

Tasks, Tools and the Dos Chombitos Farmers near Xunantunich, Belize, Central America
by Linda Neff, Northern Arizona University, Flagstaff, AZ

*******DRAFT DO NOT CITE WITHOUT PERMISSION OF AUTHOR*******

Reconstructing gender division of labor poses a significant challenge to the archaeological community. Seven months into motherhood (over 210 sleepless nights) and two months into the artifact analysis for the Dos Chombitos Terracing Project [hereafter DCTP], I felt I could identify how and where the ancient Maya women were gardening and what tools they were using. Here I summarize the results of my delusional thinking by examining gender division of labor in relation to intensive terrace agriculture for the Pre-Hispanic lowland Maya from the Dos Chombitos Community in the Macal River Valley, Belize, Central America (Figure 1).

During the Late Classic Period (A.D. 700 - 830), the Maya witnessed considerable population increase initiating and perpetuating more intensive agricultural strategies (Neff 1997; 1998a, 1998b, Neff and Gifford 1996). The construction and maintenance of agricultural terraces – linear stone features built for slope management (Wilken 1987) -- resulted in an economic reorganization that included adjustments to and changes in labor relations. Using ethnographic, ethnohistoric and archaeological evidence, I address the following three questions: 1) what tasks are associated with terrace agriculture; 2) what tools aid in the performance of these tasks; and, 3) who performs these tasks. Several lines of evidence form the basis of a model identifying the agricultural contexts possibly associated with gender roles in the archaeological record. This chapter addresses the methods employed and presents the initial results from test excavations and a lithic analysis designed to examine agricultural gender relations for the Late Classic Period Maya.

Deviating from previous Maya terrace research that has generally focused on the following three issues: (1) the functional morphology of the different slope management strategies; (2) terracing as a form of intensive agriculture and its relationship to population pressure; and (3) terrace settlement patterns (Boserup 1965; Coultas et al. 1992; Doolittle 1990; Dunning and Beach 1994; Fedick 1988, 1989, 1994; Harrison 1993; Killion 1992; Malthus 1978; Neff 1995; Neff and Gifford 1996; Neff et al. 1995; Treacy 1994; Turner 1974, 1978, 1990; Turner and Doolittle 1978; Turner et al. 1977), the DCTP took a multi-scalar approach to study the different spatial contexts of terrace intensive agriculture. Previous research examining the social contexts of agriculturally-intensified space typically focus on infield versus outfield strategies -- how they compliment each other for maximum farming optimization, and what activities are associated with each. The infield:outfield dichotomy is inappropriate during the Late Classic Period when a large percentage of the Maya landscape was undergoing some sort of agricultural modification.

The DCTP recognized a spatial continuum defined by the types and intensity of terrace farming activities employed. For example, the manifestation of intensification and the amount of work employed in a house-lot garden or orchard were drastically different than intensification in a more distant cross-channel terrace. Thus, the Dos Chombitos Terracing Project [DCTP] tested terrace sets "near" rural domestic architecture, "intermediate" between domestic architecture and what we've termed "pure" agricultural space. In doing so, the DCTP recognized the inability to arbitrarily carve the ancient Maya landscape into infields versus outfields.

Using the continuum as a guide, I chose to explore the division of agricultural labor based on gender. In doing so, I identified the tasks associated with agricultural terrace gardening, who performed them, and what tools were used. Examining the spatial relationship of the tools and

associated debitage in relation to the ethnographic, ethnohistoric data initiated a model building process reconstructing gender division of agricultural labor in the Dos Chombitos community.

Anthropology, Sexual Division of Labor, and Engendering the Past

Revisionist approaches spawning from the 1970s (Kay and Voorhies 1975; Reiter 1975; Slocum 1975; Stone 1976) resulted in a slew of articles, papers, and books dealing specifically with sexual division of labor and engendering the archaeological past. Work by Zihlman (1981, 1991), Lancaster (1989), Rickenbach (1991), McBrearty and Moniz (1991), and Sperling (1991) reevaluated sex as the biological basis for behavior. Several researchers (Ehrenberg 1989; Washburn and Lancaster 1968; Linton 1971; Draper 1975; Esioko-Griffin and Griffin 1981) took the biological studies one step further and explored sexual division of labor in hunter-gatherer societies. In middle-range societies, sexual division of labor has received less attention, but nonetheless has been addressed by few archaeologists (Ehrenberg 1989; Watson and Kennedy 1991; and Rice 1991). Faced with similar issues of the present, archaeologists have paid closer attention to sexual division of labor in state-level societies by exploring the role, subordination, political economy and ideological significance of women's work (Claasen and Joyce 1997; McCafferty, and McCafferty 1988; 1991, 1994; Brumfiel 1991; Wright 1996; Silverblatt 1991; Pollock 1991; Rapp 1977; Hastorf 1991).

As you can see, feminist archaeology and the study of sexual division of labor has a relatively short, yet somewhat developed and varied past -- moving from the introduction of women into our past to the significance of women's work in a variety of societal settings. Innovative use of the conjunctive approach or the weaving together of multiple lines of evidence to depict ancient gender relations is not new in feminist archaeological study (Gero 1991; Hastorf 1991; Silverblatt 1991; Tringham 1991; Dale and Willows 1991; Wright 1991).

However, the conjunctive approach has not been used to effectively engender all those individuals -- commoners and elites -- who make up the ancient Maya world. Thus, the more recent uses of the conjunctive approach stimulate my interest on Maya gender division of terrace agricultural labor for the ancient Maya.

Analogy and Gender Division of Labor

Anthropological research focusing on sexual division of labor in the agricultural setting additionally spans a wide range of theoretical and methodological approaches including evolutionary perspectives (Baumann 1928; Boserup 1970); general ethnographic comparative analyses (Burton and White 1984; Burton and Reitz 1981; Burton et al. 1977) Marxist approaches (Ehrenberg 1989); research stressing the interrelationships between the political, historical and cultural spheres (Guyer 1980, 1984, 1988; Linares 1981, 1985); and political economic models examining the asymmetrical power relationships between males and females (Carney and Watts 1990; Folbre 1982). All of the approaches share the common “nearly” universal generalization that work routines differ between men and women in the agricultural domain (Stone et al. 1995).

Here I focus on the gender versus sexual division of agricultural labor. When referring to gender, I am not referring to the “normative male-female dichotomy” (Hill 1998:102). Rather I examine the evidence to construct the gender relations inherent in Maya intensive agricultural practices. Gender is an ambiguous socially constructed category including gender role, identity, attribution, and ideology (Hill 1998; Spector and Whelan 1989). In other words, gender constitutes what men and women actually do, how they feel about themselves when they do it, what others think of their actions, and what those activities mean within their culture (Spector

and Whelan 1989). Moreover, gender differences vary throughout the course of an individual's life cycle.

The ethnohistoric record provides a temporal framework for examining the different agricultural tasks men and women performed over time – how those roles have changed and how they have stayed the same. Similarities in gender roles while a product of different histories, may also reflect the culturally-constructed roles that perhaps existed during the archaeological past. The model, in turn, represents a hypothesis, not a generalization, to test in the archaeological record (Hill 1998:116). To avoid making any generalizations about male and female activities, or to create any binary oppositions defining male space versus female space, I use a micro-scale spatial analysis to discuss in relative terms the engendered meaning of the lithic artifact variation within their different agricultural contexts (Hill 1998).

A cross-cultural ethnographic analysis provides the full range of engendered behavior and the tasks and tools associated with intensive agricultural strategies within the modern world (Spector and Whelan 1989). The Yucatec Maya ethnohistoric and ethnographic record in conjunction with ancient Maya codices furnish information regarding cultural norms or traditions serving to guide ancient Maya gender roles. An examination of the pre-Colonial, Colonial, and post-Colonial period documents provide the time-depth necessary to examine continuity and change for Maya gender relations.

The Yucatec Maya were once part of the much larger Classic Maya civilization, sharing a wide range of cultural and social traditions. The modern Yucatec Maya may not share a direct genetic or linguistic link to the ancient Maya of the Southern Lowlands. However, their cultural ancestors were once part of the same society. Thus, the modern day Yucatec Maya provide a good analogy for the ancient Maya from another part of the Classic Maya civilization.

Additionally, the practice of milpa farming by the modern Yucatec Maya represents a modification of traditional farming methods by including the recent introduction of fertilizers (Kramer 1998). The annual reuse of milpas is more analogous to the perceived fallow period of terrace agriculture. Consequently, the fieldwork associated with Maya milpa farming and terrace agriculture are directly correlated.

Building the Model

The tasks and tools of Intensive Terrace Farmers

The tasks associated with terrace farming techniques are a result of intensive agricultural practices which lie along a great and varied spectrum. In Boserup's (1965) book "On the Conditions of Agricultural Growth" she originally defined a scale for traditional farming systems ranging from extensive to intensive. Extensive agricultural strategies tend to have more land in fallow than in cultivation, requiring minimal field preparation and crop tending (Stone 1991:18). Slash-and-burn or milpa farming as it is referred to in Central America is a common form of an extensive farming system. Within a few years the fields are left to regenerate.

Slash-and-burn, a highly effective farming method, requires a sufficient amount of land. However, the amount of farmland decreases when population levels rise and families occupy every landscape niche. Agricultural techniques necessitate shorter fallow periods, resulting in less fertile fields covered with more grasses, bushes and secondary growth. Consequently, more time is spent performing tasks associated with field preparation, fertilization and possibly irrigation.

The process of working harder on less land is agricultural intensification (Stone 1991:18). Neff (1998) and Morrison (1999) point out the need to look at the different scales -- household,

community, topographic setting, and area -- of farming practices to avoid making generalizations about the process of intensification in a region.

Terrace agriculture falls under the rubric of a more intensive agricultural form. When labor is abundant, large-scale slope modification strategies in the form of large terracing projects are a preferable method of intensification. A family or small group is usually responsible for most Central American traditional terrace projects (Wilken 1987). In terms of labor, terraces are a low-cost construction as is the resulting field development. However, over a period of time the cumulative results of a small-scale terrace project can be impressive (Wilken 1987:98).

Two forms of terraces visible archaeologically in the Dos Chombitos community include check dams and slope terraces. Check dams are both the walls and the fields created behind the walls, built in arroyos to aid in water and soil retention. Check dam construction often occurs in stages, thus, reflecting the “process-rather-than-the project” strategy often employed by traditional Central American farmers (Wilken 1987:100).

Slope terraces, on the other hand, control erosion and retain moisture through the construction of earthen rows or rock embankments laid perpendicular to slope gradients (Wilken 1987:105). Terrace agriculture necessitates a great deal of labor for construction and continued field maintenance. Thus, labor availability and sustainability is a primary factor when initiating a project involving the intensive nature of a slope management strategy.

A review of the cross-cultural ethnographic record reveals a series of common fieldwork tasks associated with terrace agriculture. Fieldwork encompasses the activities associated with forest clearing, terrace construction [including quarrying and creation], ground preparation, planting, crop maintenance such as weeding and watering, and harvesting. Fieldwork can occur at or near the household or in more distant fields. Tasks related to fieldwork but not often

reported included pre-planting seed processing, transporting goods between the village and fields, monitoring crops, hunting or trapping vermin, field ritual, and weedy plant collection (Collier 1975:33; Kramer 1998; Robin 1998). Here is a summary of the primary agricultural tasks and the tools associated with each. Unfortunately, the literature did not provide a complete description of the full range of agricultural tasks performed.

Terrace Construction

As previously stated, check dam construction occurs in stages. Initially, a farmer builds a low wall across an arroyo. Within a few years, enough soil and debris accumulate behind the wall to warrant the construction of a higher wall. This process continues until a tall strong wall supports a large level field (Haring 1973-1974, in Wilken 1987:100-101). A well-built terrace wall is curved to deflect the water force. A pitched outside wall holds back the water whereas the interior wall supports the terrace bed. Slope terrace construction consists of building several parallel earth or rock low lying walls perpendicular to the hill slope.

In both scenarios, the tasks involved with terrace wall construction include material acquisition often involving labor intensive quarrying, the transfer of that material, and the actual construction of the terraces (Wilken 1987:98). Traditional terrace farmers avoid constructing their fields at long distances due to the transfer of construction material and excavation by products. (Wilken 1987:127).

Ground Preparation

The tasks associated with preparing the land for seed vary depending on the state of the field following the preceding farming season as well as the density of the growth to be chopped down. New fields require thorough clearing using a machete, pickax, billhook and hoe. Fields used the preceding year are easier to prepare, requiring only the felling and burning of dried out

crops and weeds left from the previous harvest (Collier 1975:30). Fields are burned prior to seeding in order to destroy all the roots of undesirable weeds. The Chamula Indians living in the “limestone hills near San Cristobal de las Casa in the Chiapas Highlands of Southern Mexico” (Wilken 1987:111) hand cultivate the slope terraces using broad hoes, or azadones.

Seeding

Seeding occurs immediately after field preparation. The seeder carries a bag full of the selected seed in one hand and an iron-tipped (Collier 1975:32) or sharpened digging stick (Kramer 1998:60) in the other. Every 75 to 100 cm, the seeder uses the digging stick to punch a hole in the ground, dropping several seeds in the hole and then covering the hole with dirt (Kramer 1998). The seeder runs a string the full length of each row to confirm that the rows are straight and roughly one meter apart (Kramer 1998).

Weeding

Weeding occurs throughout the growing season. In the second year of plot reuse, recent ethnographies report that the time spent weeding increases almost two-fold with an accompanied decrease in crop yields (Emerson n.d.; Emerson and Kempton 1935; Smyth 1988; Steggerda 1941, in Kramer 1998:61). Zinacantecos, recent highland Guatemalan inhabitants, use a narrow hoe for weeding (Collier 1975:33), whereas the Yucatec Maya use their bare hands or a machete (Kramer 1998:62). Interestingly, the recent introduction of the machete has increased weeding time. When the farmer removes weeds with a machete he/she only cuts at the plant's base versus removing the entire root system.

Harvesting

Harvesting consists of walking the rows of corn (in many cases) and “slitting the husk with a sharp metal tool, often a sharpened nail, and removing the ear” (Kramer 1998:62).

Harvest begins and ends at variable times primarily depending on the specific crops and the local climatologic and topographic conditions.

The latter descriptions identify five primary agricultural tools operated by human labor to perform the tasks associated with terrace agricultural practices. The machete, pickax, billhook and hoe are the principal forest clearing and ground preparation tools. Hoes and machetes were also used for weeding tasks. A sharpened digging stick was the primary seeding tool. And finally, a sharp cutting tool is the chief harvesting tool.

Shattering General Assumptions of Women's Agricultural Work

Now who performed these tasks? As Robin points out in Chapter __, the ethnographic and colonial period data all have the inherent assumption that pregnant/child rearing women were unable to perform all the duties associated with agriculture. Thus, men have been uncritically equated with and solely accounted for all the activities associated with agricultural production. A critical review of the cross-cultural literature suggests this biologically-determined assumption has no basis. Rather, fieldwork tasks are more often defined by culturally-determined age, sex, and gender roles.

The cross cultural ethnographic evidence suggests that women in subsistence agricultural societies can and do perform all the tasks associated with intensive agricultural production. For the Chontal Maya (Turner 1971), both sexes "carry water, plant, weed, harvest crops, carry loads, cut wood, and take animals to graze" (1972:43). Friedl (1975) suggested that "male horticulturalists, in general, have a monopoly over the clearing of fields" (1975:53). However, both sexes of the Kapauku Papuans of West New Guinea share the field clearing responsibility, as well as many other agricultural tasks. In contrast, the division of agricultural labor for the

Papuans differs by cultigen -- "certain cultigens are the responsibility of women, and others are cared for primarily by the men" (Pospisil 1978:6).

Friedl (1975:53) also suggests that both lactating and pregnant women can and do take their children to the fields and return with the harvested crops. Turner (1972) documented that Chontal Maya women in a small group will take a small child to the field, stopping her hoeing from time to time to nurse (1972:44).

In the Central Himalayas, men plow and graze while women are responsible for domestic and farm work (Mehta 1994). In fact, when the Himalayan non-local employment opportunities for men decreased -- both men and women shared the responsibilities involved with the highly intensive cropping strategies, including the construction of terraces, fields and irrigation channels (Mehta 1994:119).

On the other hand, Hopi women from the American Southwest, do not participate in the initial quarrying and construction of their ancient terrace gardens (Vasquez, talk presented to the NAU Anthropology Society, 1998). In summary though, women can and do perform a variety of agricultural field tasks the world over -- including the intensive labor required to construct terraces. With this in mind, I began this study with the general notion that women during all life cycle stages were everywhere doing everything associated with agricultural production.

Maya Ethnographies and Cultural Tradition

The Yucatec Maya ethnographic record provides copious information regarding who -- men or women -- performed each agricultural task (Stephens 1841; Villa Rojas 1932, 1935; Andrade 1930; Redfield 1941, 1950; Roys 1943; Press 1975; Kramer 1998).

The earlier documents regularly mention men working in the cornfield, hunting, carrying wood, and building houses. Women, on the other hand, were depicted as grinding maize,

cooking, making tortillas, buying and selling goods, sewing, carrying water jugs and babies.

Redfield (1941) found that the Maya division of labor where men farm and women perform the domestic work represented a long standing tradition originating from both the Indian and Spanish heritage. Redfield (1941) suggested the culturally-determined gender roles "have shown in Yucatan a high degree of resistance to change" (Redfield 1941:174).

Interestingly, the only pre-1970 reference to a woman working in the field comes from Redfield's 1941 book entitled, "The Folk Culture of Yucatan." Only one woman made milpa "by her own labor" (Redfield 1941:174-175). She came from Merida to the Dzitas-Chan Kom area and "the extraordinary, almost monstrous, character of what she did will not soon be forgotten" (Redfield 1941:174-175).

Much of the earlier work maintains the uncritical assumption that only men performed agricultural fieldwork. As previously stated, the cross-cultural evidence suggests that women -- lactating and pregnant -- in subsistence agricultural societies can and do perform all the tasks associated with intensive agricultural production (Friedl 1975; Pospisil 1978:6; Turner 1971, 1972; Mehta 1994; Vasquez, talk presented to the NAU Anthropology Society, 1998). Not surprisingly, post-1970, a spurred interest in engendered labor relations resulted in ethnographic accounts of Yucatec men sharing childcare duties and women working in the field (Kramer 1998; Press 1975).

Kramer's (1998) time allocation study in Xculoc, Yucatan found that young women and women beyond their reproductive careers participate in many agricultural tasks. Male children between the ages 4 and 23 spent 20% of their fieldwork time weeding, 7% planting, 38% harvesting and 10% performing related agricultural tasks. Female children spent 9% of their fieldwork time weeding, 5% planting, 19% harvesting, and 24% of the time performing related

tasks. Thus, while male children are spending more time performing fieldwork activities, female children contribute a great deal to the success of the agricultural strategy.

However, Kramer (1998) found that lactating women primarily restrict themselves to village activities. Due to costs associated with health risks, the nursing women and very young children rarely work in the distant (up to 20 or 30 km) fields.

Interestingly, non-nursing women spend almost twice as much time in fieldwork occurring away from the household. Moreover, women without young children (ages 0 - 6) spend three times as much time in fieldwork away from the household and women nursing a child under a year strictly participate in domestic and village activities (Kramer 1998). The village is viewed as a safe domain for nursing women and children (1998:15). Additionally, Xculoc Maya families are extremely large and have been for the past century. Thus, the women spend a majority of their reproductive careers nursing.

Combining the pre-1950 Yucatec Maya data with the general ethnographic record and Kramer's work, we find that while women can and do participate in various fieldwork activities, nursing Maya women rarely if ever do. I propose a combination of western biases brought on by the ethnographers in conjunction with women fully engaged in their reproductive careers explains the lack of women performing agricultural fieldwork in the pre-1950 ethnographic record. Based on costs associated with resource loss, Kramer (1998) found that children -- including females -- made a considerable contribution to harvesting, weeding, transporting, and shelling maize (Kramer 1998:17). Moreover, when Kramer (1998) initially asked the families of Xculoc, "Who does the fieldwork in Xculoc?" The answer was always, "The men." I postulate that Maya cultural tradition associates *productive* fieldwork, particularly milpa

agriculture, with men. This supposition overrides the fact that both sexes participate in the various tasks.

Gender Ideology: Continuity and Change

Yucatec Maya post-Colonial, Colonial, and pre-Colonial documents provide information regarding the persistence of Maya agricultural gender ideologies. As far as the continuity of gender roles, colonial Yucatec Maya wills and testaments (Restall 1995) suggested that "men were more likely to work away from the solar, or house plot, tending the milpa (land under cultivation) or cutting the kax [forest], whereas women tended to work within the confines of the solar" (Espejo-Ponce Hunt and Restall 1997:245). Additionally, women were two times more likely to obtain a solar in a will, whereas, men were more likely to bequeath kax to their sons (1997:246).

In every instance, men -- while owning the orchards, trees, and vegetable gardens -- left such property to their wives (Espejo-Ponce Hunt and Restall 1997:246-247). Moreover, women owned more goods associated with the solar than the men did such as the solar-bound pigs and chickens as well as more clothing (Espejo-Ponce Hunt and Restall 1997:247-249). Few women owned horses and mules -- travel animals.

Likewise, the female peasant farmer testators did not mention any tools. However, one half of the male testators had one of five tools -- the machete and ax being the most common (Espejo-Ponce Hunt and Restall 1997:247-248). Consequently, in most cases, men left tools to their sons (Espejo-Ponce Hunt and Restall 1997:248).

And finally, while we do see a general increase in a minimum reconstruction of family size from the mid-seventeenth century to the end of the colonial period -- family size was and has

been relatively large for a long period of time. Consequently, female demands associated with primary childcare have not lessen (Espejo-Ponce Hunt and Restall 1997:249).

The Popol Vuh provides an interesting perspective on examining the longevity of Maya agricultural gender ideologies. A story of Quiche history and origins, the Popol Vuh was first translated by Quiche lords near the end of the 1500s. It is thought to have been a preconquest hieroglyphic book or a copy of one with translations from the colonial period. A known colonial scholar, a Dominican Spanish friar, Francisco Ximenez made Quiche and Spanish copies between A.D. 1701 and 1703. It is a useful source of analogy for ancient Maya ideology as long as we take into account that it is a creation of the colonial encounter. However, Sanday (1981) posits that cross-culturally gender roles depicted in creation stories have a strong correlation with the rules governing social and cultural tradition.

In relation to agricultural tasks and tools, the epic story provided an interesting account of two twin brothers who magically cultivated a garden with the aid of a mattock, axe and hoe. The axe and mattock took on a life of their own, felling trees and bushes, “clearing off whole mountains, small and great” (Tedlock 1985:125). Upon their departure, they told their grandmother to bring them their midday food. The grandmother replied, “Very well, my dear grandchildren” (Tedlock 1985:125). And off the brothers went to make their garden. Later in the text, a reference is made back to the grandmother, Xmucane. She is preparing the “substance of human flesh” by grinding her corn and mixing the flour with water (Tedlock 1985:47).

I interpret this in a very literal and symbolic sense -- the mattock, axe and hoe were gardening tools used by the masculine twin gods while away from their home to perform fieldwork. The mattock, axe and hoe are symbolically associated with masculine gardening away from the home. The grandmother, on the other hand, is symbolically associated with the

grinding of corn presumably using a mano and metate -- to prepare the "substance of human flesh" (Tedlock 1985:47).

Not surprisingly, the machete, a more recent introduction to the Maya tool kit, was not mentioned in the Popol Vuh. However, a continuity between the more recent ethnographic record and the precolonial past suggests that the mattock, axe and hoe are symbolically associated with masqueline gardening away from the household.

The Model: Who were the Dos Chombitos farmers and where were they farming?

Once again I revisit the general notion that women during all life cycles were everywhere doing everything associated with agricultural production. The most recent ethnographies and pre-Colonial native documents all suggest that modern and ancient Maya gender ideology associates fieldwork performed away from the household with men even though younger and older women contribute significantly to the overall productive strategy. Moreover, nursing females, in particular, spend a great deal of time performing childcare duties, restricting themselves to the safe village domain. In doing so, these women contribute less to the total amount of fieldwork and more to domestic tasks such as chopping wood, hauling water, washing, childcare, cooking and sweeping (Kramer 1998). Ethnohistorians and ethnographers have demonstrated the persistence of a large family size all over the region. Consequently, I propose that cultural tradition with respect to family size and childcare systems are the principal guides to the role of women's work (Friedl 1975:60). Using the conjunctive approach, several lines of evidence suggest this gender ideology existed in the archaeological past dating to over a 1000 years ago.

The Archaeological Domain

The latter model identifies two principal contexts possibly associated with the division of agricultural labor based on gender: (1) gardens directly associated with the household/domestic complex, and (2) fields located at varying distances away from the household. Thus, artifact patterning based on the different agricultural spatial contexts might reveal information regarding past agricultural gender roles.

Robin (Chapter _) suggested the centralization of previously dispersed farming populations typical of the Classic Maya into nucleated, grid-planned towns with milpa production occurring on the fringes of the village in outfields was a product of the 16th century Spanish resettlement program. So how does one recognize fieldwork occurring away from the household in a dispersed farming community presumably lacking the post-Colonial slash-and-burn equivalent of an outfield?

Terrace excavations carried out by L. Theofore Neff under the direction of Wendy Ashmore were conducted at two loci located to the east - southeast (Terrace Set 191 - 192) and north - northwest (Terrace Set 110) of Dos Chombitos, a minor pre-Columbian center overlooking the Macal River Valley (Figure 2).

From the onset, Neff (1998) recognized a spatial continuum between terrace contexts. As a result he tested terrace sets "near" rural domestic architecture, "intermediate" between domestic architecture and what Neff (1998) termed "pure" agricultural space. In an attempt to disassociate the wide range of domestic activities from the more narrowly defined domestic terrace gardening activities, Neff (1998) chose to examine the first set of terraces just below the domestic spatial complex.

In testing the intermediate space, Neff (1998) recognized the inability to arbitrarily carve the ancient Maya landscape into infields versus outfields. The "pure" agricultural space was ultimately defined by distance from domestic structures in conjunction with artifact patterning that suggested agricultural tasks were the primary activity occurring in these locations. I propose fieldwork in the "pure" agricultural space is equivalent to the away from home fieldwork associated with Colonial and post-Colonial gender ideology. Consequently, artifact patterning based on the different agricultural spatial contexts might reveal information regarding past gender roles.

All the excavations were located on terraces (behind and in front of) and they were essentially "test" excavations. Neff (1998) tentatively defined the agricultural surfaces using stratigraphy, ceramic and lithic data, and eventually the macrobotanical, soil and pollen data will aid in this determination. However, at this point the analytical units are terrace bed surface (planting surface) and near surface, terrace bed, terrace construction fill, and several other cultural and non-cultural excavation contexts. For the purpose of this study, I exclusively examine the surface materials for comparison.

A variety of relative chronometric methods are available to address temporal control for terrace construction episodes. Ceramic group formulation, seriation and Christenson's (19??; modification of South's 1977) Mean Date Formula would provide the ideal cross checking necessary for an accurate portrayal of the terrace chronology. However, the lack of a significant number of diagnostic ceramics in primary deposits inhibited the use of such techniques. Consequently, ceramic ware/type classifications of terrace wall construction fill suggest a Late Classic II terminus post quem for Operations 261, 275 and 277 (Figure 2). Unfortunately, poor

preservation of terrace wall construction fill limit our ability to firmly date the remaining terrace sets.

Other research in the area also suggested a Late Classic II date for terrace construction (A.D. 700-830). I assume the excavations represent an archaeologically relative synchronous period. Microseriation of terrace sets with ideal preservation would provide a more accurate understanding of the changing agricultural roles during the Late Classic II period.

Lithic Analysis and Results

The lithic tool assemblage from the ancient field surfaces revealed the following pattern (Figure). Expedient tools, cores, polishing stones and small, tabular-shaped, broad-based distal tools -- or small "hoe-like" tools occurred in the near domestic context. The intermediate context contained only expedient tools and the small "hoe-like" tools. The "pure" context had some expedient tools, large "hoe-like" tools, and general utility bifaces.

Expedient tools, or utilized flakes, are hard hammer percussion flakes, flake fragments, or nodules, exhibiting edge damage patterning (Shafer 1983:235). However, expedient tool use-wear lacks extensive bifacial or unifacial retouch. Expedient tool use often varies depending on the immediate task at hand. Examining the patterning in edge rounding and smoothing accompanied by bifacial microflaking, I documented a variety of expedient tool functions ranging from cutting, scraping and drilling to engraving, sawing, chopping, grinding and several variations within each. However, this was a macrowear analysis -- all debitage was examined using a 10X hand lens -- and over 71% of the entire expedient tool assemblage was documented as indeterminate use-wear. Interestingly, Gero (1997:169) argues that cross-culturally prehistoric women probably made many of the utilized flake tools found in the domestic context. However,

more research focused on utilized flake manufacture and use in subsistence agriculturalist societies and the Maya more specifically is necessary before accepting such a generalization.

Cores are the piece of stone that you strike in order to produce flakes (Whittaker 1994:14). Consequently, their occurrence suggests the initial stages of formal and informal tool production took place in the near domestic context.

Polishing stones, are small, often round or oval ground stones. Many researchers have suggested the small stones are used during pottery manufacture to burnish and smooth the various ceramic forms before and after firing (Rice 1987:138-139, 150). Guatemalan ethnographies suggest that pottery manufacture was an exclusive female activity. Particularly, the woman of San Jose Peten from the northwestern shore of Lake Peten Itza were documented polishing ceramic vessel walls (Reina and Hill 1978:144). The Maya of Lake Peten Itza are direct descendants to the Itza family of the Yucatan from the latter part of the 12th century. Perhaps the female role of potter in the household context was a traditional byproduct from the Lowland Maya region. However, more research in this area would have to be conducted in order to confirm the gender roles associated with pottery production.

General utility bifaces, a ubiquitous tool during the Late Classic, are large oval bifaces usually made out of chert. Using ethnographic and archaeological evidence, McAnany (1992) argues that the oval bifaces that she found at Pulltrouser Swamp were used as weeding and tilling implements. She differentiates the oval bifaces at Pulltrouser Swamp from the thicker, celt-like, tranchet-bit forms that Shafer (1983) described for the forms found in Northern Belize.

McAnany (1992) suggested the rounded and polished edge wear was a product of "repeated contact with an abrasive, nonpercussive, high-silicate medium," such as the soils around Pulltrouser Swamp (McAnany 1992:204). Two hafting techniques are suggested for the

Pulltrouser forms 1) the simple socket haft at a right angle to the blade, and (2) a right-angled hoe haft (1992:204). One complete general utility biface exhibiting similar patterning was found in the DCTP "pure agricultural context" excavations.

Aoyama (1995) performed an extensive experimental microwear analysis using a variety of lithic material types on a number of different working materials to examine tools at Late Classic Copan, Honduras. Aoyama found 11 different polish types with varying degrees of rounding to reflect the working of numerous materials ranging from grass and wood, to bone, snail and soil abrasion. This study is a cautionary tale regarding the complications of interpreting stone-tool function. The careful interplay of analogy, context, experimentation and use wear patterning, aid in the interpretation of stone tool function.

I bring this up because general utility bifaces were probably used for a variety of purposes ranging from forest clearing which includes the cutting of wood and grass, to weeding and tilling as well as woodcarving. The lexical diversity is documented in the *Diccionario Maya Cordomex* (Clark 1995). Summarized in this table (Table) are more than eight different axes varying due to their size and use. Consequently, the macrowear study I performed can only suggest a functional interpretation.

Interestingly, another distal fragment from the "pure" context exhibited extensive sickle gloss, readily apparent to the unaided eye. The highly polished edge and dorsal face were smoothed and rounded, resulting from phytolith additives from grassy plants to the tool surface (Kamminga 1979:151, in Clark 1995:128).

Clark (1995) makes a very good argument that oval bifaces with sickle gloss were used in a similar manner as today's machetes. A modern day Lacantun oval biface with sickle gloss on

only one of the exterior edges suggests it was hafted similar to depictions in Maya Dresden and Madrid codices (Figure 3). Intriguingly, all masculine gods are holding the tools.

Based on this evidence I would argue that at least this distal end represents a tool that was used to clear forest -- u batil sakhab -- principally secondary growth, including grass and possibly old corn stalks. Furthermore, based on the ethnographic and ethnohistoric information, I would argue that this particular tool is a byproduct of forest clearing -- a masculine activity.

Two new tool forms -- the small and large, tabular-shaped, broad-based distal, tools -- showed evidence of hafting (Figure 4). The tools were always made out of the locally available slate -- a prominent geologic feature in the Macal River Valley. Edge damage from use with extensive crushing also had some rounding and polishing. The microflaking was irregular, occurring on both faces of the tools. The polish appeared a relatively dull texture compared to the sickle gloss previously discussed. Aoyama's (1995) microwear analysis revealed that a dull polish with a matte texture results from soil abrasion.

The broad blade while amenable to a transverse haft like a modern hoe could have been mounted using a simple socket haft at a right angle to the blade. The similar shape and particularly their strict occurrence in an agricultural context, in conjunction with the use-wear patterning suggests these tools shared a similar function to present day hoes. The Dos Chombitos broad blade tools are strikingly similar in shape to the well-known Mill Creek and Dover chert archaeological hoes dating to the Mississippian Period (citation).

Interestingly, the larger broad blade tools are strictly found in the "pure agricultural context" and the smaller tools in the domestic and intermediate contexts. The ethnographic evidence demonstrated that weeding with the aid of a hoe was both a masculine and feminine

activity. The archaeology indicates that weeding occurred in all the sampled agricultural contexts, presumably by men, women, and children.

Conclusions

In summary, the archaeological evidence suggested the masculine forest clearing task using a machete-like tool occurred **away from the solar** in the "pure" agricultural space. Moreover, the tools found in the "pure" agricultural context represented a specialized agricultural tool kit, including weeding and forest clearing tools -- presumably used by men, children, and older women. A majority of the artifacts found in the "near" domestic context represented activities often associated with a woman -- perhaps a nursing woman and her children. The "intermediate" space was more similar to the "domestic" space and lacked the specialized agricultural tools associated with the "pure" agricultural space.

To help reduce the costs associated with crop loss, farming strategies employed during the Late Classic required individuals to farm not only within the immediate vicinity of the solar but also concurrently in different environmental regimes. So while the distinction is not as clear as the infield:outfield dichotomy -- there were probably people working away from home in different parts of the landscape alone and in small family, lineage and community groups.

I propose that "pure" agricultural space represented the archaeological correlate of away from home fieldwork. I presented the lithic tool variation along the agricultural continuum making suggestions regarding possible engendered behavior. Furthermore, to avoid the traps of a direct historical approach (Thomas 1997), I used post-Colonial, Colonial, and pre-Colonial documents as time-depth indicators of continuity and change in gender ideologies. As expected, I found many dissimilarities between the ethnographic present and ethnohistoric past and one

similarity -- away from home fieldwork is symbolically and ideologically associated with men even though women performed a great deal of fieldwork.

I think its important to understand that just because women might be more symbolically and ideologically associated with "domestic" tasks and men with farming -- its when we place judgement on those positions as being subordinate that our western biases monopolize our interpretations.

Moreover, I agree with Robin (1998) that breaking down western formulated dichotomies and preconceived notions of strict engendered space is the first step to a fuller understanding of ancient Maya gender ideology. However, we are still faced with a problem of definition and archaeological method. What is engendered work and space? Gender is ambiguous because it is ever changing in the life cycles and cultural identity of each individual's role within their family, lineage, community, and overall culture. Yet, it is Neff's (1998) explicit concern with using a multi-scalar approach in the study of agricultural intensification that enables a reconstruction who, what, and where were the Dos Chombitos farmers farming on an extremely palimpsest anthropogenic landscape.

REFERENCES

- Aoyama, Kazuo
 1995 Microwear Analysis in the Southeast Maya Lowlands: Two Case Studies at Copan, Honduras. *Latin American Antiquity*, 6(2):129-144.
- Baumann, H.
 1928 The Division of Work According to Sex in African Hoe Culture. *Africa* 2:289-319.
- Boserup, Ester
 1965 *The Conditions of Agricultural Growth: The Economics of Agrarian Change under Population Pressure*. Aldine Press, Chicago.
 1970 *Woman's Role in Economic Development*. Aberdeen University, Aberdeen, Scotland Press.
- Burton, Michael L., and Douglas R. White
 1973 Sexual Division of Labor in Agriculture. *American Anthropologist* 86:568-583.
- Burton, Michael L., and Karl Reitz
 1981 The Plow, Female Contribution to Agricultural Subsistence, and Polygyny. *Behavior Science Research* 16:275-305.
- Burton, Michael L., Lilyan A. Drudner, and Douglas R. White
 1977 A Model of the Sexual Division of Labor. *American Ethnologist* 4:227-251.
- Carney, Judith and Michael Watts
 1990 Manufacturing Dissent: Work, Gender and the Politics of Meaning in a Peasant Society. *Africa* 60(2):207-242.
- Clark, John E.
 1995 A Maya Grass Axe or Corn Sickle. *Lithic Technology* 20(2):128-134.
- Collier, George A.
 1975 *Fields of the Tzotzil: The Ecological Bases of Tradition in Highland Chiapas*. University of Texas Press, Austin and London.
- Dunning, Nicholas P. and Timothy Beach
 1994 Soil Erosion, Slope Management, and Ancient Terracing in the Maya Lowlands. *Latin American Antiquity*, Vol. 5, No. 1, pp. 51-69.
- Ehrenberg,
 1989 *Women in Prehistory*. University of Oklahoma Press, Norman and London.
- Ehret, J. J.
 1995 The Xunantunich Settlement Survey Test-Pitting Program. In *Xunantunich Archaeological Project: 1995 Season*, edited by R. M. Leventhal and W. Ashmore, pp. 164-192. Belmopan and Los Angeles.
- Espejo-Ponce Hunt and Restall**
1997
- Farriss, Nancy M.
 1984 *Maya Society under Colonial Rule: The Collective Enterprise of Survival*. Princeton University Press, New Jersey.
- Friedl, Ernestine
 1975 *Women and Men: An Anthropologist's View*. Holt, Rinehart, and Winston, New York and Chicago.
- Folbre, Nancy

- 1982 Exploitation Comes Home: A Critique of the Marxian Theory of Family Labour. *Cambridge Journal of Economics* 6:317-329.
- Gero, Joan M.
- 1991 Genderlithics: Women's Roles in Stone Tool Production. In *Engendering Archaeology: Women and Prehistory*, edited by Joan M. Gero and Margaret W. Conkey. Basil Blackwell Ltd, Oxford.
- Guyer, Jane I.
- 1980 Food, Cocoa and the Division of Labour by Sex in Two West African Societies. *Journal of the Society for the Comparative Study of Society and History* 22(3):355-373.
- 1984 Naturalism in Models of African Production. *Man* 19:371-388.
- 1988 The Multiplication of Labor: Historical Methods in the Study of Gender and Agricultural Change in Modern Africa. *Current Anthropology* 29(2):247-272.
- Hill, Erica
- 1998 Gender-Informed Archaeology: The Priority of Definition, the Use of Analogy, and the Multivariate Approach. In *Journal of Archaeological Method and Theory*, Vol. 5, No. 1:99-128.
- Joyce, R. A. and C. Claassen
- 1997 Women in the ancient Americas: Archaeologists, gender and the making of prehistory. In Claassen, C. and Joyce, R.A. (editors), *Women in Prehistory: North America and Mesoamerica*, UPENN Press, pp. 1-14.
- Kintz, Ellen R.
- 1990 *Life under the Tropical Canopy: Tradition and Change among the Yucatec Maya*. Holt, Rinehart, and Winston, Ft. Worth, Texas.
- Killion, Thomas W. (editor)
- 1992 *Gardens of Prehistory: The Archaeology of Settlement Agriculture in Greater Mesoamerica*, edited by Thomas W. Killion, The University of Alabama Press, Tuscaloosa and London.
- Kramer, Karen L.
- 1998 Variation in Children's Work Among Modern Maya Subsistence Agriculturalists. Dissertation on file, University of New Mexico, Albuquerque.
- LeCount, Lisa J., Richard M. Levanthal, Wendy Ashmore, Glenn Russell, and Michael Gottesman
- 1998 New Dates and old issues: Radiocarbon and obsidian hydration dating of Late and Terminal Classic Maya ceramic phases from Xunantunich, Belize.
- Linares, Olga F.
- 1981 From tidal Swamp to Inland Valley: On the Social Organization of wet Rice Cultivation Among the Diola of Senegal. *Africa* 51(2):557-595.
- 1985 Cash Crops and Gender Constructs: The Jola of Senegal. *Ethnology* 24:83-93.
- Neff, L. T.
- 1996 Dissertation Research: Precolumbian Maya Terracing in the Xunantunich Area, Belize, Central America. Proposal submitted to the National Science Foundation.
- 1998a Pre-Columbian Terrace Agriculture in the Maya Lowlands: Initial Results From Investigations in the Dos Chombitos Region, Belize, Central America. Paper presented at the 61st Annual Meeting of the Society for American Archaeology, New Orleans.

1998b Pre-Columbian Lowland Maya Population Dynamics and Intensive Terrace Agriculture in the Xunantunich Area, Belize, Central America. Paper presented at the 97th Annual Meeting for the American Anthropological Association, Philadelphia, PA.

Neff, L. T., and C. H. Gifford

1996 New Directions in Terrace Research: Results and Interpretation from the Xunantunich Settlement Survey, Belize, Central America. Paper presented at the 63rd Annual Meeting of the Society for American Archaeology, Seattle.

Neff, L. T., C. Robin, K. Schwarz, and M. K. Morrison

1995 The Xunantunich Settlement Survey. In *Xunantunich Archaeological Project: 1995 Season*, edited by R. M. Leventhal and W. Ashmore, pp. 139-163. Belmopan and Los Angeles.

McAnany, Patricia A.

1993 Agricultural Tasks and Tools: Patterns of Stone Tool Discard near Prehistoric Maya Residences bordering Pulltrouser Swamp, Belize. In *Gardens of Prehistory: The Archaeology of Settlement Agriculture in Greater Mesoamerica*, edited by Thomas W. Killion, The University of Alabama Press, Tuscaloosa and London.

Mehta, Manjari

1994 The Transformation of Subsistence Agriculture and Gender Inequalities in a central Himalayan Valley, Uttar Pradesh, India. Dissertation on file, Boston University, Boston.

Morley, Sylvanus G. and George W. Brainerd (revised by Robert J. Sharer)

1983 [1946] *The Ancient Maya*. Stanford University Press, Stanford University, California.

Pospisil, Leopold

1978 *The Kapauku Papuans of West Guinea*, 2nd Edition. Holt, Rinehart and Winston, New York and Chicago.

Press, Irwin

1974 *Tradition and Adaptation: Life in a Modern Yucatan Maya Village*. Greenwood Press, Westport, CT.

Redfield, Robert

1941 *The Folk Culture of Yucatan*. The University of Chicago Press, Chicago.

1950 *A Village that Chose Progre: Chan Kom Revisited*. The University of Chicago Press, Chicago.

Redfield, Robert and Alfonso Villas Rojas

1934 *Chan Kom: A Maya Village*. University of Chicago Press, Chicago.

Reina, Ruben and Robert M. Hill, II

1978 *The Traditional Pottery of Guatemala*. University of Texas, Austin and London.

Restall,

1995

Rice, Prudence

1987 *Pottery Analysis: A Sourcebook*. The University of Chicago Press, Chicago, IL.

Robin, C.

- 1998 And on this Farm he had a: Everyday lives of Farmers in the Hinterlands of Xunantunich. Paper presented at the 97th Annual Meeting for the American Anthropological Association, Philadelphia, PA.
- 1997a Xunantunich Rural Settlement Project 1997. In *Xunantunich Archaeological Project: 1997 Season*, edited by R. M. Leventhal and W. Ashmore, pp. 146-155. Belmont and Los Angeles.
- 1997b Rural Household and Community Flux at Classic Maya Xunantunich. Paper presented at the 62nd Annual Meeting of the Society for American Archaeology, Nashville.
- 1995 Time, Space and Demography Through the Lowland Maya Demise. Paper for Anthropology 727, University of Pennsylvania, December 1995.
- 1996 Xunantunich Rural Settlement Project – 1996. In *Xunantunich Archaeological Project: 1996 Season*, edited by R. M. Leventhal and W. Ashmore, pp. 151-172. Belmont and Los Angeles.
- Roys, Ralph
- 1971 [1943] *The Indian Background of Colonial Yucatan*. University of Oklahoma Press, Norman.
- Roys, Ralph and France V. Scholes
- 1948 *The Maya Chontal Indians of Acalan-Tixchel, A Contribution to the History and Ethnography of the Yucatan Peninsula*. Publication 560, Carnegie Washington, Institution of Washington, D.C.
- Shafer, Harry J.
- 1983 The Lithic Artifacts of the Pulltrouser Area: Settlements and Fields. In *Pulltrouser Swamp: Ancient Maya Habitat, Agriculture, and Settlement in Northern Belize*, edited by B.L. Turner II and Peter D. Harrison. University of Texas Press, Austin, pp. 212-245.
- Silverblatt, Irene
- 1995 Lessons of Gender and Ethnohistory in Mesoamerica, *Ethnohistory* 42(4):639-650.
- Spector, Janet D. and Mary K. Whelan
- 1989 Incorporating Gender into Archaeology Courses. In *Gender and Anthropology: Critical Reviews for Research and Teaching*, Sandra Morgan, ed., Washington: American Anthropological Association, 65-94.
- John L. Stephens with illustrations by Frederick Catherwood
- 1841 *Incidents of Travel in Central America, Chiapas and Yucatan, Vol. 1*, Dover Publications, Inc., New York.
- Stone, M. Priscilla, Glenn Davis Stone, and Robert McC. Netting
- 1995 The sexual division of labor in Kofyar agriculture. *American Ethnologist* 22(1):165-186.
- Sullivan, Paul R.
- 1989 *Unfinished Conversations: Mayas and Foreigners Between Two Wars*. Alfred A. Knopf, New York.
- Thompson, Marc
- 1996 Correlation of Maya Lithic and Glyphic Data. *Lithic Technology*, Vol. 21, No. 2:120-133.

Thomas, Larrissa A.

1997 Hoe Production and Household Production at Dillow's Ridge: Gender Division of Labor and the Place of Production for Exchange in Mississippian Economy. Dissertation on file, Binghamton University, New York.

Tozzer, Alfred (translator)

1941 *Landa's Relacion de las Cosas de Yucatan [A Translation]*. Peabody Museum of American Archaeology, Cambridge, Massachusetts.

Turner, Paul R.

1972 *The Highland Chontal*. Holt, Rinehart, and Winston, Inc. New York and Chicago.

Whittaker, John C.

1994 *Flintknapping: Making and Understanding Stone Tools*. University of Texas Press, Austin.

Wilken, Gene C.

1987 *Good Farmers: Traditional Agricultural Resource Management in Mexico and Central America*. University of California Press, Berkeley and Los Angeles.