Negotiations with the Animate Forest: Hunting Shrines in the Guatemalan Highlands

Linda A. Brown · Kitty F. Emery

Abstract Ethnoarchaeological research at highland Maya hunting shrines documents the material remains of interactions between two types of animate beings: humans and the forest. When either active agent enters the others' domain there are accompanying ceremonial activities to assuage the inherent danger, often leaving physical traces in the material record. These traces, if found in the archaeological record, might reveal similar ancient interactions. Using the material correlates of modern hunting rituals, we explore the utility of ethnoarchaeological research in identifying negotiations with non-human agents associated with the animate forest – an active agent in many societies.

Keywords Maya · Ethnoarchaeology · Hunting ceremonialism · Zooarchaeology

Introduction

Ethnoarchaeology, the study of modern material remains as analogs for ancient activities, can provide valuable data for inferring agency from the archaeological record. This is particularly true in the case of animistic religious practices, where one or more actors are non-physical entities or material objects not afforded agency in our own culture but active participants in other societies. In the pursuit of evidence for interactions between human and non-human agents, the material remains of repeated ceremonial negotiations are valuable. As these negotiations often occur at the boundaries between agent realms, they physically mark important thresholds where human and non-human actors interact.

L. A. Brown (✉)
Department of Anthropology, The George Washington University, Washington, DC 20052, USA
e-mail: labrown@gwu.edu

K. F. Emery
Florida Museum of Natural History, University of Florida, Gainesville, FL 32611–7800, USA
e-mail: kemery@flmnh.ufl.edu

In this article, we explore relations between two groups of social actors: humans and the animate forest, a corpus of entities that include both physical landscape features as well as objects and non-physical beings associated with the wilderness. Specifically, we focus on modern Maya hunting shrines around Lake Atitlán in the Guatemalan highlands (Fig. 1). Hunting shrines are places in the landscape used for ritual negotiations with the animal guardian who is associated with animate topographic features in the forests (Brown 2005). As hunting rites occur at these animate features, hunting shrines are thresholds between realms where interactions between community and forest agents occur. As this paper will detail, hunting shrines are clearly identified by several physical markers including the presence of a faunal cache consisting of curated wild animal bones deposited by the hunters during ceremonies.

Over the past 8 years, Brown has documented 20 hunting shrines around Lake Atitlán and collected ethnographic evidence of their use by Tz'utujil and Kaqchikel Maya hunters (see Fig. 1) (Brown and Romero 2002; Brown 2005). Hunting shrines vary from small private sites used by a single hunter to large communal sites with multiple features including impressive bone accumulations from years of use. Most recently, Emery and Brown teamed up to conduct a detailed analysis of the activity areas at three large communal shrines with a particular focus on the animal remains in their associated faunal caches (Emery *et al.* 2007). Most known hunting shrines are still in use, or were abandoned within the past 50 years, creating a unique opportunity to study recent ethnoarchaeological assemblages with the assistance of
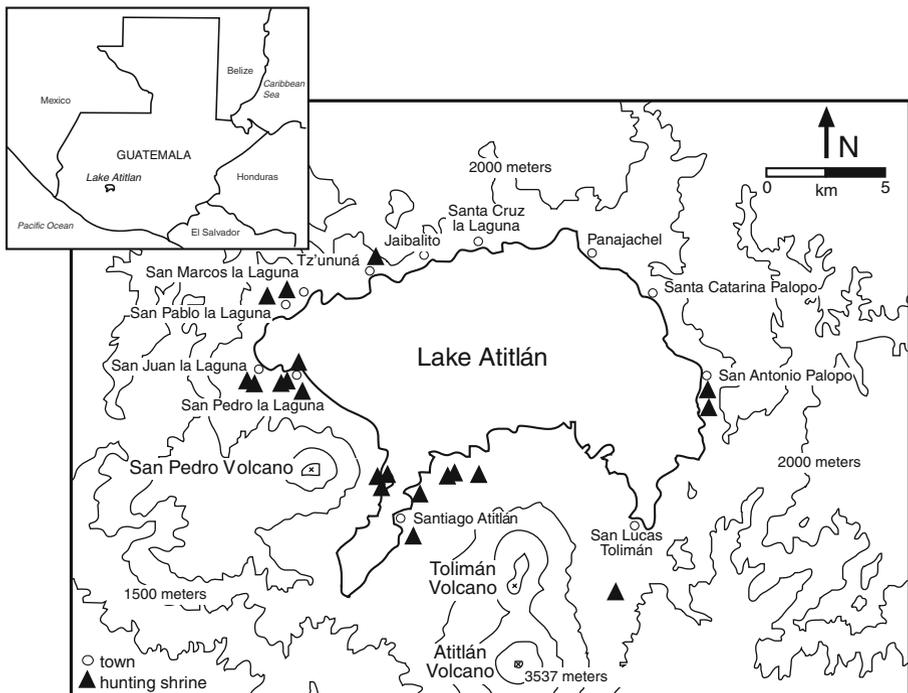
Fig. 1 Locations of hunting shrines around Lake Atitlán, Guatemala.

modern hunters and ritual practitioners who visited these shrines. Thus, the Atitlán hunting shrines are an ideal case study for the exploration of animistic religious practices including identifying important animate objects and understanding the material correlates of non-human agency, as depicted in human interactions with active forest spirits.

The contemporary Maya are descendents of the of the ancient Maya peoples, who lived in Guatemala and Belize, as well as parts of El Salvador, Honduras, and southern Mexico from 2,000 BCE to Spanish contact. The ancient Maya are best known for their cultural achievements during the Classic period (200–900 CE) in the southern lowlands, and the later Terminal and Postclassic periods (900–1500 CE) in Yucatan. Today Guatemala has over 5 million indigenous Maya speakers, most of whom live in the highland areas. Their long cultural trajectory in the region has made it a fruitful area for archaeologists interested in direct historical research and developing ethnographic analogies for comparative approaches (e.g., Brown 2002, 2004; Deal 1985, 1988, 1998; Hayden and Cannon 1983, 1984; Hayden and Deal 1987; Hayden and Nelson 1981; Killion 1987; Smyth 1991).

Most modern Maya define themselves as Christian yet religious practice is blended with an animistic ontology evident in the variety of non-human social actors with whom they interact; a perspective of some antiquity as suggested by the predominance of imagery depicting non-human actors in humanized attitudes and roles stretching from the present to the past. Animistic religious traditions (or indigenous and relational ontologies, as such approaches have recently been called) place priority on the social and interactive relationships between human and non-human environments (e.g., Bird-Davis 1999; Gell 1998; Hornborg 2006; Ingold 2006; Viveiros de Castro 2004) where "entities such as plants or even rocks may be approached as communicative subjects rather than inert objects perceived by modernists" (Hornborg 2006:22). Of particular interest here is the highland Maya understanding of the forest as an active agent capable of taking revenge against disrespectful or careless humans who enter this realm to harvest resources such as wild animals or construction materials (e.g., Guiteras-Holmes 1961; Hanks 1990; Stone 1995; Taube 2003; Vogt 1976; Wisdom 1940).

In exploring the physical correlates of animistic indigenous ontologies, we adopt a practice-based perspective (e.g., Bell 1992, 1997; Ortner 1984). Ritual practices, as interactions between human and non-human agents, leave traces in archaeological contexts and thus are amenable to material studies. However, to identify the remains of these encounters we must suspend the modernist dichotomy that splits the world into people and things and seriously accept that some of what we recover in the archaeological record reflects daily interactions between human and important non-human agents. Recognizing that non-human beings and things have social agency does not require that we see them as possessing independent thoughts or minds. But it may inch us closer to modeling a sense of past peoples that better reflects the primacy they placed on daily interactions with important social actors.

In the following pages, we first review ethnographic evidence of a Maya spatial/conceptual dichotomy between human communities and the animate forest. Then we focus on hunting shrines as case-study, discussing ethnographic data about non-human agents with whom Tz'utujil Maya hunters must negotiate for a successful hunt. Turning to the ethnoarchaeological correlates of these negotiations, we adopt a

three-stage analysis focusing on: (1) the types of animate landscape features used as hunting shrines; (2) the types of activity areas present for on-site ritual negotiations; and (3) the types of animal remains handed over to the animal guardian in ritual faunal caches. Based on these data, we propose a material model for the identification of hunting shrines in the Maya archaeological record. Finally we consider the implications of our evidence vis-à-vis the material correlates of interactions with non-human agents.

Community and Forest among the Modern Maya

Various scholars have noted that contemporary Maya draw a sharp conceptual distinction between the social spaces occupied by humans and those of the forest wilds (e.g., Guiteras-Holmes 1961; Hanks 1990; Stone 1995; Taube 2003; Vogt 1976; Wisdom 1940). Familiar and orderly domestic and community spaces are associated with feelings of harmony and safety. In contrast, the forest is linked to concepts of chaos, the edge of the universe, and antisocial beings and forces (e.g., Hanks 1990:306; Gossen 1986:230; Guiteras-Holmes 1961:223; Redfield and Villa Rojas 1934:121; Stone 1995:15; Taube 2003:466; Vogt 1976:33; Wisdom 1940:426).

Our research indicates that the contemporary Maya define "forest" as places outside the boundaries of the built community or cleared milpas and do not link the forest to unmodified land, likely because no lands in the region are unmodified. Other ethnographic data link the "forest" to shaded areas and darkness, the presence of dangerous wild animals such as snakes, as well as sink holes and caves – landscape features associated with entrances to the underworld (see Taube 2003 for a review). A dichotomy between forest and open cultivated fields is clearly evident in a description provided by a highland Maya Tzotzil man: "In the cultivated fields there is neither shadow or darkness, it is open land and we are not afraid; in the forests it is dark and there are snakes, sink holes, caves… and we are afraid" (Guiteras-Holmes 1961:287). To protect communities, in the Tzotzil Maya highland town of Zinacantán, Chiapas, gods stand at the four directions of town guarding inhabitants (Laughlin 1976:11) from the forest, "an undomesticated domain populated by wild plants, wild animals and demons" (Vogt 1976:33). Similarly, the lowland Maya in Yucatan note that the bush "is a dangerous place outside the realm of the guardian spirits posted at the cardinal corners of inhabited and cultivated space" (Hanks 1990:306). Thus, they place protective crosses at the corners of towns and milpas to secure these human-associated spaces against wild animals, evil winds, and demons (e.g., Redfield and Villa Rojas 1934:112–114; Villa Rojas 1945:101; Hanks 1990:341).

Crossing thresholds from community to forest is considered precarious and sometimes dangerous. The forest is occupied by sentient non-human agents who are capable of taking action against human interlopers. Wild plants have emotions, laughing when they overtake cultivated zones and becoming angry when they are cut down (Laughlin 2000:106). Any agricultural tool left in the forest overnight will be attacked by wild plants causing the worker to become fatigued the next day (Laughlin 2000:105). Similarly, the "creatures of the forest are man's enemies and seek to destroy his life" (Guiteras-Holmes 1961:287). Some animals "are not

animals, but witches that have taken animal forms, animals that have exchanged forms with one another" (Redfield and Villa Rojas 1934:121).

In addition to displaying individual agency, the flora and fauna of the forest have active spirit-guardians who watch over them. Temperamental wilderness guardians slighted by human trespassers can exact revenge via predator attacks, poisonous snakes, or deadly falls down the side of a cliff. The animal guardian, as the protector of wild creatures, is a potent spirit-being who must be negotiated with to ensure a successful hunt (e.g., Alcorn 1984:88; Cabarrús 1998:47; Carlsen 1997:98; Cortes y Larraz 1958:119- 120; Freidel *et al.* 1993:187; Hofling 1991:136–153; Redfield and Villa Rojas 1934:117–118; Sapper 1897:268; Taube 1997; Taube 2003:472–475; Thompson, 1930:142, 1970:308; Villa Rojas, 1945:103; Wagley 1949:57; Wisdom, 1940:72–73). Thus hunting can be especially rife with danger.

In this paper, we suggest that, in the Maya world, when animate beings from the forest or human social spheres cross boundaries into one another's space there are ritual activities to assuage innate tension, something especially obvious in the harvesting of wild resources. Two examples of precarious boundary crossings are the entry of the hunter into the forest domain in search of prey and the entry of carcasses of hunted animals (or any forest product) into the human domain. Animate beings of various ontological statuses – human, wild animals, spirits guardians, topographic features, dogs, weapons, and skeletal remains – must maintain engaged relations based on commensality and mutual respect to avoid negative repercussions. As will become apparent in our study, some of these interactions take very material forms and directly impact what and where certain remains enter an archaeological context. The material implications of negotiations between human and non-human agents, which often occur at potent thresholds between agent realms, can be used to develop models to trace such animistic practices into the ancient past. We suggest that the ethnoarchaeological methods employed in this research can be used to develop models to reveal such animistic agents in other societies.

Community and Forest among the Ancient Maya

The community–forest dichotomy may have historical depth in the Maya area (Stone 1995:15; Ringle 1999:202; Stuart 1987; Taube 2003:470, 2004:69–70). Based on ethnographic, ethnohistoric, and archaeological data from Maya caves, Stone (1995) argued that the ancient Maya also envisioned a spatial distinction between the human social spaces and those of the animate forest. In commenting on the abundant evidence of ancient Maya cave ceremonialism, she noted that "[w]hile the forest is dangerous, it is also seen as closer to the supernatural powers of the earth – indeed, it is their dwelling place – and that is why the topographic shrine must be visited" (Stone 1995:16). Crossing the threshold into the precarious forest, the ancient (and contemporary) Maya performed rituals in powerful topographic settings, such as caves and mountain tops, to mobilize support from the active denizens of the forest (e.g., Brady 1989, 1997; Prufer and Brady 2005; Vogt 1969, 1976, 1981).

Many scholars see evidence of the long term persistence of a community–forest construct in Maya iconography, glyphs, and myths. The Maya murals at San Bartolo (ca. 100 BCE) present compelling evidence of the concept of a primordial forest and

cave as the place of emergence of food and water (Saturno *et al.* 2005). Specifically, the painted scene on the North Wall depicts Flower Mountain, a zoomorphic mountain or *witz* as it is called in Mayan hieroglyphs (Stuart 1987), populated with wild plants and animals including depictions of a jaguar and snake aggressively killing wild birds (Saturno *et al.* 2005:14). In the front of this chaotic mountain scene "human figures calmly carrying and apparently exchanging objects" create a striking visual contrast between these two realms and ways of being (Saturno *et al.* 2005:16).

Taube (2003: 472) sees the community–forest dichotomy reified during the Classic period in the Maya deities known as the Hero Twins. The Hero Twins represent two realms of authority: Hunahpu was king of the human community while the jaguar marked Ixbalanque was king of the forests. Continued evidence of a human–forest dichotomy is inferred from a Postclassic mural from the site of Chichén Itzá (Taube 2003:470). Dating to the tenth century, a mural from the Upper Temple of the Jaguars depicts a person standing in front of a house, as if about to enter the safety of a domestic space (Fig. 2). Behind the individual is the forest "teeming with fierce beasts, including an apparently roaring puma and two rattle snakes, one of which is coiled as if to strike" emphasizing the forest was a place of danger (Taube 2003:470). Evidence of a dichotomy between the orderly cultivated

Fig. 2 Detail of early Postclassic mural depicting the dichotomy between the forest and human community. A human figure enters the safety of domestic space represented by a house with a cylinder vessel on its platform. The forest behind deems with wild flora and wild fauna including several snakes, one of which is coiled as if to strike. Mural is from the Upper Temple of the Jaguars, Chichén Itzá. Illustration by Karl Taube (modified from original in Maudslay 1889–1902 III: Plate 40).

agricultural spaces and those of the forests is apparent in the Popol Vuh, an ancient creation account preserved in written form by literate sixteenth century K'iche' (Taube 2003:469). In one episode, the Hero Twins spend their day clearing the forest to plant a corn *milpa* only to discover that wild animals of the forest sabotage their attempts at night by making the brambles and trees grow back to reclaim the cleared plot (Christenson 2007:148–150).

It is important to distinguish between the modern and ancient Maya view of "forest" and our own, often naïve, assumption of pristine and unmodified wilderness. Ethnolinguistic and ethnohistoric records indicate that lowland Maya cognition of environment during the Classic period included a complex landscape of forested and unforested terrain, as well as active and resting agricultural lands (e.g., Marcus 1982; McAnany 1995). Based on Colonial period dictionaries, McAnany (1995:67) argued that the glyph "k'ax," interpreted as forest or wilderness, included managed orchards, fallow agricultural fields, and reforested areas. Despite high settlement densities and agricultural expanse, paleoenvironmental and archaeological evidence indicates that much of the Maya landscape was forested in the Classic period (see, for example: Beach *et al.* 2006; Dunning 1996; Emery and Thornton 2008). However, as in many world areas, recent studies question whether any "pristine" wilderness existed in the lowlands at that time. Botanical evidence documents the high species similarity between lowland Maya forests and agricultural fields in the past, and ethnographic research on forest gardening suggests that most forests were modified by human activity, possibly by intentional manipulation (see Emery and Ford 2008 for a full review).

With much smaller populations and fewer urban centers, the rugged Maya highlands – the home of the sacred quetzal bird, source of obsidian and land of dramatic volcanoes – was never fully deforested. This area was regularly traversed by traders, if not occasionally visited by the elite, as the lowland Maya were not an isolated population. Certainly stories of great forested mountain peaks that belched smoke and snorted lava would have been told. Thus, we agree with others who have argued that the forest remained a potent construct throughout Maya history.

Atitlan Hunting Shrines: Methods

Our research at the highland Maya hunting shrines had the following goals: (1) conducting interviews with hunters and ritual practitioners knowledgeable about hunting ceremonialism; (2) landscape research to identify the types of topographic features used for hunting rites; (3) mapping cultural features and activity areas at shrines; and (4) using zooarchaeological methods to conduct in-depth analyses of the animal bones in the hunting caches associated with three intact communal shrines (Brown 2005; Emery *et al.* 2007). To achieve these goals, we used the methods outlined in the following section.

Interviews

To understand the suite of ritual practices performed at hunting shrines, we interviewed local hunters and ritual practitioners who had knowledge of hunting

ceremonialism and/or had attended ceremonies at these sites. Over a 2-year period, we interviewed 37 hunters and ritual practitioners in communities with associated hunting shrines. When possible, interviewees visited the shrine with us and provided details on activity areas and how they used these sites. Additionally, we elicited personal experiences about these special places and interactions with the animal guardian.

Landscape Research

Landscape features used as hunting shrines were first identified during an ethnoarchaeological project on sacred sites in the landscape (Brown 2002; Brown and Romero 2002). In 2005, Brown returned to Lake Atitlán to focus exclusively on recording hunting shrines. Topographic features used as hunting shrines were located by talking with community members knowledgeable about hunting and/or local sacred sites. Active hunting shrines were easier to locate than abandoned sites, as more people were aware of contemporary sacred places. Frequently, abandoned hunting shrines were described as rock outcrops or caves containing goat, sheep, or cow bones. Upon field inspection, every one of these places contained bones from wild, rather than domestic, animals. Thus, when inquiring about possible abandoned hunting sites, we found it useful to ask whether individuals knew of places in the landscape with deer, goat, sheep, or cow bones. Other times, we were told that there "used to be bones" at a certain location by someone who visited the shrine and/or attended ceremonies there in the past. When we visited these locations almost all still had animal material present.

Activity Area Research

Traditional archaeological methods and site structure analysis were used to conduct activity area research. All hunting shrines sites were visited and located on topographic maps using a handheld GPS unit to more exactly plot their locations. We drafted planimetric maps of all sites, plotting surface features and activity areas in and around each hunting shrine. Maps were made using a Brunton Pocket Transit on a tripod and an electronic measuring device (Sonin Combo Pro) with an electronic target. Additional activity area data from interviews were also plotted on scale maps. All sites were documented in photographs and surface artifacts described in field notes.

Based on initial fieldwork, three communal sites were chosen for detailed activity area and animal bone research. These three sites were representative of the full corpus of communal hunting shrines in that they were located at a distance from town settlements, were associated with rock outcrops or rock shelters, and contained intact bone deposits; however, the sites differed in some important respects.

Pa' Ruchi' Abaj (Mouth of the Rock) is an abandoned communal hunting shrine located along an old trading route near San Juan la Laguna. It includes a single large boulder and a very dense faunal deposit at the base of the outcrop (Fig. 3). Probing and column sample excavations revealed over half a meter of dense bone matrix below the obvious surface remains. Of the three sites subjected to intensive study, it was the most exposed to the elements, with protection only afforded to the areas closest to the outcropping.

Fig. 3 Overview of rock out-
crop and bone cache at Pa'
Ruchi' Abaj. Photograph by
Linda A. Brown.

   Pa Sak Man (Place of the White Bird) is one of several hunting shrines recorded
around San Pedro la Laguna (Fig. 4). It is an active communal shrine site used for
various types of ceremonies including hunting rites. The site consists of a well-
protected, west-facing rock shelter with multiple activity areas and seven observed
bone caches. Unlike Pa' Ruchi' Abaj, the site does not appear to have subsurface
deposits.
   Pa' Ziguán (The Barranca or Cliff) is an abandoned communal hunting shrine
located southwest of San Pedro la Laguna (Fig. 5). The site originally consisted of a
low, east-facing rock shelter divided into two activity areas with associated bone
caches (Fig. 6). Unfortunately, this shrine fell victim to a rock-slide shortly before
our arrival which obliterated a good portion of the site (see Fig. 5).

Analysis of Faunal Cache Animal Remains

Analysis of the animal remains from the faunal caches of the three hunting shrines
followed standard protocols used in the science of zooarchaeology, the study of
archaeological animal remains (Reitz and Wing 1999). Although the material
remains under investigation were modern, zooarchaeological methods were used as
they can address questions of patterning and provide models with relevance for
archaeological deposits. Skeletal specimens were identified to taxon, element,
element portion and completeness, side, age (on the basis of long-bone fusion and
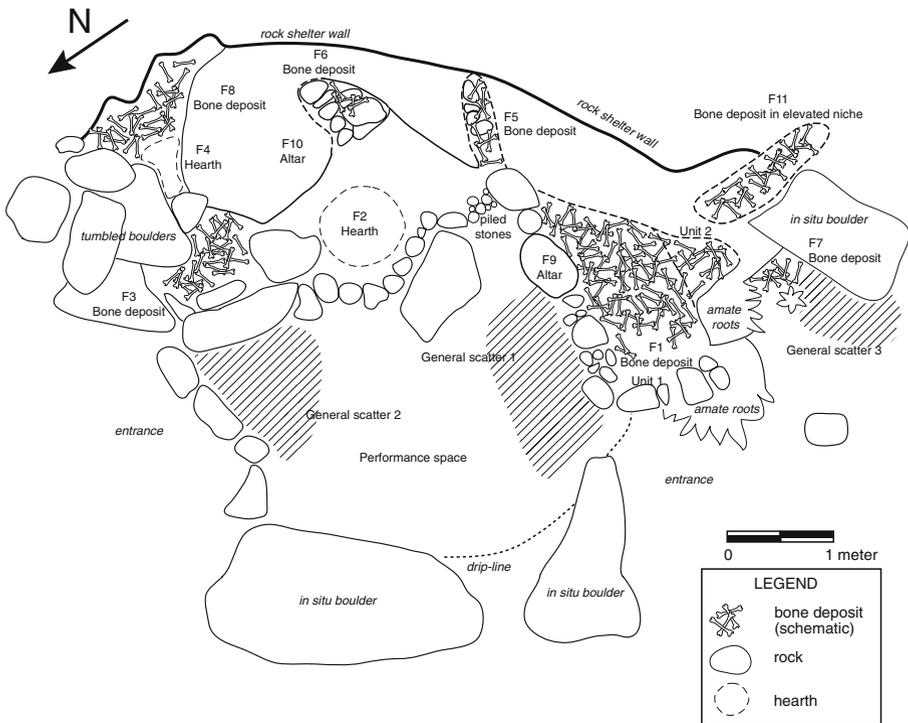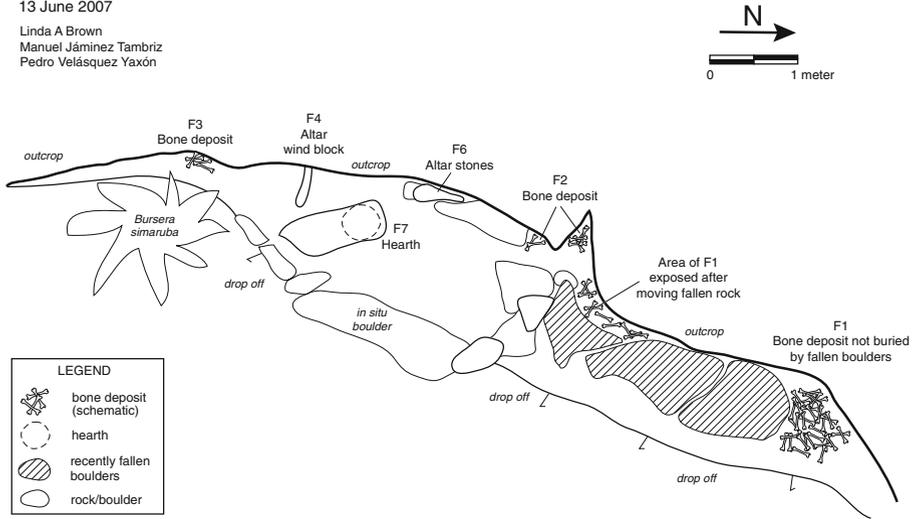
Fig. 4 Plan view feature map of hunting shrine Pa Sak Man.

surface markings, tooth eruption and wear), cultural modifications (cut marks and burning), taphonomic effects (animal markings or effects of the elements or plants), and pathologies. Identifications were done by Emery and three graduate students. To increase comparability between analysts, all identifications of taxa and elements were done collaboratively.

As a result of the special ritual needs of these research sites (particularly retention of the "pristine state" and non-removal of remains), identifications were completed on-site with reference to a detailed digital photographic archive of Maya animal skeletal elements. Remains were replaced within units immediately after analysis. Previous research by Brown and conversations with ritual practitioners indicated that small-scale disturbances at the ritual sites are common (often a result of natural elements, animals, and other ritual practitioners) and therefore removal and replacement of remains for on-site identifications was acceptable and appropriate. Elements were refitted at the time of identification where possible, and otherwise were recalculated into Minimum Number of Elements (MNE) on the basis of completeness data. Both Number of Identified Specimens (NISP) and Minimum Number of Individuals (MNI) were calculated for each ritual locus within each site.

Fig. 5 Plan view feature map of hunting shrine Pa' Ziguán.

Atitlan Hunting Shrines: Interview Data

During the course of the interviews, it became apparent that individuals approach the forest from a relational perspective where various entities are important communicative subjects. Interviewees identified a number of important non-human agents involved in the hunt including: the animal guardian, specific rock outcrops, rock shelters and caves, the hunted animal itself, hunting dogs, weapons, and the skeletal remains from successfully killed quarry (Fig. 7). From a local perspective, a successful hunt necessitates communication, engagement, and reciprocal obligations among all of these active agents.

Fig. 6 Photograph of Feature 1 at Pa' Ziguán, prior to the rock collapse that buried this deposit. Photograph by Linda A. Brown.

Fig. 7 Active agents involved in hunt as identified by Tz'utujil and Kaqchikel hunters.
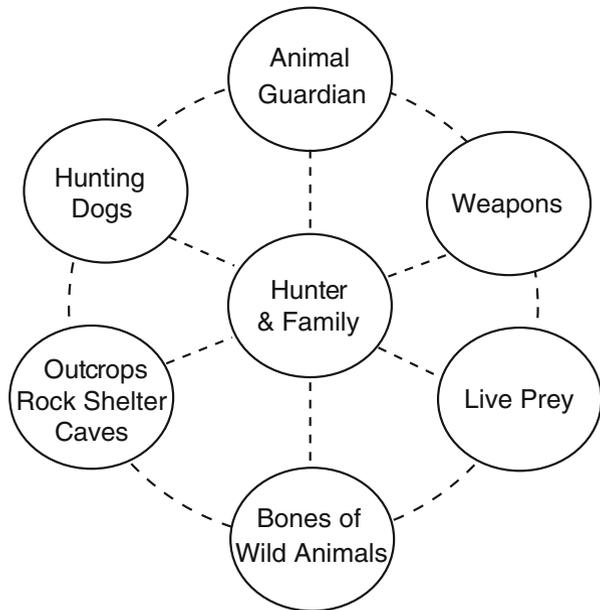
Animal Guardian

Individuals identified the animal guardian as a pivotal non-human agent with whom they must interact. As the caretaker of wild fauna, primarily terrestrial mammals, the animal guardian protects the creatures of the forest by making sure hunters do not abuse them or take more creatures than needed. Hunters know they must maintain good rapport and positive dealings with this powerful actor if they are to ensure a successful and safe hunt. Careless hunters who break ceremonial protocol risk the wrath of the animal guardian who can cause them illness or death.

Ethnographic literature from throughout the Maya area documents the importance of negotiating with this important forest being. In the Yucatan, the guardian of deer must be provided maize offerings before hunting or else the hunter will miss his mark (Redfield and Villa Rojas 1934:117–118; Thompson 1970:308; Villa Rojas 1945:103). Among the Mopán in Belize, the morning star is the animal guardian and a hunter must burn copal to this deity (Thompson 1930:142). In Verzcruz, the Huastec conduct a pre-hunting rite which includes constructing a corral around a deer skull and ceremonially opening it, an act that imitates the release of deer from the inner-mountain corral of the animal guardian (Alcorn 1984:88). In Guatemala, the Chortí must dream of deer before planning a hunt (Wisdom 1940:72–73), while the K'iche' make offerings in a cave at the archaeological site of Kumurcaaj (Freidel et al. 1993:187).

Rock Outcrops

Around Lake Atitlán, all hunting shrines are associated with boulders, outcrops, rock shelters or small caves. The rock itself is active animate doorway to the realm of the animal guardian as illustrated by local oral history about the abandoned

shrine of Pa' Ruchi' Abaj. The site consists of a single large boulder with several small natural alcoves at its base (see Fig. 3). When the site was active, hunters performed pre-hunting rites there once every 20 days when the animal guardian appeared to accept their offerings (Sexton and Ujpán 1999:67–70). Individuals arrived with gifts of roosters, sheep, or beef, which were left at the base of the outcrop. At midnight, the great boulder thundered open as the animal guardian emerged to take the offerings into his cave. If he was pleased with the gifts he appeared to hunters in dreams telling each how many animals they could take. Only with permission of the animal guardian could the hunt commence.

In the Kaqchikel area, we were given insight into how non-human agents let individuals know which topographic feature is animated, and thus can serve as a portal, and which is not. One participant in our study mentioned Don Jesus Cog (now deceased), who was the founder of the hunting shrine associated with a local *finca* community. The current shrine is positioned at exposed rock outcrop along a small stream. However, when Cog started doing hunting ceremonies, he used a rock outcrop further downstream from the current one. After performing several rites in this early location, the animal guardian visited Cog in a dream telling him explicitly that "this place is not the door." The door was actually upstream a bit. With this communiqué, Cog performed a ceremony at the shrine's present location. In a subsequent dream the night after his first ceremony in this new location, the animal guardian told him that he would find a deer 9 days later, which he did. The dream message about finding prey, followed by the successful hunt on the day specified in the dream, confirmed that this outcrop was an animated portal and the right location for negotiations with the animal guardian.

The Prey

Prey species are also active participants in the hunt and possess a purposeful and thoughtful agency. Hunters know that if the network of ritual obligations has been met then animals will voluntarily present themselves to be caught. Females, males, young or old might allow themselves to be killed in an act of self-sacrifice and any of these individuals would be taken. However, to assure such a self-sacrifice, the hunter must have been granted permission to hunt, respectfully treated any animals caught in previous hunts, curated the skeletal remains of previous animals, and returned bones to sacred sites.

Hunting Dogs

Dogs are key members of the hunting party and active partners in the tracking, trapping, and killing of quarry. As such, hunting dogs are held accountable for their actions by the animal guardian. A dog who breaks ceremonial protocol – such as chewing on a deer bone – can be the direct recipient of retribution by the animal guardian who may incarcerate it inside a mountain or lead it over a cliff to its death. Inappropriate behavior by canines can be the source of retribution exacted against human hunters and vice versa, as responsibility is shared across species.

As active participants in the network of hunting relationships, dogs must be included in all ceremonial activities (Fig. 8). Dogs are brought to hunting shrines for

Fig. 8 Dogs, as active agents in the hunt, must be included in all ceremonial activities. In this photograph, a hunter brought his hunting dog for an interview at the site of Pa Sak Man. Photograph by Elyse Anderson.

pre-hunting rites. During the ceremony, the ritual practitioner formally introduces each dog to the animal guardian, speaking their names so the guardian will know them personally. In post-hunting rites, they are again incorporated into ceremonies as the ritual practitioners must implore forgiveness of each dog, as well as human, involved in the bloodshed.

Weapons

We gathered some limited ethnographic information suggesting that weapons might also be animated social actors. At this point, the details are sketchy and the topic needs more research, but some hunters told us that, in addition to hunting dogs, guns were important participants in hunting ceremonies. Kaqchikel hunters in one community brought their guns to the hunting shrine where they danced with them like women. In the course of the ceremonies, guns were told how beautiful they were to help sway them into hitting their targets. Hunters using the sites outside of San Juan la Laguna and San Pedro la Laguna also said they brought their guns to hunting shrines as they are active agents in the death of the animal; everyone involved in the hunt must ask permission beforehand and forgiveness afterwards.

Skeletal Remains

The bones of wild animals are important participants in hunting ceremonialism. Bones retain a latent agency that allows for the regeneration of species. As one collaborator from San Pablo la Laguna told us, the animal guardian "makes a new animal from each bone you return – even the smallest toe bone. That is why you have to return them all" to a sacred site. As a result, the butchering of animals and the subsequent handling of animals bones includes ritual prescriptions. These ritual requirements are not just associated with the return of the bones to a hunting shrine (i.e., the threshold of the realm of the animate forest) but also with the entry of the remains into the human community (i.e., the threshold of the domestic realm). For

example, many hunters told us that the bones should be curated and returned to shrine whole, thus they were careful to not cut through bones during butchering. There was also some concern about the appearance of the bones returned. Several hunters said that bones should be boiled and cleaned prior to their return, so they would be white. Others told us that the bones could not be placed directly over flames or charred in fires. A separate hunter said deer bones could not be cooked in tomato-based foods as the resultant discoloration would be offensive to the animal guardian.

Wild animal bones are carefully curated while in the household. Whole bones carefully cut from the carcass were stored in special baskets and kept away from family dogs or rodents that might gnaw on them. Anyone gifted a piece of meat containing bones returned them to the hunter, who had ultimate responsibility for safeguarding and returning the remains. Deer hunters sharing meat from a single animal often returned their bones to the lead hunter who curated them for the entire group until they were handed over to the animal guardian at a hunting shrine.

In addition to latent agency of bone, hunters cited accountability to the animal guardian for why they bring bones to sacred sites. To return to the earlier example of Pa' Ruchi' Abaj, after performing the required ceremonies the animal guardian appeared in dreams telling each hunter how many animals he could take. Having permission to take a certain number of creatures, hunters were eager to prove that they maintained their part of the social deal and had not taken advantage of the animal guardian's generosity. Thus, hunters return bones to sacred sites so the guardian could count them, making sure no one exceeded the requisite number animals allotted (Sexton and Ujpán 1999).

Skeletal remains are strongly associated with regeneration throughout the Maya area (e.g., Carlsen and Prechtel 1991:32–36; Carmack 1981:352; Colby and Colby 1981:182; La Farge II 1947:50; Tedlock 1985:148–149) as well as greater Mesoamerica (Caso 1958:12; Lipp 1991:95; Myerhoff 1974:83, 201; Neff-Nuixa 2001:368–369). Bones conflated with agricultural metaphors are seeds holding the potential to create new creatures (Christenson 2007:129; La Farge II 1947:50). This seems especially so for wild forest species under the guardianship of the animal owner. The inherent agency embedded in bone, as well as social obligations between hunters and the animate forest, requires that wild animal bones undergo specialized life histories – an activity with direct archaeological implications, as discussed in the following section.

Atitlan Hunting Shrines: Spatial and Material Data

In addition to ethnographic interviews, our study of the hunting shrines and faunal caches focused on collecting spatial and material data including: (1) the types of landscape features used for ceremonies, (2) the various activity areas present, and (3) the characteristics of the animal remains in ritual bone caches.

Landscape Features

Various topographic features served as locations for hunting shrines, including free standing volcanic boulders, outcrops exposed along the flanks of sloped hills, rock

shelters, and a small cave. The most common landscape feature used was volcanic boulders with 60% of all hunting shrines ($n=12$) being located in free standing or tumbled piles of rocks (Fig. 9). Twenty percent ($n=4$) of hunting shrines were associated with rock outcrops exposed in slopes, 15% ($n=3$) of sites utilized rock shelters, while the remaining site (5%) was located in a small cave. In all cases, associated protective alcoves were used for the caching of faunal remains. In most instances, faunal deposits were tucked into alcoves and various nooks-and-crannies in the rock surface, providing some protection from the elements (Fig. 10).

Virtually all hunting shrines were located in places in the landscape outside of towns (see Fig. 1). The only exception was in Santiago Atitlán where individuals returned skulls and skins to Cofradía San Juan, located in town, as he is the local lord of wild animals (Carlsen 1997). That said, there are also eight extra-community hunting shrines around Santiago Atitlán. The distance traveled from a community to a hunting shrine varied from 200 m to 2.3 kms, with half of the shrines being located within 500 m of the edge of town.

Hunting shrines were located along roads and trails serving various functions. Thirty percent of shrines ($n=6$) were located along footpaths leading to outfields, while another 30% ($n=6$) were in agricultural outfields (coffee and avocado groves mixed with wild species). Twenty-five percent of hunting shrines ($n=5$) were located along important trade routes and avenues of communication. Of these, one site was

Fig. 9 The most common topographic features used as hunting shrines are boulders with alcoves. At this site, the bone cache is located inside the opening behind Miguel Coche Par. Photograph by Linda A. Brown.

Fig. 10 Bones tucked into al-
cove at Pa' Ruchi' Abaj. Photo-
graph by Kitty F. Emery.

located along a recently paved road leading to another town, two were situated
immediately along a footpath that served as a former trade route linking the
highlands to the Pacific Coast, while two were along a path linking the lake shore to
a community located along the old caldera rim immediately above it. Concerning the
remaining shrines, two (10%) were located along a trail leading directly into the
mountains and one (5%) was situated along a footpath leading to the lake shore.

Activity Areas

Hunting shrines contain various activity areas associated with the performance of
ceremonies including those used for ritual offerings, cleared spaces (performance
and gathering areas), and discard areas. Ritual offering areas have various features
including altars, sacrificial offering hearths, and bone caches. In this section, we
discuss altars, hearths, cleared spaces, and discard areas. Given their importance as a
key defining feature of a hunting shrine, bone caches are discussed separately.

Offering Areas: Altars

Altars are often positioned in the most ritually important section of sacred sites, marking
specific within site locations strongly associated with non-human agents (Brown 2004).
At hunting shrines, altars include natural and constructed features. Regardless of the
type, upon arrival at a shrine, ritual practitioners approach the altar area to greet the
nawal (non-human agent) associated with the site and ask permission to enter. Altars
may be decorated with various organic items, such as pine needles, herbs, and flowers,
and food gifts are left here. Candles are set on, or in close proximity to, this feature.
Some hunting shrines have symbolically important items incorporated into altars such
as animal skulls, stone carvings, wooden crosses, and stone concretions in the form of
earth deities and zoomorphic creatures. These latter are associated with the earth deity
K'oxol, an animal guardian from the previous world whose animals were turned to
stone when the present sun rose (Christenson 2007:229). If the ritual practitioner has
brought personal sacra to the site, these objects are displayed on the altar for the
duration of the ceremony (Fig. 11).

Fig. 11 Feature 1 fauna cache at Pa Sak Man. Note the *in situ* stone altar with candles and divination bundle in front of cache. Photograph by Linda A. Brown.

Offering Areas: Sacrificial Offering Hearths

Burning offerings is a key component of many Maya ceremonies and most offerings are burned in sacrificial hearths. At hunting shrine sites, sacrificial offering hearths consisted of open burn areas placed directly on the ground or, occasionally, in an elevated alcove. Often these features were in close spatial proximity to the altar (see Fig. 4). Various types of sacrificial offering are burned in these features, including the resinous incense known locally as *copal*, flowers, herbs, candles, chocolate, commercial perfumed waters, fruits, tobacco, and the bodies of domestic animals sacrificed on-site. Ritual practitioners address important non-human agents for the duration of the burning event and throw additional offerings into the fire at various points in the rite. The materials burned in offering hearths are an important part of negotiations and ritual exchange with the animal guardian, which is based on reciprocity.

Cleared Spaces

Active hunting shrine sites have maintained areas kept clear of vegetation and debris. Maintained cleared areas are used for various purposes including performing rituals, burning offerings, staging ritual dances, and ceremonial drinking as well as a place for hunters and hunting dogs to gather, visit with other participants, and observe the ceremony. Spaces are maintained in a number of ways including through deliberate cutting back of vegetation with a machete and/or the ritual sweeping of a site with brooms fashioned from branches and leaves located in the area. The edge of the cleared space typically marks the limit of the sacred area.

Discard Areas

The maintenance of active hunting shrine sites creates two discard features: sweeping boundaries and middens. Sweeping boundaries are mounds of small swept debris that accumulate along the perimeter of cleared performance spaces. Middens are located adjacent to sweeping boundaries and often located downslope

from the cleared performance space. Items in hunting shrine middens directly relate to negotiations with the animal guardian and include packaging from *copal* incense, chocolate, hard candy, alcohol bottles and caps, cookies, cigarettes, fireworks, and vessels for holding offerings, as well as swept pine needles and flower petals left during previous ceremonies. Debris from any food items consumed on site is discarded in these areas, and cardboard boxes and cordage used to transport offerings to the shrine may be present.

Animal Remains in Faunal Caches

A total of 6,671 animal remains were identified at the three communal shrine sites chosen for study (Table I). These remains represent a minimum of 69 individuals at Pa' Ruchi' Abaj, 147 at Pa Sak Man, and 50 at Pa' Ziguán. Approximately 50% of all surface remains recoverable at the sites were analyzed. Although most individual caches within a single site were identified in their entirety, because of the sheer numbers of remains some had to be sampled. The caches varied from a few bones to an estimated total of almost 600,000 bones including subsurface remains, at Pa' Ruchi' Abaj.

The assemblages were taxonomically diverse but consistent between sites with 23 discrete taxa identified overall and 19 in the most diverse assemblage at Pa Sak Man (Table II). Mammals were by far the dominant species, and the most common mammals were the white-tailed deer, *Odocoileus virginianus* (top ranked), armadillo (*Dasypus novemcintus*), peccary (Tayassuidae, combining *Tayassu* sp. and *Tayassu tajacu* where identifiable), coati (*Nasua narica*) and paca (*Agouti paca*), followed closely by the rabbit (*Sylvilagus* sp.) and the small agouti (*Dasyprocta punctata*). The next highest ranked species overall included the opossum (*Didelphis* sp.), tapir (*Tapirus bairdii*), felids (combining large and medium species), brocket deer (*Mazama americana*), raccoon (*Procyon lotor*), turkey (*Meleagris* sp. the only non-mammalian species found in any quantity) and dog allies (Canidae including gray fox, *Urcyon cinereoargenteus*, where identifiable and a probable coyote, *Canis lupus latrans*). Several species were found only as single examples, including monkey (*Alouatta* sp. or *Ateles* sp.), tamandua (*Tamandua* sp.), and pocket gopher (*Orthogeomys* sp.). Comparison with ethnographic data collected by Brown about which animals should be returned to a hunting shrine indicates a very high correlation between the species most commonly mentioned by interviewees and the species actually recovered. Among the species recovered, only tapirs, monkeys, and pocket gophers were not mentioned by the interviewees.

Skeletal element representation was remarkably complete. Most skeletal elements and body portions were found for each taxonomic group recovered in the faunal caches (Table III). This was particularly true for the larger species such as white-tailed deer, peccary, and tapir. Some notable divergences from the expected include the absence of all antlers and most cranial vault segments for deer, the absence of any but distal elements for the cats, and a predominance of distal elements for tapirs and cranial elements for both peccary and opossums.

Deer remains charted as a ratio of observed to expected with expected number of elements per body portion normalized to zero indicates that cranial, axial, and distal remains are somewhat underrepresented in comparison to limb bones (Fig. 12).

Table I Faunal Caches: Numerics

Site	No. of bone caches	Range of percent sampled	Average of percent sampled	Range of NISP	Total NISP	Estimated total number
Pa' Ruchi' Abaj (surface)	1 (4 units)	10–100%	61%	68–515	1205	1,968
Pa' Ruchi' Abaj (subsurface)	–	25×25× 10 cm[a]	30.2%	560–3,988	–	597,040[a]
Pa Sak Man	11 (14 units)	20–100%	28%	1–1,586	4,853	17,171
Pa' Ziguán	5 (5 units)	25–100%	49%	7–200	387	782

NISP Number of identified specimens present

[a] Based on site volumetrics

Ethnographic interviews reveal that although hunters from the region stress the importance of returning all bones of hunted wild animals to the ritual shrine, some divergences are the norm. In nearby Santiago Atitlán, deer skins and crania are often returned to the Cofradía San Juan, a shrine of the guardian of the animals located within the village, for use in the deer jaguar dance. Both lowland and highland hunters also sometimes curate antlers and skulls as decorations.

Animal age at the three sites varied in some important aspects, but in general was quite comparable (Fig. 13). Of the more common large species, white-tailed deer were consistently around 50% adult, ranging from 60–85% mature (including adult, subadult, and immature+) (Fig. 14). The ratio of immature to juvenile individuals in all taxa indicated higher than expected proportions of very young individuals and particularly juveniles (not of breeding age) at Pa Sak Man and Pa' Ruchi' Abaj. This

Table II Percent of the Number of Identified Specimens Present (*NISP*) Compared with the Minimum Number of Individuals (*MNI*) of Highest Ranked Taxa in Fauna Caches at the Sites of Pa' Ruchi' Abaj (*PA*), Pa Sak Man (*PSM*) and Pa' Ziguán (*PZ*) and Total NISP of all Taxa Recovered

| Taxa		PA		PSM		PZ		Total	
Scientific name	Common name	% NISP	% MNI	% NISP	% MNI	% NISP	% MNI	% NISP	% MNI
Canidae	dog, coyote, fox	0.00	0.00	0.05	1.36	0.00	0.00	0.03	0.76
Procyon lotor	raccoon	0.11	1.45	0.75	2.04	0.00	1.00	0.52	0.95
Meleagris sp.	turkeys	0.43	2.90	0.02	0.68	0.00	0.00	0.13	1.14
Mazama sp.	brocket deer	0.70	2.90	0.02	0.68	0.00	0.00	0.21	1.14
Felidae	wild cats	0.21	2.90	0.23	0.68	0.00	0.00	0.21	1.14
Tapirus bairdii	tapir	0.21	1.45	0.29	0.68	9.04	4.00	0.78	1.52
Didelphis sp.	opossum	0.11	2.90	0.16	2.04	0.00	0.00	0.13	1.89
Dasyprocta punctata	agouti	0.80	5.80	0.02	0.68	0.00	0.00	0.24	1.89
Sylvilagus sp.	rabbit	0.00	0.00	0.32	3.40	0.00	0.00	0.21	1.89
Agouti paca	paca	0.64	5.80	1.00	3.40	0.52	2.00	0.87	3.79
Nasua narica	coati	2.51	10.14	1.61	6.80	0.52	3.00	1.80	7.01
Tayassu sp.	peccaries	5.94	8.70	6.32	15.65	0.52	2.00	5.88	11.36
Dasypus novemcinctus	armadillo	29.73	20.29	44.11	19.73	3.10	8.00	37.70	17.80
Odocoileus virginianus	white tailed deer	31.71	31.88	19.76	38.78	85.79	80.00	26.94	45.08
Total NISP		1870	69	4414	147	387	50	6671	264
No. taxa		14		19		7		23	

Table III Skeletal Completeness as Represented by the Proportion of Elements Represented per Taxa

Taxa	% Body portion representation	Body portion
Birds	87.5	Mainly forelimbs (wings)
Opossums	37.5	Mainly cranial
Armadillo	87.5	Missing distal forelimb [scutes not included in analysis]
Raccoon	62.5	Missing distals and lower hindlimb
Coati	87.5	Mainly missing distals (difficult to id)
Cats	75	All distal or terminal limb elements
Tapir	100	Predominantly distal elements
Peccary	100	Predominantly cranial
Brocket deer	100	Missing antlers
White tailed deer	100	Missing antlers
Agouti	75	Mainly missing distals (difficult to id)
Paca	75	Mainly missing distals (difficult to id)
Rabbit	62.5	Mainly missing distals (difficult to id)

was particularly the case for the most commonly hunted species. At Pa' Ziguán, more mature individuals were represented and almost no juveniles were noted. Ethnographic information for age selection by highland hunters revealed that hunters took whatever animal presented itself during the hunt. Sex and age was not important as the very act of the animal presenting itself was an act of self-sacrifice occurring with the consent of the animal guardian. If so, do the higher numbers of juveniles at the two sites suggest that, when they are killed, it is more important that they be returned for regeneration? Archaeological remains from ritual deposits often
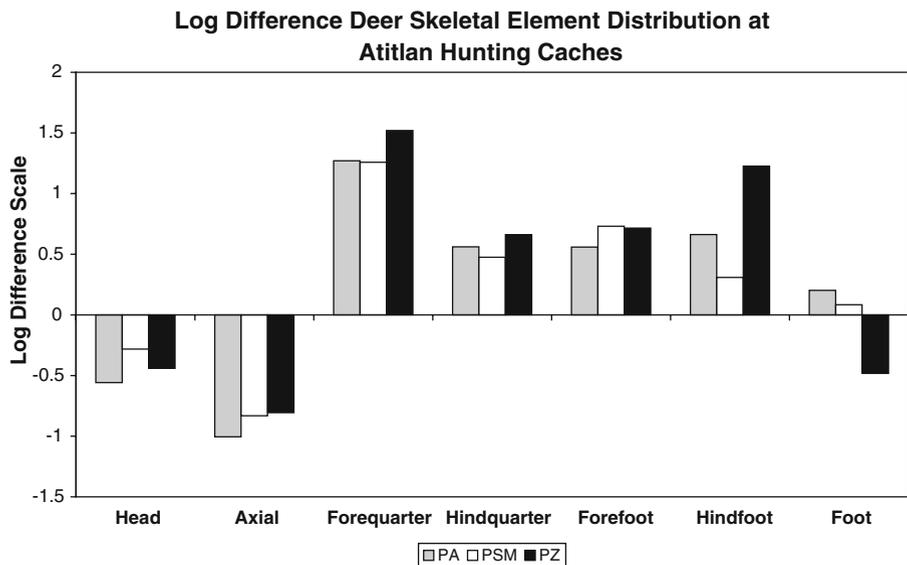

Fig. 12 Log difference in deer skeletal element distribution in hunting caches at Pa' Ruchi'Abaj, Pa Sak Man and Pa' Ziguán. Deer remains charted as a ratio of observed to expected, with expected number of elements per body portion normalized to zero.
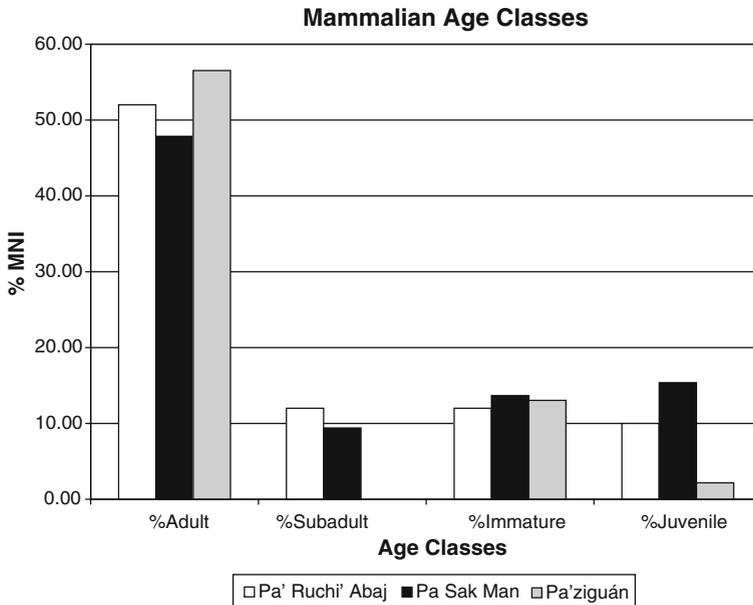
Fig. 13 Mammalian age classes in hunting caches at Pa' Ruchi'Abaj, Pa Sak Man, and Pa' Ziguán.

contain higher-than-expected proportions of juvenile individuals, suggesting a link between the young individuals and ceremonial activity (e.g., Emery 2004; Pohl 1983). It is also possible that this statistic is evidence of long-term over-hunting of the deer population, something that would not be clear without further biological study in the area.
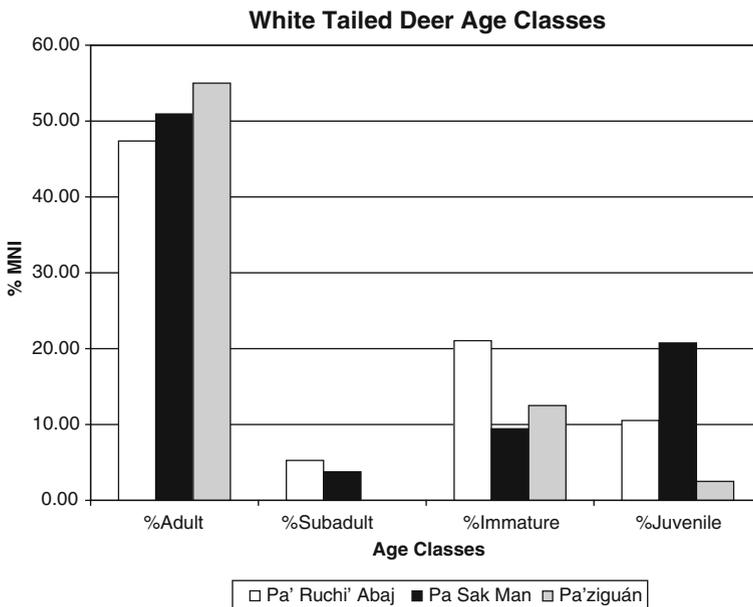

Fig. 14 White-tailed deer age classes in hunting caches at Pa' Ruchi'Abaj, Pa Sak Man, and Pa' Ziguán.

Ethnographic research suggests that the bones returned to the ritual cache sites should be treated with great care. In these assemblages, butchering marks were found on relatively few remains though certainly more than in archaeological assemblages (Fig. 15). This is consistent with the modern use of metal butchering tools rather than stone which leaves relatively fewer marks. Butcher marks were most common on the food species, and were also found on the monkey and tamandua, but not on the cats, canids, or assumed intrusives. Comparative data on butcher marks on non-curated remains have not yet been collected. Signs of burning on remains at Pa' Ruchi' Abaj and Pa Sak Man varies significantly from 24 to over 40%, respectively. Burning was ubiquitous across taxa and elements and most was done at high or very high temperatures suggesting it resulted from exposure to on-site ritual-related fires, not from household activities. Few of the remains were weathered or animal gnawed but both patterns were ubiquitous among taxa and elements. Weathering was proportionately higher in the more exposed site of Pa' Ruchi' Abaj, again suggesting *in situ* processes. Element fragmentation was remarkably low, with over 60% of the assemblage being complete elements, and an additional 25% being over one-half complete. Thus, although some butcher marks were apparently unavoidable, the bones appear to have been carefully curated prior to their return to the animal guardian.

Model for Archaeological Hunting Shrines

Did the agency of forest beings also exert a powerful presence on past Maya peoples compelling them to return animal remains to the wilds? If so, how might we recognize potent places in the landscape where hunters negotiated with the animal guardian? Our research to date defines a three part material signature for the ritual hunting site that is useful in comparative assessments with archaeological deposits: (1) ritual hunting sites are located away from settlements and spatially associated
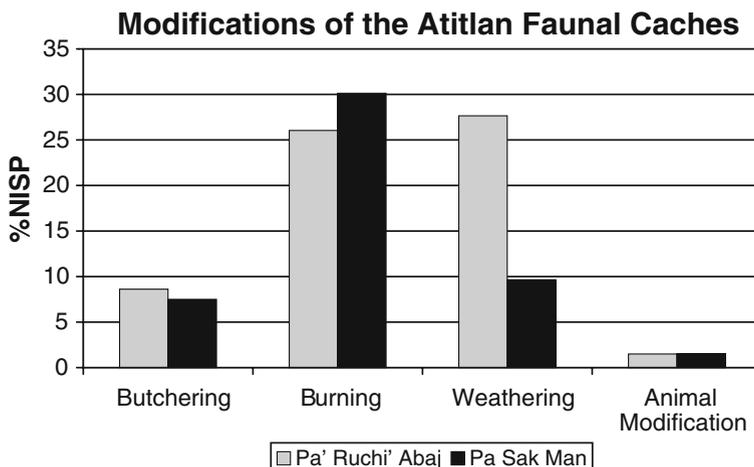
Fig. 15 Modifications of bone in the hunting caches at Pa' Ruchi'Abaj and Pa Sak Man.

with boulders and rock outcrops with alcoves, rock shelters and caves, (2) the shrines have specific activity areas associated with ceremonial performance, each with a recognizable material component, and (3) all sites are characterized by discrete caches of animal remain with specific characteristics resulting from differential selection, deposition, and treatment. The particular characteristics of each part of this material signature are discussed below.

Landscape Features

All Lake Atitlán hunting shrines were associated with free-standing or piles of boulders, outcrops, rock shelters, and caves located at a distance from the settlement center. This pattern reflects the conflation of non-human hunting agents with rock throughout the Maya area, where indigenous knowledge situates the animal guardian in the forest where he lives in his house inside of a mountain and tends his herds of wild animals kept in a stone corral (e.g., Cook 2000:114–115; Hofling 1991:136–153; La Farge II 1947:50–51; Tedlock 1982:149; Wagley 1949:57; Wisdom 1940:400–401), a pattern seen in greater Mesoamerica as well (e.g., Foster 1945:181; Weitlaner 1981:107–131; Weitlaner and Castro 1954:113, 1973:210–211). Entrance into this realm is through a cave (e.g., Taube 2003:474; Tedlock 1982:149) or an animated rock outcrop doorway (e.g., Cook: 2000:114–115; La Farge II 1947:50).

There is reason to suspect the linkage between caves, stone, wild animals, and the interior mountain home of the animal guardian has history in the Maya area, suggesting locations for archaeological hunting shrines. In the K'iche' colonial period document of the Popol Vuh, wild animals from the previous world – jaguars, mountain lions, fer-de-lances and rattlesnakes – were petrified in stone during the final moments prior to our present world (Christenson 2007:229; Tedlock 1985:51). In the 1680 celebration of the *Fiesta del Volcán*, Maya participants constructed a large effigy volcano within the main plaza of the capital city of Antigua, Guatemala, and placed live deer, peccary, tapir, and coati into cave-like openings in the effigy (Hill 1992:1, 6). Evidence linking caves and hunting rites comes from the year 1562 when "idols" associated with hunting and rain ceremonies were discovered in a cave in Yucatan (Clendinnen 1987:73). The association of the animal guardian with caves is also apparent in a Late Classic Period (600–900 CE) stela at the site of Copán, Honduras, which depicts the king dressed as the hunting god while positioned in the mouth of a hill cave (Taube 2003:474).

Contemporary indigenous knowledge that situates the entrance into the animal guardian's realm in certain boulders, outcrops, rock shelters, and caves – in conjunction with similar associations during the Colonial and Late Classic Periods – suggest that these features may have served as animate doorways for ritual negotiations in the past, as well as the present. If so, we should expect to see material evidence of ancient hunting rites at those topographic features that functioned as ancient portals. Based on our ethnographic model, we suggest that boulders and outcrops with alcoves, rock shelters, and caves located within a 2-km distance from ancient settlements, especially if located along trails used over time, could be probable locations for ancient negotiations with the animal guardian.

Activity Areas

Negotiations during hunting ceremonies include various activities that are reflected in the material record and thus useful for archaeological modeling. Here, we discuss the material remains of activity areas used for ritual offerings, cleared areas, and discard with attention placed on the possible archaeological "signatures" of each. As faunal caches are the most indicative feature of a hunting shrine they are addressed in a separate section.

Ritual Offering Areas

Altars are often positioned in the most ritually important locations in sacred sites and serve as pivots around which other activities occur (Brown 2004). Thus, they are important features to identify in archaeological contexts. Candle wax is ubiquitous on contemporary altars and would be an excellent indicator of an altar feature, at least from the Colonial period forward. In addition to candles, unburned gifts (flowers, fruit, herbs, and pine needles) are left on altars. Thus, in archaeological contexts, pollen and phytoliths could be associated with abandoned altar features especially if they are located in protected areas of caves and rock shelters. Ceramic vessels for holding food, libations, and flower offerings may be present, and potent symbolic items may be located in close proximity to this feature.

Sacrificial offering hearths are clearly recognizable after site abandonment as charred materials preserve well in archaeological contexts. Sacrificial offering hearths are characterized by the high diversity of carbonized remains present. Identifiable materials could include macrobotanical remains, such as charred seeds, twigs, and stems from organic offerings, as well as burned bone from sacrificed animals. Pollen analysis could provide information about remains too small to be recovered in floatation, and phytolith analysis could help identify agricultural offerings burned during ceremonial negotiations.

Maintained Cleared Areas

In addition to the ritual offering area, negotiations with non-human agents is facilitated by the presence of a cleared area, which is used for various activities. This area should be recognizable in the material record although often for a comparative lack of materials. Cleared areas are routinely swept. While sweeping removes larger items, small objects can be missed and are trampled into this activity area as residual refuse (Schiffer 1987:62). Such an example was seen at Pa Sak Man, which contained several generalized faunal scatters of small materials washed down from formal bone caches and trampled underfoot entering archaeological contexts in this area (see Fig. 4). Routine sweeping also tends to distribute the topmost layers of sacrificial hearths over the cleared area, which may have a dark burned appearance. As these areas are used for congregation, the ground surface becomes hard-packed over time. Thus, cleared areas would be recognizable in archaeological contexts by a number of material indicators including: hard-packed earth containing small embedded trampled artifacts, a diffuse layer of burned organic remains, and a generalized bone scatter of trampled items.

Discard Areas

Active hunting shrines are routinely cleaned by ritual practitioners leading to two discard features: sweeping boundaries and middens. As maintained cleared areas are routinely swept, sweeping boundaries may exist around its boundaries distinguished by an abrupt change in the density and size of materials present. Middens develop over years of use as individuals discard items used to transport offering materials to the site, packaging from ceremonial offerings, and the remains of food and drink consumed on site as well as ceremonial offerings left by previous participants. As hunting shrines are located at a distance from communities, materials in associated hunting middens directly reflect the activities occurring on site.

Ritual Faunal Caches

The ritual fauna caches have unique properties that make them recognizable in an archaeological assemblage. Hunting caches have extremely high densities of animal bone in defined spatial clusters (see Fig. 4). The caches contain a high taxonomic diversity but are dominated by favored wild food species (in the hunting caches studied here, white-tailed deer, peccaries, armadillos, etc.) with lower frequencies of highly symbolic (and economically valuable) wild species, such as felines. While most hunting shrines contain such taxonomic diversity, we noted two exceptions: a small cave associated with hunting armadillo only contained their remains; however, another hunting shrine used by same community did contain a high taxonomic diversity. The second exception to this diversity was private hunting shrines used by deer hunters.

As discussed above, bones of forest creatures should be complete and relatively unmodified by food preparation processes to guarantee regeneration and not offend the animal guardian. This specialized handling was clearly reflected in the condition of fauna remains observed in on-site caches, which contained a high percentage of intact elements showing a low percentage of burning or other markings (Emery *et al.* 2007). Burned remains are ubiquitous through taxonomic and element groups yet are characterized by high-heat alterations thought to be produced by on site ritual fires and not food preparation.

Another unique property of hunting caches useful for archaeological modeling is the diversity in skeletal elements present. This was especially so in the larger species, such as white-tailed deer, peccary, and tapir. Brown's (2005) work on the south side of the lake demonstrates that not all faunal caches contain such element diversity, as Kaqchikel hunters return specific elements (predominantly crania and distal limbs). However, other characteristics should apply regardless of the taxa and elements returned. Remains in archaeological hunting shrines may be relatively unfragmented, less frequently marked by butchering, and the incidence of weathering, rodent, and carnivore gnawing should vary with the taphonomic conditions of the cache location. Finally, the remains in the three shrines under study were characterized by relatively high proportions of juvenile individuals, although whether this reflects cultural or natural processes is currently unknown.

Hunting Shrines: Possible Archaeological Equivalents

The material model developed from our ethnoarchaeological research could provide a means for identifying hunting ceremonialism in the archaeological record. Although no hunting shrines have been defined archaeologically, there is considerable evidence to suggest that these practices have a long history. As discussed previously, there is reason to suspect the linkage between topographic stone doorways and the animal guardian has a history in the Maya area, and as far back as the 1700s there is written documentation of the ritual curation of wild animal bones, particularly those of deer (Cortes y Larraz 1958[1768–1770]:120).

Our review of the archaeological literature indicates that animal remains from lowland Maya caves, equivalent landscape features to the boulders with alcoves and rockshelters used by the highland Maya, reveal similarities to the faunal caches characteristic of the hunting shrines. Many archaeological cave assemblages are characterized by fairly high proportions of animal bones, including unarticulated skeletal remains in distributions that do not suggest natural death or *in situ* butchering or consumption (Brady 1989; Emery 2004; Pendergast 1969, 1971, 1974; Pohl 1983). In the Eduardo Quiroz Cave in Belize, Savage observed a "puzzling and uneven distribution" in opossum (Didelphidae), coati (*Nasua narica*), paca (*Agouti paca*), forest rabbit (*Sylvilagus brasiliensis*), tapir (*Tapirus bairdii*), brocket deer (*Mazama americana*) and white-tailed deer (*Odocoileus virginianus*), which were represented by a small number of unrelated skeletal elements (Pendergast 1971:82). The unusual distribution suggested that "only portions of these animals were brought to the cave" to be deposited (Pendergast 1971:83). (All original taxonomic nomenclature has been included here to define the species discussed.)

The secondary deposition of mammal remains in a cave context also was reported in the Late Classic (600–900 CE) assemblage at Actun Polbilche, Belize, which contained an unmodified cranium and mandible from an opossum (Didelphidae) and two paca or agouti (*Agouti paca* or *Dasyprocta punctata*) suggesting the heads were left as offerings in the cave (Pendergast 1974). Actun Balam Cave in Belize contained a white-tailed deer skull and long bones as well as long bones and a crania fragment from a possible jaguarundi (identified as *Felis* sp.) (Pendergast 1969:58).

Similar evidence of the selection and deliberate deposition of mammal remains in caves was noted in Late Classic deposits at Naj Tunich Cave in Guatemala (Brady 1989). Sixty-two percent of skeletal elements present (NISP) are from three important subsistence species: white-tailed deer (*Odocoileus virginianus*), brocket deer (Mazama americana), and peccary (*Tayassu tajacu*) (Brady 1989:376). Moreover, two attributes made the Naj Tunich fauna deposit unique: (1) an unusually high percentage (39%) of long bones that were complete or nearly so, and (2) a very low percentage (18%) of burned bones present (Brady 1989:377–378). Based on the types of species present, as well as the condition of the remains, Brady suggested that most of the medium and large mammal remains were brought to the cave and left as an offering (1989:377). Interestingly, a similar pattern of depositing intact and unburned bones was observed in Eduardo Quiroz Cave assemblage (Pendergast 1971:79).

Recent and on-going research on animal remains recovered from a conical deposit lying immediately below a chimney entrance in the Cueva de los Quetzales, Petén

Guatemala, has revealed a similar corpus of ceremonial markers (Emery 2004). These remains are dominated by a small number of species, including primarily deer (*Odocoileus virginianus*), peccary (Tayassuidae), and dog (*Canis familiaris*), while the skeletal elements of those species are more diverse than in comparative surface assemblages, indicating a specialized deposition of fairly complete skeletons (Emery 2004:108). This assemblage is also marked by several unusual characteristics such as a high proportion of juvenile specimens and a predominance of left over right elements in both deers and galliform (turkey-allied) birds.

These results from archaeological cave deposits fit our expectations for hunting ceremonialism on two counts: landscape features and the unique attributes of the faunal deposits present. We are currently conducting research on other such archaeological deposits in the hopes of evaluating the similarities and differences between the modern and ancient animal assemblages and activity areas associated with caves and rock shelters.

Might similarities between the material correlates of modern hunting shrines and archaeological cave deposits suggest that caves also represented thresholds upon which ancient Maya hunters negotiated with the animate forest by caching animal bones and conducting ceremonies? Such a possibility exists, but more important is the recognition that the material evidence of hunting ceremonialism, if traced into the archaeological record, provide a valuable avenue to understanding ancient concepts of community and forest and the agents therein.

Discussion

Today, as in the past, many people experience the world through animistic or relational perspectives (Tylor 1958[1871]). Viveiros de Castro's (1998, 2004) work among indigenous peoples in Amazonia nicely illustrates the different relationships between human and non-human environments as experienced through Indigenous and Western ontologies. Animism, he maintains, can be defined as an ontological approach that "postulates a social character to relations between human and non-humans: the space between nature and society is social" (Viveiros de Castro, 2004:481). In contrast, the "naturalism" of the Western world envisions the relationship between nature and society as natural. Animism privileges the *social* in interactions between human and non-human environments while naturalism gives priority to the *natural*." (Viveiros de Castro, 2004:481).

Given the overwhelming ethnographic evidence documenting animistic and relational ontologies of indigenous peoples, why have Americanist archaeologists been so slow to seriously incorporate these perspectives into our archaeological questions and interpretations? Part of our reluctance surely stems from taken-for-granted assumptions of the rigid divide separating human beings from the material world. In grappling with the limitations of Cartesian duality, a number of scholars have attempted to develop more inclusive theories (e.g., Ashmore *et al.* 1994; Gell 1998; Latour 1993) and apply these to archaeological data (e.g., Boast 1997; Gosden 2005; Mills and Ferguson 2008; Olsen 2003; Quilter 2007; Walker 2008; Zedeño 2008). In doing so, they revisit a basic question in social science: where does the material world end and human society begin?

In taking on that question, Latour (1993) argued that modernity required human beings make two Great Divides. The first divide was an internal shift in which humans came to perceive ourselves as being fundamentally different and separate from the natural world. Emerging during the eighteenth-century Enlightenment Movement, nature was differentiated from culture, science from society, and non-human from human. This internal divide gave rise to a second, an external differentiation and classification that carved up the world's peoples and cultures into "modern" versus "pre-modern." Individuals in modern societies maintained clear and separate boundaries between human and non-human, social and natural, and culture and science. In contrast, for pre-modern peoples these categories overlap and permeate one another. Concerning this perspective Olsen (2003:95) wrote:

> The pre-modern did not understand how to draw the line and messed it all up in an appalling mixture of people and things, cultures and natures. Unaware of their ontological blunders, the Saami reindeer herders of northern Scandinavia hugged and greeted the pine tree on their return from the mountains to the winter pastures in the forest; had long conversations with drums and stones; treated the brown bear as a relative and buried dead bears as humans. Unable to recognize where reality ends and its metaphorical representation begins, it was left to anthropologist to draw the dividing line.

Of course it took more than just anthropologists to draw that particular dividing line but the overall point is valid. Anthropology is one of many disciplines that actively creates and reproduces such distinctions. At the same time, anthropology also allows us to see such distinctions as culturally variable, as peoples in other cultures may interact with objects that possess gender, social lives, personalities, and intentionality.

Debates surrounding the classification of humans as fundamentally different from objects often center on the idea of agency. The argument follows that human beings are essentially different kinds of entities because we are conscious agents who can think, feel, speak, imagine, create, and do things in the world as opposed to, say, a cardboard box. Confusion over the meaning of agency arises when agency is conflated with the concept of intentionality. Following Gell (1998:123) among others, we do not see agency as an innate biological attribute, but as a relational one. Thus defined, agency can embrace culturally different concepts concerning who and what can act (Ahern 2001:110).

Scholars have noted that animistic religious practices and relational ontologies "pose a challenge to Western (i.e., modern) knowledge production, as they violate fundamental assumptions of Cartesian science" (Hornborg 2006:21). Instead of a challenge, might we use such ontologies as an entrée into rethinking interactions between human and non-human agents and how these relationships might be reflected in the archaeological record?

Our ethnoarchaeological research shows that highland Maya hunting ceremonies constitute crucial negotiations between active beings occupying two social realms: the human community and the animated forest. Humans are clearly vulnerable to the agency of the forest when in the wilds, and our study of hunting shrines indicates that a series of ritualized activities performed at threshold of potent animate forest beings are designed to mitigate danger experienced on the entry of the human into

the forest realm, especially if harvesting wild resources. These activities are reflected in the material record.

But our research also indicates the importance of the opposite threshold, that into the human community. What happens to the agency of the wilds when forest products enter human realms? Do social interactions between human and forest automatically change when pieces of wilderness cross the threshold to live in human social spaces? Do forest products retain their animacy when they are harvested and transported into non-forested places? If so, how must they be treated? Do these relationships leave material traces in the archaeological record? Based on our research, the answer to these questions is clearly yes. Once they enter the domestic realm, wild animal remains are subjected to distinctive life-histories. When the hunter returns from a successful hunt, a ceremony for the animal is performed immediately upon its entrance into the household. The carcass is laid out on a mat or altar and offered candles, incense, food, and prayers. Once this ritual is finished, individuals carefully butcher the quarry so that the bones remain relatively intact. Women are careful not to char bones during food preparation, and bones in cuts of meat gifted to neighbors or friends must be returned to the hunter who has responsibility to curate these remains.

Taking the agency of the forest seriously opens up interesting interpretations for other ethnographic and archaeological features, for example, the dedicatory architectural cache. Based on ethnographic analogy (Vogt 1976, 1998), ancient Maya architectural dedicatory caches are often interpreted as being "placed in the foundation of a new structure to bring it to life" in ritual acts to ensoul new buildings (Mock 1998:6). While some scholars have cautioned that overuse of a Western notion of "dedicatory" obscures more than it enlightens (e.g., Chase and Chase 1998; Coe 1975; Davies 1984; Monaghan 1998:48), the association of ancient sub-floor caches with dedicatory rites to ensoul a building are common in the archaeological literature (e.g., Freidel 1989, 1998; Freidel *et al.* 1993; Mock 1998; Schele and Freidel 1990; Stross 1998). Based on our research on interactions between human–forest agents, we believe this interpretation is an incomplete reading of the ethnographic data, one that privileges the agency of humans rather than recognizing that the house – constructed from the animate forest – is an active agent long before any rite is performed to "bring it to life."

In his long term ethnographic work in the highland town of Zinacantán, Chiapas, Vogt (1976, 1998) noted that new house ceremonies served two main ritual purposes: (1) repayment to the animate earth, and (2) providing the new building with a soul. The material correlates associated with each of these of these ceremonial functions – those that could be visible in an archaeological context – are quite different. Rites to compensate the animate earth for materials harvested from the forest occurred at several phases of construction and took their most material appearance in the form of subfloor architectural caches (Vogt 1976: 51–54 and 56–58, 1998:25–26). In contrast, rituals to ensoul the building focused on erecting a house cross in a patio, located outside the building proper (Vogt 1976: 59, 1998:22–23). Importantly, the house cross, which is the principal material feature associated with the ensoulment of the building, "must not touch the domain of the Earth Lord, which begins at ground level" (Vogt 1998:23). Thus subfloor architectural caches placed directly into the ground are directly linked to negotiations with the animate earth.

The trees, grass, vines, pine needles, and mud required for house construction are part of an animated forestscape whose agency, like that of animal bone, does not wane once they reside in non-forested domains (e.g., Guiteras-Holmes 1961:223; Hermitte 1964:61; Nash 1970:13–16). Illustrating this perspective, a Tzotzil man offered the following cautionary remark on the use of construction materials from the forest: "They are always dangerous because cut materials come from the forest and the bush, from the wild hills, and therefore they can eat the soul" (Guiteras-Holmes 1961:223). To avoid such catastrophes, household inhabitants must engage with the animate forest products harvested for construction by providing them food in the form of architectural caches (Hermitte 1964:61; Nash 1970:13–16; Vogt 1976: 51–54, 56–58; 1998:26).

Not feeding the pieces of forest incorporated into a house is dangerous. Several ethnographers working in the Tzeltal Maya area in Chiapas recorded that a neglected house takes active vengeance against its inhabitants if not fed (Hermitte 1964: 61–62; Nash 1970: 13–16) as seen in the following quote from the Tzeltal town of Pinola, Chiapas:

> When a new house is occupied, it has to be properly "fed." If the offerings are forgotten, the house starts "envying." The whole structure (made of poles, mud, and a thatch roof) will make noises…adults living in it will have frequent nightmares, and the children will get sick and probably die. The noises in the house, the dreams, the illnesses – all indicate that the house wants food (Hermitte 1964:61–62)

Nash (1970:16–17) noted that throughout its life-history a house will be fed via subfloor caches when its inhabitants fall ill and divinations point towards the agency of the house as the cause of the illness.

Similar accounts of the agency of houses come from the Q'eqchi' region of Guatemala (Bringhurst 1986; Wilson 1990). Bringhurst (1986:104, 152–153) reported that houses make noises and will seize and kill children if they are not fed. A Q'eqchi' woman explained the importance of feeding animate forest products in the following way:

> It's so nothing will happen to the children. Because sometimes they die "standing up." Yes, "standing up" they fall and they die (i.e. suddenly). That's what they're [the residents] afraid of, so they "feed" the house… It's the house [that kills]. The wood came from the forest. That's no good. "You should have fed it," they say (Bringhurst 1986: 152–153)

Shifting focus away from an anthropocentric view of agency in which humans instill life into an otherwise lifeless building suggests an alternative interpretation for a common architectural feature. Subfloor caches reflect the on-going negotiations and tensions between two types of animate beings: human residents and the house constructed from the animate forest. While one of the goals of the house dedication ceremony is to socialize the building transitioning it into a human social order by giving it a soul, this does not always work. The precarious nature of forest, and its associated products used in construction, can seek revenge against household residents who neglect ongoing exchanges and sociality. Thus the house itself – just as the stone doorway of the hunting shrine – is a site of on-going tension between

active agents associated with different spatial dichotomies: human beings and the animated forest.

The Danger of Crossing Thresholds

The tension between active human and forest agents who must routinely cross cognitive thresholds recalls Mary Douglas' (1966) work on symbolic boundary maintenance. Focusing on the classificatory systems humans apply to the world, Douglas noted that things neatly fitting into specific categorical boxes were associated with safety and purity, while ambiguous things that did not fit were viewed as dangerous, delicate, or dirty. As we have argued, active agents occupy both side of human–forest dichotomy in the Maya world. Within this scheme, human beings interacting with other humans in domestic and community spaces constitute an appropriate category as do forest-beings interacting with other forest-beings in the woods. But what happens when humans and forest-beings cross boundaries to enter each others' domains? The spatial context of whichever threshold traversing agent – a human hunting in the forest, a tree harvested for use as a house post, or the bones of wild animals in a household once the meat is consumed – places an active agent in a foreign domain. They are now animate beings out of context and, as such, they must interact with the other types of beings populating the opposite sphere. Such boundary-crossing activities seem to require special ritual behavior, and an active agent residing, if only for a time, in the opposite sphere may be subjected to unique life-histories and special ritual protocol. Thus hunters traveling into the animate forest must acquiesce to powerful forest agencies by placing offerings at animate doorways. Mud walls must be fed in subfloor caches to keep the house from feeling envy and killing children. The bones of wild animals entering households must be carefully guarded and returned to their appropriate realm in the forest to become live animals once again.

While the focus of this article is on human interactions with non-human agents associated with the surface of the forest, the same dynamics may be true of lowland caves. Working in the Q'eqchi' region of Alta Verapaz, Guatemala, Brady *et al.* (2005) recorded ethnographic information about speleothems removed from caves and curated on household altars. Importantly, the authors note that individuals "are not addressing a 'representation' of the deity but instead an animate entity" (Brady *et al.* 2005:221). On-going negotiations between these two types of animate beings take the form of ceremonial offerings, which are provided by the host family to the adopted speleothem-being. The animate nature of speleothems – like the bones of wild animals – would likely restrict the life-histories of these important spirit-objects dictating where and in what condition they re-enter archaeological contexts (also see Peterson *et al.* 2005). What about the archaeological and epigraphic evidence documenting that caves were victims of warfare in the Maya lowlands (Brady and Colas 2005)? Hieroglyphic texts referring to warfare and the capture of rulers at times refer to the destruction of a ruler's cave, a phrase thought to a metaphor until taken in conjunction with archaeological evidence. As noted by the authors, "caves were specifically targeted [and destroyed] because of the role they played in sanctifying and legitimizing both settlement and rulership" (Brady and Colas 2005:163). Might caves have

been the target of indigenous violence because, like the ruler, they too possessed agency and were powerful social actors in their own right?

Concluding Thoughts

Ethnoarchaeological research at hunting shrines challenges a number of assumptions we may bring to our research questions. As discussed throughout the paper, hunting required successful negotiation with multiple non-human agents, and the hunt itself cannot be separated from the web of relationships with human and non-human social actors. Not all of these relationships leave material traces in the archaeological record. However relationships with three important non-human agents – stone doorways, the animal guardian, and bones – directly impact the distribution of remains entering a material context. Stone doorways exert a powerful agency upon hunters who know they must go to these access points to perform the necessary rites. Hunters deposit gifts at these portals as part of negotiations with the animal guardian creating archaeological deposits. These material remains mark the locations of animate topographic features. The latent agency of bone requires that they not be thrown in the household midden or the hunter will suffer the retribution of the animal guardian. Thus, they are subjected to distinct social lives, carefully curated, and finally returned to stone doorways in an act of accountability and future regeneration of species.

From a Western perspective, hunting involves the tracking and acquisition of an animal. Yet for the hunters around Lake Atitlán, the hunt does not end there. Hunting is a cyclical event in which "flesh is reduced to bone and bone is regenerated as flesh" (Braakhuis 2001:395). While our concept of the hunt embraces the former, it does not acknowledge the latter. Yet this latter part – clearly influenced by the agency of non-human beings – is equally if not more important in indigenous concepts and directly impacts where animal remains enter an archaeological context.

Archaeologists tend to think of hunting as a subsistence activity with animal bones representing the remains of quotidian activity. Yet ethnoarchaeological data demonstrates how the sacred and the secular, like the human and non-human, and culture and nature, are not easily separated. Hunting is a sacred and secular event at the same time. Bone deposits represent the remains of household food consumption and important religious practices. Thus, as others have noted, sacredness is not necessarily an innate quality of a particular object or act but is created through the object's use in specific contexts (e.g., Bradley 2005; Brown 2004; Fogelin 2007; Ortman 2000; Plunket 2002; Tilley 1999; Walker 1999). In this case, the specialized handling and unique life-histories of bones were the result of local knowledge about the regeneration of important species and accountability to important spirit actors.

The ethnographic record from the Maya area clearly notes that crossing the conceptual boundaries of community–forest is a necessary yet precarious endeavor. Persons entering the animated forest to harvest important resources and animate pieces-of-wilderness residing in human domains are engaged in social relationships where both sides must maintain on going negotiations with one another. As apparent in deposits at hunting shrines, subfloor building caches, and the specialized life-histories of wild animal bones, interactions between human and non-human agents are clearly reflected in the material record.

Finally, we would like to suggest that ethnoarchaeology is a particularly good method for material explorations of animism and non-human agency in an archaeological context. Whether one is interested identifying animate objects, social interactions between humans and non-human agents, object agency, or any number of other related topics, ethnoarchaeology provides a potent avenue for exploring the material correlates of ritual practice.

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