Maya Anthropological Archaeology

Edited by

Chelsea Fisher and Arlen F. Chase

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Contents

About the Editors . . . . **vii**

Chelsea Fisher and Arlen F. Chase
Leaving the Quiet Jungle Path: Introduction to Maya Anthropological Archaeology
Reprinted from: *Heritage* **2021**, *4*, 979-984, doi:10.3390/heritage4020053 . . . . **1**

Patricia McAnany
Imagining a Maya Archaeology That Is Anthropological and Attuned to Indigenous Cultural Heritage
Reprinted from: *Heritage* **2020**, *3*, 318-330, doi:10.3390/heritage3020019 . . . . **7**

Julie A. Hoggarth, Jaime J. Awe, Claire E. Ebert, Rafael A. Guerra, Antonio Beardall, Tia B. Watkins and John P. Walden
Thirty-Two Years of Integrating Archaeology and Heritage Management in Belize: A Brief History of the Belize Valley Archaeological Reconnaissance (BVAR) Project's Engagement with the Public
Reprinted from: *Heritage* **2020**, *3*, 699-732, doi:10.3390/heritage3030040 . . . . **19**

Arlen F. Chase, Diane Z. Chase, John M. Morris, Jaime J. Awe and Adrian S. Z. Chase
Archaeology and Heritage Management in the Maya Area: History and Practice at Caracol, Belize
Reprinted from: *Heritage* **2020**, *3*, 436-456, doi:10.3390/heritage3020026 . . . . **53**

Sarah Kurnick
The Contradictions of Engaged Archaeology at Punta Laguna, Yucatan, Mexico
Reprinted from: *Heritage* **2020**, *3*, 682-698, doi:10.3390/heritage3030039 . . . . **75**

Chelsea Fisher and Traci Ardren
Partaking in Culinary Heritage at Yaxunah, Yucatán during the 2017 Noma Mexico Pop-Up
Reprinted from: *Heritage* **2020**, *3*, 474-492, doi:10.3390/heritage3020028 . . . . **93**

Cynthia Ellis Topsey, Anabel Ford and Sherman Horn III
Different Ways of Knowing and a Different Ways of Being: On a Path to Reawakening Legacy of the Maya Forest
Reprinted from: *Heritage* **2020**, *3*, 493-510, doi:10.3390/heritage3020029 . . . . **113**

Kasey Diserens Morgan and Richard M. Leventhal
Maya of the Past, Present, and Future: Heritage, Anthropological Archaeology, and the Study of the Caste War of Yucatan
Reprinted from: *Heritage* **2020**, *3*, 511-527, doi:10.3390/heritage3020030 . . . . **131**

Mario Zimmermann, Héctor Hernández Álvarez, Lilia Fernández Souza, Joaquín Venegas de la Torre and Luis Pantoja Díaz
Collaborative Archaeology, Relational Memory, and Stakeholder Action at Three Henequen Haciendas in Yucatan, Mexico
Reprinted from: *Heritage* **2020**, *3*, 649-670, doi:10.3390/heritage3030037 . . . . **149**

Eleanor Harrison-Buck and Sara Clarke-Vivier
Making Space for Heritage: Collaboration, Sustainability, and Education in a Creole Community Archaeology Museum in Northern Belize
Reprinted from: *Heritage* **2020**, *3*, 412-435, doi:10.3390/heritage3020025 . . . . **171**

Jessica MacLellan, Melissa Burham and María Belén Méndez Bauer
Community Engagement around the Maya Archaeological Site of Ceibal, Guatemala
Reprinted from: *Heritage* **2020**, *3*, 637-648, doi:10.3390/heritage3030036 . . . . **195**

Brent K.S. Woodfill and Alexander E. Rivas
Addressing Problems beyond Heritage, Patrimony, and Representation: Reflections on Twenty Years of Community Archaeology in the Southwestern Maya Lowlands
Reprinted from: *Heritage* **2020**, *3*, 561-586, doi:10.3390/heritage3030033 . . . . **207**

Scott Hutson, Céline Lamb, Daniel Vallejo-Cáliz and Jacob Welch
Reflecting on PASUC Heritage Initiatives through Time, Positionality, and Place
Reprinted from: *Heritage* **2020**, *3*, 228-242, doi:10.3390/heritage3020014 . . . . **233**

Kenneth E. Seligson and Manuel Chi Nah
Mul Meyaj Tía U Betá Jump'el Kaj: Working Together to Build a Community in Puuc Archaeology
Reprinted from: *Heritage* **2020**, *3*, 342-363, doi:10.3390/heritage3020021 . . . . **249**

Jonathan Ferrier, Todd Pesek, Nicholas Zinck, Sharon Curtis, Phillip Wanyerka, Victor Cal, Michael Balick and John Thor Arnason
A Classic Maya Mystery of a Medicinal Plant and Maya Hieroglyphs
Reprinted from: *Heritage* **2020**, *3*, 275-282, doi:10.3390/heritage3020016 . . . . **271**

About the Editors

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Editorial

Leaving the Quiet Jungle Path: Introduction to Maya Anthropological Archaeology

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In her book *Maya Cultural Heritage: How Archaeologists and Indigenous Communities Engage the Past* (Roman and Littlefield 2016), Patricia McAnany urges archaeologists who work in the Maya region (i.e., southern Mexico, Guatemala, Belize, western El Salvador, and western Honduras) "to leave the quiet jungle path" (p. 6)—that is, the mindset where many archaeologists comfortably assert exclusive mastery of the past—"and engage with an archaeological practice that is more uncertain but more inclusive". This place of uncertainty and inclusivity to which McAnany and others steer us is the busy, often fraught, intersectional space of cultural heritage, where multiple and diverse sorts of people command simultaneous and often competing claims to the past.

As more archaeologists working in the Maya region enter this intersection, we are seeing in real time an archaeology that willfully and thoughtfully engages with cultural heritage to better preserve the past, while at the same time yielding new forms of knowledge. Aside from enriching research efforts, archaeological engagement with Maya cultural heritage has proven itself a capable vehicle for social and environmental advances. In addition, heritage programs implemented throughout the Maya region are showing how equitable partnerships with local communities and governments move archaeological research forward, while also contributing tangible benefits on the ground. Collaborative, engaged, and community-based archaeologies offer actionable practices to enfranchise multiple voices, center Indigenous ways of knowing, and work towards decolonizing the discipline. Yet, even with all of these positive reasons that Maya archaeologists should move into the spaces of cultural heritage, relatively few are actually making such moves—and understandably so; while conceptually the case for engaging with cultural heritage may be easy, the on-the-ground employment of such practices is unpredictable, chaotic, and often difficult.

When we issued the call for papers that ultimately led to this collection, we aimed to compile an open-access repository of "on-the-ground" narratives from Maya archaeologists who have positioned themselves, their projects, and their practices within larger discussions of cultural heritage. The assembled collection of articles hopefully both increases the visibility of these endeavors and embraces a frank discussion of the positives and negatives of actual practice, offering a gestalt model of the ground-level efficacy and experience of heritage-oriented archaeology in the Maya region. Rather than focus on the products of their work, we encouraged contributors to emphasize the process—the logistics, the practicalities, and the nitty-gritty—that played out on the ground. How did these approaches spawn new research questions? How did they impact knowledge production? What challenges arose? How were they managed? Additionally, how were practices prevented from entering a neo-colonialist realm?

By contextualizing research alongside a candid and transparent discussion of the surprises, improvisations, and setbacks met along the way, the contributors in this collective enterprise co-create a widely accessible resource meant to catalyze further archaeological

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engagement with cultural heritage work within the Maya region, as well as to provide examples and lessons that may prove to be useful globally. With this spirit, we invited contributions dealing with a range of topics that we were interested in exploring, including but not limited to the following:

- Building and sustaining mutually beneficial partnerships with local and Indigenous communities and governments at all levels;
- Local heritage tourism at archaeological sites;
- Globalized heritage tourism (i.e., UNESCO World Heritage sites) in the Maya region;
- Collaborative protection and conservation of archaeological resources with communities and governments;
- Navigating partnerships with non-profits and for-profits;
- Measuring the mutual benefits and, in some cases, contra-positives of community partnerships over time;
- Collaboratively designing heritage programs for social and environmental goals;
- Modes of cultural heritage programs (e.g., educational activities, workshops, radio shows, cooking demos, and community mapping);
- Development of local cultural heritage centers (e.g., local museums) by and with communities; and,
- Ensuring that foreign and non-local researchers are not neo-colonialists in their approaches to cultural heritage.

We received manuscripts for thirteen full-length articles in response to our call for papers. Perhaps among the most salient themes to emerge from the submissions, briefly summarized below, is that context, positionality, and reflection matter a great deal in heritage-oriented archaeological projects. With that in mind, we offer this context: the papers in this collection were written or revised during the early days of the COVID-19 pandemic. Those were months of great uncertainty and perhaps that uncertainty shades the perspectives offered here. These papers co-create a repository of reflections and narratives of a more uncertain archaeological practice—forays off the "quiet jungle path"—gathered during a more uncertain time and offered towards a more uncertain future.

The thirteen papers collected in this volume include accounts of heritage-oriented archaeological projects from across Belize, Guatemala, and Mexico. We summarize them here in the order they are presented, making thematic connections where possible. We follow these summaries by distilling four key takeaways for future work: (1) focus on process; (2) prepare to address actual, not assumed, community needs; (3) engage in proactive and practical steps to decolonize archaeological practices; and (4) actively address our positionality within local dynamics.

In Patricia McAnany's [1] contribution to this collection, she invites us to imagine a Maya archaeology that is both truly anthropological *and* concurrent with Indigenous heritage concerns. To get there, she says, we have to embrace the fact that archaeological practice and cultural heritage are distinct. Each offers a different, at times contradictory, paradigm for interacting with the past. However, when archaeological practice and cultural heritage are held in productive tension, these "restless bedfellows" together render possible a Maya archaeology that decolonizes its methodologies, enfranchises local communities, and sustains itself into the future.

Two of the papers included here reflect on multi-decade archaeological research and conservation efforts in Belize. First, in the Belize Valley, Hoggarth and her colleagues detail a history of research and community involvement. Second, at the massive site of Caracol, Chase and his colleagues detail a long-term collaborative project that served both research and cultural heritage objectives. In both articles, the archaeologists share how partnerships with the Belize government allowed them to undertake an ambitious program of excavation, conservation, and tourism development. Early initiatives also fostered project cultures oriented towards developing Belize's capacity to steward its own heritage. As shown by these long-term projects, archaeology in the last half century has moved from "basic research to one where research has become intertwined with tourism

and economic benefits that accrue therein" [2] (p. 451) and is now engaged in "training the next generation of archaeologists, heritage managers, and tour guides", making sure "that local perspectives and knowledge are infused into public archaeology in the future" [3] (p. 720).

At the fringes of mainstream and government-sponsored tourism, community-led alternative tourism programs also offer fruitful ground for collaborative heritage work. Ecotourism is a thriving industry in Quintana Roo, thanks in no small part to the cluster of luxury resorts and tourist amenities concentrated along the Riviera Maya. In contrast to enormously popular ecotourism attractions such as Xcaret, a privately owned Maya site and theme park, grassroots ecotourism ventures can create sustainable and direct benefits for Indigenous Maya communities such as Punta Laguna, as documented by Sarah Kurnick. In the Indigenous Maya community of Yaxunah, Yucatán, another kind of alternative tourism—culinary tourism—mingles with heritage politics and archaeological practice. Chelsea Fisher and Traci Ardren relate how globalization has impacted the heritage of a local community by relating how in 2017 a world-renowned celebrity chef hired tortilla-makers and sourced local produce from the community for a high-end pop-up restaurant in Tulum, specifically examining how "neoliberalism and so-called sustainable development" are "inextricably linked" [4] (p.489) with presumably unintended consequences. The community's involvement with the pop-up restaurant transformed the local food landscape that spring—and continues to reverberate globally through a recent Netflix special and an influx of "foodie" tourism, even during the pandemic.

As attention to long-term histories of human–environment interactions continues to grow in the Maya area, partnerships centering environmental heritage offer another template for community-engaged archaeology. Cynthia Ellis Topsey, Anabel Ford, and Sherman Horn III mobilize their "different ways of knowing" to share insights gleaned from their work with the El Pilar Archaeological Reserve for Maya Flora and Fauna, an associated Welcome Center in the nearby town of Cayo, and active educational gardens in both urban and rural settings. Belize's landscape is constantly transforming through deep human relationships with the forest, and "from the diversity of Belizean heritage," the authors say, "a global forest garden emerges with different sources of knowledge generating a vital base for health and well-being" [5] (p. 508).

Archaeologists working in the Maya area tend to assume that local communities will connect with pre-Contact Maya culture as their heritage, but that assumption is often misguided. Many communities more readily identify with the heritage of recent historical events. Through their work in Tihosuco, Mexico, Diserens Morgan and Leventhal discuss the ways that their community heritage project has evolved in flexible response to changing perceptions of heritage within the Tihosuco community; through these reflections, the authors share how their collaborative project is "working to create a kind of heritage engagement in the region that centers on people's relationships with anti-colonial movements, such as the Caste War, while also promoting small-scale economic projects and future cultural development" [6] (p. 516).

Mario Zimmermann and his colleagues address similar dynamics at the ex-hacienda San Pedro Cholul in Yucatán, where the heritage of the state's Gilded Age (ca. 1860–1915) may resonate more strongly with present interests than pre-Contact history; they show how archaeology and collaboration empowered the descendent community to assert their own perspectives on the region's cultural heritage. Likewise, while many communities in the Maya archaeological area identify as ethnically Maya, many do not. In Belize, the national heritage discourse emphasizes the pre-Contact Maya, while Creole people—who trace their ancestry to Europeans and enslaved Africans brought to Belize as loggers during the colonial period—are largely absent. Eleanor Harrison-Buck and Sara Clarke-Vivier examine their experiences running a Creole heritage-oriented project and community museum with the Creole community of Crooked Tree, Belize: "In heritage-oriented archaeology projects, collaboration cannot happen after the fact, and it is never peripheral to the work; it is the work" [7] (p. 430).

Throughout this collection, authors point out that community-engaged projects must be ready to contribute towards actual community needs, even if those needs fall outside the boundaries of archaeology. This is particularly apparent in two papers from projects working in Guatemala and the southwestern Maya lowlands. Preserving cultural heritage is a priority for members of the Ceibal-Petexbatún Archaeological Project, but so too is mobilizing to improve local economic conditions in the face of land grabbing and deforestation; Jessica MacLellan, Melissa Burham, and Maria Belén Méndez Bauer recall their experiments in creating economic opportunities for a community near Ceibal called Las Pozas, pointing out that flexibility and communication are key to creating lasting economic benefits for local communities. Similarly, Brent Woodfill and Alexander Rivas contribute a chapter reflecting on the role of community-engaged archaeological projects in regions facing severe systemic problems. Indigenous communities in Guatemala and across the border in Chiapas often cannot prioritize heritage work given the precarity of provisioning even basic needs such as clean water, medicine, and farmland. Woodfill and Rivas [8] (p. 562) "believe that archaeologists better serve these communities by being a transient (for even multi-year investigations must end) toolkit to address issues and problems of *their* choosing" by leveraging privilege and access to advocate for communities whenever possible.

Because engaged archaeology and heritage-oriented work rely so much on interpersonal dynamics, introspection is essential. Reflection is a core theme across the articles in this collection. Scott Hutson and his colleagues show that heritage projects are shaped not just by the interests of local stakeholder groups, but also by the positionality (e.g., gender, sexuality, class status) of the archaeologists involved: "For us, part of increasing democracy was to recognize the partiality of our own perspectives and not let our habitual standpoints silently guide decisions about running an archaeology project" [9] (p. 234). Kenneth Seligson and Manuel Chi Nah offer a collection of narrative vignettes, comparing through stories their perspectives on collaborative archaeological work. The dialogue shared here is an invitation to realistic introspection for all heritage-oriented archaeologists.

A decade ago, reflecting on community-oriented archaeology in 2011 (in the book *Global Public Archaeology*, edited by Matsuda and Okimura for Springer), Ann Pyburn (pp. 15–16) wrote:

> "(M)ost archaeologists underestimate the amount of community oriented archaeology that was done and the degree of commitment and intellectual rigor applied to public outreach before the present generation . . . What has always been true, and is still true to a significant extent, is that community engagement has shared the low status in academic circles of applied anthropology or sociology and in many quarters is still generally not considered to be archaeology at all. Consequently most of what has been done remains an unremarked and unpublished part of archaeology's oral history."

Later in that same essay, Pyburn listed out some of the published studies that did demonstrate archaeological engagement with heritage. Stepping back, she observed, "The accumulated wisdom of all these efforts is considerable, but the emphasis still tends to be placed on the originality of each study rather than on increasing a useful bank of knowledge" (p. 18). This collection of papers addresses Pyburn's critiques by carving out a space for candid discussion of what has, and has not, been working in our own engagements with heritage-oriented and community-based archaeology. We hope that this collection of articles becomes part of a growing "useful bank of knowledge" that anchors in the academic literature *where we were* and points to *where we might go* from our present stasis. With that in mind, we conclude our introduction to this collection with four takeaways distilled from these thirteen articles.

First, heritage-oriented archaeologists are encouraged to focus on process, not on end products. True community engagement cannot be forced, but rather unfolds when archaeological projects do the work of nurturing sustained relationships, upholding commitments, and maintaining clear and open channels of communication. Focusing on process opens

the door for more equitable and inclusive archaeologies; when a project abandons as its top priority one-sided conceptions of efficiency, it frees up space for more intentional conversations with all stakeholders about how decisions will be made and what matters to community members. Some heritage-oriented archaeological projects began with this focus on process built in from the start; others are retrofitting it into their operations. Wherever we are as individuals across that spectrum, we need to attend not only to how our own practices can prioritize process, but also to how our academic systems (e.g., tenure and promotion; expectations for and structure of dissertation projects) can be reimagined to better support process-focused archaeology.

Second, the articles in this collection urge archaeologists to prepare themselves to address actual community needs. Community needs should not be assumed, should not be fabricated based on our own interests, and should not be regarded as static—determining needs should be an ongoing conversation with community members. This also means that engaged archaeologists must be ready to take on community "asks" that are not strictly archaeological (nor perhaps what we had originally envisioned when we wrote the "Broader Impacts" section of our grant applications). Attention to context is key. Did a celebrity chef suddenly start hiring locals? Do local tour guides have up-to-date training? Did farmers all just lose a harvest? Is land grabbing starting to encroach on local landholdings? Would people really rather be learning English than Maya hieroglyphs? When communities self-determine their own needs and interests, heritage-oriented archaeologists must listen actively and prepare to respond in concrete ways.

The third takeaway is to engage in proactive and practical steps to decolonize archaeological practices. In her chapter, McAnany [2] (p. 322) urges heritage-oriented archaeologists "to work proactively to ensure that descendant/local communities have a right to exercise authority over decisions regarding their heritage. When archaeologists work to safeguard this process, we engage in methods otherwise known as decolonization". The Tihosuco Project is explicitly attuned to anti-colonial movements and drawing upon reflections published in *AP3A* (2020, Vol. 31) by Tihosuco Project member Tiffany C. Fryer (p. 27), we might step back and ask ourselves how the "members of each of the participating organizations" in a heritage-oriented project can "act jointly to advocate for and support spaces for (community members) to assert their rights to historical self-representation"? The frank discussion of efforts and experiments described in this collection offer a humbling sense of the long journey still ahead in decolonizing the discipline of archaeology.

A fourth and final takeaway for heritage-oriented archaeologists: actively address your own positionality. Honest and open communication with stakeholder groups cannot be realized without attending to our own personal contexts—race, gender, sexuality, class status, age, ability status, etc., and how they influence our archaeological practice. Introspection is part of this, but so too is dialogue and narrative.

The stories shared in this collection show that the assumptions and expectations we tacitly harbor in our personal worldviews can be detrimental to engaged archaeology, especially if not actively addressed. Sharing these narratives openly is critical to building up our "bank of knowledge" as heritage-oriented archaeologists. In most of our publications, the trajectory from research question to research conclusion is smoothed to suggest a linear and orderly progression. This veneer covers the messiness of fieldwork, logistical disasters, and mistakes, but it also conceals the positive surprises, the life-changing meetings and partings of collaborators, and the unexpected turns that lead to discovery. Open sharing of the nitty-gritty details—both the good and the bad—enables archaeologists to learn from each other and, through that co-learning, to move the discipline towards process, responsiveness, and decolonization.

Let us leave the quiet jungle path, together.

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Article

Imagining a Maya Archaeology That Is Anthropological and Attuned to Indigenous Cultural Heritage

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Abstract: Taking an aspirational approach, this article imagines what Maya Archaeology would be like if it were truly anthropological and attuned to Indigenous heritage issues. In order to imagine such a future, the past of archaeology and anthropology is critically examined, including the emphasis on processual theory within archaeology and the Indigenous critique of socio-cultural anthropology. Archaeological field work comes under scrutiny, particularly the emphasis on the product of field research over the collaborative process of engaging local and descendant communities. Particular significance is given to the role of settler colonialism in maintaining unequal access to and authority over landscapes filled with remains of the past. Interrogation of the distinction between archaeology and heritage results in the recommendation that the two approaches to the past be recognized as distinct and in tension with each other. Past heritage programs imagined and implemented in the Maya region by the author and colleagues are examined reflexively.

Keywords: cultural heritage; Maya archaeology; indigenous critique of anthropology; settler colonialism

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1. Introduction

Imagine no possessions
I wonder if you can
No need for greed or hunger
A brotherhood of man
Imagine all the people sharin' all the world. . . .

You may say I'm a dreamer
But I'm not the only one
I hope someday you'll join us
And the world will live as one

John Lennon & Yoko Ono [1]

Here, I take the words of John Lennon and Yoko Ono to heart and imagine a different kind of Maya Archaeology—one that is couched within anthropological and heritage perspectives. In order to get there, I first turn to processual archaeology of the previous century, which is examined for its afterlife and entanglement with the crisis of representation within Socio-cultural Anthropology. The corresponding assertion of rights to self-representation among Indigenous peoples is discussed in terms of its impact on Maya Archaeology. The lenses of archaeology and heritage are argued to be separate but interlinked spaces of practice that exist in tension within each other. I propose that archaeological practice focuses on process, not in terms of theorizing change but as a methodological shift away from a research

practice that primarily is product-focused. As discussed below, this change already infuses research in Australia and Oceania. Borrowing a term from Indigenous scholar Eve Tuck [2] (p. 644) who refers to a "methodology of repatriation," I emphasize an archaeological practice that is attuned to Indigenous and local voices expressed through the idiom of cultural heritage. Reflecting on heritage programs launched by the *Maya Area Cultural Heritage Initiative* and *InHerit: Indigenous Heritage Passed to Present* (www.in-herit.org), I discuss the challenges of integrating archaeology, heritage, and anthropology in the Maya region.

2. The Afterlife of Processualism

Those of us weaned on processual archaeology were trained to theorize process over event, to view "the archaeological record" as a palimpsest of the material fallout from past activities, and most importantly to understand material remains of the past as long-term accretional—rather than episodal—evidence of time's arrow. This sort of logic was deemed to be highly anthropological because, unlike the fetishlike fascination with artifacts and their chronological seriation displayed by our culture historian grandmothers and grandfathers (mostly grandfathers), processualists were more concerned with what artifacts and ecofacts could tell us about living conditions of the past—strategies of hunting, foraging, farming or building cities. Archaeology, we were taught, was about explaining the sweeping changes that had shaped humans and were shaped by them over past millennia.

This process-focused theorizing of the past was remarkably devoid of people and their desires or beliefs [3]. Some processualists adopted a Marxist approach to understanding the past based on the premise that changes in forces and factors of production were easier to monitor archaeologically than were spiritual, ideological, or ontological changes. In retrospect, this premise is factually dubious given the early and overwhelming presence of non-residential, ritual-focused structures in the Maya region and elsewhere [4–6]. To counter processualism, other approaches to understanding the past were proposed, most prominently postprocessualism, which embraced the study of religion and ideology, historical narrative, narrative voice, and the meaning that places of the past have to contemporary people [7]. Likewise, the assertion that gendered understandings of the past were possible [8] sounded an alarm that important constituencies were being systematically omitted from archaeology, both interpretively and at the front end—in the design and execution of research. This reckoning with systemic exclusion foreshadowed the development of Indigenous Archaeology [9].

Contemporary peoples—be they descendants or communities local to archaeological sites—were another neglected constituency that seldom were enfranchised in the archaeological process of research design or interpretation of results. Communities with a strong interest in (and claim to) the material remains left by forbearers simply were not included in the archaeological endeavor beyond the invocation of ethnographic analogy, which constituted a major interpretative strut in places such as Southwestern U.S.A. and the Maya region [10]. Over time, the processual tack morphed into increasingly sophisticated analyses of archaeological materials and environment/subsistence indictors that—while indicative of the impressive maturation of the field in terms of materials science—rendered archaeologists far removed from people of any time period. In the search for deep structures of change, archaeology became an estranged stepchild of anthropology within the Americas.

3. Indigenous Critiques of Anthropology

After the 1970s, the discipline of anthropology increasingly faced what might be called a crisis of representation [11] (pp. 50–68). Socio-cultural anthropologists grappled with the erosion of ethnographic authority that occurred as postmodernism broadsided the discipline. Some questioned whether anthropology—the study of humans in all their spectacular diversity through space and time—would survive the challenge. In some cases, the ethnographic study of "my village" was abandoned in favor of multi-sited ethnographies that focused on a process or topic such as migration that could be mapped across space [12]. Another trend within socio-cultural anthropology was to double-down on a study area but within an activist mode—to trade not in knowledge for knowledge's sake but to work towards

social or environmental justice for/with a marginalized community [13,14]. In the end, the ethnographic method—structured conversation—survived the challenges of postmodernism and spread to other topical concentrations, such as cultural studies, global studies, and religious studies, which lack a disciplinary core of methods. From the perspective of Indigenous and settler-colonial studies (more on the latter below), however, even the ethnographic method was suspected as an intervention too far [15–18].

In the Maya region, the mid-century Harvard-supported ethnographic project in Chiapas, México, led by Evon Vogt [19], cast a long shadow. Explicitly engaged with symbolism, ritual, language, and cognition, Vogt and his students pursued a research agenda that couldn't have been farther from the paradigm of processual archaeology. Due to long-durational characteristics of cultural practices in the Maya region—written texts, ritual practices, intentional deposits to dedicate and terminate structures, unambiguous evidence of social inequality, among others—there existed (and continues to exist) a synergistic relationship between Socio-cultural Anthropology and Archaeology. Vogt, in particular, was intrigued by the robusticity over time of ritual practices that he observed in Chiapas with those that could be inferred from archaeological evidence [20]. Tacking between the past and present proved very productive for Maya Archaeologists (and Art Historians) but did it contribute to allegations that archaeologists were freeze-framing Maya peoples to create the "timeless Maya" [21]?

Working in Yucatán in the tradition of Vogt, socio-cultural anthropologist Astor-Aguilera [22] observed the distinctive relationality that exists between objects and people in which objects are perceived to be *communicating devices* rather than passive artifacts waiting to be measured and described. This ontological turn—focusing on how things come into being and the relationships among beings—highlights epistemic contrasts in a sharp manner and brings one to question whether or not archaeological inference in the Maya region stands a chance of being on the mark without significant intellectual investment from descendant communities.

What would a more equitable research arrangement—in which Indigenous and Western scholars worked side by side—look like? In an effort to move beyond polarized and hierarchical contrasts between the Global North and South, Comaroff and Comaroff [23] consider communities of the Global South (sub-Saharan Africa in particular) as participants in other modalities or "alternative modernities" rather than "developing countries"—the latter a rubric that can be equated with infantilism. A critical part of a differently construed relationship between the North and South involves the ceding of scholarly "air time" to intellectuals of and from the South (as well as marginalized populations within the North) in the form of publication outlets and citation patterns. In the process, important critical voices and alternative perspectives surface [24,25].

In the Maya region, Indigenous scholars such as Juan Castillo Cocom and colleagues [26] question the totalitarian fashion in which Maya culture and identity is represented in Western knowledge as situated within the four pillars of Linguistics, History, Anthropology, and Archaeology. Instead of accepting this framing, Castillo Cocom and colleagues [26] (p. 50) invoke *iknal*, a Yucatec Mayan concept that "translates roughly as an extension of social agency, of *perspective*, *presence*, *action*, and *attitude*" (italics in original). In doing so, they practice a form of "ethnographic refusal"—a term introduced by Audra Simpson [16] in response to centuries of mis-representation of Mohawk life by anthropologists. Such critique is part of the ongoing crisis that Anthropology faces—particularly if the discipline continues to conduct research *on* rather than *with* Indigenous peoples. If Maya Archaeology is to be anthropological, then we need to confront Indigenous critiques of Western representation and the corresponding desire for greater self-representation in both the past and the present.

Simpson [16] (p. 97) further notes the critical importance of self-representation, which goes hand-in-hand with political sovereignty. For Simpson, they are two sides of the same coin: "within Indigenous contexts, when the people we speak of speak for themselves, their sovereignty interrupts anthropological portraits of timelessness, procedure, and function that dominate representations of their past and, sometimes, their future" [16] (p. 97). Another critique of Anthropology is based upon its obsessive focus on "the ethnological formalism and fetishism" of difference [16] (p. 97). Although

many anthropologists cite the study of human difference—cultural, biological, and social—as a central pillar of the discipline, it is easy to grasp that the study of *difference* itself might be seen as suspect by Indigenous scholars such as Simpson who views it as a gloss for white superiority [16]. Given the history of racism against Native Americans in both northern and southern hemispheres, this critical framing of difference should not surprise us.

During a time when the call to decolonize methodologies—particularly in reference to social-science and medical research among Indigenous communities—plays an increasingly visible and prominent role [27], what does it mean for Maya Archaeology to be anthropological? How does the study of archaeology, grounded in landscape and place, adopt decolonial methods that enfranchise and benefit local and descendant communities in the study and conservation of the past? Here, I suggest that an archaeology that is attuned to cultural heritage provides a pathway (or ethnoexodus, as Castillo Cocom and colleagues [26] write) towards a future that is more sustainable and can lead to greater accuracy in archaeological interpretations.

4. Archaeology and Heritage as Restless Bedfellows

Is there such a thing as archaeological heritage? Does this phrase signify an important subset of tangible heritage? In pondering this oft-used term, I found myself consulting the online Merriam Webster dictionary, where the term "heritage" is defined as "something transmitted by or acquired from a predecessor" or "something possessed as a result of one's natural situation or birth." Certainly, archaeological methods are something that we—as archaeologists—inherit from our intellectual ancestors (although not as a birthright regardless of how many times archaeologists profess to have been born with a trowel in their hands). The material remains that occupy our waking thoughts often are not something that was "transmitted by or acquired from a predecessor" although junior archaeologists do sometimes "inherit" archaeological collections housed in museums and university labs—materials collected by predecessors. One can invoke UNESCO platitudes about the universal value of heritage places that are inscribed on the World Heritage list but one needs to tread carefully through that minefield. Although lofty notions about universal heritage sound unassailable, critiques of the UNESCO concept of universally valued cultural heritage emphasize the overtly Western, high-handed, and monument-centric framework within which this concept has been applied (for more discussion and examples from Çatalhoyuk, Turkey and Western Europe, see [28–30]).

A landscape-based approach to heritage is another option. As inhabitants of a landscape that contains material remains of the past, current residents (regardless of ancestry) do—in a sense—inherit those remains and a responsibility towards them, which might include archaeological research linked with conservation. Would this logic still hold, however, if current residents had established themselves through violent take-over of the land and attempted genocide and removal of original residents? At this point, we move into the realm of settler colonialism—which is a form of exogenous domination that entails displacement of and unequal relations with an original population [31] (p. 1). From the vantage point of those who were unsettled and marginalized by 16th through 19th century population dispersals from Europe, claims of settler colonialists to rights of stewardship over the past can ring hollow [32].

Given these complexities, it is probably advisable to view the two approaches to the past—archaeological on the one hand and heritage-focused on the other—as separate but related approaches. By suggesting this, I am not discounting a connection to old places on a landscape that is not ancestral in any sense, e.g., [33]; but I am stating that such a connection should not be called archaeological heritage. Rather, it is closer to the sensibility of cultural heritage, a subject-focused perception of a connection to something or some practice that is rooted in the past. By keeping cultural heritage distinct from archaeological practice, the two can be held in productive tension—as they assuredly are. The focused positionality of heritage can provide a voice and a platform for those who otherwise may be marginalized from archaeological research. Re-centering archaeological practice

in respect to heritage issues opens the discipline to community perspectives on heritage and local priorities for heritage conservation.

In the 16th through 18th centuries, emigrants left a place known as Castile to invade and colonize the Americas (particularly the southern part). As is well-known, they emanated from (and in some cases sought to escape) a place in which there was zero tolerance for religious diversity. Treaty negotiations with original inhabitants of the Americas were not on their minds, contrary to the case with later British colonists to the north. The roughly 300-year colonial period within a region that 20th-century anthropologists came to call Mesoamerica was marked by successive and violent efforts to dispossess Indigenous peoples from their land, strip away any and all political sovereignty, de-legitimize cultural practices (particularly religious beliefs), and erase pre-Columbian history where ever possible. As Veracini [31] (p. 3) points out, the goal of settler colonialism is its erasure—arriving at the point in time at which settlers assume "native" status. Writing from an Indigenous perspective, Sherman Alexie [34] (p. 95) declares that "In the Great American Indian novel, when it is finally written, all of the white people will be Indians and all of the Indians will be ghosts" (cited in Tuck [2] (p. 647)).

A variant on the erasure of settler colonialism is the Latin American myth of *mestizaje* or the notion that European and Indigenous-derived characteristics—everything from genotypes to philosophies of statecrafts—are so thoroughly inter-mixed as to be inseparable [35]. While it is true that the two are inseparable parts of a whole, many Indigenous communities remain distinctively separate spatially, culturally, and tragically economically. Within México, Bonfil Batalla [36] exploded the myth of a cultural heritage that is composed of centuries-old mixing of cultures with the publication of *México Profundo*.

Within Mesoamerica, settler colonialism promoted an intimate, social hierarchy while also engineering dispossession from land and from landscape features that revealed a deep precolonial imprint. This kind of heritage distancing [37] was coded into the educational curriculum beginning with primary schools and continued to ramify relentlessly through adolescence and adulthood. This estrangement from deep heritage as a strategy of settler colonialism is made more obvious by comparison to other places not subjected to settler colonialism—such as China—in which a connection to deep heritage is widely shared, albeit expressed with a range of feelings from deep emotion to casual comment.

The point of this section on the restless intimacy between archaeology and heritage is to urge a critical evaluation of archaeology in relation to cultural heritage and to take the long-term, knock-on effects of settler colonialism seriously. Historically, if not a handmaiden of colonialism, archaeology has been a beneficiary of policies abetted by regimes of settler colonialists, particularly within Mesoamerica. This beneficial relationship expanded as heritage tourism grew through the twentieth century to become a significant part of national economies [35,38]. Corollary to this growth is increasing recognition on the part of archaeologists that, for the most part, Indigenous peoples of Mesoamerica have been estranged from cultural heritage that is linked to landscape. Such estrangement is indicated through limited access to archaeological sites or rights to perform ceremonies within the limits of sacred places that currently are controlled by national or state agencies [39]. Further estrangement happens through commodification of heritage tourism in a manner that provides scant benefit to descendant communities and the destruction of sacred places despite the protests of local communities.

Knitting together the terms archaeology and heritage will not remedy this situation but only prolong the restless nights of these ill-suited bedfellows. A more productive approach is to recognize that archaeology and heritage are two very separate ways of relating to the past and to work proactively to ensure that descendant/local communities have a right to exercise authority over decisions regarding their heritage. When archaeologists work to safeguard this process, we engage in methods otherwise known as decolonization [27]. For all of these reasons, my answer to the question posed at the beginning of this section—"Is there such a thing as archaeological heritage?"—is no. They are two very distinct ways of relating to the past and both have been complicated immensely by factors of settler colonialism.

5. Return to Process within Archaeology

Emphasizing process within archaeological methods (leaving theory aside for the moment) slows things down. Fieldwork becomes a process rather than an event, which allows time for consultation, collaboration, and other kinds of community participation [40,41]. As colleagues in Australia and Oceania wrote decades ago, process-based practice acknowledges that building trust with local and descendant communities is an important part of practicing archaeology ethically and sustainably [42–44]. At the end of a field season, rather than asking each other "What did you find?" or fending off the common query from interested laypersons, "What is the coolest thing you have ever found?", attention might be focused on anthropological questions that probe how an archaeological project is embedded within a heritage landscape or the specifics of how an archaeologist works with descendant/local community members to whom we ultimately are accountable. These concerns are central to our discipline but historically have existed as a shadowy backdrop concealed by the zeal of archaeological discovery.

Reflecting on the process of fieldwork [45] need not detract from archaeological discovery. Rather, the process by which we get to discovery and subsequent co-production of knowledge follows a pathway that is more richly informed due to input from multiple sources. As knowledge about past and current landscapes becomes more routinely co-produced, archaeologists will need to step back from territorial claims on ideas, artifacts, and sites; this may be the most challenging part—ceding some control [more discussion of this in [46].

Within the Maya region, a process-focused archaeology would be more anthropological in three ways: it would reckon with Indigenous critiques of anthropology discussed above, recognize Indigenous authority over research and interpretation, and work with communities to investigate, interpret, and conserve remains of the past (examples provided in section to follow). This kind of practice is not a "move to innocence"—a term that Tuck and Wang [47] (p. 9–28) use to refer to decolonizing efforts that are largely metaphorical and achieve no real or positive change (or in their opinion, do not result in "repatriation of Indigenous land and life" [47] (p. 21). Process-focused methods will change archaeology and greatly benefit local communities. Community benefit, in fact, is a good yardstick by which to measure whether "working with communities" is only the self-congratulatory, avant-garde turn critiqued by LaSalle [48] or represents real change from business as usual.

For several reasons, Maya archaeology is far from embracing what Tuck [2] (p. 644) refers to as a "methodology of repatriation." There are strong headwinds; institutional and structural changes are needed and will take time. Funding agencies—especially the National Science Foundation—need to reckon with the importance of time-consuming processes that render archaeological research more ethical and responsive to community. Tenure-review committees at U.S. colleges and universities need to acknowledge the value of a longer cycle of researcher investment in community and reward such investment with tenure and promotion. Finally, co-management arrangements in which government-permitting agencies share authority over places of heritage with local communities—particularly those within Latin America—need to become the default instead of over-centralized control of the past. The proliferation of community museums within México, and particularly in Oaxaca, indicates that a change in which local communities have increased authority over the representation of their past is reachable [49].

Any effort to bolster Indigenous authority over self-representation is a step in the right direction. Here, the connection with anthropology is woven into the fieldwork process as well as interpretive design. In large and well-funded projects, socio-cultural anthropologists may work side-by-side with archaeologists in cultivating community relationships but the two should assume equal importance. Subjectivities that are expressed through the idiom of cultural heritage or other knowledge systems become another interpretive strand to be braided—as Sonya Atalay [40] (p. 76) has written—into narratives of the past. This pathway is not without conflict and admittedly is more time consuming and uncertain but it is not only desirable on the basis of ethics and social justice, it will lead to interpretive narratives that are better informed. As historian John Hope Franklin [50] noted in reference to the

inclusion of African-American voices in U.S. history, a narrative created on the basis of more than one perspective is a more accurate history.

6. Integrating Archaeology, Heritage, and Anthropology in the Maya Region

Within the last decade or so, the National Science Foundation has nodded towards the need for scientific research to include "Broader Impacts" to society. Archaeological proposals, ostensibly all about the past, are required to show relevance to contemporary issues or challenges. Acceptable relevance might include enfranchising marginalized populations into the research process or disseminating knowledge about the results of archaeological research to communities proximate to a research site. As a reviewer of NSF proposals, I can vouch for the fact that it is rare to see a Broader Impacts statement that is inspired or particularly creative—most of the intellectual "juice" seems to be expended on traditional research design and methods. Why do archaeologists not take "Broader Impacts" to society seriously?

The answer is multi-dimensional. First, lack of competence and creativity in designing plans of broader impact likely is indicative of the nature of training in anthropological archaeology that is offered within the U.S. The rift between archaeology and socio-cultural anthropology in many academic departments throughout the U.S. has left archaeologists ill-prepared to work with people. Second, there is a misconception that community archaeology does not lead to journal publications but assuredly this issue of *Heritage* goes a long way towards dispelling that idea. Finally, archaeologists are uncertain about "getting credit" for time spent cultivating a relationship of trust with a community. While this might be a legitimate concern for graduate students who are "under the gun" to complete their dissertation fieldwork, professionals—at any stage of their career—should expect to make an investment in a place in order to generate a working relationship. Socio-cultural anthropologists engage in decades-long programs of ethnographic fieldwork for just this reason. By abandoning the helicopter approach to fieldwork and taking broader impacts seriously, archaeologists have the opportunity to gain deeper perspective on local landscapes and their inhabitation.

Whether this involves taking Maya archaeology in a more anthropological direction or attending to issues of heritage at field sites, such initiatives—when seated within more process-focused field methods—intensify interaction with local communities (see Hutson et al. in this issue). As discussed elsewhere [11], the solely dyadic relationship between archaeologists and things/places of the past is dissolved in favor of a triadic structure that includes peoples/communities/constituencies/heritage stakeholders (whichever term you prefer) as the third member of the triad. As Charles Hale [13] has written in reference to activist socio-cultural anthropology, this is a complicated and potentially compromising place to occupy. Mistakes will be made and opportunities will be missed but the potential for creating long-term research partnerships is considerable, which makes the investment by archaeologists extremely worthwhile.

An activist socio-cultural anthropologist or cultural geographer may interact with communities about a burning issue such as a land-claim settlement and then move on after the land claim is settled [14,51]. But archaeological sites are fixed on a landscape—they do not move on. They either persist in place or suffer deterioration due to natural causes or purposeful destruction. Because of this fixity, I suggest that the following two matters are of great and lasting importance: (1) accepting the triadic structure of our profession (which includes communities, archaeologists, and remains of the past) and (2) establishing long-durational relationships with communities close to places of archaeological research.

A. Programs of *The Maya Area Cultural Heritage Initiative* and *InHerit: Indigenous Heritage Passed to Present*

Through a combination of grant-writing, donations from private foundations, and support initially from Boston University and then from the University of North Carolina-Chapel Hill, I have had the opportunity to explore variations on this triadic relationship (see www.in-herit.org for details). Explicitly anthropological and heritage-focused, programs based on this triad have encompassed a

range of educational, entertaining, and experiential activities transmitted through radio shows, school workshops, and archaeological excavations. Just about any medium of transmission available in the Maya region has been utilized at some point in time. Some of the most successful programs have been radically out-of-the-box and related to archaeology, sensu stricto, in only the most tangential way (at least that is what I thought at the time). At point of contact, these heritage programs yielded benefit to involved communities, but measuring the long-term impact of these programs is another matter altogether. Frankly, I do not know whether we increased university admittance among young participants or how many archaeological structures—destined for the bulldozer or targeted for looting—were saved. But I do know that the heritage programs were humbling and learning experiences for me and for my staff. These engagements with reality forced us to push against the edge of what archaeologists generally know about communities and their social landscapes.

For instance, community mapping in the Guatemalan Highlands resulted in recording shrines (past and present) along with oral histories of shrine locations. In one community, the information was accepted and placed under seal by the town council due to its perceived sensitivity [46]. Ceding control over such data is antithetical to the goals of archaeology yet (and the irony does not escape me) it was the ethical course of action and one that respected the sovereignty of Indigenous communities.

Another heritage program involved the creation and radio performance (in both Q'eqchi' and Spanish languages) of heritage-focused skits. Coordinated by a Petén-based nonprofit called ProPetén, the idea was to project an ideal world in which K-12 school teachers has resources to teach about the fabulous archaeological sites of the Petén and take students on field trips to Tikal and other sites groomed for tourism (for more details, see [11], p. 115–121). After the *radionovelas* aired, ProPetén convened focus groups in small towns where community members had listened to the radio shows. The transcripts of those focus groups and accompanying questionnaires are very sobering and reveal a large group of overlooked young females who—with extremely limited formal education—were very curious about the old places on their landscape and felt strongly that they should be conserved for future generations. Their voices are marginalized from national and even local discourse. Heritage programs may amplify seldom-heard voices, but converting that amplification into meaningful change in the lives of young rural women is far more challenging, which highlights a limitation of such initiatives.

With the success of the *radionovelas* in the Petén, we decided to expand the idea to the northern lowlands (with changes in the content and language of the radio shows). Since our resources were dwindling, we had to decide whether the script was to be written and performed in Spanish or Yucatec Mayan. Because of our commitment to the survival of Indigenous languages, we chose to broadcast in Yucatec Mayan but, by doing so, excluded a very large Spanish-speaking constituency who either identify as Yucatec Maya but, as children, were not taught the language or do not identify as Yucatec Maya but live in and around Felipe Carillo Puerto (Quintana Roo, where the radio shows were broadcast) and are intensely interested in conserving old places (more details of this program in [11], p. 177–179).

Language, culture, and literacy are entangled in complicated ways that can be under-appreciated. One of our first efforts to boost Indigenous languages was based in the Toledo District of southern Belize. We compiled a small booklet called "Seeing our Ancestors" that was translated into Mopan and Q'eqchi' Mayan. An academician's idea of a "user-friendly" booklet, we generated far too much script with far too few images (a graphic novel would have been far more impactful). The local community—completely conversant in Mopan or Q'eqchi' or both—struggled to read the text in a language they rarely saw in written form.

The heritage programs sponsored by MACHI and InHerit were always grass-roots and tailored to place but nonetheless, there was a tendency to homogenize. After the gifted artist Carin Steen produced a coloring book for young Ch'orti' children with a few sentences of Ch'orti' text on each page, I imagined that we could use the graphics in other parts of the Maya region and simply swap out the linguistic part. Wrong. Images, dress, archaeological sites, and local ritual activities were not generalizable and did not resonate outside of the Ch'orti' homeland. With this realization, I began

to grapple with the cultural distinctiveness of locality within the Maya region, a characteristic that is not surprising to socio-cultural anthropologists. But for an archaeologist—trained to think about The Ancient Maya as a monolithic thing—the gap between contemporary reality and archaeological imaginaries opened into a yawning chasm.

Over time, my research focus shifted to northern Yucatán. I became intrigued by the karst landscape that had been successfully peopled, farmed, and governed until ruptures caused by the Spanish wars of the sixteenth century [52]. The centrality of sinkhole features (*cenotes* and *rejolladas*) to settlement and farming—particularly in the past—is inescapable. The porosity of this karstic terrain also highlights the vulnerability of the underlying aquifer to pollution. More recently and with funding from the National Geographic Society, we have been able to work with middle-school teachers in nine communities around Valladolid, Yucatán, to create a *cenote*-focused curriculum for teachers and interactive experiential learning for students [53]. A workbook—the culmination of the project—highlights the importance of *cenotes* as sources of clean, fresh water that support a complex ecosystem as well as the urgency of their conservation [54]. The workbooks also highlight the visibility of *cenotes* in two of the four known pre-Columbian codices—the Codex Madrid and Dresden.

The middle-school and college-age students who participated in the classroom workshops resulting in the workbook displayed an impressive awareness of the beauty and fragility of *cenote* landforms and of the dangers posed by pollution. On the other hand, few students were aware of the codices produced by their ancestors and stored, for the most part, in European libraries and archives. Although recognized globally as irreplaceable treasures of world heritage, Maya codices do not make their way into Yucatec school curricula. The past five hundred years of settler colonialism has estranged Indigenous peoples not only from their landscapes but also from their intellectual history of book production. There is little space for discussing Indigenous heritage within an educational system that is predicated upon racism and maintaining certain forms of colonial domination. For the most part, history is taught as beginning with the 16th-century arrival of Spaniards and missionaries are portrayed as having worked tirelessly to eradicate the work of Satan (which included painted manuscripts). Time and again, I saw students marvel at the codex facsimiles upon their first exposure to these ancient books. Gabrielle Vail ran workshops on the codices, pointed out the many representations of *cenotes* in the Madrid and Dresden codices, and taught students to identify deities painted on the pages of books produced by their ancestors. Throughout these workshops, the injustice of this estrangement was inescapable. One can be excused for hoping that it is only a matter of time before these students become adults and petition through diplomatic channels to have their books returned from libraries and archives in Dresden and Madrid.

Cenotes are central to cultural heritage in Yucatán. Perhaps my co-director, Iván Batún Alpuche put it best when he described the goal of this bio-cultural heritage program as the repatrimonialization of *cenotes* (returning authority over cenotes to communities as part of their legitimate patrimony or heritage). From his perspective, this program should work towards *cenote* sovereignty or the authority of local communities to manage, conserve, and protect their water supply and associated bio-cultural ecosystems. Of course, no *cenote* is an island unto itself—all are connected to the underground aquifer. This knowledge is deeply seated within Yucatec Maya ontologies and traditional ritual practice and also a central tenet of karst hydrology. As such, it provides a great example of the convergence of different knowledge systems. Thus, the challenge expands; to be effective, a program of heritage conservation must include all *cenotes*. Such a large goal is overwhelming but an important point of this example is that there are heritage-linked issues that are bigger than archaeology. We need to embrace this expansiveness rather than shy away from it.

7. Conclusions

By imagining an anthropological archaeology that is attuned to Indigenous issues of cultural heritage, Maya archaeology shifts into a hybridized practice that blends anthropological emphasis on contemporary people with their perception of things, places, and landscapes of the past. This imagined

archaeology takes account and is respectful of the myriad ways in which the subjectivities of cultural heritage are locally seated and it places local ideas in productive tension with archaeological ideas and anthropological concepts. Such a critical lane shift represents a change from product-oriented goals to process-focused collaborative research. This shift allows archaeology to shed epithets such as neocolonial and extractive while embracing more inclusive and multi-braided approaches to knowledge production. Such a transition also requires attention to a balanced calculus of benefits—that is, attending to who is benefitting from archaeological research. My late colleague Dorothy Holland—a champion of participatory research—often stated that one can gauge how truly participatory a project is by who is seated at the table when decisions are made, deals brokered, and budgets allocated.

This shift also recognizes what I have called elsewhere [11] (p. 5) the triad of agents: archaeologists, local/descendant/concerned communities, and the material remains of the past (aka non-human agents). Instead of the intense dyadic relationship between archaeologists and materials of the past, community-collaborative approaches dimensionalize that space into three dimensions. This shift in geometric form opens a world of opportunities for archaeology in the realms of research design, execution, interpretation and importantly heritage conservation. While there are challenges and uncertainties associated with this evolving epistemology and practice, there also is transformative potential. Here, I have attempted to trace how we got to this place and why the path forward should look very different from our grandfathers' Maya archaeology.

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Article

Thirty-Two Years of Integrating Archaeology and Heritage Management in Belize: A Brief History of the Belize Valley Archaeological Reconnaissance (BVAR) Project's Engagement with the Public

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Abstract: Since its inception in 1988, the Belize Valley Archaeological Reconnaissance (BVAR) Project has had two major foci, that of cultural heritage management and archaeological research. While research has concentrated on excavation and survey, the heritage management focus of the project has included the preservation of ancient monuments, the integration of archaeology and tourism development, and cultural heritage education. In this paper, we provide a brief overview on the history of scientific investigations by the BVAR Project, highlighting the project's dual heritage management and research goals. This background offers the basis in which to discuss the successes and challenges of the project's efforts in cultural heritage management and public engagement, particularly in early conservation efforts, in its training and educational efforts, and its ongoing outreach activity. We emphasize the need to train Belizeans as professional archaeologists and conservators, to serve as the next generation of advocates for Belize's heritage management. We offer some ideas on how research projects can make significant contributions to heritage education and preservation in the developing world.

Keywords: Maya archaeology; cultural heritage; tourism; conservation; education; Belizean archaeology

1. Introduction

As archaeology has progressed as a discipline, a variety of archaeological methods and theories have placed an increasing focus on public archaeology that makes archaeological research more inclusive. The development of post-processualism was particularly important in understanding the need for multivocality in the conveyance of archaeological knowledge to a wide range of audiences and stakeholders. Today, archaeologists recognize that they cannot detach their field programs from efforts to communicate information to the public [1]. This broader focus has also identified tensions between different segments of society, with archaeology often being appropriated by the media, public discourse, national identity building, and the conservators of cultural heritage. These developments are clearly identifiable in Maya archaeology, where continuing archaeological research is used for development

efforts by Mundo Maya countries (Belize, Mexico, Guatemala, Honduras, and El Salvador). Researchers are therefore increasingly tailoring their efforts to navigate the complex processes of building projects that both involve the public and benefit local communities [2].

In this paper, we describe the history of the Belize Valley Archaeological Reconnaissance (BVAR) Project's research and public archaeology outreach programs. As a project directed by Belizean and foreign archaeologists, we recognize the immense responsibility our project has to preserve the cultural heritage of Belize and to disseminate that information to the Belizean public. First, we describe the research and conservation efforts of the BVAR Project's regional archaeological investigations. This history helps to frame the lessons learned by the project's conservation efforts, its training and educational initiatives undertaken over the past 30 years, and our ongoing diverse heritage management programs. Our efforts aimed at identifying the diverse goals and interests of stakeholders are critical for designing a more inclusive project attuned to the needs of cultural heritage management in Belize [3].

2. Project History

Cultural heritage management initiatives have been a major focus of BVAR archaeologists since its inception in 1988, created and directed by Jaime Awe and jointly administered with Co-Directors Julie Hoggarth, Claire Ebert, and Rafael Guerra, and Assistant Director John Walden. A major concern for the project is the protection of cultural resources in Western Belize (Figure 1), which is, in fact, clearly defined in the project's first annual progress report in which Awe and Campbell [4] stated the following:

> "The reason for investigating Cahal Pech were, and are, developmental and research oriented. In reference to the former our objectives were to, (1) halt further destruction of the center, (2) produce a map of the site demarcating an area to be established as a National Park, and (3) obtain the data necessary to publish a preliminary guidebook for use in schools and for promoting tourism. Our research interests were concerned with the diachronic development of the site, plus a study of the architectural, artistic and socio-political relationship between Cahal Pech and sites in the Belize River Valley Region" [4] (pg. 1).

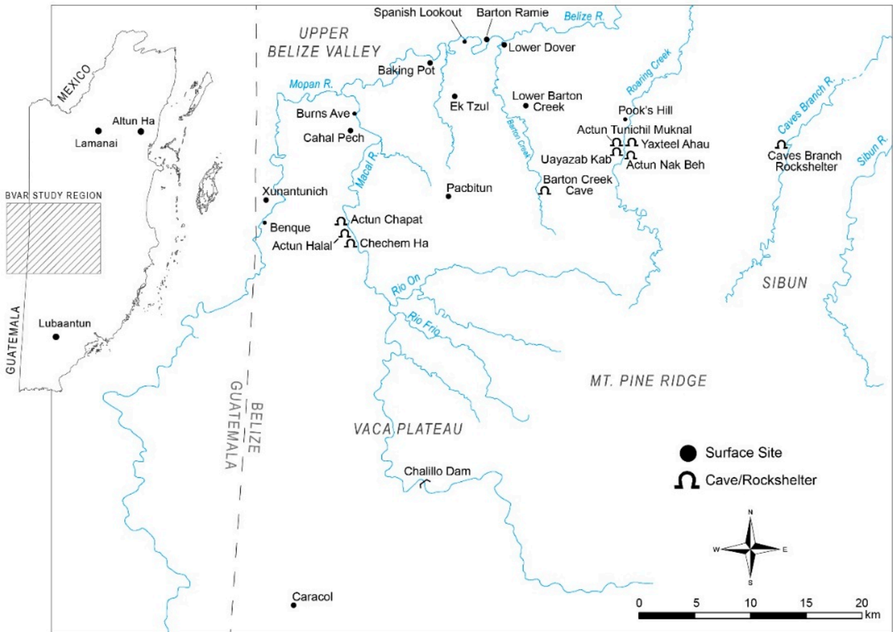


Figure 1. Map of western Belize, showing the locations of BVAR research and conservation projects conducted between 1988 and 2020. Map by C.E. Ebert.

This dual research and heritage management focus has continued to guide the project throughout its history, working at more than 30 surface and cave sites throughout the project's history (Table 1).

Upon the official inception of the BVAR Project, research was focused within the site core at Cahal Pech [4]. Subsequent years saw continuing investigations within the monumental epicenter as well as excavations across the site's periphery [5]. Awe's [6] seminal research offered important information on the Preclassic Maya, establishing the Cunil ceramic complex through radiocarbon and ceramic data, identifying some of the earliest evidence of sedentary villages in the Maya Lowlands dating to ~1000 cal BC, documenting round structures that likely served as performance platforms for Preclassic community ritual, and recording the largest Preclassic figurine collection in Belize. These findings transformed what we knew about the ancient Maya during a time when most research was concentrated on the Classic period. Additionally, development around the modern town of San Ignacio threatened the destruction of peripheral groups around Cahal Pech, so the recovery of archaeological remains in the settlement was also of vital importance for understanding Cahal Pech's political development and decline. To address these dual goals, the project's research efforts were expanded in 1991 to explore the peripheral settlement groups around the site core [7] including the K'ik [8], Tolok [9], Cas Pek [10], Tzinic [11], Zotz [12], and Zubin [13] settlement clusters.

Table 1. History of scientific research and conservation projects affiliated with the BVAR project and its predecessors, including a list of project directors and select research staff leading major projects. BVAR research reports and MA theses/PhD dissertations can be found at www.bvar.org/publications.

Sub-Project Name/Acronym	Year(s)	Sites Investigated	Directors and Senior Staff	Research Report/Publication
Ancient Maya Agriculture Project (AMPa)	1979–1987	Caracol Caledonia Pacbitun	Paul Healy Jaime Awe	Awe, MA (1985) Bill, MA (1989)
	1988–1996	Cahal Pech (site core and periphery)	Jaime Awe Jim Aimers Cassandra Bill Shawn Brisbin Mark Campbell David Cheetham Jim Conlon Sean Goldsmith Gyles Iannone Terry Powis Sonja Schwake Rhan-Ju Song Kay Sunahara James Stemp Norbert Stanchly	BVAR 1988 Field Season BVAR 1989 Field Season BVAR 1990 Field Season BVAR 1991 Field Season BVAR 1992 Field Season BVAR 1993 Field Season BVAR 1994 Field Season, Vol 1 BVAR 1994 Field Season, Vol 2 BVAR 1995 Field Season BVAR 1996 Field Season Awe, PhD (1992) Powis, MA (1996) Iannone, MA (1993) Ph.D. (1996) Goldsmith, MA (1993) Cheetham, MA (1998) Schwake, MA (2000)
	1992–1996	Baking Pot (site core and periphery)	Jaime Awe Jim Aimers Carolyn Audet Jim Conlon Jennifer Ehret Josalyn Ferguson Charles Golden Gyles Iannone Alan Moore Jennifer Piehl	BVAR 1992 Field Season BVAR 1993 Field Season BVAR 1994 Field Season, Vol 1 BVAR 1994 Field Season, Vol 2 BVAR 1995 Field Season BVAR 1996 Field Season Ferguson, MA (1999) Moore, PhD (1999) Audet, Honors (2000) Aimers, PhD (2002) Piehl, PhD (2005)

Table 1. *Cont.*

Sub-Project Name/Acronym	Year(s)	Sites Investigated	Directors and Senior Staff	Research Report/Publication
	1997	Pacbitun	Jaime Awe Bobbi Hohmann Terry Powis	BVAR 1997 Field Season Hohmann, PhD (2002)
Western Belize Regional Cave Project (WBRCP)	1997–2003	Actun Tunichil Muknal (ATM) Actun Uayazaba Kab Actun Yaxteel Ahau Actun Chapat Actun Nak Beh Barton Creek Cave Actun Halal Rockshelter Actun Oxyehub Cueva Migdalia Actun Chuplal Chechem Ha cave Pook's Hill	Jaime Awe Cameron Griffith Holley Moyes Joselyn Ferguson Sherry Gibbs Rafael Guerra Christina Halperin Christophe Helmke Reiko Ishihara Sarah Jack Vanessa Mirro Mike Mirro	BVAR 1997 Field Season BVAR 1998 Field Season BVAR 1999 Field Season BVAR 2000 Field Season BVAR 2001 Field Season BVAR 2002 Field Season BVAR 2003 Field Season BVAR 2007 Field Season Gibbs, MA (2000) Halperin, MA (2000) Morehart, MA (2002) Moyes, MA (2001), Moyes PhD (2006) V.A. Mirro, MA (2002) Jack, BA (2004) M. Mirro, MA (2006) Galvan, MA (2016)
	2000–2004	Baking Pot (site core and periphery)	Jaime Awe Carolyn Audet Antonio Beardall Christine Dixon Rafael Guerra Sue Hayes Julie Hoggarth William Poe Leslie Swain Erin Weller	BVAR 2000 Field Season BVAR 2001 Field Season BVAR 2002 Field Season BVAR 2003 Field Season BVAR 2004 Field Season Audet, PhD (2006)
Tourism Development Project (TDP)	2000–2004	Caracol	Jaime Awe Sherry Gibbs Myka Schwanke Rafael Guerra Erin Weller	BVAR 2002 Field Season
Tourism Development Project (TDP)	2000–2004	Cahal Pech	Jaime Awe Carolyn Audet	Audet, PhD (2006)
Tourism Development Project (TDP)	2000–2004	Xunantunich	Jaime Awe Carolyn Audet	Audet, PhD (2006)
Tourism Development Project (TDP)	2000–2004	Altun Ha	Jaime Awe	
Tourism Development Project (TDP)	2000–2004	Lamanai	Jaime Awe	
Tourism Development Project (TDP)	2000–2004	Lubaantun	Jaime Awe	
Chalillo Dam Mitigation	2003–2005	Upper Macal and Raspaculo River valleys (various sites)	Jaime Awe Rafael Guerra Myka Schwanke Douglas Weinberg	
Roaring Creek Valley	2005–2008	Pook's Hill	Jaime Awe Christophe Helmke Joselyn Ferguson Rafael Guerra Christopher Morehart	BVAR 2005 Field Season BVAR 2006 Field Season BVAR 2007 Field Season Helmke, PhD (2009)

Table 1. *Cont.*

Sub-Project Name/Acronym	Year(s)	Sites Investigated	Directors and Senior Staff	Research Report/Publication
Caves Branch River Valley	2005–2007	Caves Branch Rockshelter Deep Valley Rockshelter Baateelek	Jaime Awe Rafael Guerra Bryan Haley Jessica Hardy Jillian Jordan Shawn Morton Gabriel Wrobel	BVAR 2005 Field Season BVAR 2006 Field Season BVAR 2007 Field Season Jordan, MA (2008)
	2007	Baking Pot (site core)	Jaime Awe Christophe Helmke Muggs Alexander Julie Knub Jillian Jordan	BVAR 2007 Field Season
	2007–2013	Baking Pot (periphery)	Jaime Awe Julie Hoggarth Sarah Bednar Leann DuMenil Rafael Guerra Jillian Jordan Céline Lamb Eva Jobbova Phylicia Pelayo Josue Ramos Catharina Santasilia Ben Russell Christina Zweig	BVAR 2007 Field Season BVAR 2008 Field Season BVAR 2009 Field Season BVAR 2010 Field Season BVAR 2011 Field Season BVAR 2012 Field Season BVAR 2013 Field Season Jobbova, MA (2009) Johnson, BA Honors (2010) Freiwald, PhD (2011) Hoggarth, PhD (2012) DuMenil, MA (2014)
	2010–2019	Lower Dover (site core)	Jaime Awe Rafael Guerra Marieka Arksey Renee Collins Molly Hude Sasha Romih Tia Watkins Patrick Wilkinson	BVAR 2010 Field Season BVAR 2011 Field Season BVAR 2012 Field Season BVAR 2013 Field Season BVAR 2014 Field Season BVAR 2015 Field Season BVAR 2016 Field Season BVAR 2017 Field Season BVAR 2018 Field Season BVAR 2019 Field Season Kulig, BA Honors (2015) Collins, MA (2018) Romih, MA (2019)
		Lower Dover (periphery)	Jaime Awe Rafael Guerra John Walden Michael Biggie Emma Messenger Michael Petrozza Ian Roa Yijia Qiu ((邱益嘉)	BVAR 2013 Field Season BVAR 2014 Field Season BVAR 2015 Field Season BVAR 2016 Field Season BVAR 2017 Field Season BVAR 2018 Field Season BVAR 2019 Field Season Petrozza, MA (2015)

Table 1. *Cont.*

Sub-Project Name/Acronym	Year(s)	Sites Investigated	Directors and Senior Staff	Research Report/Publication
American Foreign Academic Research (AFAR)-BVAR	2010–current	Cahal Pech (site core)	Jaime Awe Claire Ebert Antonio Beardall Jorge Can C. Mathew Saunders James Garber Sherman Horn Amber Lopez Johnson Anna Novotny Nancy Peniche May Mark Porter Jim Pritchard Kristy Pritchard Catharina Santasilia Marc Zender	BVAR 2010 Field Season BVAR 2011 Field Season BVAR 2012 Field Season BVAR 2013 Field Season BVAR 2014 Field Season BVAR 2015 Field Season BVAR 2016 Field Season BVAR 2017 Field Season BVAR 2018 Field Season BVAR 2019 Field Season Santasilia, MA (2013) Villareal, BA Honors (2014) Horn, PhD (2015) Novotny, PhD (2015) Peniche May, PhD (2016) Green, PhD (2016) Delance, PhD (2016) Zanotto, MA (2017) Lopez Johnson, MA (2019) Watkins, MA (2019) Porter, MA (2020)
University of Montana-BVAR	2011–2019	Cahal Pech (site core)	Jaime Awe John Douglas Linda Brown	BVAR 2011 Field Season BVAR 2012 Field Season BVAR 2013 Field Season BVAR 2014 Field Season BVAR 2015 Field Season BVAR 2016 Field Season BVAR 2017 Field Season BVAR 2018 Field Season BVAR 2019 Field Season Johannesen, MA (2018)
	2012–2019	Cahal Pech (periphery)	Jaime Awe Claire Ebert Wendy Dorenbush Steve Fox Samuel Hemsley Julie Hoggarth Keith Solmo	BVAR 2012 Field Season BVAR 2013 Field Season BVAR 2014 Field Season BVAR 2015 Field Season BVAR 2016 Field Season BVAR 2018 Field Season Ebert, PhD (2017) Fox, MA (2018) Dorenbush, MA (2018) Hemsley, MA (2019) Solmo, MA (2018)
	2013–current	Baking Pot (site core)	Jaime Awe Julie Hoggarth Sarah Bednar Jorge Can Britt Davis Rosie Fitzmaurice Christophe Helmke Amber Lopez Johnson Sydney Lonaker Niyo Moraza-Keeswood Gabriela Saldaña Kelsey Sullivan Tia Watkins Christina Zweig	BVAR 2013 Field Season BVAR 2014 Field Season BVAR 2015 Field Season BVAR 2016 Field Season BVAR 2017 Field Season BVAR 2018 Field Season BVAR 2019 Field Season Davis, MA (2018) Watkins, MA (2019) Tappan, MA (2020)

Table 1. *Cont.*

Sub-Project Name/Acronym	Year(s)	Sites Investigated	Directors and Senior Staff	Research Report/Publication
US Ambassador's Fund for Cultural Preservation—Benque	2014	Benque site	Jaime Awe Jorge Can	
	2013	Burns Avenue salvage archaeology	Jaime Awe Sylvia Batty Antonio Beardall Jorge Can Gonzalo Pleitez Josue Ramos	
Xunantunich Archaeology and Conservation Project (XACP)	2015–current	Xunantunich (site core)	Jaime Awe Doug Tilden Aimee Alvarado Tucker Austin Christina Burke Rosie Bongiovanni Jorge Can Claire Ebert Cassandra Feely Rosie Fitzmaurice Kirsten Green Christophe Helmke Victoria Izzo Ashley McKeown Emma Messenger Catharina Santasilia Diane Slocum Kelsey Sullivan Tia Watkins Hannah Zanotto	BVAR 2015 Field Season BVAR 2016 Field Season BVAR 2017 Field Season BVAR 2018 Field Season BVAR 2019 Field Season Sullivan, MA (2017) Fitzmaurice, MA (2018) Stricklin, MA (2019) Feely, MA (2019) Austin, MA (2019) Alvarado, MA (2019)
Other regional research	2015–current	Lower Barton Creek Regional surveys	Jaime Awe Jeffrey Burns G. Van Kollias Keith Solmo	Kollias, MA (2016) Solmo, MA (2018) Burns, MA (2018)

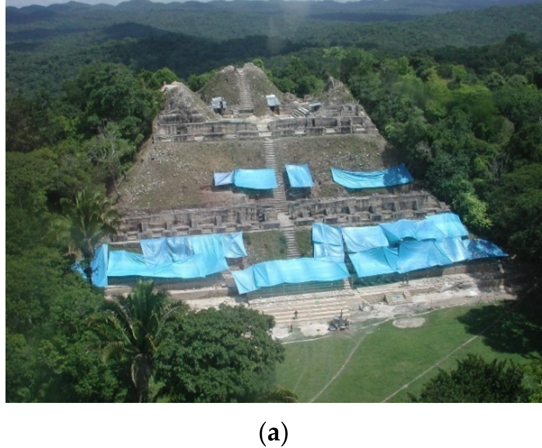
Exploratory work at the site of Baking Pot was initiated in 1992 after the site came under threat by modern cultivation, with research initially focusing on the Bedran settlement group to the west of the monumental epicenter [14]. The following two seasons were split between the peripheral settlement areas at Cahal Pech and Baking Pot [15–17], with an increasing focus on the study of middle level settlements and sacbe (causeway) termini complexes at both sites. The BVAR Project's research focus shifted completely to Baking Pot beginning in 1995 [18] and continuing into 1996 [19], with excavations in the northern monumental group [20] and the Atalaya settlement group [21]. Aimers' [22] research in Group A detailed the slow processes of political disintegration at the site, with evidence for Postclassic activity in Plaza A. Excavations at Pacbitun focused on Middle Formative occupation of the site [23], in an effort to continue investigations by the Preclassic Maya Project (directed by Healy and Awe). In addition, investigatory reconnaissance and survey was initiated at Actun Tunichil Muknal and other nearby caves in the Upper Roaring Creek Valley.

Following the exploratory 1996 season, BVAR initiated the Western Belize Regional Cave Project (WBRCP), a sub-branch of the BVAR project that lasted for several seasons (1997–2003). While the research focus of the project shifted to survey and excavation of surface and cave sites in the Roaring Creek, Barton Creek, and Macal River Valleys, research in the Upper Belize Valley proper continued as well. To launch the WBRCP, Awe established a project camp outside Actun Tunichil Muknal (ATM), mapping and conducting excavations for that location over the course of several years [24,25]. The ATM investigations were integral in later efforts to establish that site as an archaeological reserve and as a

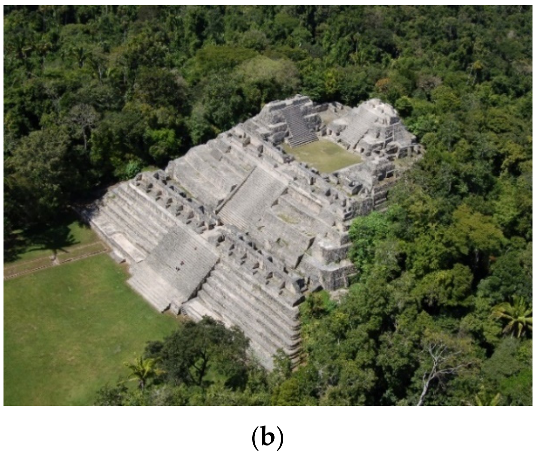
major tourist destination. The WBRCP was also the first wide-reaching and regional cave project in the Maya lowlands, with research focused at several cave sites across Western Belize, including Actun Uayazaba Kab [26], Actun Yaxteel Ahau [27], Actun Chapat [28–30], Actun Nak Beh [31], Barton Creek Cave [32], Actun Halal Rockshelter [33], Actun Oxyehub in the Sibun Valley [34], Cueva Migdalia [35], Actun Chuplal [36], and Chechem Ha cave [37]. This research showed that the ancient Maya had a long history of ritual use of caves throughout Western Belize, and this ritual intensified alongside political and environmental instability in the Terminal Classic period (AD 750–900/1000) [38,39]. In conjunction with the WBRCP, Helmke also conducted investigations at Pook's Hill, detailing the long history of occupation at the *plazuela* group [40,41]. The research at Pook's Hill was subsequently complemented with a conservation project that aimed to expand tourism opportunities in the Roaring Creek Valley.

Research at Baking Pot resumed at the turn of the twenty-first century, with an expansion of the settlement survey program that was designed to map the entirety of the site's eastern periphery [42,43]. Simultaneously, excavations at the Yaxtun Group were initiated and soon identified an important Postclassic component [44], offering additional evidence that Baking Pot had an occupation in the Postclassic long-past its Classic period heyday. Over the next four years, Audet and Awe's research in the site epicenter would continue, discovering elaborate royal tombs and architecture at several locations in Group A [45–47], the palace complex of Group B [48], evidence of ritual activity and scalping in an Early Classic cache at the causeway termini structure [49,50], and excavating house mounds in the central settlement [51–54]. Between 1999 and 2004, BVAR recorded important information about the history of Baking Pot, suggesting that it was an important center in the Belize Valley with political contacts that extended into the Peten, including Naranjo and Holmul [55].

Between 2000 and 2004, Awe became the director of the Tourism Development Project (TDP), operating jointly through the Belize government and the BVAR Project, the primary focus of which was the excavation, conservation, and tourism development of several major archaeological sites across Belize. To execute this very ambitious conservation program within a relatively short four-year lifespan of the project, Awe employed several BVAR archaeologists to serve as onsite supervisors. At Caracol, extensive horizontal excavations [56–58] focused on the monumental architecture of the site core, including the entire southern façade of Caana (Figure 2a,b), the adjacent Barrio Group, several structures in Plaza B, including the Group B ballcourt, the E-Group and other associated structures in Plaza A, the south acropolis, the Raleigh Group, and the Group A ballcourt. These investigations were important because not only did they aesthetically improve the site for tourism, but key discoveries added to the site's history. Among the most significant discoveries were the inscribed Ballcourt B markers, the Early Classic Stela 20, the stucco masks flanking the central stairway of Structure B5, and the Witz mask and accompanying hieroglyphic text on the eastern flank of Structure B19.



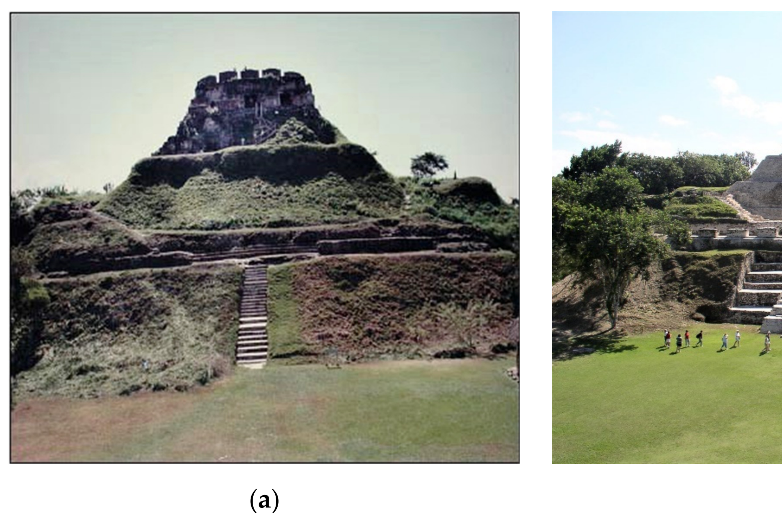
(**a**)



(**b**)

Figure 2. Photos from the conservation of Caana, Caracol: (**a**) At the beginning of conservation; (**b**) After conservation was completed. Photos by J.J. Awe and Diane Chase.

The TDP also made considerable improvements at Cahal Pech, Xunantunich, Altun Ha, Lamanai, and Lubaantun. At Cahal Pech, the project excavated and conserved several of the monumental buildings in the site's palace complex, as well as buildings in Plazas B, C, and F. Important discoveries at Cahal Pech included several peri-abandonment deposits and Terminal Classic burials across the site core [59]. Conservation efforts at Xunantunich (Figure 3a,b) focused on Strs. A-6 (the Castillo), on Strs. A11 and A13 in the Plaza AIII palace complex, and on Strs. A4, A14, and A15, as well as Ballcourt 1 [55] (pg. 34). Besides conserving the spectacular east frieze on the Castillo, the project also covered this fragile monument with a fiberglass replica. These efforts also discovered the first recorded elite crypt in the site core, Panel 2, and ballcourt rings in Ballcourt 1. Panel 2 is particularly important because its hieroglyphic text likely records the original name of the site [60]. At Altun Ha and Lamanai, the TDP finished excavations and then conserved all the major architecture that had been previously exposed in the epicenters of these sites by David Pendergast. At Lubaantun, in contrast, the TDP's efforts were directed towards the conservation of several buildings and monuments that had been damaged during Hurricane Iris in 2001.



(**a**) (**b**)

Figure 3. Photos from the conservation of the Castillo (Str. A6) at Xunantunich: (**a**) Prior to TDP conservation efforts (**b**) After TDP conservation efforts were completed. Photos by J.J. Awe.

In June of 2003, BVAR was contracted by the government of Belize to perform archaeological mitigation in the Upper Macal and Raspaculo river valleys in Western Belize in response to the construction of the Chalillo Dam. Over the course of two years, an intensive salvage program was focused on settlement survey, plus the testing and large-scale excavation of structures to gain information about the cultural history of the region [61]. This research resulted in the identification of high densities of isolated structures, *plazuelas*, and multiple plaza groups. Major centers with monumental architecture and elite burials were also recorded. Of particular importance, the project demonstrated that this seemingly uninhabited region had been home to considerable Late Classic Maya populations. Although some of the sites were flooded with the construction of the dam, the preservation of the information from the salvage project ensures that their legacy will be maintained within the cultural heritage of Belize. Research from 2005 to 2008 was split between multiple sites: Pook's Hill [62], Caves Branch Rock Shelter [63–66], Cahal Pech [67], and Baking Pot [68–71]. Regional studies were pivotal in providing information about the landscape of the Roaring Creek Valley, with research at Pook's Hill showing both residential and ceremonial activity at the site during the Late Classic period. New explorations in the Caves Branch region offered previously unknown information about its regional trajectory. These studies found evidence of extensive mortuary activity at the site from the Middle Preclassic through Postclassic periods, subsequently leading to the initiation of a new independent project, the Central Belize Archaeological Survey (CBAS) Project under the direction of

Gabe Wrobel, Shawn Morton and Christopher Andres. Concurrent excavations at Cahal Pech revealed an impressive Terminal Classic tomb that likely housed one of the last known rulers of the site [72].

During the following period between 2008 and 2013, BVAR research was refocused at Baking Pot, with Hoggarth and colleagues' [70,71] research extending the settlement survey to the west and south to connect to the Cahal Pech survey, and eastward to connect to the Spanish Lookout and Barton Ramie survey. At the same time, Hoggarth also conducted household excavations in Settlement Cluster C [70–82] in an effort to explore the strategies of commoner households to adapt to the processes of sociopolitical collapse of institutionalized rulership at the end of the Classic period [82]. This research identified that commoner households increasingly engaged in long-distance exchange, while the higher status groups focused on community integration, prior to the site's abandonment. Helmke's excavations of Group B at the site remapped the site core [68] and identified the extensive history of construction at the eastern shrine (Str. B1), including the identification of an elaborate Late Classic tomb. This structure had been documented in the 1960s by William and Mary Bullard [83].

In 2010, BVAR archaeologists were informed of a new major center near the village of Unitedville and this led to the start of investigations at Lower Dover under the direction of Rafael Guerra and Awe [84–90]. Interestingly, continuing research at the site has demonstrated that Lower Dover arose later than its contemporaries (e.g., Cahal Pech and Baking Pot), with monumental construction in the site epicenter constrained to the Late Classic [86]. Survey of the settlement around Lower Dover was initiated in 2014 [89,91] recording a distinct settlement clusters to the south of the site. Walden's more recent research [92–94] has expanded the scope of this survey to link it to Willey and colleagues' [95] Barton Ramie, Floral Park, and Spanish Lookout surveys, as well as previous Baking Pot surveys [71,73]. Furthermore, Walden and colleagues' excavations in the Tutu Uitz Na (SG1) group and other households in the Lower Dover settlement revealed that some peripheral communities existed prior to the establishment of the Lower Dover site core [96], with intermediate elites serving important roles in the development of power at the site. Continued excavations in the palace complex at Lower Dover by Watkins and colleagues [97] explored the development, function, and regional role of Courtyard 2, finding little evidence for exotic materials while also recording a peri-abandonment deposit that terminated the use of the courtyard. Throughout the Lower Dover research, BVAR researchers worked closely with the Friends of Lower Dover and the Lower Dover Field Station to conserve Courtyard 4 (Figure 4a,b), the eastern structure of the ballcourt, and structures in Plaza A, B, and G, to conserve the archaeological site and natural resources for tourism. Since the location was already developed for ecological tours, with trails identifying important local and economic species across the site.

(**a**)

(**b**)

Figure 4. Photos from the conservation of Courtyard 4 at Lower Dover: (**a**) Prior to conservation efforts (**b**) After conservation efforts were completed. Photos by R.A. Guerra.

A refocus on documenting the region's settlement history came in 2012 with a return to research in Cahal Pech's settlement area beginning in 2012. Dorenbush's [98] expansion of the settlement survey at Cahal Pech revealed extensive settlement clustering near the confluence of the Macal and Mopan Rivers. Ebert's excavations at the large Tzutziiy K'in group in the western periphery of the site documented the Preclassic to Terminal Classic construction history associated with the rise of social inequality [99–102]. Additionally, stable isotope and radiocarbon data on burials from Cahal Pech demonstrated that the site's Terminal Classic residents were more vulnerable to the effects of drought than their Preclassic counterparts, ultimately impacting the disintegration of the polity around AD 850 [103]. At the same time, Fox's excavations of peri-abandonment deposits at the Zopilote group to the south of the site core helped to reconstruct the final ritual activities associated with the abandonment of Cahal Pech [104,105].

The acquisition of lidar (light detection and ranging) remote sensing data from across the Belize Valley (as part of the West-Central Belize LiDAR Survey, [106]) also served as an important threshold in this research, allowing areas with dense vegetation to be assessed and new settlements and constructed features to be identified. This resulted in a full coverage classification of over 125 km^2 that also integrated previous survey work [70,82]. Lidar survey allowed for the detection of two previously undocumented major centers in the Upper Belize River Valley, Ek Tzul to the south of Baking Pot, and Lower Barton Creek to the south of Lower Dover [107–109]. Analysis of lidar data near the Bedran group in Baking Pot's western periphery identified over 20 linear km of ditched fields, revealing the system to be much larger than previously understood [108]. In addition, statistical analysis of lidar and excavation data helped to identify at least six tiers in the settlement hierarchy across the Belize Valley sub-region [96], providing a framework that can be replicated and applied to other parts of the Maya lowlands.

The BVAR Project's efforts to engage with the public and to conserve archaeological sites for tourism were enhanced when the project began a collaboration with the American Foreign Academic Research (AFAR) program in 2010 [110], and with the Tilden Family Foundation shortly thereafter. The AFAR program offers educational opportunities for high school students from the United States and Belize to conduct archaeological research at Cahal Pech. Each summer BVAR-AFAR has excavated numerous areas across the site core at Cahal Pech and conserved those areas for tourism, while simultaneously training more than 200 high school students in archaeological field methods since 2010. The early efforts focused on preserving the area adjacent to Plaza C and the associated ballcourt through a site preservation grant funded by the Archaeological Institute of America. The strong focus on site conservation continued through the support of the Tilden Family Foundation, with subsequent excavations at Ballcourt 1 [111], the eastern triadic group [112–117] (Figure 5a,b), Strs. B4, B6 and B7 [118], Plaza B [119,120], and Strs. G1 and G2 [121–123] to further enhance the site for tourism. Douglas and Brown's work in Plaza H [124–127] has sought to better elucidate the timing of processes associated with Cahal Pech's Terminal Classic occupation. Furthermore, excavations in Plaza B led by Ebert have identified a large monumental structure dating to the Preclassic period that likely represents the western radial structure of a Middle Preclassic E-Group at the site, associated with several Middle Preclassic ceramic caches [128,129].

A major theme in BVAR research that has developed since 2013 deals with documenting the processes of abandonment of sites across the Belize Valley between AD 750 and 900. Awe [60,72] had been documenting peri-abandonment (i.e., terminal) deposits across sites in Belize for over two decades. These deposits, located in corners of plazas/courtyards or flanking central stairways, often sat atop a matrix layer, which suggested that some time had elapsed between the end of plaza maintenance and deposition. To better understand these peri-abandonment deposits, the BVAR Project began strategic excavations to locate similar deposits at various sites across the Belize Valley and to compare them with those extensively documented at Cahal Pech. In 2013, Hoggarth began directing research in Group B focused on identifying such deposits as well as developing a high-precision AMS ^{14}C chronology of the site's decline, to complement previous research on Baking Pot's abandonment by

Aimers [22] in the northern Group A. Multiple deposits were identified in Group B [130–135] and the high-precision radiocarbon chronology of Baking Pot deposits identified that they were formed through multiple depositional events spread across the eighth and ninth century, suggesting a slow and protracted process of abandonment and decline [131]. Davis' [130,132] analysis of materials from those deposits presented important information on the specific activities that formed the features, suggesting that food/water storage, with iconography associated with fertility, were integral to the final rituals associated with the formation of the deposits.

(**a**) (**b**)

Figure 5. Photos from the conservation of the eastern triadic shrine at Cahal Pech: (**a**) Prior to conservation efforts (**b**) After conservation efforts were completed. Photos by J.J. Awe.

The regional comparison of peri-abandonment deposits across the Belize Valley [60,136–141] presented important information showing similar patterns of deposition and materials at Cahal Pech, Baking Pot, Xunantunich, Lower Dover, and Pook's Hill [60], with some discontinuities in the timing of their deposition [139]. While Cahal Pech's deposits were shallow and appear to have been deposited over a short period of time in the eighth century [137], deposits at Baking Pot were large, stratified, and persisted into the mid-to-late ninth century [139]. Deposits at Lower Dover and Xunantunich appear to be more akin to the depositional scenarios at Cahal Pech, while those at Pook's Hill share more similarities with the dense and stratified deposits at Baking Pot. This same era of the BVAR Project saw the conservation of several areas at Baking Pot, including a well-preserved sweatbath in the royal palace complex, and several structures associated with Plaza B of Group B (Figure 6).

Figure 6. Photos from the conservation of the sweatbath in the royal palace complex at Baking Pot after conservation. Photo by J.A. Hoggarth.

In 2014, funding from the US Ambassador's Fund for Cultural Preservation was also awarded to Awe to excavate and conserve the Benque Site, located in the modern town of Benque Viejo, from further destruction and for tourism purposes. Horizontal excavations completely stripped the central buildings at the site, revealing that the small center dates primarily to the Late Classic period, and that it maintained close affiliation with Xunantunich. Since its preservation, the site has become a regular destination for members of the local community, including children from Benque Viejo's elementary and high schools. Additionally, the site offers tourists departing through the country's western border one last picture of the ancient Maya of Belize. BVAR's research and conservation efforts, with support from the Tilden Family Foundation, initiated the Xunantunich Archaeology and Conservation Project (XACP) in 2015 [142,143]. A major focus of XACP, which operates under the joint auspices of the BVAR Project and the Belize Institute of Archaeology, is to continue the TDP's conservation and tourism development of the Xunantunich site core [144]. During the summers of 2015 and 2016, Awe directed BVAR excavations at the triadic group (Strs. A2 and A3), Str. A20 atop the Castillo, and Str. A8. The triadic shrine excavations [143] suggested that the group was largely constructed in a single construction episode during the Late-Terminal Classic. Str A20 atop the Castillo was re-opened and conserved to highlight its unique architecture featuring a colonnaded shrine that is reminiscent of Terminal Classic architecture of the northern lowlands [144]. Continuing research over the following several seasons saw the excavation and conservation of Strs. A7, A9, A13, A28, and Group B [145–149]. In 2016, Str. A9 was the site of important new discoveries at Xunantunich, including a royal tomb and two hieroglyphic panels that had once been part of a hieroglyphic stairway at Caracol [142,148,149]. With the defeat of Caracol by Naranjo in AD 670, panels from the stair were dismantled and transported to Naranjo and its allies (Ucanal and Xunantunich) [150–152]. The text contains important dynastic details for the central lowlands, including the death date of rulers from Caracol and the Kanu'l (Snake) dynasty, and the first epigraphic confirmation of conflict involved in the transfer of power from Dzibanche to Calakmul as the seat of power for the Snake Dynasty [142,148–152]. Furthermore, the single phase of construction of Str. A9 was likely to house the tomb of a female ruler or elite that dates around the same time as the Naranjo defeat of Caracol in the mid-seventh century. Additional excavation and conservation efforts over the past several years have focused on the north palace complex [153], on Ballcourts 1 and 2 [154], Terminal Classic architecture in Plaza A1 [155], and at Group B [147,156].

At the time of writing this manuscript, the coronavirus pandemic has disrupted what would have been the 33rd consecutive field season by BVAR. Despite the new challenges that this will present, our major concern is for the well-being of the people of Belize. We also recognize that this brief hiatus in excavation is but a brief pause in our project's long-term plans to continue the conservation of sites across the Belize Valley, to seek out and train Belizean students in professional archaeology, to educate the next generation of Maya archaeologists from around the world, and to create training/educational materials for tour guides and artisans through the dissemination of research. In the following sections, we will elaborate on the lessons learned through site conservation, the project's educational and training efforts, as well as its heritage and outreach initiatives. These tie in closely with the history of research across the project's 32 years and have guided the future directions of the project.

3. Conserving the Past for the Future: Lessons Learned During the Past K'atun and a Half

The conservation of ancient and fragile monuments is never an easy task. This is particularly true in developing countries where these challenges are compounded by the unavailability of conservation materials and by the lack of personnel trained in conservation protocols. This was certainly the case in Belize in the 1980s, and it continued to be an issue in the 1990s and early 2000s. The latter situation is particularly exemplified by early conservation efforts at Cerros, Xunantunich, Lamanai, and Altun Ha.

Following David Freidel's discovery of the stucco masks at Cerros in the late 1970s, both Freidel and the Belize Department of Archaeology were in a quandary concerning how to preserve the fragile monuments. Despite the negative impacts of the reburial of masks at Uaxactun [157], in the end, both parties decided that it was likely best to rebury the Cerros masks with the hope that this would keep them preserved and that they could be conserved in the future. In the case of Xunantunich, Lamanai, and Altun Ha, archaeologists and conservators had to contend with three major challenges. The first of these challenges involved previous conservation efforts at these sites. In the 1960s and 1970s, for example, cement mixed with sand had been used to mortar limestone blocks together. During the ensuing 20–30 years, the acidity of the cement and sand accelerated the dissolution of the limestone blocks, thus compromising the stability of the prehistoric architecture. This conservation approach was discontinued in the 1990s when we began to employ mortar prepared from water mixed with *cal* (lime powder) and *sascab* (marl) and which more closely approximated the mortar used by the ancient Maya.

Another issue that greatly affected our conservation efforts at Xunantunich was the reuse of cut stones from collapsed buildings. Limestone from outcrops around Xunantunich is of relatively low quality, and limestone blocks from collapsed architecture often disintegrate due to the combined forces of time and the natural elements. For suitable replacements, we had to locate an ancient quarry and then mine it anew for fresh blocks. This process is slow, physically taxing, and time consuming, especially since freshly cut blocks need to be left exposed to the elements for some time so that they can begin to harden. After several weeks of exposure, the cut stones are stable and solid enough to replace those destroyed in collapsed buildings. While we were able to apply this approach to our conservation work during the four-year-long TDP, it quickly became apparent that it would be inefficient in projects with limited funding and time constraints. To address this concern, in 2002 Awe decided to experiment with the production of blocks made from the same *cal* and *sascab* mix that was used to make mortar. This approach was very successful because blocks could be quickly produced and customed-made to specific sizes, and they were very durable.

The third and most challenging conservation effort was what to do with fragile stucco masks following their discovery and exposure. Faced with this challenge after their excavation of the west frieze at Xunantunich, directors of the Xunantunich Archaeological Project [158] decided to hire a conservator from Guatemala to come and preserve the monument. This effort was quite successful but extremely costly as materials to produce a fiberglass replica had to be imported from abroad and the conservator's financial compensation was considerable. In 2001, while executing the TDP's conservation efforts at Xunantunich, we were faced with a similar but even more dauting task, that of conserving the considerably larger stucco frieze on the eastern summit of the Castillo. Years of direct exposure to the elements had left the east frieze in very poor condition and in danger of being irretrievably lost (Figure 7a,b). To save the project money, Awe hired one of the Guatemalan conservators who had worked on the west frieze, to come and assist the TDP in its efforts to preserve the frieze. One of the conditions of the conservator's contract was that he would train several Belizeans in the art of reproducing fiber glass replicas of stucco masks. This was agreed on and following the closure of the TDP, Awe permanently hired the Belizean apprentices to work for the Belize Institute of Archaeology. These newly trained Belizean conservators were subsequently responsible for conserving the large stucco masks at Caracol, Cerros, and Lamanai, for producing fiberglass replicas of the masks at the three sites, as well as the recently discovered hieroglyphic panels at Xunantunich. Equally important to those conservation successes is that we were able to develop Belize's capacity to protect its own cultural heritage and to no longer depend on costly foreign professionals to do this.

(a) (b)

Figure 7. Photos from the conservation of the eastern frieze on the Castillo (Str. A6) at Xunantunich: (a) Prior to conservation efforts (b) after conservation efforts were completed. Photos by J.J. Awe.

4. Education and Training Lessons

Since its inception in 1988, the BVAR Project continues to be the largest and one of the only archaeological projects that has been directed, and co-directed, by Belizean archaeologists. We have also produced the most Masters theses and doctoral dissertations by Belizean archaeologists in the country, with two Belizean PhDs (Awe [6] and Moore [159]), one MA [160] and soon-to-be PhD (Guerra), and one MA in progress (Beardall). In addition, the project has actively offered research opportunities to interested Belizeans ranging from high school to college students, and has also trained several archaeologists who are employed by the Belize Institute of Archaeology (IA) and the Institute for Social and Cultural Research (ISCR). Besides training Belizeans, the BVAR Project has also mentored undergraduate and graduate students from around the world, producing over 60 Honors and Masters Theses, and Dissertations, an accomplishment that reflects the wide reach in the project's training of professional archaeologists within the field of archaeology. BVAR has also developed strong connections with local Maya communities, including the village of San Jose Succotz and San Antonio, through programs aimed at education and training for tour guides and the revitalization of cottage industries.

The BVAR Project field school annually offers 2 month-long field sessions in the summer, providing undergraduate and graduate students, and other interested members of the public, the opportunity to be trained in archaeological field and laboratory methods and the archaeology of the ancient Maya. The field school has operated for 32 years, training more than a thousand students since 1988. Running such a large field school has had both challenges as well as successes. We have taken pride in training numerous current PIs running projects in Belize, and up-and-coming graduate students currently on archaeological projects across the Maya area, as well as archaeologists working in other parts of the world. The project has always had a strong focus on training Belizean students, and has established scholarship programs for Belizean students interested in archaeology in order to fully waive field school fees, and in cases where students might not be local to San Ignacio, to house them with the other international field school students.

In addition to this program, the next generation of Belizean archaeologists have started to focus on offering intensive training for other Belizeans during the BVAR sessions. For example, BVAR has had long ties with Galen University where Awe joined the faculty and began the Anthropology Program in 2005. Over the past 15 years, other BVAR archaeologists have offered summer courses at Galen and their new Dean, Sherry Gibbs, was a graduate student of BVAR's cave project in the Roaring Creek Valley. More recently, Antonio Beardall has hosted numerous Belizean students from Galen at Cahal Pech during the annual BVAR field school. This offers an important opportunity for Belizean students

not only to gain valuable experience in archaeology, but also to be instructed by Belizean archaeologists who serve as role models and mentors in navigating ways that those students might become future archaeologists themselves. Beardall believes that having local youth participate on an archaeological project is a great way to strengthen their own appreciation of cultural heritage as well as strengthening their Belizean cultural identity.

Perhaps it is important to note that unlike the US where many archaeological sites have specific cultural affiliations, Belize promotes multi-ethnic, national, stewardship of its archaeological past. Unlike the U.S. which has several different sets of regulations for the management of cultural resources on private, state, and federal land, Belize also practices a unitary system of heritage management where legal ownership of all cultural resources, wherever they are situated, is vested in the government and people of Belize [161]. This unitary system of ownership and management encourages and promotes the concept that no single ethnic group solely owns any part or parcel of the nation's cultural resources, and that all Belizeans, regardless of their ethnicity, are responsible for the protection and preservation of all the country's heritage.

Belize's 'multi-ethnic stewardship' of its heritage is a functional model that has worked and will continue to work well, particularly in parts of the country where communities located around ancient Maya sites are not of indigenous Maya background. The ancient site of Altun Ha, which is encircled by the Creole communities of Lucky Strike and Rockstone Pond, provides one of several good examples of this approach. At Altun Ha, for example, most of the park rangers, and all part-time employees hired to protect and manage the site are members of the two Creole communities that encircle the site. Yet another excellent example of the success of this approach is provided by the site of Lamanai in Northern Belize. The Lamanai archaeological park contains three distinct zones; the Maya zone which includes prehistoric monumental palaces and pyramids, the Spanish zone with the remains of two *visita* churches, and the British zone that contains a colonial period sugar mill. Most of the park managers and staff at Lamanai include ethnic Mestizos from a refugee village (Indian Church) originally populated by immigrants from Guatemala and El Salvador. This approach to heritage management has fostered, and continues to foster, a strong sense of pride, nationalism, and identity among all Belizeans, regardless of their origin or ethnicity. Active Belizean participation in research and heritage management is also a major step towards decolonizing archaeological theory and attitudes in Belize and promotes a passion for learning about history, both before and after European contact. Beardall's MA research, which is examining the impacts and significance of public education and outreach, and how Belizeans perceive foreign projects, will help to modify future directions of archaeological research by providing foreign archaeologists with ideas on how to incorporate Belizean interests in their project goals. Guerra's MA research [160] examined how effective Belize has been at controlling looting and the movement of illicit artifacts. The research found that data is lacking for understanding these processes in Belize, and Guerra established guidelines to push the country to educate citizens of Belize on the value of protecting their diverse cultural heritage.

The project also regularly reaches out to tour guides across the region to offer opportunities for guides to visit sites during excavations and to participate in our investigations. These opportunities allow guides to provide more nuanced and informed tours to visitors of Belize, including personal accounts by the guides themselves. The relationships that have been forged over the years between the BVAR Project and local tour guides originates in Awe's contribution to the writing of the national tour guide training manual, in his participation in the Belize tour guide certification program, and his coordination of the first official cave guiding course in the country. Having such close involvement in the establishment of these programs offers the project the ability to identify the specific types of information that may be out of date from the training materials themselves. Tour guides are often of multi-ethnic descent, although several former (and current) excavators with the project from the village of San Jose Succotz identify as being of Maya descent. Several guides from the community have utilized the knowledge and skills in archaeological research that they have learned with the BVAR Project to become successful tour guide operators in the region.

As a result of the increasing amount of archaeological information produced since the tour guide manuals were written, in 2018, the project began to create one-page research summaries reporting the results of graduate research and other published BVAR studies. The summaries are aimed at offering quick research summaries for tour guides and for directing them to the full manuscripts that are available online [162]. Lessons have been learned over the past several years through the creation of these materials. First and foremost, academic archaeologists are rarely trained in communicating the results of their findings to local communities. Making these materials brief and visually appealing, with images and short bullet points that are written at the high-school educational level, have been some of the improvements that the project has been working on. Some of the lessons learned from BVAR's work with tour guides lies in the project's ability to communicate effectively with them, particularly through their participation in our excavation and conservation efforts during the summer. For example, the project regularly offers bi-weekly field school lectures, offering a wide variety of topics including the chronological periods of the Maya, as well as topical lectures on settlement patterns, osteological analysis, and other themes. While the lectures have always been open to the public and some tour guides attend, we have realized that a greater effort towards advertising these events often result in greater attendance from guides, as well as other interested members of the public. We incorporated the latter approach in 2019 and plan to continue more dedicated efforts towards advertising the lectures through social media and during site visits. In particular, we hope to target tour guides, artisan groups, as well as students from local schools and universities.

Additional efforts towards the education and training of tour guides continues with regular lectures to the Cayo, San Jose Succotz, and Belmopan Tour Guide Associations during the winter and summer months. As part of these efforts, we have increasingly worked to make sure that guides across Western Belize are aware of research summaries, recent publications, and other educational materials that are available on the BVAR Project website. Guerra's assumption of the role of president of the Cayo Tour Guide Association offers great new avenues to forge these collaborations, particularly because as a local liaison for the tour guides this offers a unique opportunity for us to expand our project's educational and training programs. He has started the Belize Tour Guiding Network, which will provide educational opportunities to guides during the COVID-19 pandemic and beyond, with the inaugural lectures focusing on training guides in the basics of archaeological method and theory. He sees this role as an opportunity to update the bylaws to include additional officers for the organization who will be responsible for managing opportunities for archaeologists and tour guides to connect. While the BVAR Project has contributed to the training of students and tour guides across the three decades of its history, the lessons learned through the continual revision of methods and materials will allow us to extend our outreach programs to other communities and stakeholders in the future.

5. Heritage and Outreach Lessons

BVAR's three-decade history of heritage and outreach initiatives (Table 2) has allowed us to forge important relationships with tour guides, artisan groups, schools, local communities, indigenous groups, and the Belize Institute of Archaeology. Mutually beneficial collaborations with all these stakeholders has enabled us to make significant strides in the preservation of Belize's archaeological resources while simultaneously disseminating the results of our project research and including local interests in the direction of heritage management in Western Belize. In 1987, some of these early relationships were formed in the local indigenous community of San Antonio, when Awe procured local slate and identified Maya art that could be used to produce slate carvings for sale to tourists. BVAR's relationship with modern artisan groups continues today and is best reflected by a recent collaborative project between ceramic artist Jeremiah Donovan of the State University of New York at Cortland, and Awe. The focus of this project, which is titled the 'Future of the Past: Revitalizing Ancient Maya Ceramic Traditions in a Modern Maya Community Project' is to train members of the San Antonio Women's Cooperative (SAWC) to produce good quality ceramics for sale in the tourist industry. To encourage replication of ancient Maya masterpieces, Awe provides the local potters

with images of ceramics discovered at neighboring sites and the potters then replicate these vessels under the guidance of Donovan. This new project expanded Awe's earlier efforts with the Garcia Sisters slate carving studio in San Antonio village. A highlight of the ceramic revitalization and replication project came in the form of a grant from the National Endowment for the Arts in 2016 which, in addition to purchasing a modern kiln for the cooperative, paid for them to travel to New York where their pottery was exhibited in the Dowd Gallery at SUNY Cortland [163–165]. As technologies change, we can expect that the relationships between archaeological projects and local communities will change with them. Hoggarth and Awe are currently working on developing an expansion of current collaborations with artisan groups, creating 3D models of ceramic vessels that will be able to be utilized by both scholars and artisan groups. Future workshops training artisans from the nearby Maya communities will be held to aid in the use of archaeological finds in the production of modern crafts, as well as to disseminate images of their creations. Interested parties can follow the project at www.bvar.org/ceramics-in-3D. Similarly, Watkins is using photogrammetry and digital documentation of architecture to create an interactive record of excavations and preserve evidence of graffiti, which is very fragile. This project can be followed at www.bvar.org/architecture-in-3D. Efforts to preserve cultural heritage through the dissemination of the most up-to-date archaeological findings have also had a long history in the BVAR Project. As we noted previously, in 1988 Awe received a grant from the Canadian Commission for UNESCO and the Canadian International Development Agency to launch a joint archaeology and heritage management project at Cahal Pech. As part of this early effort in heritage management, Awe wrote the first guidebook for Cahal Pech and delivered these materials to the local tour guide association. At that point, Cahal Pech was not yet designated as an archaeological reserve, so the project surveyed the site and established the official boundaries of the national reserve in 1993. The BVAR-WBRCP research at Actun Tunichil Muknal and Barton Creek Cave were pivotal in establishing those locations as national reserves, now visited by several thousand visitors to Belize annually and supporting the large number of tour guide companies throughout the Cayo District. In those early days, little information was available for tour guides, so BVAR archaeologists trained the first tour guides and Awe wrote a chapter on Maya civilization [166] as a training material for the National Tour Guide Certification Program. Awe added to this literature with two subsequent publications titled "101 Questions and Answers about the Maya of Belize" [167] and "Maya Cities and Sacred Caves: A Guide to the Maya Sites of Belize" [168]. In 2012, Awe also received a grant from the Inter-American Development Bank to train tour guides across Belize. This allowed Awe and Hoggarth to launch the Northern and Southern Belize Cultural Tourism Training Project, which provided multi-day training workshops, and the publishing and donation of the training manuals [169,170] to tour guides in both Maya and multi-ethnic communities in both regions. These examples show how archaeology can have direct impacts on the economies of local communities. Having both Belizean and foreign directors and staff members of the project allows the BVAR project to develop outreach materials that will appeal to both local and international communities alike. As in the project efforts to engage with local artisan groups, the relationships with tour guides has continued to change, as Guerra works with the Cayo Cave Guide Association to make new initiatives to offer virtual lectures by researchers around the world for educating the tour guides on the most recent findings in Maya archaeology.

Providing professional training in archaeology and heritage conservation has also been an important endeavor of Belizean archaeology. During the Tourism Development Project, and thereafter during his tenure as the Director of the Institute of Archaeology, Awe facilitated opportunities for project members to be trained in the replication of monuments in fiber glass, for Beardall to pursue a Bachelor's degree in Taiwan, for Guerra to begin his graduate program at the University of New Mexico, and for other Institute of Archaeology members to pursue graduate degrees in heritage management in England and the United States.

Table 2. Some Highlights of BVAR's public archaeology and heritage outreach over the past 40 years.

Year	Heritage and Outreach
1977	Joseph Palacio's work at Hokeb Ha Cave and Xunantunich. First archaeological research projects conducted by a Belizean anthropologist. Palacio served as Archaeological Commissioner of Belize from 1971 to 1976. He hired Harriot Topsey and Jaime Awe.
1987	Awe provide images of Maya art and transported slate from Pacbitun, to Maria Garcia in San Antonio village. Maria and family, famously known as the Garcia sisters, used the images and slate to produce some of the most exquisite slate carvings for sale in Belize.
1988	Awe applies for and receives grant from the Canadian Commission for UNESCO and the Canadian International Development Agency to launch a joint archaeology and heritage management project at Cahal Pech in Western Belize.
	Awe wrote the first guidebook to Cahal Pech, published it, and delivered copies to the Cayo Branch of the Belize Tourism Industry Association (BTIA)
1990–1993	The site survey was completed in 1990 and Cahal Pech was converted into an archaeological reserve in 1993.
1993	BVAR conducted salvage archaeology all around San Ignacio Town and disseminated the information in publications such as *Now You See It Now You Don't* (Awe 1993)
1994–2000	BVAR launches the Western Belize Regional Cave Project (WBRCP). The work at ATM and Barton Creek Cave led to their declaration as archaeological reserves. BVAR archaeologists also trained the first tour guides for these sites.
2000–2004	BVAR archaeologists were employed by the Tourism Development Project (TDP) to excavate and conserve six of the largest archaeological sites in Belize. Accomplishments of this project include the conservation of several sites, the development of archaeo-tourism in Belize, and the training and hiring of several Belizeans in heritage management.
2003	BVAR archaeologists write and produce brochures for several sites in Belize.
2004	Awe writes chapter on Maya Civilization of Belize for National Tour Guide Training Manual
2005	Awe publishes "*101 Questions and Answers*" book.
2006	Awe publishes "*Maya Cities and Sacred Caves: A Guide to the Archaeological Sites of Belize*" book.
2006–2013	Awe teams up with Channel 7 Belize and launches TV series: *Glimpses of the Past: Celebrating Belize's Archaeological Heritage*.
	Awe also publishes several articles on archaeological discoveries in *NICH Magazine* and *Belize Today Magazine*
2012	Awe applies for and receives grant from Inter-American Development Bank to train tour guides. Awe and Hoggarth then launch the Northern and Southern Belize Cultural Tourism Training Project. They also publish and donate copies of the training manual to tour guides in several communities in northern and Southern Belize.
2012–present	BVAR conservation projects at Cahal Pech and Xunantunich funded by the Tilden Family Foundation
2014–2018	Jeremiah Donovan (SUNY Courtland) and Jaime Awe launch Future of the Past: Revitalizing Ancient Maya Ceramic Traditions in a Modern Maya Community Project.
2018–current	Watkins and other BVAR staff initiate collaborations with the Fajina Archaeological Outreach program's annual Succotz Archaeology and Culture Fair
2020–current	Hoggarth and Awe expand the ceramic traditions project to include 3D models of ceramics, funded by the Archaeological Institute of America-National Endowment for the Humanities.

BVAR's early settlement surveys around San Ignacio were literally races against the clock to avoid the destruction of archaeological features, as increasing areas were bulldozed and developed and archaeological remains vanished forever. Through this salvage archaeology effort, information was able to be recorded prior to the destruction of many areas of San Ignacio town. Publications like Awe's [171] *Now You See It Now You Don't* are available locally and offer important information about the ancient Maya around Cahal Pech that was only recently disturbed and destroyed by modern

development. Unlike many academic volumes that are published internationally, Awe's [166,167] *101 Questions and Answers about the Maya of Belize* and his *Maya Cities and Sacred Caves* books are published by local presses which means that they are readily available for populations in Belize. When Burns Avenue in downtown San Ignacio was being converted into a pedestrian walkway, the identification of archaeological remains led Awe to bring Institute of Archaeology archaeologists and Galen students to excavate the cultural deposits [172]. The discoveries from these excavations were later incorporated in a permanent display in the Cayo Welcome Center, giving both locals and visitors a view of what downtown San Ignacio looked like in the past. Recognizing that archaeologists must also employ other media types to reach a broader spectrum of the local population, Awe, between 2006–2013, teamed up with Channel 7 Belize and launched the TV series, *Glimpses of the Past: Celebrating Belize's Archaeological Heritage*. These efforts highlighted various archaeological sites and discoveries and offered the latest information on archaeology to audiences around Belize.

Project staff have been encouraged to develop tours for local community members, school and university students, and other interested groups during the summer field seasons. These tours have been going on since the project's inception, but over the years the project has worked to refine these tours to offer more personalized experiences for visitors. For example, research at Lower Dover was initiated in 2010 and although locals around Unitedville knew of the archaeological site, the lack of investigations there meant that communities did not know about the site's history. Both Guerra and Walden have been working with the local community in Unitedville to offer educational tours while excavations and site survey were in progress. Walden's experience noted that the earliest tours needed more tailored educational materials to give to community members, so information pamphlets and maps were created in order to allow visitors to take the information home with them where they can share with friends and family members. These experiences offered local community members with the opportunity to ask the archaeologists questions that were never anticipated. Guerra has hosted tours for local Belizeans, Galen University students, and the Cayo Tour Guide Association to Lower Dover for several years. Those tours have been successful, although he notes that the outreach to bring in tour guides could be enhanced. A large part of the lack of attendance of tour guides lies in the scheduling, family obligation, and financial issues that may conflict with the timing of excavations and research. Similarly, transportation posed issues for Galen students, preventing some students from working at Lower Dover, although the project was able to accommodate them at the most easily accessible site of Cahal Pech. Similarly, Hoggarth's tours at Baking Pot, being located on the government-operated Central Farm, have been catered to describe ancient agriculture and to highlight the ways that modern agricultural production is operating in the region today.

More recently, the BVAR Project has also teamed up with other heritage and outreach groups to expand the project's ability to engage with local communities. Beginning in 2018, Watkins led the BVAR initiative to work with the Fajina Archaeological Outreach's annual Succotz Archaeology and Culture Fair. The fair aims to promote local Maya culture and to introduce members of the indigenous community of San Jose Succotz, as well as other local multi-ethnic groups, to recent archaeological research in the region. Since the BVAR Project works at the nearby site of Xunantunich, it was important to the project to have a presence at the fair to disseminate recent information and to engage with the community adjacent to the archaeological site. BVAR field school and graduate students helped to run various information booths and to organize various activities at the fair. Some of the most prevalent questions at the BVAR information booth included how individuals could volunteer with the project, as well as access to project resources such as field reports, thesis/dissertations, and other publications. Out of these needs, we developed the one-page research summaries to convey findings quickly to the public, while directing interested community members to the locations online where the full publications could be found. Because the Succotz Archaeology and Culture Fair primarily targets elementary school children, it is important to create activities and information stations that explained some of the basics of local archaeology, including "this is what an archaeologist does", "this is how stone tools are made", and "this is how we read hieroglyphs". By presenting information

at the appropriate age-level, it allows for the individual to make their own interpretations and form their own questions. These interactions have also motivated project members to develop even more engagement activities in the future, such as expanding advertising of local tour days, developing "work with BVAR" events, and expanding the advertisement of our field school lectures. Given the status of the BVAR Project as one of the only Belizean-run archaeological projects in the country, both our Belizean and foreign project members are continually challenged to expand the ways in which we might engage with local communities.

In sum, over the course of the BVAR Project's three-decade history, the project has sought to disseminate archaeological information, to create heritage management training materials, and offer in-person tours and information booths to engage with local communities. While these initiatives have made significant steps towards the preservation of cultural heritage in Belize, future endeavors will continue this work and aim to involve local communities in the process of archaeological research process.

6. Discussion

Throughout the three decades of BVAR's history, the project has stressed the integration of both research and public archaeological objectives. The strong focus on cultural heritage has led to successful implementation of programs, as well as continual reflections on how the project can improve to enhance its dual mission. Today, tourism represents about ~21% of the GDP of Belize, employing ~28% of Belize's population [173]. Some of the greatest impacts that archaeologists can make lie in offering economic opportunities for local communities to benefit from the generation of local archaeological knowledge. BVAR's long history of involvement in large-scale conservation of archaeological sites across Belize has offered important lessons on how archaeological research is conducted in the country, as well as how that research can benefit local communities. Early efforts were challenged by the lack of local knowledge of conservation practices. This led researchers to build large-scale conservation projects from the ground up, bringing in specialists from neighboring countries to train archaeologists and excavators in conservation management. Continuing work has highlighted developing conservation efforts that emphasize the interactive experience of visitors, allowing them to visualize specific events or experiences of the ancient Maya. This has led the project to collaborate with other researchers to develop immersive virtual reality technologies that allow for site exploration and analysis, 360-degree site tours (https://sites.psu.edu/archaeology/), and self-guided education through smartphone technology at Cahal Pech [174]. Future implementation of this sort of technology can enhance the accessibility of archaeological sites that are not publicly open for tourism, such as Baking Pot which is situated on the government-run Central Farm Agricultural Research Station.

Maya heritage studies have asked the question of 'Where are the Maya in ancient Maya tourism?' [175]. Many studies have suggested that while governmental agencies and organizations use prehistoric heritage to forge national identities that often have broad international appeal for the tourism industry, local communities sometimes do not share in the economic opportunities and benefits that these initiatives might bring. With these issues in mind, continual reevaluation of the conservation of archaeological sites, as well as the development of educational facilities such as site visitors' centers or museums, ought to include local community perspectives in the construction of educational narratives. Studies also suggest that tourism can have effects on notions of self-identify [176], including whether communities recognize either direct descent or other relationships to the people who constructed archaeological sites. These perspectives can affect the ways that communities might engage with archaeologists. Further exploration of these issues in Belize, like in other countries, are still needed. Given that cultural heritage is not frozen in the past, but rather continually transforming [177], the role of archaeology must be constantly reevaluated. Within the BVAR Project, Beardall's MA research on local perceptions of archaeological research and heritage efforts will focus on these issues and hopefully offer important new insights and avenues to pursue in the future.

Conservation and development efforts at archaeological sites have also highlighted some of the dangers of opening locations to large-scale tourism. In the Maya Riviera, for example, Walker [177] describes how the accessibility and appeal of sites such as Tulum can lead to the destruction of archaeological heritage, as these locations are literally 'loved to death'. Similar threats challenge the conservation of archaeological sites for tourism in Belize. BVAR's investigations at Actun Tunichil Muknal, and the subsequent development of the cave for tourism, has generated a great deal of economic opportunities for local tour guide companies. Each year, over 30,000 visitors explore the ancient cave system, which is perhaps best known for the Main Chamber's "Crystal Maiden". Tourists going off the established trail, or destroying archaeological features, has led the Institute of Archaeology to control the nature of tours more tightly through new restrictions. For example, when a tourist dropped their camera on a human skull in 2012, causing irreparable damage to the bone, the IA prohibited tourists from bringing their own cameras and instead were encouraged to use stock photos of the cave to remember their trips. In other instances, tourists stepped on and broke pot sherds, resulting in the mandate of no shoes being permitted in the cave. Unfortunately, development and conservation can be a double-edged sword, offering important economic opportunities for local communities while endangering the archaeological heritage on which those economies are constructed. Future work must always keep these considerations in mind and work to preserve the archaeological record while not disenfranchising the communities which depend on them.

Lessons learned through the BVAR Project's heritage and outreach initiatives have suggested multiple media outlets are helpful for public outreach and education today. Twenty years ago, guidebooks were the best way to offer up-to-date archaeological information to tour guides and other interested members of the public. These efforts have expanded to include TV and radio formats, and now to online media and materials that seek to educate various stakeholders across the country and across age groups. Today, BVAR is utilizing media outlets such as Facebook (https://www.facebook.com/groups/BVARProject/), Instagram (@bvar.project), and Twitter (@BVAR_Project) to convey archaeological information to the widest audiences. The development of future conservation efforts should utilize virtual and digital media in efforts to reduce the impacts of large-scale tourism at archaeological sites.

Finally, as archaeological projects continue into the future, every effort must be made to avoid top-down and neo-colonialist archaeological agendas that exclude local communities. This history reminds us of the importance of remembering the legacies of the past and to use those memories to create new research projects and practices that are free from neo-colonialist agendas. McAnany [3] reminds us of the dangers of unequal access to archaeological knowledge and landscapes. Training the next generation of archaeologists, heritage managers, and tour guides offers some opportunities to ensure that local perspectives and knowledge are infused into public archaeology in the future. On the BVAR project, mentorship has been key to these endeavors, as students and communities see how other Belizeans have navigated their educational and professional journeys, they can increasingly encourage their children to become advocates for their cultural patrimony. Awe's mentorship of both Belizean and foreign archaeologists has contributed to the development of some of the leading and emerging voices in Belizean archaeology. The next generation of Belizean archaeologists, including Guerra and Beardall, have developed their own outreach initiatives based on their lived experience. As the identity of stakeholders often forges the relationships formed [176], we must always remember to continually reevaluate the ways in which archaeological process can be more just.

7. Conclusions

At the inception of the Belize Valley Archaeological Reconnaissance (BVAR) Project 32 years ago, the project established dual objectives for research and heritage management. In the past three decades, the project has extended its research to encompass over 30 sites located in central and western Belize and beyond. Conservation of archaeological sites has been a prominent part of the project history, enhancing opportunities for economic growth through tourism. Lessons have been learned through

these consolidation efforts, with significant focus on training Belizeans as conservators. Educational initiatives adopted by BVAR archaeologists have centered on offering training for students, tour guides, and members of the public. As new technologies have developed, BVAR has worked to make educational materials accessible and appealing to local and international communities alike. Heritage and public outreach initiatives have focused on bringing the latest archaeological discoveries to indigenous Maya communities in the region to enhance economic opportunities of artisan groups and tour guides in the villages of San Jose Succotz and San Antonio. As BVAR continues into the future, we aim to continue the dual research and heritage objectives that were established at its inception, placing a strong focus on training the next generation of Belizean archaeologists.

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Article

Archaeology and Heritage Management in the Maya Area: History and Practice at Caracol, Belize

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Abstract: Archaeology and heritage management in the Maya area have developed differently in the various modern-day countries that make up ancient Mesoamerica. In the country of Belize, heritage management has been conjoined with archaeology since at least the late 1970s. Long-term projects, such as the 1985-to-present archaeological investigations at the ancient ruins that comprise the immense city of Caracol, Belize, demonstrate the evolution of heritage management. This abandoned metropolis has also been the location of concerted stabilization and conservation efforts. Research and heritage management efforts at this urban center have been coordinated and intertwined since the project's inception. This article contextualizes the long-standing relationships between archaeology and cultural heritage as it has been practiced at Caracol, Belize within the broader field of Maya Studies.

Keywords: heritage management; collaborative research; Maya archaeology; consolidation; stabilization; looting

1. Introduction

The management of the heritage of ancient Mesoamerica is operationalized in different ways in the various countries that constitute the culture area. Belize, El Salvador, Guatemala, Honduras, and Mexico all contain ancient Maya sites but have different laws governing archaeological practice related to these past remains. In some countries, heritage is used to instill and support a sense of nationalism in a diverse population; in others, the projection of national heritage is a source of controversy among ethnic groups. No matter the case, archaeology figures prominently in documenting and building heritage, both past and modern. This article contextualizes heritage management at Caracol, Belize by providing a historical frame of reference for this ancient Maya site. It chronicles the efforts that went into the conservation and stabilization of these ruins for touristic purposes and also places these efforts within broader policy issues in Mesoamerican archaeology. Caracol has always been viewed by the country of Belize as their anchor site for both world heritage status and for Mundo Maya tourism, and balancing these two objectives has presented challenges for the site's heritage management.

2. Background

Any history of heritage management in the Maya area (Figure 1) should consider the activities of some of the earliest Spanish priests that set foot in Mesoamerica. Much of the rich cultural heritage of central Mexico was preserved in the writings of Bernardino de Sahagun [1] in the Florentine Codex, but in the Maya area, Diego de Landa [2] gathered together the written heritage of the native Maya and burned their paper books (codices) and wooden religious images in a great bonfire—a formal attempt to destroy ancient Maya heritage and ways of life. His subsequent record about Maya culture and history was an atonement for his activities in the Yucatan, written in Spain with access to other colonial descriptions; while not replacing the works he destroyed, his written report remains a major reference for the ancient Maya [3,4] (pp. 362–363). In general, however, the initial Spanish settlers in the Maya area attempted to convert the Maya to Christianity and concomitantly to erase their ancient heritage, first through policies involving population movements and the establishment of encomiendas [5] and subsequently through the removal of perceived pagan or otherwise offensive Precolumbian images, while at the same time imposing European mores and values. Thus, when Empress Carlotta of Mexico, cousin of Queen Victoria of England, visited the site of Uxmal in November 1865, the local officials made a concerted effort to remove all ancient Maya phallic images that had once existed at the site (phallai were used as gutter spouts on buildings and were also placed vertically as stelae; see [6–8] (p. 319)).

The value of the ancient past was seized upon in Mexico as a way of uniting its many native populations; ancient architectural structures were viewed as monuments to be celebrated and that could be used to foster nationalism [9] (p. 191). This is evident in the massive effort that went into the stabilization of the Pyramid of the Sun at Teotihuacan under the guidance of Leopoldo Batres in honor of the first century of Mexican independence. In order to move the earth and supplies necessary to undertake this task, a railway was built to the Pyramid of the Sun [10] (p. 11). In Mexico, heritage management has thus long been tied to the creation of a national identity [11]; the stabilization of Teotihuacan's largest pyramid was the forerunner of subsequent Mexican policy focused on the preservation of its sites for both touristic and nationalistic purposes [12].

Maya archaeology has a varied history of heritage management and site stabilization that in some cases corresponds with national boundaries. Early research projects in the Maya area had different track records with regard to site preservation. The activities carried out by archaeological projects associated with the Carnegie Institution of Washington (CIW) highlight contrasting approaches to this issue [13] (p. 273). The initial CIW project at Uaxactun, Guatemala (carried out from 1924 to 1937), left excavations open and largely removed the central palace (and other structures) of that site during the course of its study [14]. In contrast, the CIW project at Chichen Itza, Mexico (carried out from 1924 to 1936), focused on the conservation of select structures under the guidance of the lead researcher Sylvanus G. Morley. Thus, multiple buildings—the Castillo, the Temple of the Warriors, and the Mercado—were all stabilized under the watchful eye of the project. Part of the difference in approaches was likely due to the remoteness of sites and proximity of modern populations. Uaxactun was located deep in an uninhabited jungle in an area where supply runs were more difficult, whereas Chichen Itza was surrounded by population and already had recognized touristic value by the time that the CIW established their project at the site. Yet, the stabilization of Chichen Itza had even broader ramifications than heritage management, helping to define perceptions of both ancient and modern Maya [15]. The recognition of a past relationship between Chichen Itza and Tula in central Mexico [16,17] also served nationalistic purposes. Subsequent stabilization of Tula magnified the similarities between the two sites; in fact, there has been a strong suggestion that the Tula stabilization process created features similar to Chichen Itza where none had existed earlier [18,19]. Regardless of intent, the similarities between these two spatially distinct sites were also points that could be utilized to emphasize the shared heritage of the Mexican people.

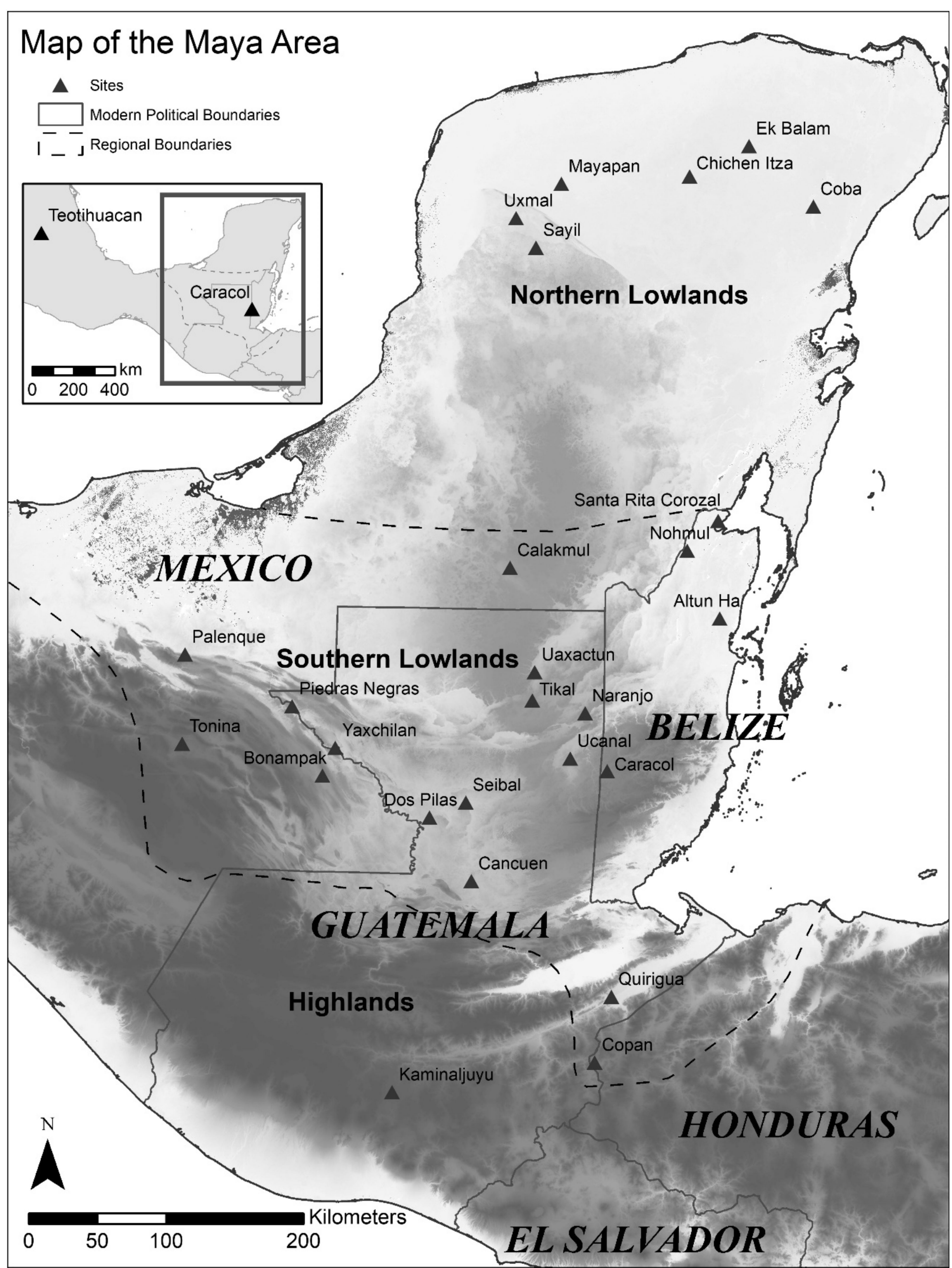


Figure 1. Map of the Maya Area with select sites in the southern lowlands indicated.

While archaeology in the Northern lowlands at Chichen Itza incorporated stabilization and preservation, Maya archaeology in the Southern lowlands did not initially have this focus. As already mentioned, at Uaxactun, later buildings were removed to expose earlier ones and to determine complete architectural plans and sequences [20] with open excavations not being backfilled [13]. Early excavations at Piedras Negras, Guatemala likewise did not focus on backfilling. The University Museum of the University of Pennsylvania carried out an archaeological project at that remote site

from 1931 to 1939; conservation and stabilization were not part of the research design (see photos in [21]). A more recent (1997–2000) archaeological project at Piedras Negras attempted to remedy this through the "stabilization of structures and trenches left exposed" [22]. For any number of Maya archaeological projects through the late 1970s backfilling excavations was not part of standard practice, especially when research took place in inaccessible and largely uninhabited areas as was the case for much of the Maya Southern lowlands. However, a change in heritage preservation practice can be seen in the excavations carried out at Tikal, Guatemala by the University Museum of the University of Pennsylvania between 1956 and 1969.

A major focus of research for the University Museum Tikal Project was the North Acropolis of that site, eventually published in a six volume set by William R. Coe [23], the director of the investigations. Excavation of the North Acropolis at Tikal included a 10 m wide trench that penetrated this architectural complex down to bedrock and had deep side tunnels to other earlier, buried structures. Not only had Tikal been selected to highlight the research carried out by The University Museum, but the Guatemalans also wanted the site to be developed as a way of attracting tourists to Guatemala to enhance that country's economy. As the North Acropolis formed the northern side of the principal plaza at Tikal, its preservation became essential for Guatemalan tourism. However, by 1966, the 10 m wide trench was collapsing, and, before the end of the University Museum Tikal Project, the axial investigation needed to be backfilled so that tourists could appropriately visit the Tikal epicenter. Most of the debris from the North Acropolis trench had been removed some distance and would have required a substantial amount of labor to reclaim. The eroded central pyramid, Structure 5D-33-1st, located at the south (and front) side of the massive trench, was selected for total excavation and as the source for backfilling material for the excavation. The dismantling of this pyramid down to an earlier construction and its use to infill the axial trench through Tikal's North Acropolis were justified as an exercise to understand how the pyramid had been built and was sanctioned by Guatemala's IDAEH, which regulated archaeology in that country [23,24]. But, heritage management decisions made in the 1920s and 1930s when northern Guatemala was not a major touristic location were not as easily replicated in the 1960s, and a major debate ensued over the complete excavation and removal of the latest version of Structure 5D-33 and its use as backfilling material [24–26], in essence turning the issue of site preservation and heritage into an ethical conundrum.

We faced a somewhat similar challenge in 1985 during the first formal field season of the Caracol Archaeological Project (1985-present; http://www.caracol.org) in Belize. The central architectural complex at Caracol, named "Caana" or "Sky Place" [27], had seen two of its three summit pyramids badly looted. Structure B19, the northern structure, had been tunneled into from its northern side and Structure B20, the eastern building, had a massive trench through its front and had been deeply tunneled into from its eastern side, revealing three looted tombs [27] (figs. 4 and 5)] [28]. Investigations in the trench that bisected the front of the summit building revealed an earlier structure that was in a fairly good state of preservation and that had scenes of graffiti on its inner walls, including one of an elite Maya individual being carried on a palanquin [29] (fig. 4.12)]. The then archaeological commissioner for Belize, Harriot Topsey, upon a visit to the site in 1985 briefly discussed the possibility of removing all of Structure B20-1st to expose the earlier building for viewing. However, remembering the ethical dilemma and castigation suffered by the Tikal archaeologists, we all agreed that a better solution was to not take such a path, and today Structure B20-1st is stabilized (thanks to both the efforts of the United States Agency for International Development (USAID) and the Tourism Development Project (TDP) stabilization projects noted below) and provides the full Late Classic vista for Caracol's Caana summit. The consensus reached in 1985 helped us to understand better the broader implications for archaeological research beyond providing just scholarly data for interpreting the past. It placed us squarely in the middle of considerations of how to present the physical past to the modern world in the context of goals that were not only focused on basic research but also on economic development and tourism. This experience also helped highlight the importance of being simultaneously involved in both the archaeology of and the conservation and/or heritage management for a site—something that

in the early 1980s had been long separated in the Southern Maya lowlands (where the archaeologist carried out the research and the country of origin undertook the stabilization).

By the 1980s, Maya archaeology was rapidly evolving in terms of heritage management. Mexico was assessing researchers with a 15% overhead fee on archaeological projects in order to support the conservation and stabilization of that country's sites for tourism. By the mid-1980s, archaeological excavation permits in the country of Belize mandated that all excavations be backfilled or stabilized, changing older archaeological policies that had been established by the British Colonial Government. As colonial British Honduras, researchers in Belize were accorded 50% of all finds to be curated and/or displayed in their home institutions; this is how The University Museum in Pennsylvania ended up with a large collection of carved stelae and altars from Caracol in 1953. However, this colonial practice of partage finally came to an end [30] (p. 281), and Belize changed its policies to make clear that archaeological materials were national heritage, mandating that all key finds be turned over to the then Department of Archaeology.

Belize followed Mexico's lead in assessing a 15% stabilization/consolidation fee on all archaeological projects within the country [30]. When this fee was first proposed by the Belize Department of Archaeology, there was grumbling from some of the senior Mesoamerican archaeologists who were then working in Belize. These complaints reached the United States National Science Foundation (which had funded some of their research). Thus, in 1986, the National Science Foundation (NSF) sponsored a gathering during the American Anthropological Association meetings in Washington, D.C. between then Belizean archaeological commissioner Harriot Topsey and all of the archaeologists who were working or had recently worked in that country. With everyone seated around a large table, the meeting was fairly short. At the head of the table, Topsey looked at the assembled archaeologists, announced that Belize was instituting a 15% surcharge for consolidation of ancient ruins, and asked if anyone had any comments. No one said a word. The silence was broken by John Yellen, who handled archaeological funding for NSF, when he announced that the National Science Foundation would respect the 15% surcharge by Belize in any grants as a valid consolidation/conservation expenditure.

3. Caracol, Archaeology, and Stabilization: A Brief History

The formal investigations of the Caracol Archaeological Project began with two preliminary trips to the site in 1983 and 1984, with annual archaeological field seasons commencing in 1985 [28,31,32]. To a large extent, archaeological experiences at Caracol mirror the already changing field of Maya archaeology and the redefined relationship that Maya archaeology had with heritage management [33]. While always a research project, the Caracol Archaeological Project embraced stabilization efforts early in its history, beginning formal consolidation work on the northern building in the A Group in 1988 (Figures 2 and 3). Archaeological heritage management involves conservation both for stabilization, making sure that something is physically secure or stable, and for tourism, ensuring that what is stabilized can, first, withstand repeated human contact and, second, enhance local economic development. Conservation for tourism requires significantly more expenditures and effort than conservation for stabilization. Given national goals related to tourism, the conservation of ancient buildings usually involves more than cursory stabilization, and this was in fact the case at Caracol.

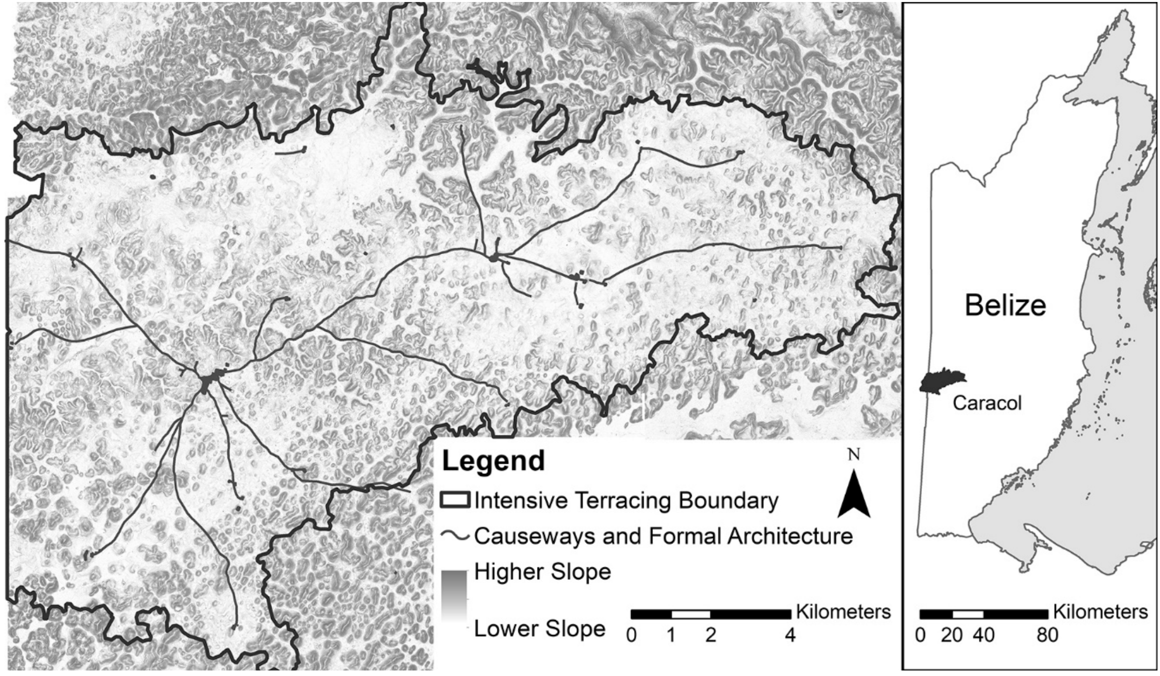
Figure 2. Caracol Structure A3 in 1986 before excavation (looking north).

Figure 3. Caracol Structure A3 in 2011 after further stabilization by the TDP (looking north).

Conjoining archaeology, stabilization, and tourism management at a site can be a useful iterative process. Stabilization permits safe tourism; archaeology provides information that encourages touristic visitation; and, archaeological research engagement in stabilization helps ensure accurate consolidation efforts. This interactive cycle is one that has, in fact, been used successfully at Caracol and is evident in our research and conservation strategies. Between 1985 and 1989, excavation focused on re-excavating looted structures and testing buildings in the site epicenter to establish a basic chronology; it also involved carrying out the first settlement pattern program in the southeastern part of Caracol to get a sense of city size and composition. Initial stabilization focused on Caracol Structure A3, one of the more accessible buildings in the site epicenter. This early work made clear that a combined research and stabilization program could provide key evidence on Terminal Classic (800-900 CE) site occupation in the epicenter as well as provide areas were visitors could safely visit the site. Thus, from 1989 to 1993, sponsored by the United States Agency for International Development (USAID) and the Government of Belize (GOB), a conjoined research and conservation project permitted the recovery of data pertinent to the Caracol's epicentral development and abandonment and stabilized a series of buildings in the downtown area [27,34,35]. In order to place these data in broader perspective, from 1994 to 2000, archaeological efforts focused on carrying out settlement pattern work in the northeastern and southwestern sectors of Caracol [36], again in an attempt to measure city size and better define its composition [32]. Conservation of buildings in these areas did not make sense, given the difficulties in providing long-term security and in conducting stabilization due to a lack of nearby roads and water.

During a second formal conservation effort from 2000 to 2004 by the Tourism Development Project (TDP), sponsored through the Government of Belize and run in conjunction with the Institute of Archaeology, the research project moved back into the epicenter of the site in support of these activities [37]. Following this stabilization cycle, archaeological work sought to better define Caracol's past social composition through examining a series of residential areas throughout the site [32,38], while also testing specific buildings and the associated plazas of various epicentral groups. The Northeast Acropolis, immediately east of Caana, was intensively investigated and was physically stabilized in conjunction with the Institute of Archaeology in 2011 [39]. Thus, the archaeological research has not only produced significant knowledge about Caracol's past, but has also articulated with the formal consolidation efforts and ever-increasing tourism. Extensive publication of the research results also helps to promote public interest in visiting the site, which helps drive Belize's economic development.

Over three decades of active archaeological investigation at Caracol have demonstrated how important the site is to any understanding of the Maya past. Not only is Caracol a massive urban city (Figure 4) [40–42], but it exhibited long-term relationships with people from other parts of Mesoamerica and the Maya area. An individual, potentially from the site of Teotihuacan based on artefactual materials and mortuary pattern, appears to have married into an elite family and was living at Caracol in the early part of the fourth century; the burial of this individual, dating to approximately A.D. 350, was recovered in Caracol's Northeast Acropolis plaza [39]. Connections with other close and distant Maya sites are found in epigraphic texts. Caracol apparently contributed the founding ruler for the site of Copan, Honduras in A.D. 435 [43,44]. Two of Caracol's greatest rulers, Yajaw Te' K'inich and K'an II, were buried in the North Acropolis at Tikal [32] (p. 219) [45], signaling the impact that successful warfare could have on the Maya political order [46]. Research also documents some ways that Caracol may have been unique. During the Late Classic period, Caracol practiced an enlightened form of social practice, known as "symbolic egalitarianism", where most of the populace had access to the same quotidian, prestige, and ritual items [32] (pp. 215–216) [47]; this led to the growth of a large middle status level [48,49] that was facilitated by the site's market system [50–52] and easy access to water within household reservoirs [53,54]. The site organization with its dendritic causeway system, low-density urbanism, and agricultural terraces provides an ancient model of a walkable green city [55]. Finally, the collapse of Caracol again reveals the site's widespread interactions with other parts of Mesoamerica [35,56]. As such data about the site reaches not only academic audiences, but also public ones, the research can drive tourism and increase the need for heritage management.



(after Chase, A.S.Z., et al. 2020 fig. 2)

Figure 4. The ancient city of Caracol, Belize shown against the modern country of Belize.

The support of long-term archaeological projects, like the one at Caracol that has conducted 36 consecutive field seasons, is not easy to accomplish. Assuring continued funding for research at a single site can be difficult [57], but it has been possible at Caracol because of the ability to establish different research designs over time and the fact that these different programs of research often evolved into new and interesting questions that were of interest to the general field of Maya studies [32]. Equally important has been the willingness and interest of both the lead archaeologists and the heads of the Belize Institute of Archaeology in cooperating and planning the process of conjoining research and heritage management.

4. Caracol, Archaeology, and Stabilization: United States Agency for International Development (USAID)

In the late 1980s, USAID was still operating throughout Central America and had provided funds to the development of Copan, Honduras in the late 1980s. Seeing that USAID had provided funding for archaeological research and stabilization in Honduras [58] (p. 20), the Caracol Archaeological Project approached USAID in Belize in 1987 about the possibility of funding for Caracol's touristic development. While the first response by the USAID office was negative, a new US ambassador in Belize (with an MA in Cultural Anthropology) helped turn USAID funding into a reality.

At the time that the USAID funding was provided in 1989, almost all tourists to Belize were either drawn to the cayes and the natural resources provided by the barrier reef or were passing through the country from Mexico on their way to Guatemala and that country's archaeological ruins. The proposed USAID funding was seen as a potential avenue for encouraging tourists to overnight in the Belize interior and thus contribute to the country's economic development. The USAID funding was tied to direct support from the Belize Government. The bulk of the funding for the first two years of stabilization came from USAID with the Belize Government providing progressively more in years 3 and 4; year 5 consisted of funding from the Belize Government alone. The overall goal of the USAID-supported Caracol Archaeological Project was to assure that there would be several architectural complexes in the epicentral part of the site (Figure 5) that visitors could see as a first

step in drawing tourists into the interior of Belize. Initially, USAID wanted to know whether they should first spend money on a road to Caracol or on the site itself. While the road would have made the investigations easier and have saved a lot of wear and tear over the years in terms of spent and broken vehicles, it made no sense to fix the road if there was nothing but jungle to see at the end of the drive. The Caracol Archaeological Project therefore opted for site development and provided a plan to USAID that focused on three specific vistas that could be appreciated from ground level without having to climb pyramids: a front view of Caana (Figure 6), a rear view of Structure A6 (the Temple of the Wooden Lintel), and a front view of the South Acropolis (at the time gutted with open excavations from earlier investigations undertaken in the 1950s by A. Hamilton Anderson [59,60], the first archaeological commissioner of Belize). To attain these goals, we would first carry out the excavations of these locations and then supervise their stabilization with the support of Institute of Archaeology specialists, according to established practice in Belize. While each of these locales were indeed foci for USAID conservation, stabilization also was carried out on the summit building that comprised Structure A3 in the A Group, as well as on Structures A38 and A40 in the Central Acropolis (Figure 7). This plan of action not only produced solid archaeological evidence for the use, construction, and abandonment of Caracol's palaces and temples but also stabilized key structures.

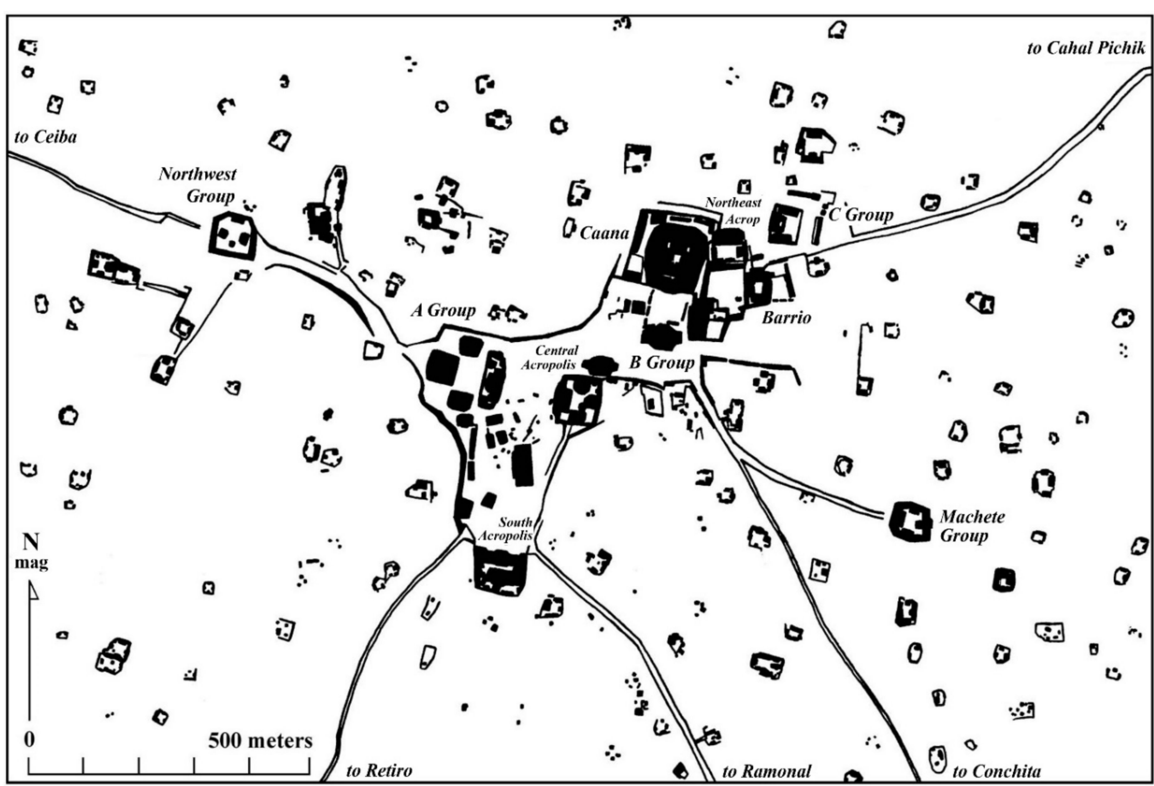


Figure 5. The epicentral buildings of Caracol, Belize (after [32] fig. 2).

Figure 6. The USAID stabilization of the Caana architectural complex at Caracol, Belize in 1993.

Figure 7. Caracol Central Acropolis stabilization undertaken by the USAID efforts (looking south).

To stabilize excavated buildings, large amounts of lime and cement needed to be trucked into the site and clean marl fill and cut stone needed to be stockpiled. Luckily, the marl and cut stone were byproducts of excavating the once vaulted stone architecture in the site core. Thus, the only other thing needed was water, which was pumped from the Caracol A Group Reservoir. Using a standard mix of cement (1 part), lime (1 part), marl (3 parts), and water (as needed), the stabilization of the epicentral structures proceeded using the still extant ancient architecture as a guide (Figure 8). In this way, the epicentral structures of Caracol were transfigured into some sense of their former selves and also "tourist-proofed" so that they would not fall apart under the onslaught of visitors or be a danger to them. While the project supervised most of the stabilization in concert with the excavation of the buildings, specialists were also required. Thus, when a lintel was needed over the front doorway for the Temple of the Wooden Lintel (Structure A6), a zapote-wood beam was cut to specification and installed by the Institute of Archaeology's head stabilizer. While access to Caracol was still difficult because of the unfinished road, the stabilization work, television shows, and continuous publication of the archaeological research through the 1990s resulted in an upsurge in tourism. This increased tourism meant that earth-moving equipment was occasionally placed on the road to facilitate touristic access, drawing attention to the need for a road that could be used throughout the year, including the rainy season.

Figure 8. Stabilization being undertaken on the front face of Caana by the USAID efforts.

After the five-year USAID-Government of Belize stabilization project, the Caracol Archaeological Project continued to work closely with the Institute of Archaeology. In 1998–1999, the Institute constructed an on-site museum and visitor center just east of the site's epicentral architecture. This small exhibition hall is accessed by all tourists and sightseers to Caracol either at the beginning or end of their site visitation. The visual panels and artifactual displays that were installed in this on-site museum were undertaken by the Caracol Archaeological Project in concert with the Belize Institute of Archaeology (the images used for the installed panels may be viewed at https://www.caracol.org/dig/virtual-museum/). This immediately foreshowed Belize's Tourism Development Project at Caracol

and, again, a shift in research focus by the Caracol Archaeological Project back to the site epicenter to work with these stabilization efforts.

5. Caracol, Archaeology, and Stabilization: Tourism Development Project (TDP)

Following the initial USAID funding for Caracol, the Belize Government embraced the use of development funds to build archaeological infrastructure for tourism as a way of driving the economy of the county. In particular, the Belize Government partnered with the Inter-American Development Bank (IDB) and the World Bank to obtain funding for building their tourism infrastructure. After a series of consultants for these various funding agencies had completed their studies, the IDB provided the Belize Government with a loan for improving the road to Caracol and for also carrying out more stabilization not only at that site but at other archaeological sites throughout the country of Belize. This effort, which lasted from December 2000 through November 2004, was also seen as a way of providing employment opportunities to local constituents, much like the Works Project Administration in the US had used archaeology [61] during the Great Depression.

While the Caracol Archaeological Project continued with archaeological investigations at the site, the Tourism Development Project undertook stabilization of buildings previously investigated by the Caracol Archaeological Project, as well as in other buildings throughout the site epicenter. These new efforts focused particularly on monumental architecture in the A Group, the B Group, Caana (Figure 9), the Central Acropolis, and the South Acropolis. Following the discovery of basal stucco masks on Structure B5 and on the eastern flank of Structure B19, the TDP also made fiberglass replicas of the monuments so that these features would be openly visible to visitors at the site. Much of this research and conservation was also truly collaborative for it combined the efforts of archaeologists from the Caracol Archaeological Project with those of the TDP, the first major conservation project directed by Belizean archaeologists. This collaborative approach marked an important milestone in heritage preservation in Belize for, in many ways, it represented a significant move towards the decolonization of heritage management in the country, as argued for other venues [62,63]. More importantly, however, it served to demonstrate that far more can be accomplished in heritage management when national and international stakeholders work together and combine their efforts and resources [64,65]. At Caracol, the value of this approach is exemplified by these and several other joint operations at the site. In particular, the Caracol Archeological Project collaborated with the Tourism Development Project on carrying out more research in two archaeological complexes, Barrio and the South Acropolis, both areas that had previously been investigated. In both of these complexes the archaeological project excavated new rooms and buildings so that the entire complex could then be stabilized by the development project. Similar cooperation took place on the summit of Caana and in a residential complex referred to as the Raleigh Group.

Concurrent with the archaeological components of the conservation project, the TDP also invested considerable funds on infrastructural developments designed to preserve the site's monuments and to enhance visitor's experience at the site. These included the construction of modern bathroom facilities plus a large structure for housing and protecting Caracol's carved stone monuments. Additionally, as a result of the TDP funding package, the last 12 miles of the Caracol road—historically the worst section of the thruway—were paved, while other sections of the road were improved. The completion of the conservation and infrastructural components of the Tourism Development Project in 2004 led to a dramatic increase in visitation by both locals and foreigner visitors, and it also served to train many Belizeans in site conservation and heritage management. Today, many of the staff hired and trained by the TDP are now full-time members of the Belize Institute of Archaeology.

Figure 9. Caana, Caracol, Belize after stabilization by the TDP efforts.

6. Caracol, Archaeology, and Stabilization: Other Stabilization—Northeast Acropolis

Following the second set of stabilization efforts at Caracol, the Caracol Archaeological Project again embarked on settlement research for a number of years. However, the archaeological project then returned to the epicenter to carry out more investigations in the Northeast Acropolis, where research had originally been undertaken in 1994 and 1995. These investigations, carried out from 2009 to 2011, exposed the palace structure atop the northern substructure and the western and southwestern buildings. Rather than backfill these structures, the archaeological project opted to sponsor the stabilization of these buildings for tourism to encourage visitors to explore stabilized areas east of Caana that had been stabilized by the TDP. To accomplish this goal, the archaeological project hosted an Institute of Archaeology stabilization crew at the same time that project excavations were ongoing. As a result of these efforts, a walkway was constructed on the eastern side of Caana that climbed a stairway in the southwestern corner of the Northeast Acropolis and exited the southeastern corner of this complex. Additionally, Structures B31, B32, and B33 were all stabilized under the direction of the Institute of Archaeology in collaboration with the Caracol Archaeological Project. These investigations, like the previous ones, thus served both heritage management and archaeological research interests.

7. Current and Future Development Plans and Issues

Some aspects of the current development plans for the Caracol region are already under way. The unpaved road from the main Western Highway at Georgeville in Belize is being widened and paved—all the way into Caracol. While the last 12 miles of the road were paved in 2000, that road is currently rutted, pot-holed, and largely eroded to its underlying bedding. The new effort will formalize a road some 56 miles in length. This will facilitate touristic visits to Caracol and will undoubtedly lead to new stabilization efforts. A paved road will also provide access to the site by cruise-ship passengers that dock in Belize City, as it will make a day-trip by vehicle to Caracol a reality. This should

substantially escalate the visitors to the site and increase the need to plan for the differentiation of visitor movement and access at the site to best preserve the archaeological and environmental resources.

The paved road, however, will also mean that new development and stabilization efforts will be possible—both because it will be easier to bring in supplies and to access other parts of the site. Currently, the epicenter can be toured in approximately three hours, but future plans would see the possibility of multi-day visits to the site. One potential plan would focus on causeway walks to impressive termini groups (nodes of monumental architecture that facilitated intra-city market exchange), permitting interested tourists to explore a series of residential complexes along the route. This would decrease concentrations of visitors in the epicenter and also meet the needs of tours focused on biological and natural resources

There is a strong desire on the part of the Belize Government to make Caracol a World Heritage Site. World Heritage status would not only raise national pride in Belize but would also help make Caracol more secure. Caracol is one of the oldest protected archaeological sites in Belize, having been established as a reserve by the then archaeological commissioner, A. Hamilton Anderson, and the British Colonial Government in 1958. The limits of the preserve only extend 5 km out from the site epicenter and do not encompass that actual ancient city. However, the archaeological reserve is located within another protected area, the Chiquibul Forest, and the activities within the Forest Reserve are exceedingly restricted. While Caracol remains a legally protected area by virtue of being located in both a protected archaeological reserve and a protected forest reserve, World Heritage status would even more firmly establish the priorities of site conservation as well as make more resources available to enhance security for the general area.

Learning from development at Tikal, Guatemala, there is currently no intent to develop hotels within the site itself. Future hotel development would likely take place in Douglas de Silva, some 22 miles from the site epicenter. It is projected that the only individuals residing in the epicenter of the site would be the site caretakers and park rangers, the rotating military patrols and tourism police, and the members of the archaeological project. The current museum, installed in 1999, will be updated and enlarged. At some point in time, a restaurant may open to provide lunch facilities and drinks for tourists, something currently not available.

Besides issues of modern services at the site—such as water (there is only rainwater capture and one functional ancient reservoir), electricity (there is only a generator or solar panels with no larger grid access), and phone service (there is no Belizean service, only Guatemalan service from certain parts of the site and atop certain pyramids)—there are a series of other concerns that need to be resolved in terms of heritage management. Looting of Maya sites has a long history within Central America because the beautiful objects that were created by the ancient peoples have significant modern monetary value [66,67]; this has created many ethical issues for modern Maya researchers [68–70] (see Balestrieri [71] for comparable ethical issues regarding looting in Classical Archaeology). Looting has been a consistent problem in Belize [30] and in the Caracol area [72]—as well as throughout much of the Maya area [73–76]. When the Caracol Archaeological Project started excavation at the site in 1985, there were a series of well-established looters' camps in the epicenter as well as substantial trenches on the Caana summit [28,72]. The magnitude of the problem led to a collaborative publication by the Caracol Archaeological Project and the Institute of Archaeology that sought to draw attention to broader issues related to looting [68]. During settlement pattern work in the 1980s, more camps, as well as open pits and tunnels, were recorded by surveyors, providing evidence of the looters often successful activities (it is clear that the looters uncovered tombs and caches in some of the termini groups and in numerous residential groups; see Figure 10). Newer technologies like lidar actively highlight the extensiveness of the looting [77,78], while raising a host of new ethical issues [79]. Looters have always been precocious and one of the legacies left by looters was the inside of a cigarette carton nailed to a tree at the end of the Pajaro-Ramonal Causeway in 1987, bearing a message in Spanish that let the archaeological project know that the looters were the archaeologists of that region and that the project was not welcome.

Figure 10. Artifactual materials left behind by looters at the Pajaro-Ramonal Terminus of Caracol.

Illegal excavation has continued throughout the years despite the best efforts by the Belizean military to patrol the immediate vicinity of the site. It has been accompanied over the years with an influx of people from across the Guatemalan border (only 4 km west of Caracol's epicenter) who combed through the Caracol jungle terrain in search of various items, including a wide variety of jungle resources other than archaeological materials. The first of these resources that was heavily collected was known as "shate"; the leaves of this plant were in high demand for flower arrangements throughout the developed world. The second wave of harvested items included hardwood trees. Illegal logging has been a perennial problem in the Caracol area, but in the last decade illicit loggers working at night have systematically removed entire species of trees, like mahogany and tropical cedar, for up to 10 km into Belize. They cut down the trees, carve out planks of wood with chainsaws, and then leave these planks to dry and then be hauled out by horseback at a later date across the border into Guatemala, where they are marketed. The final plant that has impacted looting and archaeological work is marijuana. Given that Guatemala and Belize have a border dispute over a 3-km wide stretch of land, many "farmers" have taken advantage of this no-person's land to plant marijuana crops

and, in conjunction, to also loot ancient residential groups in this transitional zone. Thus, border control and management between Belize and Guatemala is one of the issues that must be resolved to promote site heritage management. Even though the populations in both countries have voted (in 2018 for Guatemala and 2019 for Belize) to have their long-standing border dispute [80] resolved by an international court, this resolution has not yet been effected. And, given the remoteness of Caracol, an international court decision may not actually solve the long-standing problems in and of themselves.

8. Concluding Comments

Within the last 50 years the role of archaeology has changed in most Central American countries from one more concerned with basic research to one where research has become intertwined with tourism and the economic benefits that accrue therein. Archaeology at Caracol began as basic research in its earliest phase in the middle of the twentieth century—an attempt to gain knowledge about a largely unknown part of the Maya area—but transitioned into a more comprehensive development plan that considered basic research, heritage management, and economic development. This led to collaborative efforts between the Belizean Institute of Archaeology and the Caracol Archaeological Project. These Belizean collaborations go beyond the site of Caracol; they were already in evidence with the Corozal Postclassic Project (1979–1985) that focused research on the Late Postclassic capital of Santa Rita Corozal in the Corozal District of Belize [81]; with the TDP, these collaborations also existed at Xunantunich and Lamanai. The collaboration between dirt archaeology, stabilization, and broader touristic goals at both Santa Rita Corozal [82–84] and Caracol [85–88] were highlighted in various Government of Belize publications. Other publications appeared in mainstream archaeology journals, one in particular being a joint statement on looting, collecting, and the protection of cultural heritage [68] (see also [70]). An even more recent collaboration builds on the earlier Santa Rita Corozal research, framing recent consolidation efforts in terms of the importance of the recovered archaeological data [89].

Collaborative efforts in heritage management—which combine the interests of researchers, local stakeholders, and national or world-wide heritage institutions—are critically important for the future success of archaeological research, conservation, and tourism development [64] (p. 76) [90,91]. This is particularly key in the Maya area, where many of the countries that make up the Mundo Maya are still in the process of developing their professional capacity to sustainably manage their cultural resources [64]. Importantly, these collaborative efforts serve to bring national and foreign colleagues together, as well as to help ensure that our interpretations and preservation efforts related to the past are conducted through teamwork rather than as independent efforts that ignore the interests of one group over the other [63,65] (pp. 173–181) [92,93]. Furthermore, these collaborative efforts also create "opportunities for finding common ground for dialogues about the goals of scientific research, publication, and conservation" [94], something particularly in evidence in Belize's annual archaeology symposium that occurred every year from 2003 to 2019 [33] (pp. 23–24) [95] (Belize's annual archaeology symposium was canceled for 2020 because of COVID-19).

Finally, it is important to note how Maya archaeology itself has changed in the last century. In his retrospective article on the importance of the Carnegie Institution of Washington's Uaxactun Project in the Peten District of Guatemala, Stephen Black [13] (p. 273) emphasized that the excavations at that site "served as a model for what might be called the dirt archaeologist's approach to Maya sites" in that they "were not constrained by any concern for preserving the site". Even though destructive, the results of this research generated archaeological data that was crucial for the development of Maya archaeology and that is still used today (see especially information on the site's ceramics [96,97] and information on Group E and its astronomical significance [34,98]. Black [13] (p. 273) contrasted the Uaxactun research with that at Chichen Itza, which he viewed as spawning "a preservationist approach to Maya sites which has contributed little to Maya archaeology beyond a corpus of reconstructed monumental architectures". We strongly believe that the contrast between dirt archaeology and preservationist approaches is no longer valid. We have always felt that the two approaches to Maya research—research

archaeology and a preservationist approach—should be conjoined. Because of the long-standing partnership between the archaeological project and the Belize Institute of Archaeology, excavations at Caracol have not only focused on conserving areas important to site preservation and eco-development, but also on carrying out more intensive research in areas that otherwise might have seen limited archaeological sampling because of the need to engage with heritage management. In this vein, we hope that the long-term research and stabilization efforts at Caracol, Belize have served as a model for how this can be successfully accomplished.

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Article

The Contradictions of Engaged Archaeology at Punta Laguna, Yucatan, Mexico

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Abstract: Engaged archaeology, like other forms of research, is replete with contradictions. Over the last several years, members of the Punta Laguna Archaeology Project—a community-based endeavor in Yucatan, Mexico—have encountered and sought to address several paradoxical questions. Do attempts to mitigate certain forms of inequality unintentionally sustain other forms of inequality? Can the production of capital alleviate rather than exacerbate unequal social relationships? And, can Western social theories be marshalled to advocate for and increase Maya and other Indigenous perspectives in archaeology? This article examines these contradictory questions and analyzes them as potential sources of dialectical change. To conclude, the article suggests three new foci for engaged archaeology: intersectionality, control, and authoritative speech.

Keywords: engaged archaeology; inequality; contradictions; Maya archaeology; Yucatan

1. Introduction

At first glance, contradictions—broadly defined as logical incongruities or entities consisting of opposing ideas—may appear nonsensical or even inane. Indeed, the absurdity of contradictions has been a source of humor. Yogi Berra, for example, famously quipped that "nobody goes there anymore. It's too crowded". And, Oscar Wilde once said, "I can resist everything except temptation". The absurdity of contradictions has also been a source of contemplation and social critique. In George Orwell's 1984, for instance, the fictional ruling party adopts a paradoxical slogan that gives readers pause: "War is peace. Freedom is slavery. Ignorance is strength". Within the social sciences, contradictions have often been understood as catalysts, as phenomena that generate new knowledge and bring about social change. As Georg Hegel [1] wrote, "contradiction is the root of all movement and life; it is only in so far as something has a contradiction within it that it moves, is possessed of instinct and activity". Put simply, contradictions generate change [2].

Like other forms of research, engaged archaeology—archaeology that is "community-serving rather than strictly research-generating" [3]—including activist or action archaeology [4,5], community archaeology [6,7], and Indigenous archaeology [8,9] is replete with contradictions. Over the last several years, members of the Punta Laguna Archaeology Project, a community-based endeavor in the Yucatan peninsula of Mexico, have aimed to practice engaged archaeology such that Maya peoples generate information about the Maya past, control how they are represented to tourists, and otherwise benefit their own communities. Such goals, however, are difficult to achieve. As other scholars have noted, the "challenges to collaborative [and other forms of engaged] archaeology should not be underestimated" [10]. At Punta Laguna, fieldwork has led to a series of paradoxical questions likely encountered by those working with and for other Indigenous communities. Do attempts to mitigate certain forms of inequality unintentionally sustain other forms of inequality? Can the production of capital alleviate rather than exacerbate unequal social relationships? And, can Western social theories be used to advocate for and increase Maya and other Indigenous perspectives in archaeology?

Rather than glossing over these contradictions or viewing them as frivolous, this article examines them in detail and analyzes them as potential sources of new knowledge and social change. Indeed, "reflection on successes, failures, and unexpected consequences of social action has been a vital source of new understandings" [11]. This article will first consider the concept of contradictions and how engaged archaeology can be a contradictory endeavor. It will then provide context for the emergence of engaged forms of archaeology in the Maya area and introduce Punta Laguna and the Punta Laguna Archaeology Project. Finally, the article will explore three different contradictions encountered by project members—contradictions associated with labor, capital, and praxis—and suggest three new foci for engaged archaeology: intersectionality, control, and authoritative speech. Like the other contributions to this special issue, this article thus focuses on the process of practicing engaged archaeology with and for a Maya community, and encourages further experimentation with engaged forms of archaeology in the Maya area and beyond.

2. Contradictions and Engaged Archaeology

Contradictions have substantially influenced social thought, perhaps most notably in the form of the dialectic. As originally described by Hegel, a proposition, or thesis, contains within itself and leads to the expression of its opposite, or antithesis. The struggle between thesis and antithesis leads to a new proposition, or synthesis [12]. In Hegel's [13] words, "we are dealing with forms of consciousness each of which in realizing itself at the same time abolishes and transcends itself, [and] has for its result its own negation—and so passes into a higher form." Karl Marx adopted from Hegel the notion that history progresses through dialectical change and that every historical epoch contains within itself the seeds of its own destruction. Unlike Hegel, however, Marx argued that social change is driven by the forces and relations of production, and that the antithesis, or contradictory source of change, is class struggle [12,14,15].

The notion of the dialectic, and the explanatory power of contradictions more generally, have influenced numerous scholars [16]. Practice theorists have described the relationship between structure and agency as dialectical. Put differently, changes to structuring principles and the habitus occur because each contains within itself, influences, and alters the other [17]. Structuration theorists have similarly posited a dialectical relationship between social rules and the actions of human agents [18]. Further, historical ecologists have understood human environmental interactions as reflexive, postulating "a dialectic at work between nature and culture, an evolving relationship in which the present adapts to the results of past interactions" [19,20].

More broadly, the history of science has been described in terms of dialectical change. In his mid-century publication The Structure of Scientific Revolutions, Thomas Kuhn [21] argued that scientific knowledge does not, as traditionally thought, progress in a linear fashion through the gradual accumulation of data. Rather, he argued that the history of science is better characterized as a series of revolutions that occur when the anomalies and inconsistencies inherent to a particular research paradigm come to light. (Nevertheless, some [22–24] have critiqued the term research paradigm and its applicability to developments within archaeology.) Put differently, for Kuhn and others, science has progressed dialectically, with each research paradigm containing inconsistencies that lead to its repudiation by the scientific establishment. Knowledge about the world thus increases not because of the slow and steady "accumulation of established truths", but because of "revolutionary breakthroughs in science [which] often derive from growing recognition of contradictions and aporias within paradigms" [11].

Drawing on various scholars including those noted above, several archaeologists have suggested that contradictions fueled social changes in past societies [25–33]. Christopher Tilley [31], for instance, has argued that differences between represented and actual social relationships led to the collapse of the hegemonic social order in middle Neolithic southern Sweden. Randall McGuire and Dean Saitta [28,34,35], to take a second example, have argued that the logical incongruities of a simultaneously egalitarian and hierarchical society were a critical impetus for shifts in social organization in the pre-Hispanic southwestern United States.

Those practicing engaged forms of archaeology have used the notion of contradictions not only to explain past social change, but also to characterize the causes and consequences of their own research. Often, engaged archaeologists are both spurred and haunted [36] by contemporary contradictions. On the one hand, such scholars tend to enmesh themselves in social struggles catalyzed by logical incongruities—social struggles "born in contradictions: between the protagonists' aspirations for well-being and the oppressive social conditions they confront; between their own analysis of their surroundings and dominant representations of their oppression as justified or inevitable" [37].

On the other hand, the practice of engaged archaeology is itself contradictory. For many, and particularly members of marginalized groups, the notion of equitable or ethical research is an oxymoron. As Linda Tuhiwai Smith [38] has written, "from the vantage point of the colonized . . . the term 'research' is inextricably linked to European imperialism and colonialism". She continues, noting that "the word itself, 'research', is probably one of the dirtiest words in the indigenous world's vocabulary" [39]. Indeed, archaeological and other forms of research can generate the selfsame inequalities and hierarchies that engaged scholars try to combat, and can do so regardless of an intent to produce emancipatory knowledge [39]. Despite the best intentions, "all kinds of institutional patterns end up reinforcing the very inequities that the knowledge ostensibly contests" [37].

This article argues that the contradictions of engaged archaeology, like those of other research programs, should not be minimized but instead brought to the fore, investigated in detail, and examined as potential sources of new knowledge and founts of social change. Specifically, this article considers a series of contradictions encountered by the community-based Punta Laguna Archaeology Project—contradictions associated with labor, capital, and praxis. First, however, this article will briefly provide context for the emergence of engaged archaeology in the Maya area and introduce Punta Laguna and the Punta Laguna Archaeology Project.

3. The Maya Area, Punta Laguna, and the Punta Laguna Archaeology Project

In the Maya area, as in many other parts of the world, the relationships between archaeologists and members of descendant communities have traditionally been problematic. (Patricia McAnany [36] has provided an insightful overview of how indigenous groups and archaeologists have engaged the Maya past.). In the first half of the twentieth century, the earliest archaeological explorers in the region marveled at the ancient cities while simultaneously disparaging the contemporary inhabitants. In his 1927 account of the Mason–Spinden survey of the east coast of the Yucatan Peninsula, Gregory Mason [40], for example, described the archaeological sites as "splendid" and "lovely", but the local people as "ignorant" and as an unfortunate but necessary part of fieldwork. He lamented that "again and again we have reached a ruin only to have an Indian appear as if by magic and keep a close eye on us until we had finished our work" [40].

In the following decades, members of the first large-scale projects in the Maya lowlands collaborated with national governments, but rarely mentioned local communities or contemporary Maya peoples. At least some archaeologists believed the Maya to have existed solely in the past. In one instance, William Coe [41] wrote of the need to "rescue [the ancient Maya metropolis of] Tikal for our edification by whatever means we have. It is old; it belongs to a people whose culture for the most part died long ago. If its history and that of its makers have bearing on today, it lies most likely in the causes of civilization and those factors, both natural and human, that made it die".

More recently, archaeologists have reconsidered and redefined their relationships with contemporary Maya peoples. Over the last two decades, several archaeological projects in the Maya area have actively redressed inequities resulting from archaeological research. McAnany and colleagues' Maya Area Cultural Heritage Initiative [36,42,43]; Richard Leventhal and colleagues' Community Heritage Project in Tihosuco [44]; Traci Ardren and colleague's [45,46] work at Chunchucmil and beyond; and Héctor Hernández Álvarez and colleagues' [47] work at Cholul, offer prominent examples.

The Punta Laguna Archaeology Project has continued this trend. Punta Laguna is located in the Yucatan Peninsula of Mexico, approximately 20km northeast of Cobá (Figure 1). The contemporary village consists of approximately 150 residents who speak Yucatec Mayan as their primary language. Most also speak Spanish. Like other villages in the area, Punta Laguna includes a bilingual grade school for young children; a small church used by traveling religious personnel; a modest store selling snacks, cleaning supplies, and other goods; a concrete soccer field; house compounds; and milpas (agricultural and often corn fields). Notably, the village also operates an ecotourist attraction: the Otoch Ma'ax Yetel Kooh (House of the Monkey and Puma), also known as the Punta Laguna Nature Reserve (Figure 2). Those visiting the reserve can walk with a local Maya guide on trails through the jungle to search for spider monkeys and archaeological structures; canoe and ride a zip line across the lagoon; and buy crafts such as needlework and jewelry from local artisans. Visitors can also participate in a Maya purification ceremony, led by a village shaman, and conducted entirely in Yucatec Mayan. This ceremony takes place around a traditional wooden altar and includes burning copal incense and drinking non-alcoholic balché from a gourd. Punta Laguna is a rare example of an ecotourist attraction created by, and that tangibly benefits, Indigenous peoples [48].

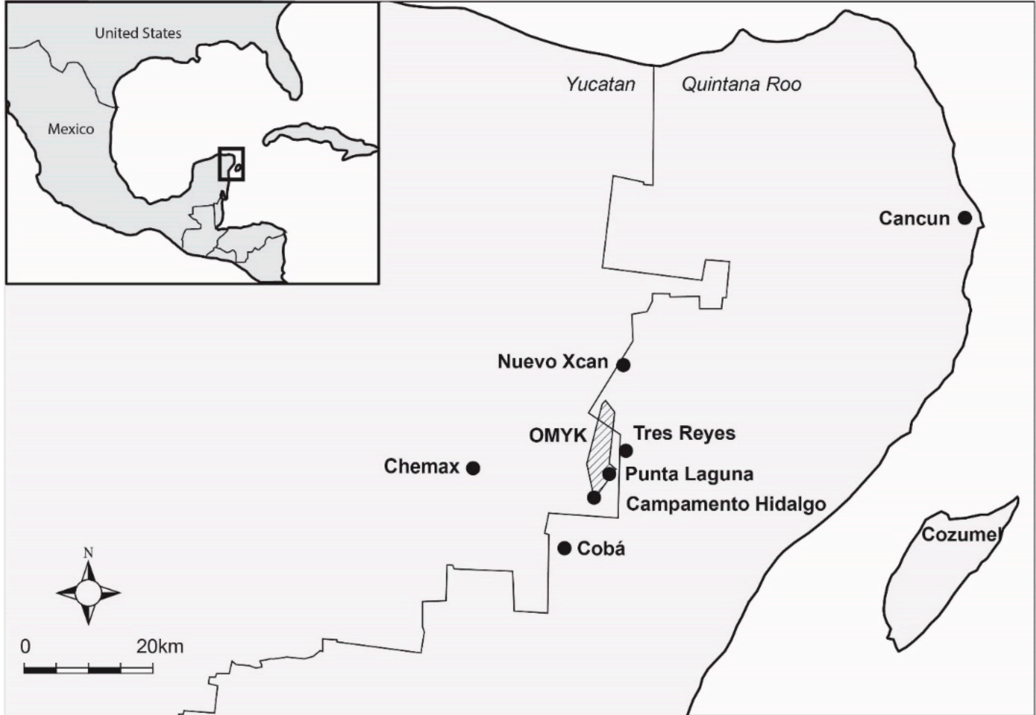

Figure 1. A map showing the location of Punta Laguna, the Otoch Ma'ax Yetel Kooh (OMYK), and other locales in the northeastern Yucatan Peninsula of Mexico. Map by author.

Figure 2. Tourist activities at Punta Laguna. Clockwise from upper left: (**a**) a spider monkey, (**b**) a miniature masonry shrine, (**c**) a purification ceremony, (**d**) a canoe ride across the lagoon. Photographs by Conrad Erb.

The archaeological site of Punta Laguna, located almost entirely within the nature reserve, includes a cenote (a natural sinkhole filled with water) containing an ancient mortuary deposit of at least 120 individuals [49–53]; stelae; a series of caves [54,55]; and the remains of over 200 mounds (Figure 3). These mounds range in height from just above ground level to approximately 6m and include seven miniature masonry shrines (see Figure 2)—one room buildings that span only a few meters in length, width, and height [56–58]. Ceramics [59] suggest that Punta Laguna was occupied continuously, with ebbs and flows, from the Middle Preclassic (600−300 BCE) through the Postclassic period (1100–1550 CE) [60].

Since 2014, the Punta Laguna Archaeology Project, codirected by Sarah Kurnick and David Rogoff, has endeavored to work collaboratively with and for members of the Punta Laguna community. Many decisions, including what research questions to address and how to disseminate the project's findings, have been made collaboratively. At community meetings in 2015, for example, village residents asked that the project first provide answers to commonly asked tourist questions, including when the structures were built. Community members also expressed interest in knowing whether those who lived at Punta Laguna in the past had a communal system of government, like the current residents, or whether they were subjects of a king. As a result of these conversations, the project is currently investigating the occupation history of the site as well as the nature of Maya political authority during the Postclassic period. Critically, the Najil Tucha cooperative, comprised entirely of local community members, grants permission for research to be conducted at Punta Laguna and can terminate the project at any time.

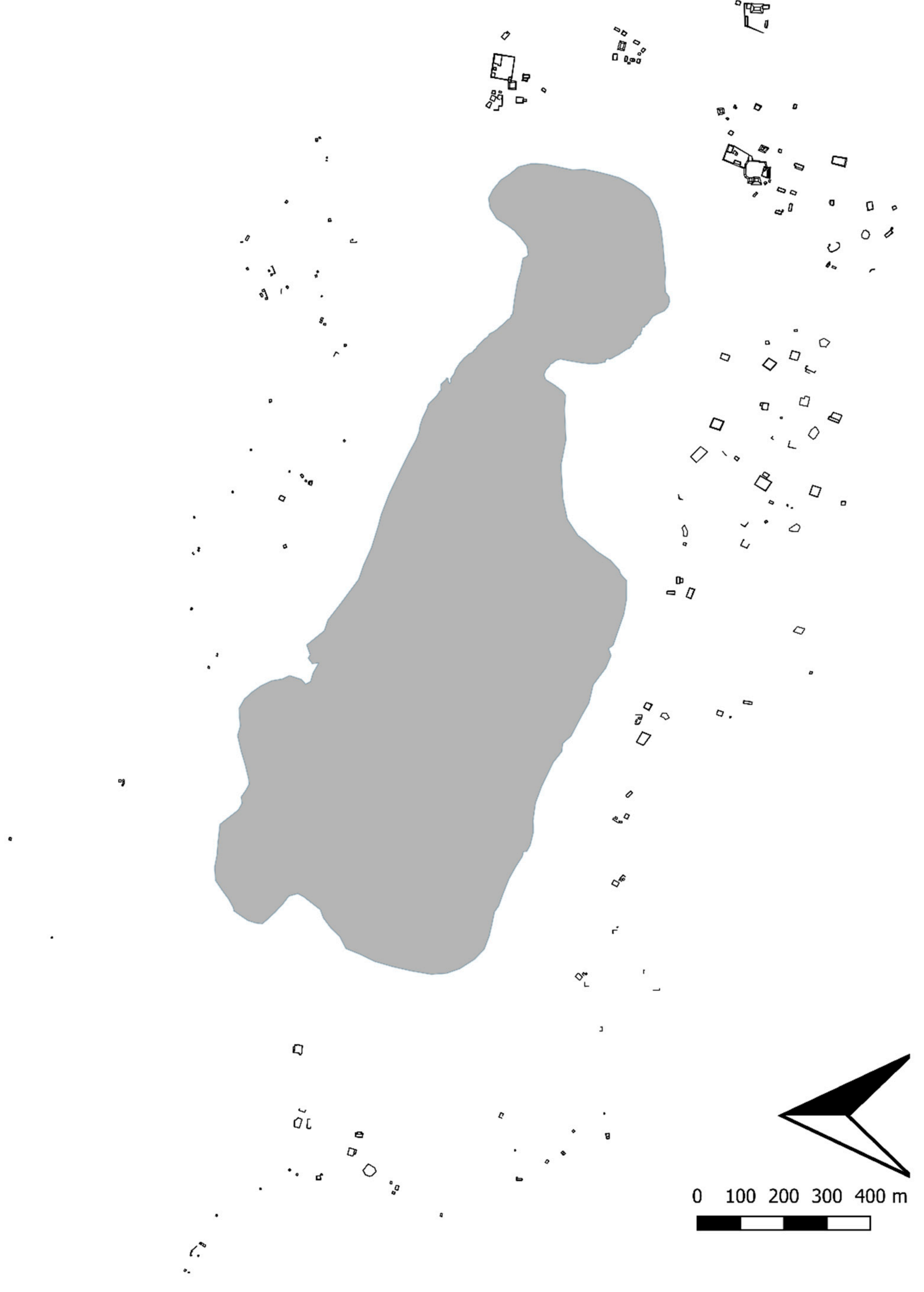

Figure 3. A conventional, Malerized site map of Punta Laguna. The gray area represents the lagoon and the black lines indicate structures. Map by David Rogoff and Sarah Kurnick.

4. The Contradictions of Labor

From the outset, project members, including the codirectors and local residents, have been deeply concerned with labor. Marx defined labor as a process whereby humans act on the external environment to benefit themselves. In Marx's [61] words, an individual "opposes himself to Nature as one of her own forces, setting in motion arms and legs, head and hands, the natural forces of his body, in order to appropriate Nature's productions in a form adapted to his own wants". In contemporary, capitalist societies, labor power—the capacity to produce labor—functions as a commodity. In other words,

individuals who do not own the means of production sell their labor power to those who do in exchange for wages. Marx argued that such an economic system is necessarily exploitative. To maximize their profits, those who own the means of production must pay workers less than the actual value of their labor, and workers continually produce surplus value that belongs not to themselves, but to the owners [12,61,62].

Drawing on these ideas, various scholars have suggested that the extent to which individuals control their own labor is and has been a key variable in the emergence and persistence of economic inequality and extreme economic disparities [63]. Indeed, labor and inequality are intimately intertwined. Some archaeologists have proposed that institutionalized inequality ultimately emerged in past, non-capitalist societies because of socioeconomic changes that permitted a few to control the labor of many. Jean Arnold [64,65], for example, has argued that institutionalized social hierarchies arose among historic complex hunter-gatherer societies, including the Chumash of California's Channel Islands, when, for a variety of historical and environmental circumstances, most individuals were forced to work at the behest of, and according to the rules set by, the elite. Further, once the majority of people lose control over their labor, there is little to stop wealth from accumulating in the hands of a few.

Critically, archaeologists not only study past labor systems, but also create and participate in contemporary ones. In the Maya area and elsewhere, archaeologists often hire local peoples to assist with excavations, clean sherds, and cook meals, among other tasks. Such employment opportunities can help individuals earn additional income and stimulate the local economy. However, as noted above, buying labor power is necessarily exploitative. Regardless of how well they pay or how many benefits they provide, archaeological projects ask local peoples to sell their labor power for wages. Moreover, while some individuals are appreciative of opportunities to earn extra income, others are resentful. When asked why he did not want to work for archaeologists, one farmer in Yucatan said, "I do not ask for work. I do not have employment and I do not answer to any patron" [66–68]. Engaged archaeologists who hire wage laborers can thus find themselves trying to combat inequality while simultaneously sustaining it.

Archaeological labor systems are also intertwined with inequality in other ways. A common concern is that archaeological projects intensify inequality by hiring and paying wages to only a small subset of a community. Rarely do projects have enough funds to hire all community members. Further, the economic benefits of archaeological research are generally distributed unequally. While professional archaeologists profit from publications, presentations, and grants, too often local peoples gain little other than wages. In an insightful analysis of why archaeology is not yet postcolonial, George Nicholas and Julie Hollowell [69] argue that archaeologists "hold the power in terms of the actual production and interpretation of archaeological knowledge, access to or use of data, and the capital derived from these processes" and that a key challenge is to distribute more equitably the economic, social, and cultural benefits of academic research.

To ensure that they retain as much control over their labor as possible, Punta Laguna residents established the project's labor system, including what appropriate pay is, what appropriate hours are, and who should work. Community members decided that the opportunity and responsibility of working with the project should rotate among village families so that all families participate and benefit equally. Consequently, each workday, two different families send individuals to assist with excavations and laboratory analyses. Each day, the co-directors thus work with a different group of people. Some of these individuals work with the project several times during a field season, while others do so only once or twice.

This rotating labor system has both benefits and drawbacks. It allows the codirectors to work directly with a substantial portion of the community and ensures that the project produces equal amounts of capital for all families. Punta Laguna residents do not want the project to create new, or exacerbate existing, economic inequality. However, this labor system also slows excavations considerably and requires that the scale of excavations be kept small. Each day begins with a general

conversation about what archaeology is and why and how it should be done, and a specific conversation about the goals and methods of that particular workday. To maintain high excavation standards, there are always an equal number of trained archaeologists and community members working together. During the project's 2018 field season, for instance, the two co-directors and two graduate students worked alongside a rotating group of four community members.

This rotating labor system has also raised an ethical dilemma—indeed a contradiction—with no easy answers. Village families have only ever sent men to work with the project. At Punta Laguna, as at other archaeological sites in the Yucatan peninsula, "consultations by foreign researchers with primarily all-male community leaders [have] result[ed] in hiring practices that continue to re-enforce social ideals of gendered labor" [70]. At most sites, local men participate in survey and excavation, and local women participate in lab work, and especially washing ceramic sherds [70]. At Punta Laguna, however, it is men who help not only with survey and excavation, but also with lab work, including artifact washing. Regardless of the task or the setting, the project has only ever collaborated with Maya men.

The root causes of local women's lack of participation in the project remain unknown, and additional conversations with Punta Laguna women are needed. Nevertheless, the co-directors remain concerned that, while attempting to ameliorate the economic inequities resulting from wage labor, they inadvertently maintained gender stereotypes, and specifically the notion that only men should interact with foreign researchers and participate in foreign research projects. Margaret Conkey [39] has written thoughtfully about such paradoxes. She notes that "there are multiple relations of domination that have structured and informed the production of archaeological knowledge" including those based on race, class, and gender, but that, with most archaeology projects, "it is just one axis of difference or oppression that tends to be foregrounded" [39]. She advocates that researchers "recognize and engage with the 'whole picture' of what archaeology is, and how it is that what is power for some is precisely someone else's powerlessness" [39].

5. The Contradictions of Capital

As the project conducts research within the Otoch Ma'ax Yetel Kooh—a nature reserve and ecotourist attraction established, communally owned, and communally operated by Maya peoples—project members have also been deeply concerned with capital. Broadly meaning an asset, Marx [71] understood capital as money used to buy a commodity, and specifically labor, to create more money. For Marx, capital was thus wealth used to buy the labor of others, and thereby produce more wealth. A critical aspect of capital is that it is not evenly distributed throughout societies. Rather, over time, it accumulates in the hands of a few and distinguishes those who buy the labor of others from those who sell their own labor for wages [72]. Importantly, as Pierre Bourdieu [73] has argued, capital can be economic, including goods and property; cultural, including specialized knowledge and particular mannerisms; and social, including group memberships and other types of connections.

Archaeologists have studied the emergence and effects of capital and capitalism in past societies [74–77] as well as the relationship between archaeology and capitalism in the contemporary world [27,78]. Some scholars have argued that the discipline has, often unintentionally, sustained and naturalized capitalist ideologies. Yannis Hamilakis [79,80], for instance, has argued that archaeology's traditional, Western focus on inanimate objects reinforces commodity fetishism: the misunderstanding of social relationships as relationships between things. As Hamilakis [80] writes, it is the "foundational logic of modernist archaeology that makes it part of the framework of capital: its fetishization of things, and their constitution as autonomous objects, divorced from the [social] relationships, flows and connections that have led to their constitution".

More commonly, scholars have critiqued archaeology's role in the commodification of the past—in the transformation of places, artifacts, and identities into items to be bought and sold by developers, corporations, and tourists. Indeed, archaeological tourist attractions, be they reconsolidated sites, cultural performances, or theme parks, are often problematic [8]. In some instances, nation states and

corporations exoticize marginalized groups and appropriate their history and culture for profit [46,81]. In other instances, a desire to attract tourists, and to generate as much revenue as possible, leads to the trivialization of the past and the presentation of historical inaccuracies [82–87]. In still other instances, the creation of archaeological tourist attractions, and their associated marketing, results in the promotion of essentialized and homogenized identities. Capitalist endeavors, including but not limited to archaeological tourist attractions, frequently make unique peoples indistinguishable and unique places interchangeable [82,83,87–89].

For these and other reasons, many have criticized the commodification of the past and oppose the production of archaeology-related capital. A few [90] take this argument further and contend not only that the past should not be used to create capital, but that it should be used to question capitalist ideologies that maintain contemporary inequities. Many engaged archaeologists aim to use the past to ameliorate present day inequalities, and their "ultimate goal is the empowerment of marginalized groups to resist domination in the contemporary world" [91]. Here, a paradox emerges. What if such empowerment can be achieved, in part, through the production of capital? What if marginalized groups who own the means of production want to profit from their own histories and cultures? In some instances, can the commodification of the past alleviate rather than exacerbate inequality?

Punta Laguna offers a useful case. The Valladolid ejido owns the land on which the nature reserve sits and the Najil Tucha cooperative, comprised entirely of Punta Laguna residents, manages the ecotourist reserve and makes decisions about what to charge, how best to offer tours, and what information to communicate to visitors. Rather than relying on wage labor, the community distributes its revenue equally among village families. At Punta Laguna, local Maya peoples thus own the means of production and benefit economically from the commodification of Maya history and culture. Further, the ecotourist attraction allows Punta Laguna residents to present information about their own identities to outsiders. By choosing what information to present in the guided tours, which aspects of Maya culture to emphasize in the ceremonies, and what to put on display in the museum, community members can resist, at least in part, the imposition of a homogenized and essentialized Maya identity [48]. Perhaps not surprisingly, there is no mention at Punta Laguna—as at other nearby tourist attractions owned and operated by non-Maya peoples—of collapse, conquest, or colonization. Residents of Punta Laguna choose instead to impart information about Yucatec Maya religious practices, traditional medicine, and daily life.

For these reasons, and despite the generally negative effects of capitalism and capitalist ideologies, the archaeological project takes as a primary goal the production of economic, cultural, and social capital with and for the Punta Laguna community. Economically, the project has aided in the advertisement of the reserve to tourists by collaboratively designing and hanging a large roadside banner and by collaboratively designing and distributing bilingual brochures. Culturally, the project has distributed to community members books about the ancient Maya and accessible, image-based field reports describing the results of project field seasons. Further, it has created and updates annually a display in the museum about the archaeology of the site. Socially, the project is collaboratively designing a website and has hired a professional photographer to take images with and for village residents. Local peoples will thus be able to choose how to represent themselves to others when joining online social networks or making other connections.

The relationships between capital, inequality, and archaeology are thus not straightforward [86,87,92,93]. Rather, they are more nuanced. At issue is not simply whether the past should be commodified, but who owns the means of production and how the capital is distributed. Paradoxically, those practicing engaged archaeology may thus need to "investigate the empowering, as well as the disadvantaging force that the commodification process can have" for members of marginalized groups [94].

6. The Contradictions of Praxis

Since the project aims to effect social change, and specifically to practice archaeology such that Maya peoples generate information about the Maya past, control how they are represented to others, and benefit their own communities, project members have also thought carefully about praxis. While not the only archaeologist championing praxis, Randall McGuire [95] has been among its most vocal advocates. As he and colleagues have written, praxis is action informed by theory [91]. Archaeologists "generate knowledge about the past, use this knowledge to engage in a critique of our own world, and come to action based on this realization that there is real oppression in the world that must be challenged" [91]. Or, as Marx famously wrote, "philosophers have only interpreted the world. the point is to change it" [96].

Perhaps not surprisingly, many engaged archaeologists have promoted praxis as one way to alleviate contemporary inequalities and empower members of marginalized groups. However, one common and critical form of inequity within archaeology is the dearth of Indigenous voices and the "lack of standing given to alternative [non-Western] worldviews and ways of meaning-making" [69]. At least historically, archaeology has relied on solely Western perspectives and archaeologists have focused on the "material, scientific, observable world over the spiritual, experiential, and unquantifiable aspects of archaeological sites, ancient peoples, and artifacts" [8,9,97,98]. The need to incorporate Indigenous perspectives in archaeological research has led to another paradoxical question for engaged archaeologists. Can Western theoretical concepts be marshalled to empower Indigenous groups? Specifically, can the notion of praxis be used to advocate for and increase non-Western voices in archaeology?

In part to move beyond the discipline's traditional reliance on solely Western perspectives, several archaeologists have advocated approaches that combine Western and Indigenous forms of knowledge. To take a few examples, Sonya Atalay has proposed the notion of "braided knowledge" in which "community knowledge intertwines with archaeological data to create new and richly textured interpretations of the past," [6] and Chip Colwell and colleagues have advocated "multivocality" or "an engagement of different voices arising together to tell a whole and complex story" [99,100]. Taking a different approach, other archaeologists have examined ontologies: "historically specific structures of being, presence, reality, and personhood" [101]. Among other issues, these scholars have debated whether individuals can communicate across different ontologies and how archaeological data and ontological insights can best inform one another [102–105]. One of the most notable consequences of the ontological turn in archaeology has been the increased "importance given to the non-human, to things, as equal partners in the creation of social worlds" [106–108].

However, despite having similar intentions—to make archaeology more inclusive, more relevant, and more responsive to the needs of local communities—research programs that advocate praxis and that incorporate non-Western knowledge and ontologies are in many ways dissonant. Daryl Stump [109], for example, has argued that it is illogical for scholars to "advocate the 'blending' of local conceptions of history within archaeological interpretation while simultaneously attempting to draw on the authority of archaeology as a 'western' science in order to influence modern policies." Put differently, Stump suggests that scholars cannot concurrently critique Western perspectives and employ those perspectives to mitigate inequality and foster other forms of social change. Zoe Todd [110] has also argued that the use of Indigenous perspectives and engaged archaeology are incompatible with one another, but for a different reason. She notes that Indigenous thinkers are often overlooked in archaeological considerations of local knowledge and non-Western ontologies, and that such oversight is one aspect of structural violence within academia. As she writes,

"Indigenous peoples, throughout the world, are fighting for recognition—fighting to assert their laws, philosophies, and stories on their own terms. When anthropologists and other assembled social scientists sashay in and start cherry-picking parts of Indigenous thought that appeal to them without engaging directly in (or unambiguously acknowledging) the political situation, agency, legal orders

and relationality of both Indigenous people and scholars, we immediately become complicit in colonial violence” [110].

Despite such tensions, Punta Laguna project members have simultaneously engaged in praxis and incorporated Maya knowledge and ontologies. On the one hand, the project relies primarily on Western theoretical frameworks and, as noted in detail above, has sought to mitigate inequality by producing forms of capital with and for Punta Laguna community members. On the other hand, the project has integrated Indigenous Maya perspectives in its research, interpretations, and publications. Most notably, project members have produced two maps of Punta Laguna: one based on traditional archaeological conventions and the other on Indigenous Maya spatial ontologies [111] (Figures 3 and 4). This latter map, like other colonial period Maya maps, is circular in form with east at the top of the page: the cardinal directions are in Yucatec Mayan. It adopts multiple viewpoints and relies on neither a grid nor a scale. Important locations are represented by unique toponyms, roads by solid black lines, and narrative events involving movement—including migration and intensive social interactions—by paths with footprints. Both human and supernatural figures are present, and the various aspects of the built environment derive their importance from the human and supernatural relationships they mediate.

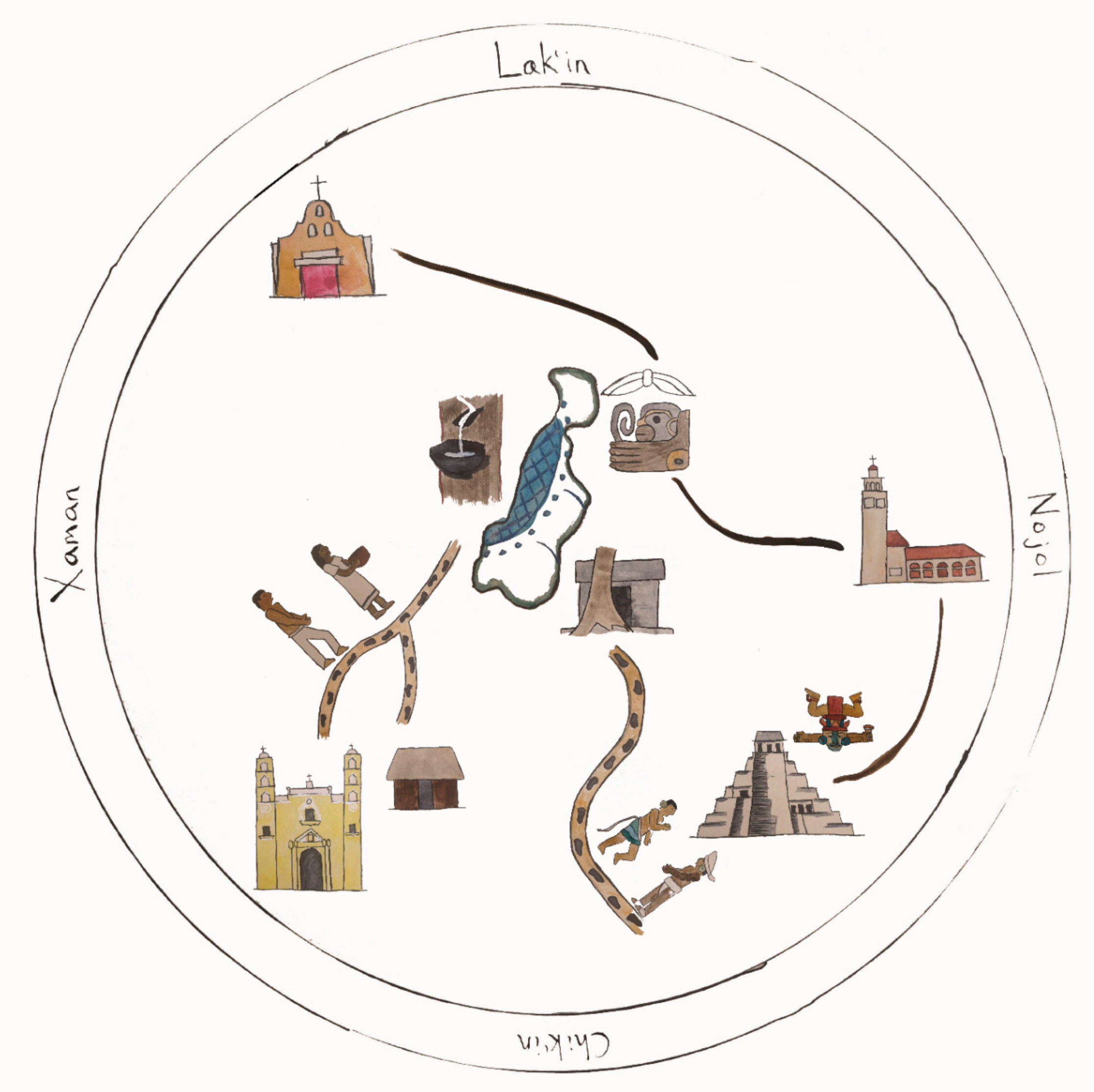

Figure 4. An Indigenous Maya visual cartographic history of Punta Laguna. Map by David Rogoff and Sarah Kurnick.

The project produced this map for two primary reasons. First, Indigenous Maya maps often include historical and experiential information omitted in conventional site maps. Further, because they adopt a relational rather than an abstract understanding of space, Maya maps are arguably more congruous with contemporary social theories about space than are traditional Western ones. Second, the juxtaposition of two different maps of the same space suggests that Western spatial ontologies are neither natural nor ubiquitous and that there is no one correct or most accurate map of an archaeological site. The creation and use of Maya maps thus offer one way to question hegemonic Western understandings of the world and to affirm the value and utility of non-Western perspectives.

The tensions between practicing praxis and incorporating Indigenous Maya knowledge, between engaged archaeology and the ontological turn, are thus present at Punta Laguna. To describe these tensions, Stump [109] uses words such as "confusion" and "ambiguity" and, cautioning against the "danger of conflation of arguments", suggests that archaeological projects not simultaneously rely on, and critique as inadequate, Western perspectives. At Punta Laguna, however, project members have understood this combination of approaches not as an uncritical amalgamation of related ideas, but as a clear contradiction that should be explored and mined as a potential source of new knowledge and social change. How to do so forms the subject of the conclusion.

7. Conclusions

Like the other contributions to this special issue, this article has considered the process of practicing engaged archaeology with and for members of a Maya community and aims to encourage exploration and experimentation with engaged forms of archaeology in the Maya area and beyond. Specifically, this article has examined the contradictions of engaged archaeology and three paradoxical questions encountered by members of the Punta Laguna Archaeology Project. Do attempts to mitigate certain forms of inequality unintentionally sustain other forms of inequality? Can the production of capital alleviate rather than exacerbate unequal social relationships? And, can Western social theories be used to advocate for and increase Maya and other Indigenous perspectives in archaeology? Further, this article has argued that these and other contradictions should not be minimized, but instead brought to the fore, investigated in detail, and regarded as potential sources of dialectical change. But how exactly does a consideration of these contradictions help advance the field of engaged archaeology? How, in this instance, can contradictions generate change?

The paradoxical questions noted above raise new concerns and bring to light promising new areas of research for engaged archaeologists. The contradictions of labor, and particularly how attempts to ameliorate one form of inequality can lead to the perpetuation of other forms of inequality, suggests that intersectionality should be a key aspect of engaged archaeology [39]. Put differently, scholars seeking to mitigate inequality should consider how various aspects of identity—including but not limited to ethnicity, gender, age, and class—combine to create different types of inequities for different members of marginalized groups. As Conkey [39] writes, engaged archaeologists must recognize the "intersections of hierarchies and aspects of 'identity'" and "take into account the convergences of several dimensions of difference".

The contradictions of capital, including how the commodification of the past can both undermine and empower marginalized groups, suggests that issues of control should be another integral element of engaged archaeology. The critical question is not whether the past should be commodified, but who controls the means of production and who controls the content to be presented to tourists and other consumers. If members of marginalized groups own the means of production, then commodification can help ameliorate economic inequality. Further, if members of marginalized groups decide what information is presented about themselves to outsiders, they can, at least in part, resist the imposition of exotified or homogenized identities. Indeed, archaeological tourist attractions are not inherently problematic because they commodify the past. They tend to be problematic instead because too often "one group is in a position to name another group, to describe them, to demonstrate and assess

their historical and contemporary significance, to place them in the world, [and] to choose their cultural identity" [67].

The contradictions of praxis, and particularly the tensions that arise from using Western theoretical frameworks to advocate for and increase Maya and other Indigenous perspectives in archaeology, suggest authoritative speech as a third potentially fruitful avenue of study for those practicing engaged archaeology. Put differently, how is that "some forms of speech and language. have a greater impact on the constitution of reality than others" [112]? Why, as Todd [110] notes, are Indigenous thinkers often overlooked in academic writing about Indigenous ontologies? And can this be changed? Linguistic research has demonstrated that the "forms of language and the ideas associated with the dominant or more highly valued social category flourish, while the forms of language and ideas associated with the subordinate or less highly valued social category are constructed and disattended" [112]. But exactly which aspects of language do archaeologists tend to value and why, and can such valuations be altered?

These suggestions—that engaged archaeologists focus on intersectionality, control, and authoritative speech—do not in any way solve the thorny contradictions or answer the paradoxical questions posed above. Instead, as with all sources of dialectical change, they suggest potential ways to move forward. As McGuire [27] writes, the "dialectic offers us no destination or resolution to our quest, but only an ongoing process of dialogue that builds understanding." And building understanding is undoubtedly a worthwhile endeavor that may change the future of engaged archaeology. Or, to quote Yogi Berra one more time, increased understanding and dialogue makes it such that "the future ain't what it used to be".

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Article

Partaking in Culinary Heritage at Yaxunah, Yucatán during the 2017 Noma Mexico Pop-Up

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Abstract: In spring of 2017, celebrity chef René Redzepi opened a pop-up of his famed restaurant, Noma, on the coast of the Yucatán Peninsula. During its run, Noma Mexico worked closely with the town of Yaxunah, a Yucatec-Mayan speaking community in the peninsula's interior, hiring women to make tortillas and acquiring local ingredients for the restaurant. For us—two archaeologists interested in past and present Maya food and agriculture who have worked in the Yaxunah community for years—this made the 2017 field season a compelling time to engage in culinary heritage. We share on-the-ground perspectives from our work with Yaxunah community members during a decisive spring for rural Yucatán's globalizing food system. These perspectives offer a candid contribution to this special issue's archive of community-based and heritage-engaged archaeological work in the Maya area.

Keywords: culinary heritage; celebrity chefs; foodways; tourism; Yaxunah; Maya archaeology

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1. Introduction

For seven weeks in the spring of 2017, the Danish chef René Redzepi—whose Copenhagen restaurant Noma is revered in some gastronomic circles as the best in the world—opened a pop-up in Tulum, on the eastern coast of Mexico's Yucatán Peninsula. To dine at Noma Mexico was to partake in "the most enviable meal of the year" (according to Esquire food critic Kevin Sintumuang)—no, "the meal of a lifetime" (said Jacob Richler of The Toronto Star). In the breathless reviews from Noma Mexico's brief existence, amid praise of the palm trees and culinary reveries of kelp oil, banana ceviche, and grasshoppers, four women come up again and again (Figure 1).

"The best table may be No. 23," Tom Sietsema, the reviewer for The Washington Post, tells us, "parked front and center amid the greenery and with a view of the kitchen that captures the four local women whose sole job is making tortillas." The GQ reviewer, Joshua David Stein, notices them, too: "At the very heart of the restaurant, on the steps of the kitchen, four women in traditional dresses from the Yaxunah community in the Yucatán handmake tortillas during the day as well as through dinner service." Even Pete Wells of the New York Times, whose essay on Noma Mexico went viral for calling reviews of "a pop-up that sold out months ago . . . spectacularly useless", nods to the tortilla-makers in his non-review: "Directly in front of the kitchen, four women from a nearby Mayan village make tortillas."

These women—as well as maize, eggs, vegetables, and herbs—came to Noma Mexico from the Yucatec Mayan-speaking community of Yaxunah, two-and-a-half hours' drive inland from Tulum. We know these women, have called some of them friends, through our work as anthropological archaeologists based in Yaxunah. For many years, we have sought to understand the agriculture and foodways of past Maya communities through archaeological investigations at sites in Yaxunah's

landholding (ejido). Personal friendships and conversations with members of Yaxunah are a fundamental part of how we have come to approach these topics. Our work in cultural heritage—and especially culinary heritage—with the Yaxunah community is integral to this research. For this Special Issue of Heritage, we decided to share our experiences participating in culinary heritage work at Yaxunah in the 2017 field season, during and after Noma Mexico's run. Yaxunah holds status as a prominent gastronomical origin place thanks to the attention and clout of the celebrity chefs, critics, and "foodies" whose voices dictate much of the global discourse on culinary heritage. While perhaps unique to Yaxunah in its particulars, that status is symptomatic of the larger forces of globalization and neoliberalization currently impacting the food systems of hundreds of other Maya-speaking communities across the Yucatán Peninsula, and Indigenous communities around the world.

Figure 1. Yaxunah women preparing tortillas at Noma Mexico. Photograph courtesy of Anders Husa and used with permission. Accessible at https://andershusa.com/noma-mexico-tulum-popup-rene-redzepi-taco-tortilla-jungle-restaurant/.

To explore this further, we will contextualize the spring of 2017 in the historical entanglements of local and non-local stakeholders in Yaxunah's culinary heritage. We follow that context with a frank look at our experiences participating in culinary heritage production with the Yaxunah community during that eventful period. Our focus on culinary heritage is indebted to the work of anthropologists who have explored the political and cultural dynamics of Mexican and Yucatecan food, and we hope our work may advance their efforts [1–4].

We seek, too, to play a part in advancing archaeology's potential contribution to the larger discourse around globalizing food systems and food sovereignty. Celebrity chefs, for all their skill and knowledge and artistry, owe their celebrity to capitalism. They are products of the same system that has, for centuries, eroded Indigenous food sovereignty and dismantled traditional agricultural knowledge systems worldwide. Our objective in this paper is to bring attention to the arrival and presence of celebrity chefs and gastronomical tourism in communities like Yaxunah, to show that these encounters do not happen in a vacuum but rather are entrenched in histories of neoliberalism and so-called sustainable development. We as archaeologists (with our field's own capitalist and colonial baggage) studying past food and agriculture have a responsibility to confront and engage with these histories as they unfold. We acknowledge these broader goals informing our ongoing work. Here, though, we want to draw attention specifically towards the ground-level dynamics of culinary heritage in Yaxunah and our participation in those dynamics as archaeologists. We offer these narratives candidly, as a contribution to this special issue's archive of on-the-ground insights into 21st-century archaeologists' engagement with communities and heritage in the Maya area.

2. Yaxunah

"Yaxunah" may not be a household name in North America or Europe, perhaps not even in avowed foodie households where "Noma" and "Redzepi" might be part of the parlance. Yet the celebrated chefs who have visited Yaxunah and who have sourced ingredients from its gardens and fields have, deliberately or not, labeled the community as a gastronomical origin place—and that labeling has a real effect on the ground, bringing "foodie" tourists to the community and increasing demand for Yaxunah products. That labeling is not because Yaxunah's cuisine is inherently exceptional among the hundreds of similar small towns across the Yucatán Peninsula, but because of Yaxunah's particular and changing role within the history of neoliberal sustainable development projects in rural Mexico.

Yaxunah is a town (officially a localidad, informally called a pueblo in Spanish; here we refer to it using "town" and "village" interchangeably) of about 600 people in central Yucatán state (Figure 2). Yucatec Mayan and Spanish are commonly spoken. Yaxunah maintains a local government building, elementary and junior high school, a small health clinic, several places of worship, a community center, and an open area for cooking demos and other group events [5–9]. Well into the 1980s, Yaxunah households traditionally relied on farming, gardening, and harvesting wild resources for their subsistence, but increasingly, souvenir crafting and other tourism-based cottage industries have become key to people's livelihoods [10]. Many individuals from Yaxunah seek temporary employment opportunities in cities and tourist areas like Cancun, often returning to the village on the weekend.

Figure 2. Yaxunah's location in Mexico's Yucatán Peninsula. From Google Earth.

The town is surrounded by its ejido, or collectively owned landholding, designated during the national agrarian reforms of the 1930s. Yaxunah's ejido includes several archaeological sites, one of which, the similarly named Yaxuná, has been partly restored and attracts a small number of tourists. Yaxuná is not listed as one of Yucatán's official archaeological zones open for tourism, though, and so most visitors coming into the peninsula's interior are channeled directly into UNESCO World Heritage Site Chichén Itzá (about half an hour's drive away). As part of the northern Maya lowlands region, Yaxunah's ejido lands are characterized by low-lying scrub forest, a terrain of thin soils and superficial bedrock, lack of surface water, and vast networks of subterranean features including caves and cenotes (natural sinkholes through which fresh water can be accessed). Agriculture has never been particularly profitable in this part of the peninsula, and during much of the historic period, Yaxunah fell along

the border of the henequen zone, the western part of the peninsula where the cactus-like henequen plant was cultivated on an industrial scale.

3. Archaeologists in Yaxunah

Traces of prehispanic and Colonial-era life are abundant in the Yaxunah ejido. Archaeologists first visited Yaxuná in the 1930s before the ejido was officially recognized [11]. Later, in the mid-1980s, focused archaeological research began and, under a series of projects, it has continued to the present day [12–16]. In this article, we consider not the research contributions of archaeology in the Yaxunah ejido, but rather the roles archaeologists have played in the Yaxunah community, especially in relation to food heritage. Archaeologists are not the only non-local academics based in Yaxunah. Cultural anthropologists Grace Bascopé and Elías Alcocer Puerto have been working in the community for years. Their contributions are critical to our understanding of Yaxunah cultural heritage. Additionally, Yucatecan university students and their professors often visit Yaxunah to participate in service-learning and field-based research.

The Proyecto de Interacción Política del Centro de Yucatán (PIPCY) was the active project based at Yaxunah in the 2017 field season. PIPCY directors and project members are a mix of foreign (primarily U.S. American) and Mexican archaeologists. Since 2007, PIPCY has investigated the political relationships and interdependencies among a group of archaeological sites, centered around the village of Yaxunah, that date to all eras of Maya history.

During active field seasons, as many as 24 PIPCY archaeologists live in a field camp situated between the Yaxuná archaeological site and the modern town of Yaxunah. The earlier Selz Project built the camp on land owned by the ejido and used it as project housing for nine field seasons before donating it to the Yaxunah community in 1997 [5]. After a cooperative of Yaxunah families experimented unsuccessfully with running the property as an ecolodge, the compound returned to its original role as an archaeological camp [17]. Currently, the Yaxunah ejido owns the camp and loans use of it to the archaeological project.

Like other archaeological projects authorized by the Instituto Nacional de Antropología e Historia (Mexico's National Institute of Anthropology and History; INAH), PIPCY employs locals for fieldwork and logistical support. We, along with our collaborators, work with Yaxunah authorities in the comisario ejidal, who oversee all matters having to do with ejido lands (including archaeological sites) and the comisario municipal, who govern matters in the town itself (including the camp). Since the Selz Project, Yaxunah men have been employed to work on excavations, clearing brush, and other tasks in the field. Yaxunah women have been employed to cook, clean, and wash laundry. This system of gendered work was suggested by the members of the Yaxunah community and upholds gendered expectations in the village.

One of the main areas of logistical support is the provisioning of archaeologists who are expected to work long hours and are in unfamiliar culinary terrain. There have always been cooks from the village who come to the camp to prepare meals for the crew. There are no restaurants in Yaxunah, and when archaeological research began in the 1980s there was only one man in the town who had any experience preparing food outside the home. Over time, younger women have offered to work as cooks and today there are at least two dozen women who take turns preparing food for the archaeological project in the camp. Given how long archaeologists have been present in Yaxunah, some of these women have grown up around foreign archaeologists and have a sophisticated understanding of what non-Maya people enjoy most about Maya cuisine. This familiarity with the eccentricities of the North American and European palate played a role in how people from Yaxunah understood the food prepared at Noma.

We each first joined archaeological excavations at Yaxuná as graduate students, Ardren on the Selz Project in the 1980s and Fisher on PIPCY in the 2010s. To disclose some of the identities informing our perspectives: We are both from the United States, both white cis women, both non-native Spanish speakers, and both currently faculty at private universities in the United States. We are both

"food-adventurers" [18]. Fisher [19] completed her doctoral fieldwork at a small site in the Yaxunah ejido and plans to continue research with the community. Ardren [20] also completed her doctoral fieldwork at a site in the Yaxunah ejido. After time working elsewhere in the northern Maya lowlands, Ardren returned to Yaxunah as a co-director of PIPCY, and more recently as co-director of a project investigating the longest ancient Maya road that connects Yaxuná to the site of Cobá. For each of us, we orient our archaeological research around questions of past foodways, agriculture, gardening, and households—and we have both found that community-based work in Yaxunah has been instrumental to the way we frame and answer those questions. Culinary heritage is foundational to our archaeological practice.

4. Stakeholders in Yaxunah Culinary Heritage

If something as intangible as foodways could be said to belong to anyone, we might say that Yaxunah foodways belong to Yaxunah community members themselves. Culinary heritage, though, is a messier matter. Culinary heritage is an unfolding conversation about food, society, and history that invites multiple stakeholders, with different perspectives and backgrounds, to the table. Culinary heritage can be debated and dissected, its authenticity evaluated from multiple perspectives, none of which is definitive.

Stakeholders in Yaxunah's culinary heritage, then, include people like us—foreign archaeologists interested in understanding the connections between past and present foodways (and whose employment depends, to a degree, on our ability to publish on and teach those connections to college students)—as well as the farmers, gardeners, cooks, and families for whom that heritage is a birthright. We acknowledge that the stakes of eating are hard to define, since all people eat and simply to eat a meal does not necessarily a culinary stakeholder make; stakeholding is perhaps more accurately conceived as practice than as an identity. We are also not interested in imposing an impermeable boundary between the "ancient Maya" and the Maya of today. Nor do we want to privilege our position over those of the other stakeholders. We would instead prefer, as Patricia McAnany [21] (p. 6) puts it, to "engage with an archaeological practice that is more uncertain but more inclusive." Understanding how local and non-local stakeholders have found their seats at the table of Yaxunah's culinary heritage requires historical context. With that said, the discussion we offer here is not exhaustive. We do not attempt to account for all the stakeholders involved in Yaxunah's culinary heritage; we acknowledge that many more exist, and we look forward to future opportunities to collaborate and learn together. We will resist the urge to begin the story three millennia ago (we are archaeologists, after all), and instead jump in just under three decades ago.

4.1. Neoliberal Agrarian Reforms

In the winter of 1992, the presidents of the United States and Mexico signed the North American Free Trade Agreement (NAFTA). Their signatures pushed forward the agrarian and economic reforms that would fundamentally alter the food systems of the two countries [22].

In Yaxunah as in many small Mexican farming towns, NAFTA meant an influx of cheap, highly processed food and drinks. Soda and other incarnations of high fructose corn syrup pose public health problems for the community [23]. Their abundance as cheap sources of calories alters, too, the decisions and practices of farmers. Climate change has disrupted the rhythms and cues of the agricultural cycle in Yucatán. Growing crops has frequently been challenging in this area, but it is particularly risky in times of uncertainty, and farming families in Yaxunah choose to buffer that risk with store-bought food. Over the last three decades, some families in Yaxunah have cut back on or cut out farming altogether, shifting their time and energy away from the subsistence economy and into activities that will earn cash [10].

The same year NAFTA was signed also saw Mexico revise its constitution's laws on agricultural land tenure. These changes targeted Article 27 of the Mexican Constitution. For decades previous, Article 27 was revered as a victory for the country's agrarian population because it established the ejido

system: A system of federally protected, community-based land tenure [24]. Before 1992, ejido lands belonged to ejidatarios (community members who hold generational rights to ejido lands) and their descendants in perpetuity; rights to ejido lands could not be purchased or sold. The 1992 revisions to Article 27 made it legal for communities to vote to sell their lands [25]. In Yucatán, potential buyers for ejido lands are plentiful. Developers are hungry for lands in peri-urban areas and areas with touristic potential (e.g., coastal ejidos; ejidos near or including archaeological sites), to the point where some have even forged community votes as a means of co-opting land from resistant ejidatarios [26,27].

Yaxunah's ejido was formally established in 1934. Today, Yaxunah ejidatarios claim 4066 hectares of land that not only includes agricultural fields, but also forest, cenotes, and archaeological sites. Yaxuneros—both those who claim official ejidatario status as well as many who do not—use ejido lands to farm; to gather wild foods and to hunt; to collect firewood, building materials, forage, and water; to graze livestock and to care for bees; to participate in rituals; to guide tourists around the Yaxuná archaeological zone or to work on archaeological excavations; and even to make phone calls from the peak of a renovated pyramid with inexplicably good cell signal (cell service does not yet reach most of the village). The ejido system has ensured generational land security to Yaxunah farming families even with the Article 27 revisions of 1992.

However, this may be changing. Yaxunah is 25 km from Chichén Itzá, the UNESCO World Heritage Site and capital of a growing inland tourism hub. Already a highway connects Chichén Itzá east to coastal Cancun and west to Mérida. In 2009, 520 thousand square meters of ejido land just 10 kilometers north of Yaxunah were purchased for the "Mayan Disneyland" or Palace of Mayan Civilization, which was designed as a multi-purpose Cancun-style resort with luxury hotels, swimming pools, golf courses, etc., in the middle of the peninsula. This project, which had the backing of then-governor Ivonne Ortega Pacheco, was ultimately abandoned with only the immense paved parking lot left along the road to Yaxunah [28]. Nearby Chichén Itzá will be a prominent stop on the proposed "Mayan Train," an ambitious rail system promising to pump tourists from the beaches of Tulum to the mountains of Palenque, supported by the current president of Mexico, Andrés Manuel López Obrador, and which is set to cost over 7 billion USD [29]. Yaxunah is only a short 30-minute drive away. As a picturesque traditional community with the blessing of celebrity chefs, it is easy to imagine Yaxunah ejidatarios will soon be weighing offers from motivated developers.

In fact, they already are. During the summers of 2013-2017, local gossip (selectively shared by Yaxuneros from time to time with archaeologists) hinted at the visits of interested buyers. Offers to buy ejido lands were debated and ultimately rejected by Yaxunah ejidatarios. At the time, they were too small to entice the needed majority, and many ejidatarios are familiar with the risks of becoming landless. We, as outsiders, were not privy to these negotiations, and gathered news of them instead as fragments shared during the slower spells of summer fieldwork.

4.2. Sustainable Development Projects

Let us return to 1992: The same year NAFTA would be signed, a group of business and intellectual leaders chartered a state-sponsored initiative to improve the livelihoods of Yucatán's rural communities. The leaders of the resulting non-profit, Fundación Cultural Yucatán (FCY), professed goals of promoting education, cultural diversity, ecological stewardship, and economic development. FCY was a product of the neoliberal 1990s; its advisory board included at least one Coca-Cola México executive [30].

FCY chose Yaxunah for one of its major development efforts. Though FCY tried to get several so-called sustainable development projects off the ground in Yaxunah, the "sustainable" qualifier of these projects turned out to be more aspirational than realistic. FCY helped launch educational workshops, a poultry farm, an ecolodge (the once and future archaeological camp), and an ecotourism trail, but most projects were short-lived [5,17].

Despite these letdowns, the nonprofit FCY's early involvement in Yaxunah cleared a path for more development projects in the 21st century. Late in 2002, Hurricane Isidore devastated the Yucatán Peninsula. Just weeks later, another nonprofit organization called the Fundación Haciendas del Mundo

Maya (FHMM) formed to provide aid to Maya families affected by the hurricane. FHMM, then and now, maintains close ties to Banamex, the second largest bank in Mexico. Over the next few years, FHMM sponsored development projects throughout Yucatán: Adult education programs, heritage botanical gardens, cultural events and workshops, libraries, as well as new sports fields, community centers, houses, and infrastructure [31]. The organization also began creating commercial channels for the sale of artisanal products.

4.3. Cooks and Chefs

While the growing nonprofit FHMM cultivated a presence across the peninsula, a group of cooks who had worked for the archaeological projects in Yaxunah were mobilizing to tap into the networks first established by the earlier, ultimately unsuccessful, FCY nonprofit organization. These cooks were aided by the Centro Cultural de Yaxunah (CCY), Yaxunah's local cultural center. The CCY had evolved from the earlier ecotourism ventures of the 1990s. In contrast to those ventures, however, the CCY is locally supported and locally administered—while still working with a board of Mexican and North American academics and advisors with nonprofit experience [7,8]. As one of its earliest initiatives, the CCY facilitated the founding of a culinary tourism cooperative in 2005. The cooperative, known as Lool K'uum or the Squash Blossom Committee, and discussed in detail in a recent article by Ardren [8], consisted then of 10 self-selected women from Yaxunah. These women noticed the increasing number of visitors coming into Yaxunah and recognized an opportunity. They pooled their resources to pay for professional training in the tastes, preferences, and potentially sensitive digestive systems of foreign tourists. This training was offered by a Maya speaking person who had been "certified" in food production standards, and the content of the training was situated within a cultural framework that perceives food preparation in small Maya pueblos to be "less sanitary" and Maya cooks ignorant of healthful practices. The cooks of Lool K'uum were aware of the prejudices that uphold their teacher and his curriculum, situated as such ideas are within larger structures of the institutionalized racism of Mexico. They had varying reactions to the curriculum, but agreed that they learned useful recipes of interest to tourists, which was their primary objective.

By 2008, FHMM had expanded into commercial ventures and launched a gourmet food brand, Traspatio Maya, through which they began marketing maize and vegetables produced by Maya communities to upscale buyers in the peninsula's urban and resort areas [32]. Five years into this branding venture, and eight years into the Lool K'uum collective's entrepreneurship, FHMM began collaborations with Yaxunah community members in 2013. Elías Alcocer Puerto, a Mexican cultural anthropologist (and our friend and colleague, though not officially affiliated with the archaeological project) who has been working in Yaxunah since the 1990s, was key in facilitating the FHMM-Lool K'uum collaboration.

To assist with its projects in Yaxunah, FHMM brought in specialists from yet another nonprofit, the Centro Internacional de Mejoramiento de Maíz y Trigo (International Maize and Wheat Improvement Center; CIMMYT), a Mexican research and training institution with its origins in earlier agricultural development programs funded by the Mexican federal government and the Rockefeller Foundation. Agricultural scientists from CIMMYT ran workshops teaching Yaxunah farmers "best practices" (mejores prácticas) for milpa farming while promoting the cultivation of landrace (heirloom) maize varieties [31]. At a time when farmers across Mexico were being compelled to plant hybrid corn, which is genetically engineered and leaves farmers reliant on pesticides, mechanized equipment, and multinational biotechnology firms [21], landrace maize grown in communities like Yaxunah became increasingly scarce. In Yaxunah's case, FHMM recognized the market for niche commodities like landrace corn and began selling it under the Traspatio Maya brand. Some of that maize, though, stayed in Yaxunah and was used by the women of the Lool K'uum collective to make high-quality, handmade tortillas.

FHMM and Yaxunah community leaders first began facilitating celebrity chef visits to Yaxunah in the 2010s. The very concept of a celebrity chef was taking on new meaning in the social media

age, and looking back at the digital content of that time it seems many chefs were vying to engage with so-called authentic regional cuisines—and to be the ones who introduced those cuisines to their public followings. FHMM had become a point of contact for global actors interested in accessing "traditional" Maya culture in Yucatán. Since FHMM was already selling Yaxunah produce, bringing chefs to the community posed synergistic opportunities for promoting the Traspatio Maya brand. Personal relationships between FHMM's leadership team and cultural anthropologist Elías Alcocer Puerto were key to these logistics. When seeking out the reasons why celebrity chefs started paying attention to Yaxunah, it is equally important to consider the decades of experience Yaxuneros already had in translating their culture to interested outsiders. Because of the community's involvement with sustainable development programs and foreign research projects, Yaxunah cooks arguably have a deeper familiarity with the palates of non-local visitors than cooks in most small Maya towns. Not only do the cooks of Yaxunah understand Maya cuisine, they understand the cultural capital that it holds in the right setting.

Rick Bayless, a Chicago-based chef whose brand includes more than a dozen Mexican restaurants and a line of "authentic" gourmet Mexican food products, visited Yaxunah in summer 2015 to film an episode of his television show, *Mexico: One Plate at a Time*. Clips from that episode show Bayless interacting with Lool K'uum cooks as they prepare cochinita pibil, a traditional pork dish cooked underground. After Yaxunah men dig up the roasting pan, the scene cuts to Bayless and Miriam Peraza (chef at Mérida restaurant Manjar Blanco and Bayless' cultural liaison in Yaxunah) as they behold the steaming pig. They eagerly prepare tacos and begin to eat, while Bayless' voiceover tells us, "Miriam offered me the unique opportunity to taste that pork right when it came out of the pit with some of those beautiful fresh-made corn tortillas. This is a unique flavor, unique to this place, cooked with this unique method from local ingredients. It's a perfect expression of this community, its history, and its geography" [33].

Those same tortillas would bring another celebrity chef, René Redzepi, into Yaxunah's orbit the following year. Redzepi had decided to shut down his flagship Copenhagen restaurant, Noma—ranked best restaurant in the world in 2010, 2011, 2012, and 2014 by *Restaurant* magazine—and open a pop-up restaurant, Noma Mexico, in Tulum for seven weeks in spring 2017. In the months leading up to the pop-up, Redzepi landed in Yucatán, uncertain how he would realize his vision. Wandering Mérida, Redzepi stumbled upon FHMM in a serendipitous encounter—at least serendipitous in the telling of Jeff Gordinier, a *New York Times* food critic then traveling alongside Redzepi. Samples of Traspatio Maya foods were eaten, Redzepi was intrigued, and soon FHMM had arranged to take the chef and his team on a tour of the countryside to visit its supplier villages, including Yaxunah (Figure 3).

Redzepi's first visit to Yaxunah is chronicled in Gordinier's 2019 memoir, *Hungry: Eating, Road-Tripping, and Risking it All with the Greatest Chef in the World*. The chefs arrived in the village. The cooks of the Lool K'uum collective prepared their signature dish: Cochinita pibil. As the men unearthed the roasted pig, Redzepi watched entranced as the women made tortillas. Gordinier [34] recalls the moment: "Suddenly Redzepi had an idea. "We should ask them what they're doing in April and May."" The chefs ate. Redzepi was impressed, decided then and there to source all the maize Noma Mexico would need from Yaxunah. FHMM would broker the arrangement through Traspatio Maya. Gordinier [34] (p. 188) continues: "But it was clear that (Redzepi) now felt as though he had to take things a step further ... A few months later the result of his decision was on full display in between the dining room and the kitchen at the pop-up in Tulum." The tortilla-makers, who would populate the scenery of food critics' reviews in weeks to come, had been found. As Redzepi and his creative partner Rosio Sanchez (a Mexican American chef and owner of Copenhagen restaurant Hija de Sanchez) would later write, "We chose to source our corn from Yaxunah because it was there that we tasted the best tortillas of our entire trip" [35]. Many touristic restaurants in Mérida or Cancun employ traditional tortilla-makers, either visible or hidden, as handmade tortillas are considered a mandatory component of Yucatecan high cuisine; Noma was not unique in this regard. We would suggest, though,

that very few or none of those restaurants paid for their tortilla-makers to travel 2.5 hours each way, every two weeks. Neither were these other restaurants met with the global attention given to Noma Mexico. In what had already become recognized as the quintessential Noma way, Redzepi identified local traditions but made them his own.

Figure 3. René Redzepi, Rosio Sanchez, and the Noma crew visit Chichén Itzá. Photograph courtesy of Noma and used with permission. Accessible at https://noma.dk/the-weather-report/noma-mexico-the-building-site/.

5. Culinary Heritage Work on the Ground

Patricia McAnany [21] has compared cultural heritage work to maneuvering a busy intersection. We could say that working in Yaxunah's culinary heritage in late spring and early summer of 2017 was like navigating a congested glorieta, one of the roundabouts in urban Mérida: Heavily trafficked, somewhat chaotic, and often unclear who was going where.

We showed up ready to continue our archaeological research on past Maya farming and foodways. Yaxunah farmers were weighing the risks of planting a crop, given that the weather had been unpredictable and crop failures discouragingly common in recent years. Soon, ejidatarios would be courted by a developer offering to buy part of the ejido. Cooks of the Lool K'uum collective who were willing to live in a Tulum apartment for two weeks, away from their families, had started their stints as tortilla-makers in Noma Mexico. They rotated their time in Tulum and Yaxunah, returning home with stories about sleeping in beds (not hammocks) for the first time, and laughing about the salbutes served in the restaurant, which they agreed were ridiculously small and included things they did not consider edible, like flowers and seaweed.

Though there was no formal interaction between the famous chefs and archaeological project, the chefs left traces. One day during excavations, Fisher noticed one of the excavators was wearing a t-shirt emblazoned with Rick Bayless' TV show logo. When she asked him where he got it, he shrugged and said, some guy. Ardren went looking for local authorities one afternoon and found them serving food to a large table of chefs including Rosio Sanchez—no one at the table seemed to notice the arrival of other non-Yaxuneros. Another day, during an afternoon celebration for Yaxunah's patron saint, a couple of archaeologists were mildly scandalized to see young Noma chefs publicly drinking,

dancing, and even making out. For those of us on the archaeological project, public gatherings—and especially religious gatherings—were occasions where we were most vigilant about our personal behavior, especially since Yaxunah is a dry town and, as a whole, fairly conservative. Later, we laughed about our reaction, because no one from Yaxunah seemed to care about the Noma team's good time. In fact, one of the most unusual aspects of the summer of 2017 was that in this tiny village where we were accustomed to being the only non-locals, there were suddenly many tall, pale, scruffy young foreign chefs coming and going, eating and visiting. We knew Yaxunah had become a destination for chefs to visit, but we had not experienced how consuming those visits were for this small town. Now, other women and their families were also offering to cook cochinita pibil for visitors, a process that involved whole extended families as well as local authorities (who can be counted on to have a working cell phone). These large meals in Yaxunah require shopping trips to the nearest market 30 minutes away, borrowing cooking and serving vessels from people throughout the village, procurement of forest materials and household garden spices—they are a major production that occupied many people in this otherwise very quiet and unflappable place. When viewed alongside the steady presence of the Lool K'uum collective (8), which feeds college students, teachers, and other volunteers, the expansion of food for pay during the summer of 2017 marks the emergence of a new phase of culinary tourism in Yaxunah. Celebrity chefs "discovered" a place where food had been made for outside visitors for the last 30 years; in 2017, there was suddenly a greater demand and more economic benefit to be had than ever before. Two-and-a-half hours' drive east from Yaxunah, René Redzepi, Rosio Sanchez, and the rest of the Noma Mexico crew were serving up dinners at $750 USD a head after taxes.

All of us were circling the glorieta of Yaxunah's culinary heritage. For the two of us writing: how we navigated that intersection was, of course, informed by our identities as foreign archaeologists. Below, we each contribute a narrative of what it was like to participate in Yaxunah culinary heritage work during the heightened conditions of the 2017 field season. We present these narratives transparently, providing an account of what happened "on-the-ground".

5.1. Walking and Talking in the Eijido, Told by Chelsea Fisher

I opened camp in Yaxunah right after our permits came through in April 2017. It was my third and last season of dissertation fieldwork at Tzacauil, a small archaeological site about 30 minutes' drive from the town of Yaxunah east into the forested ejido lands. I wanted to figure out how Tzacauil's ancient farming households had used the open spaces (houselots) around their dwellings at different points in history. When I arrived, it was still late dry season and the absence of vegetation made it easy to see subtle features on the ground: Slight differences in bedrock and soil, tiny ancillary structures, and land-use features. If I could document where those features were, I would be able to piece together houselot activities across the site. I also wanted to document how modern farmers and gardeners understood the landscape, and to archive those insights into a map of Tzacauil using digital humanities methods. With a sense that the rains could start at any time, I decided to hold off on excavation and instead gather a team for survey.

I met with local authorities to explain my plan and to ask for assistance assembling a group of six ejidatarios to work on the survey. I told them that it would be a week's work, paid the regular wage, but that it would entail walking and talking instead of the usual clearing and excavating. The authorities chose four men from the pool who had already signed up to work on our project that season. Their selections were deliberate: Understanding my goals at Tzacauil, the authorities selected ejidatarios who were strongly invested in local history and familiar with the eastern ejido lands. I had worked with all four many times in my previous seasons at Yaxunah and was happy to work with them again.

I had also asked if I could hire women ejidatarias for this work. Houselots, now and in the past, have been sites of women's domestic labor (e.g., cooking, gardening, washing) in Yucatán. My plan for surveying Tzacauil's houselot areas was to imagine, collectively, "if we were living at this house, how would we use the space around it?" (i.e., what spots are best for gardening, collecting water, building, walking, depositing waste, etc.) I wanted to know what men and women intimately

familiar with the central Yucatán landscape—as well as the nature of farming and gardening in that landscape—would see in Tzacauil's forest and put their observations into conversation with my own as an outsider and an archaeologist. Women were an important part of that plan.

However, women had never been hired for archaeological fieldwork in the Yaxunah ejido, not by our project nor by its predecessors. My proposal to include women was initially met with resistance from ejido authorities (themselves male). Yaxunah's municipal branch (headed by the first female comisaria, elected in 2016) supported the idea from the start, but their jurisdiction concerned the town, not the ejido nor its archaeological sites. I attended a few more meetings with ejidal authorities, each time bearing offerings of ice-cold drinks, as the town treasurer (a sympathetic friend) had instructed me. We sat in plastic chairs, sipped Coke, and talked. As with many of our meetings with local authorities, most of the discussion was in Yucatec Mayan (a language I do not speak) so I had to rely on the occasional post hoc summary offered in Spanish. The authorities conveyed they were concerned women would get too tired in the field and would not be interested in working.

To this last point, the authorities decided to invite the few women who held ejidataria rights to attend a meeting. Six women came and heard my proposal, with ejidal authorities facilitating and translating as needed. We eventually agreed that if the women wanted, they were welcome to show up for one week of "walking and talking" fieldwork beginning the following Monday (May 1, 2017). All six expressed interest. When the sun rose on Monday, I nervously walked out of camp, anxious to see if anyone had come. To my relief, I saw assembled around my truck the four men I had worked with previously and two women from the meeting. These two señoras were the first Yaxunera women to work on a local archaeological field project in more than three decades of near-continuous research.

The seven of us drove out into the ejido forest each morning that first week of May. I used an iPad and GPS to record the ejidatarios' stories and our observations directly into a georeferenced LiDAR image of Tzacauil. We started out in the houselot areas as originally planned, but midway through the first day I realized we were going faster than I had expected. I panicked. I had hired everyone for a week of this "walking and talking" and we were going to be out of things to do in two days. So, I improvised: I slowed us down. We started breaking more, taking longer lunches.

I can admit, slowing down started as stalling (how can we fill five days of this?) but turned into something else altogether as I gave up micromanaging the flow of our work. We were more relaxed. The conversation became less guarded. To be clear, the shared awareness that I was paying these six individuals to hang out in the woods with me was always present, but the pace and direction of what we would do with this paid time together was no longer my exclusive decision, but that of the group. We left Tzacauil and visited other places in the ejido, places that held significance for the ejidatarios. I put aside the notions of what was "relevant" to my project that I had formed before even arriving in Mexico, and just listened.

Lunches changed the most in this new order. In earlier seasons at Tzacauil, lunch had been for me a frantic half hour to catch up on paperwork and scarf down a granola bar, while the crew would eat pozole and rest at a distance. In the 2017 season and beginning with this survey crew, lunches stretched out to an hour or more as food and conversation were shared.

That first week, Noma came up in conversation every day with the men and women of the survey team. Noma was buying eggs, vegetables, and herbs from some households in the community. Their prices were dissected: There were reports of three pesos per egg (compared to the two pesos an egg would sell for in the local store), 40 per kilo of chaya (a leafy green), 50 per kilo of epazote (an herb), 12 per kilo of maize. We talked about the Yaxunah women currently in Tulum making tortillas for Noma diners. We shared news of what we had heard from the cooks who had already come back. I asked how much Noma was paying the tortilla-makers. Though no one knew for sure, their impression was that the women were making $2000 pesos per week (double the wage that archaeologists were allowed to pay crews in Mexico in 2017), but that much of the money was lost on Tulum's inflated costs of living. I plugged the price of a meal at Noma Mexico—$600 USD before tax—into my phone's calculator and

converted it to pesos under the current exchange rate. I showed them the screen: $10,800 pesos for one meal. I could not tell if they believed me.

At one lunch, survey team member Don Ernesto (name has been changed), an elder and recognized authority in the Yaxunah community, told me that he had an upcoming meeting with CIMMYT agricultural technicians. He was experimenting with organic maize agriculture with CIMMYT support, he said, because Noma and other restaurants want to buy everything todo natural, todo orgánico (all natural, all organic). Don Ernesto told me that making milpa (the polycultural, slash-fire cultivation traditionally practiced in Yucatán) organically was different from doing it the normal way. He told me that organic food is grown by leaving lo orgánico on the ground to decompose. To illustrate, Don Ernesto grabbed a handful of dry leaves from the forest floor and crumbled them; I realized by "lo orgánico" he meant organic matter, leaf litter. Leaving lo orgánico on the land instead of burning it keeps the nutrients in the soil, he said, and so corn grown in that soil is organic. As the conversation moved onto other topics, still I was struck by this well-meaning but distorted takeaway from CIMMYT's organic farming workshops. Given that FHMM and CIMMYT feature photographs of Don Ernesto prominently in their promotional materials, I was baffled, too, that he had been given such a simplistic explanation of organic farming. It seemed as if the branding capacity of the word "organic" was prioritized over practical understanding. Or perhaps, since Spanish is a second language for many elders in the Yaxunah community and CIMMYT's workshops were most likely offered predominantly in Spanish, it is also possible that language barriers contributed to misunderstanding.

We finished our week of walking and talking around the ejido, and then I began excavations with a new crew. We worked through September 2017. Talk of Noma ended with the closing of the pop-up in late May, but the newfound emphasis on slow lunches and open conversations continued through the long field season. The time spent conversing during lunch profoundly shifted the culture of work at Tzacauil. Lunches themselves became communal, and increasingly elaborate (Figure 4). I documented most of the daily meals the men and I shared with my cell phone camera, and some ejidatarios began to do the same.

Figure 4. An elaborate mid-morning meal during excavations at Tzacauil. Photo by Chelsea Fisher.

We seldom drew overt connections between the food we shared, prepared in the pre-dawn hours by the men's wives (some of whom had cooked at Noma Mexico), and the broken dishes, bowls, and grinding stones resurfacing in the ancient kitchens we were excavating. However, I like to think that during those lunches, we expressed in our eating a quiet respect for the deep history of Yaxunah's culinary heritage.

5.2. Maya Primicia and Global Conversations, Told by Traci Ardren

I arrived to Yaxunah in mid-May of 2017, after wrapping up a long stint as departmental chair and ready to begin a huge new three-year National Science Foundation funded project. The logistics of the sacbe project were heavy on my mind, as we would be living and working in three separate locations and I knew the loss of paid income when we were away would be a burden on the people of Yaxunah. I was really pleased to learn so many people in the village were benefitting from Noma Mexico, and that there were wages coming in that while temporary, were substantial. I had three undergraduate students with me, all of them interested in the food tourism research I had planned for 2017. We had household excavations to get started, meetings with local authorities to schedule, and a primicia to arrange as quickly as possible.

A primicia is the local Yucatec Maya offering ceremony that prevents any member of the archaeological project from coming to harm (like snake bite or fall) during the field season [36,37]. A large offering of food and prayers are made to the guardian spirits that live in the archaeological site and if it is successful, the work will proceed without incident. I have written elsewhere about the long history of archaeologists collaborating with Maya shamans, or h'men in Yucatec—this tradition began in the 1930s at the urging of local elders, and it is widespread within archaeological projects in the area today [38]. As a young member of the Selz Foundation project at Yaxunah in the 1980s, project director David Freidel took the counsel of local elders very seriously and I learned that these ceremonies were one of the most important responsibilities of the archaeological project. I was honored to learn how to assist the local shaman with preparations, and I was looking forward to being part of the whole process again in 2017.

Less than two weeks after arriving in the village I sought out the shaman, a local farmer who also did ceremonies for a wide variety of clients—family, friends, and enemies from the village as well as curious visitors and tourists who were able to pay well. Don Ricardo Cupul (name has been changed) was old enough to be my father, I met him when I was only 22 years old and we had known each other for 18 years. While charismatic and skilled at his spiritual work, he was also a drinker who could be difficult to find in the evenings. Despite my efforts to reach him in the morning, his wife told me and my students to come by one evening to discuss the logistics of that year's primicia. We arrived about 8 pm and waited on the road by the invisible gate to be invited into the yard and house in the manner of people who do not have doorbells or many other ways to assure privacy. We were invited into their two-room home, given the only plastic chairs available, while Don Ricardo sat in his hammock. Everyone agreed the huge old tree that collapsed onto Chelsea's truck while we were all sleeping safely in camp was a sign the primicia was especially needed this year. While the two of us have done these negotiations many, many times, I asked him some questions this time about what would happen—in the past, I felt that was not my place, but this year was different and I am grateful for that inspiration as Don Ricardo passed away in the spring of 2019.

We would need to pay six women to prepare the food and this would take two full days of work. Even with many of the local women traveling to Noma, there were plenty of women who could do this, these were skills every woman in the village possessed, he told me. He was happy to recommend six of his relatives. The women would prepare a homemade recado rojo, or seasoning mixture made of whole peppercorns, roasted garlic, cinnamon, cloves, and oregano—local achiote would be added later. We would need to purchase the spices and 60 chickens, people in town who wanted to attend would bring a bucket of corn masa from each family. I also needed a lot of aguardiente, candles, and incense, which is only sold in little envelopes in the villages and might have been the hardest ingredient to

obtain. A lot of the cooking would take place in the archaeological camp, which was a new innovation this year and I didn't see any reason to argue with him on this. Over the years, as culinary tourism has increased in Yaxunah, even Don Ricardo (whose wife is not a member of Lool K'uum) has become more aware of the cultural and monetary capital to be obtained by emphasizing the "Mayaness" of his rituals. Early on we bought commercial packets of recado rojo; now he expects we will expect it to be made by hand. Early on we purchased the cheapest form of aguardiente possible; now he has a label he requests.

In 2017, we held the primicia on the archaeological site, which was the way I experienced the ceremony during the Selz Foundation project, but the tradition had fallen away in subsequent years. Don Ricardo was happy when I suggested this idea, and knew the exact spot to set up that would both be close to the guardian spirits at the center of the site, and under the correct species of tree that was nice and shady. The first part of the ritual he does privately with just a few assistants. A large table sized altar is built of specific woods and vines, candles mark the four directions. Clearing the area, gathering the correct plants, and building the altar took a full day. The ritual continued with a petition to ask the spirits for permission to do the archaeological research safely and without obstacles. Then, there was a huge offering of food to everyone in the community (all archaeologists were required to attend!). The spirits received their food offering earlier in the ceremony, when the chickens were made to drink blessed alcohol and then dispatched, to be cooked in the corn masa along with the recado rojo. An underground oven or pib, with loaves of corn and squash seed bread, was opened as the food was served, and many loaves placed on the altar (Figure 5). The final event in the ceremony, once everyone had as much free-range chicken, dense corn bread, and Coca-Cola as they could consume, is a limpieza or cleansing for all the project members and Don Ricardo's ritual assistants.

Figure 5. Don Ricardo's primicia altar, with offerings of chicken, maize, and alcohol. Photo by Traci Ardren.

It was my experience that the presence of Noma Mexico in the village heightened many aspects of the primicia. In many other seasons, the primicia was the largest and most elaborate social and food-based event of the summer, but in 2017, it was one more event in a series of feasts. The primicia also used to be one of the few places people from the village and archaeologists shared a meal—meals

are now shared with outsiders on a regular basis. Even the context for obtaining the ceremonial supplies had changed. Buying that many chickens and spices—a hugely extravagant expense by local standards—was not really a cause for any particular attention or gossip this summer, as the two competing cooking cooperatives regularly had large supply runs and of course FHMM was purchasing large quantities of corn, eggs, and vegetables from many households in the village.

I had long ago accepted the fact that Don Ricardo did rituals for non-believers and charged them loads of money; how this subsistence farmer supported himself was really none of my business. But 2017 was the first summer where the social value of food had been elevated to a place where the concerns of very wealthy Europeans and Mexicans for todo orgánico recontextualized the Maya food traditions of Yaxunah. This knowledge was now further capitalized, and treated as precious (in both the emotional and monetary sense) for no other reason than its ability to serve the palates and preferences of wealthy foodies in Tulum. The primicia chicken and corn stew was still served on disposable Styrofoam plates but I think everyone eating it, except maybe the youngest kids, was aware that the aesthetic of the meal had changed. What had been traditional Maya ritual food, a little rough around the edges and possibly challenging to foreign stomachs, was now part of a big complex conversation about hot button concepts like culinary authenticity, local traditions, and food advocacy.

6. Discussion: What's next?

Noma Mexico ended its run on May 28, 2017. The women of the Lool K'uum collective returned to preparing meals in Yaxunah for tourists. The tourists, in turn, posted photos of themselves eating said meals on social media, often garnished with hashtags proclaiming the food's (and, implicitly, their own) authenticity. For our part, we reentered academic life in the United States, and, as with the end of every field season, began abstracting our experiences into the stuff of publications, grant proposals, and technical reports. Three years later, we look back at 2017 and ask, where do we go from here?

A distinctly 21st century cultural moment of foodies and celebrity chefs and gastronomic optimism had, for better or for worse, reached peak saturation in 2017—it felt like food was everywhere, and that everyone wanted to talk about it as much as they wanted to eat it. In 2020, the landscape has changed. Farmworkers and grocery store employees are forced to risk their lives to keep food systems running during a global pandemic. Restaurants worldwide are shuttering. Laid-off kitchen and front-of-house staff wait desperately for unemployment checks to arrive. Our summer will be spent in the U.S. rather than doing research in Yaxunah due to university travel bans and safety concerns. As archaeologists and as stakeholders in culinary heritage, we hope to use this time to learn from the starkly different food landscapes of 2017 and 2020, and to take those lessons forward into better community-engaged work in Yaxunah.

Our participation in culinary heritage has led us to rethink methodologies for the study of past food and agriculture. Like other archaeologists engaged in community-engaged research, we can attest firsthand to the value—and, admittedly, sometimes the difficulty—of relinquishing the façade of our authority as "experts" during fieldwork. It may be comfortable to assert the image of being in control, with a certain kind of authority buttressing our assurances: Let me tell you the exact type-variety of that sherd, let me tell you that I absolutely expected to find this burial while excavating on a Friday afternoon, let me tell you why the ancient Maya simply could not have grown corn here. The time for that kind of archaeological monologue is long over.

Decentering our academic perspectives and opening to the authority of other stakeholders in the culinary past, most especially the authority of Yaxunah cooks, farmers, and gardeners, has taken years of work. It is an ongoing process, but one that has already yielded meaning. Preparing and sharing meals with community members resulted in a slower, more intentional archaeology in the 2017 field season. We were more attentive. Because we were more attentive, we were able to recognize residues of past food systems we had missed before. Yaxunah gardeners pointed out subtle shifts in soil quality in 2000-year-old houselots. Yaxunah farmers corrected us, with a laugh, that a presumed-ancient structure was actually a decade-old corn crib. Facilitating an elaborate primicia for project (local and

non-local) members slowed down our excavations, but it provided a space for all of us to observe and learn from Yaxunah cooks and shamans, rather than just from artifacts. It has not been perfect. We still have significant work to do to make archaeology at Yaxunah more inclusive at every step of knowledge production. We see that work as part of a larger effort to reckon with archaeology's neocolonial tendencies, while also clarifying archaeology's potential contribution to modern food sovereignty and sustainability. Our collective ability to collaborate with communities to build centennial-scale bridges between past and present food systems will determine whether we realize that potential.

We will keep returning to Yaxunah, but in this new culinary landscape, will the chefs? Less than a year after Noma Mexico closed, Redzepi had reopened the flagship Noma in Copenhagen, in a new location, and now as a small campus complete with a fermentation lab, urban farm, and staff sauna. Back in Tulum, Google Maps imagery (taken in May 2019) of the former Noma Mexico site shows shaggy thatched roofs dappled with dead leaves and an inner courtyard piled with black plastic garbage bags.

Yet, while the pop-up has become its own sort of archaeological site, Redzepi has kept coming back to Yaxunah. On his Instagram, a video posted in early 2019 shows tortillas cooking on a comal. The video is geotagged to Yaxunah. A woman sitting beside the fire, who we see only from the waist down but who wears a traditional huipil, flips a tortilla. The tortilla begins to puff up with hot air. The woman waits a beat, reaches her hand out, deftly pats the puffed tortilla, pulls back, and then reaches again to grab it while Redzepi exclaims excitedly with admiration for her skill; she laughs in response. A year later, in February 2020, Redzepi's Instagram shows he was back again. Amid lush posts showing tropical fruits, chicharrón, beaches, and cenotes from around the peninsula (he was on sabbatical with his family), he posts a video recorded at Yaxunah. It is a close-up of his hand, turning a jamaica flower delicately for the camera. In the background, we hear a woman speaking Spanish—it sounds like she is giving a presentation about local ingredients to a small audience, her voice coming in and out among whistles and whoops of children playing outside. Only a month after that, Redzepi appears to be back in Copenhagen, and posting the first of several Covid-19 updates. Everyone is figuring out what life post-pandemic will hold, and the culinary landscape will likely never be the same as it was in 2017. However, as we affirm our commitment to continuing work with Yaxunah community members and their culinary heritage, we are encouraged by Redzepi's signaled commitment to continuing to engage with the farmers, gardeners, and cooks who made Noma Mexico possible.

7. Conclusions

For archaeologists studying past foodways, the decision to partake actively in culinary heritage work with communities is an increasingly critical one if we want to contribute towards solving modern food issue—and if we want to dismantle archaeology's neocolonial tendencies. When archaeologists decenter our view of the past, and instead make room for the multivocal and sometimes competing authorities and perspectives of farmers and gardeners, cooks and chefs, "foodies" and eaters of all kinds, the work gets messier, true—but it also gets richer and more relevant. We gain a deeper understanding of traditional ecological and culinary knowledge systems and can more readily marshal the patterns in our archaeological data towards pressing issues of food sovereignty, rural land tenure, and agricultural sustainability. In this paper, we shared on-the-ground stories from our culinary heritage work during the particularly unusual 2017 field season at Yaxunah, when the signs of neoliberal, globalized food were apparent in ways they never had been before. We framed these narratives within recent historical context to emphasize that the attention of celebrity chefs and culinary tourists is not happening in a vacuum, but rather is inextricably linked to neoliberalism and so-called sustainable development. We share these stories with the hope that our colleagues in Maya archaeology, and especially those researching past food and agriculture, will join this open conversation about the challenges, surprises, and delights of partaking in culinary heritage work in the Maya area.

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Article

Different Ways of Knowing and a Different Ways of Being: On a Path to Reawakening Legacy of the Maya Forest

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Abstract: Archaeological projects are in a special position to create unique partnerships, with shared goals and intentions, to development Maya anthropological archaeology. This narrative presents an education outreach project in archaeology invigorated with local collaboration. When priorities of active archaeological projects formally include resident community participation, new horizons and accomplishments are achieved. Local and international interests in heritage and cultural traditions create the platform for interactive relationships and identification of common ground. Together, our experience recognizes four educational pillars that revolve around ancient Maya heritage and the fundamental Maya forest garden. Centered on the protected area of the El Pilar Archaeological Reserve for Maya Flora and Fauna, El Pilar and forest gardens are celebrated at the urban Cayo Welcome Center, practiced at the active outfield *Chak Ha Col* forest garden, and taught at the rural *Känan K'aax* School Garden. As our experience demonstrates, community partnerships require specific elements of acknowledgment including a valued tangible heritage, a formal information outlet, an education link, and an honored cultural tradition. Together, these provide fertile ground for cultivating collaborations in the Maya region and across the world.

Keywords: archaeological heritage; education outreach; community participation; culture and nature Conservation

1. Introduction: Education Partnership Opportunities for Maya Archaeology

Developing a roadmap for archaeologists and community members to become partners is complex yet very worthwhile. Local community members have experiences, naming conventions, and conceptions of important landscape features that archaeologists must engage with to engender inclusive understandings of the past and shared heritage values for the future [1]. Improved social and environmental well-being are common goals for those dedicated to the preservation of cultural heritage, and archaeologists are in a position to bridge social, political, and economic sectors by forming partnerships to achieve these goals. Partners include the governments that authorize projects through permitting processes, the local communities within which—and the actors with whom—archaeologists work, and the global academic society that is the context for research. The decision to partner with the community must be a priority [2,3].

Short-term archaeological research projects face great challenges in the arena of community engagement, while projects that plan for long-term investment in specific areas will be better positioned to build partnerships. These can include, but are not limited to, engaging with tourism, working

with non-profits, collaborating with education programs, and building creative enterprises based on confidence and trust that can benefit all parties. We recognize four essential elements to building a community partnership: (1) a specific, valued tangible heritage; (2) a formal information outlet; (3) an active education link; and (4) an honored cultural tradition. This paper reviews the last decade of the El Pilar Project's community outreach programs, carried out in the context of our ongoing research (Figure 1) and collaborations, to expand participation in Belize and the greater Maya forest.

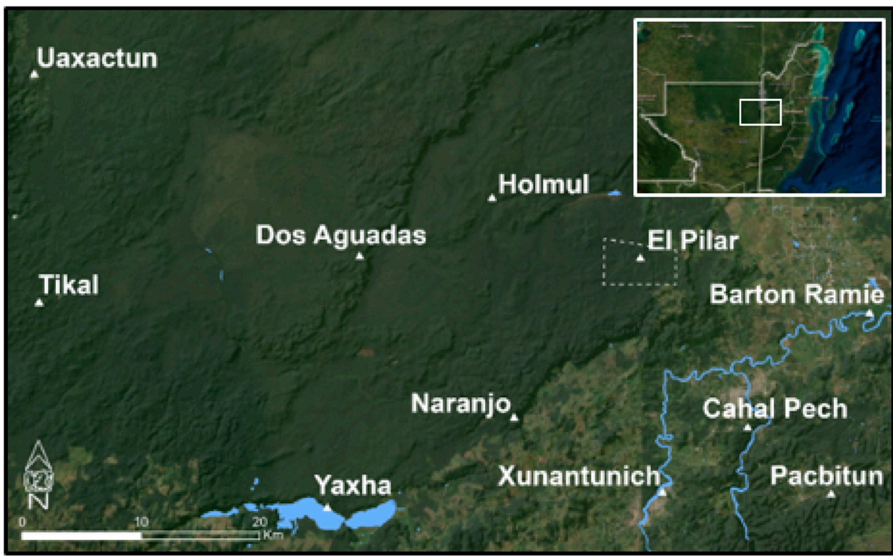

Figure 1. Location of the Central Maya Lowlands with El Pilar and Nearby Sites Indicated. Credit: MesoAmerican Research Center.

Honoring the Maya forest legacy requires reconnecting master forest gardeners with their communities and the youth, who can experience the Maya forest as a garden for the first time. We realize how everyone can play a part in encouraging biodiversity, enriching soil fertility, conserving water, and feeding themselves even as they help shade the landscape to reduce the impacts of increasing temperatures due to climate change. Our education outreach program builds from what we view as four pillars of the El Pilar model: (1) the protected El Pilar Archaeological Reserve for Maya Flora and Fauna; (2) the urban Cayo Welcome Center; (3) the outfield *Chak Ha Col* forest garden of Master Gardener Narciso Torres; and (4) the rural *Känan K'aax* School Garden. Our joint efforts celebrate the intimate local knowledge of traditional Maya farmers and pursue creative outdoor education opportunities to explore the nexus of culture and nature [4].

The New World tropics are hotspots of biodiversity, and the Maya forest stands second only to the Amazon in this respect [5]. Biological and cultural diversity in the Maya forest, often discussed in terms of the creation of protected conservation areas by contemporary governments, can be traced to the forest management practices of the ancient Maya [6–8]. Recognizing the Maya have their origins in their forest environment opens a world of possibilities for understanding the beneficial impacts of human actions [9]. The environment itself is the wealth untold of the Maya forest, where the dominant plants all are useful for food, medicine, construction, utensils, and even toys and ornaments, not to mention a habitat for the animals [10,11]. Ancient Maya culture was sustained by an alliance between people and their landscape, which is worth recovering to build creative livelihoods for contemporary and future inhabitants of the tropics.

Traditional practices demonstrate connections between people and natural cycles of plants and animals [6,12]. Forest gardeners, who have grown up in the tropical landscape, know the importance of human relationships to the earth and the role these relationships play in maintaining health and wellness. They are conservationists who protect water and soil while maintaining biodiversity and supporting their families with food and medicine [13]. Our partnerships link the international academy

to local activists and forest gardeners to explore past solutions to contemporary challenges. Our broader vision includes an education network that illustrates the Belize national motto *Sub Umbra Floreo*—Latin for "Under the Shade We Flourish." These partnerships provide the foundation for conservation and development strategies that promote a sustainable future. The people of Belize know the inherent value of their forests and gardens, and our project seeks to foster an explicit appreciation of the native landscape.

We see that the greatest threat to the Maya forest today, and its flora and fauna, is the loss of traditional farmers and their intimate ecological knowledge, which carries greater relevance as we move forward in today's climate. To address this alarming trend, we have elected to invest in conservation and development practices that support the forest and its people. We provide a base for engaging Belizeans with their vital landscape, bringing out and making public the intrinsic values recognized by all. The enduring environmental legacy of the ancient Maya provides a blueprint for addressing issues of climate change, water conservation, soil fertility, and human well-being. Reconnecting and reawakening the people of Belize to their environmental heritage is our primary aim.

2. Background: Passing on the Legacy

The Maya forest is among the most diverse in the world, yet it is threatened by Western farming practices. Temperatures have risen more than 2° C and the global climate crisis is evident in quixotic and unpredictable rainfall patterns. Monocrop farming with chemicals is undermining the polycultural traditions that benefit farming families and the entire ecosystem. To reverse these disturbing developments, we see investment in conservation practices from local traditions as integral to support the forest and its people into the future. The time-honored skills and knowledge of the forest gardeners promise a future of prosperity and sustainable development [6,13]

The landscape of the upper Belize River, home of the ancient Maya of El Pilar and the diverse community of Cayo, Belize today, provides an example of the challenges facing the world. Where 50% of the community occupies rural areas and an equal proportion of the population is under 15 years of age, the relationship between population and environment is on the cusp of major change. Population estimates for the ancient Maya are higher than that of current populations in the same area. There is a growing need to investigate traditional land-use strategies and the viability of food sovereignty that has only intensified because of the Covid-19 pandemic. The El Pilar education outreach model is designed to awaken the community to the potentials of their landscape and revitalize the conservation ethic embedded in local traditions.

El Pilar was first explored in 1983 as part of the Belize River Archeological Settlement Survey, an archaeological project in the Cayo District of western Belize. Initial research was focused on survey and test excavations, examining the relationships between settlement and environment [14,15] and laying the foundation for appreciating traditional Maya land use. Investigations of looter's trenches at El Pilar were conducted in 1986 [16], and full attention to the construction chronology of El Pilar's monuments proceeded from 1993–2004. Coincident with the fieldwork was the development of the protected area in Belize and Guatemala [17,18] and its management plan, which highlights community participation [19,20]. Research in Belize and Guatemala continues with citizen scientists and community partners documenting ancient settlement and vegetation with the aid of cutting-edge Lidar technology [4,21].

Education outreach and community collaborative partnerships developed out of the archaeological research program in Belize and Guatemala directed by Anabel Ford (AF) [2,3,22,23]. As interest in the creation of a protected area around El Pilar increased, the local Cayo Area Representative Daniel Silva submitted a proposal for the boundaries of a proposed archaeological reserve. The archaeological team inaugurated the Fiesta El Pilar, cosponsored with government archaeologists, to expand community outreach through an annual, accessible event. The Fiesta El Pilar, initially dedicated by Father Richard of the Santa Familia Monastery—a long-standing Catholic institution in the area—spanned a decade and drew as many as 2000 celebrants with music, performances, and educational activities. The success

of this community-based and supported celebration led the Cayo Belize Tourism Industry Association (BTIA), under presidents Godsman Ellis and Bobby Hales, to invite AF to apply for funding that would be used to create The El Pilar Archaeological Reserve for Maya Flora and Fauna. The Directors of the Non-Government Organization Help for Progress (HfP), Elias Awe and Rick August, supported the management planning process for the creation of the reserve. HfP brought in Anselmo Castañeda and his wide conservationist connections as a key partner to integrate the essential community participation component into an inclusive planning process. This process marked the beginning of crucial collaborative work with traditional forest gardeners that forms the link from past to present.

At the same time developments at El Pilar were moving forward, Cynthia Ellis Topsey (CET) was pursuing a career in rural development and building expertise in community organization in Belize. To expand her objectives, CET accepted Ford and Carnegie Foundation fellowships to spend two years at the Institute of Social Studies in the Hague, returning to Belize as her nation gained independence. As a community activist focused on rural development, CET was well positioned to work across Belize, where her leadership skills were acclaimed. She was selected to participate in a four-year Kellogg Foundation World Community Leadership program that honed her leadership skills and expanded her global network. Later, through her diplomatic work in the Caribbean Community and Common Market (CARICOM) focused on women, youth, and community development, she became aware of the Duke of Edinburgh Award and began to fiercely advocate for this program. In Belize, CET continues to work with both rural and urban communities. Her certification as a Supreme Court Arbitrator and Mediator helps in assisting with many controversial issues among the villages and towns.

The credentials of AF and CET, and their overlapping but complementary networks, made a convergence of their work both desirable and inevitable. CET's father, Godsman Ellis, was involved with the El Pilar project through BTIA, and AF had worked with CET's husband, Harriot Topsey, when he was Commissioner of Archeology for Belize. CET was involved with a network of development NGOs at the same time AF was working with HfP. While AF was relying on Dr. Joseph Palacio of the University of the West Indies for community development input, CET—a friend and colleague of Palacio—was active in community development. CET even lived next door to Anselmo Casteñeda, the important collaborator with AF. Both CET and AF have connections in Belize and in international circles, both are focused on the great potentials of the Maya forest, and both see opportunities for positive change.

The meeting that set all in motion was stimulated by Israel Rivera, from Santa Familia village in Cayo, who requested CET's support with the forest gardeners' organization and insisted that she meet AF. Years ago, CET set out to learn the legacy of her late husband Harriot Topsey, an Archeological Commissioner of Belize and enthusiastic supporter of the establishment of the El Pilar Archaeological Reserve for Maya Flora and Fauna. Topsey was particularly devoted to developing links between people and plants and mentoring his archaeological team, and he was dedicated to educational outreach across Belize. Since his death in 1995, CET and their children attended the Belize Archaeological Symposium to engage with his colleagues, and AF was one of these. This encounter of listening, learning, and sharing was the beginning of two women from distinct backgrounds walking down the same path. Words like yin-yang, serendipity, enigma, and dynamic cannot adequately capture the power of this relationship, which has propelled El Pilar's education outreach to new heights.

A recognized community activist, CET sees herself as a mother of five children, with 17 grandchildren and counting. Her commitment to the next generations is intertwined with fulfilling her husband's dream of a brighter future for all children. She found AFs concept for El Pilar exciting, discovering the wealth untold in the dominant plants of the Maya forest [11] after seeing them represented at the *Känan K'aax* School Garden in Santa Familia. The recognition that the world is a classroom further validates the work of forest gardeners, as Harriot Topsey certainly knew. CET found the stories from community members about forest gardens nothing less than revolutionary and could hardly contain herself; like the woman at the well, she went about sharing the good news with everyone, including the media.

CET is the Champion of the Duke of Edinburgh Award for Belize (DoE-Belize, intaward.org). This is an informal education program, established by the British Royal Family and aimed at promoting youth apprenticeship, which challenges participants to engage in physical recreation, learning new skills, voluntary service, and adventurous journeys like those she and Harriot shared. The DoE-Belize objective to build valuable life lessons of leadership, teamwork, and communication provides an ideal fit for the El Pilar model and is synchronized with our education outreach program. Both programs provide education themes that complement each other formally and informally, and both entities draw on the natural creativity of youth to enhance their preparation for the world.

Balancing the free flow of CET, AF is an archaeologist trained in the academy with a fierce commitment to integrating disparate views of concrete topics. Ever an idealist with hopes for a viable future, she is open to different ways of knowing. AF strives to understand the diverse disciplines that describe and interpret the Maya forest: anthropology, archaeology, geography, geology, botany, biology, agriculture, and the traditional practices of Maya forest gardeners. The core of AF's archaeological research explores the settlement and environmental patterns that are the heritage of the Maya forest in Belize, Guatemala, and Mexico. AF asks, If economic botanists say the Maya forest is a garden, and if agroforestry studies demonstrate that the milpa cycle is in sync with natural cycles, what can this teach us about conservation and management? In this line of questioning AF and CET find common ground.

Together, we need not go so far afield. Local forest gardeners teach the lessons of the wealth untold in the forest, and by apprenticing with these heroes, we can learn from their daily practice that demonstrates how under the shade we flourish. We can observe how they conserve water and moisture with shade, build soil fertility with organic matter, reduce erosion with land cover, and manage land use to reduce temperatures. These keen observation skills are what we value learning from forest gardeners, and we leverage this opportunity to share their knowledge with the world.

After forming this partnership, CET reached out to the University of the West Indies. This led to an invitation for Master Forest Gardener Narciso Torres to visit a seemingly impoverished community in Belize City. CET will never forget the excitement as Torres showed community leaders the potential of the plants all around them. This relationship led to United Nations Development Program (UNDP) funding for an urban gardening project to help build food sovereignty in Belize City, which transported the imagination of the forest garden from the rural "bush" to the city.

Diverse initiatives have blossomed from these initial efforts. Our education initiatives thrive through relationships from near and far, but they have always been facilitated by walking the same path together. We developed workshops that trained teachers by building on their ways of knowing, using the methodology of song, dance, and storytelling to celebrate, to honor, and to heal. Each teacher tells the story differently but converges on the mission of revealing the wealth untold. This creates an appreciation among people from all walks of life to become aware of their inherent knowledge. Engagement with indigenous wisdom of the Maya, Garifuna, Kriol, and Mestizo is in line with the new education curriculum for Belize. Rene Villanueva, founder of LoveFM, supported the workshops, and used his powerful media voice to promote a wider appreciation for nature and the Maya forest.

Bringing together the resources and networks of two women as they explore their one path is experiential and organic, evolving naturally from the local setting of Belize, and combining complementary networks in a most phenomenal way. Community organization and mediation skills fall in the domain of CET, while understanding the ancient Maya forest is the province of AF. The networks run deep and wide, with CET as a native Belizean and AF as international Mayista. The uniqueness of these combined assets energetically propels the project forward. Together, these two forces have met the challenges, the ups and downs, steering a course they share to a world of possibilities.

The foundation of the four pillars of El Pilar is the forest garden. We learn to trust the reliability of the forest gardeners' knowledge of the landscape, predicting when it will rain, finding the cure for the bruise, collecting repellant for bugs, and locating water. We honor their ability to perceive where, when, and what to plant. In these times we can depend on the capacity of the traditional forest

gardeners who understand the nuances of weather and terrain. This continues to be an education for all of us, especially for the youth who search for enterprise, showing a way to foster a new future for the planet. We transcend regional borders as more people from around the world come to study with the forest gardeners.

3. Materials and Methods: The Four Pillars of El Pilar

This discussion comes at a significant historical moment to capture the treasures of traditional Maya knowledge and resources for the world. We need to evaluate the role of humans in the caretaking of the environment, which has reached a critical threshold amid growing populations and changing climate. Education is fundamental and we use the Maya forest as an example. The El Pilar education outreach program includes four distinct and interconnected pillars in the Cayo District of Belize: the ancient Maya site El Pilar, the Cayo Welcome Center, the active forest garden *Chak Ha Col*, and the Santa Familia Primary School Garden *Känan K'aax* (Figure 2). The pillars provide a mosaic from the rural to the urban with herbs, shrubs, and trees that invite different ways of knowing and being.

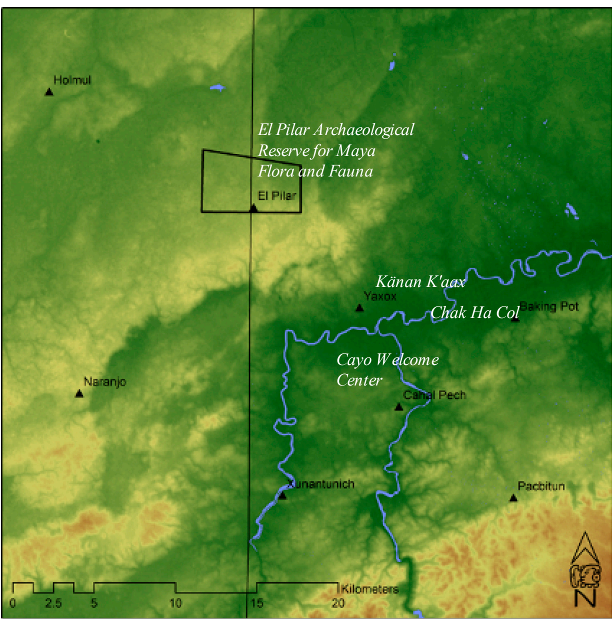

Figure 2. The Local Area Locating the Four Pillars of El Pilar. Credit: MesoAmerican Research Center.

The first pillar is the archaeological site of El Pilar [23], the umbrella which shelters and preserves Archaeology Under the Canopy [24] in the rainforest and a model showcasing connections among living things. Unique in the Maya world, El Pilar is the only archeological site maintained for tourism that explicitly frames the temples and pyramids in the context of the forest (Figure 3). Plants, animals, and people converge into a tapestry that highlights the past and present while nurturing a promise for the future. This is where you can walk with citizen scientists, forest gardeners, and naturalists, and learn to identify the 20 dominant plants of the Maya forest [11]; where you can see howler and spider monkeys maneuvering in the tree tops [23], rejoice in the soaring parrots at sunset, and learn how to recognize the tracks of animals like the jaguar. The model forest garden in the midst of the monuments invites us to appreciate the cultivated values of the Maya forest [25].

Figure 3. The Unique Archaeology Under the Canopy at the Tzunu'un Maya House at El Pilar. Credit: Macduff Everton.

The interconnectedness is significant in the second pillar at the Cayo Welcome Center, which extends the experience to take an imaginative look at El Pilar. The evocative images, engaging videos, and scale model of the site increase understanding of the gifts of culture and nature. We learn with fascination about the interwoven flora and fauna and the potential of fortifying food sovereignty so relevant to society today. Archaeology Under the Canopy [25,26], the singular framing of work at El Pilar, honors traditional farmers—the *milperos* and milpas they sow—and enlists visitors to renew and restore the symbiotic relationship between humans and nature (Figure 4).

Figure 4. Zacarias Quixchan in his Polyculture Milpa. Credit: Macduff Everton.

The third pillar—the active forest garden *Chak Ha Col*—captures the synergy between culture and nature by showing cooperation with, rather than an attempt to tame, natural cycles [27,28]. The garden displays the diversity of intertwining annual crops with perennial trees even as it is surrounded by the expanding monocrop fields of Western-style agriculture (Figure 5). Here one experiences the opportunity to harvest beans, appreciates the importance of water for animals, and learns about seasonal behaviors of birds. The limitless possibilities of the forest show its resilient capacity to provide food, medicine, shelter, shade, aesthetics, and habitats shared with animals.

Figure 5. Blooming Bukut (*Cassia grandis*) Guards the Edge of the *Chak Ha Col* next to a plowed field ready for a monocrop of Beans. Credit: Narciso Torres.

The *Känan K'aax* School Garden, our fourth pillar, is a place for an important yet enigmatic experience of the Maya forest (Figure 6). It represents the intentional passing of the Maya legacy to future generations, the children and their children, ad infinitum. Through this garden, we invite everyone to consider the challenge that no child be left indoors [22,29]. Even with the new reality caused by the Covid-19 pandemic, creativity and innovation can prevail. There is unity in isolation and connectivity in separation that creates a world of inclusion. Nature teaches us how to care and this is one of many lessons from the school garden.

Figure 6. Alfonso Tzul Sharing with Students and Teachers at the Känan K'aax for Education Week. Credit: MesoAmerican Research Center.

Sharing these treasures with the local and global community grew through the generosity of many individuals. The El Pilar experience provides a notable opportunity to model a world of possibilities

through collaborations with government, private sector, and community-based groups. Belizeans captured this vision early on—Harriot Topsey, Daniel Silva, Godsman Ellis, Elias Awe, Anselmo Castaneda, and Joseph Palacio, to name a few prominent supporters—and the list has expanded across international borders over the past decade, bringing new energy and insight for the critical next steps.

4. Results: Experience and Works in Progress

Misunderstood and relegated to the margins of society, the modern Maya have been blamed for provoking widespread deforestation, soil degradation, and loss of biodiversity. This negative view of a venerable agroecological system is due in part to the peripheral role it plays in today's commodity-oriented industrial agriculture. The exceptional qualities of the Maya forest garden tradition show the success of an indigenous annual cropping strategy with the well-developed management of perennials, all linked to the value of the commons [30–32]. The astonishingly productive strategies are flexible and can be intensified with labor, skill, and scheduling. Far from environmental destroyers, Maya farmers are spiritual caretakers of the Maya forest who recognize the interrelated values of plants, animals, and habitat. These local practitioners are heroes who use strategies that shade the landscape, cycle the land cover, foster biodiversity, and feed people. These heroes need to be celebrated by promoting apprenticeships in school gardens, which highlight local traditions and bring forest gardens to all homes, rural and urban, in the Maya forest and the world.

The coming together of CET and AF from different cultural experiences was spontaneous and created an inclusive partnership motivated by the recognition of the value of traditions. The partnership developed clearly focused goals and nimble actions. Together, the collective network has drawn in local and international collaborators, building on a groundswell of local knowledge and practice that resonates with the challenges of climate change and food sovereignty. The result has been a step by step movement incorporating new ways of knowing. This work in progress began in Cayo, Belize, and has moved into the international sphere, with new potentials for developing inclusive education models built on local experience for the entire Maya forest.

4.1. Creating the Model School Forest Garden Känan K'aax

Reawakening knowledge of the Maya forest begins with the creation of apprenticeships for new forest gardeners. Apprentice gardeners are the next generation of advocates and teachers to identify, cultivate, and enhance forest gardens in their own communities. We began with an education platform in Santa Familia, Belize, to develop this program, and we have set our sights far ahead, envisioning all schools in Belize cultivating school gardens—and the skills needed to tend them—with support from the El Pilar Forest Garden Network [32].

Our first major project was the development of an accredited teacher workshop (Figure 7), with the support of the Department of Education, on a 1-acre plot contributed by the Government of Belize and established on the Santa Familia Primary School grounds by the El Pilar Forest Garden Network. Named the well-managed forest, *Känan K'aax* in Yukatek Maya, the school garden provides a base with a small open gallery, a water tap, and an outhouse suitable for outdoor learning, and was funded by the National Geographic Society. The curriculum is designed around environmental components of primary school learning. A three-day workshop outlines teacher–student activities, work exercises, and projects that make use of the garden space and encourage students to see the world as a classroom. The program stimulates listening, learning, and sharing, and it presents the experience as one of community investment; we have successfully validated and engaged the community through participation in these workshops. This coordination unifies our collective and opens up new horizons as a key pillar of our outreach program, which has become particularly important given our new reality under the pandemic.

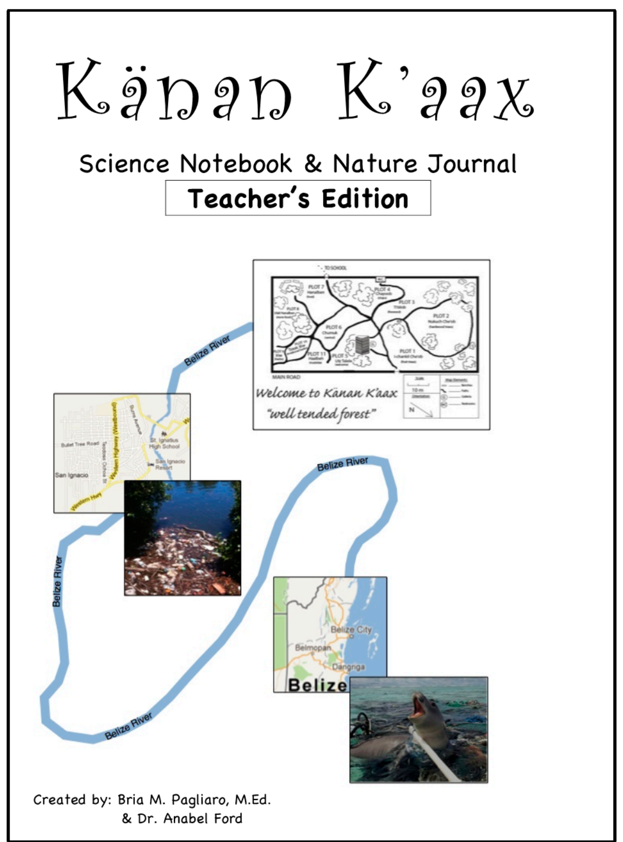

Figure 7. Cover of the 2011 Teacher's Guide for the *Känan K'axx* School Garden. Credit: MesoAmerican Research Center.

4.2. Building Bridges and Making Connections to Wealth Untold

In the decades of lessons learned and the connections made, one of the main threads is venturing into the unknown equipped with the certainty of ancient wisdom. As the story unfolds, we are determined to tell it differently. This means to listen and appreciate without necessarily comprehending the meaning at first. We also recognize there are different ways of knowing.

Paradigm shifts take place when we include storytelling as a methodology. The story about the forest as a garden became our next major project with a country-wide traveling exhibition organized with the National Library Service. The exhibition focused on El Pilar and the Forest Garden and included stunning images, informative panels, and familiar plants. Each exhibit had an opening and closing event that involved local participants and featured forest gardeners, which enhanced community engagement. These events produced many "Aha!" moments, especially when Felecita Cantun, a Maya spiritual leader from Corozal, guided attendants through Sacred Maya prayer and ritual (Figure 8).

The forest gardeners network is a means by which to explore an important story of traditions (http://mayaforestgardeners.org/). Expanding from Cayo to the entire nation has given strength to the inexplicable bond among gardeners, be they in rural Cayo, Stann Creek, or any other district in Belize. Even though the framers had never met, they shared the same vision about the breadnut tree as an important contributor to food sovereignty. We have created these connections with stories.

Teamwork at the *Känan K'aax* school garden has guided a commitment by the Ministry of Education and the Ministry of Agriculture to reestablish gardens in every school. The shared experience of relationships between plants and people is revealed when teachers tell about the importance of a plant to them and their family. We saw this also as inspiring home and community gardening, and this vision has now become a reality. The pandemic has enhanced the opportunities to teach about gardening as

a necessity, and we can see that the education outreach has borne fruit emphasizing the importance of forest gardens. Master forest gardeners are excellent mentors and forest gardens are the perfect setting for youth apprentices, which dovetails with goals of the DoE-Belize, championed by CET.

Figure 8. Felicita Cantu Offering Prayers for the El Pilar Exhibit hosted by the Mexican Embassy. Credit: Adma Chuc.

The feather in our cap was the sensational three-month exhibit hosted by the Mexican Embassy, featuring Archeology Under the Canopy and Household Belongings [33] in a presentation titled *Chaya! Dinner with the Maya!* This event, centered in Belize City, was El Pilar's debut in the main urban center of Belize (Figure 9). With media fanfare for the opening and closing and a mid-stage celebration with Garifuna gardeners, this heralded new avenues of interest, involvement, and collaboration [34,35]. We worked with the Director of the Institute of Archaeology, Dr. John Morris, and his team member Sylvia Batty, to create a display of ancient Maya household belongings accompanied by photographs of modern Maya kitchens from Macduff Everton. Ancient Maya jars, bowls, and vases were shown in a kitchen context and contrasted with contemporary home settings from a University of Belize student, a home in Belmopan, and the residence of the Governor General (Figure 10). This inspired Dr. Joseph Palacio, the first commissioner of Belizean Archaeology, to imagine a Garifuna house as well.

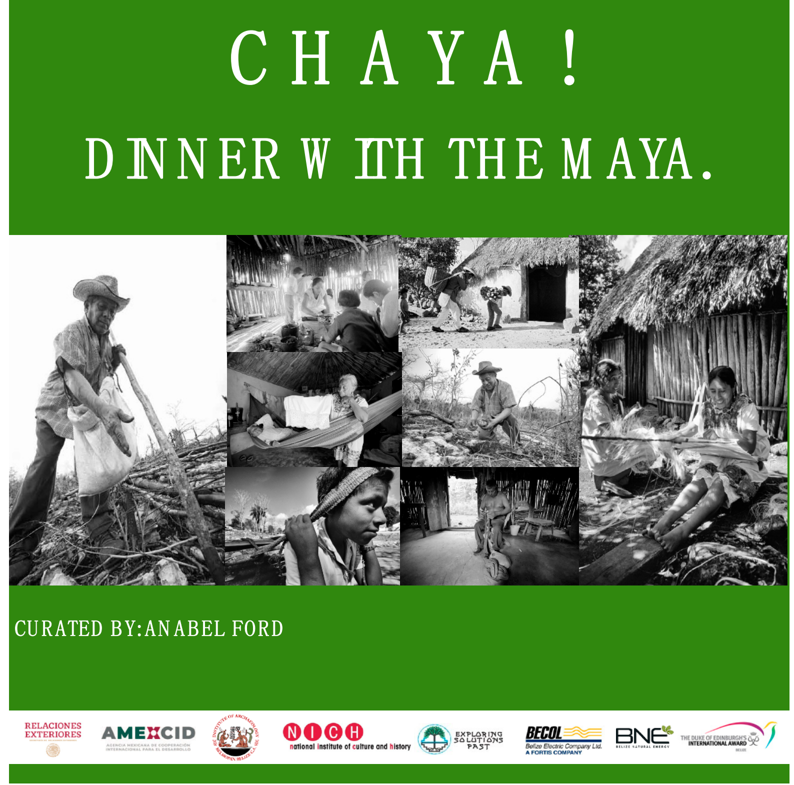

Figure 9. The Opening invitation to the Exhibit of the cultural Institute of Mexico in Belize. Credit: Mexican Embassy Belize.

Figure 10. Contemporary Place Settings with Tradition Maya Kitchen in the background. Credit: Adma Chuc.

The storytelling in the exhibit resonated and led to a major partnership with the Director of the Museum of Belize, Alexis Salazar. He envisions a new exhibit on archaeology and environment that links to the new Belize heritage education curriculum. El Pilar is the model they identify to develop educational materials to enrich learning for students and teachers, with emphasis on "Transformation and Connections: The World of the Ancient Maya." This is a strand of the Belizean Studies Project that incorporates geography and history, both pre-Contact and recent. The Museum of Belize staff are developing their exhibit with the El Pilar team. Plans to create the didactics and build a virtual introduction to the forthcoming exhibit are underway.

4.3. Community Partnerships

Our relationships with rural and urban leaders in the community are strong. As the education outreach moves along, changes in the dynamics, the reshuffling of advocates, and the incorporation of greater diversity support the expansion outward from Cayo to the rest of Belize and beyond. We have found a new groundswell of interest in the forest garden based on mutual respect, which builds on a long-standing alliance with the Institute of Archaeology that began with Harriot Topsey's vision [36]. This foundation has brought in the endorsements of the San Ignacio Hotel, the Governor General, the National Library Service, the Mexican Embassy, and now the Museum of Belize.

Our growing partnerships are widely recognized in the region through participation in events, projects, and activities beyond Belize. Private sector engagement has been remarkable, with funding and support from the Belize City Rotary Club, Belize Natural Energy, BRC printing, and Belize Electric Company Limited, and the San Ignacio Resort Hotel. Who would have imagined that paying a courtesy call to the Governor General would result in a fund-raising event to support school gardening?

We regularly appear on radio and television shows to promote our mantra on the benefits of forest gardens in rural and urban areas, in private and public spaces. We applaud the Cayo Town Board for the vegetables planted outside their town hall. Fruit trees and home-grown crops are planted as the traditions tell us, to heal the landscape, shade the soil, build fertility, conserve water, and care for people. Lectures and presentations about the Maya forest at schools and clubs, with students, teachers, and the

general public, raise the question of what we can do for our world. AF and CET have been keynote speakers at several local and international events to raise awareness of these issues. CET has promoted El Pilar and forest gardens at the Department of Education Principals conference and the convention of the National Credit Union League, where she shared the podium with the US Ambassador to Belize. AF is active on the international front, including UNESCO panels on Exploring Frameworks of Tropical Forest Conservation [37] and the Max Planck PanTropica workshop [38]. Her work on Maya forest gardens and the domesticated landscape involved her with the Indian Institute of Technology Madras interdisciplinary workshop on the Republic of Plants. All our presentations highlight the wealth untold of the forest by increasing visibility and participation at all levels [39].

As the visibility of the heritage of the forest gardens grows, we attract more individuals from many walks of life. The story still unfolds as the journey continues. The impact of the pandemic in Belize highlights the urgency for gardening, and this new situation has brought a greater appreciation for the importance of food sovereignty.

5. Sustaining Partnerships and Lessons Learned

The combined networks of AF and CET attracted supporters to the El Pilar education outreach programs, which are sustained by guiding principles and accumulated experience. It is essential to develop reciprocal partnerships and to build on lessons learned from events and activities. As the collaboration evolves, we continue to recognize one another's strengths and strategically leverage support for our endeavors. The resilience of this relationship is based on mutual respect and common concern for the legacy of the Maya forest. The passion that emanates from this collaboration draws attention and inspires engagement among more supporters. We see success as measured by the achievement of clear goals and building of trust rather than acquiring prizes and trophies, and we realize that determination, honesty, and steadfast commitment are the most important elements of our proposed community projects.

Partnerships develop with experience, and the narration here is based on extensive outreach efforts. Our prior experience facilitated the launching of several community projects, and we found there was still much to learn. We are aware that themes evident to our team need to be made clear and unambiguous to partners, and through this process of clarification, we discover and recognize our underlying suppositions. Assumptions about existing knowledge must be reviewed and common ground explored to achieve productive ends. We obtain strength from developing models that influence existing paradigms and honor cultural diversity. For example, global themes of climate change and biodiversity relate directly to our work with Maya forest gardens, providing reference points that people and institutions recognize. By connecting to this prominent issue, we have gained support from a wider cross section of the populace.

Our experience demonstrates that trust can be gained by listening without judgement and creating safe spaces for experts to express themselves. This approach expands potentials for reciprocity to meet mutual objectives. Through staging celebratory events, participating in local activities, and collaborating with community programs, we have been able to demonstrate inclusiveness and formally engage to recognize our partnerships in the community. Such an inclusive agenda provides a platform to establish relationships with collaborative projects and memoranda of understanding, and we have developed a resource database of individual and institutional contacts by building on this dynamic.

From our experience, we identify nine fundamental components that help to establish and sustain vital community relationships:

1. Seek to identify assumptions.
2. Respect the diversity of cultural traditions.
3. Recognize experts, wherever they are.
4. Pursue reciprocal endeavors.

5. Innovate with events, activities, and programs.
6. Always assess inclusiveness.
7. Formally credit partners for their work.
8. Maintain a contacts resource database.
9. Formalize institutional relationships.

Learning lessons is a continuous process as a project engages in adventurous new undertakings. We have found that respecting partners, and validating their diverse knowledge and experiences, is critical to successfully building an inclusive project. This means striving to honor the opinions and backgrounds of others by giving them space for expression. We also must identify controversies, both obvious and subtle, that arise from the meeting of different perspectives. Listening to our partners' perspectives, and attempting to distinguish common ground among all participants, have proved to be simple yet invaluable strategies to address such issues. We meet challenges with facilitation, exercised with patience and timing, to negotiate objectives, and we remember that acknowledging mutual aims draws in people and resources. As events and programs evolve, new supporters emerge, and we must constantly remind ourselves to recognize who we can work with and trust our accumulating intuition. We see the emphasis on the participation of youth advancing a sustainable future. Self-assessment is an ongoing process involving relationships, goals, and the relevance of activities, and this reflection provides an opportunity for team members to express themselves and shape the direction of future endeavors.

Based on the guiding principles of interaction, we have determined nine basic lessons to consider as we promote the community model:

1. Strive to honor the opinion and background of others.
2. Address controversy by listening for common ground to meet challenges.
3. Exercise patience and recognize timing in negotiating objectives.
4. Use creativity in identifying people and resources to enhance the mutual objectives.
5. Improve advocacy by appreciating individual supporters' values.
6. Trust your teams' intuition/instincts.
7. Know your experts' abilities and commitments.
8. Self-assessment is ongoing based on current events.
9. Allow space for team members to express.

The application of these principles and lessons are a continuing work in progress, as every step in building relationships requires constant reassessment. With each innovative event, every new activity, and all collaborative programs, we must evaluate the principles and appraise the progress and challenges that brought the endeavor to fruition. We see the only way forward as involving constant diagnosis and reflection.

6. Results: Recognizing the Past, Valuing the Present, Embracing the Future

This review of our efforts in the Maya forest is an example of how education outreach projects are invigorated with local collaboration. Shared goals and intentions are essential. When the priorities of archaeological projects include diverse entities and individuals, new horizons and unanticipated achievements can be reached. Local and international interests in tangible heritage loci and intangible cultural traditions create the platform for interactive development of relationships and the identification of common ground. We show here that archaeological projects in the Maya area are in a special position for creating unique partnerships. These projects derive from the academy, articulate with the government, bring appeal to heritage attractions, and have associations with the communities where they work. Required elements to build community partnerships include the recognition of specific

valued tangible heritage, a formal information outlet, an education link, and an honored cultural tradition. Each provide fertile ground for cultivating collaborations.

Our project recognizes four educational pillars that revolve around the heritage of the ancient Maya. We have identified the protected area of the El Pilar Archaeological Reserve for Maya Flora and Fauna as the principal pillar of community identity with its unique feature of Archaeology Under the Canopy [20]. We have emphasized the wealth of the Maya monuments, yet there are more recent connections to lumber and chicle camps. Much of Cayo's historic wealth was based on wood cutting and chicle bleeding, activities that continued into the 1980s. The wealth of the Maya forest—the product of ancient Maya creativity—is much more than this lumber and chicle.

The Maya forest garden is the wealth untold that underpins our four education pillars. It is found at the El Pilar Archaeological Reserve and is celebrated at the urban Cayo Welcome Center. It is revealed at the *Chak Ha Col* outfield of Master Forest Gardener Narciso Torres and is the vision of the rural *Känan K'aax* School Garden. The Maya forest is the result of ancient Maya land-use practices that still link to traditional forest gardeners from the villages all over the region today. Creative outdoor education opportunities are guided by these traditional farmers and provide young and old with the chance to explore the nexus of culture and nature.

We share the narrative of our work in progress as we continue to discover the legacy of the Maya forest garden and the riches of El Pilar. The illustrious Maya civilization has been exalted but disconnected from the heritage on which it was founded. People have been taught that the Maya disappeared! Alfonso Tzul, a Maya historian and Master Forest Gardener from San Antonio village in Cayo, puts it succinctly and dramatically [40]: You are talking to one!

Belize is developing a new education program that highlights heritage focused on "Transformation and Connections." The aim is to increase understanding of how people's interactions with each other and the environment have and continue to shape Belize (http://www.belizeanstudies.com/). The four pillars of El Pilar figure significantly in this new evolving agenda and will be the core of forthcoming exhibitions with the Museum of Belize that explore peaceful ways of knowing and being.

This is our way forward with lessons that will prove to be useful for Maya anthropological archaeology. Through our growing education outreach activities we sustain mutually beneficial partnerships with citizens. We are creatively envisioning local education and tourism based on the intangible heritage of the forest garden by way of exhibits and field trips. This showcases heritage land management as a conservation and development strategy from the home to the archaeological setting. The project engages with Government and Non-Governmental Organizations with cosponsored projects, programs, and events that bring attention to new ways of knowing and being. The Cayo Welcome Center presents a meeting place for tours that introduce the public, citizen scientists, and international researchers to the value of community participation. These processes reveal the logistics, the practicalities, and the nitty-gritty considerations that play out on the ground.

Where is the wealth and the heritage of Belize? It is on the path of discovery, and we see our program as a catalyst. We recognize that it is in the local traditions that have a cosmopolitan and eclectic source from the deep historical past of the Maya. Building on this creative pre-Contact foundation come adaptations by the Garifuna, and later the gardens of the new Belize with North Americans, Europeans, Chinese, Indians, and Central Americans as contributors, creating a complexity that provides a rich source of different ways of knowing. From the diversity of Belizean heritage, a global forest garden emerges with different sources of knowledge generating a vital base for health and well-being. The distinctiveness of Archaeology Under the Canopy models ways in which we can learn from nature. As we recognize the past and value the present, we invite ourselves to embrace a future guided by forest gardeners and sharing the gifts of the Maya from nature.

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Article

Maya of the Past, Present, and Future: Heritage, Anthropological Archaeology, and the Study of the Caste War of Yucatan

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Abstract: This paper examines the relationship between the past, present, and future of Maya heritage and archaeology. We trace some of the background of Maya archaeology and Maya heritage studies in order to understand the state of the field today. We examine and demonstrate how an integrated and collaborative community heritage project, based in Tihosuco, Quintana Roo, Mexico, has developed and changed over time in reaction to perceptions about heritage and identity within the local community. We also describe the many sub-programs of the Tihosuco Heritage and Community Development Project, showcasing our methods and outcomes, with the aim of presenting this as a model to be used by other anthropologists interested in collaborative heritage practice.

Keywords: cultural heritage; Maya archaeology; community based heritage and preservation; anthropological archaeology; Caste War of Yucatan

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1. Introduction

Within this paper, we examine and frame the connection between the past and the present, particularly the archaeological past and present heritage within Maya anthropological archaeology in the Yucatan Peninsula of Mexico. The past is not a simple, single temporal line, but rather one that is complex and twisted—one that starts and stops—and one that is differentially identified and recognized in the present. One of Yucatan's pasts is a distant past focused upon the ancient Maya—the pre-16th century Maya of Chichen Itza, Uxmal, Coba, and Tulum [1]. This past is identified as the definitive story of the Maya people and the Yucatan Peninsula. The second past is a more recent vision, following Spanish contact and focusing upon the past 200 years—including the rebellion, often called the Caste War of the Yucatan (or the Maya Social War) [2]. When we turn to the present, we see a landscape of modern Maya towns connected to the growing city of Cancun and the rising tourism industry stretching further south along the east coast of the peninsula to Tulum and beyond. The current promotion of the region by tour agents and government actors alike links the ancient past with the heritage of the Maya people today, disregarding the more recent past [3].

Mexico, as a nation-state, engages this flexibility in both time and temporality in the creation and maintenance of its national narrative [4]. The past helped create a state connected to its fight for independence, its revolution, and its deep indigenous past. Mexico's indigenous history is complex and tends to emphasize the Aztec or Mexica as foundational. The concept of mestizaje is a critical one, that combines an indigenous and Spanish past in the creation of a modern "mixed" population.

However, as we turn to the Yucatan and the southeastern part of Mexico, we find an even more complex connectivity of Mexico to both ancient Maya culture and living Maya within the region.

The stories and heritage of the past and present in the southern states of Mexico are framed and negotiated within Maya communities, as well as within the context of tourism and the powerful state and federal governments [5]. This framing and negotiation has resulted in a story of Maya heritage within the communities of the Yucatan, often more connected to the 19th century rebellion than the ancient past. Heritage stories are flexible and are not based upon an absolute linkage between the past and the present. The Tihosuco Heritage Preservation and Community Development Project, described in detail later in this article, highlights this more recent past, and examines how it can be put to use in the present and future.

2. Background: Anthropological Archaeology

Since the 19th century, archaeology has always been considered a central part of the anthropology discipline in the United States, but it was in the middle of the 20th century when a long and complex conversation was initiated about the role and function of archaeology within anthropology.

Conversations about the goals and methods of archaeology, between Walter Taylor [6], Gordon R. Willey and Philip Phillips [7], began to focus and identify the role that archaeology should have within anthropology of the 20th century. This conversation was then extended by the pivotal writings of Lewis Binford, starting in the 1960s [8]. Binford and other proponents of "New Archaeology" shifted the conversation to one that positioned archaeology as a science with a defined and clear set of goals and methods. We will not recount these debates here. [9] From the cultural historical approach, to processual archaeology, post-processual, and more recent views, anthropological archaeology remains focused upon the past and the nature of how we, today, interpret that past. This focus upon the past did not change even with the acknowledgement, within post-processual and more recent theoretical and methodological insights, that the positionality of archaeologists in the modern-day world has an impact upon how we view and interpret past communities [10]. As a result, the field has witnessed a growing tension that relies on a key temporal division: archaeology is about the past; heritage is about the present [11–13].

We see a paradox in archaeologists' views of their own roles. On the one hand, they are scientists. On the other, they are stewards of the human past and thus stewards of human heritage [14]. Archaeological sites are thus assumed to be the heritage sites of people and communities living today. However, heritage is not just a study of the past—it is how the past is used to structure the present and create the future. [15]. We cannot assume that interpretations of archaeological sites of the past are directly connected to the heritage of a community or group. That connection might be historically correct, but accuracy is not how identity and heritage are constructed. There is an important and distinctive contrast between archaeological work and interpretations and the way those views are utilized in the construction of the present. If archaeologists desire our work to be meaningful in the here and now, we must embrace all the temporal dimensions of our work—past, present, and future. [3].

3. Maya Archaeology and Maya Heritage

Following the previous section, we want to make a clear and definable contrast between Maya archaeology and Maya heritage.

Maya archaeology has been, and continues to be, a part of anthropological archaeology, defined by the study of a cultural group that begins to be identifiable around 1500 BCE and continues changing and developing into the present. It has focused on the time period from 1500 BCE to the beginning of the 16th century BCE, with the arrival of the Spanish [1]. There is a growing field of Maya historic archaeology, focused upon the 530 years following contact [16,17]. In addition, there has been extensive ethnographic work with modern Maya people to understand the cultural, social, and economic position of the Maya in the modern world [18].

A frequent false assumption is that the heritage of Maya people today is directly related to their ancient past—with "the Maya" of the past often described as one of the "great civilizations" of the world. Clearly, there is a direct historical connection between the ancient Maya with modern Maya

people today [19]; however, we must demonstrate, rather than assume, that the heritage construction by people today utilizes and is built upon that ancient past. Modern day nation-states, such as Mexico, Guatemala, Honduras, El Salvador, and Belize, all utilize the ancient Maya past as part of their heritage stories for the creation of and existence of their countries [4].

However, as we discuss below, not all Maya communities identify the ancient Maya as a primary part of their heritage and modern day identity. This is not to say that Maya people and communities are disconnected from the ancient stories and culture identified and defined by Maya archaeology. The direct linkage is acknowledged and understood, but Maya heritage is not about historical connections nor about truth in history. Rather, it is about how modern day people, in this case people who identify themselves as Maya, construct the stories of their past and history to create a Maya heritage in the 21st century [3].

Yucatan: Past and Present

The Mexican government and tourist business have co-opted Maya narratives to suit their promotional needs. This framing emphasizes the glories of ancient Maya culture but also eliminates modern Maya people from the present-day landscape.

In Cancun and throughout the Maya Riviera, the story of the ancient Maya abounds. Many cultural and financial resources go towards codifying that story, as is made evident by two large new museums in the Yucatan—Museo Maya de Cancun and the Gran Museo del Mundo Maya in Merida. Today's Maya communities, at worst, make no appearance or, at best, are a minor appendage to the story of a once great Maya civilization that collapsed and/or disappeared around 900AD. Archaeologists (both Mexican and US American) helped create this story of the Maya past—one that also contributes to the trope that Maya people were dramatically reduced as a culture or civilization by the time the Spanish arrived in the 16th century. This is not just a story for the tourists. The Instituto Nacional de Antropología e Historia (INAH) and other forces of the Mexican government often present this to Mexican citizens, including Maya school children, as their heritage. The complexities of this story are seldom explained within a broader context of political and social development and change.

We find that post-revolutionary Mexican national identity reinforces and justifies these structural inequities. Mexico's identity centers on a romanticized pre-Hispanic indigenous culture, overlaid by a history of Spanish creoles that valorizes an imagined view of mestizaje. Within the Yucatan, part of this national story, often reinforced through archaeology, is the idea that the ancient Maya have disappeared, leaving no real descendants. In fact, the two previously mentioned museums emphasize this cultural framing. The Museo Maya de Cancún is almost entirely about the ancient world, focusing upon the finds and excavations from sites throughout Quintana Roo. There is one vitrine that presents a single photograph and statement about the 19th century Caste War (Figure 1). There is a slightly larger presence of modern Maya people in the Merida Gran Museo del Mundo Maya.

These modern people, from whom an identity and past have been removed, consist of millions of Maya who form the core of the underclass, providing labor for the construction of and service work within the hotels of Cancun and the Maya Riviera. In the end, the emphasis on a Mexican national identity and a simplistic story for the tourists in Cancun disregards the millions of Maya service people in the region. Modern Maya, unrecognized by those constructing hegemonic narratives about the past, have become an almost invisible cultural group, a service underclass [20].

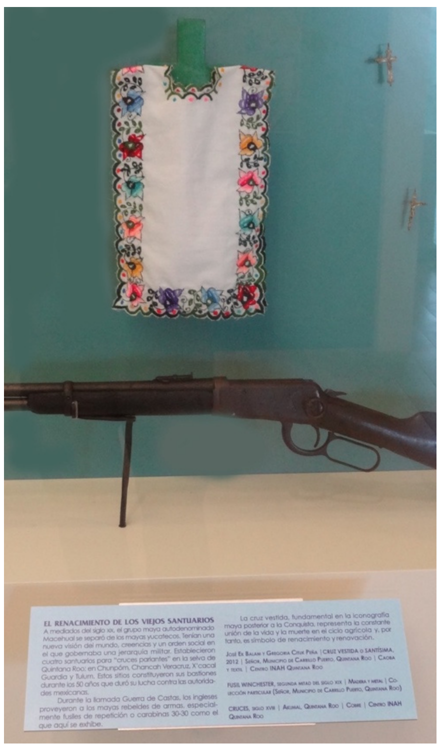

Figure 1. Sole representation of the Caste War in the Museo Maya de Cancún. Photo by Richard M. Leventhal.

4. Historical Background: Tihosuco and the Caste War of Yucatan

4.1. The Caste War (1847–1901)

The "Guerra de Castas (the Caste War)", also called the "Guerra Social Maya (Maya Social War)", began in the Tihosuco Parish (where we currently participate in a collaborative heritage initiative, described in detail below) in 1847. The Caste War was one of the most successful indigenous uprisings in the history of the Americas and led to the existence of a Maya state that remained semi-autonomous for over 50 years. Yet, the Caste War was a war of factions—Maya against Mexican, Maya against British, Mexican against British, and Maya against Maya [21]. Inhabited by Maya peoples for well over three thousand years, the Yucatan had become a political and economic focus for the Spanish colonial powers centered in Merida. By the early 1800s, traditional Maya extended-family networks were breaking down as village political identities and local economic interests increasingly guided the administrative organization of Maya villages and towns across the Yucatan Peninsula [2,22].

Following a series of events in the summer of 1847, "the conflagration swept over the eastern three-quarters of the peninsula ... as the rebels drew to their cause possibly a fourth of the entire peninsula population" [22] (p. 3). The demands of the insurrectionists included the abolition of all taxes and the guaranteed right to sufficient land. Despite their success, the Maya forces were never truly united, but multiple Maya factions worked in concert to push their way to the outskirts of Merida. By mid-1848, the Yucatan elite population had been driven to Merida, where preparations were being made to flee the peninsula, leaving it entirely in Maya hands.

For unknown reasons, the rebel forces did not complete their advance upon Merida. Instead, the rebels retreated, many of whom simply returned to their villages. In late 1848, the remaining Maya forces were driven eastward by a renewed Yucatecan military, beginning a 50-year period of isolated fighting and ongoing resistance by the rebels. By the end of that year, it is estimated that over 200,000 people had been killed or displaced by the war.

In late 1850, a small group of Maya witnessed a divine visitation in the form of a talking cross. Though little is known about the establishment of the "cult" of the cross, a new town, Noj Kaj (Chan)

Santa Cruz was founded in the eastern Yucatan as the home of this divine miracle. Giving the rebels new hope, the cross reportedly spoke the words of God directly to them, calling for Maya independence and religious autonomy. With newly identified Maya priests, the Talking Cross united a beleaguered population of war-weary Maya with a resurgence of religious hope and rebel spirit. These Maya established control over eastern Yucatan and, through friendly trading networks with the British, managed to maintain political autonomy for almost 50 years [2,22].

4.2. Contemporary Heritage Values

The predominantly Maya communities of Quintana Roo, similar to the one we have worked in since 2011, clearly understand their lineal connection to the ancient Maya cultures represented at many local archaeological sites. However, the relatively recent history of the Caste War seems to resonate more strongly throughout the region. The Caste War was a critical period in the creation of the modern Maya as an independent and identifiable cultural group in Central America. It is one of the most important regional events of the Yucatan in terms of the creation of a modern Maya identity. Thus, it is easy to understand the connection people in today's post-war Tihosuco community have created with the architectural remains from the 19th century that structure their town. The partially reconstructed church remains a reminder of the "blood spilled during the war", to use the words often heard in Tihosuco (Figure 2). The 19th century houses, found throughout the center of town, provide a direct physical link of the present to the past. These heritage spaces are seen as harbingers for a brighter future through their preservation.

Figure 2. Photograph of the Templo del Santo Niño Jesús (Temple of Holy Infant Jesus) in Tihosuco. Photo by Kasey Diserens Morgan.

There is a sort of stretching and snapping back of the fibers of history that is commonly encountered in Tihosuco. The rebellion is often constructed as an almost recent event. The elders of the town, none of whom could have been alive for even the final stages of the rebellion, tell stories of the war as if they had been there. The leaders of the rebellion, Jacinto Pat, Cecilio Chi, Manuel Antonio Ay, and Bernardino Ken, inhabit Tihosuco and the surrounding land today.

For the majority of the region, the future is based upon a mix of economic and social factors: tourism from Cancun or the Maya Riviera and a spirit of continued rebellion and maintenance of

a local identity in contrast to Mexican culture, as defined by the nation-state. The future is imbued with both the physical remains of this past war and the spirits of the leaders who brought the Maya to the battlefield. It is a future filled with Maya people, with the growth and development of Maya communities, inhabited by the spirits of the rebellion.

It is a future that people are fighting for. The local state government (Quintana Roo) and the federal government envision very different futures for the region. As stated before, one story de-emphasizes the existence of the descendants of the ancient Maya, and this is the story told to the millions of tourists who visit the coast and the ancient Maya sites. However, the Quintana Roo state and Mexican federal governments have begun to enter the towns and communities located away from the tourists, where this subversive and powerful Maya heritage has taken hold. In entering these towns, the government entities are not just bringing financial resources (or more often, promises of financial resources) but also a new image for the future— an image that domesticates and capitalizes on the story of rebellion and indigeneity in the region.

Every year in late July, Tihosuco hosts a five-day festival to celebrate and honor the start of the Caste War. For many years, this was an internal celebration, structured and organized by the town and neighboring local communities, including Tepich. A few local government officials might have come for the opening or closing, but it was quite contained in its form and nature. Stories of the war and the heroes of the Caste War were presented through plays, music, photographs, and presentations. It was a celebration looking at the past in the present with an eye to the future.

Beginning in 2013, this celebration began to take on a more overtly political edge. Rousing speeches highlighted the importance of Maya culture and the war, often ending in a cry of "Viva los Mayas! Viva los Heroes de la Guerra!"

However, at almost the same moment, state politicians arrived and presented a very different picture of the Maya and the rebellion. We remember one tall Quintana Roo official saying, "The Maya Caste War or Maya Social War is important for all Mexicans and all people of Quintana Roo. For this rebellion teaches all of us how to be good Mexicans and good people of Quintana Roo." The Caste War was a rebellion against Mexico and against the government. The future, as presented by this government official, domesticates the rebellion and brings it into the imaginary for Mexico and Quintana Roo—not as a rebellion against the system, but as a teaching moment for the enactment of good citizenship in the present and the future. This sort of co-optation is, perhaps, inevitable, but our collaborative heritage work shows that it is possible for people to take charge of their local histories and resist through the work of self-representation and advocacy for the futures of their communities.

5. The Tihosuco Project: Overview

Today, an ongoing umbrella heritage project between affiliates of the Penn Cultural Heritage Center at the University of Pennsylvania and members of the Maya community of Tihosuco is working to create a kind of heritage engagement in the region that centers on people's relationships with anti-colonial movements, such as the Caste War, while also promoting small-scale economic projects and future cultural development. This is a major shift in how archaeology is conducted because it acknowledges the importance of, not just stories about the past, but the impact of heritage upon the creation and existence of communities in the 21st century. In addition, it is a bottom-up model of heritage-based cultural and economic development. The project centers on building collaborative relationships over the long-term and eschews some of the continued academic emphasis on gathering data, creating publications, and interpreting the past as the primary aim of archaeological fieldwork.

The remainder of this article will provide an update on the progress of the Tihosuco Heritage Preservation and Community Development Project—hereafter the Tihosuco Project—since its inception in 2011 [3]. It will provide an overview of the current work being done, with a focus on the process and outcomes, both positive and negative, that this work has engendered over the past nine years.

The project started as a collaborative effort to better understand the history of the Caste War and how it disrupted the social, economic, political, and physical landscape of the Yucatan peninsula

for almost 60 years. While initially grounded in the archaeological study of the past, the project has always maintained a focus on present conditions and the needs of the community, with an eye to the future. It is grounded in a forward-looking present, which makes the most of anthropological archaeological practices.

The study of the Caste War remains one of the central aims of the overall project, with an archaeological sub-project that documents the historic vestiges of the era, including towns, haciendas, ranches, and road systems across the ejido of Tihosuco (cooperative land tenure organization common in Mexico). Branching out from the three initial project foci—Caste War Museum, Caste War era sites of XCulumpich (a hacienda), and Tela (Lal Kaj'; a town) on the ejido land, and general activities regarding engagement, education, and collaboration with the people in town—the project now has nine fully developed sub-projects. Based upon numerous community meetings and requests, these sub-projects include oral histories of the current community, the documentation of historic structures within the central core of the town, the preservation of old photographs, the revitalization of the Maya language, as well as broader tourism and development concerns. We will touch on a few of them here, speaking specifically to how the process has evolved over time, and the challenges we have faced in implementing our project goals.

This project is focused upon the community of Tihosuco, which is created by both a physical concentration of people but also through the shared emotions and expressions of the community that are constantly changing [6]. As such, our research questions and methods are constantly evolving to meet the current needs and practices of anthropology. If we were to estimate, at least 25% of our time in the field is devoted to meetings and outreach within the town of Tihosuco, with another 25–50% consisting of constant conversations and exchanges of ideas even in the middle of work within the field. What this entails varies by sub-project, which we will discuss further in subsequent sections.

The premise of the project has not changed, however our approaches have evolved and adapted over time. Community development and preservation, both cultural and economic, have become long-term goals of the overall project, which is why they have been integrated into the name. It reflects our investigations and conversations about what is important to the community, and that certainly extends well beyond archaeological inquiry. A project with such breadth and depth is often chaotic and difficult to manage and maintain—but necessary ethically. The benefit of the past should surely not just be for those of us in the ivory tower of academia, nor those within the upper reaches of the socio-economic system. This type of work involves inverting the power relationships regarding the past, particularly with questions of ownership and control of access or narrative. Understanding the impact that this work has on the community and the people with which we work is paramount to how we frame our project [23].

Unfortunately, much of the hierarchy of power over the past has not been changed, particularly with regard to who in Mexico controls access to archaeological sites and resources, but we are trying to change this with our model. The power structures in place continue to have hold over the ability for people in Tihosuco to truly benefit from the past, but by encouraging more bottom-up projects and control over resources, slow changes are being made in how control is communicated on the ground and who gets a seat at the table when decisions are being made. We continue to stake the community as the primary place where decisions about our work are done and where ideas for the future are developed [3]. We endeavor each day to forge equitable stakes in the work—economically, socially, culturally, and educationally.

6. The Sub-Projects: Challenges and Logistics, Surprises and Setbacks

Overall, the primary steps in constructing this project have been about collaboration, deep engagement, and relationship building. Each graduate student or scholar who joins the project is there on a trial basis their first season. The community has to embrace them as a collaborator, and through extended conversations, a project is developed that will turn into a dissertation, thesis, or sub-project. This new program must be identified as having a demonstrated benefit for all parties

involved. If it is not seen as interesting, feasible, or valuable by those that will be participating from Tihosuco, it does not move forward. Only then do we decide on more concrete research questions and set up a plan for work. The overall project has not been without its pitfalls; most notably, it is a slow-moving process for gaining approvals, buy-ins, and cooperation between the many groups. The leadership of the town, both the mayor and the head of the ejido, changes every three years, and with that change comes an entirely new administration and group of people, some of whom are familiar with our work, and some whom are not. Local politics and federal recognition of Tihosuco have also complicated matters, as the battle over who controls the narrative of the past is constantly negotiated.

For the sake of clarity, we have broken down our sub-projects by those that focus on the past, and those that are more present and future oriented. However, that is not to say that the archaeological component does not have impact in the present, or that the project to revitalize Maya language does not have roots in the past. Our model of work focuses on bridging these temporalities and demonstrating that true anthropological archaeology is never just about the past.

6.1. The Study of the Past

Anthropological archaeology, as defined above, necessarily focuses on the past, understanding how that past may still exist in the present, and uncovering stories and histories that may have been otherwise silenced in the historical record. The Caste War is no exception. Between its marginalization as both a successful but ultimately failed indigenous rebellion and the belief that, perhaps, it never truly ended, it occupies that liminal space bridging the past and the present.

6.1.1. Historical Archaeology

We are sitting in front of the casa ejidal (the administrative offices for the Tihosuco ejido) after a long day in the field. Large bottles of Coca-Cola and Fanta and packages of cookies are being passed around as we discuss the work that we have done during the week, and what the future looks like for Tihosuco. The discussion starts slowly, but some of the younger generation have started to chime in. "Patrimony is going to help us keep jobs here." "We need to learn more about the past so we can tell it to the tourists when they come." "This is an important story to share." These quotes represent paraphrases of common themes that occur in our designated platica sobre patrimonio (a chat about patrimony), hours that we have with the entire team each week. This conversation can address anything related to heritage, but it often comes back to the use of these stories and sites for the future of Tihosuco. We have spoken of the UNESCO world heritage list, the ways to protect heritage, the development of tourism and what that might look like, the history of the Caste War, and many other related subjects. These talks are held in the museum with a tour of the galleries or, in a more informal setting, such as the front of the casa ejidal. These conversations are essential for understanding how residents of Tihosuco view the concept of patrimony at a larger scale, but also how they see it in relation to their daily lives as the place where they live. Many of the younger generation we work with have lived and worked in the coastal tourist industry. They have seen first-hand the benefits and pitfalls of tourism, and they would like to see what would happen if it was a bit closer to home. Perhaps the most important outcome of these meetings is the collective decisions made about how to move forward with the project, and opinions on the use of these sites in the future. Some weeks the conversation flows, other weeks it is a struggle to get participation, but we persist in having them, because it provides an opportunity to be clear about our goals for the project and get input on the goals of the community. It solidifies, for ourselves and for the community, that this project is as much about the social and economic benefit of the research to the community as it is about uncovering more information about the history of the rebellion.

The historical archaeology sub-project of the Tihosuco project seeks to understand the lived experiences of the war, while also understanding how that historical memory impacts people in the region today [24]. On the data collection side of the project, since the first year of the documentation of

Caste War sites, Tiffany C. Fryer and the team (headed by Co-PIs: Secundino Cahum Balam, Elias Chi Poot, Bartolome Poot Moo, and several others) have documented and mapped one large and two small town sites within the ejido that were likely abandoned during the war, an additional ten hacienda sites that contain a few large structures and houses, and over thirteen smaller ranch sites, usually identified by their water systems and wall systems for the management of livestock or crops [25]. Additionally, a concerted effort has been made to document the road systems that go between these sites, as well as identifying roads that appear on old maps, such as the road to the bahía de Asunción to the south of Tihosuco, which was a well-known entry port for pirates and illicit goods as early as the 17th and 18th centuries [26].

Some excavation was undertaken in 2017 at the site of Tela' or Lal Kaj, the largest of the abandoned town sites on the ejido land. Five crew leaders from Tihosuco were integral in leading a rotating crew of ejido members in these excavations. Through collaboration and discussion, the Tihosuco team identified where to excavate, conducted the excavation work, wrote notes, and created detailed maps. Each week, the crew leaders were tasked with training and educating the new members of the team and explaining what had been found in their excavation unit to date (Figure 3). The work took time because of weekly team rotation but was exciting and meaningful for all involved, as we uncovered the tangible remains of this local history. At first, the ejido members were hesitant about excavation, but they now ask when we will be doing it again.

Figure 3. Excavation Crew Leader Vicente Poot Peña describing the work that was done in the past week. Photo by Richard M. Leventhal.

There are still sites we have not visited or documented because their current ejido representative is uninterested in participating, or no one was available to take the team there during the planned work weeks. However, our constant presence in town and the years spent building relationships have served us well in opening up a few more spaces yearly. This is the true collaborative point of this project—that trust and relationships allow us, not only to get permission to see and conduct research at these sites, but to understand the desires of use and access by the local community.

6.1.2. Casas Coloniales or Pre-War Houses

El primer paso (the first step) is how the collaborators on the colonial house sub-project have come to see the project since its inception. The first step started in 2013 and 2014 with a concerted effort to document, through measured drawings, photographs, and oral histories, the numerous historic sites in the "urban" core of Tihosuco. This complements the documentation work being done on the sites that are outside the town center and fall under the purview of the archaeological sub-project. The division between the two is arbitrary and mostly relates to the necessity of managing large amounts of data, the difference in who has jurisdiction over modern space, and individual dissertation projects. The ultimate goal of this documentation is to understand the history of these houses and ancillary structures in relation to the formation of Tihosuco and its role in the Caste War. In addition, it provided a way to start a conservation about these buildings and about the past. The project came about as a request from within the town to better understand the breadth of historical material that exists within Tihosuco. This sub-project is focused upon a large group of buildings, mostly houses, within Tihosuco that were originally built in the 18th and 19th centuries (Figure 4). These buildings, and the town, were abandoned during the Caste War and then reoccupied in the 1920s–1930s. These standing structures (often without roofs) were used as the houses for the first families reoccupying the town and remain a primary part of the modern day community.

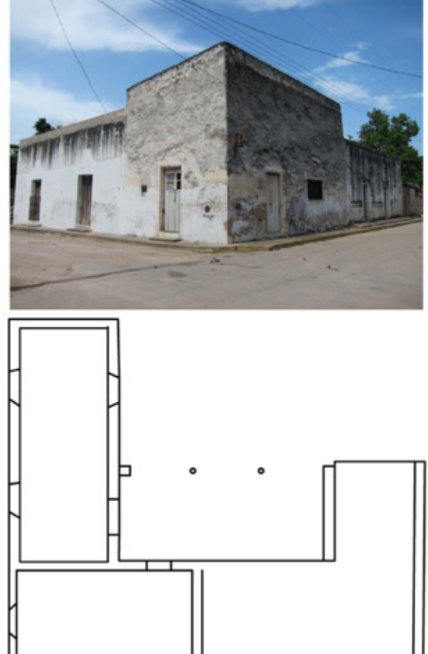

Figure 4. Documentation efforts for the colonial houses. Drawings and photographs by Kasey Diserens Morgan.

Kasey (co-author) joined the project with a plan to conduct a systematic historic resource survey and to take oral histories of the houses following the reoccupation of Tihosuco in the 1930s in order to understand how the buildings have evolved and changed over time. This project simply could not have been done if there had not been extensive participation by the town's committee on the colonial houses, formed by a previous mayor, and if there had not been a co-lead, Socorro Poot Dzib, who is from Tihosuco and is also female. This allowed Kasey and Socorro to enter the houses during the day when many men were out in the field [27].

However, with increased attention being paid to the buildings and the history of the Caste War by politicians, the project quickly changed course. The initial report produced by Kasey and Socorro was used by a group of state representatives to request that Tihosuco be declared a zona

histórica (historic zone) at the national level. This zone provides additional protection for historic structures, while bringing national attention to the history of the town. However, resources for the actual restoration of the structures, many of which are in various states of repair, have been slow to come. The facades of a select few houses close to the central plaza were repainted in 2018 with funds from the state of Quintana Roo, but that work has already begun to fail, and the interiors have not been touched.

Now, a large portion of the study involves waiting for information from government officials, understanding where resources for restoration might come from, putting together reports and information that might help people in Tihosuco request those resources, and more generally being an advocate for the people of Tihosuco when government officials tend to want to bring in blanket programs that do little in terms of real benefit to the town. This wait-and-see model is both frustrating and rewarding—frustrating in that resources or restoration programs are slow to come, and when they do, are inadequate or poorly executed, and rewarding in that we have built strong relationships with the local Tihosuco government and committees, which have allowed us to generate new ideas for how to move forward. It has become a project focused on politicking as much as a study of the past. In some ways, we are able to watch and examine how the heritage story of the Caste War is being created, manipulated, and solidified into a more national narrative, and to explore who really benefits from this increased attention.

The hope for the future of this project is that the updated reports produced by Socorro and Kasey, highlighting the real conditions of the structures, can be used by the local authorities to request funding and projects that will make the buildings more functional as dwellings. The report focuses on the real needs of the buildings and goes beyond requesting façade repair. The connections built with INAH and local politicians also build a stronger platform for these requests, and people in town have made it clear that they want a seat at the table when discussing the future of their town and the uses of the heritage assets that exist within it.

6.2. Implications in the Present and Future: Modern Community Needs

What has become evident in our work over the past decade is that, while the legacy of the Caste War is important, there are other pasts and histories that the people of Tihosuco value equally. During the rebellion, the town was abandoned and remained largely unoccupied until the 1930s when it was resettled by people coming in from other areas of the peninsula seeking land and opportunities to create new communities [28]. The histories of the repoblación (repopulation) come up in most conversations, with families tracing their histories back to a few intrepid men and women who came from the north and settled where they found available land. Many of these stories tie to the vestiges of built heritage we discuss above, because finding land with useable infrastructure enabled new settlements to form faster by employing these remains for temporary shelter. Documenting and exploring this newer chapter in Tihosuco has been the focus of a lot of oral history and photographic work as a complement to the archaeological work.

6.2.1. Photographs, Oral Histories, and Publications

The Caste War lies just beyond the lived experiences of the oldest generation in Tihosuco. When we began the oral history sub-project, we asked the town elders to recount what their grandparents and great grandparents might have told them about the war and the movements of people throughout the landscape of the peninsula. We were also looking for old photographs that might provide information about the architecture that remained on the landscape, and what the town looked like in the past. We have built up a large database of photographs, with the earliest probably dating to the 1950s, and recorded oral histories about the repopulation of the town and life in Tihosuco up to the present. We scan the photographs and return them to their owners, often with printed and digital copies that have been slightly retouched and repaired (a hot and humid climate is unkind to paper photographs).

We were sitting and catching up one afternoon with Marcelina Chan Canche, a resident of Tihosuco and member of the project since 2013. She has been working with us to collect old photographs and conduct oral histories from people in Tihosuco. We were discussing who she was going to interview and what she thought about her work on the project. She stressed that we needed to do something with this material, not just collect them and give digital or hard copies of the photos back to the families. What we were missing, she said, was a concrete way to show the product of this work, and to provide something the community could react to and share. Marcelina suggested that we pull together some of the photographs and their corresponding histories and create thematic volumes for publication and local distribution (Figure 5).

Figure 5. The first issue of Imágenes de Tihosuco, published in 2018. Produced by the Tihosuco Project and the Penn Cultural Heritage Center.

Thus, *Imágenes de Tihosuco* was born. The first volume (2018) focused on some of the oldest images we had, including scenes of local festivals and portraits of some of the repobladores. The second volume (2019) focused on the lineages of those people, tracing certain branches of their family trees into the present. The response to these volumes has been tremendously positive, with many requests for inclusion in future issues. These photographs do not represent the deep past, or even the past of the Caste War, but they do represent how Tihosuqueños think about their immediate past and highlight what they see as critical in telling their story to a broader public.

6.2.2. Maya Language Revitalization

"If you are going to do a true heritage project here in town, you need to do something about the Maya language." Early on in the project, Carlos Chan Espinosa, then director of the Caste War Museum in Tihosuco, was adamant that any project talking about Maya heritage needed to have a language component. This sentiment was shared by many members of the older generation in Tihosuco, for there is a fear that the Yukatek Maya language is being lost, particularly among the younger generations—it was not being taught in schools, and it was a struggle to speak it with their children and grandchildren, who appeared embarrassed to use it. A particularly effective tool developed for this has been a series of historietas (historical comic books) describing, in comic book form, the lives of three of the leaders of the Caste War. Written in collaboration by members of the museums' staff, especially Beatriz Poot Chable and Antonia Poot Tuz, along with Aldo Anzures Tapia (Penn), the stories of Jacinto Pat, Manuel Antonio Ay, and Cecilio Chi appear in both Maya and Spanish (Figure 6). With Spanish on one side of the fold and Maya on the other, children and other interested readers can use the comics as both a teaching tool for Maya and a way to learn about the history of the rebellion. This comic book

form proved very popular and has helped provide a tool for language instruction within the Caste War Museum, schools, and homes. They are also a tool for broader outreach about our project, and the aims of a more localized heritage program that goes beyond traditional archaeology.

Figure 6. Covers of the historietas. Produced by the Tihosuco Project and the Penn Cultural Heritage Center.

6.2.3. Museum Work

There is a room at the Caste War Museum in Tihosuco that is littered with local artifacts. Some are ancient Maya pottery, some are firearms and ammunition, and some are tools from chicle harvesters. Further still, there are record players, CD players, old adding machines, and glass bottles. This room is used by the residents of Tihosuco as a repository for things that show the history of their community. Residents of Tihosuco know what a museum is and what it can be, and when the rigid structure of the other galleries in the museum did not reflect that, or the history they thought should be displayed, they worked around the official government structure of the museum and created a separate gallery (Figure 7). With input from our project, and the creation of signage, the community room now has information about heritage and patrimony, profiles of the leaders of the Caste War, signs about our project and the sub-projects, in addition to a now curated and labeled display of those artifacts that have been donated by community members—all with signs now in three languages (Maya, Spanish, and English). The room, with its artifacts and signs, is a perfect demonstration of the fluidity with which Tihosuqueños view heritage, and what stories and objects are important to them from both the distant and recent pasts.

As one of the primary partners of the project, the museum, which is located in the center of town, has proved a fruitful place from which to initiate our community outreach and to connect the story of the rebellion to the artifacts and archaeological survey we are doing on ejido land. One of the benefits of this partnership was that we were able to begin the project with an already established institution, which helped us disseminate information about the goals of the project and the nature of our work. Officially, the museum is under the jurisdiction of the Secretary of Culture for the state of Quintana Roo, but it is managed and staffed by people who live in Tihosuco. The museum has become a community center within the town. The presence of a museum in town has also made logistics easier for the project: the museum has been identified as the official repository for any artifacts found during the project. Eventually, we hope to display these materials more permanently in the museum. We have also received permission from INAH to exhibit the artifacts during the anniversary celebration of the rebellion each July, which helps broaden the visibility of our work in town.

Figure 7. New signage in the Caste War museum. Photo by Kasey Diserens Morgan.

6.2.4. Exhibits and Public Outreach

Every year during the anniversary celebration of the rebellion in July, we put on a large exhibition of photographs of our work, printed on massive banners and displayed on the facades of buildings throughout the town center. We create an outdoor museum of sorts, showcasing work from each of the sub-projects (Figure 8). During the events of the anniversary, people wander through the town center, looking at the photographs of their friends and relatives who have been on our weekly teams, seeing old pictures of family, and looking at copies of letters written by the leaders of the Caste War. These exhibits are a focal point in our effort to disseminate our research to the larger Tihosuco community and beyond.

In addition, people from Tihosuco are part of the presentation team when academic papers are given at international conferences held in Mexico, such as the Third International Conference of the Society for American Archaeology, held in Oaxaca in 2017, and the Eleventh International Congress of Mayistas that was held in 2019 in Chetumal, Mexico. Our collaborators, therefore, are full partners within this project, not just with excavating or clearing settlements in the jungle, but also in the interpretation and presentation of ideas within academic settings.

This is an area where we most struggle with groups outside Tihosuco. Our exhibitions and public speeches often conflict with or overshadow the political desires of those seeking to benefit from the use of the Caste War narrative in their campaigns for election or job advancement. One year, we had to remove our exhibit from the main plaza in Tihosuco because it conflicted with an external exhibition of photographs that a local politician brought to Tihosuco, even though the photographs had little connection to the community. That was a struggle for our entire team, especially those from Tihosuco, because it was understood that the community exhibition reflected the activities within Tihosuco and was important to the people in town. In the end, after much discussion with the local authorities and the people of Tihosuco, we agreed to remove the community exhibit to a less public place in order to not directly conflict with political authorities from outside the town.

Figure 8. Part of our annual exhibition from 2019. Photo by Kasey Diserens Morgan.

6.2.5. Tourism

Finally, being so close to Cancun and the Maya Riviera, residents of Tihosuco have seen the benefits and pitfalls of tourism. As a struggling farming community, they see tourism as a potential industry that could bring jobs and stability to their lives. However, there is great anxiety about tourism, which is seen as a powerful outside force that can change and control a small community, such as Tihosuco. Today, many of the young people of Tihosuco leave after high school or university in search of work along the coast, upsetting the town and family dynamics.

Our Tihosuco project is focused on both community and economic development. Part of our project is to work with local authorities and community members to create a small-scale and locally led tourism industry, focused on the history of the Caste War. The primary focus of this program is to attempt to bring some internal economic stability to the community while, at the same time, ensure that the story of the Caste War rebellion that is told to tourists is that of the people of Tihosuco, not one structured and controlled by the state and federal governments.

7. Conclusions

As we have demonstrated, creating a collaborative anthropological archaeology and heritage project requires us to frequently deal with issues of control and ownership over the heritage of the recent past and the present. A primary goal of the Tihosuco project is to broaden the definition of heritage and create a more inclusive picture of, not only the past, but how that past is employed, protected, and disseminated over time. We use this approach to better help us understand the dynamic between temporalities, as well as make sure that our study is not simply interesting research but, in fact, useful for the community within which we, as outsiders, live and work. The past needs to relate to the present and the future. This approach for anthropological archaeology foregrounds the very pressing issues of social and economic inequality that directly impact marginalized communities that live in association with historic and archaeological sites.

Our approach also changes how we define heritage practice and its link to anthropological archaeology. Sites that we, as archaeologists, assume to be part of a community's heritage may not necessarily matter to people as we would expect. To prioritize only those pasts that fit neatly within our own research interests and programs is an injustice to our collaborators, the field, and the study of the past in the present. Instead, our objective should be to engage with the sites and stories that are important for communities today. That understanding can only be determined through deep collaboration and conversation and the ability to open up the past for new views of heritage and interpretations of the past. To write off those pieces of heritage that do not meet specific research aims or questions is to do a gross injustice to our collaborators, the field, and the study of the past in the present.

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Article

Collaborative Archaeology, Relational Memory, and Stakeholder Action at Three Henequen Haciendas in Yucatan, Mexico

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Abstract: In the Mexican state of Yucatán, the Industrial Revolution is intimately linked to the cultivation and commercialization of henequen (*Agave fourcroydes*). The second half of the nineteenth and the first decade of the twentieth century are most often referred to as the region's Gilded Age. Some local families accrued immense wealth, while many peasants were essentially enslaved. The city of Mérida saw the construction of magnificent mansions, and the new port of Progreso was connected through thousands of kilometers of railroads. At the same time, the rural landscape experienced the foundation of countless new and the expansion of existing haciendas. In this article, we provide a comparison of the relational memory of local communities regarding three of these historical settlements: San Pedro Cholul, San Antonio Nohuayún, and San Antonio Sihó. We present the circumstances leading to the historical archaeology project at San Pedro and recount our efforts at involving its descendant community. In the face of the recent destruction of San Pedro's core buildings, we end with a discussion about the potential fates of Yucatan's henequen haciendas and a series of suggestions on how to safeguard related material remains, while allowing stakeholders to benefit from historic preservation.

Keywords: historical archaeology; Yucatan; descendant communities; tangible heritage

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1. Henequen Agroindustry in Nineteenth Century Yucatan

Although haciendas have been established on the Yucatan Peninsula since the seventeenth century, their numbers and economic importance increased significantly over the second half of the nineteenth century as part of the local expression of the Industrial Revolution. This development was spurred by a series of sociopolitical, techno-economical, and environmental factors. After the Mexican Independence in 1821, socioeconomic differences in the Yucatecan countryside became more acute as the Spanish Creoles began to occupy political positions and claimed vacant land in the rural area, thus increasing their landholdings and promoting peonage. The disruption of native leadership and way of life resulted in a considerable number of indigenous people being subjected to the hacienda system. In combination, growing disparity and the lack of farmland served to exacerbate the mood of rebellion and led to the armed uprising known as the Caste War in 1847 [1,2]. During the rebellion, indigenous communities in the eastern and southern regions of the state reorganized and were able to resist debt peonage.

There, rural populations continued occupying lands extensively in a more dispersed settlement pattern, without significant changes to their indigenous ways of life. For example, Alexander [3] (p. 333) points out that peasants promoted litigation to preserve their land at the expense of the establishment of numerous haciendas in Ebtun. Similar processes, however, are not evident in Yaxcabá, a more centrally situated municipality studied by the same author [4].

Among the consequences of the Caste War in the core zone of henequen production, centered on the state capital of Mérida in the northwest, was a marked demographic decrease and the reorganization of indigenous communities [1]. A landscape of agro-industrial production facilities emerged as an architecture appropriate to the promoters of the nascent Industrial Revolution. Following Farris [5], Meyers [6] (p. 125) underscores the neocolonial character of the design promoted by landowners with the goal of accelerating the assimilation of Yucatecan peasants within the capitalist project. Paredes [7] specifically points to the architecture of hacienda main houses as an expression of hierarchy and domination by the groups in power. The machinery houses, the administrative buildings, and the chapels, on the other hand, were important as means of ideological control and subjection.

The Yucatecan haciendas of this period are the main examples of the exploitation, forced labor, and ideological manipulation to which the peninsular communities were subjected by an oligarchy of wealthy landowners. However, they were also the scene where different strategies of resistance were developed by indigenous people, who sought to subvert the living conditions of a highly restrictive system [8]. Based on his research at the haciendas Tabi, Dolores Aké, and Xucú, Meyers [9,10] argues architectural and settlement designs are part of a neocolonial effort to control the aesthetics of the landscape and the built environment. The author stresses that the standardization of hacienda village layouts decreased with respect to the distance from the henequen core zone. However, he also draws attention to the fact that the persistence of the indigenous styles of vernacular architecture and house lot layouts within the haciendas expresses a form of cultural resilience among the Yucatec Maya [6] (p. 142).

In addition to the restructuring of Yucatecan society, the rise of henequen production was also firmly tied to technological developments and the growing connectedness of international markets. The invention of the first steam-driven decortication machines for henequen leaves, locally known as *pencas*, transformed many of the existing as well as the newly founded hacienda settlements into booming agrobusinesses. Local agaves had been exploited for their fibers since the pre-Columbian era and Colonial manufacturers exported sacks and rigging to nearby Cuba. However, the extraction of *sisal* fiber from the thick leaves had always been powered by either human or animal muscle. Thus, the ability to process thousands of *pencas* per day allowed for mass production and opened new export markets. The most significant market for Yucatecan *sisal* arose in the United States, where the invention of the McCormick Harvesting Machine in 1834 led to a staggering demand of binder twine.

The relatively dry northwestern plains of the Yucatan Peninsula were especially suited for the landscape transformation required for henequen monocropping. The omnipresent low spiny forests were relatively easy to clear, and plantations were exposed to regrowth only during the rainy season from May to November. By 1885, 42,000 ha had been converted to henequen [11]. Continuously booming over the turn of the century, the extension of its cultivation eventually ascended to 202,000 ha in 1916. This number accounted for more than 70% of all land under agricultural production in the state of Yucatán [12]. In addition to the rapid technological development of decortication machines, the arrival of railroads and their adaptation to local agro-landscapes through Decauville feeder systems spurred the productive capacities of henequen haciendas.

The economic boom associated with henequen cultivation brought about a Gilded Age for land-owning families, most of them residents of the state capital of Mérida. While this group of oligarchs became rich and politically powerful, displaying their wealth by building European-style mansions in the city, the working-class inhabitants of the haciendas themselves fared less well. Due to a relative lack of workforce in the mostly indigenous rural communities, owners grew increasingly preoccupied with tying labor to their haciendas. The most common strategy to achieve this goal became later coined as "debt peonage" [13]. Workers were encouraged to purchase subsistence goods on credit

at the haciendas' own *tienda de raya* stores. In addition, the owners offered larger loans to sponsor social events, such as baptisms, *quinceañeras*, and weddings. Given their low wages, most peon families were never able to pay off their debts, a fact which bound them to the hacienda. To make matters worse, in case of death, debt was inherited by widows or children, thereby effectively institutionalizing slavery. The exploitation of the indigenous workforce often involved physical abuse, as shown in Figure 1, or even the loss of lives when the lack of protection of laborers led to fatal accidents (see anecdotes below).

Figure 1. Peon with lash marks from hacienda *Noh-nayum* [14] (p. 180).

This social facet of Yucatan's henequen heritage has received only scarce attention in the academic literature and even less in public discourse. Through the discussion of relevant precedents as well as our own efforts, we will use the remainder of this article to shed the spotlight on community perceptions of historical heritage on the Yucatan, the actions taken by different groups of stakeholders, and the role archaeologists play as promoters of heritage preservation.

2. Localizing Identity and Heritage as Relational Memory

Although a comprehensive discussion of Yucatecan identity is beyond the scope of this paper, in this section we will review models and case studies relevant to the way present-day communities and individuals perceive themselves and their heritage. In the state, the tangible aspect of the latter is under constant spotlight as two UNESCO World Heritage sites—Chichen Itza and Uxmal—attract millions of national and international tourists each year. The monumental remains of these and other major pre-Columbian settlements cause awe and admiration for the ancient Maya civilization. At the same time, surrounding indigenous communities are commonly portrayed as descendants to the ancient Maya. Recent ethnographic studies, however, have shown this essentialist notion to provide a rather incomplete picture of the diverse ways of how local populations in the larger region relate to the pre-Columbian, as well as more recent past [15–17].

In his study of indigenous communities in highland Guatemala, Fischer [18] argues the human condition is based on the conscious and unconscious dialectic reconciliation of received cultural paradigms and changing environmental circumstances. For him, this interplay between stasis and adaptation nurtures the shaping of identities as a dynamic process. In Guatemala, this has led, among others, to the relatively recent adoption of common identifiers, such as "Maya" among indigenous groups which previously distinguished themselves by locality or language [18,19]. The shift in self-perception of individuals and communities across the Yucatan Peninsula and adjacent highlands is of utmost importance for any attempt of discerning peoples' relationship to heritage.

The variability in regional identities stems from historic processes reaching beyond the roughly 500 years of post-Conquest existence. However, colonization by the Spanish, the forced introduction of African slaves and northern Mexican Yaqui rebels, as well as the arrival of migrants from the larger Caribbean, eastern Asia, and the Middle East throughout the Colonial and Independent eras yielded a much more complex demographic mosaic than the ethnic diversity observed among the pre-Columbian populations [20]. The repetitive intermingling of resident and foreign populations, as well as internal migration caused by phenomena such as the Caste War, have blurred the lines of biological descent. In fact, Hervig [21] demonstrates native speakers do not necessarily perceive themselves as descendants of the ancient Maya. The complexities of the issue have gone as far as exposing local communities to claims negating their indigenous status [22] (p. 117). Accordingly, some scholars contend that the concept of "descending communities" is not unequivocally tied to biology. Instead, advocacy focuses on the recognition of self-defined present-day communities who seek association with groups of the past [23,24].

The acknowledgment of self-determination leads to the question of how people's identities are impacted by the remains and memories of the past. Several members of the Chunchucmil Regional Economy Project (CREP), focused on the semiarid lowlands in northwestern Yucatan, have launched ideas relevant to our own arguments. As an associate to the archaeological investigations at the pre-Columbian site of the same name, Breglia [15] conducted ethnographic fieldwork at the present-day villages of Chunchucmil and Kochol. In a challenge to the nationalist notions of heritage in Mexico, she focuses on the non-monumental aspects of patrimony. Breglia [15] (p. 137) contends that peoples' conceptions of heritage are rooted in "cultural and familial legacies associated with particular locales, the inherited beliefs, and the transgenerational practices of taming, cultivating, and respecting the land".

Consequently, for many communities in the area henequen haciendas are a much more immediate form of heritage than the pre-Columbian monuments. Following the framework of Foucault's [25] activity-controlling techniques, Breglia [15] (p. 145) reports on survivors of the henequen era still

exhibiting "vestiges" of the day-to-day life of this time engrained in gestures and material references. One example is the enacted sweeping motion of cutting *pencas* whenever former plantation workers speak about henequen harvests. She also recounts how the older generation still vividly remembers the strident bell ringing that kept peons on schedule, since the earliest of morning hours. Hutson [16] (p. 171) adds to this panorama, observing that recent use-history related to farming and animal husbandry has a significantly greater impact on the names assigned to Chunchucmil's pre-Columbian structures than any form of collective memory of ritual practices of the past.

Together, these observations conform to what Ingold [26] describes as the relational model of human existence and historical meaningfulness. Compared to the traditional genealogical model, which places ancestry, generation, substance, memory, and land within a context of an active culture to whom a passive nature serves only as a backdrop, Ingold [26] (pp. 132–133) envisions a dynamic process. Here, situating oneself in the world is impacted by both the cultural and natural environments. While the genealogical model implies the substantive components of personhood to be applied rather than generated, in the relational model, memory is transmitted in a spatial and experiential context providing meaning. Although language furthers, embodies, and transmits knowledge of the world, living in the land assures the continuity of language and, by extension, cultural identity [26] (pp. 135–147). In Ingold's [26] (p. 148) own words: "(...) objects of memory [such as haciendas] cannot pre-exist acts of remembering. (...) The activity of remembering forges memory."

Ingold himself refers to Mead [27] (p. 97) when arguing that a landscape must be understood as the "taskscape" in its embodied form. Therefore, human existence is not an imprint stamped upon nature rather than an incorporation interwoven with the lifecycles of organisms and the properties of its constituting inanimate objects and forces. By extension, a landscape is never to be considered complete or "built" but dynamically developing [26] (pp. 198–199). Buildings, like any other feature of the landscape, emerge as part of the dynamic processes and human dwelling of the world [26] (p. 206). Synthesizing Ingold's model under the term "entanglement", Hutson et al. [28] underscore the necessity of heritage to be tied to concerns such as income, politics, or personal aspirations and biographies to gain relevance for present-day communities. Weighing the monumentality of sites, such as Chichen Itza, against the spatial proximity of smaller sites, he observes the former absorb virtually all existing attention among villagers who have not been previously engaged with the vestiges surrounding their own communities. However, involvement with an archaeological project, state-wide media coverage, as well as the invitation to reflect upon and present their own notions of heritage to both foreigners and other community members, augmented the perception of local patrimony significantly [28] (p. 13).

Returning once more to Ingold [26], a review of his essay gains further value for this study due to his discussion of Bruegel's 1565 painting "The Harvester". This representation of a rural Golden Age Dutch landscape has been argued to be an idealized representation of peasants from a landowner's perspective [29]. We argue that the painting portrays a situation virtually identical to the generalized perception of Yucatecan henequen haciendas as the splendid monuments of a period of economic and societal progress. Both cases are characterized by a lack of consideration for the real-life hardships and day-to-day experiences of the peasants sustaining agricultural production and economic growth.

3. Collaborative Archaeology and Stakeholder Action

Compared to history, archaeology tends to be acknowledged for its greater potential to look beyond the elites and provide empirical data on the lives of commoners. More recently, collaborative archaeology has contributed even more to a focus on the disenfranchised of the past. This development transcends the excavation of lower-status households and the analysis of their material remains, but instead grows from descending communities becoming a part of the research process in a two-way didactic interpretation of the past. Since the 1990s, archaeologists have become more and more concerned about community feedback and benefits provided to the public [30] (p. 115). Before discussing the nature

of our own approaches to community involvement in the historical archaeology of northern Yucatan, we want to address some of the general challenges accompanying a socially engaged archaeology.

Supernant and Warrick [31] provide two relevant examples of how archaeological research can create or exacerbate political problems within and between groups of stakeholders. In their first example, the authors discuss how their work impacted claims to fishing sites in the Lower Fraser River Canyon between two Native Canadian communities. Here, one group utilizes ethnography, oral history, and archaeology to reclaim their right to define themselves. When conflicts arose, the Canadian government stepped in as an arbitrator. However, state officials lacked the appropriate understanding of time depth, cultural context, and internal systems of governance. Given these circumstances, it was impossible to integrate the local meanings of the landscape into the analysis without alienating one or the other party and the archaeological fieldwork had to be suspended [31] (pp.568–573). A second case involves the Six Nations of the Grand River in Ontario and features disputes over land between Native communities and the Canadian government. Here, archaeology figures prominently in negotiations by demonstrating long-term indigenous land-use. However, intra-tribal conflicts hinder both research and development projects in the area. While no permits were necessary for archaeological field crews in the past, administrative processes have recently become more contested. Due to the politically charged atmosphere created by overlapping tribal representative bodies, both developers and archaeologists have become used to work stoppages and costly delays. Consequently, Supernant and Warrick [31] (pp. 576–581) stress the need for explicit discussions and the co-management of stewardship among diverse interest groups.

Parks [22] presents another case illustrating the complexities of community stewardship in a geographically closer setting. She summarizes the struggles of Belizean indigenous communities to gain tenure over lands which have been inhabited by Maya people for millennia. While the villagers of Santa Cruz and Conejo, Toledo District, were primarily suing the Belizean government over the lack of consideration during the establishment of the Sarstoon-Temash National Park and subsequent seismic testing concessions to a US-based energy company, ultimate community goals include rights over the archaeological resources on the same lands [22] (p. 118). Although historians, anthropologists, and geographers testified on behalf of the claimants demonstrating the precolonial relationship between indigenous communities and local territories, the land-claim project was also threatened by the members of neighboring indigenous communities who protested in favor of oil exploration and the promise of jobs [22] (pp. 117–118). Moreover, even though the Belizean Supreme Court granted collective and individual rights to lands and resources used and occupied according to Maya customary practices, communities continue to meet resistance from the Institute of Archaeology regarding claims to archaeological sites. Similar to Mexico and many other nations [24] (p. 289), the Belizean constitution vests the government with exclusive authority over all ancient monuments and antiquities, thereby preventing local communities from any type of control. Most often, direct benefits are limited to custodial employment for a rather small group of villagers.

Returning to Yucatan, Magnoni et al. [32] point out how the work for and with archaeologists can lead to the exposure of otherwise uninformed and disempowered sectors of a given community. As part of the discussion of disagreements within the community of Kochol, which also holds claims to the land the pre-Columbian site of Chunchucmil rests on, the authors underscore varying perceptions across gender and occupational groups, reinforcing the importance of relatedness. However, employment in cleaning and labelling artifacts and the attendance of site tours and presentations organized by CREP archaeologists also caused a noticeable revalorization of pre-Columbian heritage among women and children. Nevertheless, the differences in opinion among residents and archaeologists about a cultural tourism development forced all stakeholders to acknowledge and understand opposing perspectives on archaeological remains and heritage sites [32] (pp. 368–369).

Breglia [15] (pp. 168–169) further reflects on these differences in perceptions between Kochol and Chunchucmil as both communities not only share parts of a pre-Columbian site but also house the remains of two contemporary henequen haciendas. The residents of Chunchucmil are slightly more

enthusiastic about a possible restoration of the historical buildings in their village. This feeling is based on a variety of factors, including the state of architectural preservation, the (temporal) occupation of the property compared to the complete abandonment of the hacienda at Kochol, as well as more frequent communication on part of the owners. Regarding the last point, Breglia also addresses the question of property and belonging. The Mexican land reform and ensuing expropriations of the 1920s and 1930s left hacienda owners with only small holdings, often reduced to the haciendas' core buildings. The largest part of plantations and properties were assigned to the former peons as communal lands or *ejidos*. The devaluation of haciendas, due to the political changes, as well as the decrease in demand of henequen, often led to the rapid abandonment of the so-called *cascos*. After almost a century, present-day communities feel these buildings belong to them and often claim usufruct rights [15] (pp. 159–169).

Study Sites

Over the remainder of this article, we will compare our research and outreach experiences at three ex-hacienda settlements of northwestern Yucatán—San Pedro Cholul, San Antonio Nohuayún, and San Antonio Sihó. Most of the discussions will center on the former, as our entire group of authors participated in research stretching over more than a decade. San Pedro Cholul is part of a larger group of haciendas located on the northeastern periphery of the present-day municipality of Mérida. Its contemporary neighbors are Kancabchen de Cazares, San Juan Dzonot, San Antonio Xcuyúm, Yaxché Cazares, Santa María Chí, and Chichí Suárez. Among these settlements, San Pedro was the last to be abandoned, as three families were still living in it by 1980. During initial reconnaissance, we charted over 30 house lots with most of them preserving at least the foundations of the corresponding single-room dwellings. Given the commonly used stipulation of five residents per household [33], this means San Pedro must have housed at least 150 inhabitants during its height. The settlement was articulated through a network of streets with some still preserving vestiges of the Decauville mini-rail system, which originally connected San Pedro to the Cholul train station, located about 1 km to the north.

Historical documents prove that San Pedro was founded in 1709 as a *cofradía* [34], a communal organization of Catholic laymen typical of Colonial-era Mexico and Central America. Don Gaspar Huchim, elder of the village of Cholul, donated a portion of his property as a cattle ranch in order to raise funds for the cult to Saint Peter and the urgencies of the village itself. Its low production capacities, however, resulted in very low numbers of permanent residents—likely only a commissioner and a rancher—throughout the entire eighteenth century. Following the orders of Friar Luis de Piña y Mazo, San Pedro and many other *cofradías* were auctioned in 1782. After the independence of Mexico and the ensuing liberation from ecclesiastic duties, these small rural landholdings experienced significant growth, yet still remained in possession of local owners. For San Pedro, this was Carlos García, another neighbor of Cholul, who owned a few hundred heads of cattle and employed a small group of resident laborers. In 1875, San Pedro was sold to Juan José Herrera, a Mérida-based lawyer with a medium-sized fortune and good social connections, who converted it into a henequen production facility [35].

Despite our focus on the historical settlement, it is important to mention that the landscape around San Pedro had been inhabited since pre-Columbian times. About 0.7 km to the west of the hacienda's core lay the center of a pre-Columbian Maya site which was given the same name. Resembling many other sites in the Northwestern Plains region, its occupational peak corresponds to the Late Classic period (AD 550–850). However, both Preclassic and Postclassic ceramic types were also found in significant quantities during archaeological excavations [36]. In conclusion, it is safe to assume the land surrounding the hacienda San Pedro Cholul was more or less continuously occupied for more than 2000 years. The abandonment of the hacienda settlement toward the end of this interval led many of its former inhabitants to move to the village of Cholul. Located less than 2 km to the northwest of San Pedro's *casco*, Cholul is currently home to about 6000 inhabitants and classified as a *comisaría* (the lowest entity in the political geography of Mexico) of the Mérida municipality. Regarding notions of

propriety, it is noteworthy mentioning that Cholul men, as *ejidatarios* (holders of usufruct rights to communal lands) decided to sell part of their parcels to the construction company, whose impact on San Pedro will be discussed below.

Our second study site, Nohuayún, is located 36 km to the west of Mérida. Its current population is a remnant of another former henequen hacienda. Similar to San Pedro, the village is surrounded by pre-Columbian vestiges. The historical settlement was also originally established as a cattle ranch, then transformed into a maize and cattle hacienda, and eventually converted into a henequen enterprise. Nevertheless, Nohuayún was considerably larger than San Pedro. A document from 1917 specifies the existence of 80 dwellings for peon families. In addition to the standard productive infrastructure, Nohuayún also included a church, dedicated to St. Anthony, and a school [37] (pp. 66–67). In contrast with San Pedro, Nohuayún was never abandoned. The village currently counts around 800 inhabitants. Following the land reforms of the 1920s, most of the hacienda's land was turned into *ejidos*. However, the core buildings remain in private hands to this day and are used as a garden for the commercial cultivation of vegetables, as shown in Figure 2.

Figure 2. Casco buildings at hacienda Nohuayún surrounded by commercial vegetable crops.

Lastly, Sihó is a rural community of about 1500 inhabitants, located 97 km to the southwest of Merida. Historical records describe Sihó as one of the *encomiendas* granted by the Spanish Crown after the conquest of the Yucatan Peninsula. Similar to Nohuayún and San Pedro Cholul, by 1695 it had become a cattle ranch [38], p. 1. However, the parallels among all three settlements stretch into the pre-Columbian era, as present-day Sihó is also situated near an archaeological site. Its size and monuments attracted travelers such as John L. Stephens [39] and early archaeologists such as Teobert Maler [40], who reported on part of the standing architecture and the site's stelae. Excavation projects under the auspices of the Universidad Autónoma de Yucatán (UADY) from 2001 to 2003, and again from 2013 to 2015, yielded evidence for Preclassic to Terminal Classic occupation [41].

As part of his trip, Stephens, also visited the hacienda San Antonio Sihó, then owned by the brother of Simon Peón, a member of one of the most powerful and wealthy Yucatecan families [39] (p. 187). The buildings of the henequen hacienda are arranged, forming a plaza in the center of the present-day village. Most are either totally or partially abandoned and one of them is in danger of

collapsing. However, the community keeps them painted in red and white, remarking the name Sihó and their respective construction dates. Vestiges of the machinery testify to the fact that the hacienda was still in use three decades ago. For the purposes of this article, it is noteworthy that some of the historical constructions at Sihó have also undergone transformations and are still being used. Among those are a convenience store, as shown in Figure 3, a residence, a vending station for drinking water, and a fourth building, which has been adapted to serve as a venue for community workshops. This shows that the hacienda has been divided into private holdings owned by descendants of both former oligarchs and peons, as well as communal parcels managed by cooperatives.

Figure 3. Former hacienda building at Sihó transformed into a convenience store.

4. Ethnographic Fieldwork at Nohuayún and Sihó

Focusing on community perceptions of heritage and the potential for collaborative archaeological research, Venegas de la Torre [37] conducted extensive ethnographic fieldwork at Nohuayún. Similar to the approach towards descendants at San Pedro Cholul, discussed below, he initiated contact inquiring about people's familiarity with local heritage markers. These informal notes were later amplified through participant observation, life history records, focused interviews, and questionnaires. At Nohuayún, young residents are aware of the historical buildings and the pre-Columbian vestiges in and around their community. However, the *casco* is mostly perceived from functional and religious perspectives. Patrimonial values and yearning, on the other hand, are only expressed by older community members who engaged with and both physically and symbolically constructed formerly unrestricted spaces, such as plantations, the machinery house, the garden, and the well.

Middle-aged men remember joining their fathers for work at the hacienda and its plantations. While memories of the latter stages of henequen cultivation are rather fond, the lives of grandparents are described in terms of slavery [37] (pp. 95,115,144–145). The self-identified heritage at Nohuayún resembles the case of Konchol/Chuncumil, discussed above. Again, compared to a rather "mystical" relation to their pre-Columbian past, most collective memories of the nineteenth and twentieth century are articulated in a relational manner, associated with the landscape, its buildings, and the accomplished tasks or activities. Survivors of the henequen era and their children remember the hacienda's own dungeon and, more specifically, the suicide death of one former prisoner, as well as inconsistent

schooldays due to shortages among itinerant teachers for rural communities. Their accounts also feature astonishingly detailed comparisons of vapor vs. diesel-driven decortication machines and comprehensive inventories of workers per station, and their respective daily production dues [37] (pp. 101–111).

The villagers also acknowledge the maintenance and restoration work conducted in several of the historical buildings since the hacienda's *casco* last changed ownership. Nonetheless, the creation of gardening jobs is considered to be an even more important positive outcome [37] (pp. 109–129). These feelings contrast with the uneasiness inhabitants express about the recent construction of a higher perimeter wall which detaches the hacienda's core buildings from the rest of the community. Previously, the abandoned *casco* was accessible to everybody and open spaces were used to play baseball, as animal pastures, and playgrounds for children. A notable exception to this divisive development is the Catholic church, which was donated to the community by a previous owner. Here, it was the congregation which moved ahead and raised a delimitating wall [42]. Venegas de la Torre's ethnographic work also demonstrates that heritage privatization is not necessarily considered to be an issue, as its inhabitants acknowledge the *casco* as always being in private hands rather than communal property [37] (p. 146). Regarding the possibility of a tourist enterprise, most current inhabitants do not have a clear opinion. Nevertheless, one informant expressed his doubts regarding any positive impact on the community itself. As long as the development does not involve the villagers in any way—granting they are not yet trained for specialized tasks/jobs—the only beneficiary would be the owner [37] (p. 109).

Regarding the latter, an interview request was refused in the same way that access to the private premises is denied to all non-employees. In a particularly striking example, Venegas de la Torre reports the case of a local pre-school teacher asking to be allowed to teach a group of four of her students about the germination of plants at the vegetable garden. This request was also denied by the hacienda's administrator [37] (p. 99). The author concludes that there is a lack of willingness among privileged stakeholders to interact eye-to-eye with communities. The exclusive focus on the economic value of historical buildings at Nohuayún also becomes evident through the selectiveness of restoration. While the main house and its above-ground rooms were rehabilitated and even embellished by new archways for occasional visits by tourists, storage facilities and dungeons in the basement were left unattended.

At Sihó, ethnographic data have been recovered in different ways. As director of the 2013–2015 field project at the pre-Columbian site, Fernández Souza hired a significant number of workers from the community. In order to avoid claims of favoritism, open and persistent lines of communication with authorities of the *comisaría* and the *ejido* were imperative. As some members of the workforce had already participated in the 2001-2003 UADY-led excavations, acquaintance between archaeologists and participating villagers was strong and on-site dialogues were characterized by mutual trust. In addition, both Fernández Souza and Hernández Álvarez directed undergraduate theses based on ethnoarchaeological research in the present-day community [43,44]. Lastly, Fernández Souza has conducted several collaborative projects with local schools since 2011 [45].

In this community, the hacienda continues to be an intrinsic part of village life. Some of the main public edifices (kindergarten, primary school, municipal and *ejido* offices, clinic, and the chapel) are within two blocks of its *casco*. Thus, men, women, and children habitually walk by the chimney which, much like a burnt-out lighthouse, is visible across the community. The center square or *plaza*, surrounded by the historical buildings, is also the venue for community celebrations, such as the Catholic *gremios*, the festivities dedicated to Saint Anthony, and school graduations. Withal, despite its modest size, Sihó is a complex community and the identities and perceptions of its inhabitants are diverse. This certainly applies to the relation with the hacienda. Both older men and women keep vivid memories of the hacienda's functioning days. Many current inhabitants are sons or daughters of men who used to work on the plantations or in the factory and still remember the way in which the henequen leaves were cut and tied up to be taken out via Decauville tracks. There are also memories of (at least) two accidents occurring over the second half of the twentieth century: a fire in one of the

plantations and the explosion of one of the boilers in the factory. In both cases, men were injured and/or died.

On the other hand, as part of the "Museos Cercanos" project, Fernández Repetto and Fernández Souza [46] conducted a series of talks and questionnaires with local middle school professors and students in 2017. The objective was to ascertain the interests and questions of students regarding their own community in order to develop a virtual museum. While the project is still underway, it is possible to say the way of life of the ancient Maya was a more popular topic than the history of the hacienda. This might be due to the closeness of the archaeological site or because Sihó's children are aware of recent excavations at the site. Nevertheless, questions about the hacienda were oriented toward the machinery, its uses, and fiber processing. This, again, suggests that present-day Yucatecans conceptually connect physical vestiges with tasks performed by their former occupants.

5. Heritage Protection and Archaeological Research at San Pedro Cholul

The hacienda San Pedro Cholul first caught the attention of archaeologists due to a salvage project in 2007. In accordance with federal laws, the residential development project, "Gran San Pedro Cholul", required a permit from the Instituto Nacional de Antropología e Historia (INAH) in order to proceed with any change in land use. The corresponding request was submitted by the construction company and, after an initial inspection in June 2005, led to the observation of both pre-Columbian and historical remains, INAH determined a salvage project would be required. The main objective for the ensuing intervention consisted in the protection of the pre-Columbian archaeological remains associated with the aforementioned Tier IV site center located to the west of the hacienda. However, a study of the historical settlement was listed explicitly as Phase VI [47].

From a general perspective, an archaeological salvage project can be perceived as one of few possibilities to understand and protect endangered buildings, materials, and information considered part of a given community's patrimony [48,49]. While most such enterprises in Mexico focus on the preservation of pre-Columbian sites, occasionally historical remains are front and center. Specifically, the rapid growth of cities threatens buildings such as convents, churches, aqueducts, haciendas, and ports. The ensuing procedures determine which measures could be put in place to avoid the destruction or alteration of tangible heritage. Development projects might be postponed, while archaeological materials are recovered, or might be forced to adapt to the presence of cultural remains by redirecting roads, back-scale building renovations, or by incorporating vestiges into protected green spaces. As examples of Mérida-based salvage projects focusing on historical haciendas figure San Agustín de Pacabtún [50] and Anikabil [51].

Initial surveys at San Pedro reported the presence of a main house, a machinery house with its diagnostic chimney, an administration, a warehouse, and a chapel, as well as a significant number of single-room residences distributed along several former streets. The original project plan also stipulated the excavation and restoration of standing architecture for their future integration into cultural spaces available to the neighborhood's new residents [47]. However, as the hacienda's core was included into a conservation zone (similar to the core structures of the pre-Columbian settlement), which prevents developers from building, the company eventually declined funding of any intervention in the corresponding area. Fortunately, San Pedro's spatial proximity to UADY's Department of Anthropological Sciences—campus buildings are located 1 km to the west of the hacienda's core—led to public awareness regarding the presence of archaeological and historical remains. As several students were involved in the INAH-led salvage project through their social service, eventually contact was established between Pantoja Díaz, then project director, and a group of UADY faculty, including Hernández Álvarez and Fernández Souza. Given the lack of private-sector funding for more extensive work at the hacienda, it was agreed a UADY-led historical archaeology project would be beneficial both in terms of heritage management and field school for the department's archaeology students.

In 2009, UADY archaeologists and students conducted a first field season at San Pedro as a research-oriented extension of the previous salvage project. By then, it had become clear that at least the peon's homes surrounding the hacienda's core would eventually fall victim to residential development. Consequently, mapping, surface collections, and small-scale excavations centered on this working-class segment of San Pedro's population, as shown in Figure 4. Despite the relative urgency to complete labor, this particular investigative focus caused a lot of interest among participants of the Projecto Arqueología Histórica en la Hacienda San Pedro Cholul (PAHHSPCH). As mentioned above, the henequen era has been extensively studied by historians. However, most written sources provide information first and foremost on the owner families and economic facets, such as production capacities. Data on the day-to-day lives of the *peons*, on the other hand, are largely absent.

Figure 4. Remains of one of the former peon homes at San Pedro, including control grid used for surface collections and test pits.

Over the first field seasons, PAHHSPCH produced evidence for socioeconomic differences among peon families, which were expressed, for example, through quality of housing [52], available infrastructure [53], and access to imported goods [54]. In addition, we were able to reconstruct the subsistence strategies in place during the region's Gilded Age [55]. Successive projects, launched in 2013 and 2016, respectively, moved the focus to the *casco* buildings and eventually to the position of San Pedro within the larger henequen landscape, comprised within the Mérida, Conkal, and Progreso municipalities [56]. To this day, our research has shed light on the quotidian lives and household activities of San Pedro's inhabitants [57], the health conditions which characterized peon families [58,59], and the technological innovations which occurred as part of the industrial revolution in rural Yucatan [60,61].

6. Oral History and Community Outreach at Cholul

As mentioned earlier, a significant portion of the former inhabitants of San Pedro moved to the village of Cholul when San Pedro was gradually abandoned over the latter half of the twentieth century. After our first field season, PAHHSPCH staff approached the civil registry offices in Cholul and learned that some of the former inhabitants of San Pedro who moved to the village were still alive. This fact represented an opportunity to supplement our archaeological and documentary sources of information with oral history. It was also the first time survivors and descendants got engaged with the archaeological salvage work conducted just across the highway that connects the village with the state capital. Following Díaz Ruiz [62], historical memory can be defined as a conscious,

collective effort of communities to entrench with their past—real or imagined—through the assignation of special value and respect. Communities select the facts, which will be imbued with importance and perpetuated through time, thereby creating a sense of identity. Due to its subjective character, collective memory cannot be "recovered" and is instead "constructed", between interviewee and interviewer, between past and present [63]. Moreover, the recovery of life history accounts was not only a research tool but aimed at contributing to the rescue of the descendant community's heritage and historical memory [64].

Our commitment to reach out and work to the benefit of survivors and their families grew even stronger after an initial group of three informants agreed to join us on a visit to San Pedro. Returning to the place they grew up in made them feel "as if we were 15 years old again". However, the walk around overgrown streets and buildings also brought sorrow and the desire to be informed about the fate of San Pedro [65] (pp. 286–288). In addition to former San Pedro residents, we later interviewed present-day inhabitants of Cholul whose relatives, neighbors, or acquaintances provided them with accounts of life at San Pedro. A team of students distributed posters and flyers with the call "Reconstruyamos juntos la historia de Cholul [Let's reconstruct the history of Cholul together]" across the village. In informative meetings, several interviewees expressed pity over the recent passing of community members who had lived at San Pedro. These neighbors were communally perceived as prime sources of information, as transmission across generations appears to be inconsistent.

In this regard, interviews demonstrated that young adults between the ages of 18 and 30 years do not know about the hacienda. The group of 30- to 40-year-olds was able to identify San Pedro but did not carry own memories, either because they never lived there or because they moved very early in their lives [64] (pp. 274–275). Neighbors beyond the age of 50 did share personal memories and experiences. In the end, a group of seven key informants provided a perspective on the day-to-day lives of the last inhabitants of San Pedro. These interviewees remembered it as a big hacienda; they highlighted the beauty of its chapel and the tranquility of life. Personal accounts also included information on the owners' families. For example, while San Pedro was a property of the Sánchez family of Mérida, the patron saint was honored every year with celebrations, including a music band, prayers, and *novenas* (Christian tradition of devotional prayers for nine successive days or weeks). However, when ownership was transferred to the Xacur, a family of migrants with roots in Libanon, the festivities were downsized significantly [64] (pp. 275–280).

As to the growth of San Pedro during the Gilded Age, our informants remembered in-state migrants looking for stability and fix wages due to the uncertainties of rain-fed *milpa* agriculture across the region. However, work on the plantations was hard. Working days started as early as 3 a.m. and were concluded at noon. The labor was so strenuous that newcomers struggled mightily. One informant remembered a fatality on a first day of work [64] (pp. 276–278). Our interviewees also stressed the strong gender division of labor present at San Pedro. While men were responsible for all steps in the processing of henequen, women stayed at home preparing meals and tending to children and animals. While boys went to school at Cholul for three years, girls had to stay home too [64] (pp. 278–279). Only Sundays were off and used for trips to Cholul or Sitpach. Mérida was too far for a journey on foot. The majority of San Pedro's inhabitants did not grow *milpas*. Most of the food and other articles of domestic need were acquired at the hacienda's own store or the market in Cholul. Soda drinks were considered a luxury and reserved for weekends or special occasions [64] (pp. 279–280).

Consensually, our informants called for San Pedro's history to be acknowledged and valued. Both younger and older adults were in favor of conserving the hacienda, either as a reminder of the history of the people of Cholul, or as an anchor of personal memories and family histories [64], pp. 280–281. This perception reinforced our motivation to make the results of our research known not only among colleagues in the anthropological realm, but also the general public, and especially the descendant community in Cholul. Among the dissemination activities we have carried out throughout the years figure talks, conferences, and lectures in Mérida schools of different educational levels. Particular strong connections were created with students of the elementary and middle

schools at Cholul. As part of the anniversary celebrations of the Anthropology Department at UADY, PAHHSPCH staff organized a symposium featuring preliminary research results in the fall of 2010. The symposium was directed toward the general public and presentations were specifically intended to reach a non-specialist audience. In addition, we assembled a museum-style exhibition with historical artifacts recovered during the first field season at San Pedro. Different types of materials, such as coins, glass bottles, pieces of machinery, ceramic fragments, metates and grinding stones, metal containers, and various kinds of tools, were displayed together with advertisement documents of the time. Both events were attended by diverse audiences, including university authorities, teachers, and students, as well as Cholul residents and other visitors, as shown in Figure 5. The presentation of the book "Sendas del henequén" [66] during Yucatan's international book fair in 2017 was similarly successful in terms of attracting Cholul residents as part of the audience.

Figure 5. PAHHSPCH staff with Cholul school children at the 2010 exhibitionof historical artifacts from San Pedro.

7. The Fate of Henequen Haciendas

Since the INAH-led salvage project started in 2007, there was concern about the eventual destruction of the hacienda San Pedro Cholul. PAHHSPCH' early research focus on the peon house lots was motivated to a substantial degree by the belief those peripheral remnants would disappear sooner rather than later. We did not conduct exploratory excavations in San Pedro's *casco* before the 2013 field season. In order to obtain funding for more extensive interventions, Hernández Álvarez submitted a proposal for a three-year research project to the Consejo Nacional de Ciencia y Tecnología (CONACYT) in 2015. The project was authorized by both CONACYT and INAH the following year and granted funds in excess of MXN 1,000,000. However, despite this shift in attention and the necessary financial support, the chapel was the only larger construction for which the project goals were met, as the core buildings of San Pedro were almost entirely dismantled by heavy machinery in March 2018 [57], as shown in Figure 6.

Figure 6. Aerial photo of San Pedro after almost complete destruction of *casco* buildings. Foreground: Machinery house and chimney. Background: Residential development Gran San Pedro Cholul.

After the hacienda's destruction was reported, INAH officials immediately proceeded to verify the infraction, assess the damage, and seal off the affected areas. The following administrative process entailed a formal investigation regarding the destruction of built historical heritage. A request was sent to the construction company to submit a statement and a series of meetings and appearances were held to clarify the purported acts and to plan damage compensation. As no agreement was reached, INAH turned the case to the Procuraduría General de la República (Mexico's offices of the attorney general) where expert opinions have been solicited and the first hearings conducted. Although both INAH and UADY staff have been trying to persuade developers to preserve and protect the remains of the hacienda for almost a decade (for example, delivering copies of all reports and publications), their position remains without change—the presence of historical remains decreases the surface area for new residential buildings and therefore diminishes revenue. While we argued San Pedro would generate added value to the new residential neighborhood as a park, recreative area, or cultural center, architects and engineers had found the buildings to be too damaged to warrant a reconstruction. To our knowledge, the descendant community did not engage with the developers either before or after dismantling.

The decision to demolish most of the buildings of San Pedro's *casco* is even more difficult to comprehend in view of the company's advertising strategy for the residential development. Gran San Pedro Cholul not only adopted the name associated with the former hacienda but is also promoted under the slogan "Grandeza de Tres Culturas"—the grandeur of three cultures. The official website [67] opens with a video describing the development of a neighborhood where the past and the present fuse together. Potential buyers are courted with the perspective "to live among the vestiges of a millenary pre-Columbian civilization and the nostalgic presence of hacienda *cascos* from times of henequen splendor (translation by first author)". A click on the "Tips y Artículos" tab on the same website clarifies some of the perceptual differences. Among the heritage sites recommended to new neighbors are the archaeological zone of Aké and the hacienda San Pedro Ochil. The former is a public heritage site under the direction of INAH, located 27 km to the east, while the latter is a restored henequen

hacienda in private hands, which houses a restaurant, is rented for social events, and is situated 45.5 km to the southwest.

8. Discussion

This brief review of our own and other colleagues' experiences studying Yucatan's industrial heritage from an anthropological perspective has brought to light the complex relationship between present-day stakeholders and the material remains of former haciendas [68]. Recreating a neocolonial pattern observed on a global scale [24] (p. 294), tourism promoters and, truth be told, many archaeologists portray the region's patrimony as a static entity firmly tying Yucatec culture to the pre-Columbian Maya civilization. However, a closer look at more recent time periods tells a different story. Until the early 1990s there was arguably no pan-Maya identity among indigenous communities of the Yucatan Peninsula and adjacent Guatemalan highlands [18]. Although few, the cases presented in this article demonstrate that present-day communities might be more or less aware of the remnants of pre-Columbian settlements in their surroundings. Moreover, consciousness of what is technically known as tangible heritage depends heavily on a person's occupation, his or her age and gender, and possible contact with professionals of the area.

This perceptual variation regarding heritage extends into the industrial era and its vestiges. Communities do not ascribe value or perceive themselves as heirs to a given culture or society of the past simply because of the existence of nearby architectural or other material remains. As Ingold [26] puts it, the landscape, natural and cultural, does not impose on people. Instead, people build a relationship with their environment through interaction. Memory and the perception of heritage are part of this dynamic system. Ethnographic work shows how this relational memory is driven by physical experiences and the embodiment of interactions with natural and social forces. Eyewitness accounts of Yucatan's Gilded Age converge on the arduousness of labor on henequen plantations, the rare taste of soda beverages, the isolation of holding cells, or the joy of religious festivities. The heritage of Yucatan's henequen haciendas does not lie in their buildings, but the lives lived within them.

Acknowledgement of this fact is crucial for any effort toward heritage preservation. If stakeholders are not somehow related to a given site, they will not imbue it with a symbolic patrimonial or any other value. The example of large-scale developing enterprises indicates the greater the resources and the access to land, the bigger the potential threat. As evidenced by San Pedro Cholul, in extreme cases, this can lead to the outright destruction of material markers of heritage, even though the glorious moments of an abstract past are seemingly being celebrated. However, the dismantlement of entire buildings by heavy machinery is not the only factor in the disappearance of pre-Columbian or historical vestiges in the region. The small-scale yet pervasive extraction of stones for construction purposes originated during Colonial times and continues to be one of the most common forms of looting, specifically in rural Yucatan [69] (pp. 20–21). Nonetheless, the relationship between human communities and their patrimony is not characterized by dialectic opposites. The examples from Nohuayún and Sihó exhibit how material remains are often neither completely destroyed nor reverberated. Rather, they are transformed and continuously imbedded into the daily lives of surrounding communities. The conversion of a Gilded-Age construction into a drinking water dispensary might not cause delight among archaeologists, historians, or tourism promoters, yet at the end of the day the building persists. Similar to the destruction of historical buildings in order to increase the surface available for new developments, here the economic value outweighs a merely ideational consideration. The difference is that, in one case, almost an entire hacienda was destroyed, while only a few walls were modified in the other.

Challenging the constricted perception of tangible heritage as a display of itself [70] (p. 7), we acknowledge that soccer or baseball games in the yards of former haciendas do not conform either to the largely contemplative relation which defines visits to most official patrimonial sites in Mexico. Nonetheless, we also recognize that communities continue to maintain ties to these locales and assign

recreational value. In comparison, the transformation of San Antonio Nohuayún's open spaces for horticultural purposes appears to be closer to historical reality. The detailed mapping of San Pedro's *casco*, for example, led to the identification of an enclosure with hydraulic infrastructure, such as feeder channels and reservoirs, indicating the existence of a vegetable garden [71]. Together, our case studies suggest that the preservation of Yucatecan henequen haciendas does not depend as much on the structural integrity of their standing architecture, but their potential value to the communities which interact with them.

As mentioned by Meyers [6] (p. 143), "engagement with descendant communities and other stakeholders will bolster the strategies that are brought to bear on (...) questions [of heritage preservation]." In this regard, we have to consider that the tensions between the vestiges of the past and the actors of the present in the context of haciendas or other patrimonial sites are still largely mediated through the control of neocolonial elites over the aesthetics of economically valuable landscapes [24] (p. 279). For example, in seeking to integrate tangible heritage into new residential developments or other private landholdings, proposals to turn them into museums, restaurants, or spas might be a more viable option than advocating for their preservation as part of green spaces. This argument aligns with Hutson et al. [28] (p. 8), who express no a priori conflict over the support of economic interests, specifically when they favor heritage preservation. On the other hand, rural settlements, linked to their past as remnants of former haciendas, see the emergence of actors who defend their built heritage more pragmatically by giving it value through their daily actions and recreational use.

In order to reach sustainable agreements, it is imperative to identify all parties of interest [28], p. 4–5. So far, this paper considered professionals in charge of heritage preservation, developers, and descendant communities. However, the case of San Pedro is exemplary for the limitations of such coarse, non-inclusive categories. Given access restrictions to residential developments, such as Gran San Pedro Cholul, once the construction of houses is concluded, many new neighborhoods become walled-off. Unless they own a residence or are involved in a neighborhood business, the descendants of the former hacienda would not be granted access to whatever historical remains will be kept in place. This is yet another clear example of what has been framed as communities being "legislated out" of the opportunity of being managers of their heritage [24] (p. 289). Despite our unconformity with such policies, we also want to stress that the new homeowners will be in constant proximity to the land and everything on it. It is very likely that some kind of relationship will be established between this community and the remains of the hacienda (and the pre-Columbian site).

It is here where efforts toward heritage preservation must be more inclusive and aware of the multiplicity of stakeholders. Without denying the compelling and primordial claims of descendants, we believe the presence of new residents in an area presents an opportunity more than a threat to heritage sites. However, for this to become true, these communities must also be actively involved in the decision-making process. Without a previous relation to the landscape and its constituting elements, it is unlikely (yet not impossible) that newcomers will acquiesce to merely contemplative uses of the land. It is more plausible for transformative proposals, such as recreational spaces or small-scale businesses, to find appeal. Withal, the creation of ties between new groups of stakeholders and the landscape does not have to wait for preservation concepts to be put in place. One strategy, which has been increasingly implemented in recent years to raise awareness, is place-based education [24] (pp. 237–275). For example, after developing a series of outdoors archaeology workshops for Native American youths in the state of Wisconsin, USA, Reetz and Quackenbush [72] (p. 500) contend that this approach possesses the potential to improve environmental stewardship. Their indigenous students appeared to benefit more from science and ecology-related lessons and were more encouraged to be the "tellers of their own existence, of their past, present, and future".

Residents of the city of Mérida have been able to partake in similar experiences, thanks to the efforts of the municipal government, UADY, as well as NGO's, such as *Xíimbal K'áax* and AYERAC. The municipality's summer program "Taller de Arqueología para Niñas y Niños" [73] and the "Arqueofest 2019" [74] have received particularly strong public appraisal. Both are tailored toward

elementary school audiences and aim at reinforcing regional identities and promoting the appreciation of the region's (bio)cultural heritage. Although the objectives include a challenge to the perception of an archaeology dedicated exclusively to the discovery of ancient masonry buildings in remote locales, both events are held in city parks with partially restored archaeological remains. Here, children are encouraged to participate in educational activities which are fun and, at the same time, cause appreciation. The hosting groups of archaeologists also invite both kids and their parents on guided tours through the respective sites. Given the multiethnic character and the accelerated growth of Mérida, most of the families who attend these events might not consider themselves direct descendants of the pre-Columbian or historical settlements serving as venues. They are, however, part of the neighboring communities of the present and, therefore, hold both claims and present the potential to be acknowledged as stakeholders.

9. Conclusions

This review exposed the importance of establishing links with descendant communities and other groups of stakeholders regarding the preservation and management of historical heritage in Yucatan. PAHHSPCH sought to provide San Pedro's descendants with opportunities to express their visions of a heritage site with which they had related for generations before its eventual abandonment. Nevertheless, we failed at broadening our perspective on the multiplicity of stakeholders involved in the preservation of tangible heritage by not acknowledging the new residents of Gran San Pedro Cholul. Of course, there is no guarantee that a neighbor's appeal could have prevented the destruction of the hacienda, but developers would have had to negotiate with an additional interest group. At Nohuayún, villagers convinced owners to donate the hacienda's chapel to the community. At Sihó, residents continue to find ways to adapt historical architecture to their current necessities. It is likely the new homeowners at Gran San Pedro Cholul would have appreciated exploring the possibilities of relating to a neighborhood with historical remains.

In conclusion, we believe in the social responsibility of institutions, specifically those funded by taxpayers, to collaborate with and disseminate knowledge to the communities who sustain them. Regarding archaeological projects in Mexico specifically, this includes INAH, state governments, as well as public universities, such as UADY. Research objectives ought to include helping present-day populations, descendants or newcomers, to turn into co-managers and protectors of their own heritage. We realize that the mechanisms for the community stewardship of tangible heritage have yet to be articulated. Similar to many other countries, in Mexico monuments have historically been prioritized over the people who lived and continue living in and around them. In order to transfer more rights and responsibilities to communities, a collaborative perspective must be incorporated into the academic discourse of those in charge of training new generations of archaeologists. It is only when professionals and other stakeholders are comfortably seeing eye-to-eye that sustainable ways of heritage preservation can be agreed upon.

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Article

Making Space for Heritage: Collaboration, Sustainability, and Education in a Creole Community Archaeology Museum in Northern Belize

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Abstract: Working with local partners, we developed an archaeology museum in the Creole community of Crooked Tree in the Maya lowlands of northern Belize. This community museum presents the deep history of human–environment interaction in the lower Belize River Watershed, which includes a wealth of ancient Maya sites and, as the birthplace of Creole culture, a rich repository of historical archaeology and oral history. The Creole are descendants of Europeans and enslaved Africans brought to Belize—a former British colony—for logging in the colonial period. Belizean history in schools focuses heavily on the ancient Maya, which is well documented archaeologically, but Creole history and culture remain largely undocumented and make up only a small component of the social studies curriculum. The development of a community archaeology museum in Crooked Tree aims to address this blind spot. We discuss how cultural sustainability, collaborative partnerships, and the role of education have shaped this heritage-oriented project. Working with local teachers, we produced exhibit content that augments the national social studies curriculum. Archaeology and museum education offer object-based learning geared for school-age children and provide a powerful means of promoting cultural vitality, and a more inclusive consideration of Belizean history and cultural heritage practices and perspectives.

Keywords: archaeology; descendant communities; community museums; Afro-Caribbean history; Creole; Belize

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1. Introduction

Heritage-oriented archaeology is an inherently public endeavor, often involving the select preservation and display of material remains from the past with an eye to the potential political, economic, and social impacts of archaeological research [1,2]. Heritage projects, such as community-based archaeology museums, are often part of an ongoing dialogue and negotiation about who controls the past, and benefits from the production of archaeological knowledge in the context of economic revenue generated from heritage-based tourism [1,3–5]. Tourists have been the primary target audience for archaeological site museums established at Maya sites in recent decades across Belize, as part of the country's tourism development initiatives led by the National Institute of Culture and History (NICH) [6] (p. 75). While the economic promise of tourism is often an important consideration in the Maya region, the tourism industry is an unstable enterprise, particularly in rural communities [1,7–9]. This article describes the development of a community-based archaeology museum in a rural Creole community in northern Belize. While tourists were a consideration, the Crooked Tree Museum and Cultural Heritage Center was designed primarily for Belizeans, namely school-aged children. Working in partnership with local teachers, we designed the exhibition content

to complement the national social studies curriculum, and to address the concerns expressed to us by members of the community regarding the loss of traditional Creole cultural heritage.

Crooked Tree Village is located in northern Belize within the Maya region, just south of Quintana Roo, Mexico (Figure 1). The community of Crooked Tree was specifically selected as the site for the museum and learning center for several reasons. This area shows archaeological evidence of continuous human occupation spanning roughly 6000–9000 years, from Paleoindian times to the ancient Maya and into the colonial period [10,11]. In addition, as one of the oldest Creole villages in the country, this community holds a valuable repository of colonial archaeology, and community members hold a wealth of local knowledge in the form of oral histories. The Creole are descendants of Europeans and enslaved African people who were originally brought to Belize by the British colonists, primarily to work as slaves for the logging industry beginning as early as the seventeenth century. These British colonists who brought with them enslaved Africans penetrated far into the forests of northern Belize in search of logwood and mahogany and displaced the Maya residents living in this area [12–16].

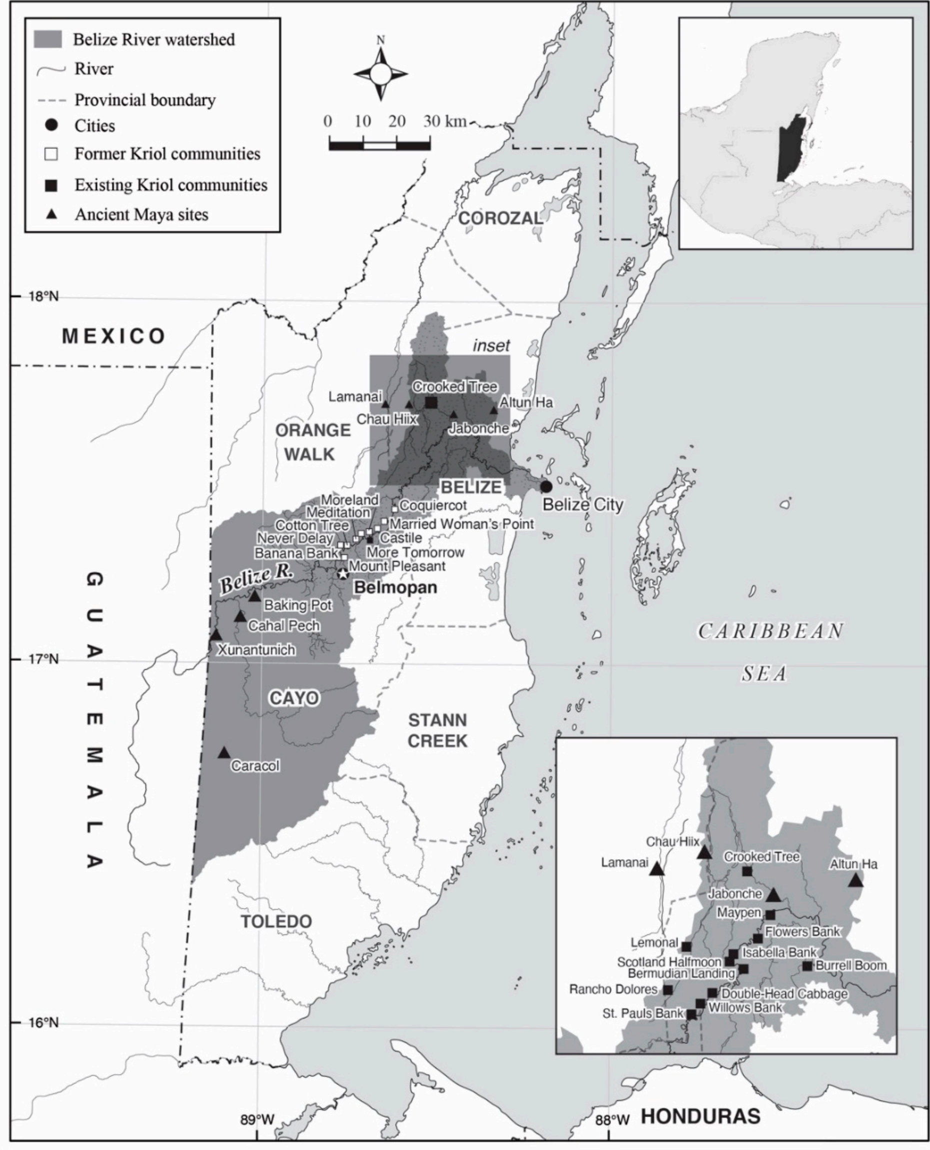

Figure 1. Map showing former and existing Creole communities in the middle and lower half of the Belize River Watershed, which encompasses the Belize River East Archaeology (BREA) study area. Inset map highlights settlement in the lower Belize River Watershed (map prepared by M. Brouwer Burg).

While slavery was abolished in 1834, Belize was a British Colony up until 1981, so colonialism is not a thing of the distant past for Belizeans. For this reason, our approach to the museum project featuring archaeology of the lower Belize River Watershed has paid particular attention to the decolonization of museum practice [17–19]. Belizean history in the national curriculum de-emphasizes Creole cultural heritage and is heavily focused on the ancient Maya civilization, which has dominated Belize's heritage preservation efforts and tourism development in recent years [20]. While ancient Maya culture has been thoroughly documented through previous archaeological research, Creole history and culture have been largely undocumented archaeologically and make up only a small component of museum content in Belize. The Crooked Tree Museum and Cultural Heritage Center aims to address this blind spot, making space for a more inclusive consideration of Belizean archaeological history and cultural heritage practices and perspectives. Integral components of this heritage-oriented project, described below, involved community-based collaboration, sustainability, and education.

2. Project Background

For this project, our goal was to develop a community-based public archaeology museum exhibition focused on the deep history of human–environment interaction in the lower Belize River Watershed, covering roughly 6000–9000 years of human history. The Maya period of occupation has been the most thoroughly investigated [21–27]. However, there is also a rich historical record for the Creole, and this has been the focus of more recent archaeological investigations by the Belize River East Archaeology (BREA) project, assisted by a group of well-trained excavators from Crooked Tree village [10,14,28]. The first author, who has conducted archaeological research in Belize for nearly 30 years, directs the BREA project, which encompasses a 6000 km^2 study area in the lower half of the Belize River Watershed. As part of the BREA research project, her work examines local oral histories, alongside archival and archaeological evidence, in an effort to reconstruct the colonial history and settlement in this area. The second author joined this project as a specialist in education and the design of learning experiences in museums, and was instrumental in helping to develop the exhibition content, with an eye toward creating accessible experiences for a range of audiences including local school-age children.

When the first author initiated the BREA project in 2011, the goal was to document ancient Maya settlement in this area, but it quickly became apparent that, in addition to hundreds of ancient Maya sites, there were also a wealth of colonial sites in the lower half of the Belize River Watershed [10,14,28–31]. This area is often referred to as the "birthplace" of Creole culture. Many of these historic communities, including Crooked Tree, were originally established as logging camps, and most today are comprised of direct descendants of mixed African and European descent. As many young people move to be closer to the highways and cities, the rural Creole communities in the lower Belize River Watershed show signs of dwindling populations, and there is legitimate concern about the loss of cultural heritage [32,33]. Most of the Creole villages noted on the inset map of Figure 1 show diminishing populations, and others have been abandoned all together. For instance, nearly all of the Creole communities from Banana Bank to Coquiercot in the middle Belize River Valley, where we have conducted an archaeological survey, no longer exist today (see sites marked as white squares on Figure 1). The one exception is More Tomorrow, which, like Crooked Tree, is one of the oldest Creole communities in the Belize River Watershed.

The BREA project started working in the Crooked Tree area in the summer of 2014. Our first public outreach initiative in the village occurred in the summer of 2016 and involved a collaborative, interdisciplinary humanities project, which culminated in a temporary community exhibit at the Crooked Tree Visitor's Center, a building managed by the Belize Audubon Society. This public history exhibit featured information on contemporary ethnographic research in Crooked Tree, which was led by Dr. Alicia McGill of NC State [33,34]. The BREA team contributed several panels for the exhibit featuring the "deeper history" of the Creole, which we gathered through our oral history, archival, and archaeological research. The opening of this temporary public history exhibit garnered a surprising

amount of attention from the local community. Many people read the informational panels, but what seemed to engage them the most was a small vitrine with a collection of ancient Maya and historical artifacts that had been arranged in one corner of the visitor's center. While many of the younger kids were unfamiliar with the rusted metal objects in the vitrine, the older visitors quickly piped up and explained how they recalled their father using spikes like the ones in the vitrine for climbing chicle trees to harvest the gum and how their ancestors used the "dog" to haul mahogany logs and float them down the river to Belize City where they were loaded on to ships destined for the U.S. and European markets (Figure 2). What was clear from this experience was how artifacts helped trigger people's memories of the past; they served as cues for an historical narrative, which locals provided to us (the "experts"), rather than the other way around.

Figure 2. An example of an iron dog used with chains to float mahogany logs down river to be shipped out of Belize City, found in the lower Belize River Watershed (courtesy of the BREA project).

Tragically, almost exactly a year after the opening, the visitors' center where the temporary exhibit was housed burned down. All of the panels and the collection of artifacts on loan from the community that were in the vitrine were destroyed in the fire. It was a huge loss, particularly the artifacts which are irreplaceable. However, despite the loss of this tangible heritage, it also served as a reminder of how precious the intangible heritage is that remains preserved, including the oral histories of the Creole, who remain alive and well in the village and who are instrumental in reconstructing the local history.

3. Project Objectives

At the opening of the temporary exhibit, the first author spoke with the new Chairman of Crooked Tree Village. They both agreed that a future goal should be to build a permanent museum in the village, featuring the archaeology and deep history of this area, which includes the rich Creole history and cultural heritage. A year-long Public Humanities Fellowship from the Whiting Foundation and a grant from the Alphawood Foundation enabled the first author to initiate this project in 2017. Critical to the success of the museum project were a series of key collaborations, including those with the second author, Dr. Sara Clarke-Vivier, as well as the village council and community of Crooked Tree, and members of Belize's National Institute of Culture and History (NICH). These valuable

collaborations, described below, led to the building of the Crooked Tree Museum and Cultural Heritage Center in the "old" Community Center, which was no longer being used, and was donated by the village council to serve as the museum.

Three overarching objectives guided the development of the public archaeology museum project:

1. *Collaboration* in archaeology and museum practice in partnering with local stakeholders;
2. *Sustainability* in the cultural content and physical structure of the museum exhibition; and
3. *Education* geared for local school-age children with exhibition content and displays that complement the national social studies curriculum.

Below, we describe our efforts throughout the process of the museum development to employ each of the three objectives outlined above. We begin with an overview discussion of postcolonial approaches to museum practice, specifically in the collaborative development of community museums "with, by and for" descendant communities [35]. In this case, the concern for Creole cultural sustainability expressed by the community shaped our approach to this heritage project, spawning new directions for the Crooked Tree Museum that ultimately impacted the outcome of the exhibition. In this paper, we discuss our focus on issues of collaboration and sustainability, and how education in this rural Creole community has been a central component of the museum development. We conclude by discussing future directions for the museum, which opened in June 2018, including a series of teacher workshop initiatives, involving collaborations with local teachers and other educators associated with the Belize National Institute of Culture and History (NICH). These workshop initiatives have continued to stress collaboration, sustainability, and education in the promotion of this community archaeology museum to school children throughout Belize.

4. Developing Community Archaeology Museums "with, by, and for" Descendant Communities

Building on an idea put forth by George Nicholas [36], Sonya Atalay [37] suggests that collaborative archaeology should be done "with, by, and for" descendant communities, in an effort to decolonize the practice of archaeology. She specifically advocates for greater scholarly partnerships with indigenous communities, calling for "research that is community-driven and that produces results relevant for the communities involved" [35] (p. 10). Carol McDavid [38] (p. 172) echoes these sentiments in her collaborative work with African American descendant communities, noting that such projects should "create new knowledge that is relevant to archaeologists and communities alike." These collaborations have involved archaeologists and a range of stakeholders, and include community participation and multivocal projects, which emphasize how archaeology can serve the needs and interests of local communities, with the goal of mutual empowerment [39] (pp. 164–166). The development of a community archaeology museum falls along this "collaborative continuum" [40]. Rather than a singular or uniform practice, this continuum involves "a range of strategies that seek to link the archaeological enterprise with different publics by working together." [ibid] (p. 1).

As Laurajane Smith and Emma Waterton [41] (see Chapter 5) observe, heritage projects like community-based archaeology museums share many of the same concerns and issues as collaborative archaeology and the closely related field of community archaeology, where relationships with the community do not end at the "dig". The collaborative development of a community archaeology museum requires partnerships where power is shared between communities and the researchers in negotiating not only the cultural legacies depicted therein, but also in navigating the local, national, and international politics around heritage management, ownership, and reporting [42–46]. Therefore, an important first step in forming partnerships is to gain trust with the community and other stakeholders, to become familiar with the political landscape, and to devote the time to listening to and talking with a wide range of individuals, who may (or may not) support the project [43,45]. This form of one-on-one engagement with stakeholders fosters the kind of open dialogue in heritage discourse advocated by scholars such as Laurajane Smith [46]. Bonnie Clark and Audrey Horning [47] (p. 344) observe that, when dealing with multiple stakeholders and divergent perspectives, a successful

collaboration requires a genuine awareness and deep understanding of the local contexts, as well as mutual respect. "Beyond those two principles, there is no one-size-fits-all model" [ibid.] (p. 344).

Recent research on community museums in Central America and the Caribbean demonstrates the opportunities and challenges inherent in building public educational spaces that bridge the multiple needs of collaborating partners [42,48]. Community or "grassroots" museums cover topics that are of interest to local communities, and as such fill gaps in heritage education left by larger, mostly government-run museums, located principally in central urban areas [42]. Depictions of "culture" in local versus national museums may vary dramatically, and it is worth noting that national narratives about heritage, ethnicity, and culture are often influenced by larger patterns in national politics [18,44,49]. Nationalist agendas can perpetuate dominant historical narratives and can obscure subaltern histories and voices [41]. In response, scholars promoting multivocal, collaborative, and community-based projects in archaeology have advocated a "relational" approach, defined as "a turn toward decentering and flattening existing hierarchies—as a decolonization of knowledge production" [50] (p. 64). When applied as an approach to decolonization, "relationism" implies collective groups of disenfranchised people in a politically fragmented landscape becoming liberated through a process of democratization and "bridge-building" [50] (p. 65). However, a relational approach does not invariably suspend difference or asymmetry in power relations within these communities. Some scholars worry that relational approaches can risk obscuring inequalities or difference, and inhibit a full consideration of the range of political actors, both in the past and present [51–54].

In the context of contemporary heritage studies and museum practice, some scholars suggest that the academic's "quest" for democratization in knowledge production and participation may be a politically correct move, but it is not necessarily an elixir for dissolving political inequities and may, in fact, mask the continued unequal distribution of power that actually exists in reality for certain groups [55]. Applying collaborative approaches and other participatory design practices in the development of community museum content can provide opportunities for a more inclusive heritage story, but these practices can also be exclusive depending on who is identified as being a part of that "community" [42]. Scholars, like Agbe-Davies [56], encourage practitioners engaged in community work to be more aware of the "non-homogeneity" of communities [45], and to be more self-reflexive, taking into account their own roles as participants in the communities where they work. "It is when we—particularly by virtue of our shared interests, locale, and social interactions—participate in the making of 'communities' that our discipline's work most effectively 'serves' them" [56] (p. 385). Anne Pyburn [57] comes to a similar conclusion in her discussion of "lessons learned" from her own community-based work in Crooked Tree Village. Heritage-oriented archaeology projects that foster local investment are most effective when archaeologists not only align their research interests with those of the community, but help to solve pressing issues that the community (not just the archaeologist) identifies as important [57] (pp. 235–238).

Many collaborative community-based projects involve working closely with "descendant communities." According to McDavid and Brock [39] (p. 161), these communities are a "self-defined group of people in the present that link themselves—socially, politically, and economically—to a group of people in the past." However, descendant communities may not all self-identify or relate to the past in the same way. In the case of Belize, the Creole are considered a "descendant community" who are neither African nor European, but are a mix of these two ancestries "born" in the New World. While Creole identity in Belize is often linked to the history of British logging and African enslavement, how Creole people define themselves as a descendant community in this former British colony has varied over time, and was particularly obfuscated during post-emancipation society of the nineteenth century [58] (p. 26). As Assad Shoman [59] observed, the rejection of African identity and heritage was essential during post-emancipation for the enslaved and their descendants. This was imperative if "they wanted to be included in the world from which they were being excluded, the world where decisions were made and where there was greater access to material goods. The struggle for freedom was one for integration, not separation, although a space for the exercise of some cultural autonomy

was still sought. This tension, then, this quest for inclusion, and at the same time for the freedom to be different, is what most characterizes the evolution of Creole culture" [59] (p. 127).

In Crooked Tree, it became clear to us through conversations with community members that some people connected with their African ancestry (mostly younger people), but others (mostly older adults) were brought up to reject this heritage in favor of their European ancestry. The national social studies curriculum has sought to provide education that addresses the tensions between Belize's mixed African and European identities, while minimizing the "colonial legacies of dividedness" [60] (p. 70). This tension between pan- and multi-ethnic identity narratives was also apparent in early attempts to develop a Belizean national museum at the time of independence [49]. Trying to define a singular pan-Creole identity, both today and in the past, appears as fraught as trying to apply a pan-Maya identity in this region [5,50] (see Chapter 6). These descendant communities are far from homogenous ethnic groups [7] (pp. 229–230 for a Maya example). When Belize was a former colony, Johnson [61] (p. 25) notes: "the British racialized Maya as an ultimate 'other.' Yet, there was also intermingling between Maya and the English and African descended people who lived here. Many Belizean Creole people today can identify a Maya person in their ancestry, and the foods people in rural Belize eat and plant-based medicines they use have traces of Maya influence."

Treating ethnicities like Creole, Maya, Garifuna, Mestizo, and others in strict isolation belies the 'mixed' ethnicity that characterizes the lived identity of many Belizeans [62,63]. This lived experience impacted the overall narrative for the Crooked Tree community archaeology museum, which centers around the history of human–environment interaction through time and presents identities of place, rather than just isolated identities without context. These place-based historical narratives on display in the museum capture the cultural and archaeological stories that have shaped past and present communities living in the lower Belize River Watershed. The exhibition highlights themes such as the use of natural resources, foods, and transportation for those who have inhabited this particular landscape over the years. This approach is similar to other contemporary heritage projects involving archaeologists and descendant communities in the Maya region of Yucatán, Mexico [3,5,64]. Here, scholars describe this approach as *relational*, but define this collectivist perspective in terms of those who dwell in the same landscape and share ways of being and doing in their community [5] ([65], p. 362).

In describing the Afro-Caribbean Creole culture in Belize, Johnson [61] illustrates the history of rural Creole identity as entangled with the landscape and waterways of the lower Belize River Watershed. She describes 400 years of identity-making that is not static, but always in a process of becoming through ongoing human and "more than human" relations in-the-world [61]. While Johnson's observations are based primarily on ethnographic and ethnohistoric data, the power of archaeology in articulating the history of the African diaspora, and the role of descendant communities in identity-making and knowledge production, has also been made clear, particularly among scholars and stakeholders of African American archaeology in the U.S. [43], ([66], p. 590). In Belize, the power of archaeology and oral history for the Creole people is starting to emerge and be featured in museum work, albeit on a much more limited scale than in the U.S. In 2016, for instance, NICH and its national Museum of Belize (MOB) developed the exhibition "enSlaved: The Rise and Fall of Slavery in Belize", which focuses on the material culture of the British colonial period, the Afro-Caribbean diaspora and history of enslavement, and the African roots of Creole culture. In addition, NICH's House of Culture in Belize City is part of the so-called Downtown Rejuvenation Project designed to feature the Creole and British colonial heritage of Belize City. The ongoing project involves the renovation of the Governor's House and other historical places in downtown Belize City, which will be turned into public museum space. The "enSlaved" exhibition may be permanently housed in one of the renovated buildings, and there are plans to develop an expanded display featuring Belize's colonial history.

5. Development of a Creole Community Archaeology Museum in Crooked Tree

In the case of the Crooked Tree Museum and Cultural Heritage Center, the permanent exhibition presents the archaeological history of the Belize River Watershed—from Paleoindian times onward—but the primary focus of the exhibition is a rural perspective of the Creole and their European and Afro-Caribbean diasporic history. Below, we discuss how cultural sustainability, collaborative partnerships, and the role of education have shaped this heritage-oriented project. This collaborative effort involved a range of stakeholders—from local members of the Crooked Tree community, such as builders and craftspeople—to national entities, such as various governmental bodies of NICH, including the MOB and the Institute of Archaeology (IA). Working with local teachers, we produced exhibit content that augments the national social studies curriculum. By designing a learning space geared for school-age children, the archaeology museum in Crooked Tree offers object-based learning and provides a powerful means of promoting cultural sustainability, strengthening cultural vitality, and presenting a more inclusive consideration of Belizean history and cultural heritage practices and perspectives.

5.1. Collaboration

With a public-facing project like a community museum, it is imperative for a scholar to seek the public's input and collaboration in the project from the outset, not after the fact. However, because all communities are composed of variable members, we should not assume that all stakeholders would want to participate in the same way throughout the course of a heritage project [67]. Given the variability in the community of Crooked Tree, members brought different interests, expertise, and applied skills to various components of this heritage-oriented project. As partners throughout this process, we met and communicated regularly with our core collaborators, which included the Crooked Tree Village Council, to seek their input and direction on the proposed museum project, and with teachers, who offered their feedback on the primary themes of the exhibition. We also worked one-on-one with locals who are trained excavators, and who have spent many field seasons working on the BREA project conducting archaeological investigations in and around Crooked Tree (see further below). For us to connect with the wider community, this required a diverse means of engaging with the public, which ranged from open archaeology days to community meetings and public forums to interviews (formal and informal conversations) with local participants and collaborators at different stages of the project.

Our starting point was asking community members what it was they wanted to learn more about in terms of their own history, and how it was that we could help them to achieve this. Engaging in this way allowed for key collaborators to be established, namely people who were engaged and excited to participate in the project. Advocates of community museums suggest that these spaces "should exhibit those materials that are deemed the most important archaeological components for community groups to engage with in order to understand their own history" [68] (p. 209). The ancient Maya history is featured in the Crooked Tree exhibition, but the most important archaeological components for the community was their own Creole history, which occupies the majority of the 1500 sq. ft museum space. For us to develop this museum content, it was imperative that we sought the input and collaboration of the local community as our starting point, because they served as both informants and active participants in the collection, recording, and presentation of their own history. When asked where the oldest historical settlement in the village was located, multiple individuals pointed us to the grounds of the Baptist Church located in the center of Crooked Tree village. With the permission from the church and local officials, the BREA team and local excavators from Crooked Tree village spent a field season in January 2018, performing a series of shovel test pits and test excavations throughout the churchyard. Our investigations yielded a rich assemblage of historical artifacts from the nineteenth century [28]. The oral histories that directed BREA's historical excavations in Crooked Tree were instrumental in helping us to better understand this rich Creole historical settlement area, which is featured in the Crooked Tree Museum and Cultural Heritage Center (Figure 3). The artifacts recovered from our excavations are displayed in the museum, alongside numerous historical objects that were

donated by local community members, which also serve to inform our historical reconstructions (see further below).

Figure 3. (**a**) BREA historical excavations at the Baptist Church (formerly a church and school) in Crooked Tree; (**b**,**c**) BREA staff discussing the historical excavations with an elder who shared their experience attending school here in the early 20th century; (**d**). historical artifacts donated by community members and from BREA excavations on display in the Crooked Tree Museum and Cultural Heritage Center. Note the metal cross from the excavations curated and on display (photos courtesy of the BREA project).

The community was also invested and involved in other steps of the project, including the architectural redesign of the museum building that was done by a local architect and the building renovation, which was carried out by local contractors living in the village (Figure 4). Hiring local residents to design and overhaul the museum building offered economic benefits to professionals living in the community. To avoid any intra-community conflict, we worked with the village council and made a joint decision to hire a trusted and respected professional architect, who lives in the community and owns his own business in Belize City, to oversee the bidding and construction project itself. Together, we reviewed his architectural plans at a public community meeting and announced a contract bidding process for the project. Having this individual oversee the renovation was one of the best decisions that we made, and having local builders (although not without its challenges)

had many unexpected benefits. They had more personal investment and pride in their renovation of the community museum; they not only worked around the clock to have the museum ready for the opening, but members of the construction crew donated historical pieces to the collection, offered their input in the content of the exhibition, and were thrilled to share the museum with their friends and family at the opening.

Figure 4. The renovation of the museum space in Crooked Tree during 2018: (**a**) Eleanor Harrison-Buck and Sara Clarke-Vivier in the space during January 2018 prior to renovation; (**b**) Eleanor Harrison-Buck with the village chairman and architect from Crooked Tree discussing the building design; (**c**) before and after shots of the building exterior; (**d**) Local contractors working on the building renovations.

These various kinds of collaborations and partnerships require trusting relationships [69]. In places like Belize, where the colonial roots of archaeology are not long dead, and the majority of archaeologists are foreigners of Euro-American descent, there is deep seated mistrust that is difficult to overcome,

because of a long line of archaeologists, not all of whom developed trusting relationships with local communities. Rumors regularly circulate about past archaeological expeditions that involved tomb excavations where workmen were sent away and artifacts were taken out of the country to the U.S., Canada, or some other distant location, never to be returned again. Whether these rumors are true or not, archaeology's connection to a long line of colonial oppression is undeniable and, as a result, these relationships have been damaged and the mistrust is not easily overcome. We found that transparency throughout the process was critical and that public community meetings could facilitate more open dialogue where some rumors could be addressed like: "Are you or are you *not* CIA?" The community member who asked this question at our very first community meeting ultimately became our lead contractor on the project! We laughed about his question a year later, but the deep seated mistrust that exists is real and there is no quick and simple way to overcome it. As he noted at the end of that first meeting: "we just need to get to know you." To develop mutually trusting relationships takes time, a lot of listening, and a great deal of face-to-face communication, but these partnerships are crucial for a community-based collaborative project to be successful.

5.2. Sustainability

The term sustainability is used here in several different ways. First, we employ the term in the sense of cultural sustainability, defined as preserving cultural heritage for present and future generations [70]. The concept of sustainability is also employed here from the perspective of implementing sustainable strategies in the development and design of an exhibition space. The renovation and reuse of an abandoned building could also be construed as an act of sustainable development, reviving a central area of the community and potentially "[enhancing] environmental, social, cultural and economic sustainability" [71] (p. 74). The principles of cultural sustainability share many of the same values as collaborative heritage-oriented archaeology, including moral and ethical considerations, the concept of stewardship, social equity, and community collaboration, paying particular attention to descendant communities whose cultural traditions are being threatened by an increasingly homogenized and globalized world [2].

In the context of a community archaeology museum, cultural sustainability centers around "the need for the protection of cultural heritage and the strengthening of cultural vitality" [72] (p. 191). This definition of cultural sustainability captures the tension manifest in cultural heritage. While, on the one hand, it appears to be a static and finite resource in need of preservation and protection, on the other hand, cultural heritage is a vibrant resource, constantly being contextualized and reimagined among present-day communities. The display of artifacts and panels in the Crooked Tree Museum and Cultural Heritage Center help to preserve and protect cultural heritage, and, at the same time, provide cues for remembering and commemorating, which are "fundamental to many people's sense of 'heritage'" [46] (pp. 213–216) and can serve to strengthen a community's sense of cultural vitality. In our many conversations with community members, elders in the village consistently tell us that the kids who grow up in Crooked Tree today have no idea what life used to be like and how hard things were 40 or 50 years ago, reinforcing that Creole cultural sustainability is a pressing concern for them and that there is a need to remember and commemorate the past to not only preserve and protect the cultural heritage but to strengthen Creole cultural vitality in the community.

The loss of first-hand knowledge about former Creole traditions and the generational disconnect about heritage practices guided the development of the community archaeology museum in Crooked Tree. We planned the museum so that a large section was devoted to the rich colonial history of the lower Belize River Watershed and featured Creole traditions that have not been practiced regularly in the village for the last 40 or 50 years or more. Villagers shared with us their knowledge of traditional Creole practices and ways of life from "those days." For instance, one elder female in the village shared with us how they used to process the arrowroot plant (*Maranta arundinacea*) into a starch, which was used in ironing clothing up until as late as the mid-twentieth century. The starch processing is featured in one of the exhibits in the Crooked Tree Museum and Cultural Heritage Center, along with

several "old fashion" irons used for this purpose. Another example entails fishing and bird hunting practices regularly used 40 or 50 years ago, which were recorded by a senior male member of the community, who also constructed replicas for the museum of a traditional fish pot and *calaban* trap used for catching birds. The material culture and information provided through oral histories from community members were instrumental in reconstructing these traditional Creole practices, which are featured in the museum displays (Figure 5).

Figure 5. Example of a display in the Crooked Tree Museum and Cultural Heritage Center showing the traditional processing of arrowroot (*M. arundinacea*) into starch used for ironing clothing.

In addition to stressing cultural sustainability in the development of museum content, we were challenged to design an exhibition that was also structurally sustainable. The first thing that you learn when you work in Belize is that Murphy's Law *always* applies (if it can break, it will). Therefore, we aimed to develop an engaging, but low-tech exhibition, which is accessible to a diverse audience. While "high tech" designs are compelling alternatives for most contemporary museums, simple and relatively "low maintenance" exhibitions are preferred in developing countries like Belize. As one might imagine, without climate control, sustaining technology in this wet tropical environment is almost impossible. We also had an educational rationale for limiting technology use in the museum—the unfamiliarity of visitors with how to use technology, specifically as a tool for learning and teaching. Even the most prominent public schools in urban areas of Belize that have access to computers and the internet generally do not integrate technology into the delivery of the daily curriculum.

The challenge we faced was developing engaging and interactive exhibits with no digital technology—low tech, but engaging exhibits that incorporate material culture (artifacts) as well as

replicas with which visitors (namely school kids) could interact. Some examples include a dugout dory produced by a local Creole craftsman from Crooked Tree (Figure 6). Children are able to sit in the canoe and hold a paddle and imagine themselves paddling the three days it took (one-way) to reach Belize City.

Figure 6. A local craftsman from Crooked Tree builds a dugout canoe from a single tree trunk (**above**). A child sits in the dugout dory on display in the Crooked Tree Museum and Cultural Heritage Center and pretends to paddle down the Belize River (**below**).

Another interactive display is a heavy mortar (*mata*) and pestle for pounding rice and other materials. The reproduction of the *mata* was made by an older member of the Crooked Tree community. Kids are able to pick up the heavy pounding stick and feel the weight of the action, gaining a better appreciation for the hard work in the past required of their ancestors. In several instances, we also have 3-D models on display, which was one means of safely displaying ancient Maya artifacts, such as jades and pottery, without the concern for heightened security. In one instance, we mounted a 3-D model of a polychrome painted ceramic pot on a rotating "lazy Susan" that allows visitors to spin the piece and look at all sides (Figure 7). Our goal is for visitors to not only look at and read about the local history, but where possible have them actively engage with it. This kind of objects-based, experiential education has been shown to have the most lasting impact and greatest learning gains (as described further below).

Figure 7. A replica of an ancient Maya vase on display in the Crooked Tree Museum and Cultural Heritage Center (photo courtesy of Yoshinori Wakabayashi).

While we kept the exhibits low tech, we made the museum more widely accessible through the use of technology by creating a virtual tour available online (Figure 8). Dr. Clarke-Vivier and her students and colleagues used widely available and low-cost tools to take high-quality digital images of the museum objects, as well as 360-degree photographs of the museum space. These efforts yielded a museum virtual tour, making the story of human–environment interaction in the lower Belize River Watershed accessible to individuals who may not otherwise be able to visit the area, as well as to educators who may use a virtual experience to prepare students for, or extend onto, an in-person visit to the museum. The object photographs and associated meta-data tagging also make it possible to build a searchable online database, accessible to other researchers from around the world with an interest in Maya and Creole history and culture of the lower Belize River Watershed. The use of technology for a virtual tour enhances the sustainability of the mission of the Crooked Tree Museum and Cultural Heritage Center by granting increased access and flexible use of the exhibit content to audiences, beyond those who are likely to be able to enter the museum itself, and by building these digital technologies upon a robust, high-quality collection of digitized images, which could exist in perpetuity in the virtual world. The utility of these virtual resources has only increased as museums pivot toward virtual tours and other online offerings, to provide access to collection content while their doors remain closed during the COVID-19 pandemic [73].

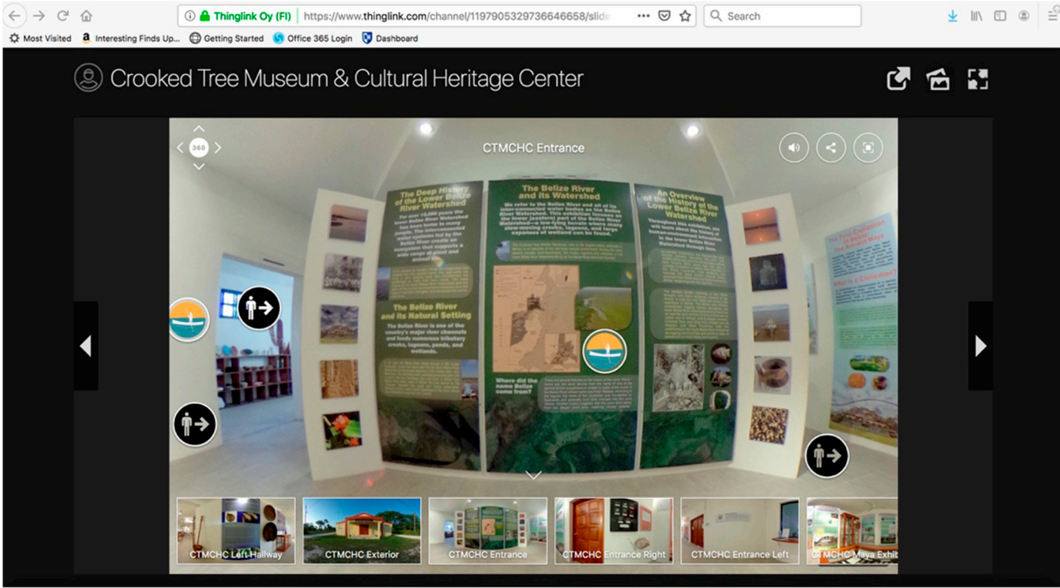

Figure 8. Virtual Tour of the Crooked Tree Museum and Cultural Heritage Center (https://www.thinglink.com/video/1235694926616854534).

5.3. *Education*

One of our efforts to promote the long-term sustainability of the museum has involved an ongoing collaboration with teachers and other professional educators in Belize. Early in the planning stages for the museum, we established the goal of developing engaging exhibits linked to educational content specifically geared for local teachers and school-age children. Although we anticipated that tourists would visit the museum, Belizean school children and teachers are the primary target audience (Figure 9). In developing content for the exhibitions, we worked with the local teachers at the Crooked Tree Government School through interviews, observation, curriculum study, focus groups, and surveys, in order to leverage their expertise in both the national curriculum and pedagogical content knowledge for history and social studies. We also worked with museum educators in local and national Houses of Culture, to learn how other informal learning environments were addressing school-based learning, field trips, national curriculum connections, and teacher professional development.

First, our research with teachers explored relevant themes in their existing national social studies curriculum for Standard I-V (2nd through 6th grade). Not surprisingly, under British rule, the education in Belize did not highlight the history of African slavery. Even today, while West African history and culture are introduced, Creole history and culture make up only small components of the social studies curriculum. We found that teachers were eager to see this content featured in the museum, so that they could address these understudied issues head on with their students. In response to teacher desires, we designed exhibit displays that augment the existing curriculum where children ages 8–12 are introduced to topics that directly relate to Creole history, including the history of slavery, British colonialism, and the logging industries, and the rich African heritage found in contemporary Creole culture and language (Figure 10).

Figure 9. A local school group visiting the Museum of Crooked Tree Museum and Cultural Heritage Center.

Second, we explored teaching methods and pedagogical content knowledge amongst our collaborators. Pedagogical content knowledge is the way that skilled teachers integrate subject-area expertise and teaching strategies to improve instructional efficacy and student outcomes in different content areas [74]. One of the challenges for us was learning how Belizean teachers approach teaching and how it differs from practices in the US. The educators with whom we worked were experts at the content of the national curriculum, but were less familiar with developing the kind of hands-on, object-based or applied learning experiences found in museum settings.

This is due in part to the fact that there are only a select few museums in Belize (there is only one national museum in Belize City, the MOB, which opened in 2002). Additionally, expectations of teachers are to provide clearly documented lesson plans focused on knowledge acquisition geared toward student preparation for national exams. These challenges are not just experienced by educators in Crooked Tree alone, but reflect what Brown-Lopez [75] (p. 5) characterizes as the "19th century paradigm" that underwrites the entire Belizean educational system. This paradigm, rooted in British colonialism, privileges rote memorization of facts over the acquisition of flexible and functional skills geared towards individual and civic development [75]. Despite these constraints, the educators with whom we collaborated understood the value of the kind of experiential learning that characterizes museum-based education. They were particularly enthusiastic to learn how to integrate hands-on and object-based instruction into their existing lessons and field trips.

Figure 10. A school group engaging with the Creole material culture (traditional mahogany bowls used for kneading bread) on display in the Crooked Tree Museum and Cultural Heritage Center.

Our work with educators made it clear to us that the Crooked Tree Museum and Cultural Heritage Center could serve as a valuable space for teacher training and student learning in museum-based education. To that end, we have been working to develop educational materials in collaboration with local teachers and students at our universities that correspond with the museum's curricular themes and map on to the existing Belizean national curriculum standards. To tailor museum pedagogy to meet the teaching needs for the Belizean social studies curriculum, we organized our first teacher workshop and educational training during the summer of 2019 (Figure 11). The workshop, which we were able

to get accredited with the National Ministry of Education, was a collaborative effort with educators from NICH's Banquitas House of Culture. Our aim with this and future workshops is to encourage local teachers to integrate the exhibition and curriculum design into their classroom curricula, and to help teachers to think about new ways to teach students that encourage student-centered teaching and hands-on active learning. Our plan is to continue to offer future workshops that will engage local teachers in Crooked Tree and other nearby Creole villages, as well as teachers in training at the two main universities in Belize (Galen and the University of Belize).

(**a**)

(**b**)

(**c**)

Figure 11. Teacher's Workshop in summer 2019, including (**a**) group shot of all participants; (**b**) Cindey Rivero (left), the Director of Banquitas House of Culture, and (**c**) Sara Clarke-Vivier (right), Director of Museum Education for the Crooked Tree Museum and Cultural Heritage Center.

6. Discussion

Ah waahn noa hoo seh Kriol noh ga no kolcha!....

[*I want to know who says Creoles have no culture!....*]

Ah waahn noa hoo seh Kriol noh ga no hischri!....

[*I want to know who says Creoles have no history!....*]

Leela Vernon [76]

The lyrics to this song from the album *Kriol Kolcha* by Leela Vernon, a Belizean singer and Creole cultural icon, challenge a common belief that Creole people lack any sort of culture or history worth recording or learning about. The school children of the Crooked Tree Government School chose this song for a dance they performed for the Opening Ceremony of the Crooked Tree Museum and Cultural Heritage Center in June 2018. Leela Vernon's song, like the museum in Crooked Tree, celebrates the complexity of Creole identity and its rich history born in the lower Belize River Watershed, with its blended roots stemming from Europe, West Africa, and the wider Caribbean.

The museum in Crooked Tree is an ongoing collaborative effort aimed at documenting this diasporic history, and addressing Creole concerns regarding cultural loss, as numerous villages along the lower Belize River Watershed have been abandoned, and their own community has undergone increasingly rapid changes over the last several decades. In our many conversations with members of the Crooked Tree community, people regularly noted to us that modern developments, such as better roads, electricity, and introductions like air conditioning and cell phones have brought convenience and made life easier in the village. However, they also lamented that these modern introductions fundamentally changed daily life and profoundly impacted traditional culture and heritage practices. As Paul Shackel [2] (p. 10) notes, heritage-oriented archaeology aims to address concerns of cultural loss "by sustaining local identity and a sense of place, especially for those communities and locales that are threatened by transformations in the global economy." For Crooked Tree, the community museum presents an historical narrative of identities entangled with the environment of the lower Belize River Watershed. Creating space for heritage can "have a value to well-being and quality of life [for] communities, can help mitigate the impacts of cultural globalization and can become an incentive for sustainable development" [71] (p. 74).

As one of the oldest Creole communities in the country, Crooked Tree holds a valuable repository of archaeology and oral history, and its villagers are interested in seeing this rich cultural heritage documented and shared with the public, namely school-age children, many of whom have lost touch with their history and cultural heritage practices. The Crooked Tree Museum and Cultural Heritage Center protects and preserves a diversity of historical resources and cultural practices and in this way works toward the goal of a 'sustainable historic environment' [70]. The displays of artifacts that fill the Crooked Tree Museum promote and preserve the rich cultural assets of the community's heritage, but it is the remembering and commemorating triggered by the artifacts that serve to strengthen the community's cultural vitality. By combining archaeology with museum education geared for school-age children, the Crooked Tree Museum provides a powerful means of promoting cultural sustainability that effectively strengthens Creole cultural vitality, offering a more inclusive consideration of Belizean history and cultural heritage practices and perspectives.

7. Concluding Thoughts and Future Directions

In heritage-oriented archaeology projects, collaboration cannot happen after the fact, and it is never peripheral to the work; it is the work. Doing it well requires developing diverse means of engaging with multiple stakeholders throughout the process, and revisiting and maintaining those relationships as the project unfolds. Scholars interested in doing heritage-oriented archaeology work are most effective when they are doing work and helping to solve a problem that matters to the community. Engaging in this way allows for lasting collaborations to be established, namely with people who are enthusiastic about the project and invested in its long-term success. In the case of

the Crooked Tree museum, members of the local community were involved each and every step of the way and participated in different capacities—from sharing oral histories and assisting us in excavations, to providing their skills in architectural design and renovation, to helping make pieces for the museum and donating historical objects for the museum collection. There is no doubt that the long-term success of the Crooked Tree Museum and Cultural Heritage Center is contingent on this continued collaboration, support, and active participation both now and in the future.

A key collaboration we formed was with local teachers in the public school in Crooked Tree, as well as with branches of the National Institute of Culture and History (NICH). The goals of our educational work were to develop museum content that enriched and extended the Belizean social studies curriculum, and to support teachers as they learned new pedagogical strategies for integrating object-centered and museum-based learning in their instructional plans. It was clear from the beginning that building a museum in Crooked Tree that was geared for public schools across Belize and managed by the community's village council would provide a more sustainable model than building a museum with high recurring overhead costs that was dependent on tourist dollars to survive. The precarious relationship between tourism income and museum sustainability has been brought into sharp relief by the global COVID-19 pandemic. Museums around the world are facing the challenging reality that, without tourist income, they will be forced to close their doors [77].

Among the biggest challenges moving forward is how to maintain a thriving community-oriented learning space over the long-term. This was the impetus for the teacher's workshop we organized in collaboration with the educators from NICH's Banquitas House of Culture in June 2019. Together, we developed a workshop that introduced local educators to the resources of the museum, and familiarized them with the value of out-of-school experiential learning in a museum setting. The aim of this and future workshops is to help local teachers organize fieldtrips with a lesson plan that connects the national social studies curriculum for their standard and discipline to the collections in the Crooked Tree Museum and Cultural Heritage Center. Our ultimate measure of success is when museum education and Belize's rich history reaches not just thousands of international tourists, but the next generation of Belizeans.

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Article

Community Engagement around the Maya Archaeological Site of Ceibal, Guatemala

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Abstract: The Ceibal-Petexbatún Archaeological Project has built long-standing relationships in the area around Ceibal, Guatemala, particularly in the Q'eqchi' Maya village of Las Pozas. Both Q'eqchi' and *ladino* (non-indigenous) people in the region face serious, systemic problems, including a loss of access to land and an absence of economic opportunities. The ancient Maya sites in the area have been damaged by deforestation and looting. Project archaeologists seek to improve economic conditions in local communities while encouraging the preservation of cultural heritage. Here, we describe past microfinance and classroom outreach projects conducted in Las Pozas and discuss future initiatives that could make archaeological heritage more beneficial to multiple communities.

Keywords: Maya; public outreach; archaeological heritage; Guatemala; microfinance

1. Introduction

Professional archaeologists have ethical obligations to preserve the archaeological record, to consult with communities affected by archaeological research (often called stakeholders), and to engage the public through outreach [1–4]. At times, these principles come into conflict. Local communities do not always benefit from archaeological preservation and outreach. In consideration of the goals of this special issue, we offer a frank reflection on attempts to make our international archaeological project more meaningful to the people living around our research site, Ceibal. This work remains in progress, and although we provide several ideas, we do not have a clear solution at this time.

The ancient Maya center of Ceibal (formerly Seibal) is located on the Pasión River in southwestern Petén, Guatemala, near the modern town of Sayaxché (Figure 1). Ceibal was occupied for approximately two millennia and is known for its Early Middle Preclassic public plaza (c. 950 BC) and Terminal Classic resurgence (c. AD 810-950) [5–8]. Other Maya sites in the Petexbatún-Pasión region (named for the Petexbatún Lake and Pasión River) include the Classic Maya twin capitals of Aguateca and Dos Pilas, as well as smaller centers like Arroyo de Piedra, Tamarindito, and Punta de Chimino.

After conducting multiple seasons of fieldwork at Aguateca, Takeshi Inomata and Daniela Triadan began the Ceibal-Petexbatún Archaeological Project at Ceibal in 2005 [9]. Since the 1990s, Inomata, Triadan, and colleagues have seasonally employed many local people, particularly a group of skilled excavators from the Q'eqchi' Maya village of Las Pozas (Figure 1). The size of the team has varied over the years, but the project at Ceibal normally employed around 50 local people (in addition to several Guatemalan archaeologists and students) for a field season of two to three months. The authors were trained by Inomata and Triadan and eventually supervised investigations and operations at Ceibal. MacLellan and Burham completed their dissertation research at Ceibal and helped manage the larger

project during the 2013–2017 seasons. Méndez Bauer worked as an archaeologist while also completing a *licenciatura* degree in Sociology based on a microsavings project in Las Pozas, described below.

The Ceibal-Petexbatún Archaeological Project was not conceived or carried out as a community-based, collaborative archaeology project [10–12]. However, the project's directors and members have made efforts to form mutually beneficial relationships with local communities, especially Las Pozas, while promoting heritage preservation. This is not an easy task, given the many serious problems facing the people of the region. Future research at Ceibal should entail a more community-oriented approach, in order to more effectively and strategically make a positive impact in the region.

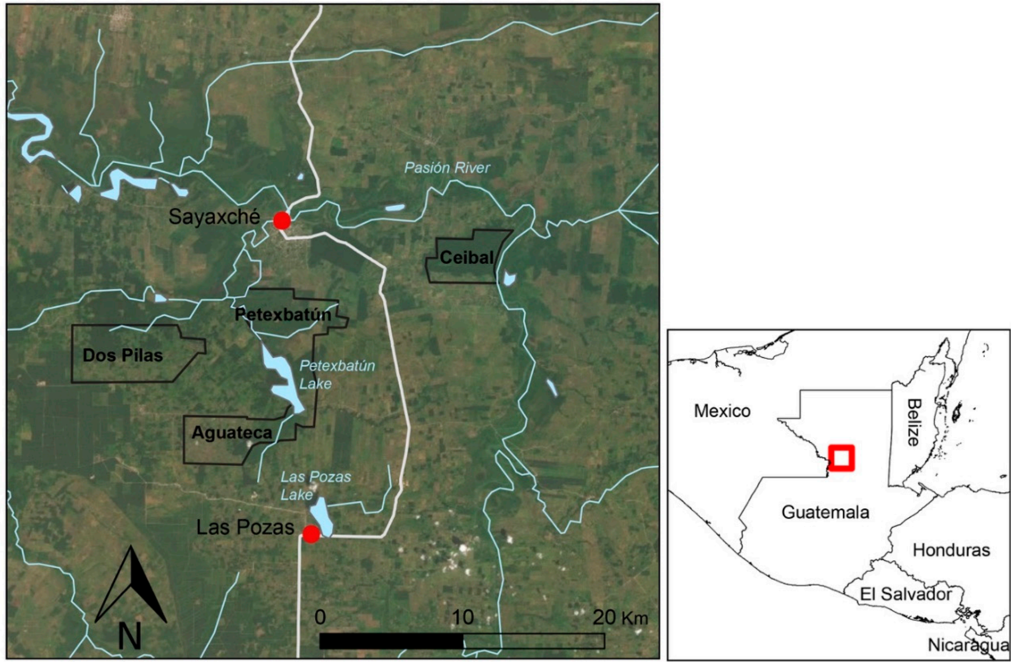

Figure 1. Map of the Petexbatún-Pasión region, with the locations of the Ceibal, Aguateca, and Dos Pilas archaeological parks, the Petexbatún ecological park, and the towns of Sayaxché and Las Pozas. Deforestation can be seen within park boundaries.

2. The Petexbatún-Pasión Region and Its Inhabitants

The Q'eqchi' (sometimes written Kekchi) people, speakers of the Q'eqchi' Mayan language, are the largest indigenous group in Petén and southern Belize [13–16]. The Q'eqchi' migrated into these lowlands from Alta Verapaz in multiple waves, beginning in the late 1800s. The migrants left the highlands in search of land to farm, but also to escape first exploitative coffee plantations, then forced labor conscription, and finally the violence of the 1960–1996 Guatemalan civil war [15] (pp. 58–70). Las Pozas and many other villages around Sayaxché were founded in the context of the civil war. Since the 1960s, the Q'eqchi' population has more than tripled, with much of the growth occurring in the lowlands [15] (pp. 79, 108–113). Based on survey data from 1998, Liza Grandia reports a fertility rate of 8.9 children for rural Q'eqchi' women [15] (p. 79). According to more recent census data, the Q'eqchi' population in Guatemala grew from 852,012 in 2002 to 1,370,007 in 2018 [17,18]. Meanwhile, the overall population of Petén increased from 366,735 in 2002 to 545,600 in 2018. In 2018, 147,530 inhabitants of Petén (27%) identified as Q'eqchi'. For the municipality of Sayaxché, the population grew from 55,578 in 2002 to 93,414 in 2018. In 2018, 54,313 residents (58%) identified as Q'eqchi'.

The area around Sayaxché differs greatly from the Maya Biosphere Reserve of northern Petén, where Tikal and other well-known Maya archaeological sites are located. Although Ceibal is protected as a small national park, much of the Petexbatún-Pasión region has been deforested since the 1996 peace accord (Figure 1). The majority of the land has been bought up by palm oil producers and cattle ranchers, leaving little room for subsistence farming. Throughout Central America, deforestation for cattle

ranching and other extractive industries has been tied to narcotics trafficking [19,20]. McSweeney et al., correlate an intensification of the drug trade with an annual forest loss rate of 10% in the protected parks around Sayaxché [21] (p. 489).

Many of the region's cattle ranchers and *palmeras* purchased their land from Q'eqchi' semi-subsistence farmers for relatively small sums of cash, displacing people who assumed they would always be able to migrate further into the frontier but now find themselves "enclosed" on all sides by private property [15] (pp. 151–157, 164–67). Sometimes companies compelled rural farmers to sell their land by systematically cutting off access to roads and water sources [22]. The national parks (Figure 1) established for ecological and archaeological preservation further limit access to land [23]. The lack of available farmland is a problem for the large and growing population of Q'eqchi' people in communities like Las Pozas. In the absence of other employment options, many are forced to work for low wages for the palm oil companies. There are not enough jobs, and families that once sustained themselves through farming are facing increased food insecurity. In addition to exploitative labor practices, palm oil has brought environmental damage to the Sayaxché area, including a widely reported 2015 "ecocide" event in which illegal pesticides were dumped into the Pasión River [24].

The lack of economic opportunity in Petén and insufficient assistance from the Guatemalan state cause both Q'eqchi' people and *ladinos* (Spanish-speaking *mestizo* people who do not identify as indigenous) to rely on undocumented, dangerous migrations to the United Sates. Ideally, a person will work in the U.S. for a few years, sending back money to their loved ones, and then return to the community. In practice, the outcome may not be so happy. For example, in 2015, two young relatives of *ladino* Ceibal-Petexbatún Project employees were kidnapped and injured by a cartel en route to the United States. The family of these migrants was forced to come up with $7000 USD to secure their release. It could have been worse. Many people from Central America die trying to cross the U.S. border every year [25–28]. Despite the known risks of violence, extortion, and even death, Petén residents with families to support still choose to migrate to the United States.

Due to the absence of available farmland, increasing populations, and few employment opportunities, many of the Petexbatún-Pasión archaeological sites have been "invaded" in order to plant illicit *milpas*, or fields of maize (corn) and beans, destroying primary rainforest and disturbing archaeological contexts. Although traditional swidden (shifting, or "slash-and-burn") agriculture, in which small fields are cleared and then left fallow so that the soil regenerates, may be ecologically sustainable [29–32], there is not enough space in the remaining forests around Sayaxché to allow for this practice, given the population size [15] (p. 109). Instead, large, contiguous areas of the Aguateca and Dos Pilas parks have been completely deforested (Figure 1). During the Ceibal-Petexbatún Project's 2015 field season, Q'eqchi' people from a village near Las Pozas entered the Ceibal National Park and cleared 28 hectares of forest. They argued that as descendants of the ancient Maya, they had a right to this land. In an ensuing confrontation, some used machetes to attack police officers. Several farmers were arrested. In the following days, we heard rumors from our friends in Las Pozas that people from the invaders' village were planning to come to Ceibal, burn the modern structures, and kidnap the site guards in order to exchange them for the arrested men. These events did not come to pass, although some of the villagers did remove an ancient Maya stone sculpture from the site.

Looting is another destructive activity observed at the archaeological sites of the Petexbatún-Pasión region. The Instituto de Antropología e Historia (IDAEH), part of Guatemala's Ministry of Culture and Sports, has effectively guarded the epicenter of Ceibal. However, other parts of Ceibal and satellite settlements on private lands have been heavily looted. The authors do not know the age of the observed looters' pits around Ceibal and are unsure to what extent looting continues today. Thanks in part to restrictions on the import of Guatemalan antiquities, looting in Petén has decreased over the past few decades [33,34]. In contrast with other countries around the world, in Guatemala, drug traffickers do not participate intensively in the trade of looted artifacts, as the antiquities trade is no longer as profitable as other forms of organized crime in the region [35,36]. Nevertheless, local people may continue to dig into ancient Maya structures on a small, non-professional scale, to supplement their low

incomes [34] (p. 428). As archaeologists, we are concerned with the loss of scientific knowledge caused by looting and the commercialization of antiquities. However, like many researchers, we recognize that local people need to make a living, and our preservation efforts should not stand in the way [37–39]. By engaging with local communities, we hope to find ways to make the preservation of the region's cultural and natural resources more economically beneficial than looting and large-scale deforestation.

3. Community Engagement by the Archaeological Project

Throughout the history of the Ceibal-Petexbatún Archaeological Project, the researchers have endeavored to form mutually beneficial relationships with local communities. Early on, Inomata and Triadan worked with their employees and friends in Las Pozas to plan an ecotourism project to provide income and protect the area's archaeological sites [40]. Méndez Bauer oversaw a microsavings project, described below, in collaboration with members of the Bureau of Applied Research in Anthropology (BARA) at the University of Arizona [41]. These projects ultimately did not result in long-term benefits for Las Pozas. A few cultural anthropology graduate students were also recruited to conduct ethnographic research in Las Pozas, but they left due to concerns over safety in Petén as a whole. Following the 2015 field season, MacLellan undertook an outreach project in Las Pozas schools, described below [42]. Burham and MacLellan plan to continue research at and around Ceibal and hope to strengthen ties and establish new collaborations in Las Pozas and nearby communities.

3.1. Microsavings Project

Microsavings groups are an approach to microfinance fundamentally focused on savings [43–45]. These programs address the needs of those who are not served by institutional lenders and traditional rotating credit associations – especially women, who are one of the groups most discriminated against in traditional finance. In a typical microsavings project, 10-20 women voluntarily form a group that democratically elects officers, sets bylaws, meets weekly, and collects savings from each member. At meetings, each woman contributes a sum of money (previously established by the members) to a communal pool. When a woman needs a loan, she requests the desired amount from the group. Once all requests are heard, the group collectively discusses whether enough funds are available and how to prioritize requests if the funds are insufficient. Loans must be repaid with interest at a rate set by the members, which is generally around 10%. The interest collected continually increases the amount of money available to the women, giving each member greater access to money than she could feasibly save on her own. At a predetermined date, the group divides the entire fund equally among members and decides whether, and under what conditions, to start a new cycle. Groups sometimes opt to increase their weekly contributions, accept new members, or change leadership positions at that time.

From 2010 to 2012, Méndez Bauer, under the guidance of Tara Deubel and Mamadou Baro of BARA, oversaw a microsavings project in Las Pozas. This was one of the first microsavings initiatives in Guatemala, and project members and Las Pozas residents participated in a training workshop conducted by Oxfam. The effort was funded by the Ceibal-Petexbatún Archaeological Project. In March 2010, Méndez Bauer and colleagues conducted community meetings in Las Pozas, a focus group, and a visit to existing microsavings groups in Salamá, Baja Verapaz. Two microsavings groups were formed. One group was made up of nine women – mainly the wives of archaeological project employees. The second group was made up of men – excavators for the archaeological project. Méndez Bauer was assigned to follow the work of both groups during the archaeological field seasons (generally falling within January–April). Outside of the field seasons, the groups were supposed to function with only remote assistance.

Méndez Bauer found that many participants needed more institutional presence to keep working on the savings groups. In 2011, when the archaeological field season resumed, only the group of women had continued to function. This group operated successfully for almost three years. The average loan amount within the group for the duration of the program was $17 USD.

The women started by saving money that their husbands earned, but then raised their own funds. They started a new business making silk-screened T-shirts to sell to tourists at Ceibal. They eventually sold almost 75 T-shirts to increase their savings pool. Wanting more, the women started a store open only on weekends to keep increasing the savings.

For the rest of 2011, Méndez Bauer visited Las Pozas and worked with the microsavings group for 15 days each month. During this period, the group worked through personal differences but in harmony. At the end of the year, the group had saved more than Q 5000 ($630 USD). However, with this money available, problems started. Rejection of loan requests was the principal cause of enmity. In 2012, during the next archaeological field season, Méndez Bauer worked with the microsavings group weekly. The group functioned, but with many infringements of the bylaws, including failure to repay debts. In the final months of 2012, the microsavings group dissolved.

Based on conversations with community members, Méndez Bauer found that the microsavings project did not fulfill the participants' expectations of making a large amount of money quickly. The women of the microsavings group initially hoped to save Q 10,000, and they were disappointed to accumulate only half that amount. The women compared the microsavings program unfavorably with Bolsas Solidarias and other government assistance programs, through which they received food rations and immediate financial support to keep their children in school. Similarly, in regard to the eco-tourism effort supported by Inomata and Triadan, participants told Méndez Bauer they imagined they would quickly have a large hotel with many guests and became disillusioned when they invested many resources without achieving that goal. In the future, it will be important to set realistic goals for outreach and development projects, to prevent such disappointments.

Other factors may have limited the success of the microsavings initiative. Like the ecotourism project, the microsavings initiative was carried out in collaboration with local people. However, in both cases, the community members who participated were already financially connected to the Ceibal-Petexbatún Archaeological Project. The perception of these development projects throughout wider Las Pozas is unclear. The long relationship between the research project and the families of its seasonal employees could potentially cause negative reactions, given the resulting differences in access to economic opportunities. In addition, the microsavings framework came entirely from outside Las Pozas. It required training by an international NGO and consistent involvement by Méndez Bauer. The concept was not adopted by other groups throughout Las Pozas. The microsavings model may not suit the community's interests and needs.

3.2. Classroom Outreach Project

In 2016, MacLellan began an archaeological outreach program for schools in Las Pozas. The main goals of the Las Pozas Archaeological Education Project were (1) to share knowledge from the investigations at Ceibal with a local, descendant community; (2) to encourage the preservation of archaeological sites for their cultural and natural resources; and (3) to start giving a young generation tools they might use in careers related to heritage. MacLellan also sought to dispel common rumors that archaeologists search for gold, buy and sell artifacts, or take excavated materials out of Guatemala. This was a preliminary effort, and an additional goal was to find out what the schools actually wanted from an archaeological project. MacLellan was assisted by Marcos Xe, a resident of Las Pozas, former excavator for the Ceibal-Petexbatún Project, and current teacher. Patricia McAnany shared bilingual Spanish-Q'eqchi' materials, including coloring books, designed by the Maya Area Cultural Heritage Initiative (MACHI)/InHerit [46] (pp. 109–118). The Ceibal-Petexbatún Archaeological Project donated boxes of school supplies.

MacLellan and Xe visited two private secondary schools where Xe had close professional ties. MacLellan used past experience in public outreach to give accessible and colorful presentations that facilitated interactions with the students. For example, in front of a PowerPoint slide featuring photos of a cacao tree and cacao pods, MacLellan asked the students what they knew about this plant and what it is used for (chocolate), and the children responded enthusiastically. Topics covered

included archaeological methods; Ceibal as one of the earliest Maya settlements; plants, animals, and technologies used by the ancient Maya; the Mesoamerican ballgame; Maya numbers, calendars, and writing; Maya kings and queens; and the Classic Maya "collapse" as a political transformation, rather than a mysterious disappearance or disaster.

Although the students and teachers seemed glad to hear about the ancient Maya, archaeology was not the main priority in the schools. After talking about Ceibal in imperfect Spanish, MacLellan was surprised to find herself recruited to teach a full day of English lessons. The English language is considered a valuable skill in Guatemala and is part of the schools' curricula. Q'eqchi' students, already bilingual, are eager to learn this third language. The problem in Las Pozas, and probably in many communities, is that the teachers do not speak English. Many of their educational materials are written completely in English, with no Spanish translations. Teaching English was not part of the original plan, but it was a way to respond to the community's needs and thank the school for welcoming an archaeologist. Foreign language skills would be useful to students in many careers, including archaeological tourism.

Upon hearing about the visits to the two private schools, the council of leaders in Las Pozas decided that the outreach project should include the public schools. MacLellan and Xe were summoned to a meeting. They explained the project and passed around samples of the bilingual coloring books. The members of the council spoke for long stretches in Q'eqchi' and eventually agreed that the outreach project, including English lessons, should be expanded. MacLellan plans to return to Las Pozas during the next phase of her research at Ceibal, and she hopes to expand the outreach project to additional communities in the area.

4. Discussion and Future Directions

Through community engagement initiatives around Ceibal, we seek to (1) make a positive impact on the lives of local people and (2) encourage the protection of cultural heritage. Several structural problems in the region pose barriers to these goals. They include the displacement of local populations (mainly by palm oil producers and cattle ranchers) and widespread poverty.

Another challenge in the area around Sayaxché is a seeming absence of interest in the ancient past. Both deforestation and looting of the Petexbatún-Pasión archaeological sites might be alleviated by a sense of stewardship among local and descendant communities. Informal conversations with the Q'eqchi' and *ladino* people employed by the archaeological project have given us the impression that local people do not identify strongly with the ancient Maya. Because the Q'eqchi' are relatively recent migrants to the Maya lowlands, the local archaeological sites are not part of their long-term social memory or traditions. Nevertheless, some Maya groups make pilgrimages to Ceibal to perform rituals, particularly around Semana Santa (Easter week). To reinforce their right to settle in the region, some Q'eqchi' informants have explained to ethnographers that the Itza Maya are the original inhabitants of Petén and "elder cousins" of the Q'eqchi' [15] (p. 80). Since the Itza population is small, they conclude that there is plenty of land to share with their "cousins." During the Ceibal "invasion" of 2015, representatives of one Q'eqchi' community did claim ancestral rights to the site in order to access land for agriculture. Ideally, this sense of kinship could lead to the curation of archaeological sites, although the dire conditions in Petén might prevent local people from preserving cultural heritage without economic incentive. At the moment, our desire to protect archaeological sites is at odds with indigenous claims to land and with the economic needs of the population. Such conflicts between local/indigenous land rights movements and archaeological preservation initiatives are not uncommon in the Maya lowlands [23,47–49]. Community land concessions have been successful in the Maya Biosphere Reserve. However, around Sayaxché, the population size and number of stakeholder communities compared to the area of remaining forest make us doubt that model would be effective in the national parks. Hopefully, in cooperation with local people, we can find a way for cultural heritage to benefit the region economically.

In the early stages of the MACHI/InHerit programs, Shoshaunna Parks and colleagues found that some Maya communities did not preserve cultural heritage largely due to a disinterest in the past and an absence of education about archaeology [34]. The project's efforts in public outreach, classroom programming, and community-based archaeology have been successful in stimulating cultural preservation in many areas [46]. As part of the next phase of the Ceibal-Petexbatún Archaeological Project, we will continue archaeological outreach in Las Pozas and expand to other communities, in order to provide basic information about cultural heritage and promote preservation. We will continue to educate children about archaeology and the ancient Maya through classroom visits and will propose public lectures and question-and-answer sessions for adult audiences. We should also offer informal English lessons, like those requested in Las Pozas.

So far, our archaeological outreach has also been unidirectional. However, we hope to work with interested locals to shift to a bidirectional framework in which local and traditional knowledge would be presented alongside archaeological information. We will take a "co-creative" approach in which archaeologists and community members decide on the outreach program's goals and manage the resulting projects in dialogue [50,51]. The Proyecto de Investigación Arqueológico Regional Ancash, in Andean Peru, found that this flexible, bottom-up approach increased interest in local history and heritage, encouraged the preservation of archaeological materials, and provided additional income in the rural community of Hualcayán [52]. That collaboration included an annual heritage festival, a women's textile business, and an oral history project carried out by school children. After the introduction of these programs, the people of Hualcayán prevented gold mining and looting activities that threatened the local archaeological site, arguing that the site belongs to the whole community and is a valuable part of its heritage and way of life. In the Maya community of Tihosuco, Quintana Roo, Mexico, a collaborative heritage project resulted in the Caste War Museum, accompanying digital and printed resources, an oral history project, educational comic books, and an annual exhibition [53,54]. Guided by the goals of local people, archaeologist Anne Pyburn has collaborated on multiple successful heritage programs in Belize and Kyrgyzstan [39]. Anabel Ford and colleagues at La Milpa, Belize, worked with local experts in traditional Maya agriculture to create a model sustainable garden at a local school and associated educational materials [55–57]. South of Ceibal, at Candelaria Caves and Salinas de los Nueve Cerros, collaborative work by Brent Woodfill and colleagues has resulted in local infrastructure improvements, as well as community investment in archaeological research [58,59]. The products of a co-creative outreach project in the area around Ceibal would obviously depend on the interests and investment of the communities involved.

We plan to reach out to both Q'eqchi' and *ladino* communities, since both are potential stewards of the region's archaeological sites. It is important to emphasize that the living Maya are descendants of the ancient Maya who built the impressive cities that draw so many tourists and researchers to Petén. However, both indigenous and non-indigenous groups live in and among the archaeological sites of the Petexbatún-Pasión region and are affected by decisions about how these sites are used. Both groups also suffer from poverty, although the Q'eqchi' endure additional racial discrimination. Surveys conducted in Petén by MACHI/InHerit suggest both *ladinos* and Maya people are unfamiliar with the concept of cultural heritage but are interested in learning more about it [46] (pp. 170–177). These results give us hope that both Q'eqchi' and non-indigenous groups around Sayaxché may participate in outreach and preservation efforts.

The limited success of our past development and outreach efforts could be due to our lack of a full and nuanced understanding of the communities around Ceibal. Pyburn argues that all archaeological outreach projects should begin with ethnographic research, because initiatives must be aligned with the goals of complex, dynamic communities in order to be successful [60]. Burham is interested in collaborating with cultural anthropologists on an ethnographic project that explores local conceptions of heritage and how archaeological work shapes or affects the identities of indigenous and *ladino* communities residing near archaeological sites. Researchers will gain insights about communities'

expectations of archaeologists and ideas about how our project can help them economically. The goal of this project is to empower local groups to take an active, leading role in heritage-related activities.

Further collaboration with local people and experts like ethnographers, ethnobotanists, ecologists, and indigenous leaders could lead to sustainable farming and gardening initiatives that provide food and income and motivate the protection of forests [56]. Although Q'eqchi' communities in Belize plant a diverse set of crops for consumption and sale, Q'eqchi' farmers in Petén focus heavily on maize and beans. The Q'eqchi' of Belize also make greater use of wild resources, and they have been able to adapt to today's economy by, for example, specializing in cacao production. The subsistence strategies seen in Belize are more sustainable, more nutritious, and tied to a stronger sense of stewardship over the environment [15] (pp. 94–101). In contrast, due to their history of dislocation, plantation labor, and private (versus communal) land ownership, the Q'eqchi' of lowland Guatemala have lost some traditional agricultural and ecological knowledge, including the culturally and spiritually proper ways to cultivate many plants [15] (pp. 101–103). In addition, rural farmers in Petén know that they can sell maize and beans, while the market for other crops is less certain. They often lack access to funds or credit needed to invest in risky agricultural innovations [61]. We are interested in identifying and partnering with groups who could bring traditional knowledge of sustainable subsistence practices to communities around Ceibal, and who could make those practices economically feasible. This would be a highly interdisciplinary project, requiring ecological and cultural expertise [62].

While sustainable agriculture has clear benefits, the question of how archaeological research and preservation could materially help the people of the Petexbatún-Pasión region is a difficult one. This topic requires more collaboration with communities and with experts from outside archaeology. To the best of our knowledge, few archaeologists have measured the economic benefits of the development and conservation projects they initiate or support in local communities. One example is the Sustainable Preservation Initiative (SPI), directed by Lawrence Coben, which reports quantitative and qualitative results of its "community-based sustainable economic development" programs that center on tourism and the sale of crafts [37]. SPI has funded ventures around the world, including several in Peru and one associated with the Maya site of Kaminaljuyu, in Guatemala City. The results from San Jose de Moro, Peru, include positive economic and archaeological preservation outcomes [37]. Looting in San Jose de Moro has decreased, and local officials have prevented development and agricultural projects that threatened the site. This result is similar to the increased interest in preservation observed in Hualcayán. Coben credits the success of SPI to the bottom-up, community-controlled nature of funded projects.

With the example of SPI in mind, we would like to build on Inomata's and Triadan's efforts to bring economic aid to communities around Ceibal through sustainable tourism. The commodification of heritage through tourism often marginalizes local and indigenous people [63,64], but when local communities are in charge, tourism can be empowering [65]. As in the case of San Jose de Moro, tourism and related businesses may help protect the region's cultural and natural resources, in addition to bringing much needed income to local communities. The Guatemalan government is currently promoting sustainable tourism, particularly in Petén, or "el Mundo Maya" [66]. The Guatemalan Tourism Institute considers Ceibal, Aguateca, and Dos Pilas key destinations for archaeology, hiking, birdwatching, and "adventure." These three sites already draw international tour groups, but visitors do not seem to significantly benefit Las Pozas and the other nearby communities. We would like to help local people profit from this industry, but any efforts in expanding tourism would need to be generated and managed by the communities, possibly in consultation with business or development professionals who could provide expert advice and set realistic goals. If local people are interested in pursuing tourism opportunities, we can imagine assisting them with community museums and archaeological site tours, as well as promoting related businesses like restaurants, eco-hotels and campsites, nature tours, craft markets, and Q'eqchi' language schools. We note that the recent COVID-19 pandemic has highlighted risks of reliance on tourism [67], and it is unclear how travel will be affected by the novel coronavirus in the long term.

None of these future engagement initiatives – expanding archaeological outreach, conducting ethnographic fieldwork, promoting sustainable agriculture and tourism – can begin without first talking to the communities. In past efforts, we have relied heavily on our seasonal employees as connections to the towns. While these trusted friends are helpful, they make up a small fraction of the population and are likely biased in favor of our work, since they already benefit economically from the archaeological project. During the next phase of the project, we plan to meet with leaders of multiple Q'eqchi' and *ladino* communities, like the Las Pozas council MacLellan spoke with in 2016, in order to explain our project's objectives and ask if they see potential benefits for local people. If possible, we will also hold public meetings to gain a broader understanding of people's needs and expectations. Our project will need the cooperation of teachers, government officials, and other experts to create activities that will improve economic conditions and protect cultural and natural resources in the Petexbatún-Pasión region. In the end, what we accomplish together may look very different from the ideas put forward here.

5. Conclusions

In this paper, we have presented some of the challenges and learning experiences faced by the Ceibal-Petexbatún Archaeological Project in engaging productively with a local, indigenous community. We are optimistic about sharing information about archaeology and the ancient Maya with more communities around Ceibal, while asking how local people see their heritage. However, we recognize that we face an uphill climb in trying to make heritage preservation economically beneficial. The systemic economic problems in the Petexbatún-Pasión region are daunting and mostly out of our control. What we can control is our approach to our own work. If we are to improve our community engagement initiatives in the next phase of the Ceibal research project, then we need to modify our methods. We must spend more time consulting with a wider range of stakeholders in Q'eqchi' and *ladino* communities during the planning process and beyond. By listening more, we hope to make a more positive impact on the communities and protect the area's archaeological sites. Those sites are extremely valuable to us, as researchers, and we want the local people to benefit from them as well.

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Article

Addressing Problems beyond Heritage, Patrimony, and Representation: Reflections on Twenty Years of Community Archaeology in the Southwestern Maya Lowlands

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Abstract: Collaborative or community archaeology as a methodological approach has a long history and is becoming increasingly common in the Maya world. This article draws from the authors' experiences on three distinct archaeological projects to discuss the benefits and obstacles we confronted while conducting collaborative research with contemporary Maya communities as well as lessons we learned that can increase the odds of a mutually beneficial partnership. After summarizing the history of the research projects and the expectations for and contributions of the scientific and community stakeholders, we propose several characteristics that were particularly helpful. These include the need for all parties to engage in sincere and sustained dialogue, to be flexible, and to take others in account when making any plans that affect them. Most importantly, we urge archaeologists to collaborate with community endeavors beyond those that are directly related to their research, offering a few examples of how archaeological skills, equipment, and social capital can be used to address a wide range of local concerns beyond patrimony and heritage.

Keywords: community archaeology; Maya archaeology; community development; archaeological ethics; world heritage; continuity

1. Introduction

In recent years, an increasing number of archeologists have embraced the inherently political nature of our field and worked to share some tangible advantages with the communities most affected by our presence and interpretations. In such community-oriented programs, the design, implementation, and results of archaeological investigation are undertaken in consultation with local populations. These communities are, to varying degrees, involved with the project design, are an active voice in data collection, analyses, and interpretation, and can use the research to further their own community initiatives.

In this manner, archaeologists do not simply work with or near people, but work "*for living communities*" ([1], emphasis ours) as we strive to create a truly anthropological archaeology [2]. Often, archaeologists use this perspective for heritage initiatives including archaeological tourism, site consolidation, and training locals as tour guides. This is a common and successful approach in the Maya region, with many archaeological projects successfully adding tourism, heritage protection, and community development initiatives towards their research goals [3–9].

However, at its core, Western science is an extractive industry, one has been intertwined with colonialism at least since the publication of *Leviathan* in 1651. In this text, Thomas Hobbes argued that his European ancestors forged a social contract in which the majority ceded power to the best

and brightest among them, creating the institution of kingship and, along with it, a superior society that was justified in conquering the world. Subsequent scientists—including our own founding figure Franz Boas—disinterred and dismembered Indigenous bodies, looted Indigenous tombs and temples, and exploited Indigenous knowledge in the name of objectivity, truth, and the advancement of knowledge [10,11] (pp. 181). In light of this troubled past, we feel that archaeology and other social sciences have a moral imperative to engage explicitly in decolonizing methodologies, especially in settings where Indigenous and other marginalized communities are actively affected by the research. Best stated by Linda Tuhiwai Smith, decolonization efforts are about "centering [Indigenous] concerns and worldviews and then coming to know and understand theory and research from [their] perspectives, and for [their] own purposes [12], p. 41".

When engaging with Indigenous communities, community-oriented archaeology can and should take a decolonialist approach that is sincerely engaged with the worldviews and concerns of the communities where we work. This approach stands in stark contrast to the fundamental scientific paradigm, in which Science is undertaken for the "good of mankind", even if little to none of said good trickles down to the communities affected and inconvenienced by our research [12–14]. In the archaeological context, decolonizing methodologies have typically meant privileging the knowledge, memories, and spiritual aspects of archaeological sites and materials [3,4,15–21]. With this focus, archaeologists support Indigenous groups as they fight for the stewardship and protection of their own cultural heritage and resources, with archaeologists taking a reflexive approach and acting as collaborators rather than managers, owners, or even the primary experts of cultural heritage [22].

However, in the southwestern Maya lowlands, concern for the protection, interpretation, and ownership of ancient Maya cultural resources is often not the primary concern of the economically and politically marginalized Indigenous communities, many of which lack access to a reliable source of clean water, medicine, land titles, and sustainable income. While we agree that foreign archaeologists can and should support Indigenous archaeologies and fight alongside descendant communities to wrest their heritage back from the heirs of colonial powers, we believe that archaeologists better serve these communities by being a transient (for even multi-year investigations must end) toolkit to address issues and problems of *their* choosing. The skills, technologies, and connections archaeologists can provide—equipment for survey and excavation, scientific knowledge, experience writing successful grants and presenting to different publics, and ties to the press and groups and organizations at nearly every rung of society (farmers, local governmental offices, NGOs, etc) are often much more valuable for locals than the actual act of conducting archaeology and the paradigms and products that result from it.

Our approach as researchers is based on this desire to empower local initiatives rather than impose our own values upon them, and can be described as both collaborative and community-based. While community members are actively involved as stakeholders in nearly all aspects of research, we make space for our presence to be used to address concerns, problems, and goals identified by the community members themselves [22,23].

Both of the present authors have been engaged in community archaeology for multiple years with the overarching goal of breaking out of the extractive research paradigm that has been the norm for much of the history of our field and which largely limits the benefits of our investigations to members of the academy. In this article, we draw on our experiences conducting community-based research and collaborative practices that are advantageous to both local initiatives and foreign scientists alike in the southwestern Maya lowlands. The article that follows is written from our own perspective as non-Indigenous North Americans, albeit ones who have lived in and worked closely with contemporary Q'eqchi' Maya communities for much of our professional careers.

2. The History of Archaeology and Community Relations in the Southwestern Maya Lowlands

The Precolumbian residents of the southwestern Maya lowlands in present-day Guatemala and Mexico took advantage of their unique geology and strategic location to transform their polities into

economic powerhouses. Located at the base of the highlands near the headwaters of several major rivers, local residents of cities, towns, and hamlets alike were integral to the economy of the entire Maya world. The city of Salinas de los Nueve Cerros surrounded the only lowland non-coastal salt source, which its residents exploited by producing up to 24,000 metric tons of salt per year throughout its more than 2000 year history [24–26]. The longest river in in Mesoamerica (albeit divided into differently-named segments—the Negro, Chixoy, Salinas, and Usumacinta) cuts through the city, not only facilitating transportation of commodities but also providing large quantities of fish for salting and deep, fertile layers of volcanic soil for large-scale agriculture. To its east, the city of Cancuén was located at the headwaters of the Pasión River, allowing its residents to become the transportation and production hub for jade and other sumptuary goods during its brief florescence in the seventh and eighth centuries A.D. [27,28]. Smaller sites along the land and river routes serviced the merchants, travelers, and pilgrims who visited the myriad caves in the region in order to petition safe passage from the regional earth deities [26,29].

When the Spaniards arrived in the early sixteenth century, the region was still home to multiple Ch'ol Maya kingdoms. The Ch'ol were the linguistic and cultural heirs to the great cities of the southern lowlands, and they were still involved in the production and exchange of multiple important commodities including salt, cacao, and achiote [26,30,31]. Unlike the Maya of the Guatemalan highlands, Chiapas, and the Yucatan Peninsula, these kingdoms were able to escape colonization and incorporation into the Spanish Empire for nearly 200 years, only succumbing to a major offensive in the 1690s [32]. Although the Spaniards initially were content to christen and occupy the Indigenous settlements, by the early eighteenth century every Maya man, woman, and child they could find was rounded up and sent to areas firmly under Spanish control, leaving the southwestern lowlands virtually unoccupied.

The region only began to be repopulated to a significant degree in the 20th century through several waves of colonization, beginning with Q'eqchi' Maya serfs through the mid-1940s who were escaping the harsh living conditions of German coffee plantations in their ancestral homeland around the highland city of Coban [33]. Beginning in the 1950s, the Guatemalan government sponsored several programs encouraging the landless poor to move into the region and cut back the wilderness that had grown up in the three centuries of abandonment. As a result, the area became a multilingual mosaic composed of small villages of highland Q'eqchi' and K'iche' Maya, as well as native Spanish speakers from the Pacific coast. After the revolution of 1954, much of the land was given to the political elite associated with a succession of military dictatorships [26,34–36].

As the civil war began to heat up in the late 1970s, the southwestern lowlands became one of the most dangerous places in Guatemala to be Indigenous. One hundred and sixty one massacres occurred in and around the region between 1978 and the signing of the Peace Accords in 1996 [37], pp. 224–244, and the combination of overt violence, intimidation, and corruption at all levels of the government forced the local Maya to organize and fend for themselves to preserve the few resources they had access to [26,34–36]. While the end of the civil war reduced the threat of annihilation, subsequent years introduced new threats in the form of transnational corporations, drug cartels, and environmental NGOs pushing for the forced removal of communities in the name of nature conservation [26,36].

2.1. Community Archaeology in the Southwestern Maya Lowlands

Although archaeologists have long noted the importance of this region for understanding ancient economics and politics ([38–40]), the difficult political situation described above discouraged all but a few small archaeological projects [21,41–46], most of which were conducted before the flood of new residents reached their field sites. As a result, the community archaeology initiatives described in this article are the first to be conducted here.

The senior author of this article has engaged in three community archaeology projects since 2000, first as a graduate student on Vanderbilt University's Cancuén Archaeological Project (2000–2007, Guatemala), then as the director of Proyecto Salinas de los Nueve Cerros (2009-present, Guatemala) and

a series of exploratory projects over the border in eastern Chiapas, Mexico (2017-present). The junior author has participated in the last two projects to varying degrees since 2015. Each of these projects (Figure 1) shares a multi-site focus and a spirit of collaboration among multiple stakeholders that includes students and professionals from multiple scientific disciplines, neighboring communities, landowners, and aid organizations.

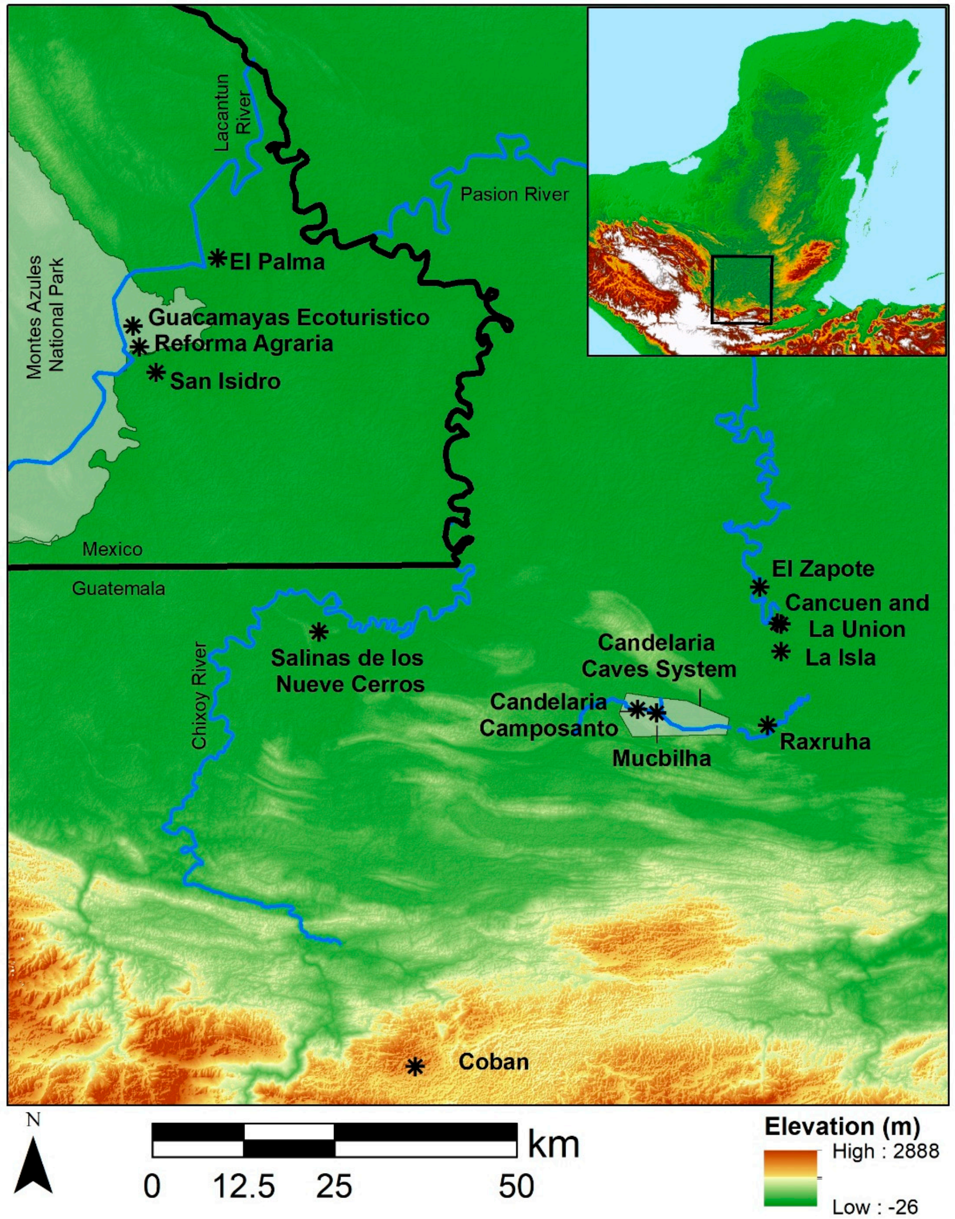

Figure 1. Archaeological sites, communities, and geographic features mentioned in the article. Map by A.E. Rivas.

2.2. The Cancuén Archaeological Project

The Cancuén Archaeological Project, led by Arthur A. Demarest (Vanderbilt University), has been intertwined with local Maya communities since its inaugural year. Project members arrived in the region in 1998 in order to investigate the nature of highland-lowland interaction in the years leading up to the Classic collapse (ca. A.D. 680–900) and rented a house in a village upriver from the site. They commuted down the Pasión River to the field by boat and employed residents from a second village across the river from the site as fieldworkers. While the team planned their research

program using established archaeological protocol—obtaining permission from the federal government, hiring locals as day laborers, and returning to an urban laboratory with the season's materials after closing excavations—they were immediately confronted with political problems. Even though they were working in an ostensibly uninhabited archaeological park with local villagers, unbeknownst to them, a third village that neighbored the site to the north claimed rights over the land. Due to tensions dating back to the Guatemalan civil war, there existed a high degree of unresolved tension among all three communities, and the archaeologists inadvertently reopened and exacerbated the conflict. As a result, the team found itself in the middle—literally and figuratively—of multiple armed standoffs.

Demarest used community archaeology, community development, community engagement, and the creation and sponsoring of a soccer league as the keys to mitigating this conflict, which over the next several years evolved into a collaborative juggernaut that necessitated the creation of multiple local NGOs and an entire subproject composed of ethnographers, ecotourism specialists, and development personnel [4,9,26]. As the local communities became more engaged and invested in the research, the project expanded into other parts of the region, and currently covers an area of over 1500 km^2 along a stretch of the highland-lowland transition in central Guatemala.

2.3. The Cancuén Cave Subproject

After a site visit the previous year, Woodfill joined the project in 2001, focusing on one primary research question—since Cancuén was a major city devoid of pyramids and most other standard ritual architecture, where were its residents performing rituals? Demarest suggested that the pyramidal karst hills riddled with caves that dotted the area (Figure 2) were the most likely suspects based on the ubiquity of cave worship in Mesoamerica [47,48] and epigrapher David Stuart's [49] observation that pyramids were referred to as "mountains" in Classic hieroglyphic texts. Woodfill set out to find data to test this hypothesis.

Figure 2. Haystack karst hills surrounding Cancuén. Photo by B.K.S. Woodfill.

He quickly discovered three primary logistic problems that complicated the quest for data. Each of these hill-cave zones was too far from camp to commute, all of them were sacred places where regular rituals were performed by the contemporary Q'eqchi' who moved into the area within the last 80 years, and access to them was only possible by passing through land that was divided among the myriad villages in the area. His strategy to overcome all three problems was simple: he would arrive in a village, meet with the community leaders and explain his research project, his needs (day laborers, a place to stay, permission to visit and excavate caves, and guides to lead him and his team to said

caves), and what he could offer the villagers in return for assisting him (wages, wells, and the possibility of managing a tourist site).

The archaeological research that followed was largely embedded in village life. We either lived in a communal building in the village (typically classrooms or church kitchens), or in a makeshift camp on the outskirts of town. The archaeological team not only worked closely with village residents while on-site, since the latter made up the excavation team, guides, and survey assistants, but also ate with them, commuted with them, and socialized with them before and after work. Communication in the camp was predominately in Spanish with smatterings of English and Q'eqchi', and as the villagers and visitors became closer, they would find multiple ways to help each other out informally. The archaeologists would provide transportation to town when needed and hire and house masons to improve village wells and other infrastructure when possible. The villagers would repair damaged boots and tools, cook local delicacies, and let the team know about new sites and finds.

The breaking down of barriers between archaeologist and community member soon became the cave subproject's default approach due to its relative ease of working in a heavily populated yet still marginalized corner of Guatemala. In 2003, Woodfill was invited to join a government initiative to convert the Candelaria Caves (Figure 3), the second-largest cave system in Central America, into a national park. He joined a team composed of leaders of three villages, a local non-governmental organization, several applied anthropologists and Peace Corps volunteers, and specialists from the Guatemalan government, and was tasked with documenting archaeological zones within the caves, suggesting low-impact tourist paths through parts of the system, and training the villagers in proper caving techniques to slow down the destruction of the fragile subterranean environment. In return, he received funding from USAID, unrestricted access to the caves under community management throughout the system, a rotating team of guides and excavators, and a place to stay in each village. The park was officially inaugurated in 2004, and Woodfill continued to work in the system until finishing his dissertation fieldwork in 2006.

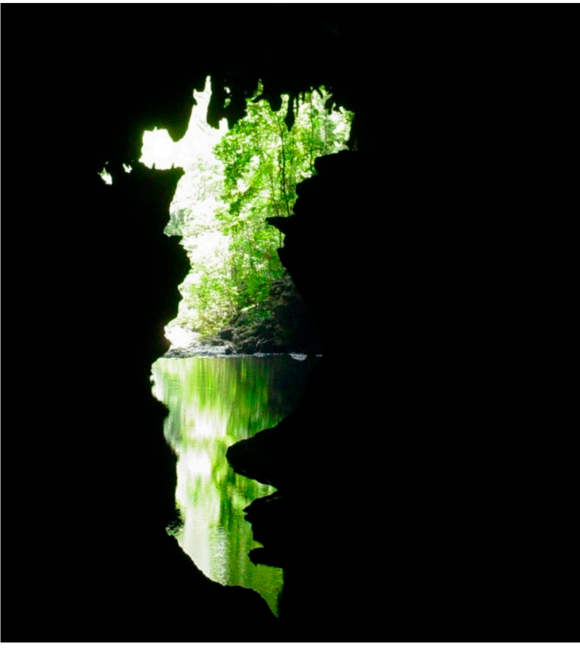

Figure 3. Riverine entrance to one of the Candelaria Caves. Photo by B.K.S. Woodfill.

2.4. Proyecto Salinas de los Nueve Cerros

In 2009, Woodfill and his colleague Jon Spenard returned to Guatemala to scout out potential archaeological projects when a happenstance meeting occurred between the latter and a group of Peace Corps volunteers who were looking for an archaeologist to work with one of their colleagues.

Volunteer Ted Joseph was stationed a few hours west of the Candelaria Caves system and had spent his term developing a unique forested environment—a massive salt dome, brine stream, and salt flats at the base of the Guatemalan highlands—for community-run ecotourism. In addition to its natural bounty, the salt source was located in the center of a major archaeological site, the massive city of Salinas de los Nueve Cerros (Figure 4), which had been the focus of several small-scale investigations beginning in the 1970s [41,44,46]. From the archaeological perspective, a new project there would answer questions about the Classic Maya economy and the degree to which the Maya elite were involved in the production of basic commodities like salt. The community was excited about the possibility of including an archaeological component to the ecotourism project to strengthen the draw for tourism.

Figure 4. Aerial photo of the salt dome and salt flats in the heart of Salinas de los Nueve Cerros. Photo by B.K.S. Woodfill.

The archaeologists traveled to the region in August and met with Joseph and local leaders to tour the site, observe potential research loci, and discuss the potential for collaboration. We were surprised to hear that the impetus for inviting the Peace Corps volunteer into the region to help create the community ecotourism initiative was a visit to the Candelaria Caves by local youths; they were just as surprised to know that we played a part in the park's formation. By the end of the year, Proyecto Salinas de los Nueve Cerros was formed with a team composed of Guatemalan, American, and French students and professionals focusing in archaeology and ethnography, with funding from the Alphawood Foundation and permission from both the local communities and the Guatemalan government.

We assembled a team of excavators representing the four villages most open to working with us. Investigations were to focus on the site core, in land that was owned by the municipality of the distant city of Coban, who shared co-management with a local village organization. As some of the last forested land in the region, this municipal property was the focus of the ecotourism project and housed the saltworks, a brine stream, salt flats, and multiple neighborhoods with monumental architecture. We believed that we could also use research in this neutral territory to acclimatize the Maya horticulturalists who owned small plots that covered the rest of the ancient city to our research methods, allowing us, we hoped, to move gradually into community land in subsequent years. After receiving the approval of both the village organization and the municipality, we headed into the field in March, 2010 to begin our inaugural season.

In spite of (or, more accurately, because of) the strong community support, the project hit a major snag on its first day in the field. Woodfill has discussed this in more detail in other publications [9,24,50], but fundamentally, we ran across two major political problems. The mayor who had recently taken office belonged to a conservative political party that was openly antagonistic towards the communities surrounding Salinas de los Nueve Cerros, and both this mayor and the new municipal council were more interested in petroleum exploitation than community development. Two hours into our first day of fieldwork—as we were setting up test units—municipal workers arrived to evict us, having changed

their mind about granting us permission. So, even after we obtained written federal authorization and verbal support from the communities and the municipality, the project shut down just as it began.

Although the situation seemed hopeless, the workmen organized themselves over the next two days to offer up their own parcels to archaeological investigation. We spent the rest of the field season mapping and excavating mounds underneath village cornfields (Figure 5) with full community support while we attempted to negotiate re-entry into municipal lands. The following season, municipal relations improved, allowing us to live in and fix up an old oil camp in their land (Figure 6) while we continued to work in community parcels. We began the season with a *mayejak*, a ritual offering to the earth spirits, ancestors, and other powerful beings led by local religious leaders that was attended by over 1000 people from throughout the region and served over 250 kg. of chicken (Figure 7, [9]).

Figure 5. Excavations in a horticultural field during the Proyecto Salinas de los Nueve Cerros inaugural field season in 2010. Photo by B.K.S. Woodfill.

Figure 6. Project cook in the newly built field kitchen. Photo by B.K.S. Woodfill.

Figure 7. Q'eqchi' ceremonial procession to commemorate the beginning of the 2010 field season. Photo by B.K.S. Woodfill.

Although we were initially told that a letter granting permission to work in municipal lands was imminent, that letter never arrived. Instead, we received word half-way though the 2011 field season that council members had sent a team to evict us without warning from the oil camp, and that they were three hours away. Within two hours, the communities had organized themselves again and written their own letter signed by several dozen leaders and landowners protesting this imminent eviction. After the council received news of the protest, they called back their emissaries, allowing us to finish the field season in peace.

The mayor continued to refuse entry throughout his term to not only the archaeological project but to an ongoing long-term biological research project run by professors at Guatemala's national university. The communities fared no better. The previous mayor had secured funding to build a high school on the municipal property before he left office and began construction on it, but after the new administration took over, the rest of the money vanished. After our field season ended in 2011, the co-management agreement with local leaders relapsed. The ecotourism project was officially terminated, all municipal development projects were canceled, and the villagers were now prohibited from entering any part of the property that they were not leasing for farmland.

Historically, the lack of community investment in and access to the municipal land paved the way for invasions from landless poor looking for a place to settle. Such an event occurred two separate times in the 1990s, inspiring the co-management strategy taken by a string of mayors before the election of the then-current mayor. We were worried that history would repeat itself after the municipality closed the land to the locals, and it did in 2015. Over 100 families invaded the municipal land in February and divided it between two new villages. Most of the remaining forest was cut down, the municipal guards were forcibly removed, and, even after the mayor was replaced later that year by another with strong ties to the surrounding region, the political fallout and uncertainties from the invasion prohibited us from conducting anything more than a handful of unmanned aerial photogrammetry missions there.

At the time of writing this article, the antagonistic mayor has returned to office, inheriting a municipal property that still hosting two officially unrecognized Maya villages and a foreign oil company. One of the villages made national headlines when they partnered with a drug cartel, transforming a straight stretch of road into a landing strip [51]. This series of unfortunate events drastically transformed the collaboration between the archaeologists and the Maya communities, forcing both sides to rethink their ambitions and expectations.

For most of the history of our research, the archaeological team (1) focused its investigations on community land in other parts of the site, (2) teamed up with some of the Guatemalan biologists who were similarly shut out of municipal land, focusing on reconstructing the paleoenvironment, and (3) worked directly with local leaders to empower them to conduct their own development. The villagers, meanwhile, (1) focused on smaller-scale development initiatives, especially related to water, maintaining infrastructure, and education; (2) teamed up with multiple institutions and ranchers working in the area to create a more diffuse support network; and (3) worked directly with the archaeological project to provide us with field sites.

The resultant collaboration between the scientists and the communities has resulted in multiple benefits to both sides—a feat only made possible by the extreme levels of flexibility and goodwill each stakeholder exhibited. These results are summarized in Table 1; of these, it is worth highlighting a few. The scientific team, which is composed of archaeologists, ethnographers, ethnohistorians, paleoecologists, biologists, and art historians, has produced an average of just under 14 scholarly products per year for the 11 years the project has been in operation. This list includes one single-authored book; 38 published articles, book chapters, and conference proceedings; six student dissertations and theses; eight successful grant applications; and nearly 100 professional presentations.

Table 1. Summary of the principal academic and community benefits from the collaborative research undertaken at Salinas de los Nueve Cerros, 2010–2021.

Collaborative Research Benefits for	
Scientific Team	**Local Communities**
Professional publications: • 1 published book • 10 published articles • 3 published book chapters • 26 published conference proceedings • 9 publications currently under review or in press	Infrastructure improvement: • 60 wells • 18 bridges • 7 latrines • 2 molds for cement tubes and cinderblocks
Student advancement: • 4 dissertation projects • 1 master's thesis project • 6 undergraduate thesis projects • 14+ undergraduate practicums	Sustainable income projects: • 20 women trained in handicraft production • 70+ women involved in managing family gardens • 300+ microcredits to horticulturalists
91 professional presentations at conferences in • The United States • Guatemala • Mexico • Canada • Spain • El Salvador	Land rights: • 87 families resettled with land titles • 200+ families in the process of resettling with land titles • 125 land parcels surveyed for lotification
8 successful grant applications • Alphawood Foundation • National Science Foundation • MACHI/InHerit Passed to Present • National Geographic Young Explorers' Grant • Internal university student grants	Health initiatives: • 15 Ecofiltro water filters donated to schools • 135 Ecofiltro water filters sold at cost to families • 30 discounted low-smoke stoves • 120+ donated eye care and eye glasses

On the community side, this collaboration has resulted in at least 13 major development projects atop and around the Nueve Cerros archaeological site. These include infrastructure development, sustainability initiatives, public health, clean water, and land rights programs. Over 100 families in at least 15 villages have benefitted from the cooperation between the archaeologists, NGOs, local churches, and community leaders.

While many of the results reflect the differing values and goals of each stakeholder, it is worth pointing out that there are several products that show where a common interest in heritage, the Maya

past, and the potentialities of archaeology have come together. The project provided a springboard for two local Q'eqchi' individuals and a third from the city of Coban who were interested in studying archaeology and anthropology. These three individuals were provided free housing in Guatemala City, a paid position on the project with flexible hours, and practicum and publication opportunities while they attended the national Universidad de San Carlos. They have since co-authored six publications in the Guatemalan archaeology symposium and eight presentations to date, and the first of the three is currently in the process of writing his undergraduate thesis.

2.5. Proyecto Sak Balam

The ongoing political problems at Salinas de los Nueve Cerros pushed us out of the salt production zone and into the surrounding region, and in 2017, Woodfill founded a second archaeological project just north of the Guatemalan border in southern Mexico. During the first season, a small team composed of both present authors, co-director Socorro Jiménez (Universidad Autónoma de Yucatán, Mérida), and two Mexican undergraduate students surveyed the surrounding region in search of archaeological sites and caves, largely through organizing community meetings and interviewing village representatives. Outside of a small secondary site in the Nueve Cerros hinterlands, however, there was very little archaeological potential on the Mexican side of the border, although we did hear some promising leads at an established village ecotourism project 30 km to the northwest.

AraMacao Las Guacamayas (Figure 8) is a community-run hotel complex in the Chinanteco village of Reforma Agraria. Located on the banks of the Lacantún River, it is adjacent to the largest nature reserve in Mexico, the 331,200-hectare Montes Azules. During a brief visit that year, we heard about several archaeological sites that local tour guides had visited within the park, so Woodfill returned with Mexican archaeologist Ramón Folsch the following year to continue the archaeological survey. They visited four archaeological sites during the 2018 field season—two small ancient villages in the immediate vicinity of the village; El Palma, a major site that was registered in 1976; and an unregistered site with a Late Classic hieroglyphic staircase in the village of San Isidro.

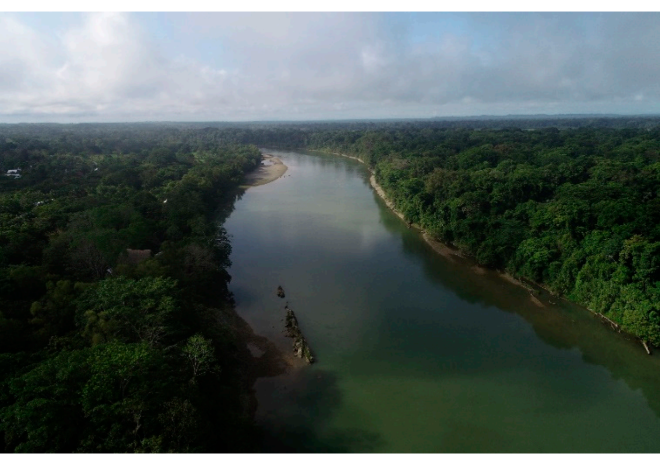

Figure 8. Aerial photo of the Ara Guacamayas ecotourism center. Photo by B.K.S. Woodfill.

Woodfill and Jiménez returned with a larger team in 2019 with two goals: fully documenting and conducting a preliminary investigation at San Isidro and El Palma, and kayaking to the headwaters of the Tzendales River to find two known archaeological sites that have never been fully documented, Late Classic Tzendales and Colonial Sak Balam, the last of the Ch'ol kingdoms to be conquered by the Spaniards in 1695 [52]. We accomplished the first goal and made great strides in the second, and, while we planned to continue this line of inquiry in 2020, the COVID-19 pandemic has pushed our follow-up field season back to 2021.

Our research in Mexico, while affected by different problems, histories, and potentialities, continues to be rooted in the same broad philosophy of partnership to address the concerns of different stakeholders. The leaders of Reforma Agraria are interested in expanding the ecotouristic experiences they offer, so our research is directly relevant to their goals. Similarly, the residents of San Isidro were working with a local schoolteacher to develop the archaeological site, located within a village nature preserve, for community-led tourism until the little funding they had secured dried up. We are now in the process of solidifying the collaboration among the archaeological team and the two villages and plan to focus most of our research energy here in the coming decade. At present, though, this project is still in its early stages and is, therefore, still based more on good will and interest than actual accomplishments.

3. What Can Happen

As the above discussion illustrates, community archaeology is full of pratfalls, opportunities, challenges, and surprises. Both the community and the academic partners come into the collaboration with specific needs and goals, but as the project develops and the political context evolves, we have to reassess and renegotiate our obligations and expectations as outsider scholars in relation to the communities.

3.1. The Bad

Although archaeological practice is typically thought of as fairly straightforward—apply for a permit to excavate a site, set up camp, conduct field research, bring materials back to a permanent laboratory, and write up the findings—the reality is rarely so simple. In addition to more universal problems like inclement weather, global pandemics, slow-moving bureaucracies, and the availability of funds, the three archaeological projects described above are located in a region known for its political and economic precarity [34–36]. This has manifested itself on several levels, including:

1. the appearance of clandestine landing strips associated with international drug cartels who are suspicious of our intentions and research parameters;
2. the power struggle between the mayor of Coban and the local communities;
3. the invasion of the Nueve Cerros site core by landless poor;
4. the proliferation of African palm plantations, oil extraction, and hydroelectric dams leading to site destruction and flooding;
5. the need to negotiate with each landowner individually or in small blocks for access to parts of archaeological sites;
6. turnover in land ownership even after successful negotiations, as owners fall into debt, gather resources to emigrate to more developed regions, or otherwise sell or bequeath their plots.

All of these uncertainties require the investigative team to be exceedingly flexible, necessitating quick shifts in research focus and design, site choice, and personnel decisions. As project director, Woodfill tries to chip away at the site and gather as much data as possible while shifting focus to different neighborhoods or even moving out into the hinterlands and across borders as availability permits.

This is not a luxury as easily affordable to students, potentially requiring them to exhibit even more short-term flexibility and quick thinking to finish their investigations. While conducting dissertation research between 2001 and 2006, Woodfill shifted focus three times to different cave systems due to a combination of restricting access and new opportunities. When actually writing his dissertation (60), he was able to construct an overarching theme—using changes in ritual practice at the different shrines, each of which was on or near the same trade route—to construct a model for understanding how trade was organized.

Rivas's dissertation research at Nueve Cerros similarly required shifting focus from investigating an early ceremonial group to a series of residential mounds and depressions in order to understand ancient water management systems [53]. This change in the research plan was initially difficult to prepare, but became crucial for understanding the Nueve Cerros aquifer, hydraulic systems,

and mound-building practices. Additionally, these investigations were appropriate for understanding ancient landscape practices of a Nueve Cerros neighborhood in relation to sustainability and resilience.

The collaborative model is also potentially problematic for communities. We have observed first-hand multiple issues and have heard local collaborators express frustration at others that had not occurred to us. This list includes:

1. excavations in, and increased traffic through, cornfields can damage crops, and
2. the presence of foreigners can pique the interest of neighbors, leading to more looting and traffic.
3. Since the presence of the archaeological team is contingent on continued funding, interest, and the rhythms of academic life, the arrival, departure, duration, and intensity of the scientific investigation can vary from year to year and will inevitably end.

It is fundamentally impossible to fairly distribute the immediate benefits of our presence in an area. The villages surrounding the Nueve Cerros region are home to over 15,000 residents, and, even in a good year, we only employ about 70 people as cooks, clothes washers, and field hands. Although the local NGO includes members from villages that do not own any land atop the archaeological site, the people we know best and have supported most strongly are those we know, typically because they own land of interest to us or are related to those who do. Only after we were in the region for eight years, for example, did we learn that most of the development benefits were limited to property owners and their families, even though there is a substantial homeless population in the region.

This realization has led us to ask several questions. Is it possible for archaeologists use their presence to benefit families and communities that do not have archaeological remains within their parcels? Can this be attempted for long-term collaboration as well? By focusing more generally on regional development as discussed in the following section, we hope to answer these questions in the affirmative.

3.2. The Good

In spite of the negatives discussed in the previous section in mind, there are multiple benefits to engaging in a collaborative research methodology. From an archaeological perspective, these sites would be fundamentally off-limits to a project focused only on Western science and data extraction. Even with funding and legal standing from the state, the reality of post-civil war Guatemala and post-Zapatista uprising Chiapas is that neighboring communities can set up roadblocks, forcibly remove people they declare trespassers, take prisoners, and threaten—and even follow through with—violence. Such potentially drastic measures are sensible reactions to the sustained history of disenfranchisement by the state and outside corporations and investors, which include the Guatemalan genocide, the privatization of the Mexican *ejidos*, and the myriad agricultural, mining, petroleum, and hydroelectric interests that threaten the region.

When collaborative endeavors are well-thought-out and communicated, in contrast, both sides do have something to gain. Local investment in scientific research not only makes research in community lands possible but, in the best of circumstances, encourages community members to share knowledge of potential research sites and unreported discoveries. When the field work is in session, the team is more likely to be protected from potentially negative situations, from the attempted forced removal from municipal lands discussed above to roadblocks, violence, and sequestering.

At the same time, community members can take an active part in the narratives surrounding their region and exert their agency in the types of economic activities and political interventions that occur there. By working closely with national and foreign entities, they can cultivate potential long-term allies with enough international reach to counterbalance some of the negative effects of globalization and modernization that are taking hold in their surroundings.

These research projects can also have a direct benefit through seeking finances. In addition to opening up new lines of grant money provided by development agencies, it can also strengthen applications to more traditional funding sources like the National Science Foundation. Research conducted in collaboration with

descendant communities ties directly into the investigation's "broader impacts". These projects explicitly target the foundation's parameters for assessing such impacts, with "the potential to benefit society and contribute to the achievement of specific, desired societal outcomes" [54].

In order to provide examples of how collaborative archaeology can be beneficial to both descendant communities and scientists in Guatemala, we will pick two examples, each from one of the authors' dissertation projects. The first involves the ongoing relationship between Woodfill and the residents of the village of Mucbilha, located in the center of the Candelaria Caves National Park, and the second involves the cluster of villages on the southern bank of the Chixoy/Salinas River where Rivas focuses his research.

3.3. The Candelaria Caves National Park

As the second largest cave system in Central America and the wealth of archaeological material that was already known to be present in the cave system after the pioneering work of Patricia Carot (7, 8), the Candelaria Cave system was ripe for a more comprehensive research project when Woodfill first arrived in the region in 2000. Although he was interested in directing research there, access proved unfeasible for the first few years due to a long-standing conflict between a Q'eqchi' Maya village and a foreign tour operator, which began during the Guatemalan civil war and continued to escalate after the signing of the Peace Accords in 1996. This conflict is described more fully elsewhere [26,36] but will be briefly summarized here.

The village of Mucbilha was founded in 1970 by Q'eqchi' Maya families fleeing the harsh conditions in highland coffee plantations. The swath of land at the base of the highlands that includes the village land was originally set up to be distributed to the landless poor in the 1950s, although after the CIA-backed coup in 1954, much of the land instead was converted to *fincas* (large ranches or plantations) owned by high-ranking military officers and other powerful individuals. Although the first few years of life in Mucbilha was relatively tranquil, trouble from the outside world crept into the villagers' lives with the arrival of a French spelunker who first visited the cave system in 1974. Over the following years, he built up an ecotourism industry with the support of military and political contacts, some of whom owned fincas nearby.

As the civil war heated up in the late 1970s and 1980s, the military was an ever-present threat, and soldiers intimidated and, on multiple occasions, disappeared villager leaders. Although the villagers tried to register their land with the Guatemalan government three times beginning in 1982, each attempt was stalled. After the signing of the Guatemalan Peace Accords in 1996, things were looking up for the community until the foreigner successfully lobbied the government to declare the cave system national patrimony in 1999, prohibiting any land titling within the designated borders. This was followed by pressure to create the Candelaria Caves National Park, which would likely have resulted in the forced removal of the communities contained within it.

The move to declare the national park reached enough momentum in 2002 that preparations began at the federal level, and the Guatemalan government invited the United States Agency for International Development (USAID) to spearhead the effort. Their point person, Anthony Stocks (Idaho State University), was an applied anthropologist who assessed the nature and root of the land conflict and convinced the government to create a new model for national parks for Guatemala, one that involved a system of co-management between Indigenous communities and the Ministry of Culture and Sports. Woodfill was called in to work in village land to assist with the process by registering archaeological remains within the cave system and assisting with creating the tourism infrastructure.

He first met with leaders from Mucbilha and the neighboring village of Candelaria Campo Santo in early 2003 and moved into the villages soon after, spending about eight months over the next two years working in the cave system in tandem with community members. The archaeologists and the villagers each had specific skill sets, connections, and knowledge that they brought to the table and by working together they were able to receive multiple desired outcomes.

The archaeologists were specialists in cave survey, mapping, and the acquisition and interpretation of archaeological remains. As the team included three cavers who were also studying ecotourism at a private university in Guatemala City, we also had knowledge of best practices for creating low-impact tourist trails in the fragile cave ecosystem. We also brought with us access to funding, press, and other specialists. The villagers, in turn, knew the location of many of the caves in the area and those most promising for archaeological investigation. They provided us with a camp site and organized to allow us to hire guides, excavators, cooks, and laundry service. Finally, their participation granted us permission to pass through farmers' fields, although once our association with the village faction was known we became *personas non gratas* in the foreigner's hotel complex and the few caves in land he claimed control over.

The collaboration proved beneficial for both sides as well. The archaeological project resulted in one doctoral dissertation [55], three undergraduate theses [56–58], two books [26,29], six articles and book chapters [59–64], seven proceedings from the Guatemalan archaeology symposium [65–71], and myriad presentations. On the village side, the work was a necessary step for the creation of the park and resulted in the establishment of low-impact tourist paths in six caves. Woodfill wrote a manual for tour guides and arranged an interchange for residents of Mucbilha and other villages engaged in cave tourism to visit established tourist caves in Belize (Figure 9); Belizean tour guides later visited Mucbilha to continue training their local counterparts. After the project investigation was concluded, several national and international funding agencies constructed a small ecotourism hotel and visitor center, a gravel road to this ecotourism complex, stone paths to the caves, and publicity for potential visitors. Most importantly, the Guatemalan government signed an agreement with residents of Mucbilha, Candelaria Campo Santo, and a third village adjacent to the park that allowed their residents to purchase their land at a greatly reduced rate in exchange for protecting the caves and forest within the park system.

Figure 9. Q'eqchi' villagers in Actun Tunichil Muknal Cave, Belize. Photo by B.K.S. Woodfill.

Although the official collaboration between Woodfill and the community ceased in 2004, the relationship has continued and each of the stakeholders continues to assist the other in various matters. The villagers continue to keep Woodfill appraised of new archaeological finds, including a rare pecked cross (Figure 10) within the cave system that was originally reported by Patricia Carot and rediscovered in 2012. The resulting article [60] was largely inspired by a conversation held during a visit to the pecked cross among archaeologists, cavers, and Q'eqchi' leaders, landowners, park guides, elders, and spiritual leaders about what the feature meant to each group.

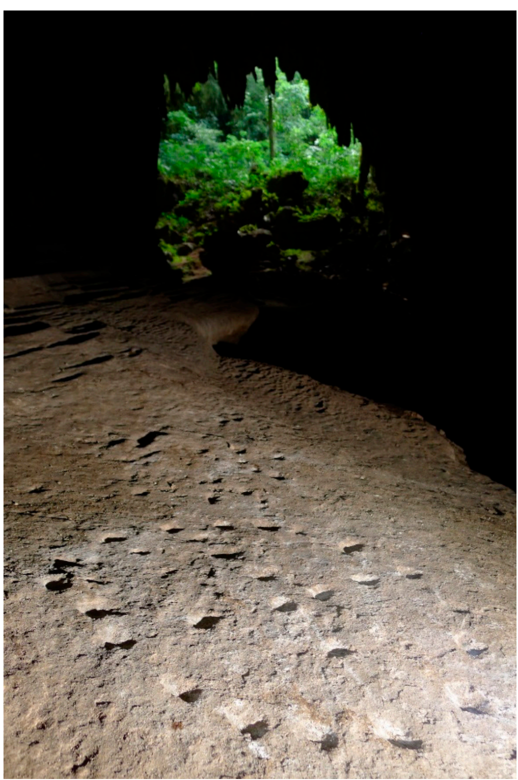

Figure 10. Pecked cross in the Candelaria cave system. Photo by M. Oliphant.

Woodfill has also continued to be involved in the local struggle for autonomy. The conflicts with the foreign spelunker and hotelier continued through attacks on the villagers in the press, on social media, and in 2012, in another round of physical violence directed towards the villagers. After this last injustice, the residents of Mucbilha peacefully shut down his old ecohotel, although they were soon accused in the media of using violence themselves. Woodfill worked with the Guatemalan Ministry of Culture and Sports to assess the actual damage the hotel's closure and a recent municipal road project might have caused in the wake of this scandal. Although it was negligible to non-existent, all of the landowners from Mucbilha—over 50 men—were ultimately charged with multiple crimes by the foreigner and his business partner, and a warrant was made for their arrest.

As a result, the men from the village were unable to seek work outside of their village, and several of them fled to the United States. Woodfill and two other Americans who worked in the village, a professor of Geography and a former Peace Corps volunteer, spent six months between 2018 and 2019 helping one of these villagers navigate the evolving judicial landscape for refugees to be granted a legal status for him and his son. After acquiring the *pro bono* support of a major New York law firm; a Texas-based refugee organization; a Bethesda, MD-area church; and a couple from this church willing to host the father and son, the pair were eventually released and are still awaiting a hearing. To help with the Guatemalan end of things, Woodfill, the geographer, the former Peace Corps volunteer, and two anthropologists are each contributing chapters to a Spanish-language edited volume [72] to be published in Guatemala about the village and its history in order to assist with the fight against the human rights abuses its residents continue to receive.

3.4. The Nueve Cerros Water Management Project

Rivas began archaeological work in Guatemala in July of 2015. His research interests lie in ancient Maya landscapes, and decided to join the Nueve Cerros team to conduct on-the-ground surveys, locating mounds, water management features (canals, ditches, reservoirs). He arrived in Guatemala 10 days after finishing a field season in a highly technical, Western science-focused archaeological

project in a remote region of Central Asia. The field research teams alone consisted of geoarchaeologists, geophysical remote sensing researchers, an aerial remote sensing specialist, a paleoethnobotanist, a denrochronologist, a geochemist, and an excavation team.

Rivas did not spend the first week in the field in Guatemala conducting archaeological investigations; he instead was sent to survey the corners of every horticultural plot of one of the Q'eqchi' communities built atop the Nueve Cerros site. The farmers needed to know the size of their parcels and other general spatial information to divide them up and begin the process of purchasing the land.

As a first year PhD student, he was open and willing to help the community with their mapping efforts at Woodfill's direction, although he did not understand why an archaeology project was so involved with community development. Rivas does not work for an NGO, is not a civil engineer, nor does he work for the local government that would be assumed responsible for parceling farmers' lots. Up to this point, he had never spent field time conducting anything other than archaeological work. Having an archaeology student spend valuable field time, money, and equipment on anything other than archaeology was unheard of to him, and not something that was prioritized in the four previous heavily funded projects he has worked on.

Rivas has since learned that these surveys are not usually done for the communities until election time, in which local officials running for office release funding for most of the civil engineering projects. He also observed that subsequent interactions with the Q'eqchi' were radically different than he was used to. For the rest of the season, local farmers volunteered their efforts in assisting Rivas in his own landscape interests. When he began his archaeological investigations the following week, he worked alongside one of the local farmers who accompanied him on his survey. The farmer walked with him around the site, making sure other landowners were aware of his presence, and that he was not intruding. Although this was not always a harmonious situation, locals around Nueve Cerros knew that we were not simply scientists extracting information for our own benefit. The surveying efforts were rather successful over subsequent years, and after he finished his doctoral coursework, Rivas decided to focus his dissertation proposal on the E-Group Ceremonial Center (Figure 11) which was slated for excavation during the 2018 field season.

Figure 11. The Nueve Cerros E-Group. Photo by A.E. Rivas.

There are clear anthropological reasons for why this center is important to investigate. E-groups can represent early sedentary communities, have astronomical significance, and reveal interregional interactions [73]. The E-group ceremonial center at Nueve Cerros is located between two lots owned by different families. A few months before the field season began, Rivas contacted the owners of both lots, requesting permissions for excavations. He turned in a dissertation proposal and plan for investigations and was ready for carrying out his dissertation project. However, a month before the field season, Rivas had learned from local collaborators that one of the families had sold their lot to an unknown rancher who did not live in the region, meaning we had lost access to part of the ceremonial

center. The other family, which had never directly collaborated with field archaeologists, revoked their permission to excavate their half of the architectural group. The head of the family had recently moved to Florida, U.S, and understandably felt uncomfortable having foreign researchers investigate their land without him being present. Within a week, however, he was able to work with community leaders to propose and obtain permission for an alternate project and resubmitted his dissertation paperwork.

Rivas's actual dissertation focused back on large-scale surveys and residential water management at Tierra Blanca, a sector of the Nueve Cerros site that contains most of the households and residential groups. The investigation shifted from focusing on early ceremonial centers and ritual practices to questions relating to hydrology and landscape construction. Rivas and Woodfill conducted drone photogrammetry and digital elevation models (DEMs) of the major architectural groups at the site including the epicenter, the salt production zone, and the Tierra Blanca area (Figure 12). Rivas then used this data to create hydrological modelling using geospatial analyses tools. Additionally, Rivas excavated residential mounds and depressions at Tierra Blanca. His excavation and GIS modeling results indicate usage of a collective economy and residentially controlled water system based on groundwater wells, dating at least to the Early Classic. The easy access to the aquifer is not common among major Maya cities, which relied on constructed rain-fed reservoir systems. Access to the water table may have played a large role in sustaining the population for survival at least four centuries after the Classic Maya collapse [26].

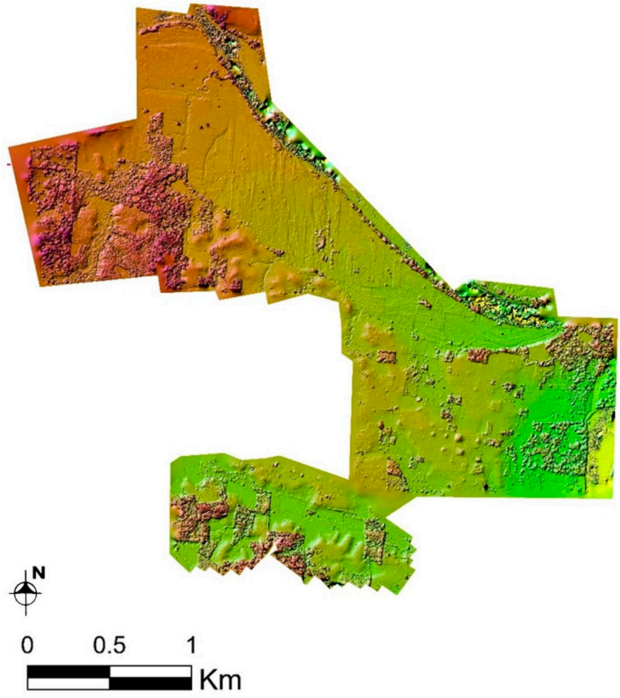

Figure 12. Digital Elevation Model (DEM) of the Tierra Blanca sector of Salinas de los Nueve Cerros. Image by A.E. Rivas.

Groundwater access was not just valuable for ancient Nueve Cerros laborers. Today Q'eqchi' families rely heavily on groundwater wells, and the construction of community wells is now one of the most important development projects that NGO's are involved with in the area. The Nueve Cerros project works with ADAWA (Asociación Civil No Lucrativa para el Desarrollo Aj Waklesinel), a local indigenous operated NGO focused on community development initiatives [74]. Public well building is one of the major projects ADAWA is continuously working on, from building large community wells in each of the local schools to providing discounted water filters to schools and individual families. The data Rivas collected on the ancient hydrological system was mutually beneficial for the farmers and archaeologists. As Rivas has described elsewhere [75], farmers living in the Tierra Blanca area

reopened some of these ancient depressions as modern wells and even created a canal system to separate clean and dirty water (Figure 13). This study showed how an archaeological understanding of subtle topographic changes through GIS modelling, and stratigraphy of depressions can directly contribute to community development projects.

Figure 13. Clean and dirty water. Photo by W.G.B. Odum.

His research efforts went beyond the excavation area and recording ancient architecture, with drone photogrammetry of the banks of the Chixoy River, and the hilly terrain west of the Nueve Cerros ridge. This was also done with members of ADAWA, who helped Rivas gain access to different plots of land. In these drone flights, no archaeological mounds were discovered, although some surface artifacts were visible during ground survey. These data were used for understanding the physiography of the greater Nueve Cerros region.

While conducting these surveys, community members living on the banks of the river petitioned Rivas and the ADAWA members for a water filter for the local school. In this particular community, none of the families had filters in their homes, and neither did the local elementary school. Local elders were particularly concerned for the children, as they are well aware of the impact of waterborne illnesses on the young. The elders know about the work ADAWA conducts for the nearby communities, and they seized the opportunity to speak with the NGO members. The following day, Rivas completed his drone work along the river, and ADAWA was able to donate one of their water filters to the local school. The team spent an afternoon at the school, teaching the schoolteacher and students how to properly use and maintain the filter. These filters, made by the Guatemalan company Ecofiltro, are inexpensive, distributed throughout the region by ADAWA, and can be used for up to two years, making them valuable long-term and easily replaced solution for the many Q'eqchi' families.

At a village west of the Nueve Cerros Ridge, community leaders are in an even more dire situation. When we first arrived to this village, the community leaders were very skeptical of the team's presence. Were we here just to extract resources or data for their own ends? Would any of this information be helpful to the community? When the local farmers realized the kinds of surface hydrology information Rivas was interested in, they instantly opened up to him. This particular village has had many problems with accessing groundwater. A large community well was built at the center of the village, with the financial help of a European operated NGO. Geophysical surveys were conducted by the NGO but did not reveal any information on water table depth. Unfortunately, the well runs completely dry during the dry season, making this feature obsolete for the four to six months of the year when it is most needed.

Rainfall is still common during the dry season, so a large tank was placed on top of the well but is not enough for village-wide needs. After the locals explained this situation to Rivas and ADAWA members, they asked us if the topographic surveys can help them identify areas where they can place a well that can remain with water throughout the year. On this particular day, we were also joined by a civil engineer from Coban, who was interested in assisting the development programs we have been working on. While we have not to date built any new wells or planned water systems with the village, talks are still ongoing with all interested parties to further assess how ADAWA, civil engineers from Coban, and the archaeological team can work together for these collaborative interests.

With these examples of community-oriented archaeology, it is clearly shown that the simple presence of archaeologists can also have some long-term benefits for all parties involved. For this to work, archaeologists must think beyond the rigor of scientific investigations, have flexibility in time management of a field season, and an understanding of the value archaeological research can bring to the community, from heritage programs to local infrastructural needs. These projects have shown that aside from documenting ancient societies and extracting data, community members can tell us directly how they can benefit from the data we are collecting from their homes.

4. Discussion

As archaeologists and community members navigate the unexpected challenges and opportunities in a shifting political landscape, there are still several things that all stakeholders should keep in mind to make the collaboration as mutually beneficial as possible. To that end, we echo Smith [12] and others [2,3,7,9,76] in suggesting several characteristics which should increase the odds of success for collaborative research projects.

1. Each Stakeholder Group Should Be Able to Address Needs of Other Stakeholders

On the academic side, needs include a reasonable amount of freedom and support to acquire the data necessary for theses, dissertations, presentations, and publications as well as any letter of support needed for grants and government agencies. The community should provide the necessary infrastructure—campsites, laborers, food, water, etc.—for the field component of the research at a reasonable cost to the researchers as well as permission to enter land, extract materials, and, if necessary, transport each season's finds to a project laboratory.

Community members, in turn, should be able to expect the archaeological team to contribute towards working through their pressing issues and problems through their expertise, equipment, and connections. In our experience, these include land rights, legal battles, the development of sustainable income, access to education, and water management. Some of the archaeological skillset—successful grant-writing, hydrological modeling, survey, soil analysis, and mass communication—can be easily refitted to address needs and problems that locals address. We have worked with issues of land use, water management, sustainable income generation, increasing tourism, and helping with human rights abuses.

2. Each Affected Community Should Support the Presence and Involvement of the Other Stakeholders

Collaborative research affects the entire scientific team to varying degrees. When non-scientists are able to voice concerns and have input in research parameters and design, investigators have to be somewhat flexible. Of course, the idea that archaeologists can actually perform fieldwork without some level of community support is largely a fiction. Even when communities are not explicitly included in planning and executing scientific investigations, there are myriad examples in Guatemala and Mexico when they exert their will through more forceful means, including roadblocks, kidnapping, vandalism, and legal challenges. We feel that it is better to have the flexibility up front, to be explicit about the possibility of changed plans when forming the research team, and to have mechanisms in place to accommodate changes in research venues and timelines as they come up.

In order to acquire community support, we have found in general that the best way to open a dialogue with community members is through a meeting with designated village representatives—the Community Development Committee (COCODE) in Guatemala and the commissar (*comisario ejidal*) in Mexico—in which we clearly state reasonable goals, expectations, and possible avenues for community

assistance. If successful, we set up a time to meet up with the village as a whole (which, in our experience, can occur within a few hours or a few days). The larger meeting has the same goal as the previous one, in which each side is able to delineate what it is able to reasonably offer and expect.

3. Limit Most of the Collaboration and Negotiation to the Specific Individuals and Organizations That Bring Something Concrete to the Table

In our experience, only a small part of the community and the research team is actually involved in any collaborative efforts beyond this initial meeting. The lab technicians and specialists typically spend little time in the field and have little to offer to any development efforts, and since research tends to focus on specific parts of community land, most locals are unaffected by our presence. Different local factions end up being the primary collaborators, depending on the specific political landscape of the community. Over the past twenty years, Woodfill has worked closely with political and religious leaders, ad hoc landowner associations, community non-governmental organizations, schoolteachers, and Christian congregations to acquire the required permissions, support, and knowledge needed to conduct field research. There has been an equal amount of variation on the project side, from trained applied anthropologists and ecotourism specialists to open-minded project directors and field archaeologists who have a sought-after skill set.

5. Lessons Learned

As collaborations between academics and communities evolve, flourish, and, occasionally, sputter, there are a few basic characteristics that all sides should agree on to ensure continued success.

1. Each side must be willing to engage in sincere and sustained dialogue, and must accept that no one group will get everything it needs.

In general, archaeologists working in the Maya world do not have the multigenerational weight of mistrust and misdeeds that North Americanist colleagues have been forced to reckon with since the signing of the North American Graves Protection and Repatriation Act in 1990 [77]. However, scientific teams are typically composed of individuals who come from much more privileged backgrounds and situations than the local populations they encounter in the field, which leads to its own problems of mistrust and mismatched values, assumptions, and prejudices from all parties. Each stakeholder group must try to work past them to be able to engage with the others. In addition, each group must be willing to compromise and prioritize goals.

2. Each side must be flexible and have reasonable expectations, both for the total amount of benefits they can expect and the timeline for when these can occur.

This has been discussed in more detail in an earlier article (62), but the biggest sources of conflict and frustration seen by the authors have occurred when one or more stakeholders are unwilling to compromise or be patient. Funding, organization, data analysis, write-ups, permits, and shipping can all take longer than expected, especially because many of them also depend on other bureaucratic institutions—universities, foundations, and government agencies. In the instance when access to land for archaeological work is cut, all aspects of the research project—research questions, timeline, data plan, crew—needs to be flexible, with alternative plans as a realistic option to continue fieldwork. In these cases, long-term relationships and collaborations with communities can be crucial, as having positive relationships with different families, farmers, and local leaders can lead to new opportunities for archaeological investigations.

3. Each stakeholder must take the others into account when making plans that affect them.

On the academic side, we need to abandon the traditional mindset in our field, that our research benefits a nebulous "humanity" that allows us the comfort of being neutral observers who simply report facts. Instead, we need to think about how our research can be beneficial or detrimental to the other stakeholders, fundamentally following McAnany [76], p. 52 by attempting to "rebalance what were unidirectional power relations and augment multivocality". What we publish, where we dig, how we present our finds can all result in distinct and profound outcomes for the people who live on the surrounding land, which can lead to increased looting, foot traffic, elevated land prices,

and possible legal troubles. While we absolutely do not encourage intellectual censorship of any kind, we do feel that it is high time for archaeologists to think through the practical and ethical ramifications of our research to the extent that our colleagues who deal with living human subjects do.

On the community side, landowners and local organizations need to keep investigations in mind when building, sowing, creating infrastructure, etc. The communities must be committed to preserving archaeological remains for the archaeologists and, whenever possible, giving us sufficient warning about pending sales, construction projects, resource extraction, etc. that could damage the archaeology so we can shift emphasis there.

6. Conclusions

Archaeologists typically understand our field in one of three ways. For many, especially those couched in the "archaeology as science" camp, our investigations are thought to be politically neutral, based in acquiring evidence of the human past, which is used to more broadly understand the history and diversity of our species. The second and third camps view archaeology as a potential boon for affected communities, albeit in different ways. Proponents of the second camp point to the inherent value of archaeology outside of academia, be it through developing Third World nations and marginalized communities, documenting and promoting evidence of past greatness and pride, or allowing descendant communities to reclaim some degree of control over their heritage. The third camp, of which we are obviously a part, seeks to move beyond the small piece of the Venn diagram where archaeological and Indigenous interests intersect—interpreting and preserving the past. Instead, archaeological methodology and presence can be repurposed as a set of tools that can address a much broader range of issues that are identified by the community members themselves, just as archaeologists depend on community support to investigate the minutia of the human past.

Regardless of the focus, all three of these approaches promote the idea that the field is providing some sort of greater good, be it scientific knowledge, sustainable income, or weapons to fight against racist narratives. While these are certainly beneficial to varying degrees, archaeology still uses methods and theories rooted in the discipline's colonialist history. Archaeology is still fundamentally an extractive discipline that benefits the careers of the scientific community but provides virtually no long-term advantage to the communities surrounding our field sites. When sites are developed for tourism, the new regulations, skyrocketing property values, and education and linguistic barriers for the well-paying jobs that are created often alienate and force out those with whom we worked [26,27,63,78,79]. Furthermore, while it is certainly important for descendant communities to reclaim their past from the long list of problematic and often racist narratives involving aliens, Israelites, Phoenicians, and the inevitability of European world dominance, this is often a much less pressing concern than many other effects of institutionalized racism and marginalization that these communities experience.

Collaborative community archaeology, as discussed throughout this article, is one way to open up our research to include—in a meaningful and mutually beneficial way—the communities already affected by our research. By transforming neighboring communities from pools of labor into active stakeholders, the archaeological endeavor can be used to address interests and concerns beyond our own narrow focus on the human past. By repurposing our presence, skills, and knowledge in ways that can be used to support and amplify local initiatives, we become each other's accomplices while still advancing our own agendas. By reframing archaeology in this light, both Woodfill and Rivas believe that we can truly begin to decolonize our field.

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Article

Reflecting on PASUC Heritage Initiatives through Time, Positionality, and Place

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Abstract: This paper reports on heritage initiatives associated with a 12-year-long archaeology project in Yucatan, Mexico. Our work has involved both surprises and setbacks and in the spirit of adding to the repository of useful knowledge, we present these in a frank and transparent manner. Our findings are significant for a number of reasons. First, we show that the possibilities available to a heritage project facilitated by archaeologists depend not just on the form and focus of other stakeholders, but on the gender, sexuality, and class position of the archaeologists. Second, we provide a ground-level view of what approaches work well and which do not in terms of identifying aspects of cultural heritage that are relevant to a broad swath of stakeholders. Finally, we discuss ways in which heritage projects can overcome constraints to expanding community collaboration.

Keywords: archaeology; community museums; gender and sexuality; Maya

1. Introduction

In framing the contributions to this Special Issue of *Heritage*, Fisher and Chase endorse Patricia McAnany's suggestion that Maya archaeologists make their work more inclusive in scope and participation. If we do not form what Fisher and Chase call equitable partnerships with local communities, we "endanger the discipline and flirt with societal and academic irrelevance" [1]. Yet, in a provocative paper published 10 years ago, Marina La Salle [2] asked "what if collaboration, despite all of the good intentions of those who are sincerely committed to 'decolonization,' is really just making everyone feel better about continuing an exploitation that may, in fact, be inherent in the system?" In other words, what if partnerships with local communities merely enable archaeologists to continue business as usual: Maintaining access to data that archaeologists then convert into publications that reap financial reward and other forms of currency [3]? Ironically, La Salle [2] notes that the recent explosion of self-reflexive literature on collaborative archaeology represents a new stream of academic revenue though now on a different level, such that archaeologists can double dip, first by publishing on the data and then by publishing on the participatory process by which the data were extracted.

Without question, archaeology is self-serving. Archaeologists recognized nearly 40 years ago that archaeology as a field of production attends not merely to the archaeological record but to contemporary systems of rewards and structures of symbolic capital [4–8]. Nevertheless, we agree with McAnany, Fisher, Chase, and the other contributors to this Special Issue (not to mention several authors cited below) that heritage work can benefit contemporary stakeholders without harming others [9] and without having to solve the world's most pressing problems [10].

In this paper, we discuss some of the benefits we have sought to create and what we have learned from stakeholders of an archaeological project in the Northern Maya Lowlands. Despite the growth of

literature on archaeological heritage and precocious analyses in our corner of the Maya world [11], Ann Pyburn's [12] comment that such work "remains an unremarked and unpublished part of archaeology's oral history" retains a degree of validity for our region. A non-representative sample of 20 "broader impact" statements from Maya-themed National Science Foundation proposals reviewed by the first author shows concern mostly with hiring or training workers and students and disseminating research results among scientists and locals. Though our own work might not be pathbreaking, we hope the following analysis of our successes and failures in going beyond the standards seen in the NSF proposals contributes to "a useful bank of knowledge" [12]. Thus, we focus on the process by which we defined and revised our heritage goals, frankly highlighting the challenges and mis-steps along the way. At present, our goals are not necessarily to valorize traditional culture or to get people to see themselves as "Maya" but to bolster already existing dispositions and discourses on heritage that strengthen people's sense of identity and pride. We interact with multiple overlapping communities that occasionally conflict. Making heritage beneficial to these groups involves accepting forms of disturbance to the archaeological record that might bother the most zealous preservationists and engaging in debates with stakeholders over what a more pragmatic form of preservation should look like. It may also involve recognizing unexpected stakeholders and utilizing new and already established social networks. We are currently planning a pair of exhibits (geared toward local and migrant stakeholders but not tourists), which we hope will provide a resolution to one of these debates and enable collaboration that is relevant to multiple stakeholders. We begin by providing background on the key stakeholders.

2. Local Stakeholders

Many different communities have a stake in the results of an archaeology project, including federal and regional officials from Mexico's Instituto Nacional de Antropología e Historia (INAH), domestic and international archaeology enthusiasts, and local communities. Our archaeology project, the Proyecto Arqueológico Sacbé Ucí-Cansahcab (PASUC), began in 2008 and has investigated several ruins along an ancient stone causeway (sacbé in Yucatec Maya) that runs 18km from the ruin of Ucí, the western endpoint, to the ruin of Cansahcab, the eastern endpoint. We follow in the footsteps of Rubén Maldonado Cárdenas, who conducted the first archaeology at these sites as part of the Aké Project from 1979 to 1982. Ucí is the largest of these ruins and its monumental core hugs the south edge of the modern village of the same name. Working at a particular ruin requires permission not just from INAH, but also from landowners. Though ruins are property of the nation as a whole (as defined by the federal government), land is owned privately or by communal land-holding groups (ejidos). Our laborers mostly come from three different places: The villages of Ucí (population 1224) and Kancabal (population 552), and the town of Cansahcab (population 4293). Ucí, located 3km north of the municipal center Motul (population 23,240), was the first place we worked and over the years we have spent by far the most time on Ucí land with Ucí workers. Given this extensive contact, heritage and outreach work takes place primarily in Ucí but also in the villages of Kancabal and Chacabal, in the municipal centers of Motul and Cansahcab, and among migrants in Los Angeles. Many people from this part of Yucatan began migrating to California in the 1990s. Migration reached its peak between 2000 and 2005, due in part to devastating hurricanes and neoliberal agricultural policies in Mexico [13]. Several hundred people originally from Ucí now live in the Los Angeles area and maintain strong connections with their hometown. They have donated tens of thousands of dollars to renovate Ucí's Catholic church and pave roads. Many visit Ucí in June during the two-week-long fiesta for the town's patron saint, San Antonio de Padua. Others cannot visit due to US immigration policy but have maintained contact not only with friends and relatives, but also with virtual communities centered around Ucí, such as Facebook groups.

To treat people linked to Ucí as a major group of stakeholders is not to say that this is a single community. Despite strong connections between people living in Ucí and migrants from Ucí living in Los Angeles, several permanent Ucí residents see themselves as distinct from those who migrated. Of course, there are fault lines even within those who live in Ucí year-round, though in our experience,

these fault lines are more fluid than those seen in famously factionalized villages in Yucatan such as Chan Kom [14–16].

Should we call people from Ucí a descendant community? This question brings up a rich, nuanced discussion. Archaeologically, we see evidence of continuous occupation in Ucí from at least the Late Classic period (including a 700 CE carved vase with the toponym Ukayi) to the conquest, the colonial period, and the present. Archival evidence confirms continuity from the 16th century, when the village was called Ucuyi. Many older people who grew up in Ucí speak Yucatec, the language of the native population at the time of the arrival of the Spaniards and well before. Thus, one can easily posit continuity between contemporary people and the ancient Maya. Yet, oppression, poverty, and spiritual alienation over the last 500 years have disconnected many contemporary people from the deep past [17]. In the face of ethnic discrimination, upwardly mobile people often reject ties to Maya cultural traditions [12]. Other processes of historical severance have been described by Matthews [18] for African American communities in New Orleans and Shackel and Gadsby [19] for working class neighborhoods in Baltimore.

People in rural Yucatan whose ruins have not yet been investigated by archaeologists often say that giants or little people, not ancestors, built the stone mounds recorded on archaeological surveys [16,20]. Thus, many contemporary people do not see themselves as descendants. That the term “Maya” as a reference to a group of people is neither ancient nor stable also troubles the prospects for connecting contemporary people to what archaeologists call the ancient Maya. Not found in any pre-Hispanic writing, the word appears very sparingly in the colonial period, almost never written by native Yucatecans as a term of self-reference. In those colonial contexts where the term does appear, people used it as a self-deprecating remark [21] or as an insult to others [22]. In some places, the term Maya still carries derogatory connotations [23,24]. In the 1880s, linguists began using the word Maya more broadly as the label for a family of native languages that included Yucatec and a couple dozen others [25].

Whether they speak Maya or not, people in places like Ucí often do not self-identify as descendants of the ancient Maya. Yet in keeping with the idea that heritage is in motion [26,27], archaeology often contributes to changes in self-identity. By listening to what archaeologists and tourists say about “Maya culture,” people living near archaeology projects learn about this new and now positive use of the term “Maya” [12,28,29]. Some come to appropriate the term as a kind of strategic essentialism, particularly in tourist zones where identifying as Maya can help sell handicrafts or fetch higher tour guide tips from tourists in search of authenticity [30]. In other words, public archaeology can create descendant communities and make stakeholders [31]. We find nothing illegitimate in such occasions when archaeology plays a role in leading people to claim the ancient Maya as ancestors. In many contexts, identification with past Maya people requires little or no prodding from archaeologists, as is clear from Maya cultural activism in the highlands of Guatemala and Chiapas [32–36], and the Yucatan peninsula [37]. Furthermore, people can form ethnic identities connected to the past in ways that do not involve archaeology, discursive strategies, or cultural/political activism. For example, Armstrong Fumero [38], using a perspective that highlights the agency of objects, and Hutson [29], using a relational perspective built from the work of Tim Ingold [39], both argue that many rural Yucatecans, prior to contact with archaeologists, do indeed manifest strong connections to the past through interacting with ruins as part of daily life and through making a living from soils and ecosystems similar to those inhabited by the ancient Maya [40].

In the end, whether or not stakeholders from Ucí should be considered descendant communities depends on who speaks and when the conversation transpires. In certain times and places, a speaker’s connection to ruins can be as strong as those of contemporary Puebloans who revere archaeological sites not as abandoned ruins but as the lively homes of spirits and ancestors [41–44]. We were lucky that an elder with these views vouched for PASUC at the beginning of archaeological fieldwork. Less important than being a certified descendant community is the issue of being able to identify in some form with the past. A good example comes from Theresa Singleton’s work on 19th century African American rice farmers in rural Georgia [45]. Here, the closest biological descendants of the rice farmers

were less interested in archaeology than were urban professionals who had little to do with those farmers. Another good example comes from Teresa Moyer's work at the Boyne house in Flushing, New York [46], where 21st century Asian Americans find common ground with 17th century Dutch colonists. These examples show that finding a connection between past and present that resonates with stakeholders is more important to the success of a heritage project than the directness of that connection. Finding resonance requires finding relevance.

3. Finding Relevance, Part 1: False Starts

If there is a common thread in the growing mass of collaborative, public, ethnocritical, participatory, and community archaeologies, it is relevance. Some of the most vibrant collaborative projects [47–49] are those that adopt a perspective that will resonate with stakeholders. Archaeologists' ideas of ancient heritage often do not resonate among historically oppressed and economically disadvantaged stakeholders preoccupied by the challenge of scraping together a living amidst uncertain local and global economies. Hutson learned this lesson firsthand while doing doctoral fieldwork at the ruin of Chunchucmil 20 years ago. Based on the good intentions of the now-deceased project director, an idea circulated that local communities would benefit from converting a part of the ruin to a museum with live displays of traditional culture. The idea had several flaws, only two of which we mention here [50]. First, tourism can be an empty promise [51]. Most tourist income in the Maya area does not go to villagers [52,53] and archaeo-tourism developments like the Mundo Maya Organization can disempower native Maya communities [54–56]. Furthermore, the market for archaeological tourism is saturated. In the state of Yucatan, dozens of archaeological sites are already open to the public, yet only the most spectacular attract significant numbers of visitors. Second, and more importantly, the museum idea went against local interests because, in a village whose livelihood is centered not on maquiladoras nor migration but on the land itself, it threatened to take away land [57]. As a result, the museum idea went nowhere and created rifts that took intensive effort to repair.

Thus, when Hutson initiated PASUC, he wanted heritage work to align with stakeholders' own economic, intellectual, and/or emotional goals. Early conversations at village meetings and informal chatting suggested a common ground between past and present that we thought would make the archaeology relevant: Mobility. The construction of the 18km-long causeway, unusual in the past, indicated that mobility was important for several ancient actors. Mobility also intersects with contemporary livelihoods. Given mass migration from Ucí to Los Angeles, mobility is an economic juggernaut and a critical aspect of the emotional experience of stakeholders. Thus, mobility seemed to articulate directly with pressing contemporary concerns. Initial conversations in Ucí showed that people who had lived in the United States and migrants who were visiting Ucí from the United States during the patron saint fiesta could be quite passionate about archaeology.

Having read that diasporic Irish Americans expressed more excitement about Charles Orser's 19th century Irish potato famine project than did people in Ireland [45], Hutson began making contacts in Los Angeles. This was easy thanks to the Red de Clubes Yucatecos USA (Network of Yucatec Clubs), which holds an annual vaqueria, a fiesta with folk dancing, in Los Angeles. In the September 2010 vaqueria, PASUC received permission to set up an information booth about Motul-area archaeology just inside the entrance and across from the beer counter. Any of the nearly 500 people who attended could see us, and lots of people were interested. Behind the beer counter, the younger brother of one of the men who works with us in the field in Ucí had posted a cardboard sign with the words "Saludos a Ucí desde Los Angeles" (Greetings to Ucí from Los Angeles). This gave us the idea of starting a web blog, at least partially centered on heritage, where such messages could be accessed by people on both sides of the border. The blog, called ¡Sacbé!, ran in English and Spanish and gained some readers in both the US and Mexico (http://sacbeob.blogspot.com) but Hutson abandoned it after a few months for several reasons.

One of the reasons for the failure of the blog was that in late 2010, few people in Ucí were online. Smartphones were not widespread and almost nobody in the village had an internet connection. So, a web-based bulletin board could not really link people virtually across a border, regardless of whether

heritage was involved. Today things are very different. The availability of cellular connectivity within even the smallest communities in the Peninsula, and the proliferation of communication platforms, such as Facebook and Whatsapp, permitted new ways of interaction with all members of Ucí, abroad or still living in the community. Ucí-specific Facebook groups ("Ucí siempre Ucí") have become essential in community organization, but also in highlighting aspects of the community, which are seen as critical in perpetuating the notion of an Ucí identity. Aside from major collaborative projects, such as paving contemporary roads, this platform is also used, for example, to organize fundraisers to repatriate bodies of migrants who have died in the USA. Given the cost and complication of this process, this is seen as a burden that can be placed on the community as a whole no matter their place of residence. When we asked about the best way to publicize a public talk, we were directed specifically to the Facebook group. When we asked why, some of the reasons given were that this included the community in the USA in activities and decisions made within Ucí. Another reason was that most people from Ucí no longer work there, and therefore only spend a limited amount of time within the actual community. The public talks given in Ucí were recorded and uploaded to the Facebook group. This sparked even more conversations and questions, which can be addressed through further collaborative research.

The blog also failed simply because it did not have much buy-in. Hutson came up with the idea, not stakeholders, and Hutson's own positionality at the time (father of a newborn) reduced the time needed to network it more closely with stakeholders. More broadly, stakeholders' receptions of the idea of mobility as heritage were mixed. Older people who had spent a lifetime working the land and therefore knew a lot about the sacbé and other archaeological features were excited about the heritage of mobility. Younger people seemed interested, but conversations about causeways and movement did not go very far. Younger people's lives were hugely impacted by migration (even those who did not migrate), but they did not bring up, on their own, the connection between past and present movement. What were people bringing up on their own, and how could these interests be integrated into a more participatory framework?

4. Finding Relevance, Part 2: Positionality and Place-Based Engagement

As Ann Pyburn [58] has repeatedly stressed, ethnography can provide the best opportunity for understanding stakeholder interests and standpoints. In PASUC's first decade, we missed several ethnographic opportunities simply because we decided to live in Motul as opposed to living in a village. Motul was convenient (it had internet, banks, large stores, more choices of houses to rent) but in Motul, located just 3km from the large site of Ucí, most people were unaware of the ruins. Thus, we missed multiple chances to spend time, as participant observers, in stakeholder communities. Perhaps what we most missed was a chance to get a deeper understanding of stakeholder standpoints [1]. In repurposing feminist standpoint theory to the field of cultural heritage, Allison Wylie [59,60] argues that groups that have been subjected to domination and oppression, such as Canadian First Peoples, "may know different things or know some things better than those who are comparatively privileged." Standpoint theory also nudges privileged academic analysts like ourselves toward recognizing the contingency of our own points of view and where they come from. Two of us finally lived in Ucí during the most recent field season, not in an archaeological camp at the edge of the village nor an ex-hacienda set apart from the village, but in a modest house by the main square. In this context, setting up a ceramic table out front resulted in so many casual conversations with passersby that it was hard to get work done. Yet, this is not a downside if we view process to be as important as product. In previous seasons, we hosted lab tours in Motul to increase transparency about what we do with artifacts, but having the artifacts out on tables in Ucí, all day long, visible to any passerby, greatly increased conversations about heritage. Placing the ceramic lab out in the open within Ucí created a learning environment, which could be largely determined by the local inhabitants. By hosting a de facto "open house" day after day, the multiple stakeholders within the community could determine the nature (e.g., time, duration, content) of the interactions themselves. This is vastly different from more "traditional" forms of community engagement, such as public talks, which usually follow archaeologists' schedules and leave little to

no room for further conversations. These interactions were vastly productive given that they allowed us to reach multiple age groups and people with different degrees of knowledge about archaeology. The themes and questions brought up during these daily interactions heavily influenced other forms of public outreach within the community.

Public talks hosted by Vallejo-Cáliz within Ucí addressed many concerns brought up during these closer conversations. Aside from being curious about the archaeology within their community and our own specific investigations, many community members also mentioned that they wanted us to investigate local folk tales and the pre-Hispanic to Colonial transition. These are excellent foundations for future collaborative work. We also learned from these exchanges the importance of an interpretive display in Ucí and the interest in similar exhibits among parties outside of Ucí. We discuss our initial steps towards such projects in the final section below.

Living in the village, even for a relatively short time, made it extremely easy to be part of village life: Attending weddings and fiestas, participating in milpa burns, becoming a regular at small businesses, buying panuchos at the templo. We could effectively shelve the rental car. We had been eager to do this ever since someone from Ucí put a rock through the windshield of a rental parked on the edge of the village during fieldwork in 2016. Ditching the car also affected our positionality. Most people in Ucí do not have cars. Walking (or riding on the back of someone's motorcycle) to the ruins and everywhere else in the village puts us on the same level as most villagers at least in terms of transit. Of course, our privileged position as employers, as credentialed specialists, and as outsiders with access to extensive resources means that we occupy very different, potentially neo-colonial spaces. Yet there are ways of softening these power differentials: Lift rocks in the field just like workers do, share your food as they share with you, or make jokes at your own expense.

At the same time, positionality of both archaeologists and villagers can prevent the kind of ethnographic opportunity just described. Literature on heritage work often highlights the diversity and complexity present within collaborating communities, while downplaying the distinct backgrounds, sensibilities, identities, and personalities of researchers. If ethnography, and consequentially heritage work, entails bridging (or softening) a distance between the archaeologists and field collaborators, then various aspects of one's identity can "figure prominently in the scholarly product" [61]. Furthermore, if achieving "closeness" with collaborators is one essential aspect of positive heritage exchange, then those "more distant" from societal or disciplinary norms face additional challenges in order to form genuine or meaningful relationships with community members. Welch experienced several challenges navigating community relations as a gay, cis-gendered male. Despite the immeasurable generosity of local collaborators, who hosted him in their homes numerous times for dinners and parties, Welch's concealment of his sexuality paired with the numerous homophobic remarks overheard during fieldwork prevented him from forming genuinely close relationships with collaborators. While Hutson and Vallejo-Cáliz experienced positive aspects of living within the town, the fear of ostracism and the negative consequences of being outed caused Welch to distance himself from the community to help maintain secrecy. This is consistent with many gay and lesbian anthropologists who must manage their identity and maintain constant hypervigilance during research, which can create painful experiences in the field and lower one's self-esteem [61,62]. At no time during fieldwork did a community member express tolerance of gay people, relationships, or activities.

Lamb's positionality also shaped the ways in which, and the places where, she engaged with Ucí community members. In 2016, Lamb lived in the area on her own for three months to conduct lab work. Not being able to afford a rental car, she planned to rent a house a few blocks from the Ucí center, where the project materials were stored, which would also allow her to get to know the community better. Yet, on days when it was necessary to visit a ceramic lab in Merida, part of the commute would involve walking or hitchhiking on a back road in the dark. While Lamb had never experienced gender-based violence in this region, she chose to live in Motul to avoid risk. These anxieties loomed in shaping her quotidian mobility, yet she recognizes that her experiences demarcate moments of privilege based on citizenship, class, and race (allowing her to easily cross the Mexico-US border, afford formalized

international travel, win grants paying for research expenses, access higher education institutions). However, they also underline how mobility and the use of particular places are forms of exercising or leveling power based on hierarchies of gender [63] as well as sexuality.

While doing lab work in Motul, however, Lamb was able to engage in discussions of heritage that differed from those she had during fieldwork in Ucí. For two months, she mainly worked with five women, three of which were from Ucí and two of which were from Motul. The lab consisted of the small patio and one room of a house. It was in this restricted place that Lamb felt she had some of the most meaningful encounters within a work context. Compared to conversations with most men in the field, conversations with these women were more varied in topic and allowed us to learn more about each other. Additionally, when family members of the lab-workers came to get them in the afternoons, they often arrived early and would sit and chat with Lamb about the work being done. When conducting fieldwork, there were no such possibilities for Lamb to meet the fieldworkers' families. Lamb suspects that interactions with the lab-workers were shaped by gender, place, and type of work. For example, in the lab, each of us undertook similar tasks. This differs from fieldwork where there is a clear distinction between field supervisor—the only one to take photos, draw, or fill out paperwork—and excavators. While we differed in age, class, race, profession, and marital status, our identities as women may have made it easier to establish rapport. Wesp and coauthors [64] note that foreign female archaeologists in rural Mexico are often liminal: "neither fully female nor male, with female bodies and male behaviors". While Lamb may have been perceived as liminal—unlike most women her age in rural Yucatan, she smokes cigarettes and has no children, for example—she nevertheless performed her gender in an intelligible way by engaging in lab work, a kind of labor that is often gendered female [65] and seen as an extension of the domestic sphere. The kind of work done and where it took place, in Lamb's own perspective, enabled a social and physical proximity that was enhanced by shared gender, leading to more organic discussions of our own preoccupations. These women are the people Lamb has kept in touch with most frequently, both when returning briefly to Ucí in 2019 but also through social media. Lamb views these kinds of interactions as the basis for future conversations about heritage and meaningful collaboration that is inclusive of women in Ucí.

5. Finding Relevance, Part 3: Collaboration

As the first decade of the new millennium closed, archaeologists made persuasive arguments for expanding collaboration—for following interests that stakeholders brought up on their own [66–68]. In this context, we sought to situate PASUC at a different place on the collaborative continuum than what one commonly sees in broader impact statements within Maya-focused NSF proposals: Doing outreach and hiring and training students and workers. Despite La Salle's thoughtful critique of collaboration (see above), we believe it can be something other than a soft-power marketing strategy for continuing the extraction and exploitation of archaeological resources. We lack the space for a comprehensive defense of collaborative archaeology and a disambiguation of the different approaches that fall under the umbrella of collaboration. Nevertheless, we note that 1) indigenous voices (not just archaeologists seeking to expand academic currency) have been central in the push for collaboration; 2) this push predates the recent explosion of literature on the subject; and 3) these voices were insistent enough to enshrine the establishment of "equitable partnerships" between archaeologists and indigenous peoples in the World Archaeology Congress' First Code of Ethics in 1990. In the Maya area, Maya people themselves demand collaboration [32]. In Mexico, where heritage discourses have historically been shaped to support the goals of the state, anthropologists have called for a "framework governing the use of Mexico's heritage that is less exclusive and centralistic, more democratic and participatory" [69].

For us, part of increasing democracy was to recognize the partiality of our own perspectives and not let our habitual standpoints silently guide decisions about running an archaeology project. For example, it is common for archaeologists to spend money on an end-of-the-year party with those most closely involved; but is this what everyone actually wants? After opening this to a discussion, we found one year that the workers preferred to pocket the money earmarked for the party instead of

actually having the party. So, that year, we skipped the party and gave out cash. One particular habit that we did not succeed in shaking was the gendered division of labor, in which men do fieldwork and women wash sherds, cook, and clean. Welch once asked a local male leader if any women would like to excavate and was told no. Though this answer may not reflect the views of some of the women the leader was speaking for, we had accidentally disturbed local gender ideologies in 2011 regarding a men-only shamanic ceremony [26] and we did not want to do so again. The idea that some women do indeed want to work in the field is supported by Traci Arden and Julie Wesp, who ran a field season in the village of Cacalchen (Municpality of Yaxcaba, Yucatan) with a female-majority workforce. While the women faced scrutiny in town for rebelliously working in a masculine domain, the project afforded them a chance at entering the cash economy, enhanced their social mobility, and increased opportunity for their children in school [64]. We add that when women are not able to do fieldwork, they miss important aspects of cultural heritage management. Likewise, by not working in the lab, men miss cultural heritage engagements such as the intimate experience of artifacts that comes from cleaning them. When Lamb hired a young man for lab work, none of his female counterparts appeared fazed by his presence, suggesting that certain aspects of the gendered division of archaeological labor may derive as much from the project's assumptions as they do from local gender norms.

To get back to the question of participation in heritage, what did people bring up on their own regarding the history, prehistory, or landscape of Ucí? When asked during the first years of the project (2008-2010), many interlocutors demurred, an experience not uncommon in these kinds of conversations [70]. When people did speak directly to the question, they usually gave one of two answers: Caves and material things (ranging anywhere from fossilized shells in the local limestone to ancient pottery to buried treasure). Caves were something of a non-starter in terms of a community-based archaeology project due to a lack of caves with archaeological deposits; caves loom larger in folklore. Material things, of course, contain lots of potential for a heritage project, and this is what we are most focused on at present (see below). As a result of the more extensive community ties that came from living in Uci, we learned of stakeholders' interests in folk tales and the pre-Hispanic to Colonial transition. Ten years ago, however, an opportunity for collaboration presented itself in the form of a grant from the Maya Area Cultural Heritage Institute (MACHI; see [1]).

The MACHI grant supported a variety of activities involving art, archaeology, food, education, and the heritage of rural Yucatecan livelihoods. Elsewhere, we have written specifically about the MACHI grant [26]. Here, we highlight that which is most germane to the central goal of the present paper: A critical reflection on the evolution of our ideas for how heritage can benefit stakeholders. In terms of collaboration, the project was a success. The planning included community members from the beginning and an unforeseen series of entanglements permitted a wide variety of actors to use the activities as vehicles for furthering their own goals. One of the highlights was an event that helped democratize the discourse on ancient heritage. Borrowing an idea from Lisa Overholtzer [71], we held a symposium in which people from Ucí working on the archaeology project gave their own presentations to the rest of the village, highlighting what they thought was important about what they were uncovering with their own labor. Our archaeology project has been less collaborative than our MACHI project, yet given our context and experience, a completely mutual, community-based participatory research (CBPR) program of archaeological investigation would be difficult to achieve. This has also been the case in situations where outside researchers have had extensive time to lay the groundwork for such an enterprise [70,72]. The non-representative sample of 20 NSF proposals reviewed by the first author contains no CBPR projects.

Our approach to heritage during the MACHI grant had missteps and missed opportunities. The ones we want to highlight both arise from a stated premise of the project: "to preserve both ancient landscapes and traditional cultural practices" [26]. A potential misstep here is that traditional cultural practices should not necessarily be coupled with ancient heritage [12]. In the eyes of many urbanites in Yucatan, "traditional cultural practices" are associated with poverty and backwardness. Linking ruins with traditional culture can potentially alienate people with roots in Ucí who appreciate ruins

but want to avoid the negative stereotype of being traditional. Yet, as we discuss further below, some residents of Ucí have specifically voiced an interest in both.

Regarding preserving ancient landscapes, we felt the issue was straightforward. We thought we could diminish destruction of ancient mounds by stressing at several public events that such mounds, found all over Ucí and beyond, are actually community archaeological resources. This turned out to be a missed opportunity. If anything, destruction of these and other small archaeological features actually increased in the years following the MACHI grant. In 2016, we found that a landholder with extensive property had leveled over a dozen house platforms to install a center-pivot irrigator. Seeing this and other desultory acts of destruction, we applied for a grant for emergency excavations of two mounds in 2017 that were at high risk of being destroyed. The missed opportunity, however, was not that the integrity of archaeological features continued to be compromised. Rather, we missed an opportunity to open a conversation about preservation—a complex issue with lots of grey area—and get standpoints different from our own.

Our own standpoints on preservation have changed over the course of the project. Initially, we favored keeping archaeological sites as intact as possible. This meant that in conversations with people who had antiquities in their houses, we tried to underplay the value of these antiquities to discourage additional collecting. However, this attitude can be colonial, implying that outsiders' ideas about how the past should be used trump how locals value the past. After reading more about collectors [73] and getting a better sense, both through conversations with people from Ucí and through academic writing about other Yucatecans [13,38], of the powerful tie between antiquities and identity in Yucatan, our standpoint changed. Certainly, we do not want to encourage people to dig things up, but we have to recognize that in a village embedded among mounds (common in Yucatan), people will inevitably unearth artifacts. As one worker, a staunch supporter of the PASUC project and enthusiast of ancient Maya culture, told Lamb when discussing the conflict between protecting the mound in his house lot and his need for space to grow garden crops, "¡pero hay que vivir!" (but one has to live!). The cynic would say that when archaeologists choose to engage warmly with such amateur collectors, they engage merely to preserve good relations with locals, which perpetuates access to ruins and thus serves archaeologists' own extractive interests. However, that is not the full story.

In 2010, a migrant who had returned to Ucí from California stated that tangible things from his homeland, be they ruins or a fossil seashell embedded in limestone, give him pride when speaking with migrants from other parts of Mexico and Central America. Deanna Barenboim [13] writes similarly about cheap mementos such as plaster casts of the Castillo at Chichén Itzá:

"Such objects may become especially effective moorings for indigenous peoples who have faced legacies of dispossession dating back to colonialism and that persist through the neocolonial realities of contemporary transnational migration. For migrants to decorate their California homes with "a little Chichén Itzá" is thus no small matter. Indeed, such everyday engagements and creative repurposing of ordinary objects assert migrants' custodial rights to Maya heritage itself."

In the last two seasons of archaeological fieldwork, we have held tours of excavations within the village of Ucí in June, precisely when many migrants have returned to Ucí for the patron saint festival. These tours were boosted by the fact that they were inside the town (an easy walk for people of all ages) and that attractive and well-preserved buildings had been uncovered. The amount of excitement and passion on these tours far exceeded our expectations. Nearly everyone was taking archaeological selfies. We believe this enthusiasm shows that the ruins facilitate emergent senses of pride in one's homeland and perhaps in a Maya ethnic identity. Returning to standpoints of preservation, many visitors are dismayed that we need to re-bury the buildings we expose. Archaeologists argue that burial is what permitted them to survive for thousands of years, and reburial is a requirement of our permit from INAH. Some stakeholders, both migrant and non-migrant, do not like this reasoning. We have brought many stakeholders by bus to ruins like Chichén Itzá and Mayapan and they recognize that their own mounds, once cleared and restored, are also worth visiting. The compromise we are working on is a permanent archaeological display in Ucí itself.

Non-migrants also have pride in their ruins, sometimes engendering an ethic of preservation, even when there might not be an explicit sense of ethnic connection [74]. There is a long tradition in Ucí and elsewhere in rural Yucatan [38] of bringing artifacts (figurines, metates, distinctive pottery, stone points) from ancient houses to modern houses. Rather than seeing this as archaeological destruction,[1] this can be seen as a way in which contemporary villagers build meaningful connections to the ruins and artifacts found in their fields and house lots. Such connections can lead to a desire to protect ruins on a larger scale. In contrast to major looting elsewhere in the Maya area, the largest mounds at Ucí have not been looted (though some were disturbed for roadbuilding fill in the 1950s).

As mentioned above, our current heritage goals focus on archaeological displays and interactive events. Lamb was approached in 2017 by Jared Barroso, director of Motul's Imagine Cultural Center, who was interested in housing an exhibit on Ucí's archaeology. Barroso explained Imagine was expanding their free educational and cultural initiatives for younger audiences and, as she stated half-joking, she wanted people to realize Motul has much more to offer then its famous dish, huevos motuleños. Barroso arranged follow up meetings in 2019 with several people beyond Lamb's own network, including 1) Cesar Ochoa Torres, an archaeologist in Yucatan interested in learning more about community engagement, to brainstorm a collaborative project; 2) two members of Rotary Club Merida Norte, which is creating the Museo del Arbol in Ucí to promote reforestation and biological diversity, and 3) Luis José Chan Sábido, a professional violist and president of Kunst and Music Yucatan, an association that creates artistic and educational programming in Yucatan as well as intercultural exchanges. Lamb also met with Seidy Ramírez Mérida, a primary school teacher in the nearby village of Tanya and daughter of a project cook, who voiced interest in having Tanya schools access the potential exhibit, which could serve as a tool for other learning outcomes. In these meetings, Lamb explained her desire to showcase the rich history of Pre-Columbian residents of Ucí and its ejido lands since many had voiced such an interest. She also hoped that, through an interactive exhibit using local examples, the archaeological process (including methods and interpretations) could be demystified. This last interest stems from Stottman's [75] argument that, by having basic knowledge on what archaeology is and how it is done, communities can better understand its "potential to be used to their own benefit."

The common ground among the varied interests and skills within this group was creating a youth-focused educational exhibit using local archaeological Maya heritage that would incorporate paleo-environmental and performing arts (through, for example, ancient musical instruments or dance paraphernalia) components and include multi-sensorial activities. Furthermore, everyone agreed that exhibits and related activities should be mobile and find their way to other towns, yet be housed in, and centered on, Ucí (and could be integrated into the possible museum Vallejo-Cáliz has planned, described below). While none of these individuals were from Ucí, they all demonstrated an interest in its archaeology as a content base for their own goals, and some were already involved with the Ucí community.

The next step is to involve stakeholders from Ucí and create a brief proposal, flexible enough to be modified, if not scrapped entirely, based on the concerns of Ucí's residents. Questions concerning the broader community objectives, topics covered, materials used, and who is to be considered a collaborator, still need to be addressed. For example, would agriculture, hunting, and "traditional" foods be relevant topics to younger generations, who are increasingly less involved in these activities? Would residents be amenable to sharing a mobile exhibit with nearby towns? Recent successful archaeology-based public outreach events, like ArqueoFest 2019 [76], and "Vamos a Hablar de Yaxuna", included experiential, multi-sensorial activities using 3D models, modern materials, and visual media. Would residents be as interested in such materials, since some have expressed wanting to see displays of artifacts recovered from excavations? What roles would community members want to take within

[1] The Consejo de Arqueologia's policy of allowing people to keep antiquities found on their land, provided that owners register the antiquities with the regional INAH center, implicitly recognizes this point.

planning and building an exhibit? Are any of the "outsider" stakeholders (including archaeologists) entrenched in local socio-political or economic factions that might lead to certain voices being excluded?

The proposal will be shared in various ways in summer 2020. Rather than relying solely on ejido gatherings (mostly attended by older men), invitations to a community forum will be given out door to door, outside of schools and churches, hung in public spaces and shops to access Ucí's diverse population, which will include a few sentences summarizing the proposal. Individuals will thus have the chance to think about the proposal before talking about it in person. Lamb is also considering organizing in the meantime a small event on "What is Archaeology?", with various activity stations using representative archaeological materials, modern fauna and flora, printed maps, etc. This event would allow for quick anonymous surveys and spark conversations concerning what people really want out of a future exhibit or event.

While living in Ucí, Vallejo-Cáliz carried out a series of talks and conversations during the summer of 2019 aimed at various groups. These included both talks in the main square open to the general public and talks with community organizing institutions like the comisaría ejidal. These institutions should not be ignored given that they have served as the primary link with Municipal, State, and Federal authorities since the 1930s. They have also helped remedy conflict between members of the community. The comisaría ejidal has served as a major entry point for engaging with the community, getting permission for fieldwork on local land, and finding workers. One of the most important outcomes of Vallejo-Cáliz's conversations has been that many people in Ucí would like to create a museum space for exhibits that are not at all limited to archaeology. We currently rent (and have invested in improving) a space from the comisaría ejidal and many people see this as a potential museum location.

Some young adults who have participated as local liaisons and field workers with PASUC have mentioned that it is important to merge both archaeological and contemporary Maya practices (sometimes glossed as traditional culture) and display them in the same space. They believe that this would help bridge the gap between ancient and modern Maya, and drive people to take pride in their language and cultural practices [see also 17]. Collaboration in designing such exhibits would mean that members of the community are no longer passive recipients of knowledge produced by "professional" archaeologists. They become active, ask questions, and demand information that may be sourced through archaeological methods. In this sense, the goal will be to discover the history of Ucí together, creating a story or narrative akin to their own experience in the world and their own place in the history of the site. Our own interpretations are openly and publicly discussed, not just delivered and accepted as the/a truth.

6. Conclusions

Positionality and place (including the various meanings attached to a place and created by various actors) shape discussions of heritage and heritage engagement. This means that if archaeologists become partners in such endeavors, the diversity of their experiences and the experience of their local collaborators must also be considered. Positions shaped by gender and sexuality can affect the kinds of heritage experiences that are possible. If positionality factors in heritage work, grading "positive" outcomes is less straightforward given the individual ways people form common ground between locals and researchers. Thus, to the extent that one's positionality makes it possible, spending less time on what McAnany calls the "quiet jungle path" [1] and more time among diverse interest groups can bring new possibilities, yet also potential challenges and drawbacks. Of course, it is easy to talk with stakeholders about cultural heritage projects, but the positionality of various actors (for example, a graduate student rushing to finish a dissertation) can make it difficult to put these ideas in place.

Moreover, our experiences over time have highlighted the deficiency of catering heritage initiatives to what we assume may be a homogenous stakeholder community, be it imagined, physically circumscribed, or attached to the archaeological site in question. Opportunities for heritage discussions may come from unexpected people and contexts (workdays in a Motul lab; passersby in Ucí; people and organizations well beyond our own personal networks). By supporting stakeholder groups who

intentionally converge around a heritage project and are made up of individuals of overlapping communities, diverse local perspectives and skills may be included and finding local relevance is more likely. Some people in Ucí have voiced interests in displaying ancient Maya history in tandem with contemporary yet traditional culture. At the same time, other stakeholders might resist the conflation of ancient Maya history and present-day rural traditions [12]. Either way, local stakeholders are knowledgeable authors of their own heritage, rather than hoodwinked audiences, and such disagreements allow for a pluralistic, contingently situated community to emerge, enriching theories of cultural representation, heritage, and community along the way.

As PASUC comes to a close, and the archaeologists vacate their role as employers, we may be better positioned to take on collaborative initiatives. Many people in and from Ucí are deeply invested in their history, though no single preservation solution pleases everyone. Some local stakeholders want buildings preserved for all to see while archaeologists from beyond Ucí believe that re-burying excavated buildings is the best current option for preserving them. The different exhibits (both in and beyond Ucí) that many stakeholders envision and that Lamb and Vallejo-Cáliz plan to pursue will hopefully achieve an array of goals defined by people both in and beyond the village whose ruins started all of this in the first place.

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Article

Mul Meyaj Tía U Betá Jump'el Kaj: Working Together to Build a Community in Puuc Archaeology

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Abstract: This paper explores specific challenges that archaeologists face when attempting to involve a broader community of local stakeholders in cultural heritage research. We combine our perspectives as a US-based archaeologist and a local community member in a discussion of practical approaches for promoting more equitable research collaborations in the Puuc region of the northern Maya lowlands. The format of the paper includes a blend of dialogue, narrative, and analysis. First, we evaluate the importance of engaging in social interactions outside of the fieldwork setting and examine the limitations to full-coverage community participation. Next, we discuss the structural barriers discouraging greater local interest in cultural heritage research. We assess the potential of linguistic education and digital conservation programs for encouraging broader-scale engagement with knowledge production. Finally, we highlight the importance of employment by archaeological research projects as the critical factor influencing local participation in heritage-related activities. Barring immediate structural changes to the socio-economy of the Yucatán, the most significant way to promote local involvement in cultural heritage projects is for archaeologists and community members to work together to try to secure funding for more sustainable employment opportunities.

Keywords: archaeology; Maya; conservation; experimental archaeology; identity; education; Puuc; collaboration

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1. Introduction

The Bolonchén Regional Archaeological Project (BRAP) completed its first field season in the eastern Puuc region of the northern Yucatán in the summer of 2000 and has overseen research in the region ever since. Founded and co-directed by Drs. George J. Bey III (Millsaps College), Tomás Gallareta Negrón (INAH), and William M. Ringle (Davidson College), BRAP's mission has included emphases on local community engagement, preservation of cultural heritage, and ecological conservation. The project's educational efforts have gone beyond fostering numerous PhD and Masters dissertations at US and Mexican institutions, to promoting local K-12 continuing studies opportunities in the towns of Yaxhachén, Kancab, and Oxkutzcab, and field research opportunities for Mexican and Yucatecan *Licenciatura* (Bachelor's Degree) and Masters-level students. BRAP and Millsaps College created the Kaxil Kiuic Helen Moyers Biocultural Reserve centered on the archaeological site of Kiuic and the non-profit organization Kaxil Kiuic, A.C. that oversees it. Based out of the Millsaps Puuc Archaeological Research Compound (MPARC) in the town of Oxkutzcab, the Bolonchén Regional Archaeological Project now enters its third decade of archaeological research while overseeing a multi-faceted, community-oriented operation. The upcoming research phase includes plans to engage with a broader spectrum of local stakeholders in cultural heritage knowledge production.

Although the main project headquarters are in the town of Oxkutzcab (pop. 23,096 according to the 2010 census), which is located along the northeastern edge of the elevated Puuc region, most of the local crewmembers hail from three smaller Puuc villages (Figure 1). Yaxhachén (pop. 1633) and Emiliano Zapata (pop. 1350) are located within the municipality of Oxkutzcab, 30 km and 8 km southwest of the principal town, respectively, and Kancab (pop. 2819) is located 12 km southeast of the town of Oxkutzcab in the neighboring municipality of Tekax [1,2]. The majority of village households, including those with members who work as collaborators on the archaeological project, rely primarily on subsistence farming for their livelihood. *Milpas* (agricultural fields) radiate outward from the villages with broad stretches of secondary growth forest separating cultivated areas. Many of the archaeological sites investigated by BRAP sub-projects, such as Kiuic, Huntichmul, and Labná, lie within these forested tracts.

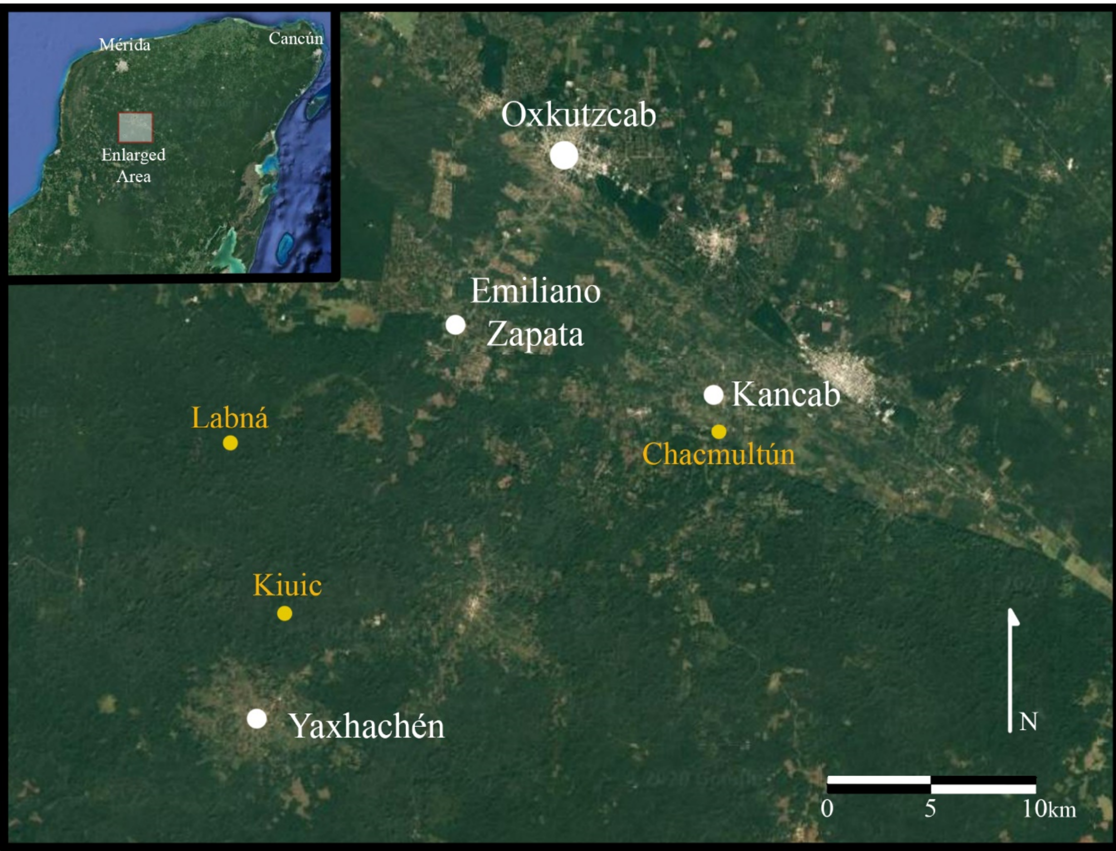

Figure 1. Satellite map of southwestern Yucatán State, Mexico highlighting modern towns (in white) and archaeological sites (in yellow) mentioned in the text.

Since the 1980s, archaeologists have reflected more explicitly on the social processes of knowledge production and the broad spectrum of living people who are involved with, and impacted by, the study of the past [3–7]. Projects across Latin America have demonstrated the potential benefits of multivocal approaches to knowledge production by engaging with a diverse array of communities in cultural heritage research. These collaborative frameworks have led to a productive elaboration of the many roles that the past can play in the present [8–11]. Several projects in the Maya area have also taken significant steps to promote broader local community involvement with archaeology and cultural heritage research [5,12–15]. However, the overall number of archaeological projects in the Maya area that explicitly outline what is actually at stake for local community members remains relatively low [5,16]. We fully acknowledge that the collaborative nature of our own archaeological project as it currently exists is very different from community or public archaeology [6,15,17–20]. As we look

ahead to the next phase of the project, it is important that we incorporate a range of perspectives as broad as the stakeholder pool in the planning and execution of the research.

The authors each joined BRAP several years after its inauguration. Seligson joined after his first year of graduate school at the University of Wisconsin–Madison for the 2010 summer field season. Chi Nah, a life-long resident of Kancab (Figure 2), joined as a crewmember on the Labná-Kiuic Inter-Site Survey sub-project in 2007. We have had the pleasure of working together both directly and indirectly for many BRAP field seasons. This paper is the result of our ongoing conversations about prominent issues that affect engagement between local community members, archaeologists, and cultural resources. Our main objective is to identify the ways in which project goals and practices can best serve the interests of local community members while facilitating broader engagement with cultural heritage. Recognizing that community identity is a fluid and context-dependent construct [21], it is important to clarify that we will be using the term to apply to residents of Kancab, Emiliano Zapata, and Yaxhachén, unless otherwise specified.

Figure 2. A street corner in Chi Nah's hometown of Kancab, Yucatán.

We present two personal perspectives on the ways that archaeological projects like BRAP have already influenced the lives of local community members and discuss how cultural heritage-oriented projects can best incorporate aspects of community archaeology in the Puuc region moving forward. In the following sections, we interweave our dialogue with narrative vignettes and analysis. The paper highlights three principal areas concerning collaborative efforts: (1) the importance of social interactions outside of the fieldwork setting; (2) potential avenues for community members to engage more directly with cultural heritage management and archaeology; and (3) the significance of employment opportunities. We explain how each of these issues relate to the underlying socioeconomic circumstances of the local communities and explore the limits of local participation in archaeological research. We argue that the most significant way to promote local involvement in cultural heritage projects is for

archaeologists and community members to work together to try to secure funding for more sustainable employment opportunities.

2. Engaging Beyond Archaeology

On Sunday August 3 2014, I took the mound for the *Reales de Kancab* baseball team against their cross-town rivals, the *Gigantes* (Figure 3). Wearing a borrowed uniform and standing an intimidating five feet, seven inches tall, I was both giddy and nervous at the opportunity to relive my glory days, however briefly. Lasting only three and one-third innings, I was pretty rusty after seven years away from the sport and only managed to strike out three while walking six batters. The *Reales* ended up rallying to victory behind a fifty-six-year-old relief pitcher nicknamed *Pich'* (Yucatec Mayan for "singing black thrush") while I cheered my team on from the dugout. All of the members of the Kancab community who turned out for the Sunday baseball game got a kick out of watching the red-bearded gringo not quite live up to the hype.

Figure 3. Seligson pitching for the *Reales de Kancab* baseball team on August 3 2014 and greeting the relief pitcher at the end of his outing.

After the game, I joined my BRAP collaborator hosts for some *venado pibil* (venison cooked in an earth oven) back at one of their family compounds. We sat in a circle of plastic chairs inside a semi-covered auxiliary structure that included a food preparation area (Figure 4), passing around a few *caguamas* (32-ounce beers) and talking about almost anything but archaeology. Like the field site, the circle remained a male-dominated space, and although other family members stopped in briefly to say hello, I did not get much of a chance to talk with them. A backdrop that included the smell of fresh-made tortillas and the sounds of reggaeton and norteño-inspired music reinforced the fact that we were far removed from the field site. I was grateful for how much the power dynamics shifted now that we were not only away from the field site but also literally on their "home turf."

An early afternoon thunderstorm brought a brief respite from the summer heat as we chatted about daily life in Kancab, local politics, recipes brought back from restaurant kitchens in San Francisco, and the upcoming planting season. We all felt more comfortable asking each other personal questions and, for the most part, answering them. Back at the archaeological site the next morning, I was very happy to find that the opening up of our relationships was not temporary. Field operations took on a new dimension for the rest of the season.

Figure 4. A cinder block house with pole and thatch auxiliary structures in Kancab.

Far from the quiet jungle path [15]—and the immediate production of archaeological knowledge of any kind—was this extra-curricular activity still a productive engagement between a foreign archaeologist and local community members? Seligson genuinely wanted to connect with local project members and found the visits to local communities to be successful in this regard, but to what degree was the satisfaction rooted in phenomenological novelty? Were the interactions tainted or even invalidated if they overlapped with self-serving goals [22]? Were there any tangible results from this instance of engaging beyond archaeology that would benefit local community members as well as the archaeologist? What follows is part of a dialogue between the authors that took place in the spring of 2020 over the phone and through a text-based digital communication platform. We discuss interactions that we have had over the course of the last decade and how they relate to broader issues of engagement with archaeological research and cultural heritage.

Seligson: From my perspective, being invited to participate in local community sporting events, attend family birthday celebrations, and just hang out in an informal setting on the weekend represented a recognition that our relationships went beyond archaeological fieldwork. I knew that we were not necessarily going to achieve the "deep hang" level of cultural anthropology, but I also did not want our interactions to be limited to the workplace environment of the project field sites. Fully recognizing that my participation in non-work-related activities on the weekends had nothing to do with the project's research goals or knowledge production per se, I wanted our relationship to be more than just an employer–employee dynamic.

At the least, I thought my visits to Kancab or Yaxhachén would demonstrate my sincerity in wanting us all to be collaborators on the project. However, I also worried that as a foreign archaeologist coming down to work locally for only a couple of months every year, a suspicion of neocolonialist intentions might be unavoidable. I hoped that hanging out with the project team on the weekends would help prove to everyone how much I valued and respected their partnership beyond the help that they were providing me for my dissertation research. I also hoped that changing the setting of our interactions would provide me with a better understanding of the role that the project played in my local collaborators' lives.

***Chi Nah**:* [*Translated from Spanish]* [From my perspective, most of us enjoyed and appreciated that you would come to visit us in Kancab, because at the field site it is another form of interaction. At the

field site, we need to focus more on the project, on the work (Figures 5 and 6). Yes, there is some time to chat at the field site as well, but it is different. Outside of work hours, there is time to relax and talk more informally. It is not the same environment as it is at the work site. I think it was important that you came to visit it us.

Figure 5. The Kancab archaeological crew excavating a burnt lime pit kiln at the site of Kiuic.

Figure 6. Chi Nah making a sketch map of an archaeological compound near Kiuic.

However, not everyone was excited or cared much. Most of the people who worked on the archaeological project liked your visits, but not everyone cared. Some were too busy working their other jobs to visit. In general, people in Kancab are suspicious of the motives that foreigners might have when they visit the town, but are interested in interacting with them to gain more confidence. Not many foreigners visit Kancab and when they do, they usually just pass through. So when you visited, some people affiliated with the project and also not affiliated with the project may be curious

about your motives. Sometimes, if people do not know who you are, they think it is a little strange that you are there. But when they get to know you, who you are, from where you are coming, it is ok. There was value in your visits, but I would say not necessarily for everyone because they would need to take even more time to get to know you, and you them.]

Seligson: It is very important to respect the diversity of experiences and opinions held by local community members in general, and especially when it comes to potential benefits and drawbacks of having archaeological projects like BRAP in the area. Over time, I learned of the potential for uneven participation in the archaeological fieldwork by representatives of only a few households to exacerbate intra-community divisions. An ongoing challenge faced by BRAP and other projects is the unfortunate reality that it is rare to achieve full-scale coverage of community engagement in archaeological research. Not all factions within even the smallest villages are going to benefit equally (or at all) from the supplemental income provided by archaeological project salaries. Based on what I have learned from experiences in Yaxhachén and discussions with local collaborators, I have come to accept the fact that not everyone in the local communities will welcome our presence, but it has also led to me to wonder whether unanimous support should be a prerequisite for continued fieldwork. It also appears that these circumstances vary from town to town and the situation may be different between Yaxhachén and Kancab.

Chi Nah: [When there is archaeological work, there are some people who would want to participate but do not have the opportunity. However, there are not many people like this. Some guys would like to work, but do not want to do this type of work for the wage that is being paid. There is usually a call put out by the foreman to assemble a team for the sub-project. The number of people needed is determined by the project director. Some people do not want to work for the project because they do not know you. If they do not know the person who is going to pay the wages, they do not want to take the work. People who do not have previous experience working for the project do not know what is involved in the work and do not want to participate.

Only sometimes do people want to work with us but do not get the chance. One issue is that because it has generally been the same guys working on the project for a long time, there are not many others who have experience doing the archaeology work like cutting paths through the forest or excavating. There are fewer people who have the experience, and therefore a smaller group that is likely to want to join the archaeological work.]

Summary: Our conversations confirmed that although Seligson's visits to Kancab were appreciated by some local project members, the overall impact was not as far-reaching as he had hoped or expected. Such discrepancies in the perceptions of intentions and results are unfortunately quite common when non-local actors attempt to "make a difference" in local communities. The skepticism is often justified given the consequences of foreign involvement in the Yucatán over the past several centuries as well as the frequent entanglement of archaeological research with the potentially destructive forces of "economic development" since the second half of the 20th century [23–27]. Despite their limits, however, Seligson's visits were valuable for deepening relationships and bridging power gaps between project members, at least to a certain degree. This helped to strengthen ties that would serve all sides well in our ongoing partnerships. In terms of intra-project solidarity and the creation of more enjoyable work environments that could potentially benefit the production of archaeological knowledge, the social engagements beyond archaeology were indeed impactful.

The visits also had a significant impact with regard to Seligson's deeper recognition of the diversity of local opinions vis-à-vis the archaeological project and non-locals in general [4,5]. This seems like an obvious point to make, but it highlights a range of challenges faced by archaeological projects seeking to engage with local communities and cultural heritage on a profounder level. One of these challenges is a desire to benefit as many local community members as possible while only being able to employ a limited number of individuals directly in project work. Although Chi Nah believes that most individuals from Kancab who would like to work for the project do in fact receive the opportunity to do so, it is difficult to confirm this due to a lack of outreach beyond the social circles of the project foremen.

In Yaxhachén, it is clear that preexisting political and familial rivalries have influenced distinct project field crews that work on separate sub-projects. Archaeologists across Mesoamerica have experienced the effects that internal community rivalries can have on the local involvement in field research. In some cases, these rivalries have been passed down from generation to generation from long ago [28–30]. Tradition dictates that local crew foremen choose the members of their respective work teams. Unfortunately, this system perpetuates intra-community tensions as each foreman invariably selects from a pool of individuals already allied with him and his family. In the past, archaeologists could work with community-wide governing organizations like the *ejidos* (local management councils) to recruit project members from a broad cross-section of the community. Over the past few decades, however, internal community divisions have worsened due to rapid population growth, emigration to urban centers, and the mounting difficulties of subsistence farming, among other factors. As a result, there no longer exists a local governing body that Chi Nah believes can serve as an effective intermediary between the project and the majority of the community. Thus, we will try alternative outreach methods to promote broader participation in the next phase of our research. These will include working with local K-12 schools, using social media to organize community events, and expanding communication networks little by little through project members who participate in multiple local social circles.

The seemingly simple task of hiring local crewmembers highlights one of the main challenges facing archaeological projects that seek to develop broader and deeper levels of engagement with local communities—the inability to provide economic benefits to enough individuals directly to make archaeological fieldwork appealing. The restricted pool of stakeholders who are directly involved with the research retain the limited annual employment positions and pass down opportunities within closely-knit social circles. However, as other contributors to this Special Issue have pointed out [5], there are many ways to involve local community members in the production of knowledge related to cultural heritage beyond day-to-day field operations. Engaging with cultural heritage can take many forms including educational outreach, the development of local cultural centers or museums [5,31], and participation in the planning, analysis, and dissemination stages of the project [14,15]. Participating in local sporting events and chatting over *caguamas* certainly do have their merits for improving intra-project relationships and may even hold potential for improving local/non-local relationships on a broader community scale. However, to invite more local stakeholders to participate directly and indirectly in the next phase of the project, we will need to work through social media and other non-governmental means to reach out to as many different social groups within the community as possible.

3. The Cultural Heritage Factor

The ten-person team from Yaxhachén worked for two weeks, switching out pairs of excavators every ten minutes. The tools they used were not trowels and buckets, but heavy iron poles and large pickaxes. They slowly picked away at the side of the low limestone outcrop, forming a semi-circular indent in the gentle slope. The irregularly-shaped boulders that they prized from the bedrock matrix were used to complete the other half of the circle, forming a miniature silo. After two weeks, the team completed the model pit kiln. Now ready to assemble the raw materials to conduct a burnt lime production experiment, they invited Don Gabriel, the father of one of the team members, to preside over the kiln firing.

As a child, Don Gabriel had seen older men in the village construct large aboveground pyres out of greenwood. They had broken down large pieces of limestone into fist-sized pieces and stacked them on top of the wood. They then lit the pyre from the center, causing it to slowly burn outward and eventually cave in on itself to form an aboveground oven. Don Gabriel was kind enough to adapt this technique, and oversaw the assembly of a pyre within the semi-subterranean pit kiln. At each stage of the greenwood layering, he included an offering—first, dried corncobs, then dried chile peppers, and finally salt. Although an unseasonal downpour ruined the first experimental burn, the second

one was a success. The freshly cut greenwood burned red through the night in a ring of fire, leaving behind a pile of quicklime in the morning (Figure 7).

Figure 7. The burnt lime production experiment: (**A**) the team arranging the fuel for the burn; (**B**) the kiln heating up soon after being ignited; (**C**) the fuel burns for a total of 20 h, through the night; (**D**) by morning, the limestone has been converted to burnt lime [image D adapted from [32]].

The construction and firing of the crew's experimental pit kiln in February and June 2015 were a direct outcome of the extra-curricular interactions described in the previous section. The larger issue at stake with the experiment, and with most of the archaeological research conducted by BRAP and its members, is knowledge production concerning Maya cultural heritage. One of the specific purposes of the lime experiment was to counteract charges made in popular publications that the Classic Maya destroyed their environment and committed "ecocide," at least to a certain degree. The firing of our experimental kiln demonstrated that the ancient pit kilns scattered across the landscape of the eastern Puuc were more fuel-efficient than the "traditional" aboveground pyres used during the Colonial Period and more recent eras. This in turn indicated that pre-colonial communities in the Puuc were in fact carefully managing their natural resources, taking proactive steps to stave off environmental degradation [32].

Seligson*:* Although the choice to visit Kancab and Yaxhachén outside of work hours had nothing to do with my archaeological research objectives, the extra time that I spent immersing myself in local community activities did end up benefitting the production of knowledge in the end. I broadened my social networks through the weekend socializing, and the success of our pit kiln experiment was largely due to the level of familiarity that we developed hanging out in the Yaxhachén central plaza, at the soccer field, and in family homes (Figure 8). On one of my visits, I was introduced to Don Gabriel, whose insights were invaluable to the construction and firing of the pit kiln. Getting to know extended families and getting to the point where we were all comfortable talking about anything but archaeology actually brought us back around to talking about cultural heritage in more meaningful contexts.

Figure 8. The soccer field on the outskirts of Yaxhachén.

I acknowledge that I did not consult with everyone who ended up being involved in the project when I first planned it. However, when I arrived in the field to begin the experimental work, I made sure to discuss the background, objectives, and possible broader implications of the project with the whole team. Although the input and guidance of my local collaborators ended up being instrumental to the success of the experiment, I wondered afterward whether we could have developed an even more nuanced understanding of lime production by incorporating the perspectives of an even broader pool of collaborators. Additionally, although I was very proud of the data that we generated and the implications of our results, it concerned me that many of my local collaborators were not as invested in the knowledge we were producing about their ancestors as I was.

Chi Nah*:* [Some of us take pride in the work that we do to find out more about the ancestors. To see how they built their buildings and temples and created the carved stones. They did not have the building materials that we have today, so it is interesting to see how they built their homes with different materials. All of the ancient architecture is very beautiful. Some of us are very proud to do this work at these sites and it is very cool to see how well preserved they are because they represent a great heritage that has passed.

For me, it is important to know that the ancient Maya knew how to take care of the natural environment and how to exploit the resources of their lands responsibly. I think that many people in the rest of the world still do not recognize that the ancient Maya were good guardians and took care of the planet. In the present, we do not know how to take care of the environment, because there is a lot of chemical contamination. The ancient Maya did not have any of the agricultural chemicals that we

have now and they did not need them to grow even more crops than we do today. In the present day, if you do not use chemical products, the agricultural plants do not bear fruit and no one can harvest their crops.

Not everyone is interested in the culture of the ancestors or learning more about them. They do not have the background information that would make the sites interesting to them or to make the ancient buildings meaningful. Some people understand and recognize that the ancient buildings are important because they are managed by INAH (the National Institute of Anthropology and History of Mexico), but not everyone. Some people do not believe in the importance of the ancient sites. To them, these are just stones. When they find remains of ancient structures on their lands, they just see stones, not forms.

Seligson*:* One weekend, a few of my friends from Kancab took me to visit the ancient site of Chacmultún, just about 2 km south of town (Figure 9. It is a beautiful site and the name, roughly translating to "mounds of red stone," references the pinkish hue of most of the stones used in the central buildings at the site. An unforgettable aspect of this visit, my first to the site, was experiencing the pride that my friends radiated in showing me around the ruins. To me, it seemed that they were demonstrating a level of interest in the ancient Maya far beyond anything that they had demonstrated at any of our field sites. I asked them about this apparent discrepancy, but they shrugged it off, saying that it was just such a beautiful site.

Figure 9. A two-story structure in the central precinct of Chacmultún, displaying the characteristic pink-hued stones from which the site derives its name.

Thinking about it now, I question my arrogance and unwillingness to believe, but I admit that I still thought that there must be some deeper meaning behind the discrepancy in their feelings toward Chacmultún and our field sites. I felt that perhaps it had something to do with the proximity of Chacmultún to their hometown—this was *their* ancient site. This was the site that they would bike to growing up, that they would take visiting family members from other towns to come visit, where they would spend the occasional Sunday touring. There must be some perceived connection between the modern town and the ancient site.

Chi Nah*:* [I do not know if there is a connection between Kancab and Chacmultún. I do not think there is. There is a small village right next to the ancient site, the modern village of Chacmultún. They probably have a closer connection. There are some people from Kancab that visit the site and

like it because it is the only site they have visited. It is a nice place to visit and spend the day outside. I personally like Chacmultún because it is a very beautiful site, but there are also other sites that are more beautiful. Not everyone gets the opportunity to see other ancient sites. If you see the other sites, you see that Chacmultún is very nice, but there are also many other nice sites.

In general, it would be very helpful if local people were able to visit more archaeological sites. It might increase their interest in studying all parts of the ancient civilization. The ancient sites are part of our Maya culture, so we must study them thoroughly to learn more about them. It is important that people today not forget the heritage of our ancestors. We must not forget that we are linked by the tradition of being speakers of the Mayan language.

I also think that it is important for local collaborators to be involved in the planning of the archaeological projects to let them know more about the goals and methods that each project has. The project objectives should investigate the relationships between ancient communities, the exchange of materials, and their daily activities. It is important to know how all of the planning of each project develops, how all of the planning of each project is carried out. It is also important for local collaborators to know what the objectives are of each investigation so that they can make sure to take advantage of every job that arises.]

Summary: Increasing participation by local community members in every stage of the archaeological research process continues to hold much promise for developing a balanced voice for the past. Unfortunately, as Fisher and Chase point out in the introduction to this Special Issue, archaeologists have not yet fully embraced this more equitable model of collaboration. One of the many factors contributing to the delay may be a seeming discrepancy in interest in the production of knowledge related to cultural heritage between the non-local archaeologists and the local community members. Chi Nah notes that not everyone in Kancab is interested in learning more about the ancient Maya. This apparent lack of interest can often be traced back to exclusion from the knowledge production and education process in the first place, and so the cycle has continued [6,15,16,27]. The other principal factor preventing local engagement with cultural heritage is a structural economic inequality that requires a focus on such practical concerns as economic stability ahead of heritage obligations or privileges [33]. We will discuss the importance of economic benefits more explicitly in the following section.

A theme that we kept returning to in our discussions of local perspectives on cultural heritage was the disconnect that many local residents feel between their own culture and that of the people who left stones in the fields. Recognizing that at least for some local community members, this disconnect may result from a lack of opportunity to productively engage with cultural heritage, archaeological projects like BRAP can work to broaden the scope of our outreach programs. One area that may encourage local exploration of connections between past and present is linguistics. Although few residents of Kancab identify with the architectural remnants scattered across their community agricultural fields, many do appreciate that the language they speak is an intangible heritage passed down from the people who lived there before. Even though many community members may not refer to themselves primarily as "Maya" [34], they do recognize and even take pride in speaking a Mayan language.

Yucatec remains one of the Mayan dialects with the highest number of speakers, but urbanizing and globalizing trends have led to a generational divide in Yucatec Mayan fluency, with younger generations more likely to embrace Spanish as a primary language. Even if language revitalization programs similar to those that have been successful in other sub-regions of the Maya area are not yet a necessity in northern Yucatán, educational programs that focus on the connections between language and cultural heritage may serve as a gateway for expanding interest to other forms of cultural heritage [15,31,35–37]. We explore other potential options for local educational programs that could promote wider interest in the study of the past, such as digital conservation and experimental archaeology in our Discussion section. With more community members interested in learning about the ancient Maya, archaeological projects may find a broader community eager to contribute perspectives and engage in knowledge production about the past. However, even if such programs are successful at

promoting broader and more meaningful interest, funding and employment remain critical underlying issues deterring widespread engagement.

4. The Importance of Employment

The final Friday of the field season is always a mixed bag of feelings. Relief, sadness, excitement, anxiety. Everyone meets back in the village one final time for salaries to be doled out and to enjoy the sandwiches and cold soft drinks that often represent the final shared meal until the following summer. We all sit on the concrete benches in the shade of the ciricote trees in the central plaza. Most community members are indoors or sitting on shaded patios during what happens to be the hottest part of the day. Some local guys who did not work on the project this summer whistle and slowly raise an extended palm skyward to say "what's up?" as they cruise by on their mopeds on the way to prepare their fields. A few students take advantage of the downtime and relaxed atmosphere to try out the old seesaw they had been eyeing all season. The local crewmembers ask what the students will be doing when they return to the United States in the coming weeks and whether they will be returning next summer.

Group photos are taken, handshakes and hugs are exchanged (Figure 10). Exclamations of "Thank you," "*Gracias*," and "*Dios bo'otik*" are spread around. Some project members are looking forward to returning to the United States, maybe to air conditioning and a favorite food item. Some are relieved that after seven grueling weeks, the coming Monday will not bring with it more forest-clearing or earth-extracting or bucket-carrying. Anyone who has participated in summer fieldwork in the Yucatán knows that it is tough work—both physically and mentally—and that the level of difficulty is significantly higher for the local crewmembers than it is for the archaeologists who oversee the project. And yet, the final interaction of the final day is almost invariably a request (part hopeful, part desperate) for confirmation that there will indeed be another season of arduous labor the following summer.

Figure 10. Group photo of the 2018 field crew in the town center of Emiliano Zapata.

Although the final day of the field season is indeed a bittersweet experience for all, it is that much bitterer for the local project members who count on the weekly salaries provided by the project every summer. Employment is the most visible and direct way that the archaeological project benefits portions of the local community at the moment, but it can only go so far. Archaeological projects pool together

funding from multiple sources and still rarely include specific allotments for community engagement beyond employment in fieldwork, despite the inclusion of broader impact considerations in grant applications [5,17,29,38]. Employment is the reason why most, if not all, local crewmembers participate in the project in the first place. Any interests that they might have in cultural heritage are secondary to the importance of supplementing livelihoods based on subsistence farming. Thus, archaeologists must grapple with several issues surrounding the sources and quantities of funding, as well as where responsibilities should lie with regard to ensuring local economic stability.

Chi Nah: [I first got involved with the archaeological project when I was in Secondary School. I found out that they were looking for people to work at Maya sites, such as at Labná and at other smaller groups of structures. I decided to participate for two reasons—first off, due to the lack of other jobs available, I saw that it was an opportunity to work. The other reason was to know more about the Maya ancestors, and how they built and lived in their homes.

One of the benefits of having that job was that it provided me with a way to help contribute to my household, to bring food to serve at home. Sometimes I would ask if there was a way to raise wages, because with that salary we only had enough to buy some things. Today and every year food products are increasing in price, and a low salary is sometimes not enough for us to be able to buy everything necessary. For the community, it is a good job because it helps some to be able to support their families and is a benefit for them.

One of the main challenges that villages like Kancab face is poverty. The economy is poor due to the lack of work and due to the minimum wages offered locally. It is one of those problems that we face and many cannot pay for an education to then go into a career that would earn more money. In truth, both the cultural heritage aspect and the monetary aspect are important, but the ability to help provide money for the family is the top priority.]

Seligson: It is unsurprising that the economic support provided by employment on archaeological projects is the most important factor influencing participation by local collaborators. Beyond the fun and benefits of weekend socializing, and even the importance of protecting and promoting cultural heritage, it makes sense that supplementing income to help support a family is a top priority. Archaeologists are obviously very happy that we can provide employment opportunities for our local collaborators, but recognize that our contributions to the local economies can only go so far.

To address some of the broader challenges faced by local communities, Millsaps College and BRAP created a *becario* (scholarship) program to help children from Yaxhachén continue their education. Until a new schoolhouse was built in Yaxhachén in 2016, local education ended after the eighth grade. Only a handful of students were able to afford the time, transportation costs, and tuition to attend the high school in Oxkutzcab, 30 km away. The Millsaps becario program sponsored between two and four students per grade from Yaxhachén to attend high school in Oxkutzcab. Since the new schoolhouse was built in 2016, Millsaps and BRAP have supported students from Kancab and Oxkutzcab in pursuing other continued educational opportunities. These education opportunities, like the salaries paid for archaeological fieldwork, are limited by available funding. Perhaps more emphasis should be placed on integrating education opportunities into the archaeological research components of the project?

Chi Nah: [More scholarships for local students would help some, but not everyone. Not everyone wants to study more. Jobs are more important to help support families. If possible, the archaeological project should look for other strategies or ways to offer more work, so that the communities can get involved, as well as maybe tourism to generate more jobs. Maybe the archaeologists could reach out to people in villages near other ancient sites that need to be explored and conserved to get more people involved. There are many sites in the region that can be studied more closely.

Maybe there are more jobs that could relate to cleaning and protecting sites, but these would have to be administered through the government, through INAH. This would maybe provide year-round work for some people. Maybe workers would be needed to clean paths so that people can reach the sites and have a good view of them. This would help employ more people. Also, I honestly think that if I had a job that was unrelated to archaeology, I would be a little less interested in Maya heritage.

I would not learn as much about the importance of how the {ancient} Maya culture evolved, because my work would not be related to it. It would still sound interesting, even if my work was not focused on it, because it is part of our culture and our language comes from our ancestors, but overall I would not be as interested in learning more.

It is important to continue to study the ancients to learn about their ways of living together, and to learn more about their languages that are similar to some that are spoken now. But at the same time, another important benefit is that while the project is running, it helps people from small communities to have temporary employment. The opportunity to work for the project provides work that people would otherwise not have.]

Summary: The Bolonchén Regional Archaeological Project oversees several sub-projects, many of which have field seasons of fewer than eight weeks each summer. Fortunately, two of the project's directors, Dr. Tomás Gallareta Negrón and Mtra. Rossana May Ciau can employ local collaborators on National Institute-related projects for periods throughout the rest of the year. However, even these work opportunities are often short-term and depend on such factors as the frequency of modern construction projects. Funding for summer fieldwork salaries is limited by the amount of research funds available to BRAP sub-projects, which can vary widely from year to year. The National Institute of Anthropology and History (INAH) sets the salary levels for crewmembers on archaeological projects, so local project directors do not have the authority to raise wages. The fact that archaeological employment is sporadic even in the best years leaves local collaborators in a precarious situation and constantly seeking other, more permanent sources of income. The lack of alternative local employment opportunities leads many individuals to move to larger urban centers like Mérida or Cancun [30], or even to risk the dangerous journey to the United States [39].

In our discussion of potential ways to improve the local archaeological employment situation, we regularly raised the possibility of finding more opportunities to engage in cultural resource management. As Chi Nah notes, this could involve protecting and maintaining archaeological sites for both cultural preservation and tourism purposes. Local or state governments could employ community members to cut back vegetation that threatens standing architecture at consolidated and unconsolidated sites, as well as regularly visit the thousands of architectural compounds scattered around the eastern Puuc to monitor for natural or anthropogenic destruction. Unfortunately, there is only limited government funding available for heritage management and it is mainly directed at the more prominent sites in the region. Only a handful of individuals currently work or volunteer as local site guardians [40]. It is possible (though unlikely) that INAH would be able to employ more individuals in the site-monitoring program in the future, as this would require an increase in funding for INAH. The federal government recently slashed the INAH budget due to the COVID-19 pandemic and though it is too soon to evaluate the full scope of the budget cuts, it is unclear when funding might return to previous levels, let alone rise above them.

With few other viable options at present, individual research projects like BRAP will continue to serve as the most pragmatic avenue for archaeology-related employment. Thus, in addition to taking the next crucial steps toward adopting aspects of a legitimate community archaeology level of local participation, it is important to continue to focus on local employment in the broader impact sections of grant applications [5]. In the eastern Puuc, at least, the best way to invite more local community members to become active stakeholders in cultural heritage protection and knowledge production may be to ensure that involvement is an economically worthwhile endeavor. There are still many changes that need to be made to funding structures to provide the economic foundation for achieving broader employment coverage [7,38]. In the meantime, archaeological projects can continue to promote this transformation by collaborating directly with local community members on project planning and including explicit statements about community well-being in their research proposals.

5. Discussion

Cynicism toward archaeologists and their intentions is unfortunately often justified in the era of globalization as the rise of contract (alternatively referred to as cultural resource management or commercial) archaeology has entangled the objectives of knowledge production with "economic development" [23–27]. Despite originating with the noble goal of cultural heritage preservation, many contract archaeology projects have been linked, fairly and unfairly, to predatory economic forces [7]. Disconnects between local and non-local perceptions of archaeological research intentions are rooted in neo-colonial structural problems that are unfortunately often beyond the power of individual research projects to fully address. Despite the obstacles, we agree that it is still worthwhile to try to manifest the changes that we can, even if it means advancing with small steps. In this regard, social engagements that seek to transcend the employer–employment dynamics of the field site are a valuable early step away from the quiet jungle path. They help to establish deeper personal relationships and more open channels for communication about project objectives. However, to enact real collaboration in the generation of understandings of the past, it will be necessary to work with multiple local social groups to reach as broad a cross-section of the community as possible.

Communities are heterogeneous entities with compositions and identities that are constantly in flux. Individuals within the overlapping social groups that compose the populations of villages like Kancab, Yaxhachén, and Emiliano Zapata possess a diversity of perspectives that could inform project agendas moving forward [4,10,20,30]. A great way to introduce more local community members to the ways that the project has thus far generated understandings of the past is to follow the example set by Overholtzer [13] and emulated by Hutson and colleagues [5], and encourage local project collaborators to give public talks about the archaeological fieldwork in which they have already participated. Through these broader community engagements, the project can invite more village residents to be a part of the planning process for upcoming field seasons. This would help to build new communities of practice [35] in which the benefits and responsibilities of being a stakeholder can be made explicit from the start [18]. It would also force archaeologists to confront the prospect of relinquishing total authority over the production of archaeological knowledge, which may end up being one of the biggest obstacles to fully embracing aspects of a community archaeology framework.

Archaeologists who work in the Maya area, many of whom are not from the Maya area and do not claim ancestral ties to the region, tend to get defensive about the accomplishments of the ancient Maya. It is unsurprising that researchers would be proud of the cultures to which they have devoted their life's work and about which they have helped shape popular understandings. However, taking pride in a culture that is not one's own often carries with it the potential for paternalistic claims to authority over knowledge production and the overstepping of boundaries [4,6,18,21]. For several decades, researchers have been raising these issues about who should be able to "speak for" ancient communities [17,41–45]. Even as archaeological projects increasingly promote the incorporation of subaltern perspectives, we continue to do so largely within the framework of authorized heritage discourse [42] that still privileges Western, scientific theoretical foundations [7,21,27].

On several occasions over the past decade, the two of us have disagreed over interpretations of archaeological features that we mapped together in the field. Sometimes, one of us would end up changing our opinion, but more often, we would include both of our perspectives in the write-up of our findings. Collaboration does not mean replacing the unilateral authority of Western-based theoretical frameworks with authoritarian subaltern frameworks—it means recognizing the potential contributions of multiple ontologies to generate a comprehensive understanding of the past [10,27]. Thus, moving forward, it will be important to recognize that disagreement is going to be an integral part of the knowledge production process [6]. Instead of trying to avoid it, we will work to embrace it as an indicator that we are engaging in more worthwhile, equitable collaboration. We expect this to be a challenging proposition, and even if we successfully implement an equitable program of knowledge production, we will still need to regularly assess to what degree our collaboration is merely a diversion from deeper underlying structural issues [7].

Beyond collaboration in planning, execution, and analysis, however, it may be impossible to completely overcome the power differential created by the employer–employee relationship. This dynamic is maintained in part by research guidelines that require a certain level of training to document archaeological fieldwork—an essential measure of protection when the subject matter involves cultural patrimony. Non-field site socializing can only go so far to address these dynamics when project members return to the field site. However, a potential approach to remedying the colonialist overtones of current research practices would be for archaeologists to make a more concerted effort to train local collaborators in archaeological documentation. This can take place within the project setting, through broader outreach programs, or even through K-12 educational programs. The fact that archaeologists usually retain the responsibility of record-making for themselves not only restricts control over knowledge production, but leads to a situation in which the archaeologist often literally stands over their local collaborators as they labor manually. Sharing access to archaeological documentation skills would not only empower local collaborators, but also allow archaeologists to more directly engage in the "muddy labor," breaking down some of the more overt displays of inequality [46].

In addition to education in archaeological documentation methods, workshops focused on ancient Maya texts have been demonstrated to be a productive way to involve school-age community members more closely in the study of cultural heritage [47]. We have already touched on the significance of linguistics as a bridge between past and present and its potential importance as a gateway for promoting wider interest in both intangible and tangible heritage. The dialect of the hieroglyphic texts is different from Yucatec, which has continued to evolve since the end of the first millennium C.E., and yet there remain enough parallels to allow students to appreciate that their linguistic heritage can be traced back over one thousand years. Frequent engagements with Classic Maya hieroglyphs, whether within class settings or at workshops after normal class hours, could thus potentially be a productive way to encourage broader participation in knowledge production about the past.

Two other potentially productive avenues for greater local collaboration and engagement with cultural heritage are to focus on digital conservation [48] and experimental archaeology. The near ubiquity of internet access and smartphones, even in the smallest villages [5], coupled with the widespread adoption of such communication platforms as Facebook and Whatsapp, facilitates greater communication between archaeologists and local collaborators during the archaeological "off-season." Easier communication methods and access to the internet's trove of information and software downloads open the door to a wide range of potential heritage-related activities that go beyond excavation and survey, especially for younger generations. Advances in photogrammetric modeling that include the development of relatively intuitive software [49,50] raise the possibility that local community members can digitally conserve local artifacts and features. K-12 students could use their smartphone cameras to photograph objects and landscapes, and then upload them to central consoles at the BRAP headquarters or local schoolhouses where they can work with the photogrammetric software to create 3D models.

Experimenting with ancient technologies is another way to promote engagement with cultural heritage, especially at the K-12 level. Our construction and firing of a lime pit kiln modeled on the archaeological features that we had identified all over the field site brought this artifact of the past to life. Beyond their value for education, hands-on activities like ceramic or stone tool production or preparing meals using only pre-colonial tools and ingredients are fun. They also have the potential to instill a deeper connection and appreciation for the visible remnants of ancestral communities that did not have access to metal nor electricity. These applied lessons in digital and experimental archaeology can thus serve as productive starting points to encourage widespread community engagement from a younger age. The aim of all of these engagement initiatives is not to set the stage for the cooption of erasure of private heritage [33], but rather to promote broader interest toward the ultimate objective of developing a more balanced, multivocal interpretation of the past.

Looming over the implementation of these broader cultural heritage engagement programs is a concern for their potential to translate into gainful employment. Throughout our conversations,

site consolidation and preparation for tourism were frequently raised as possible avenues for generating more sustainable work opportunities. Despite the potential upsides for employment that such projects would entail, the focus on tourism faces several challenges. As Hutson and colleagues point out [5], the archaeological tourism industry of the Yucatán is saturated. Even if tourists arrive specifically to visit archaeological sites, there are too many sites to visit them all. They mainly stop by the more well-known archaeological zones in the center and northeast of the peninsula, which have the advantage of being closer to the major beach resort areas [30]. It is unlikely that the state or federal government will provide funding for new archaeological infrastructure, excavation, and consolidation projects in the Puuc for tourists that may never come. A concerted social media campaign to promote already consolidated sites like Chacmultún to tourists could potentially draw a few extra visitors to the smaller villages in the eastern Puuc, but it is unlikely to be significant enough to help with local employment.

Additionally, recent research has identified several ways in which cultural tourism has contributed to fraught relationships between modern Maya communities and the Maya cultures that came before. Foreign tourists visit small villages with preconceived notions of “Maya” culture that are biased by pop culture depictions. They then judge residents as inauthentic or “less than” in comparison with the ancient inhabitants of the region [30,34,51–53]. There are several gray areas in the commodification of heritage that are beyond the scope of this paper [7], but it is important to recognize that despite the resulting deficiency in tourism revenue, their locations far from the well-worn tourist paths may be beneficial in certain ways for villages like Kancab and Yaxhachén. One positive result is that local residents have not been pressured to exploit their cultural heritage in similar ways to communities closer to Chichen Itza or Ek’ Balam [29,30]. Such pressures often lead to the reiteration of cultural tropes influenced by and for tourists [52].

Despite the silver linings of limited local tourism revenue, the fact remains that the ability to find employment of any type is becoming increasingly precarious. Intensifying aridity in the northern Yucatán is placing further economic constraints on the local collaborators who rely heavily on subsistence farming. A full-on drought that began in 2018 now reaches the worst levels experienced locally since 1986 [54]. The direness of the situation is exemplified by the fact that many individuals continue to attempt the extremely dangerous US–Mexico border crossing despite the fact that recent US policy has made it at an increasingly life-threatening undertaking. As we finish writing this paper, the COVID-19 pandemic continues to wreak havoc on the global economy. Those individuals who recently risked it all to pursue economic opportunity in the United States have arrived in a locked-down country where jobs that they had been seeking have disappeared. The importance of archaeological employment will become even more apparent in summer 2020 as fields dry up and projects are prevented from conducting fieldwork due to the pandemic.

Ideally, organizations that fund archaeological research will support the creation of broader cultural heritage infrastructure such as local K-12 and continuing education programs, as well as resources to employ more individuals in heritage research during the archaeological “off-season.” Some might argue that the well-being of local Puuc residents is the responsibility of the local, state, or national governments of Mexico. However, considering how US-based institutions and researchers continue to accrue economic and professional capital through engagement with Maya cultural patrimony, it makes sense that local stakeholder communities should be prominent beneficiaries as well. Major funding institutions will thus need to be open to supporting archaeological projects with collaborative organizational structures and significant public well-being goals. Additionally, academic publishers and learning institutions will need to be more receptive to studies of the past that include knowledge generated through a collaborative framework. Although it may be a long while, if ever, before we see the full realization of these structural transformations, archaeologists and local communities can work together in the meantime to pursue goals that are more achievable in the short-term. We can collaborate on more equitable forms of knowledge production and work

together to apply for support from multiple, not necessarily archaeological, sources in an effort to balance archaeological research objectives with economic practicalities.

6. Conclusions: Looking Ahead

The Bolonchén Regional Archaeological Project oversees several ongoing sub-projects around the eastern Puuc that continue to draw upon local community support networks. As we look ahead to the next phase, we plan to adopt as many aspects of a community archaeology framework as the local circumstances permit. We will begin by attempting to broaden the local social circles within which the project currently operates through partnerships with local schools, as well as through social media. This will facilitate the incorporation of broader input in the formulation of research objectives and logistical planning. Prior examples of community-oriented research designs have yielded valuable insights into the possible benefits and complications of taking such an approach [4,5,14,17,24,38,45]. Taking the explicit step from community participation to integration in project planning has the potential to augment local community support for the cultural heritage goals and add new dimensions to knowledge production. Increased access to multiple social media platforms will facilitate the incorporation of a broader spectrum of perspectives into the planning processes that often take place during the winter when non-local archaeologists are not there in person.

In this paper, we have highlighted some of the understandable challenges that continue to impede the widespread implementation of community-focused archaeology projects. Despite these broader structural challenges, and the more immediate setbacks of 2020, we believe that a strong potential still exists to deepen partnerships between archaeologists, local community members, and governmental and non-governmental organizations to benefit all involved. In taking a realistic approach to this next phase, we recognize that there were will be limits to the implementation of our community archaeology paradigm. We understand that many members of the local communities will remain suspicious of archaeologists' intentions and uninterested in participating in the research or management process. There will also be certain aspects of the archaeological research process that are unlikely to change, at least for now. These include the methodologies employed during data recovery phases and the field dynamics established by the employer–employee relationship on-site. We know that it will be difficult for archaeologists who have themselves been enculturated into a certain framework for studying the past to engage with diverse ontologies and to relinquish some of their power that to this point has been nearly absolute. Even those of us who feel ready to adopt a new approach may find the process especially challenging when it comes to the interpretation and dissemination phases of our research.

Finally, underlying these many individual hurdles is the essential challenge of continuously securing funding for archaeological and cultural heritage research. Funding will continue to be necessary to clarify and generate new understandings of the past. Funding will also be increasingly important to encourage a broader spectrum of local stakeholders to work with archaeologists to engage with the past. Archaeologists must continue to partner with community members to apply for funding from a wide range of public and private institutions to try to secure more sustainable employment opportunities on research projects. One of the focal points for these projects moving forward should be collaborative engagement with cultural heritage.

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Letter

A Classic Maya Mystery of a Medicinal Plant and Maya Hieroglyphs

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Abstract: The Maya employed the k'an |K'AN| glyph in Late Classic (~750 CE) hieroglyphs on murals and polychrome pottery as an adjective meaning precious, yellow. On cacao drinking vessels, the k'an glyph was suggested as a descriptor for a flavoring ingredient, allspice, *Pimenta dioica* (L.) Merr. (Myrtaceae). However, our previous consensus ethnobotanical fieldwork with Q'eqchi' Maya healers of Belize revealed another candidate among antidiabetic plants, *Tynanthus guatemalensis* Donn. Sm. (Bignoniaceae), which was the healers' top selection for treatment of diabetes and an exceptionally active extract in an antidiabetic assay for inhibition of protein glycation. Traits of *T. guatemalensis* observed after cross sectioning the liana were: (1) a cross-shaped xylem organization similar to the k'an glyph; (2) an allspice-like aroma; and (3) yellow color. Based on taxonomy and ethnobotany, confirmation of the allspice-like aromatic compound eugenol, and antidiabetic activity, we determined the plant described by the k'an glyph to be *T. guatemalensis* (chib'ayal in Q'eqchi'), not *P. dioica* (allspice). In contemporary Q'eqchi' tradition, the section of the chib'ayal vine with its cross is associated with the eighth day of their Tzolk'in calendar, which is called the "nawal" (energy) of "q'anil" (ripe, full yellow). This day is represented with a different glyph from the k'an glyph, but notably has a cross representing the four cardinal points. The identification of a potent medicinal plant used in the late classic as well as contemporary times may suggest the long-term preservation of traditional medicinal knowledge in Maya culture for pharmacologically significant plants.

Keywords: Maya k'an glyph; *Tynanthus guatemalensis* eugenol; antidiabetic activity

1. Introduction

In the Yukatekan languages, the hieroglyph listed as T281 in the Thompson (1962) catalog [1] (Figure 1) reads k'an [K'AN], meaning "yellow, ripe, or precious" [2]. As an adjective, k'an can relate to anything that can be described as being yellow or yellowish. The k'an glyph is a common cosmogram used by the Classic Maya to invoke cosmic locations, which often links these spiritual locations to precious sacrificial offerings like ripe maize or precious jewels [3]. (To avoid confusion, it is important

to note that the Yukatekan word k'an has a second meaning and glyph. In the Tzolkin calendar, which is still used in indigenous Maya ceremonies today, k'an is the name of the fourth day, but is represented with a different glyph). In 2012, an article was published on the possible use of the k'an glyph as a description of an ancient ethnobotanically used plant [4]. The glyph is found recorded in numerous hieroglyphic contexts including Classic Maya murals, pottery vessels, and sacred vessels used specifically for beverages made with cacao (*Theobroma cacao*) (Figure 1). The glyph is a symmetric cross with equal arms but there are many variations, including occasional depictions with tapered arms, like a Maltese cross. According to Freidel et al. [5], the k'an cross symbolizes the four cardinal directions, which provide the basic cosmological framework for describing the surface of the world and, by extension, for individual Mayan communities. In addition, the k'an cross symbolizes the pathway of the sun as it moves daily on its journey across the sky from east to west (ibid.). Each of the four cardinal directions has its own special tree, bird, color, and spiritual personages associated with its domain, and rituals associated with those personages (ibid.). Classic Maya oriented the four cardinal directions to the following four color connotations: East was associated with the color red (chak) and was the most important direction since it represented the direction where the sun was born. North was associated with the color white (sak) and represented the direction from which the cooling winds of winter came. West was associated with the color black (ihk') and it represented the dying place of the sun, and finally, South was associated with the color yellow (k'an) and was considered to be the great side of the sun [6].

Figure 1. Ways the Maya employ the k'an template with small variations: (**a**) Drawing of detail of photograph K625 by Justin Kerr (drawing by Marc Zender, used with permission). The whole four-glyph context here reads *y-uk'ib ta yuta(l) k'an ka(ka)aw* or "his drinking vessel for fruity ripe cacao" [1] (Beliaev et al. 2010:260). (**b**) The k'an cross on Late Classic Maya ceramic cacao vessels (photograph K8804 © Justin Kerr, used with permission). (**c**) The k'an cross in the center of a Late Classic Maya ceramic bowl from Tikal (Photo J. Arnason).

While a variety of trees in the Maya area can be described as "yellow trees" or k'an te or k'an che, [7], we were particularly interested in the use of the glyph on cacao vessels. As reported by Weiss-Krejci [2], k'an serves as an adjective for a specific cacao additive, hitherto read as "yellow, ripe" or "cacao beverage". Working with Maya in Belize, Weiss-Krejci suggested that a plant with the common name "pimiento" was the k'an botanical additive, and identified it as the allspice tree based on its yellowish cross section of the wood with a pattern resembling the k'an cross, yellow bark as well as precious wood, berries which ripen after the harvest, good smell, etc. We hypothesized in the present study that Weiss-Krejci made a logical assumption, but her local informants mistakenly identified the plant described by the glyph as allspice, *Pimenta dioica* (L.) Merr., a common tree of the family Myrtaceae in the Maya traditional territory and a prominent medicinal plant used widely as an aromatic flavoring agent and tea.

The objective of this study was to determine which botanical species, based on its anatomical, phytochemical, and medicinal properties was best described by the use of the cross-shaped k´an glyph. This botanical revision led to an important Maya medicinal plant used today, which suggests the continuity of use of some traditional Maya medicines and the reasons for their continued importance.

2. Materials and Methods

2.1. Ethnobotany

The Q'eqchi' Healers Association comprising five healers and two translators collaborated in the ethnobotanical study. Ethics approvals were issued from University of Ottawa (File H 05-09-07) and the Institutional Review Board of Cleveland State University (File 26228-PES-HS). Ethnobotanical information was collected through a series of open-ended and qualitative ethnographic interviews by Ferrier, Arnason, and Pesek. Participating healers granted prior informed consent and their ethnobotanical knowledge was protected as intellectual property through a research agreement with the University of Ottawa. The use of plants described here is the intellectual property of the Maya healers and should not be used without their permission. Herbarium vouchers and extracts are accessioned at the University of Ottawa, Dalhousie University, the New York Botanical Garden, and the Belize Forestry Office, Belize.

2.2. Identification of the Eugenol Essential Oil Extraction

The essential oil from *Tynanthus guatemalensis* was obtained by solvent extraction of the fresh liana. The liana, 2 cm in diameter, was cut into 5 cm long segments and placed in isopropanol. A total of 16 mL of the solvent was filtered through a 13 mm nylon 45 nm syringe filter (Canadian Life Science) to remove particulate matter. The remaining solution was extracted with 4 mL of hexanes and centrifuged at 1000× *g* for 20 min. The organic phase was collected, washed, and dried over sodium sulphate and concentrated under reduced pressure. The method yielded 0.2 g of the oil. A total of 200 mg of extracted oil was dissolved in 1 mL of hexanes for analysis via gas chromatography-mass spectrometry (GC-MS).

2.3. GC-MS Analysis of Essential Oil Extraction/Fraction

The GC-MS analysis of the essential oil fraction was carried out on a Hewlett Packard 6890 series GC-MSD with 5913 inert Mass Selective Detector at the John L. Holmes Mass Spectrometry Facility, University of Ottawa. Injector temperature was set to 250 °C and a 50:1 split ratio was employed using helium gas at a rate of 48 mL·min^{-1}. Separations were performed on a DB-5 column containing 95% methyl groups, and 5% phenyl groups (HP 19091A-102, 30 m × 250 µm × 0.25 µm film thickness) at a helium carrier gas pressure of 14.63 psi and a flow rate of 0.9 mL·min^{-1}. The temperature program was started at 40 °C and raised to 300 °C over a 26 min period at a steady rate of 10 °C·min^{-1}. The electron impact ionization mass spectra were obtained. Eugenol (cat# E51791-5G) was obtained from Sigma Aldrich and used as an external standard.

2.4. Identification of the Essential Oil Component

Eugenol was identified from the essential oil by matching the mass spectra of the pure compound with the peak eluting at the same retention time under similar chromatographic and spectrometric conditions. Identity was further confirmed by spectral comparison with the Wiley 275 database and the NIST (National Institute of Standards and Technology) Chemistry Web Book entry (http://webbook.nist.gov/chemistry/). The calculated Kovats Retention Indices were arrived at using the linear retention times of an n-alkane external standard according to the accepted method [8] and compared to the literature values [9].

3. Results

3.1. Taxonomic Identification of the K'an Template Based on Wood Anatomy.

Our ethnobotanical work on antidiabetic plants with Q'eqchi' Maya healers in Belize suggested that a different plant species was the basis of the k'an template, namely a woody liana, *Tynanthus guatemalensis* Donn. Sm. (chibayal in Q'eqchi') of the family Bignoniaceae.

Common names can cause confusion when the name applies to more than one taxon. In Belize, "pimiento" can allude to both *Pimenta dioica* (Myrtaceae), which we argue was incorrectly associated with the Maya k'an glyph, and "pimiento bejuco", *Tynanthus guatemalensis* (Bignoniaceae), an important Q'eqchi' diabetes treatment. The Bignoniaceae family, consisting mostly of tropical trees, shrubs, and lianas, is comprised of approximately 800 species and is not closely related to Myrtaceae. The similar common name arises from the high content of eugenol or its derivatives in both species, lending a distinctive and pleasant allspice-like aroma to both the *P. dioica* leaf and *T. guatemalensis* liana. An alternative common name used by the Q'eqchi' healers is chib'ayal.

To solve the mystery of which species was the correct template for the Classic Maya glyph (Figure 1), we worked with Q'eqchi' Maya healers over the course of several years and collected tree and liana stems from the remote and rugged rainforest-covered Maya Mountains as well as from the Q'eqchi' Maya healers' traditional medicinal plant collections at Itzamma (meaning place of Itzamna) Garden, Indian Creek, Belize. Vouchers of *P. dioica* (OTT 17048) and *T. guatemalensis* (OTT20003) from Belize were collected and determined by Ferrier, Arnason, and Pesek and compared with a *T. guatemalensis* type voucher (Smith 1488, NY 328979) and other Central American vouchers of *P. dioica* and *T. guatemalensis* at the New York Botanical Garden (NY)* (* Information on and photos of *P. dioica* can be found at http://www.tropicos.org/Name/22101787 and for *T. guatemalensis* at http://www.tropicos.org/Name/3701480). Cross sections of wood for comparison were prepared in the field for both species using a sharp machete. The *T. guatemalensis* cross section (Figure 2) showed the k'an glyph template clearly, while the *P. dioica* cross section showed concentric growth rings, but no k'an cross. The *T. guatemalensis* pattern also shows the tapered arms found on some cacao drinking vessels, bowls, and murals [4]. Unusual xylem patterns of various types are common in tropical lianas but rare in trees. In subtropical areas with a distinct dry season, the growth pattern in trees normally shows annual rings similar to temperate trees where growth is interrupted during winter. Although *T. guatemalensis* is a forest liana and, unlike *P. dioica*, not easily grown in cultivated sites, the appearance of the *k'an* cross suggests *T. guatemalensis* was a ritualistic component in Classic Maya art and hieroglyphic texts [5,6].

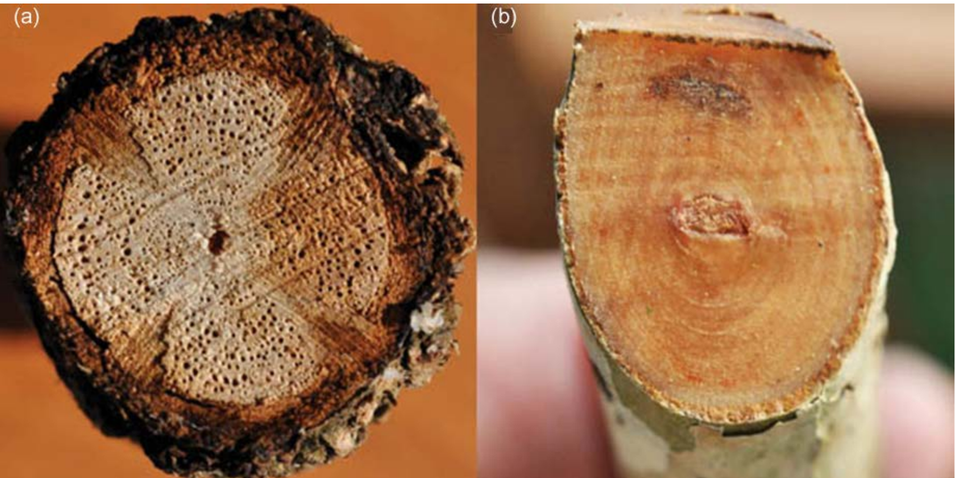

Figure 2. (**a**) *Tynanthus guatemalensis* liana cross section showing the k'an sign. (**b**) *Pimineta dioica* stem cross section showing concentric growth rings. Stems are approximately 1.5 cm in diameter. (Photos J. Arnason).

After cross-sectioning the woody liana, we also observed a pronounced yellow tint in the outer bark and traditional decoction prepared with the stem. *P. dioica* stems and its traditional decoctions had much less color.

3.2. Evidence from Flavour and Aroma

The flavor and aroma of *T. guatemalensis* is pleasant and strikingly similar to the infusion prepared with *P. dioica* leaves. Since their common names and aroma are similar, taxonomic confusion is not only possible but predictable. Eugenol is a component of *P. dioica.* Our gas chromatography-mass spectrometry (GC-MS) readings of *T. guatemalensis* isopropyl liquor (Figure 3) compared to an authentic eugenol standard also confirmed the presence of eugenol in the liquor of this species.

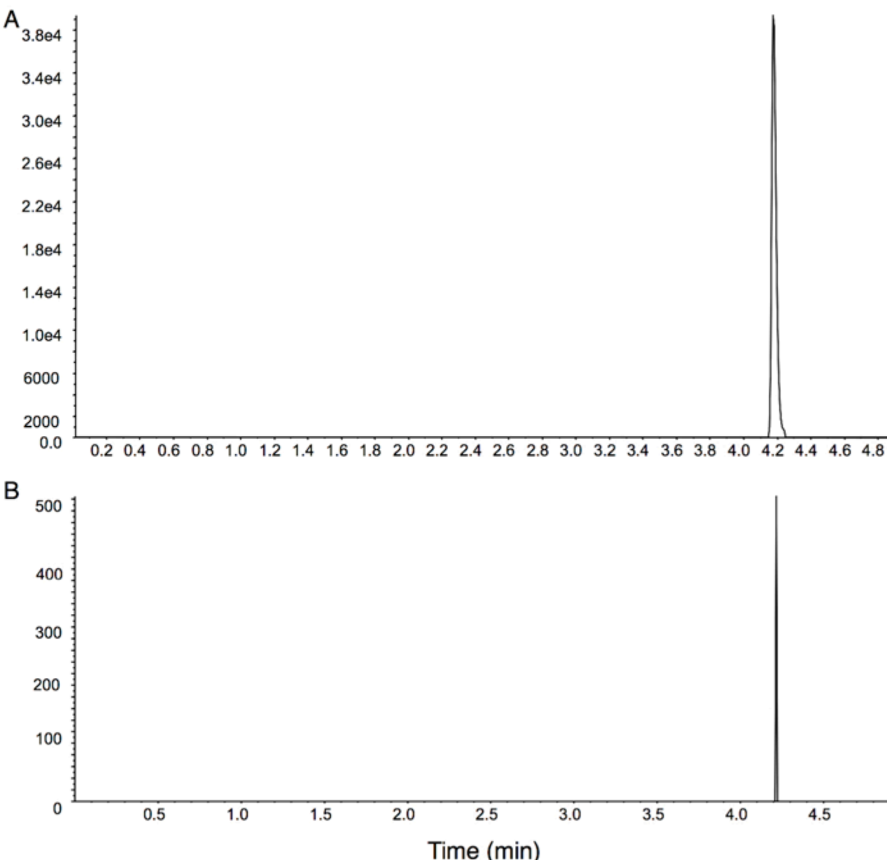

Figure 3. Comparison of retention times (RT) and Kovát's Index (KI) of (**A**) *T. guatemalensis* isopropyl liquor (RT = 14.666 min; KI = 1338) and (**B**) eugenol standard (Rt = 14.781, KI = 1346).

3.3. Traditional Knowledge

Although not uncommon, *T. guatemalensis* is found in primary and secondary semi-evergreen forests, often far away from villages, and effort is required to find and collect the liana. For this reason, Maya medicinal plant specialists (traditional healers), who can identify hundreds of medicinal species [10,11] are aware of the anatomical differences in these two species and rarely confuse them. However, non-specialists among the Maya are often unaware of the difference. We have previously shown that lack of botanical expertise has led to errors in interpretation of ancient Maya botanical use of the ramon tree [12].

3.4. Ethnobotanical and Ethnopharmacological Studies

In our research with Q'eqchi' Maya healers, *T. guatemalensis* was recorded as a treatment for diabetes, heart and chest pain, increased thirst, and increased urination. The treatment was prepared

by crushing 12 8-cm sections of the liana, plus the root for diabetes, or heart and chest pain, and boiling in 4 L of water for 30 min. Healers administered the preparation as an infusion to be consumed or applied topically three to four times daily. In the field, the liana was used as a coffee substitute (tea) and the triangular sections outside the xylem were used as cord for fastening tree poles for forest shelters.

The term k'an as used in the archeological context for "precious, yellow" is perhaps best translated in the modern Q'eqchi' language as "q'anil" (yellow, ripe, seed or ready to multiply; for example, the corn of the earth). In contemporary Q'eqchi' tradition, the section of the chib'ayal vine with its cross is associated with the eighth day of their Tzolk'in Maya calendar, which is called the "nawal" (energy) of "q'anil" (ripe, full yellow). This day is represented with a different glyph from the k'an glyph but notably has a cross, which is interpreted as representing the four cardinal points. The Q'eqchi' community and especially traditional healers conduct the Tzolk'in calendar ceremony on a regular basis.

In our previously reported studies [13] on antidiabetic plants from southern Belize with Maya healers, quantitative ethnobotany using the syndromic importance value (SIV) [14] was used to rank the importance of traditional medicines based on treatments for 15 diabetic symptoms including many symptoms, such as poorly healing leg sores, neuropathy, cataracts, and kidney decline which are associated with elevated haemoglobin A1C, a marker for diabetic protein glycation caused by elevated blood glucose. The SIV value for plants developed from healer knowledge was able to predict antidiabetic activity measured in a diabetic anti glycation assay ($r^2 = 0.70$, $p = 0.014$). Remarkably, *T. guatemalensis* had the fourth highest SIV value of 70 plants collected with the traditional healers. For treating diagnosed diabetics (rather than specific symptoms), the healers preferred *T. guatemalensis* over all other species. Pharmacological studies also showed that *T. guatemalensis* had the highest antiglycation activity of all plants tested. This activity was associated with the occurrence of the active principle verbascoside, a phenolic compound with potent antioxidant properties [15]. Verbasocside was as active as the positive control, quercetin, in the antiglycation assay. Verbascoside is not known to occur in *P. dioica* and eugenol was not identified as a potent active principle. Although our results focused on diabetes, the antioxidant effects of phenolics like verbascoside have health benefits in wide areas of application to many degenerative conditions. These data all support the observation that *T. guatemalensis* is a far more active medicinal species than *P. dioica*. While more research is needed, our results suggest that *T. guatemalensis* is potentially a superfood similar to blueberry or açai promoting good health. The ancient description of *T. guatemalensis* by the glyph for "precious yellow" can now be understood in its translation to a modern pharmacological context.

4. Conclusions

While many cultivated food plants from Mesoamerica can be traced in the archeological record back to periods as early as 7000 years before present (for example maize), the history and archeological record of medicinal plants, especially from the semi-evergreen tropical forests of the classic Maya heartland in the Peten and Belize are poorly documented, despite evidence of contemporary Maya use of hundreds of species [16–19]. This is perhaps because medicinal plants are mainly herbs that are poorly preserved at archeological sites and are difficult to identify from glyphic texts. Although we cannot be certain, it appears that preservation of aspects of medicinal knowledge over long periods of time may have occurred. If so, it may depend on the enduring medicinal value of the plant as well as the continuing needs of the Maya population over the centuries. The present study shows use in both classic and modern periods for *T. guatemalensis*, which we showed has remarkable pharmacological activity. Another example is copal incense, obtained by burning the triterpenoid rich resin of *Protium copal* (Burseraceae), used both in classic and modern Maya spiritual ceremonies. Our pharmacological studies [20] showed that the incense also has remarkable activity as a potent anxiolytic activity, which may explain its long historical use.

Much has been written about Classic Maya civilization and the splendors of their language, astronomy, calendar, architecture, politics, economics, diet, and medicine. Despite conquest, genocide,

and forest destruction, the endurance of the Maya civilization is evident in contemporary cultural celebrations at Classic Maya city centers. As we have demonstrated, Classic Maya medical heritage recorded on ancient ceremonial vessels (including ceremonial cacao vessels) appears to survive today in the living oral history and medicinal library of living traditional healers. Like Ayurvedic medicine, traditional Chinese Medicine, and Persian traditional medicine, we should accord Maya medicine respect as one of the great medical traditions of the world.

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