

Ethnoarchaeology in the Philippines

by P. Bion Griffin & Agnes Estioko - Griffin

Why an archaeologist would spend fourteen months living in untamed jungles with bow and arrow hunter-gatherers demands some sort of explanation. Readers of *Archaeology Magazine* may well already have some hint of the reasons if they recall articles over the past couple of years on a type of archaeological research dubbed "ethnoarchaeology." Bill Rathje of the University of Arizona discussed his study of modern garbage in Tucson, Arizona and showed how this highly original use of contemporary materials answered questions about patterns of human behavior in both the past and the present. Roderick McKintosh of the University of California, Santa Barbara, applied a study of West African mud-walled house construction and decay to similar archaeological sites. Recently, Douglas Sharon and Christopher Donnan of the University of California, Los Angeles integrated a knowledge of the use of hallucinogenic cacti in modern Peru with ancient use. These articles all exemplify a drive to plumb the depths of archaeological knowledge by better exploiting the ethnographic or living cultural record.

As the more primitive or traditional cultures of the world disappear under modern development, anthropologists are aware that they know very little about the how and why of these people and must select very specific research topics in the short time available. They seldom, however, undertake topics of utility to archaeologists, who always use ethnographic knowledge to devise models of past societies. Archaeologists have increasingly chosen to study iso-

lated, traditional or nonindustrial peoples, seeking answers for problems unique to archaeological data and interests. Even now these scholars are in the field among Kalahari desert !Kung San bushmen, western Pacific sailing traders, Polynesian atoll dwellers and peasant villagers in the Old and New Worlds. As ethnoarchaeologists, they seek to explore the nature of archaeological data, to learn the relationships of material and nonmaterial culture, to discern generalizations about patterned human activities and to describe the natural and cultural aspects of how an archaeological site is formed.

We decided to conduct an ethnoarchaeological investigation of humid tropics hunters and gatherers in northeastern Luzon, an area of the Philippines. From 1974 to 1976 our hosts were the Agta Negrito, from the Spanish meaning "small Blacks," who are forest nomads in the Sierra Madre. These hunters subsist on the flora and fauna of interior jungles, rivers and coastal reefs. While they are somewhat known to anthropologists, their way of life, thousands of years old in Southeast Asia, is an archaeological blank. Most archaeologists have chosen to concentrate on either the remote mid-Pleistocene fossil man sites or on the temple remnants of much later civilizations. Beautiful ruins such as Ankor Wat in Cambodia drew more archaeological attention until the work of Wilhelm Solheim of the University of Hawaii demonstrated the potential of research into agricultural origins. About ten years ago, then, several excavators decided to look at prehistoric hunters, focusing on their acquisition of agriculture or on their trade networks with more settled groups. By studying the Agta, we sought to provide an ethnoarchaeological model, for use by archaeologists, of one style of adjustment to hunting-gathering in wet, seasonal jungles. We were especially interested in describing the interaction of environment, settlement and subsistence and tried to find ways in which nonmaterial culture, such as social organization, is reflected by the material. These data include the usual terms of archaeological

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inquiry — arrowhead style, size and location and distribution of trash in campsites. From this information we also hoped to offer ideas about what it means to be a hunter in a jungle, as opposed to a desert or tundra, and to suggest how these insights may be used in archaeology.

Who Are the Agta?

The Agta of the Philippines are not among the untouched, unknown recluses of hidden jungle caves like the famous Tasaday of the southern Philippines who were discovered few years ago. They are proficient, aggressive exploiters of the major and minor game animals found the length of Luzon and have traded with lowland farmers for generations. Early American anthropologists visited these people shortly after the United States took over the Philippines at the turn of the century. Still, due to their warlike customs and the difficulty of travel along the Pacific coast, the Agta have enjoyed, until today, varying degrees of isolation and traditional subsistence. Beginning a few decades ago, Agta close to the towns of Palanan and Casiguran increasingly planted small plots of corn, sweet potato and cassava. Deeper in the mountains they chose to remain seminomadic, preferring to trade wild pig and deer meat for corn, thereby avoiding the drudgery of farming.

The Agta are not a Stone Age society. Through trade they now depend on steel knives and tools for sharpening arrowheads, on aluminum cooking kettles, on cloth instead of bark and on such luxury goods as tobacco, glass beads and gin. Before World War II an outsider, including another Agta, might be shot on sight. Since then, the Agta have come into frequent contact with strangers. Today, anthropologists are welcomed warmly, with keen anticipation of gifts of *noblesse oblige*. Most Agta are still intimately knowledgeable about the biology, topography and climate of their territory. First and foremost hunters, second gatherers of wild plant foods and third traders-horticulturalists, the Agta depend on wild game to such an extent that in the remotest locales women also hunt. More and more Agta are favoring a shift to dependence on grain staples for which they exchange meat. In the last five years, we have observed that even the most nomadic Agta are trying to stake a claim of land by putting in rainy season gardens.

Research Method

In order to systematically observe and record the lifestyle of the Agta, we first designed a strategy and specific models. "Activity sets" in which all activities were defined and placed in their environmental context allowed us to focus on the interaction of environmental and cultural behavior. A specific activity, for example, might be "the one day hunt with dogs." In recording the hunt, the date, weather, terrain, unique forest conditions and game sought are relevant to an understanding of the environmental

influences considered by hunters. To describe the Agta's behavior, we noted location of the base camp, placement of the temporary camps, composition of the task group, the hours engaged in hunting, the technology of the hunt and the game killed. Since dividing up activities is usually arbitrary, we carefully detailed each in order that activity sets might be properly compared. Thus information collected about butchering, an activity often undertaken during a hunt, is separately listed so that it can later be studied separately.

The environment itself does not determine Agta settlement and subsistence strategies but forms a guide in which their way of life must be adjusted to the realities of climate and general terrain of a montane jungle. Seasonality is perhaps the major factor met by the Agta. They adjust to a wet-dry cycle, following the resultant changes in the animal populations and the forest flora. Human, animal and plant populations all subsist as structured by the cycle of cold, heavy rains and wind storms, followed by hot, dry months and occasional typhoons. The mountains of eastern Luzon receive intense rain generated by the northeast monsoons and seldom enjoy sunny weather between October and February. Typhoons

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and less severe rain storms usually flood the streams and rivers, making them impassable and unfishable. The rains do, however, enrich the productivity of plants and thereby aid the animals that live on fruit, roots and seeds. The major game animals of the Agta are wild pigs, deer and monkey. Pigs are most desirable, especially during the rainy season when they are fat. Both Agta and Paranan, the Malay Christian farmers who live downriver from the Agta and trade with them, desire the layer of fat from which lard is extracted as a dietary supplement during the cold, unhealthy monsoon season. Since the forest plant community is provident in fruits, roots and seeds during the rains, animals are both unwary and well fed. Deers find abundant fallen fruit along previously dry streams and monkeys are extremely fortunate in collecting fruits from trees and vines.

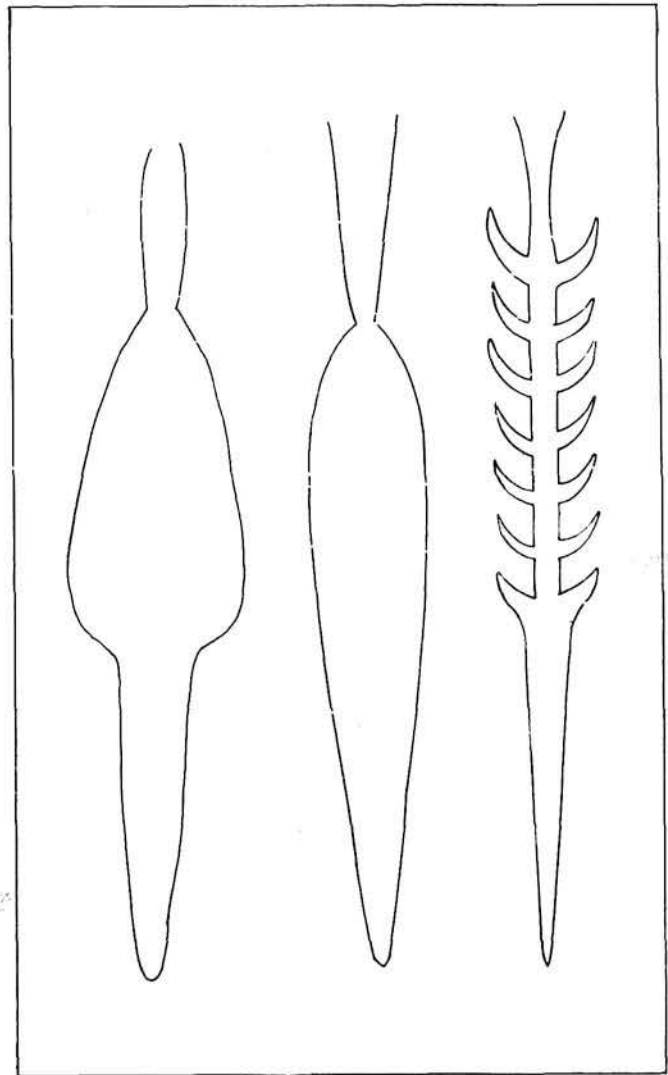
The dry season is more pleasant and permits travel. Unfortunately, the forest is less productive and with the diminishing rainfall, streams dry up and game animals range far in search of plant foods. Pig, deer and monkey become lean and are constantly on the alert, listening for hunters. During the heat of the day all game tend to rest in hiding spots, waiting for the cool and security of nightfall before foraging. Occasional rains, however, allow maintenance of fruit bearing

plants throughout the summer and diminish the ecological effects of severe seasonality. Agta subsistence patterns, and most importantly hunting strategies, conform to the pressures of this environment. As successful hunters, the Agta have created a specialized hunting technology and numerous techniques for securing game. Simply put, the hunting patterns depend primarily on the condition of the forest and wild pig and deer. During the dry season, when one cannot quietly stalk through the deep woods, and when alert male pigs will readily charge an offending bowman, two types of hunting are usually advantageous. It is most important to hunt in groups of three or more assisted by several dogs. A single hunter, or any Agta especially capable of controlling dogs by voice, sets off to a predetermined location where he or she releases the dogs, which will hopefully drive deer or pigs to ambush points. Waiting archers attempt to kill passing animals. A frequent alternative is to hunt singly or in pairs at night, "jacking" with a three battery flashlight strapped to the head. This technique involves spotting a deer at night with a strong light; the deer stops and gazes fixedly at the light and is easily shot. The method, which is illegal in the United States, owes its existence to western influences on the Agta and their unique adoption of modern objects. Less profitable night hunting was practiced with or without torches before the advent of the flashlight. Other strategies include ambush of game from concealment adjacent to fruit trees, along game trails and at drinking spots.

As dry season activities, these styles of hunting are carried out both near and far from the base camps where women and children reside when not in a hunting camp. Hunting with dogs often is restricted to a single overnight trip. Long distance hunting is common when little danger of flooding is present; men, and occasionally women, may be gone from home for a week or more, depending on kills. Trips of long duration are never undertaken alone; natural and supernatural dangers are too great. A group of three to five hunters is the rule. Dogs are seldom taken on long trips since food may be lacking and they may have to be carried across the wide rivers or could be too easily lost in the remote, unpopulated jungles. The hunters live on fresh meat and fish, honey and perhaps a root or two. Game may be rough butchered at the kill site and smoke dried at a special hunting camp. Rules of butchery vary among the Agta groups in Isabela and Cagayan provinces, but division of shares generally follows drying and may await final distribution at home. Since excess weight must be discarded, some bones are left in the hunting camp, along with the specialized features of the camp itself — a smoke drying wooden rack, large hearths and rudimentary shelters.

The equipment of dry season hunting is similar to that of the rainy season. Most sensitive to variation in game are the arrows used by the hunters. The Agta names, such as *pangal*, *palsok* and *gahaygay*, of these objects are based on point styles and functions.

Arrows can be divided into two categories — those of simple construction including a one-piece metal or wood point fastened to a reed shaft and fletched with three or four feathers, and arrows of a more complex design. The complex arrows are of multiple component construction, usually with a metal head, metal barbs to the rear of the cutting points and are connected by a line to a hardwood shaft. These arrows, in their heaviest forms, are made to most effectively kill pig and deer, while the lighter models are used for monkey. The idea is to impale the animal and secure the arrow point internally by the barbs. The line plays out and as the animal flees the shaft catches on plants, bringing the line up taut, causing internal damage and death.



Agta arrows: left, a palsok used for general purpose; middle, a kinamangan used to hunt deer; and right, a gahaygay used for shooting wild boar and large deer.

As archaeologists, it is important to note that different types of arrows are game specific; a monkey arrow, for example, would seldom be used on another animal. Of equal interest is that considerable variation in use is found with each type of arrow. In the rainy season, when stalking pig and deer to within a few yards is possible, much heavier points are used. The power of close-in shots and massive projectiles enhances the killing probability in all except heart and head shots. Other variations in arrows can be explained by the strength of the archer or by personal and group preferences. Younger hunters, for example, are not expected to draw a heavy bow or throw the arrows with large points. Interestingly, our observations have revealed that overall various groups of Agta have strikingly different notions as to the relative effectiveness of the specific arrow barbing styles. Personal preferences, then, play an important role in the archaeological record.

The weather conditions of the wet season make hunting more difficult for the Agta, with the hot weather turning to cold, miserable rains. Rivers turn from fish laden and easily crossed streams to raging currents, carrying uprooted trees, boulders and brown sediment of flood speed. No swimmer, however accustomed, may enter such water. One can literally see the erosion of the mountains as heavy rains bring landslides into rivers, which transport the stones and sediment toward the Pacific. To the occupants of the river bank and forests, special adjustments are in order. Pig and deer, restricted by high water, roam less widely. With the forest floor soaked, hunters singly or in pairs stalk their favorite prey, wild boar, looking for the largest, fattest target. Most hunting is conducted during a single day, although one-night campovers are known, especially if a moderate break in the rainfall occurs. Stalking, night hunting and ambush are other hunting techniques used at this time. Dogs are useless; they hate the cold, refuse to swim and have trouble following scent. While hunters also dislike and suffer from cold rains they hunt actively since pig fat is essential in the diet especially during cold months.

Settlement Patterns

Settlement patterns follow both the seasonal cycle and the considerations of hunting. Although in the past the distribution of wild plant foods may have exerted more influence on residence and subsistence, today forest collection of roots, fruits and greens is a relatively minor activity. Meat buys the corn and rice that have replaced roots. The demands of hunting rather than gathering therefore strongly affect size, distribution and movement of family and group residences. Agta live in small clusters of family units, usually made up of three or four lean-to's, each occupied by a married couple and their unmarried children. Rainy season and dry season differ markedly in most respects. During the height of the rains, some tendency for consolidation exists. Group size

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may enlarge to about six families, although the nucleation is shortlived. Houses are placed in different settings; in the dry season lean-to's are found on the dry portion of riverbeds, usually on a cobble or gravel base. Later, rains flood these spots, often leaving several feet of water over the old campsite. During the wet season dwellings must be on high ground, above flood limits. Site location is further complicated by limited space, since camps cannot be adjacent to steep hillsides or old trees. Landslides are a constant threat and because the Sierra Madre lies in the heart of the Philippine typhoon belt, tree blow-downs are also a hazard. As a result, the Agta have only a few selected, safe, rainy season campsites which are used at least once every few years.

The campsite location must also conform to game distribution and to the range limits of each hunting group. This could be several kilometers along a river and may include several sites on small tributaries. Hunting can extend past this central focus, however, and may include regions seldom used for residences. Parties of hunters often camp in very remote, rugged terrain days from contact with Agta or non-Agta. Among the most nomadic Agta groups, whole families are known to join their males on these expeditions. The women dig roots and find honey and fish as a supplement to pig and deer meat. These hunting camps differ little from a base camp, since women usually take the time to build a lean-to adequate to shelter the family from rain, sun and wind. In addition to the residential lean-to's considered "home," seasonally specific camps are established for specialized subsistence activities. The placement, configuration and activity remnants all help the archaeologist and ethnographer understand their context in the overall Agta settlement and subsistence system. In the dry season, for example, "honey camps" are occasionally used. One or two families may make forays of three or four days' duration high on the mountain slopes, where they collect honey in quantity and return to a base camp. Typologically, these honey camps are similar to the base camp with good quality lean-to's built by the women. A similar situation is typical of the rainy season, when women frequently process the starch of the sago-like palm tree *caryata cummingii*. If the trees to be felled are beyond an easy hour's walk, the whole family may transfer while one or more trunks have their starch extracted. "Sago" camps are always close to a stream,

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beside which women build a dry season shelter which is placed on a platform of saplings or bamboo, indicating a wet season setting. The Agta split the trunks, remove the pith and collect the starch. Other purposes for alternative camp constructions include visitation to friends or trade partners among the Malay farmers, overnight shelter while traveling or brief shelter while collecting specialized rattan, plant medicines or other forest resources.

Archaeologists investigating the remains of hunter gatherers try to locate, describe and interpret special activity areas and habitation remains. If temporal or seasonal assignment of the site can be made, comparison among sites is often useful, since variation tells more about the full range of activities. For example, the special hunting camps found far in the mountain interior should and do have features that distinguish them from family residence camps. They are usually distinguished by location, the simplicity of shelter, a relative abundance of specific bones and the presence of a large hearth away from the shelters. Honey camps, even when combined with hunting activities tend to have an unusual quantity of honey collection-related paraphernalia. Finally, the base camp, even if occupied only for a few days, is the scene of numerous activities reflecting the "permanency" of residence.

A full range of subsistence Agta activities can be discerned by analysis of both these outlying and base camp remains. The base camps of the two main seasons are occupied for a longer duration than the functionally specific camps and are used for a wide range of activities, including those found at the specialized campsites. Butchering of game, for example, occurs throughout the year at base camps. While one may expect different frequencies of certain bones in hunting camps and base camps, only careful quantification reveals the pattern. Arrow manufacture occurs only in base camps, since selected anvil stones placed nearby the hearth and the necessary steel hammer, chisel and files are too heavy to carry. Residues of arrow repair are also found around the lean-to's. Especially common are fragments of broken arrow shafts, bits of metal left in the process of shaping a point, resins and cordage and feather debris. Evidence of womens' and children's presence invariably include fragments of cloth, toys made of native materials and the by-products of mat and basket manufacture. The charred remains of wood and shell in fireplaces where shellfish were heated to convert them into lime for

use in betel nut chews can be spotted outside the immediate lean-to environs. Betel nut chews are an Agta addiction, consisting of lime, various leaves, the nut of the betel palm (*Areca catechu*) and leaf tobacco.

Conclusions

The evidence that enters the archaeological record is much greater than what might be recovered at some considerably later date through excavation. We have not yet investigated through digging any of the problems of the preservation and visibility of the data which have been observed firsthand. Instead, we sought to show how subsistence activities, settlement features and the natural environment interact to produce the patterns of behavior advantageous in the humid tropics. These conclusions can then be put into a framework applicable to the archaeology of Southeast Asia. In fact, several of the interests now guiding archaeological inquiry both on the mainland and in the islands include such attempts to understand the range of economic resources exploited by hunters and the relative dependence on larger game animals, plant foods and trade goods. The appearance and nature of hunters' interactions with non-hunters is also critical in understanding the interethnic relations over several thousand years of prehistory. Additionally, the use or lack of domesticated plants and animals is a factor in understanding tribal existence.

Our work, although far from complete, has shown that the Agta were dependent on large game animals, suggesting this phenomenon as a viable alternative throughout prehistory in a tropic setting. Until our research most anthropologists specializing in hunting-gathering cultures argued that hunters, especially in the humid tropics, were more gatherers and scroungers than killers of game. In addition, women were believed to have collected the bulk of the daily food from the wild plants available in the jungle. We now know that bow and arrow hunting, even without the use of steel points, was a highly productive alternative. The Agta have demonstrated the viability of an economy based on pursuit of large game, supplemented by roots and other plant foods. The hunting emphasis comes as a surprise; its existence will allow the modeling of far different adaptations than had once been thought likely. At the same time, archaeologists, learning of Agta hunting success, are likely to be increasingly cautious in overzealously seeking any one model for humid tropics hunting. For example, when the Agta are compared with the Tasaday, a small group of collectors in the southern Philippines, one finds great similarities in subsistence strategies, group organization and adjustment to environment. The Agta demonstrate one pattern of seasonal adjustment;

in placement of residences, size of residence group and in use of functionally specific activity sites, all reflecting great dependence on acquisition of game for protein. The Tasaday, who range out of a permanent cave home and operate in single family gathering units, pay far less attention to seasonal considerations. While climate, topography and available resources vary, neither Tasaday nor Agta adaptations are determined by these differences. Instead, a long history of adjustments, including contacts with other societies, have led the respective cultures to their rather different configurations. The lesson for archaeology is clear, and though already known, perhaps adhered to only with difficulty: humid tropics hunting and gathering cultures can vary in their exploitation of the environment and hence in systems of organizing their cultures.

How and to what may this ethnographic research be applied? Archaeology must have, and seems to be developing, a greater interest in the variations of and changes in prehistoric human behavior. We now realize that neither simplicity nor backwardness typifies either ancient or modern Southeast Asian hunting cultures. Differences between the past and present do exist, but successful adaptation to the environment and skill at hunting large game are no more or less unusual in the Asian tropics than in preagricultural Europe and Africa. Instead, a multitude of economic strategies operated over the tens of thousands of years in prehistory, as is still the case today. The archaeologist, utilizing ethnographic data from many of today's living sources, can devise new approaches for testing the ancient cases. From these, and from the insights gained through excavation, better and fuller explanations of the stability of hunting

systems and the significant shift to horticulture and trade may be gained.

For Further Reading on the Agta: J. Allen, J. Golson and R. Jones, editors, *Sunda and Sahul: Prehistoric Studies in Southeast Asia, Melanesia, and Australia* (New York 1977), contains one paper on the Agta, plus other generally well written papers on archaeology and ethnography; John M. Garvan, "The Negritos of the Philippines," edited by H. Hoehle, *Wiener Beiträge zur Kulturgeschichte Und Linguistik*, Band 14 (1964), out of date anthropologically, but containing many details on most aspects of Negrito life.

On ethnoarchaeological studies in general: Richard A. Gould, editor, *Explorations in Ethnoarchaeology* (Albuquerque, New Mexico 1975), an excellent collection of the best up to date scholarly papers reporting recent ethnoarchaeology; Karl Hutterer, "Reinterpreting the Southeast Asian Palaeolithic," *Cultural Ecological Perspectives on Southeast Asia: A Symposium*, edited by William Word (Athens, Ohio 1977), a brief yet comprehensive paper providing an adequate introduction to the subject; John E. Yellen, *Archaeological Approaches to the Present: Models for Reconstructing the Past* (New York 1977), a highly readable monograph discussing ethnoarchaeology among the Kung San hunter-gatherers of the Kalahari desert of Botswana; D.E. Yen and John Nance, editors, "Further Studies on the Tasaday," *Panarin: Foundation Research Series* (Makati, Rizal, Philippines 1976), is of limited interest to archaeologists, but the paper by Yen gives a good synopsis of what is known about Tasaday subsistence practices.

The Boat Coffin. . . continued from page 24

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