Community-Engaged Archaeology and the Question of Rigor

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This paper seeks to define rigor within an expanded concept of science that is compatible with community-engaged archaeology. Much of the harm that archaeological research has caused for disenfranchised communities over the past century and more relates to archaeologists' hidden imperialist and colonialist agendas. These motivations in turn shaped archaeological knowledge production, cast inaccurately as scientific and thus neutral. For that reason, this paper begins with a discussion of researcher positionality and how that can intersect with various motivations. It provides an overview of the veins of motivation for archaeological research and identifies the commitments that community-engaged archaeology should center. Next, a concrete example demonstrates the relationship between accountability structures and research outcomes. Problematic and low-accountability representations of the past have implications for the present, and in particular for those who live near archaeological sites or are thought to relate to them in specific ways. In order to counter the effects of traditional archaeological practice in a responsible way, community-engaged archaeology can be seen as an interdependent science conducted with and for stakeholder communities with the objective of democratizing access to processes of data creation and interpretation. The rigor of such scientific activity can be demonstrated by its honesty and attention to researcher motivations, data interpretation, and the social context within which research takes place.

Keywords: interdependent science, researcher motivation, knowledge production, positionality, care

A perception exists among some archaeologists that community-engaged research projects relax their standards of methodological rigor in terms of disciplinary field and laboratory practices. On the other hand, archaeologists engaged in collaborative and participatory research *with* and *for* stakeholder communities indicate their continued commitment to rigor in both method and interpretation. Biological anthropologist Michael Blakey (1987) points out that the collection of precise laboratory measurements, often seen as a rigorous approach, easily lends itself to manipulation during the data interpretation phase of research, in support of problematic and erroneous prevailing social views. A more rigorous approach to scholarship is one in which those involved in research honestly share their biases, positionality, and motivations for study. With such assessments and the research goals in mind, precise measurements and identifications (of artifacts, soils, plant remains, etc.) can be made alongside other, more holistic methods of information gathering, and considered within an analytical framework less subject to hidden manipulation by dominant social groups. Finally, a rigorous approach to research involves understanding the social contexts in which it takes place.

Positionality

As a young person, I became interested in archaeology in part due to museum exhibits and books I read that described Maya archaeology, in particular, as the study of ancient cities hidden in the jungle, in the process of being discovered. However, in my undergraduate studies I came to
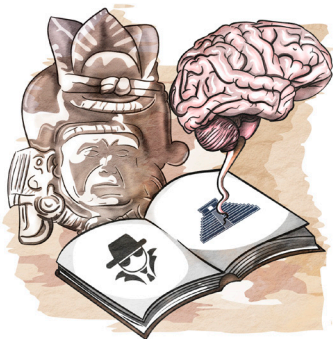
question the notions of "discovery" and also "abandonment," recognizing them as problematic terms that divide people living in areas where archaeological research takes place from their ancestors and heritage places. I became aware of archaeology's history of benefiting from such divisions, which have facilitated archaeologists' claims of authority over sites. By the time I started graduate school as an advisee of Patricia A. McAnany, I wished instead to participate in archaeological research conducted with and for communities living near archaeological sites in order to repair such divides and organize for positive change.

The story of my burgeoning interest in archaeology is not unusual. Research by Laura Heath-Stout (2019) has demonstrated that white and middle-class (categories with which I self-identify) practicing archaeologists are commonly attracted to the field through childhood experiences with books and museum visits. Other practitioners she spoke with, especially those of color or from working-class backgrounds, became interested in the field at the college level due to professors that actively mentored them, connecting them to resources and opportunities. Heath-Stout's work demonstrates that patterns exist in student motivations to pursue archaeology based on their positionality in relation to prevailing social structures. As Gabby Omoni Hartemann (2021:2) has argued, while referencing the work of Heath-Stout, as well as Maria Franklin and colleagues (2020), "archaeology is still globally a predominantly white and cisgender field of knowledge," and more specifically, "a field that directly favors male, western, heterosexual, able-bodied, urban, middle-class people in its disciplinary mechanisms of knowledge production" (see also White and Draycott 2020 on this topic). Scott Hutson and co-authors (2020)

Vein of Motivation	Specific Examples
Imperialist, colonialist, nationalist	Gain control over land/people/artifacts/knowledge
	Interest in understanding or identifying with the "other"
Career advancement	Achieve professional status by exceeding expectations
	Maintain control over sites/artifacts/interpretations
Intelligence and espionage	Monitor foreign politics and defense
	Further objectives of the home country
Disciplinary and institutional	Produce highly regarded scholarship and students
	Contribute to understandings of past human behavior
Justice and sovereignty	Learn about and care for one's own heritage
	Build capacity within one's own community or nation
Solidarity and advocacy	Contribute to community efforts and discussions
	Facilitate archaeology for the benefit of another group
Public engagement and relevance	Search for past answers to contemporary problems
	"Make the world safe for human difference" (Benedict)
Personal enjoyment	Intellectual stimulation of problem solving and analysis
	Alignment of work with personal convictions

Table 1. Range of motivations for conducting archaeological research.

join their anthropological colleagues (Berry et al. 2017) in discussing how researcher positionality influences opportunities for meaningful collaboration. Tiffany Fryer (2020) has also written insightfully about researcher subjectivity and positionality in archaeological practice. In other venues she has pointed out that a new generation of students from diverse backgrounds are drawn to archaeology not because they think it's cool, but because they are intrigued by what archaeology might be able to help accomplish for the communities with which they identify.

Motivation

Clearly, motivation can be closely linked to positionality. This section outlines the range of motivations for archaeological research (Table 1). These motivations are by no means exclusive. That is, many archaeologists are motivated by two or more of the veins listed in the table, and they may alternate in importance depending on the situation. As just discussed, a researcher's social position influences their motivations and approach, a point further addressed by science studies and standpoint theorists (e.g., Blakey 1987; Collins 1990; Haraway 1999; Harding 1986; Smith 1990; Wylie 2003). In addition, each participant in a research team has their own mix of motivations, which interact variably over the course of archaeological research.

First on the list is the **imperialist, colonialist, and nationalist vein** of research motivation (e.g., Trigger 1984). This vein is listed first because it entailed some of the original, root motivations for archaeological research prior to, and continuing throughout, the professionalization of the discipline. Imperialist and colonialist motivations can entail a quest for access to and control over sites, artifacts, historical narratives, and at times the people and land located nearby. They can also involve a desire to document those categorized as the "other" (Spivak 1985). Nationalist research, on the other hand, can originate within centers of imperial power or outside of them, and in many cases, such as within the countries of Latin America, it involved a direct response against

imperialist research. Nonetheless, the nationalist motivation is grouped here with imperialist and colonialist motivations because all fall into a broader umbrella category of practitioners serving the interests of the nation-state.

For any designated field, there exists the motivation of **career advancement**, which in academia involves achieving "scientific competence *and* social authority" by exceeding expectations, demonstrating expertise, and gaining wider attention (Knorr 1977:670, building on Bourdieu 1975). In archaeology, reflexive consideration of how the discipline has been shaped by this "structure of rewards" that values specific products and social relations, within wider political contexts, became more prominent in the 1980s (Wobst and Keene 1983:81; Gero et al. 1983; Pinsky and Wylie 1989; Tilley 1989). Career advancement in archaeology at times corresponds with a desire to maintain control over or at least get credit for research conducted at a specific site or within a region, and related interpretations. In this way, the career advancement motivation in archaeology can intersect with the previous motivation listed in the table.

The **intelligence and espionage** vein may sound unlikely, but in fact many archaeologists in the Maya area and elsewhere throughout the 20th century pursued intelligence work alongside their archaeological endeavors (more on this below; Sullivan 1989). This motivation is grouped with the previous two because all three have historically intersected and fed into each other in significant ways based on national objectives, funding opportunities, and interpersonal as well as international power dynamics.

Archaeologists pursue **disciplinary and institutional** advancement. This significant and generally well-regarded motivation can entail striving to produce the highest quality scholarship, mentoring students, improving disciplinary practices, and making research outcomes persuasive, interesting, and relevant. It can also include accountability to colleagues. On disciplinary listservs for anthropology and archaeology, it is common to find practitioners arguing that these disciplines are meant to be scientific pursuits, and that the point of the science is to *understand humankind*. They may or may not reject other motivations. These are often scholars who are senior in the field, and who occupy dominant social positions (in relation to categories such as race, gender, sexual orientation, and/or socioeconomic status, among others). That is, they stand to gain through the continuity of current power structures both within and beyond academia. That being said, there are many other scholars motivated to shape the discipline in distinct ways that *they* think would strengthen it.

The next two veins are those that most concern community-engaged archaeology. They can be traced to more recent disciplinary developments and may come into conflict with the motivations previously listed. An archaeologist might be motivated by the goals of **justice and sovereignty**, as they learn about and care for their own heritage. For example, Rachel Engmann discusses her community-engaged research at Christiansborg Castle, in Ghana, as autoarchaeology, in a project called "Slavers in the Family: The Archaeology of the Slaver in Eighteenth Century Gold Coast" (Engmann 2019; Harrison and Schofield 2009). This term is being taken on by other scholars such as Alicia Odewale (2020) in her work in Tulsa. Another example of this would be Indigenous Archaeology as practiced primarily in North America. The next vein, related to **solidarity and advocacy**, involves the motivation to work with a community (with which a researcher may not personally identify) to serve their interests, usually alongside their own. This is a desire to learn

about the past in partnership with those positioned differently in society.

And finally, there is a motivation to ask questions whose answers could **serve the broader public**, by providing longer-term perspectives on topics such as climate change, sustainability, human diversity, and environmental justice (e.g., Dawdy 2009; Kintigh et al. 2014; Logan et al. 2019; Sabloff 2008; Schiffer 2017; Stahl 2020). Projects driven by this motivation may or may not engage communities explicitly; the emphasis of such research tends to be on the dissemination of results, but can also incorporate a collaborative approach. Of course, we also cannot discount the extent to which researchers are motivated by their own **convictions and beliefs** about the world, as well as their **enjoyment** of research and teaching experiences, and the opportunities for travel and lifelong learning that accompany them. Scholars with views that range the political spectrum engage in archaeological research, and their perspectives often shape the questions that they ask. Among the personal motivations to pursue anthropological and archaeological research include the need and desire to support oneself financially, and to do so in a fulfilling way.

Motivation for Community-Engaged Archaeology

In Latin American archaeology, residents of towns proximate to archaeological sites, descendant or not, conduct a great deal of the field and labwork that research requires. In many projects, people living near sites have been excluded from knowledge production and lack access to research results. In community-engaged research, such residents get involved in, and at times lead the design, implementation, interpretation, and presentation of research.

Community-engaged archaeology that collaborates with or is led by community members and works for a community's benefit is centered around **justice and sovereignty** and **solidarity and advocacy** as principal motivations. It can be helpful for practitioners engaging in such research to reflect regularly, both individually and as a group, on their motivations for community engagement and recalibrate as necessary. Other motivations can easily emerge and distract from original project goals, causing conflict between the parties involved. This occurs in particular because every member of a research team has a number of motivations for participating in the project beyond those shared by the wider group, and so each must at times suspend or downgrade their pursuit of personal objectives in order to support project success.

Researcher Motivation and Knowledge Production

Why should researcher motivation interest us, the producers and consumers of archaeological information? Transparency about motivation is crucial because motivation shapes knowledge production. If a researcher's motivation is obscured, the rigor of knowledge production may be unknowable or difficult to discern. This is because, as Blakey (1987) notes, measurements, even when accurate, mean nothing until they are interpreted by the researcher. In turn, the knowledge produced (whether pertaining to the past or the present) can influence how researched and related groups are perceived by broader publics and can shape the opportunities available to them. Because a concrete example would be helpful, I next provide a streamlined account of an instance of imperialist knowledge production to be described in more detail in a forthcoming publication co-authored with Patricia A. McAnany and Adolfo Iván Batún Alpuche (Dedrick et al. 2022).

Sylvanus G. Morley was a spy for the U.S. government during the early 20th century, conducting archaeological research in Yucatán and Central America while collecting intelligence throughout the region about potential German threats (Browman 2011). He was in Yucatán immediately after Salvador Alvarado's implementation of labor reforms resulting from the Mexican Revolution (1915-1918), which improved worker conditions and wages on henequen plantations (Joseph 1982:111). At this time, the U.S. was in dire need of henequen for binder twine, which was used in the harvest of wheat. The U.S.-based International Harvester Company controlled Yucatán's fiber supply indirectly, to the extent that it could dictate henequen prices (Joseph and Wells 1982:71). In addition to advocating for laborers, the Mexican reformers in Yucatán worked to break up International Harvester's monopoly, at times blocking U.S. vessels from entering the port of Progreso, near Mérida. Present in Mérida for this situation, Morley argued in his intelligence reports against the Mexican reforms, indicating that the move away from what many considered to be conditions of slavery was causing the laborers to be lazy, leading them to work only a day or two per week (Harris and Sadler 2003:245-246).

Why mention all of this here? Morley's political views and his intelligence motivation warped his production of archaeological knowledge. Specifically, he naturalized the exploitation of Indigenous peoples through his published archaeological research. In the chapter of his book *The Ancient Maya* (1946) on agriculture, Morley contorted archaeological, ethnographic, and experimental evidence (including many quantitative measurements of yield and other variables) to argue that the average Maya farmer in Yucatán could support a family through just 48 days of agricultural labor per year. His imperialist calculations (which were included through the third edition of the book [1956] but removed from the fourth edition [1983]) depend on a number of indefensible assumptions, including that a family could survive on maize alone. Whether or not the measurements on which his argument was based were accurate and rigorous, Morley found himself motivated to ask the question: what is the bare minimum necessary for these farmers to survive?

Morley's motivation becomes clearer in his disturbing concluding statement: "With so much free time on his hands, the Maya Indian for the last two thousand years has been successively exploited—first by his own native rulers and priests; next by his Spanish conquerors, again both civil and religious; and more recently by private owners in the hemp fields of Yucatan" (Morley 1946:156). He acts as an apologist for those who would exploit the worker, even in his archaeological publications. Morley's motivations to conduct archaeology, which included imperialism and espionage, (mis)shaped the production of archaeological knowledge. That knowledge in turn has real-world implications for those Morley and others sought to characterize in their work.

Implications of Imperialist Knowledge Production

Avexnim Cojtí Ren (2006:14) wrote powerfully about the effects of representations of the Maya written by archaeologists, even when they are not as obviously imperialist as the views expressed by Morley; it is worth quoting her words at length:

"The distribution of historical information is usually aimed at a white, middle-class public, ignoring the fact that Maya people are getting more access to sources such as computerized media, literature, museum displays, and television documentaries in their home countries as well as in other countries around the world. Thus our representation becomes the description of 'the other' to Western society through our mysterious, exotic, ritualistic, and violent life, while Westerners affirm their own identity as a society with modernity, a culture with logic, real history, good moral values, and so on. In short, our past and present life is sensationalised and sold to Western consumers as a newly discovered property (Echo-Hawk 1997). The archaeological image of Maya constructed as the culture of the other affects how non-Indigenous populations, corporations, and government institutions perceive us and treat us, as well as how we perceive ourselves".

Community-engaged archaeology can provide an important antidote to the harm traditional archaeological practice has caused for the people living near archaeological sites by representing their heritage in irresponsible, callous ways, to suit their own objectives. However, for this to be the case, community-engaged archaeologists must be reflexive, accountable, and honest in providing space for discussions and redress of such historical wrongdoings. This process will involve the creative reinvention of archaeological methods, pedagogy, analysis, and publication practices.

Rigor in Community-Engaged Archaeology

Finally, I turn to the question of what this all means for the evaluation of rigor in the study of archaeological sites. Recently, a well-respected scholar speaking at an online conference expressed concern that the move toward community-engaged archaeology had led archaeologists away from a rigorous approach to the laboratory analysis of artifacts and other data recovered from archaeological sites. While I contest the notion enthusiastically in this paper, I can appreciate that there are only so many hours in a day, such that if archaeologists spend more time in conversation with community members and redirect their primary attention to community-led pursuits, that may result in fewer hours measuring artifacts in the laboratory. However, it is possible to make time for and assign team members across diverse tasks; in fact, the greater number of people involved in a community-engaged project may compose a team with broader skills and talents for lab-based activities. As such, I do not think that constraints on time or training alone motivate such an argument. Instead, I believe that those with hard-won laboratory expertise are concerned that their skills and accomplishments will be undervalued within a community-engaged archaeology framework. Thus, they raise the issue of archaeology's supposed loss of methodological rigor.

While many archaeologists use the term **rigor** as a concept they value, it usually goes undefined. For some, and probably for the scholar mentioned above, **methodological rigor** refers to a controlled, repeatable, and scientific approach to artifact identification and data analysis. In this model, rigorous methods are presided over by lab directors, or by what Sonya Atalay (2014) and Louise Fortmann (2008) have referred to as "credible knowers," who train select apprentices. As Fortmann (2008:6) points out, "Credibility is frequently aligned with social power. In general, the powerful are designated as credible knowers and set the criteria for identifying who are other

credible knowers". Unfortunately, science produced in this way has often been used to mask imperialism. For example, early anthropological researchers in North America gained most of their insights into cultural diversity through interactions with and information from Indigenous people (and often indirectly from women) who never got equal credit for their contributions—who "were positioned as ethnographic subjects, not as scholars; and as informants, not theorists" (Bruchac 2018:17). White scholars of the time, due to their social standing, became recognized authorities on cultures other than their own. Returning to the notion of replicable labwork, questions we should ask include: how were the items being measured attained? Why and how is this lab and its director empowered to collect and access such information? How will the data be shared? Are these measurements significant, for what, and according to what values? How else might meaningful data about the items be produced?

If rigor is tied to a scientific approach, then demonstrating the rigor of community archaeology may also entail redefining notions of science. Many scholars have worked on this. Returning to Fortmann (2008:1), we

Figure 1. Through participation in PACOY, the author had the opportunity to contribute to the development of the Tahcabo Community Museum, designed by project personnel (Patricia A. McAnany, Adolfo Iván Batún Alpuche, Sarah M. Rowe) in coordination with a committee of town residents, and funded by the Archaeological Institute of America. This photograph shows the author in conversation with a Tahcabo resident the evening of the museum's inauguration on August 23, 2015. Photograph by Patricia A. McAnany.

can consider her term "interdependent science […] done collaboratively by local people and professional scientists". This concept is helpful because it allows for the fact that those who are not professional scientists also can make important empirical observations about the world around them, identify rigorous procedures for data evaluation, note the limitations of hegemonic approaches, and contribute meaningfully to received wisdom (Echo-Hawk 1997; Wylie 2015). For example,

Bautista and Zinck (2010) have demonstrated that Yucatec Maya farmers maintain a soil classification system that is in some respects more accurate than, though similar to, the World Reference Base for Soil Resources. In my own research, which took place as part of the Proyecto Arqueológico Colaborativo del Oriente de Yucatán (PACOY; co-directed by Patricia A. McAnany and Adolfo Iván Batún Alpuche; Batún Alpuche et al. 2017; McAnany et al. 2021; Figure 1), residents of the town of Tahcabo, Yucatán, reframed data interpretation in two important ways. First, through interviews with town residents about how they make cultivation decisions, they demonstrated the diversity of variables that contribute to what they choose to grow and the extent to which humans exist within webs of landscape relationships, all of which contribute to farming outcomes (making a theoretical intervention; Dedrick et al. 2020). Second, Tahcabo residents' consistent enthusiasm for the annual town fair in honor of the patron saint of San Bartolomé (Figure 2), and their staunch conviction that these events constitute heritage, made me realize that some of the patterns I had noted in the archaeological datasets likely reflect the historical nature of such practices (revealing an analytical oversight). These and many other examples demonstrate the significance of local, Indigenous, and descendant knowledge for advancing science and building a more just future (Douglass and Cooper 2020).

Figure 2. Image of the town saint, San Bartolomé, prepared for the procession during the Tahcabo fair in 2015. Photograph by Patricia A. McAnany.

Figure 3. Residents of Tahcabo have expressed concern about the rate at which young people in the community can speak Yucatec Mayan language. For one week each summer of 2016 and 2017, with the support of PACOY, teachers Lic. José Miguel Kanxoc Kumul, Lic. Alex Tuz Bacab, and Mtra. Lourdes Chan Caamal, graduates of the degree program in Maya Linguistics and Culture of the Universidad de Oriente in Valladolid, Yucatán, taught concurrent language workshops in Tahcabo for three levels of students. All three contributed their expertise to the project in other ways as well. Photographs by Amanda Brock.

In addition, the term "interdependent science" suggests mutual accountability. This takes us back to the motivations of archaeologists, each of which could be re-cast in terms of who archaeologists are accountable to. Returning to the Morley example, he was apparently accountable to the U.S. government and presumably his own scientific colleagues (who also, for the most part, hailed from the United States). He obviously did not see himself as accountable to the farmers he wrote about, and his work would have been more accurate if he had been. When one person in what could be called a controlled environment, or perhaps a low-accountability environment, is entrusted with research, it is less likely that their weaknesses and errors (of identification or interpretation) will be made apparent and resolved collaboratively. Both Fryer (2020) and Scott Hutson (2010) have written, in contrast, of relational archaeology that involves ethical engagement with stakeholders.

Quetzil Castañeda (2014:81-82), Hale (2008), and others (e.g., Gero et al. 1983) also argue for the importance of understanding the sociological contexts of research to achieve a scientific and rigorous approach. Castañeda (2014:81) specifically indicates that an analysis of research contexts includes "what archaeology does and what it accomplishes in the lives of the persons and communities involved in archaeology on the ground". As he says, "It would be better science to take account of the conditions that shape if not determine the production of knowledge" (Castañeda 2014:81). Community-engaged archaeology attends more carefully to these dynamics and the political environment in which research takes place than what we might call "conventional research". To engage in archaeological practice that is helpful and interesting to particular communities, practitioners

must converse with those who form part of a given community about the strengths and challenges they face (Figures 3 and 4), as well as what they value and how they define their own identities as well as relevant terms such as heritage and community (e.g., Diserens Morgan and Leventhal 2020; Zimmermann et al. 2020). In this sense, too, community-engaged archaeology is more scientific. However, if the term rigor is not expansive enough to be relevant to a broader conception of science (i.e., as signifying the use of thoroughly examined data collection and interpretation practices), then it could be replaced with equally valuable notions of working carefully and well (e.g., Supernant et al. 2020).

Conclusion

The research that archaeologists conduct, especially that involving our own or others' heritage and culture, requires a great deal of care. If a researcher's motivations influence their studies and knowledge production, and one's positionality influences one's motivations, then

Figure 4. PACOY events feature traditional dance and music performances that promote use of the Yucatec Mayan language. In 2017, with the support of José Miguel Kanxoc Kumul, PACOY was able to host hip hop artist Pat Boy with DJ Rakalku, Verso Maya and Xi'imbal Bej to perform as part of the celebration event for the second anniversary of the Tahcabo Community Museum. This event was well-received by audience members of all ages. Event flier by Morgan Russell.

who does the research does *matter*. Archaeological research that follows the lead of those whose heritage is being described can at least mitigate against the worst abuses of imperialist knowledge production. Community-engaged research should center the motivations of justice, sovereignty, solidarity, and advocacy when designing research questions and determining the appropriate methods to answer them. As the interpretive stage of research is where things can truly go awry, techniques of collaborative analysis will ensure rigor and accountability.

With more people involved in research, it is easier to identify personnel and teammates with real dedication, talent, and developing skill in specialized research areas (Figure 5). A larger team

Figure 5. Excavation in progress at a colonial residential area in Tahcabo. One goal of the excavation strategy was to ensure that each team member had the opportunity to participate in all aspects of the work, including operating the total station and recording maps and field notes. Photograph by Patricia A. McAnany.

also requires a more standardized approach to data collection and analysis that supports scientific rigor, even when defined at its most rudimentary level (i.e., precise and replicable measurements). Just as important as increasing the accessibility of archaeological practice and method, however, is expanding the kinds of knowledge considered valid and thus the people subsumed within the category of "credible knowers". Archaeologists must trust and share power with local experts who have a stake in how their communities and landscapes are represented. Once involved in the archaeological process, such knowledge producers should be credited in research products in more creative ways than has been accomplished so far.

Alongside this democratization of knowledge production, archaeologists will need to develop pedagogical tools to ensure that opportunities are widely available to learn various techniques deemed important for answering archaeological research questions. Well-equipped laboratories, comparative collections, and knowledge banks should exist in the places where research takes place, rather than being found primarily in historical centers of imperialist power.

Overall, archaeologists who strive for rigor can commit to evaluating and being transparent

about their positionality and motivations for research. They can learn from collaborators about the political and social environments in which research takes place and strive to understand disciplinary histories and contexts that continue to influence how data are produced and interpreted. Community-engaged archaeologists can take a more rigorous approach by learning from local experts who maintain knowledge that can contribute to or demonstrate the limitations of scientific understanding. By incorporating a larger number of people into research projects during the data acquisition stage and allowing them to participate in various aspects of the process, method standardization becomes necessary, and it is more likely that participants with specific talents and skills will enhance final outcomes. Including diverse constituents of communities in the data interpretation phase of research will discourage the production of archaeological narratives that serve to strengthen current social inequalities. While this approach requires expanded definitions of terms such as *science* and the *credible knower*, it will ensure a thorough vetting process of the knowledge produced and then consumed across contexts.

Acknowledgments

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