 2021; Ferris et al. 2014; Leonard 2021; Leonard and Haynes 2010; Meek 2020; Perley 2012; Supernant et al. 2020; Tsikewa 2021; Watkins 2000) and disciplines (see, for example, in data science [Carroll et al. 2019, 2021; Thorpe et al. 2021; Tsosie et al. 2019], science and technology studies [TallBear 2013a, 2013b, 2017], STEM education [Bang et al. 2020; Fonua 2020; Gutiérrez 2022], botany [Kimmerer 2003, 2013], genetics/genomics [Claw et al. 2018; Fox 2021;

Tsosie and Claw 2019; Tsosie et al. 2019], and data sovereignty [Carroll et al. 2019, 2021; Tsosie et al. 2020]). By and large, these efforts have yet to extend robustly to zooarchaeology—the study of human–animal relationships in the past (although see Davis and Krupa 2022; Fitzpatrick 2019, 2022; Ward et al. 2024). In many ways, however, zooarchaeology is well positioned to make unique contributions to the decolonial project. Drawing on Indigenous studies, animal studies, and models of Indigenous science, this article discusses how zooarchaeologists working in North America can acknowledge the ways that our work is inherently structured—and limited—by its Euro-American origins and the colonial history of its parent discipline, as well as the possibilities and benefits of addressing those legacies. In this article, we present North America—and the United States specifically—as a case study for consideration, though the tenets outlined here may be applicable to other parts of the world.¹

Broadly speaking, zooarchaeology attempts to reconstruct aspects of past human–animal relationships through the analysis of animal remains—typically skeletal—from archaeological contexts. Owing to its origins, its history of development, and the nature of the data it collects, many of its methods (though not all) are quantitative, relying on counts, measurements, and calculations. Consequently, some practitioners may initially perceive that there is little space to “decolonize” zooarchaeology as a lab-based quantitative endeavor with firmly entrenched and somewhat “objective” methods. However, as we discuss below, there are multiple ways to invite or create opportunities to decolonize, indigenize, and broaden the scope of zooarchaeological research beyond its position in Western science.

We argue that those practicing zooarchaeology at any level can contribute to decolonial efforts by taking up any one—and especially multiple—of the recommendations we offer below. We emphasize that our suggestions are just a beginning and that there are many more ways that this work can be done, including ways yet to be imagined. In what follows, we first argue *why* zooarchaeologists should consider decolonizing the subdiscipline, and we draw on the work of many Indigenous scholars and others who have made similar arguments for their own fields or for the academy overall. We explain what we mean when we use the terms “decolonizing” and “decolonial” as shorthand for a much broader set of overlapping and coalitional frameworks that are committed to disrupting colonial claims over Indigenous lands, bodies, cultures, and knowledge. Next, we review the notion of relational ontologies—frameworks for seeing and engaging with the world that position animals as subjects, agents, and co-constituents of less explicitly hierarchical or even nonanthropocentric animate worlds.

After establishing the premises from which we are operating, we offer seven different recommendations—or rather interventions—for zooarchaeologists to consider adopting. Although they range in scale and level of commitment, and will vary in their practicality for different practitioners, each is an intervention into current theoretical frameworks of interpretation or methodologies in zooarchaeology that seeks to subvert long-dominant colonial legacies and practices by drawing instead on the work of Indigenous scholars, activists, and thinkers. As a field, zooarchaeology only stands to gain by engaging in ongoing efforts to decolonize. Doing so offers the potential to develop more holistic, accurate, and inclusive interpretations; to strengthen relationships between the many potential partners engaged in this work; to expand zooarchaeology’s relevance in other spaces (both academic and otherwise); and to increase Indigenous contributions to and sovereignty over knowledge production regarding past human–animal relationships in North America.

Throughout this article, we have worked to take up our recommendations ourselves. When and where possible, we engage with and cite the work of Native American and Indigenous scholars directly, and this article itself is the product of several years of collaboration between two scholars—one Indigenous and one Euro-American—within and across the fields of American Indian and Indigenous studies, anthropology, and zooarchaeology. Bishop is a Euro-American zooarchaeologist whose research focuses on noneconomic human–animal relationships, animal agency, collections and archives, and collaboration with Indigenous communities in Native North America. Davis is a citizen of the Chickasaw Nation who has spent more than two decades working collaboratively with Native nations in the realms of language reclamation and the repatriation and care of Ancestors, beings, and collections taken from

Indigenous lands, including faunal remains. Together, we have direct and personal experience in each of the recommendations we propose below.

Why Decolonize North American Zooarchaeology?

It has been 20 years since Anishinaabe anthropologist Sonya Atalay called for decolonizing approaches in archaeology. She wrote,

If our goal is to decolonize archaeology, we must then continue to explore ways to create an ethical and socially just practice of archaeological research—one that is in synch with and contributes to the goals, aims, hopes, and curiosities of the communities whose past and heritage are under study, using methods and practices that are harmonious with their own worldviews, traditional knowledges, and lifeways [Atalay 2006:285].

We echo Atalay's call and the ongoing need for that work, specifically in zooarchaeology. Our use of the term "decolonial" here is intended as a shorthand to invoke the overlapping and coalitional frameworks of decolonial, anticolonial, anti-empire, and Indigenizing methodologies and commitments to naming and intervening in colonial efforts to settle, dis/posses, and otherwise claim ownership over Indigenous lands, bodies, and cultures. We also recognize the many shared commitments with feminist, queer, collaborative, activist, and community-based participatory research approaches, among others. We take this pluralistic approach to decolonization because (1) this work is immense and not all approaches are available to or equally productive for all scholars and teachers, and (2) decolonialism should (must) take as many forms as the work of colonialism itself (symbolic, structural, etc.). It is necessarily simultaneously individual *and* institutional, coalitional *and* collaborative. Consequently, our recommendations throughout this article build on the wide range of scholars who have called for this work and provided frameworks for it, especially in anthropology.

Following Atalay (2006), we argue that decolonizing zooarchaeology requires approaches that are grounded in Indigenous praxis and ontologies. As we will demonstrate throughout this article, scholars in Indigenous studies have made multiple critical interventions into the theories, methodologies, and ethics central to zooarchaeology. As Sisseton Wahpeton Oyate scholar Kim TallBear (2017:193) notes, "Indigenous thinkers have important contributions to make to conversations in which human societies rethink the range of nonhuman beings with whom we see ourselves in intimate relation." They have challenged (1) the tidy classifications of animals (Justice 2010) and the neutrality of colonial science (Belcourt 2014) and (2) the received universality of binary distinctions between (a) animate and inanimate and (b) human and nonhuman (Davis and Krupa 2022; TallBear 2017; TallBear and Willey 2019; Todd 2016, 2017, 2025).

Why decolonize North American zooarchaeology? In the context of Native North America, this requires recognizing that the majority of archaeologists—including zooarchaeologists—are of Euro-American descent, and in the case of "prehispanic" or "precontact" archaeology, they study the material culture of the ancestors of present-day Indigenous North American peoples. The positionality of many archaeologists therefore entails operating—whether implicitly or explicitly, acknowledged or unacknowledged—from a "Western"² (i.e., European or Euro-American) worldview, which maintains ideas about humans and animals that are not necessarily inherent to (and are often at odds with) many Indigenous ontologies. As Brian Boyd (2017:307) has noted, "Western concepts do not travel that well even in the modern world, so why should they be appropriate for use in explaining modes of relation in the deep past." Recognizing the ways in which zooarchaeological research is driven by its position and origins in the Western academy, and how that affects interpretations of the human–animal relationship, is a first step toward decentering Western epistemologies and decolonizing North American zooarchaeology.

Alex Fitzpatrick (2019, 2022) has argued that the overwhelming focus in zooarchaeology on the economic and functional uses of animals by people—such as for meat and other products—derives from a Western/European framework of interpretation that "emphasizes concepts such as domination and commodification of non-human species by our human ancestors" (Fitzpatrick 2019:3) and is therefore anthropocentric in its approach. Because anthropocentrism is colonialist, Fitzpatrick argues, in order to

decolonize, zooarchaeology must move away from anthropocentrism and purely utilitarian approaches to the human–animal relationship. Drawing on the oft-cited words of Tuck and Yang (2012) that “decolonization is not a metaphor,” Fitzpatrick (2022) is clear that simply moving beyond anthropocentrism does not a decolonial zooarchaeology make. Although doing so helps to establish a theoretical foundation for a decolonial zooarchaeology, it is only a move *toward* decolonization—not a state attained. Fitzpatrick argues that the next and most critical step is an *applied* decolonial zooarchaeology, one in which zooarchaeology is applied toward decolonizing purposes, such as increasing Indigenous sovereignty and control over knowledge production and dissemination.³ We echo Fitzpatrick (2022) that decolonizing zooarchaeology will be a process, always arriving closer and closer to its goal, at least for now. Some of the interventions we provide below more explicitly angle toward an applied zooarchaeology, whereas other interventions focus on shifting the premises, frameworks, and language of zooarchaeology to embrace the theories and perspectives provided by Indigenous thinkers. Both will be critical in moving toward a decolonized zooarchaeology.

Zooarchaeology is already a generous and capacious field, encompassing a diversity of methodologies, goals, and research topics, with room for many different approaches and perspectives. We argue that a decolonial zooarchaeology is one that is epistemically plural, critically self-aware, and ethically accountable. It embraces the notion that multiple, distinct, and sometimes contrasting ways of knowing and understanding the world are valid, and that these do not necessarily need to be reconciled into a single “correct” framework. This does not make zooarchaeology less rigorous or scientific; it makes it more holistic. A decolonial zooarchaeology is also critically self-aware. It acknowledges its positionality and interrogates the colonial foundations of its methods, interpretive categories, and authority. It then seeks to account for how these influence zooarchaeological research and practice. A decolonial zooarchaeology is also ethically accountable. It considers the implications and impacts of its work. It consults and collaborates in decision-making and knowledge production, and it offers to be of service to the needs and goals of Indigenous communities. In short, decolonizing zooarchaeology is both about decolonizing zooarchaeological reconstructions of the past human–animal relationship, as well as decolonizing practice.

Animals in Non-Western Relational Ontologies

Many of the interventions we suggest rely on acknowledging the fact that Western ontology and the scientific ideology it promotes provide only one way of seeing and understanding the world. Many non-Western ontologies see, relate, and categorize the world in ways fundamentally different to the way that European and Euro-American worldviews do. We are not suggesting an essentializing dichotomy between Western and non-Western, given that the latter encompasses an immense array of diverse perspectives. Rather, we acknowledge that (1) the Western way of knowing is only one of many, and (2) operating solely within that framework—and presenting it as universal, especially in the context of Native North America—not only perpetuates ongoing legacies of colonialism and harm in a settler colonial context but also severely stunts the possibilities of collaboration and communication with Indigenous archaeologists, scholars, and community members.

As Indigenous scholars have highlighted, one of the fundamental tenets of many North American Indigenous ontologies is a relational understanding of components of the world, including landscapes, animals, plants, people, and other entities, interwoven and bound together (Atleo 2011; Cajete 2000; Cipolla et al. 2019:130; Turner et al. 2000), in contrast to the perception of a world in which humans are at the center of these relationships. In the last few decades, a number of archaeologists have acknowledged that notions of anthropocentrism and its associated dualisms, such as nature/culture and human/animal, are not structural components of all worldviews (e.g., Alberti and Bray 2009; Alberti and Marshall 2009; Alberti et al. 2011; Armstrong Oma and Birke 2013; Fowles 2013; Hill 2013; Overton and Hamilakis 2013; Watts 2013). These ideas, however, are not new in the academy, and more critically, are not new *to* the academy. The relatively recent embrace by archaeology of non-Western and relational ontologies is often intellectually credited as stemming from a slightly earlier embrace within social anthropology in the 1980s (e.g., Ingold 2000), which itself is credited as having emerged out of the development of philosophical posthumanism a decade or two prior (e.g., Latour 1991). Multiple, overlapping theoretical

currents and intellectual projects in the humanities that have developed in the past half-century have similarly acknowledged the agency of nonhuman and more-than-human beings and have sought to decenter humans and reposition other beings as central to world making, such as the so-called Animal Turn (e.g., Anderson 1998; Cederholm et al. 2014; Derrida 2008; Haraway 2003, 2008; Knight 2005; McFarland and Hediger 2009; McFarland and Hediger, ed. 2009; Weil 2010; Whatmore 2002; Wolfe 2003), the New Materialisms (e.g., Barad 2007; Bennett 2010; Braidotti 1991; DeLanda 2006; Witmore 2014), and Multispecies Ethnography (e.g., Kirksey and Helmreich 2010; Locke and Muenster 2015; Ogden et al. 2013; Smart 2014), among others.

As Red River Métis scholar Zoe Todd (2016) and TallBear (2017) have pointed out, each of these intellectual paradigms and theoretical trends have developed—whether explicitly acknowledged or not—in large part through interventions from Indigenous studies and Native activists, who have insisted on engagement with Indigenous ontologies and Indigenous science. Poignantly, Todd (2016:7) describes the Ontological Turn as “another Euro-Western academic narrative . . . spinning itself on the back of non-European thinkers.” Although new intellectual paradigms and theoretical trends have sought new language to describe relations between humans and nonhumans, they have often failed to engage adequately with Indigenous standpoints “that never forgot the interrelatedness of all things” (TallBear 2017:180) or to credit Indigenous scholars and thinkers themselves, instead of mainly Euro-American ethnographers. Predominantly non-Indigenous scholars continue to receive the lion’s share of citation for the Ontological Turn, its tenets, and its increasing reach into new disciplines and areas of the Western academy, whereas Indigenous thinkers become “disembodied representatives of an amorphous Indigeneity that serves European intellectual or political purposes” (Todd 2016:7).

Because animals are a component of relational ontologies, animal studies of all kinds are fruitful arenas in which to not only engage with Indigenous Science and Indigenous knowledge but also to further the decolonial program. Zooarchaeology therefore should see itself as relevant to this work and capable of making contributions. Critically, when zooarchaeologists attempt to acknowledge and work within relational ontologies (and they should), we encourage explicit engagement with and citation of the Indigenous scholars, activists, and thinkers who have emphasized for decades and centuries the centrality of nonhumans of all kinds. They should be cited “directly, unambiguously, and generously . . . as dynamic Philosophers and Intellectuals, full stop” (Todd 2016:7). Continued citation to predominantly Euro-American scholars perpetuates already pervasive citational practices that disproportionately elevate the scholarship of only particular kinds of people while minimizing or erasing that of others. Any effort to decolonize North American zooarchaeology (and indeed, North American archaeology) cannot, in good faith, engage only predominantly white, Western academic scholarship and should instead elevate that of our Indigenous colleagues.

Suggested Interventions

In order to begin a conversation around decolonizing North American zooarchaeology, we provide a series of suggested interventions and actionable recommendations regarding frameworks of zooarchaeological interpretation, analytical procedures, terminology, and practice. We offer these as a springboard for future discussion, elaboration, and additional interventions.

(1) Animal Agency and Animals as Subjects and Persons

The first intervention we suggest is one that has already been adopted by several zooarchaeological scholars: acknowledging the agency of animals. Throughout the history of the discipline, zooarchaeological research has positioned animals primarily as objects or resources exploited and consumed by people—whether literally or figuratively—as food, raw materials, symbols, and sacrifices (Hill 2013:117; Overton and Hamilakis 2013:114). The anthropocentric dichotomy of human as subject and animal as object is rooted in Western notions of the division between nature and culture (Hill 2013:118), and it presupposes a passive animal body rather than an agentic entity. Empire historian Antoinette Burton and sociologist Renisa Mawani (2020:4) remind us that animals have been far from passive recipients of human control, noting that in the context of British Empire, “animal life, whether large or small, could and did

often work against the grain of imperial control.” Their bestiary is an exploration of moments and places where animal agency and unwillingness to comply with human expectations and directives shaped our past(s) at both local and global scales.

In zooarchaeology, animals that coshaped human–animal relationships in the past are often reduced to element counts, charts of taxonomic identifications, and reconstructed meat portions. Instead, the history of engagement between human and nonhuman animals should be seen as one of “mutual becomings” (Overton and Hamilakis 2013; see also Argent 2010; Armstrong Oma 2007, 2010; Birke et al. 2004:174). The imposition of Western dualisms such as nature/culture and human/animal onto interpretations of the archaeological record are, as Ian McNiven (2016:34) has said, “misleading at best and colonialist at worst.” These constraints have hindered zooarchaeological interpretation and flattened its potential to generate insights into past human–animal relationships.

Within the last decade, give or take, multiple scholars have attempted to reposition animals in archaeological research as agents and subjects. Boyd (2017) provides an excellent review of these as of 2017. In their “Manifesto for a Social Zooarchaeology,” Nick Overton and Yannis Hamilakis (2013) present a call for an ontological turn in zooarchaeology that rejects anthropocentric ontology and reductionist epistemology. By way of application of their manifesto, they consider the relationship between people and whooper swans at two Late Mesolithic sites in Denmark. Elsewhere, Erica Hill (2013) discusses a myriad of zooarchaeological studies that have attempted to account for the agency of animals and their mutually influential relationships with people, including dogs in Mesolithic Sweden (Larsson 1989, 1993) and southern Siberia (Lozey et al. 2011, 2013), horses in southern Siberia (Argent 2010), dugong in the Torres Strait (McNiven 2010), and others (see Armstrong Oma 2007, 2010; Brittain and Overton 2013; Gittins 2013; McNiven 2010).

By and large, these represent studies in which the agency and potential personhood of animals is woven into the *interpretive*⁴ phase of zooarchaeological research—an admirable undertaking. If we accept animal agency as a critical component of the human–animal relationship, how then can we move beyond considering agency only in interpretation and incorporate it in meaningful ways at earlier junctures? Bishop (2022) provides an example of how animal agency and its effect on the human–animal relationship can be *quantified* by recording species-level biological and behavioral characteristics of animals as a form of zooarchaeological data alongside other categories of routinely recorded data. The study presents a case study from Chaco Canyon, New Mexico, in which the visual, physical, and experiential impacts of the characteristics of different bird species—such as body size, plumage color, sociality, and feeding, nesting, and roosting behaviors—were assessed in terms of how they would have influenced or even determined the outcome of individual interactions between animals and people. Spectrums were created for each characteristic (e.g., sociality), and quantitative values (e.g., 1, 2, 3) were assigned to each option for that characteristic (e.g., highly gregarious, somewhat social, highly solitary). Each species identified in the Chaco avifaunal assemblage was given a summative “procurement score” that reflected the relative ease or challenge of first locating and then interacting with (procuring) an individual of that species based on its physical and behavioral characteristics. When procurement scores were assessed in relationship to Number of Identified Specimens (NISP) of different taxa identified in the assemblage, it could be quantitatively demonstrated that animal agency not only played a role in human acquisition of birds but did so in a direction opposite of what an efficiency model would predict. Instead of targeting species with the lowest procurement scores—which were physically, visually, and behaviorally the “easiest” to acquire—residents of Chaco Canyon consistently favored birds that would have been the *most* challenging to locate and procure. The social, ceremonial, and societal value of large, solitary birds (such as eagles) and exotic birds (such as parrots) warranted the challenge of their acquisition, and in turn, that challenge and rarity likely elevated their importance.

The model offered in the Chaco Canyon case (Bishop 2022) demonstrates that animal agency can be considered both well before the interpretive phase and quantitatively rather than anecdotally. It provides a way to bring animal agency into other phases of zooarchaeological research and to bridge a

perceived barrier between acknowledging animal agency and quantitative faunal analysis. Overton and Hamilakis (2013) provide a qualitative consideration of similar characteristics to those considered by Bishop (2022) for the whooper swan and, importantly, ways in which the *individual bird* might even be considered.

Because animal agency and animal personhood form critical components of relational ontologies, and because embracing relational ontologies serves to undermine the perceived supremacy of Western ontology, we suggest that one intervention in North American zooarchaeology aligned with a decolonizing agenda is for zooarchaeologists to continue to find ways to consider animal agency in their research—whether in the interpretive phase, by creating (quantitative) models, or in ways yet to be imagined. Doing so not only repositions animals as subjects in mutually influential relationships with people and their environments but subverts ontological anthropocentrism and the objectification of animals.

(2) Terminology

Our second intervention regards the development of more expansive, inclusive, and agency-oriented terminology for the remains of animals. As Davis and Krupa (2022:18) remark, “Language is a site of intervention into non-Indigenous assumptions and practices.” For example, in the broader field of archaeology, Indigenous archaeologists Nicholas Laluk and Joseph Aguilar (2023) have pointed out how damaging colonial terminology, such as “abandonment,” can be for contemporary Indigenous people and the narratives surrounding Indigenous survivance. Other scholars—including Davis and Krupa (2022), Bader et alia (2023), and Watson et alia (2022)—have suggested shifts in the terminology employed in the process of the Native American Graves Protection and Repatriation Act (NAGPRA) consultation, repatriation, and the general care of collections. In the ongoing work of repatriation across the United States, for example, using the term “Ancestors” as a proper noun confers respect, agency, and a sense of humanness otherwise bereft of the term “human remains” (Davis and Krupa 2022:21). Watson and colleagues (2022:Table 1) provide a vocabulary of respectful terminology that serves to de-objectify common terms used in archaeological compliance work, including referring to “cremains” instead of “cremated human remains,” or “escorting” the remains of Ancestors rather than “transporting” them. Bader and colleagues (2023) provide similar adapted terminology that covers biological samples taken from Ancestors, such as DNA.

If nonhuman beings, including animals, have agency and sometimes personhood, or at the very least are more than objects for human consumption, reflecting on the terminology commonly used to refer to archaeofaunal remains provides another opportunity to center an ethic of care and responsibility in the treatment of Native American archaeological collections. As Davis and Krupa (2022:24) point out, “Animal remains represent deceased living beings and may not be classified as ‘objects’ within Indigenous ontologies.” Therefore, “shifting to language that recognizes animacy or allows the possibility of it has the potential to undo . . . harm” (Davis and Krupa 2022:18).

Potawatomi botanist Robin Wall Kimmerer has noted that the use of the word “it” to describe plants and animals “gives us permission to see the land as an inanimate object” (interview with the Minneapolis Institute of Art [Richard 2020]). In her book *Braiding Sweetgrass*, she offers adaptations of the Anishinaabe word *aki* (meaning “earthly being”), suggesting *ki* (singular) and *kin* (plural) as ways to refer to plant and animal relatives without objectifying them (Kimmerer 2013).⁵ In the case of great apes whose remains are stored in museums, Kralick and Canington (2025) have suggested shifting from the use of “it” to “she,” “he,” “who,” “whom,” and so on.

Perhaps similar terminology can be employed in moments when zooarchaeology acknowledges animal bodies and animals as influential members of the human–animal relationship. In her osteobiography of an injured wild caribou held at the Canadian Museum of Nature, Emily Hull (2020) refers to the individual as “he” rather than “it” and avoids other objectifying language such as “the specimen.” In cases where the sex of the individual animal in question is known, humanizing pronouns such as “he” and “she” are easily employable instead of objectifying pronouns such as “it.” Of course, sex is often one of the most difficult qualities to assess in archaeofaunal analysis, given that not all animals—even when their skeletons are complete—exhibit sex-specific skeletal traits. In the case of 42 complete and fragmentary

macaws (birds whose skeletons exhibit no sexual dimorphism) from Chaco Canyon, Bishop (2025) refers to each bird as “they.” In cases where sex is not identifiable, the use of “they” still acknowledges the living animal. Small changes, such as replacing objectifying terms with humanizing or agency-affirming terms, help move zooarchaeology toward language that instead reinforces the beingness of the animals with whose remains we are interacting.

Additionally, when possible and appropriate, acknowledging and working within Indigenous languages is also important. Critically, however, the determinations and decisions made around terminology in one specific regional and cultural context may not be appropriate for others. Decisions regarding language-specific interventions therefore should be made in close collaboration with Indigenous colleagues in each unique consultation or collaboration. Developing and using “inclusive, community-oriented terminology” (Davis and Krupa 2022:25) for the remains of animals is a logical next step in the extension of ongoing efforts to decolonize archaeology.

(3) *Osteobiographies and Life Histories*

Our third intervention suggests the adaptation of the concept of osteobiographies into zooarchaeology. In bioarchaeology and related fields, the construction of what are known as osteobiographies have become commonplace in the study of the skeletal remains of human individuals around the world (e.g., Boutin 2011; Robb et al. 2019; Saul and Saul 1989; Stodder and Palkovich 2012). Originally defined in 1972 by Frank Saul, constructing an osteobiography involves assembling all available information from the human skeleton to create a life history for an individual (Hosek and Robb 2019; Saul 1972). Although originally formulated as a way to increase the quantity and quality of information gathered in bioarchaeology, the construction of osteobiographical narratives has the effect of focusing attention on the individual as a person with a lived experience.

The term “osteobiography” has been infrequently employed in zooarchaeology (Hill 2013:123). Zooarchaeologists have, on occasion, constructed life histories for animals, drawing on multiple lines of evidence to understand the life and death of a particular individual (e.g., Monagle and Jones 2020; Monagle et al. 2018; Taylor et al. 2021, 2023). So far, only a handful of studies have explicitly used the term “osteobiography.” Losey and colleagues (2011) constructed life histories for one wolf and one dog from two eighth-millennium BC sites in Siberia, using the terms “osteobiography” and “life history” interchangeably. Hull (2020) constructed an osteobiography for an injured wild caribou in a museum collection as an example of the value of considering the lived experience of nondomesticates. Bishop (2025) created osteobiographies for each of 45 parrots found at archaeological sites in Chaco Canyon, New Mexico. Tourigny et alia (2016) use an osteobiographical approach in their analysis of a nineteenth-century dog burial from a historic homelot in Canada. What unites each of these studies is not just their focus on the lived experience of the individual—which life histories also often consider—but their explicit acknowledgment of the agency of the individual animal, its potential impact on and interactions with people, and in the case of Losey et alia (2011) and Hull (2020), consideration of the personhood of the animal.

There has been no published discussion of the theoretical differences between the terms “life history” and “osteobiography” in zooarchaeology, nor has an argument been made for when and why one should be used over the other. We would suggest that the term “osteobiography” goes beyond acknowledging that the animal had a life (life history) and creates greater opportunity for the recognition of animal agency and animal persons in relational frameworks of existence that are not anthropocentric. This is not to say that all animals held such a role in all societies or that all individual animals of a given species held such roles even within a single society. Given the use of “osteobiographies” in bioarchaeology, however, the use of this term in zooarchaeology may help to elevate the significance of the animal as a participant in the construction of daily life, encourage greater attention to animal agency, and create space for the consideration of personhood where appropriate.

Regardless of whether the term “life history” or “osteobiography” is employed, both have almost exclusively been created for animals recovered as complete burials. In her synthesis of the treatment of animals as animal persons in zooarchaeology, Hill (2013) argues that although animal persons may be most discernible in animal burials, what she calls “Structured Deposits” also hold potential for

recognizing the individual as such. Such deposits consist of “arrangements of specific animal elements, especially those that are iconic or indexical” (Hill 2013:124). “Ritual mounds” consisting mostly of dugong cranial elements in Torres Strait (McNiven 2004, 2010) and the linear arrangement of hundreds of beluga whale skulls at the archaeological site of Kegcaqurmiut in southwest Alaska (Hill 2012) have both provided opportunities to imagine the animal person even when remains are disarticulated and not in burial contexts.

Animal burials and structured deposits typically account for only a fraction of the archaeofaunal record; the majority is instead made up of the disarticulated and comingled remains of many animals, such as in “midden,” “trash,” or “fill” contexts.⁶ Consequently, it is often challenging, if not impossible, to reunite the distributed bones of what was once a single individual. These depositional circumstances, however, do not negate the possibility that the animals represented by the distributed remains were not encountered as, perceived of, and interacted with as individuals, agents, or persons. Although the use of osteobiographies in zooarchaeology is complicated by the nature of disarticulated faunal assemblages, their application in particular circumstances demonstrates yet another way that agency and even personhood can be returned to animals as a way of rejecting the human/animal and subject/object dichotomy. As an area for further development, we may consider ways in which animal agency and personhood can be recognized in disarticulated deposits, without presupposing their absence or writing off their potential in this arena. Zooarchaeology already possesses a useful metric, that of the Minimum Number of Individuals (MNI), which attempts to reconstruct the minimum number of animals of a given species necessary to account for the specimens in a faunal assemblage. Although MNI does help to conceptually recombine the distributed remains of once-whole animals, it results usually in a count of members of a species, such as 15 white-tailed deer, rather than literally reconfiguring the bodies of single individuals. Although by itself MNI may not be sufficient, the marriage of MNI with other interesting approaches may prove to be useful in reimagining animal agency (see, for example, Bishop 2022).

(4) “Cultural Taxonomies”

Our fourth intervention involves acknowledging an assumed hierarchy between scientific taxonomy and “cultural taxonomies,” the implications for zooarchaeology, and the value of bringing cultural taxonomies to bear on zooarchaeological interpretation. We, along with multiple other scholars, argue that scientific taxonomy is itself a cultural taxonomy, globally spread and legitimized through processes of colonialism and imperialism. By “cultural taxonomy” we do not mean arbitrary, unstructured, or non-factual; cultural taxonomies are systematic classificatory systems that are shaped by historically and culturally specific epistemologies and practices. Recognizing scientific taxonomy as a cultural taxonomy does not diminish its utility but places it on epistemic parity, of equal validity, with other observation-based classificatory systems developed in different cultural and historical contexts. Scientific taxonomy provides an essential framework for some phases of zooarchaeological research and facilitates comparability and communication across the field. Our concern lies instead with its uncritical extension into interpretation in cases where culturally specific categories of significance may differ.

“Scientific” and Indigenous Taxonomy

Modern scientific taxonomy originated with Carl Linnaeus (1707–1778), whose *Systema Naturae* (Linnaeus 1758) articulated rules for species descriptions and terminology based on morphology and established hierarchical classification and binomial nomenclature. In the mid-1900s, the “phylogenetic revolution,” pioneered principally by German biologist Willi Hennig (e.g., Hennig 1966), brought cladistics into the picture and focused on modifying taxonomic categories to reflect evolutionary relationships as well (Godfray and Knapp 2004). Over more than two and a half centuries, scientific taxonomy has been primarily shaped by European and American naturalists, systematists, taxonomists, and biologists, such as Linnaeus, Hennig, Mayr, Woese, and others (see Mayr 1982).

The terms “cultural taxonomy,” “native taxonomy,” “folk taxonomy,” or “Indigenous taxonomy”⁷ have been used to describe the ways that Indigenous groups of people organize the entities of the world. Multiple scholars (e.g., Atran 1990, 1998; Chambers and Gillespie 2000; Raven et al. 1971; Tavella 2024) have argued that what Linnaeus himself produced was a folk taxonomy based on a local European

knowledge system. The now-global spread of scientific taxonomy, and therefore its perceived supremacy, is deeply entangled with a history of colonialism and imperialism (e.g., Guedes et al. 2023; Mabele et al. 2023; Schiebinger and Swan 2005; Subramaniam 2024; Trisos et al. 2021). As Chambers and Gillespie (2000:239) note, the spread of Western knowledge systems over the last 400 years has gathered “such enormous power and authority that it has been able to confront, overwhelm, and absorb the insights of traditional knowledge systems around the planet.” Critically, “this social and organizational triumph is sometimes interpreted as evidence of the universality of scientific knowledge claims” (Chambers and Gillespie 2000:239).

In scientific taxonomy, the base unit of consideration is the species. The philosophical and biological notion of “species pluralism” accepts that there can be multiple “species concepts” (e.g., de Queiroz 1998, 2005; Mishler and Donoghue 1982). For example, the biological species concept emphasizes reproductive isolation (e.g., Mayr 1942, 1970), whereas phylogenetic species concepts (of which there are several) emphasize shared common ancestry (e.g., Donoghue 1985; Nixon and Wheeler 1990). The notion of the “species” is therefore a theoretically fluid concept. Species are defined by patterns of variation, rather than fixed traits, and individuals within a species will vary both genetically and phenotypically (Mayr 1959). The boundaries around a species therefore are fuzzy and dynamic.

Today, scientific taxonomy organizes the constituents (types of animals) of each of its hierarchical categories based on multiple lines of data (such as morphology, phylogeny) that it determines to be salient for classification. Indigenous taxonomies do the same, choosing their own categories of significance that are culturally relevant. Indigenous taxonomies also offer scientific understandings of the world based on thousands of years of observation and experimentation. Cultural anthropologist Scott Atran has argued that cross-culturally, all groups of people think about plants and animals “in highly structured ways” and order them into species-like groups that are further ordered into lower- and higher-ranked groups (Atran 1998:547). Although this practice describes both scientific taxonomy and so-called folk taxonomies, the way that different animals are identified and grouped is shaped by cultural context and local ecological knowledge (Atran 1998; Atran and Medin 2008). Raven and colleagues (1971:1211) discuss how in “folk taxonomies,” the greater the cultural significance of different types of plants and animals, the more elaborately they will be subdivided and organized compared to those of lower cultural significance. This logic is evident in the way Linnaeus saw the world: “Linnaeus recognized many genera, each with few species . . . in plants of high cultural utility. In contrast, he named few genera, each with many species, in families . . . that were of low cultural utility” (Raven et al. 1971:1211).

Although Indigenous/“folk” taxonomies have been given extensive attention in ethnobiology, they continue to be positioned as somewhat inferior to scientific taxonomy, which reigns supreme. Whereas scientific taxonomy is perceived as factual and hypothesis driven, Indigenous taxonomies are typically thought of as observational but ultimately subjective, often because of their interrelationship with spiritual practices and beliefs. “Folk taxonomies” in the ethnobiological literature are frequently compared by Western scholars to scientific taxonomy, and scientific knowledge is used to assess the validity and accuracy of Indigenous knowledge (Chambers and Gillespie 2000:237).

To this last point, it cannot be assumed that the categories and creatures defined by scientific taxonomy are organized in the same ways across all cultural contexts—archaeological or contemporary. Although overlap sometimes exists, it is widely accepted that scientific taxonomy does not map category-to-category onto any given Indigenous taxonomy. Why, then, should we expect it to map cleanly onto the pre-Linnaean, archaeological past, particularly in Native North America? As Chambers and Gillespie (2000:237) note, “We often forget that the validity of scientific taxonomy also suffers when taken from its cultural context.”

Zooarchaeology relies on scientific taxonomy in several ways. It is the organizational framework employed in the comparative collections used to make morphologically based identifications of fragmentary animal bone. It is also what allows zooarchaeologists to then consider—once taxonomic identification is made—the biological and ecological characteristics of the species identified, given that reference literature is similarly organized. This reliance on the taxonomic categories of scientific taxonomy, however, is usually tacitly carried forward into the interpretive phase of zooarchaeology. This assumes, then, that people in the past identified and organized animals in the way that Western science

does today, that the categories outlined by scientific taxonomy had relevance in the past, and that people prioritized and singled out the same characteristics as meaningful that scientific taxonomy deems salient.

Intervention

Our proposed intervention here regarding decolonizing North American zooarchaeology requires acknowledging three interrelated truths. First, taxonomies from contexts and systems outside of European-derived/Western practices and ideologies are scientific in that they represent and reflect systematic ways of knowing and categorizing the world based on centuries of observation and experimentation. Second, scientific (Linnaean) taxonomy is itself a cultural taxonomy that emerged from and reflects specific linguistic, geographic, religious, and otherwise cultural ways to account for the world. Third, accepting the first two points, the categories and groupings of scientific taxonomy cannot be assumed to have had the same structure or significance to past Indigenous peoples and therefore may not adequately assist in producing accurate interpretations and reconstructions of the human–animal relationship in a Native North American context.

Although scientific taxonomy undoubtedly provides a useful overarching framework for making identifications and reporting results, its categories are likely to lose some of their utility when employed as the sole or primary categories structuring zooarchaeological interpretation. When writing up the results of zooarchaeological research, the zooarchaeologist is likely to structure, at least in part, their interpretation along categorical lines drawn from scientific taxonomy. The extension of scientific taxonomic categories, perceived to be neutral and objective, into the interpretive phase of zooarchaeological research may obscure other categories of past meaning or create groupings that did not have significance in the past.

We propose that a greater understanding of locally and culturally specific Indigenous taxonomies is needed for the interpretive phase of North American zooarchaeological research. This has the potential to contribute to the generation of more expansive perceptions of animals and the human–animal relationship. Importantly, we are not encouraging an unbounded Euro-American imagining of past human–animal relationships in non-Western and Indigenous contexts. Rather, more appropriate understandings may be developed through collaboration and consultation with knowledge holders in descendant communities, resulting in either the co-construction of knowledge about past human–animal relationships or the yielding of interpretation to Indigenous communities in pursuit of Indigenous knowledge sovereignty. At the very least, an understanding of culturally specific taxonomic categories developed through consultation can guide zooarchaeological interpretation of the human–animal relationship in a particular time and place.

Very few explicit examples exist of North American zooarchaeological studies that (1) have drawn on direct consultation with descendant communities to develop an understanding of locally and community-specific frameworks of identifying, thinking about, and organizing animals and (2) have incorporated such knowledge into zooarchaeological interpretation. Much more common in North American zooarchaeology (and abroad) has been a practice of drawing on eighteenth-, nineteenth-, and twentieth-century historic accounts and ethnographies, as well as ethnobiological literature, to characterize how people in a time and place may have thought about and interacted with animals. Information generated from the review of such literature is often used as background and contextualizing information in a particular case study and/or is brought to bear on interpretation of the archaeological human–animal relationship in a particular place (see Hudson [1993] for multiple examples; see Albarella and Trentacoste [2011] regarding the term “ethnozooarchaeology”). This approach has value, because it moves the needle away from an exclusive reliance on a Western scientific understanding of modes of interaction with animals and toward the acceptance and legitimization of other frameworks.

Drawing on accounts of ethnographically documented human–animal relationships in zooarchaeology, however, does not necessarily contribute to a decolonial zooarchaeology. The vast majority of the ethnobiological and ethnographic literature has been and continues to be authored by individuals who are not themselves Indigenous to the region of study and who are typically Western-trained

scholars. Representation of Indigenous scholars in fields of study that include a focus on the human–animal relationship is increasing, such as in ecology, environmental history, environmental humanities, and environmental justice (e.g., the work of Linda Hogan, Deborah McGregor, Robin Wall Kimmerer, Rosalyn LaPier, Kim TallBear, and Daniel Wildcat). Indigenous representation in ethnobiology and ethnozoology more specifically, however, remains poor. Consequently, the knowledge that zooarchaeologists might draw from the ethnobiological and ethnographic literature is still predominantly produced by and for Western academics and Western scientists.

Our point is not that such texts are not useful, but that the use of ethnographic and ethnobiological literature authored by Euro-American scholars is not equivalent to or interchangeable with attempts to understand Indigenous taxonomies through sources directly authored by Indigenous scholars or through collaboration and consultation with Indigenous communities. What might it look like to incorporate Indigenous knowledge regarding animals into zooarchaeological interpretation, especially knowledge regarding the classification and perception of different animals? The interpretive consequences of the potential mismatch between scientific taxonomy and Indigenous taxonomies, and the importance of considering the latter, can be illustrated through two ethnobiological cases—either Indigenous-authored or community-engaged consultative studies—in which Indigenous categories are explicitly documented.

In their ethno-ornithology, Chandler and colleagues (2017) draw on consultation with Blackfoot, Assiniboiné, Hidatsa, Crow, Mandan, and Arikara elders and cultural specialists to understand the role of birds among tribes of the Missouri River basin. They discuss the different characteristics attributed to and associated with different birds, noting that for the Mandan and Hidatsa, the category of “big birds” includes eagles, hawks, ravens, and crows, each of which is also connected to the thunderbird spirit (Chandler et al. 2017:31). Although each of these types of birds may be recognized in its own right, through their connection to a different category of being (the thunderbird), they form a group of their own that has interpretive significance.

In practice, the zooarchaeologist will identify the remains of each of these birds as the distinct taxa that they represent in scientific taxonomy, given that the comparative collections on which they draw to make their identifications are organized in this way. They will therefore be isolated as at least four distinct taxa: the eagle (large members of the family Accipitridae, including bald eagle and golden eagle), the hawk (smaller members of the family Accipitridae, including multiple species of multiple genera), the common raven (*Corvus corax*), and the American crow (*Corvus brachyrhynchos*). The utility of recognizing these birds as distinct species (and in the case of the hawk and eagle, multiple species) is obvious for understanding associated biological and ecological characteristics, which are important to consider when reconstructing human–animal relationships in the past. When it comes time to report the taxonomic composition of the faunal assemblage, the tables and charts will be organized using the same scientific taxonomic categories. A discussion will follow, in which each species/taxon is likely to be treated separately, one-by-one, or in groups organized along Linnaean/scientific logics. In doing so, the process of identification and reporting has a tendency to isolate the distinct species and render invisible any connection they may have had along other culturally significant lines that do not align with scientific taxonomy.

A second example can be drawn from the work of Zuni scholar Edmund J. Ladd. In his ethno-ornithology of Zuni Pueblo, he describes multiple disjunctions between Zuni identifications, uses, and groupings of birds and the species recognized by scientific taxonomy, noting that “several species which are phenotypically similar may be known by separate names or a single name” (Ladd 1963:55). For example, a single name (*jachuz/ana*) is used to refer to three birds that scientific taxonomy recognizes as distinct species: the sharp-shinned hawk, the duck hawk (peregrine falcon), and the pigeon hawk (the merlin). This does not mean that differences between the three, which are visually quite distinct from one another, are not recognized, but that they have a shared significance and interchangeability that is recognized in their naming, and which is prioritized over their treatment as separate “species.” Again, in a zooarchaeological case, these birds would be treated and reported as separate, isolated species, yet their significance is shared and would be missed.

Both examples above highlight that when scientific taxonomy alone provides the categories of interpretive significance, it may only capture part of the picture. Broader groupings that may have had great importance, or interchangeable uses and value between different species, may remain completely unrecognized. Indigenous taxonomies may split a species (in the Linnaean/scientific taxonomic sense) into more categories than scientific taxonomy would, or they may lump species together to form a single category that scientific taxonomy would otherwise split. In short, species or category boundaries may be different, and the uncritical use of scientific taxonomic categories in zooarchaeological interpretation risks obscuring culturally salient human–animal relationships. We should not assume without justification that the categories of significance in scientific taxonomy, itself a European-derived cultural taxonomy, had the same relevance and recognition to people in the past. The use of scientific taxonomic categories to organize and structure interpretation of past human–animal relationships in the Native North American context should be challenged and subject to validation, modification, or rejection through consultation.

Critically, we are not suggesting an abandonment of the use of scientific taxonomy in zooarchaeology. Scientific taxonomy remains an important shared language that allows zooarchaeological data to be comparable across regions and time periods. Instead, and in keeping with our next recommendation (consultation and collaboration), we propose that zooarchaeologists work with appropriate descendant communities in their area of research to identify categories of interpretive significance that may more faithfully guide our (shared) reconstructions of past human–animal relationships. Zooarchaeology only stands to benefit from this move toward plurality and multivocality. The field already relies on multiple knowledge systems external to itself, including ecology, ethology, and biology. Embracing Indigenous taxonomies is an extension of this already pluralistic practice rather than a departure from it.

(5) Consultation and Collaboration

Our fifth intervention is perhaps one of the most obvious, yet it is currently underutilized. In fields that involve living Native American research participants or research conducted within tribal jurisdictions and reservations, various protocols are required, including institutional review board approval and tribal review. Critically, this means a model of collaboration (ideally) or consent (at a minimum) beyond the individual level that includes Tribal Nations (Tsosie et al. 2019). Work to decolonize anthropology has demonstrated that consulting and collaborating with Native nations is also central to research on archaeology (Atalay 2012; Lonetree 2012), ancient DNA (Bader et al. 2021; Fox 2021; Kowal et al. 2023), linguistic data analysis (Davis and Smalls 2021; Holton et al. 2021; Leonard and Haynes 2010), and paleobiology (Kakaliouras 2021). Consultation within this model also requires working with those with the appropriate designated roles within Native nations—such as Tribal Historical Preservation Officers, Tribal Historians, and others—rather than just with Native individuals not authorized to consult on behalf of their tribe. This large and growing body of work demonstrates the importance of collaboration and consultation with descendant communities even when (perhaps especially when) research is focused on the past or does not explicitly involve direct interaction with living people as research participants. This approach also ensures that the use of nonhuman animals as stand-ins for Indigenous peoples is avoided (i.e., looking at animal remains to answer questions about humans without having to consult or collaborate with the peoples being discussed in the research). Consulting and collaborating with descendant communities in zooarchaeology only stands to strengthen our understanding of the human–animal relationship in the past and, of course, contributes to broader discipline-wide efforts to account for archaeology’s colonial legacy.

Critically, robust and meaningful consultation must take into account the complex historical and contemporary configurations of Native nations and their ongoing relationships to the contexts to which zooarchaeological collections are connected. For example, a single cultural group may be divided into multiple, politically distinct Native nations, whose tribal jurisdictions are spread over multiple states or even national borders; contemporary tribes may be organized as federally or state-recognized tribes, multigroup confederacies, Native corporations (in the context of Alaska), or unrecognized groups (in Hawaii, for example); and groups may have multiple relationships to places as Ancestral lands, historical

homelands, and/or contemporary tribal jurisdictions. All of these complexities require that zooarchaeologists learn and take seriously the Indigenous histories, contemporary political configurations, and tribal sovereignty of the regions in which they work. Furthermore, complexity should not be seen as an excuse to avoid consultation or collaboration.

Broadly speaking, North American archaeology continues to move toward an ethical position in which consultation not only is required for the repatriation of human Ancestors or research related to beings and “materials” that fall under NAGPRA (discussed below) but is also considered best practice for collections that do not technically fall within the requirements of the law, including archaeofaunal remains. Rather than being perceived as an additional and onerous step, best-practice consultation should be seen as an opportunity to refine research questions and project methodologies and to allow the future of zooarchaeology to be influenced and even driven by tribal needs and interests. Requests for the use of destructive sampling methods on faunal remains—such as for radiocarbon dating, stable isotope analyses, and aDNA—should be predicated on consultation. As Davis and Krupa (2022:24) point out, animal remains represent deceased living beings, not objects; they should therefore be treated with appropriate respect. Relatedly, zooarchaeologists should consider consulting on how the remains of animals—both in general and for particular types of animals—are not only handled, housed, and stored during the course of a research project but also disposed of.

Like many other types of materially focused archaeologists, zooarchaeologists possess a “skill” that can be deployed in a myriad of settings and for different reasons. Ideally, we see a future in which North American zooarchaeology and its practitioners seek to address research questions and achieve goals informed by tribal interests. Until that day arrives, we explicitly encourage consultation regarding research on animal remains from Native North American archaeological contexts, not only for ethical reasons but for the benefit to interpretation, and we promote the use of nondestructive methods unless permitted otherwise.

(6) *Articulations with NAGPRA*

Relatedly, our sixth intervention involves ways that zooarchaeologists can contribute to the practice of NAGPRA compliance. Though faunal remains are not explicitly named within NAGPRA, they nonetheless feature in both the letter and spirit of repatriation of Native American collections held in colonial institutions. A survey of recent repatriation notices posted to the *Federal Register* yields multiple examples of the inclusion of fauna, such as one from June 2025 in which “two lots of fauna” were included in the 190 cultural items requested for repatriation from a collection removed from Santa Fe County, New Mexico, on Pueblo of Pojoaque land (Department of the Interior, National Park Service 2025a) and two dog burials from Pike County, Illinois, included in a Notice of Inventory Completion by the Illinois State Museum in November of the same year (Department of the Interior, National Park Service 2025b). Because of this, zooarchaeologists have robust opportunities to contribute to that work and related efforts.

Although NAGPRA was passed more than 30 years ago, the majority of collections taken from Native American lands and Nations have yet to be repatriated. Although the long-term goal is to be able to consult on all eligible collections (as well as those that do not explicitly fall under the law), priority is given to the repatriation and reburial of Ancestors. As part of that work, tribes routinely ask institutions to work through the parts of their collections previously labeled as “faunal” to ensure that Ancestral human remains are not present (which they often are). This requires the skills of osteologists and zooarchaeologists, and the need for those skills currently outstrips the number of trained individuals available to do that work. Consequently, zooarchaeologists working in the United States should have at a minimum a strong understanding of the law and would benefit from some form of NAGPRA training.

No “best practices” have yet been published for how this work should be carried out. Analysts may choose different paths, but the end goal should always be to provide as exhaustive and accurate a search of an archaeofaunal collection as possible. Although the process of sorting archaeofaunal collections for the presence of human remains may initially seem straightforward, the ability to recognize human bone—especially highly fragmentary bone—is affected by many different factors, including analyst training and

experience, available reference material, degree of fragmentation, extent of certain taphonomic effects, and others. When the goal is to ensure the return of *all* human Ancestor remains no matter how fragmentary, we recommend collaboration between a human osteologist and a zooarchaeologist (or multiple of each when possible), as this will help mitigate the effects of interanalyst variation and is likely to increase success.

In ongoing work in the Social Zooarchaeology Lab at the University of Illinois Urbana-Champaign, a two-stage approach is employed. First, the entire archaeofaunal collection from a single archaeological site is sorted by one or more human osteologists whose goal is to recognize bone that is definitively or might be human. During this stage, a zooarchaeologist should be available for consults as needed. Once the first stage is completed, the second, usually much longer stage consists of a nondestructive standard zooarchaeological analysis that includes sorting, identification, and recording. During this stage, a human osteologist should be available for consults as needed. The second stage not only ensures a better chance that remains missed in the first stage will be recognized but also provides positive identification of skeletal remains as *nonhuman* through standard zooarchaeological taxonomic identification using a reference collection. Our experience suggests that at least some remains of Ancestors are always missed in the first stage; consequently, the second stage provides an additional two-part check by both identifying additional Ancestral remains and positively identifying nonhuman animals. Though they share a focus on skeletal remains, human osteologists and zooarchaeologists are uniquely trained to recognize different characteristics. Therefore, the involvement of both in faunal reviews for the presence of Ancestors increases the likelihood of success.

One persistent scenario in assessing archaeofaunal collections for the presence of Ancestors is that some portion of the collection will typically be unidentifiable using traditional (visual) faunal analysis. Some specimens will be so fragmentary and morphologically indistinct that they will be either visually unidentifiable beyond a size class of mammal (e.g., “unidentified medium mammal”), unidentifiable beyond simply the class of mammal itself (“unidentified mammal”), or unidentifiable even to a class (“unidentified”). Therefore, the unidentified portions of a faunal assemblage—including completely unidentified remains, unidentified mammal remains, and especially unidentified medium and large mammal remains—may still contain the remains of human Ancestors that cannot be recognized visually. We recommend that this issue be explicitly acknowledged in consultation and that consulting and repatriating tribal parties be given the option for unidentified remains to be included in repatriation of the remains of Ancestors. At the least conservative, for example, return of human Ancestors might also include all remains of medium and large unidentified mammals. At the most conservative, repatriation might include all remains unidentifiable even to animal class, as well as those of medium and large mammals. The decision regarding whether to include any category of unidentified remains in repatriation should ultimately be made by consulting tribal parties.

Additionally, faunal collections often escape being included in institutional inventories constructed for the purpose of NAGPRA consultation and repatriation, precisely because they require specialist identification and are often large. Older legacy collections in particular may be overlooked because they suffer from lost or poor contextual information that might otherwise inform funerary status or assist in cultural affiliation (Ward et al. 2024:2). Animal burials and the remains of certain kinds of animals that may be eligible for repatriation might therefore “slip under the radar” and be omitted from ongoing consultation and repatriation efforts because they have yet to be identified as such. Wherever possible, institutions should seek to have their faunal collections inventoried so that they might fall under the same research moratoriums and protocols as other types of collections awaiting NAGPRA consultation. As Ward et alia (2024) suggest, museums should strive to increase their in-house capacity for zooarchaeological identification, or they should reach out to local (and in appropriate cases, nonlocal) zooarchaeologists for assistance in this work, given that there are many zooarchaeologists who are either already assisting in such endeavors or who are eager to do so.

Especially in the case of older legacy collections, the inventorying process may need to involve extensive context reconstruction through the use of archival materials, including old field notes and related documents. This process can be time consuming and tedious, and it is frequently foregone for those

reasons, but it is critical to the thorough evaluation of archaeofaunal collections for repatriation. Such “cross-walking” (Bruchac 2025) between collections and archives (physical or digital) is also necessary in disentangling the historically specific motivations and collections practices of nineteenth- and twentieth-century excavations that prioritized detailed recording of some materials and willful disregard of others (including, often, faunal remains; Bishop 2025; Bruchac 2018, 2025; Hanson et al. 2024; Heitman 2016; Jones and Gabe 2015). Relying on archival materials to provide greater insight into the contexts of deposition of the remains of animals from an archaeological site can help to locate remains that may otherwise be missed, overlooked, or deprioritized for repatriation. Critically, consultation, collaboration, and repatriation can and should occur beyond the limited parameters of NAGPRA so as to also include archival materials (Krupa and Grimm 2021); collections not determined to be funerary or ceremonial; and those from private lands and institutions not subject to NAGPRA compliance.

Importantly, the process of zooarchaeological identification and analysis generates data of additional research potential. Decisions regarding how those data are ultimately stored and used should be made in consultation with appropriate descendant communities (Ward et al. 2024). Performing zooarchaeological identification in the context of faunal reviews for NAGPRA collections should not be considered tacit permission to use the data generated without further permission. Recent scholarship in the importance of Indigenous Data Sovereignty, including for aDNA research, demonstrates that the outputs of data are critical places for consent, collaboration, and consultation (Carroll et al. 2019, 2021; Kowal et al. 2023; Tsosie et al. 2019).

(7) Laboratory Practices and Collections Care

By extension of some of the principles so far discussed, there are also decolonizing practices that might be enacted in a laboratory setting regarding the storage, analysis, and care of faunal collections from archaeological sites as well as modern comparative skeletal collections used in analysis and teaching. Much of what we suggest here might also be adapted to the care of other archaeological “materials” and “objects.”

Modern comparative skeletons of animals of known species are maintained by many different kinds of institutions, including museums and universities. Some zooarchaeology laboratories, especially those that are well established, also maintain their own “comparative collections” or “reference collections.” Hundreds, thousands, or even hundreds of thousands of individual once-living animals can be represented in such collections. There are, of course, already best practices in the storage of perishable materials such as these, including temperature and humidity control, labeling and documentation, and the use of appropriate storage materials. Stemming from Indigenous perspectives on nonhumans, additional practices might be used to ensure that animals are housed in ways that treat them as beings rather than inanimate objects and study tools. In general, these practices should be predicated on an ethos of care and respect for both the animal itself and for different perspectives on animals. For example, if deemed appropriate by Native nations and communities, Indigenous names for animals might be added to collection labels and records following consultation. Relatedly, comparative collections might be physically reorganized into categories and groupings determined through consultation, rather than relying on the categories prescribed by scientific (Linnaean) classification. For example, at Northern Arizona University, Chrissina Burke and undergraduate student Max Schrader sought to reorganize the zooarchaeological comparative collection into community-defined categories such as more-than-humans from land, water, and sky contexts (Schrader et al. 2025).

Alexandra Kralick and colleagues (Kralick and Canington 2025; Kralick et al. 2023) have recently made recommendations for the care of great ape remains in museums in ways that prioritize empathy for individual primate beings. The skeletons and skins of untold numbers of primates have entered museum collections by way of a historical legacy of colonial violence against both animals and people. For these animals, many of whom were ripped from their families and social groups and/or suffered violent deaths, recognizing (and having empathy for) the life (and death) of the individual has the potential to transform “a history of extraction and exploitation into one of respect and dignity” (Kralick and

Canington 2025). Their recommendations include the accompaniment of each individual by a curatorial sheet that (1) records their names (if given), specimen numbers, history of acquisition, and movement; and (2) documents the findings of researchers and curators, such that a picture of the individual can be built over time. Furthermore, as is common practice in many museums, skins and skeletons of the same individual primate are sometimes stored separately from one another. This “depersonalizing practice . . . unintentionally reinforces the idea that ape remains are a mere collection of body parts” (Kralick and Canington 2025). This practice characterizes the storage of the remains of many types of animals. In the case of zoological collections, skins and skeletons, crania and postcrania, and different postcranial anatomical regions are often separated from one another. As Kralick and colleagues suggest (Kralick and Canington 2025; Kralick et al. 2023) for primates, we also suggest that care practices centering empathy should consider keeping together the remains of a single individual in zooarchaeological comparative collections. Doing so helps to acknowledge and recognize the individual that lived and died as a whole being. Although adjustments to shelving size, spacing, and height may be required in the case of larger animals, this factor alone should not preclude undertaking the work.

An additional way that laboratory practices can be modified in consideration of decolonizing principles is to acknowledge that some animals may be deemed culturally sensitive or inappropriate for handling by some groups of people. Providing transparency around the presence of potentially culturally sensitive taxa when entering a space is critical to respecting different perspectives of and relationships to animals. An understanding of community-specific needs regarding the housing and handling of the remains of certain kinds of animals can be developed in conversation with tribal communities on whose ancestral lands the collections are stored, as well as those from whose lands the animals came.⁸ Signage at the entrance of a zooarchaeology laboratory or storage space that announces the presence of different types of animals is simple to implement once such sensitivities have been determined.

Zooarchaeology laboratories also house the remains of animals as archaeofaunal collections undergoing analysis. These pose considerations additional to those for comparative collections, given that they usually consist of the remains of many animals disarticulated in the ancient past. Even so, a culturally informed approach to the storage, care, and treatment of archaeofaunal collections in zooarchaeology spaces can be implemented through consultation and collaboratively developed laboratory and storage practices that prioritize the values and goals of Indigenous communities. In museum contexts, Ward and colleagues (2024) have called for a “collaborative care approach” that revolves around “cultural humility” (Hurley et al. 2022; Tai 2023), which “emphasizes combining awareness of the individual positionalities of those responsible for creating and implementing policy with an awareness of and commitment to redressing power imbalances” (Ward et al. 2024:5). They suggest that museums begin implementing a collaborative care approach by asking Native partners to identify which collections and which animals are a first priority in redefining collections care (Ward et al. 2024:6).

As with comparative collections described above, guidelines for storing and handling archaeofaunal collections—including the remains of certain animals when identified—can be codeveloped in conversation with tribal communities from whose ancestral lands they were taken, as well as those on whose ancestral lands the collections are stored. Additionally, because older collections in particular often include the remains of Ancestors misidentified as and intermingled with faunal remains, signage should be used to indicate this possibility to students and others entering the lab, since not all individuals from all cultural affiliations and backgrounds are comfortable with this prospect. Science considers these “materials”—both human and animal—as objects of study, de-animating them. But this perspective is not universal. Laboratory training programs might be developed with Indigenous collaborators that focus on sensitivity and best practices for the possibility that students working in a laboratory might encounter human remains.

In addition to collaboratively developing more expansive and culturally sensitive care practices for animal remains—both contemporary and archaeological—zooarchaeologists should also be attentive to the differing needs of the people who enter laboratory and collections spaces. Indigenous collaborators, consultants, elders, museum professionals, researchers, employees, students, interns, volunteers, visitors, and others may have spiritual, emotional, and psychological needs when interacting with or being in the presence of the remains of certain animals, sacred animals, or animals in general; sacred, funerary,

and cultural items that may incorporate animal parts; and human Ancestors. Providing a safe working environment should not entail physical safety alone but also emotional, mental, and spiritual well-being. Care-based practices in zooarchaeology should attend to not only the remains of animals in our care but also the needs of the people who enter the spaces that house them.

Discussion and Conclusions

In many ways and for many reasons, zooarchaeology is uniquely positioned to contribute to ongoing efforts to decolonize archaeology and anthropology. Not only does the subject of zooarchaeology create opportunities for considering non-Western ontologies and modes of relationality between animals and people, but arguably, North American zooarchaeology *needs* to decolonize and to engage Indigenous perspectives and Indigenous science. So long as North American zooarchaeology continues to operate solely within a scientific framework originating from and developed within a nearly exclusively Western, Euro-American approach, it arguably cannot *fully* reconstruct past human–animal relationships in a Native North American context. Zooarchaeology continues to carry the legacies of its parent disciplines. Coalesced within archaeology—the progeny of anthropology, itself birthed in the so-called “Enlightenment” and colonial expansion of populations and ideas—the tendrils of zooarchaeology’s framework of knowledge production lead back to and are anchored in the historical legacies of the development of the Western academy, whether we are actively aware of it when we conduct our research or not. Especially in the Native North American context, any portrait of the human–animal relationship produced only within the confines of Western ontology and epistemology will always be inherently incomplete at best. Maintaining this status quo also contributes to the ongoing exclusion of Indigenous voices from science.

Major and important steps have been taken by a variety of zooarchaeological scholars in the last several decades in repositioning animals as subjects, and certainly some of these have engaged Indigenous scholarship (e.g., Davis and Krupa 2022; Fitzpatrick 2019, 2022; Ward et al. 2024). Although perhaps intellectually stimulating, it is not enough to simply bring posthumanism, its intellectual relatives (e.g., the animal turn), and associated concepts (e.g., relational ontology) to bear on zooarchaeological research. Though perhaps avant-garde in the historical moments of their introduction to the Western academy, they themselves are now well established and accepted theoretical turns that in many cases (though certainly not all) continue to minimize the contributions of Indigenous thinkers and claim as their own supposedly novel ways of reframing academic research (see Todd 2016). Moving toward decolonizing North American zooarchaeology will require a commitment to engaging with, crediting, and elevating the work of the many Indigenous scholars, activists, collaborators, and thinkers whose work has driven the decolonial project.

In this article, we have provided seven recommendations for how zooarchaeologists working in North America today might begin to contribute to the decolonial project. We emphasize here that plurality is key; as stated above, the work of decolonization is immense, and not all approaches are available to or equally productive for all scholars. Decolonization is both individual and institutional. It is collaborative. And it is diverse in the shapes that it takes and spaces that it fills. What unites all seven of our suggested interventions is a commitment to pushing the boundaries of dominant, prevailing, Eurocentric frameworks of knowledge production by challenging some of their underlying tenets, assumptions, and practices. Another theme of our suggested interventions is the immediate need for consultation and collaboration with Indigenous communities. We wish to emphasize that although several of our interventions can be taken up immediately by zooarchaeologists, others will require decisions made through consultation, or better yet, collaborative efforts to develop new language and terminology as well as empathy-based, culturally sensitive laboratory, storage, and collections care guidelines and practices.

Our first suggested decolonial intervention into North American zooarchaeology calls for the acknowledgment that in many non-Western/Indigenous relational ontologies, animals are subjects, not objects. The historical tendency of zooarchaeology to see animals as objects for consumption ignores the active role that they likely played for a great number of past societies. Zooarchaeologists should continue to find ways to consider animal agency in their research and to reposition animals as subjects in

mutually constructed relationships with people, other animals, and other beings. Doing so challenges ontological anthropocentrism, a key component of Western ontology.

Our second suggested intervention is to develop being-centered terminology that recognizes the animals in archaeofaunal assemblages as once-living beings. Related to this, our third intervention suggests that the construction of osteobiographies for animals found at archaeological sites provides one way to refocus attention on the individual animal, rather than to allow the disarticulated nature of the majority of faunal assemblages to obscure the reality of animals' "complex relational livelihoods" (Tavella 2024:35).

Our fourth intervention requires acknowledging multiple truths about so-called cultural taxonomies: (1) taxonomies from non-Western, non-European contexts are scientific in that they provide ways of categorizing the world based on observation and experimentation, just as scientific (Linnaean) taxonomy does; (2) Linnaean taxonomy itself is, like all taxonomies, a cultural one born from a specific geographic, religious, and cultural context. Although scientific taxonomy provides an important structuring framework for making zooarchaeological identifications, its extension into interpretation should be questioned. The categories salient in scientific taxonomy may not have had relevance to Indigenous people in the past. Zooarchaeologists can and should strive to develop better understandings of alternative ways of conceptualizing animals through consultation and collaboration with appropriate descendant communities.

Our fifth intervention calls for consultation at a minimum and collaboration as best practice regarding the analysis, storage, and disposition of archaeofaunal collections. Consultation and collaboration provide important opportunities for tribal needs and interests to influence and determine the goals, questions, and outcomes of zooarchaeological research. They provide an extremely promising, exciting, and fruitful path forward, both in terms of what can be learned about past human–animal relationships and with respect to increasing Indigenous sovereignty over archaeological data and materials.

Our sixth intervention regards the ways that zooarchaeologists can contribute to the practice of NAGPRA. Zooarchaeologists can assist, alongside human osteologists, with the review of faunal collections for the remains of Ancestors. Furthermore, they can assist museums and other collections facilities in assessing which components of a faunal collection should be prioritized for consideration for repatriation.

Finally, our seventh decolonizing intervention into North American zooarchaeology involves the development of laboratory protocols and collections care practices centered on principles of empathy, respect, humility, and cultural awareness and sensitivity. Signage that signals the presence of culturally sensitive taxa and the possible presence of the remains of human Ancestors is easy to implement. Individual animals in comparative collections should be stored in ways that reflect their whole beingness, rather than as isolated crania, postcrania, and other parts. "Collaborative care" approaches (Ward et al. 2024) can be developed with Indigenous communities and applied to both contemporary comparative collections in zooarchaeology laboratories and archaeofaunal collections.

We have argued that zooarchaeology is an extremely fruitful arena in which to make contributions to the larger decolonial program in archaeology and anthropology. Our goal has been to provide concrete recommendations for how zooarchaeologists, especially those working in North America, might contribute to the many and diverse ways that scholars across multiple fields are addressing decolonization. Moving forward, we are hopeful that each reader will see in this article at least one or more recommendations that seem achievable in their own work. We also hope that other zooarchaeologists will choose to elaborate on the implementation of some of these recommendations, provide successful examples, or offer additional interventions. We have no doubt that as decolonial efforts continue—in archaeology, anthropology, and beyond—new and exciting possibilities will emerge for how zooarchaeologists can participate. Ultimately, we believe that an actively decolonizing zooarchaeology will result in much richer understandings of past human–animal relationships and a more equitable construction of narratives of the past.

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Notes

1. We are mindful that decolonial efforts must be aware of and responsive to the specific histories and practices of colonialism of a given place.
2. Even this terminology for Europe and its colonies is representative of these colonial histories and ideologies. England and Europe are “the West” in relation to “the East/the Orient,” but they are in fact east of the Americas. It also erases all of the cultures in the American hemisphere by including it in the European “West/Western” category (for more discussion, see Clancy and Davis 2019:173–174).
3. For example, a small number of zooarchaeological projects have focused on Indigenous food sovereignty (e.g., Gruntorad 2021; Moss 2020).
4. Within zooarchaeological research, there are generally three stages: identification (of animal remains), analysis (of data), and interpretation (Reitz and Wing 2008:153).
5. For more discussion on animacy within the social sciences, see Chen (2012); specifically within museum collection contexts, see Matthews (2016).
6. For a discussion of these terms and their value to understanding social practice, see Fladd et alia (2021).
7. The use of the term “folk taxonomy” is common in ethnobiology, and its basic definition as a culturally shared, hierarchically organized system for classifying plants and animals is attributed predominantly to Berlin and colleagues (Berlin 1992; Berlin et al. 1973). Because of the connotations of the word “folk” as traditional, lay, and representing belief and opinion rather than fact, we prefer the term “Indigenous taxonomy,” which has also been used to describe Indigenous systems of recognizing and organizing the world.
8. Current practices around traditional knowledge (TK) and cultural sensitivity labels in museums may be a helpful reference. See, for example, <https://localcontexts.org/label/tk-culturally-sensitive/>.

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