Linguistics and Ethnology against Archaeology: early Austronesian terms for architectural forms and settlement patterns at the turn of the Neolithic Age of the Kapampangans of Central Luzon, Philippines[1]

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Abstract

This paper presents compared linguistically based, ethnologically based and archaeologically based inferences about Austronesian culture history with special focus on the early settling phase of the Kapampangans speakers, and partly with the Pangalatuk and Tagalog speakers of Central Luzon, Philippines. The study offers conjecture on the consideration of settlement patterns and the architectural forms at the turn of the Neolithic Age that touches the closing period of Palaeolithic industry of *papulapulai* and *pasalasalangi* (visiting hunter-gatherers) towards the development of *pamanese* (agriculture and its cognates) and *pamanuknangan* (settling and basic society building).

Inference of study can be seen on the following example table of lexical reconstruction:

Kapampangan terms	Present definition	Etymological definition	Archaeological inference
- tuknangan	- house; settlement	- stopping place	- cultural marker that cuts the Palaeolithic and the Neolithic ages
- salangi	- to visit; to enter another house	- to fire; - to light up	- discovery of fire
- manese	- to cook rice; to keep animal as pets; to care	- the farm, or properties acquire by force of his labor and industry	-Neolithic culture: agriculture of farming, fishing, pottery, culinary art, animal domestication, use of pyrotechnology…
- bale (balai)/ balen (balaian)	- house/downtown area	- house; dwelling; habitation/ community; nation	- house and settlement building

Moreover this paper attempts to synthesize these lexical reconstructions together with the inferences coming from present archaeological results of Palaeolithic finds in Nueva Ecija and the Rizal-Bulacan Boundary as well as the possible multiple episodes of settling activities (with evidence of pre-2300 BP red-slip pottery users) from Pampanga all located within the vicinity of the Central Plain of Luzon and the comparative ethnological data available while trying to

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propose an interpretative framework of understanding the early life ways in homeland building of early Kapampangans and the Austronesian in general.

Abbrevations used for the names of subgroup and proto-languages

Pan	Proto – Astronesian
PEOc	Proto – Eastern Oceanic
PMP	Proto – Malayo Polynesian
POc	Proto – Oceanic
PPn	Proto – Polynesian

1. AIMS AND BACKGROUND OF STUDY

This paper was outlined after an earlier work of R.Green and A.Pawley (1999). This paper seeks to reconstruct early architectural considerations in the patterns of settlement establishment of early Austronesian (or Proto-Austronesian, PAn?) speakers against the late Pre-Hispanic settlers and the present Kapampangan speakers of Central Luzon. It aims to present compared linguistically based, ethnologically based and archaeologically based inferences about Austronesian culture history with special focus on the early settling phase of the Kapampangan speakers, and partly with the Pangalatuk and Tagalog speakers of Central Luzon, Philippines. The study offers conjecture on the consideration of settlement patterns and the architectural forms at the turn of the Neolithic Age that touches the closing period of Palaeolithic industry of *papulapulai* and *pasalasalangi* (visiting hunter-gatherers) towards the development of *pamanese* (agriculture and its cognates) and *pamanuknangan* (settling and basic society building).

2. GEOGRAPHICAL ENVIRONMENT OF STUDY: PAMPANGA AND CENTRAL LUZON

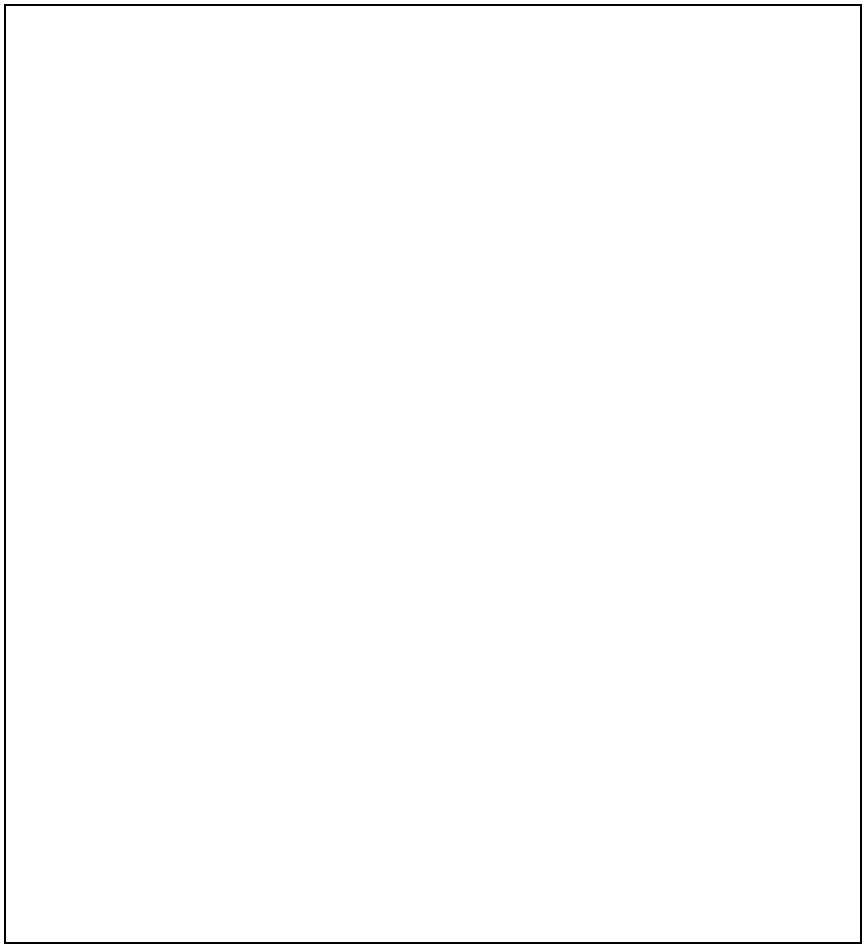
The word Kapampangan evidently derived from the root word *pampang* literally meant as 'riverbank' to the Kapampangans, Bikolanos, Hiligaynons, Cebuanos (Sugbuhanon, Sibuhanon), Samar-Leyte Bisayans and the Tagalogs. Likewise, it is meant as a 'region of riverbanks' in the Kapampangan language. Historically, the entire valley of Central Luzon constitutes most of the areas covered by the first colonial province created by the Spanish government known as *La Pampanga*. It is diversified by alluvial lowland opening on to the sea both to the north via the Agno River Basin and south via Pampanga River Basin (including its allied Guagua-Pasak River Basin). It occupies a sedimentary basin of about 125 miles in length and ranges from thirty to forty miles in width (see more Mc Lennan 1980).

To the northeast, a transverse, the Caraballo Mountains, separates the Central Luzon plain from the Cagayan Valley, while linking the Cordillera Central with the Sierra Madre. The northwest margin opens upon the Lingayen Gulf, while in the south touches the upper waters of

Pampanga Bay (part of Manila Bay). The eastern part is bordered by the Sierra Mountains and on the west by the Zambales mountain range.

Central Luzon at large is currently peopled by several ethnolinguistic groups of people namely: Kapampangan, Ilokano, Tagalog, Pangasinan, Sambal Tina, Ambala, Sambal Botolan, Mag-Antsi, Mag-Indi and Abenlen (Gaillard 2001) (see map 1). The first four are well identified for the longest time as lowland groups currently peopling the plain.

Figure 1. Ethnolinguistic map of Central Luzon (Gaillard J-C 2001)



3. PALAEOLITHIC TO NEOLITHIC: EARLY PEOPLING AND HUMAN ACTIVITY

3.1.HUNTING-GATHERING BEGINNINGS

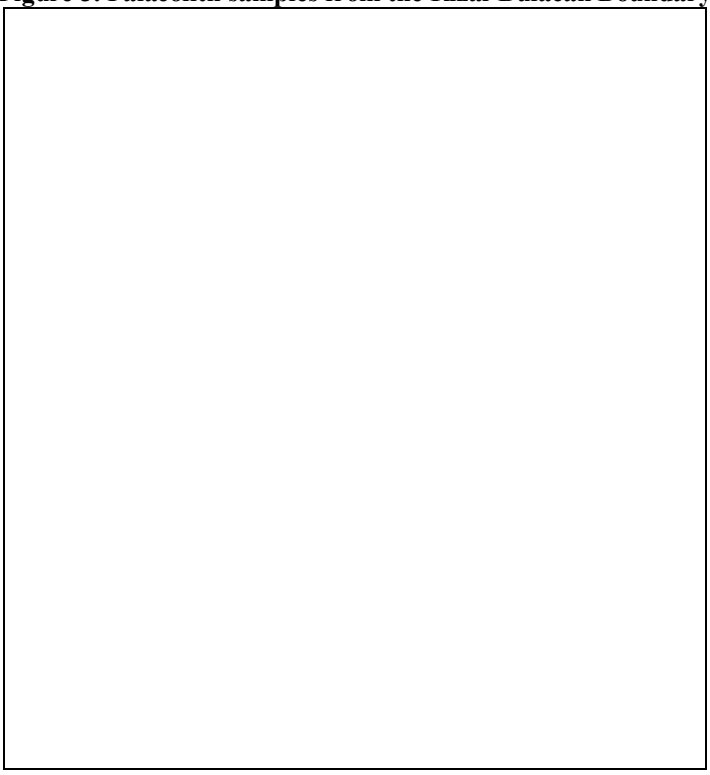
Early traces of human activity dates in the Central Plain of Luzon Island may possibly dated back from as early as the relative period of the Middle Pleistocene of 700,000 BP to 500,000 BP, since this early trace of human culture coincide to the early Palaeolithic Period. It represents the nomadic hunting-gathering form of living. In fact evidence of Achulean stone tool-using hunter-gatherers inhabited and created a campsite near the Peñaranda River at Arubo, Nueva Ecija (figure 2), and it was assumed that the extinct megafauna with the early elephas, stegodons, giant turtle and rhinoceros would have accompanied the Paleolithic's hunter-gatherers (Pawlik 2002). The examination of the artifacts identified one specimen as a typical proto-handaxe while another one appeared as a large flake tool with a retouched tip.

Figure 2. Palaeolith samples from Nueva Ecija, Central Luzon (Pawlik 2003)

"Quasi-Levallois" flake (Illustration: C. Tulang)	Proto-Handaxe (Illustration: J. Moser)

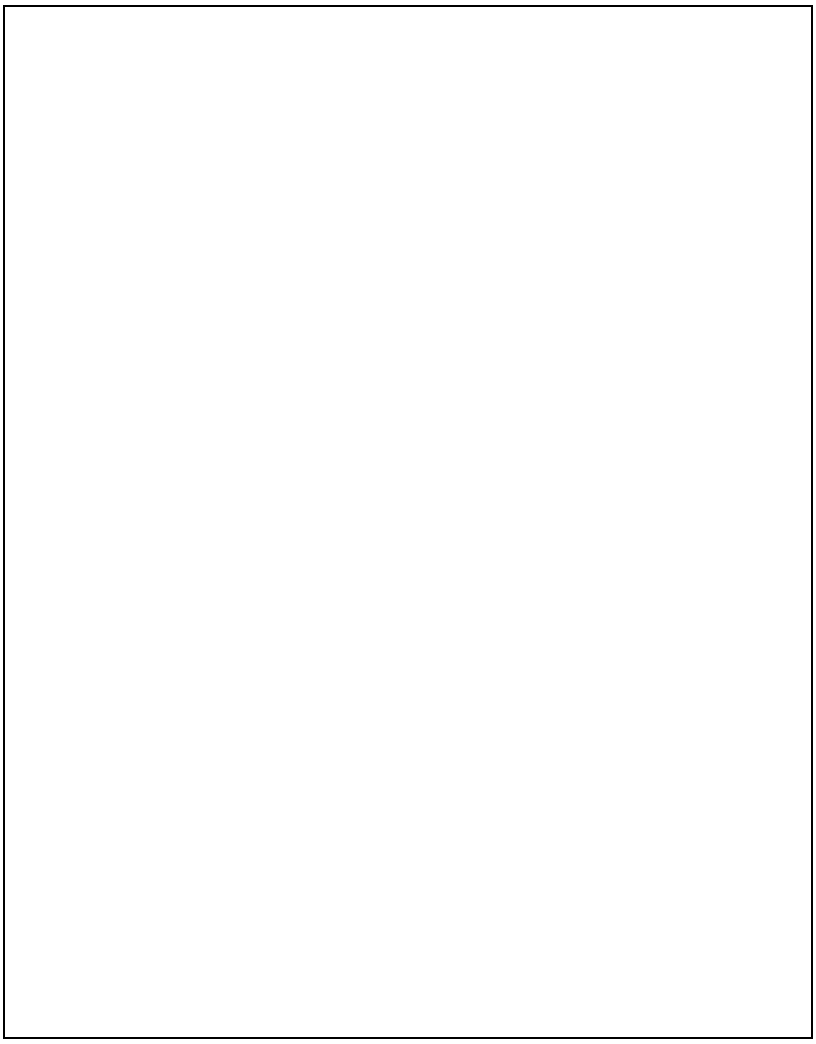
The period of the Late Pleistocene, of about 700,000 BP to 10,000 BP, another evidence of Palaeolithic culture also existed in the Bulacan-Rizal Boundary. This early population used flake tools and core tools made of flint, quartz and chalcedony (Beyer 1948) (see fig. 3 and 4).

Figure 3. Palaeolith samples from the Rizal-Bulacan Boundary



Moreover, allege palaeolith-users also populate some of the areas of the Zambales Mountain Range in Bamban of the province of Tarlac (see J. Dizon et.al.)

Figure 4. Map of Palaeolithic sites in Luzon Island



3.2.NEOLITHIC SETTLERS

As generally been identified, the Neolithic marks the revolution of human achievement. The simultaneous and interrelated development of various industries in Southeast Asia usually include boat making culture, farming, livestock industry, culinary art, fishing technology, weaving technology, pottery tradition. The initial development of agriculture generally identified with the farming of *palé* (rice, *Oryza* sp.). Although its natural development may tend to lean on debates about the transitions, practices and or frictional interactions of traditions of dry-rice farmers and wet-rice tillers (see Paz 2004). Nevertheless, this phenomenon is always seen indicative to the settling phase of the soon to retire hunter-gatherers.

A basalt stone adze labeled as *Daras Candaba* (see figure 5) possibly used for boat making and clearing of forested lands for water transportation and farming might have took place respectively within the vicinity of Candaba, Pampanga. This period was relatively dated at about 5,000 bp to 4,000 bp of the traditionally used Philippine Late Neolithic Period (Paterno 1995; Mallari 2004).

Figure 5. Samples of Neoliths found in Pampanga

(Photo courtesy of Filipino Heritage 1979)	A stone adze, *daras candaba* Material: basalt Dimensions: 36.4 cm x 9.8 cm (max.) x 4.53 cm Date: Late Neolithic Provenance: Candaba, Pampanga
(Courtesy of Johnny Gamboa 2005)	A stone adze, *daras jalung* Material: andesitic Dimensions: 94.5 cm x 44.2 cm (max.) x 31.4 cm Date: a Neolithic survival tool (?) Provenance: Jalung, Porac, Pampanga

At about 3750 bp to 2200 bp of the Late Neolithic, ground stone tool-using populace peopled the Rizal-Bulacan Boundary (Beyer 1948). Various implements of ground stone tools of adzes, stone mortar and pestles, stone pads which are considered to be part of the Late Neolithic survived artifacts allegedly litters the area along the eastern foothills of the Zambales Mountain Range (from Capas and Bamban of Tarlac; Mabalacat, Porac, and Floridablanca of Pampanga etc.). These various implements recovered indicate the possible development of various industries and settling phase of Neolithic people(s).

4. SETTLEMENT OF BABO BALUKBUK: ARCHAEOLOGICAL EVIDENCE WITHIN THE PRESENT GEOGRAPHICAL LOCATION POPULATED BY KAPAMPANGAN SPEAKERS

Among the different sites archaeologically explored in the Central Plain of Luzon, it is the town of Porac of the Pampanga Province which is the most relatively extensive. The earliest archaeological activities was done by H. Otley Beyer (1947:2-26), who wrote that in Hacienda Ramona, a plantation in Porac, there existed a remarkable and extensive Porcelain Age site of the early type. This was the "Goodall Site", first explored in 1935-36 by G.M. Goodall. In 1939, E.D. Hester, George Woods, and Herman Costenoble assisted by Manager Suarez and certain other officials of Warner, Barnes and Co., who owned the Hacienda, carried out a more

extensive exploration. A large quantity of burial jars and smaller ceramic pieces of various shapes and sizes were obtained. Parts of the specimens were sent to the United States, but great majority was destroyed during the war.

Hacienda Ramona Site was large and at least three periods of inhabitation were identified:
(a) An extensive burial area dating from Late Tang to Middle Sung;
(b) A village site and less extensive burial area, dating chiefly to the Late Sung and Yuan (with early dragon jars and similar objects);
(c) A small village site, and possible a few graves, dating from the beginning of the Ming period. This was located a short distance up the slope from the major site.

In December 9-19, 1959 and February 9-26, 1960, team from the National Museum led by Dr. Robert B. Fox carried out excavations in Porac, Pampanga. This was supported by a Grant-in-Aid from Don Andres Soriano. One excavation was conducted in Balukbuk, just to the southwest of the Hacienda, on the property of Mr. Marciano Dizon. To the south of the road at Balukbuk was a massive habitation area, the midden area reaching two meters in depth. The midden consisted of hundreds of broken pottery sherds of locally made earthenware and imported porcelain and stoneware, broken metal tools, animal bones and teeth, and others. The habitation site comprises at least 3 cultural layers (see more Dela Torre, A. 2001) with a relative time range of 10th century AD to Ming Dynasty (15th century AD). According to Fox (1960), the midden recoveries indicated that a large pre-Spanish community inhabited the high points at Balukbuk, which overlook the valley. At the north of the road, one jar burial was discovered which Yuan was probably in date. The large stoneware jar, mouth covered by an inverted monochrome plate, contained the skeletal remains of a child associated with two (2) iron bracelets.

In the meantime, another excavation was conducted in Gubat, about six kilometers from Dolores, towards the mountains. Gubat Site was located near the mountains which were within Hacienda Dolores. The site was heavily looted. About 300 graves were pot hunted. There were no data about the burial areas or the types of burials found there. About 53 test squares were excavated which yielded a midden or habitation area. The habitation area in this site was only about 30-40 centimeters deep (Fox 1960). From February 27 to March 27, 1960, Dr. Robert B. Fox conducted an extensive excavation at Gubat. It was assumed the concluded that Gubat Site is the oldest site as indicated by the porcelain and stoneware sherds recovered and was abandoned in the late 14th century (Fox 1960).

The excavation of Dizon-I site located at Sitio Babo Balukbuk, Porac came at the after the previous excavations conducted in 1999 and 2001 (see Dela Torre 1999, 2001, Dizon 2002). This site is generally located within the old boundary of Hacienda Ramona (now Hacienda Dolores) (Beyer 1947; Fox 1960a,b). In these previous excavations, it was established that the area surely had signs of human habitation as seen from the recoveries of abundant gravegoods (Beyer 1947; Fox 1960b). But the type of pattern of settlement was not clearly established. Not until the last excavation done in 2002, that the site made to provide several hints of these significant questions of settlement. Dizon-I site was established beyond doubt as a 13th – 14th century settlement followed by a 16th century habitation (Paz 2002 and 2004) (see table 1).

Table 1. Sequence of habitation on the general area of Babo Balukbuk (after Paz 2004)

I	There was human habitation in the area before 2,300 bp, post c. 5,000 bp
II	The *Maraunot eruptive period* of Mt. Pinatubo starts around 2,300 bp and covers the area of more than 3 meters with clastic materials,
II	On top of this deposit, around 13th century CE, a settlement grew. The people built sturdy structures, used earthenware and stoneware pottery, had metal implements,and exchanged materials for tradeware ceramics. They produced and consumed rice. The population wore glass beaded ornaments and metal bangles. They also buried their deed near their homes, with a belief system that made them include several tradeware ceramics and local ggods in the burial.
IV	The settlement decreased by the 16th century and plowed fields most likely for the planting of rice replaced the area.
V	Mt. Pinatubo erupted again around 500 bp (Buag eruptive period) and covered the fields.
VI	The land was again utilized for agriculture, by at least the turn of the 20th century, for cash drop *atbu* (sugarcane, *Saccharum officinarum* L., Fam. *POACEAE*). .
VII	The latest eruption of Mt. Pinatubo in 1991 left a thin additional layer of sandy material.

The actual excavated site of Dizon-I was 28 m x 24 m open area very near the south east end of Babo Balukbuk plateau (see figure 6).

Figure 6. Topographical location map of Dizon-I archaeological site

The general location map of the main project area focusing on the site of the excavation at Porac (modified after Delos Santos 2002)	The excavations at Babo Balukbuk in relation to each other; the smaller excavation pits belong to the previous excavations in the area, with the exception of the deep test trench' (Paz 2004).

Based from the recent analysis of findings, the habitation seen at Dizon-I site is a settlement (Paz 2004) (figure 7).

a. The numerous posthole features may be reconstructed roughly into plants of house-like structures. Several large postholes may even be granaries (two

granaries). The recovery of charred remains of rice grains from hearths through archaeological methods may support the conclusion that we are looking at granaries next to houses (see further discussion below). These features are associated with context 5 or the 13th and 14th century CE.

b. The amount of middens and hearths recorded from the area where the first two seasons of excavations were made, and the location of this year's excavation.
c. The general cultural debris scattered throughout the area.
d. The density of the features-four associated structures in a 24 m x 22m land area. The recording of a posthole in the previous excavation further this.

Figure 7. Excavated area of Dizon site showing the horizontal representation of context 5 (13th -14th century CE) with its structural features (modified after Paz 2004)

A date of post c.5000 BP to Pre-2300 BP, red-slipped pottery-using population inhabits the former lower grounds of about 3.5 meters below the present surface area of Babo Balukbuk, (see Paz 2004). While in the Palaeo-shoreline at the Lubao area, yielded several potential pottery-producing settlement(s) which may have been prospered and later on engaged with overseas trading with the early people of Mainland China. This period possibly coincided to another eruptive history of old Mt. Pinatubo which occurred from ~3,900-2,300 yr B.P (Newhall et.al. 1995). It was dubbed as Maraunot Eruptive Period based on the material evidence studied at Maraunot River on the western plank of Mt. Pinatubo. This eruptive period might displace this pottery-using people of Porac and affected the life ways of the allege potters of old Lubao area.

5. ETHNOLOGICAL BUILDING HISTORY

The *bale kubu* is a Kapampangan term for a typical native house made of various bamboos, and *paud*/*sasa* (*Nipa fruticans* Wurmb.) woven into shingles, and or the *ilib* (cogon grass, *Imperata cylindrica* [L.] P.Beauv.), and the like. Its construction represents various levels of expression of social character like adaptation for survival; and ecological factors of change.

The social adaptation of various ethno linguistic groups living in Central Luzon also varies in terms of diverse aspects of priorities. Moreover, the reconsideration of focus of studying the evolutionary models of house engineering and architecture and the materials used provides a supplemental review and vital analyses of how adept (or basic) are their knowledge and skills in building a structure (houses, granaries etc.) and development of settlement sites like p*ampang* communities; and how they reacted in balancing the different factors of adaptation against the fluctuating conditions of ecology. Such fluctuations summarily include various geological calamity and phenomena, topographical and climatic changes, vegetation cover etc…

The *balé kúbu* (*bahay kubo* in Tagalog) was earlier seen as single room, multi-purpose house that pre-colonial peoples of the Central Plain of Luzon used for shelter, work, sleeping, eating,

and cooking – all in one boxy structure. It is mistakenly thought by ethnographers and historians for the longest time to came from the Spanish word *cubo* as cube or cube like and the Kapampangan "*bale*" or the Tagalog *bahay* for house or shelter. Contrary to this understanding, the word *kubo* already appears among early versions of Kapampangan dictionaries (such as Fr. Diego Bergaño's *Vocabulario dela Lengua Pampanga en Romance*, 1732). *Kúbu* is synonymous to *balungbung* (Kapampangan word for hut, cabin or lodge); *cuala*, *saung* and *dangpa* (Kapampangan word for sheperd's hut or hovel, *dampa* of the Tagalogs).

The *balé kúbu*'s usual construction has survived the centuries and has remained as efficient shelter for people especially those found in the lowland far flung areas. The structure is raised several feet from the ground. Among the Japanese observers, its picturesque roof, set in the midst of waving palms was the symbol of the Philippine house (Ebro-Dakudao 1993). This type of house construction links the beginning of house on stilts common among the lowland villages around the Candaba swamps, old Magabol and Canarem regions and most recently by houses found in the middle of lahar-striken areas. Comparatively the Igorot tribes of Luzon have their houses perched on trees resembling a bird's nest, which parallels the architectural designs of house on stilts. Moreover, the *balé kúbu*'s floating volume raised on stilts, is the archetypal house of the lowlanders (Kapampangans, Pangasinenses, Ilokanos, Tagalogs and the rest of 'Christian' ethnolinguistic groups of the Philippines) that retained the features of the traditional house (Hila 1992). It was described as the best possible house in the tropics.

The bamboo which was used in various and complex ways, in round form as post, roof frames and ladders; splits into slats for flooring called *lande* in Kapampangan and *sauali* matting for walls. The gabled roof made of solid and frame is built first, ready to be thatched with *ilib* or *paud*. Kapampangans do all the proceeding while the frame is laid on the ground to be lifted and attached after the house posts are planted on the ground, while the Tagalogs does it all already attached on at least four high posts erected from the ground. Among the Ilokanos, the house starts first with the posts and then the roof, which is probably the same with that of the Pangasinan practice. All ethnolinguistic groups generally use almost the same type of materials.

The roofs are mostly steep and its height is equal or more than a quarter than the relative height of walls (and sometimes even the post from the ground). This type of design provides clues how adept are their skills in knowing the cycle of rain and wind patterns. On the contrary, American type roofs ranges around 15 to 35 degrees inclination. Thus, during the heavy ash fall activities in the early 1990s most houses of the contemporary period collapsed while the lowly *balé kúbu* type remains standing and proud.

The floorings of *balé kúbu* are raised several feet from the ground. This gap in between is called as *sulip* in Kapampangan which literally mean as earth. Old Kapampangan folk belief maintains that civilized Filipinos do not live close to the ground only barbaric people do. Ironically, Spanish and American architectural influences utilized the "ground" level as the major activity area of occupants. The elevated flooring of *balé kúbu* before reflects technological and geological consideration in construction, since this type of house structure are situated in the lowland – wetland means prone to yearly cycle of hydrological activities. It is no wonder why most contemporary houses in the Central Plain of Luzon are confronted by flooding problems, while houses found along the peripherals of Candaba Swamps still reflects their

awareness to this yearly following scheme that they still construct their houses in stilts and even reinforced them with concrete just to make sure that these structures secure stability and strength. Moreover, even the revived houses in the lahar Region of Pampanga and Tarlac are constructed in stilts just like what the original *balé kúbu* was intended to. Old Kapampangan belief includes that Asia's (major posts) and other vertically seen house frames have to be placed parallel to their natural growth formation. Many still practice the custom of soaking the logs and bamboos in salt water or river waters just to prevent termite infestation (Zarate 2000). Orientations of houses and other folk beliefs parallel much of the scientific supports old indigenous house building.

The houses built by the Ilokanos generally follow the same architectural form used by the Tagalogs but stronger and spacious (Dacanay 1988). From the boxy structure came the division of *sauali* walls, among these divisions include the *silid* (generally used as a stock room) and the *kilub* (from *king lub* [literally: inside], both the living room, and bed room) and the *kilual* (from *king lual* [literally: outside], the usual kitchen plus the dining area). The *sulip*, the area under a house is used for storing domestic animals like chickens or a garage for boats and fishing nets. Meanwhile, the *bale bato* which was the 'Spanish version' of *balé kúbu* have one uniform style and layout through out Luzon but differs dramatically to the Kapampangan version. For instance, the Kapampangans have their kitchen section occupying almost 2/3 of the house floor area equivalent to the living room of the Tagalogs and Ilokanos, (see more: Zialcita and Tinio).

Significant Kapampangan entries listed from an early 18th century dictionary (Bergano 1732) provide support in understanding the earlier style and elements of *balé kúbu*. These include *ambi*, the wing or extension of the house; balangcas, to layout pieces of wood, lumber on the ground for the purpose of putting up the framework for a house; bangun, to raise up, to put up, v. g. a house, or that which is roofed high, *mabangun ya*, raised too high, very elevated / lofty; m*ibung*, and its constructions, to make or put coverings on the roof, *bibungan*, the house on which the roofings are placed, and *bubungan*, the whole roof; *sulambi*, an awning, or an addition to a house; *sulip*, downstairs, below, everything that is not in the house above, opposed to *banua; suki,* oblique props, supports, like those placed under a house, propped against the posts, so that the house may not be swayed by the wind. Lastly, *lunlung* or *lonlon*, *tambobo* or *tambubung*, and *taluntung* variably refer to a granary.

6. COMPARATIVE LINGUISTICS: ELEMENTS OF SIMILAR CONCEPTS AND PRACTICE

The presentation in this case may not necessarily classify certain grouping but rather the basic comparison of some collected sample sets of cognates. These samples yield lexical reconstructions that tell something about the elements and patterns of architecture and settlements of early Austronesians respectively. Following the presentation used by R.Green and A.Pawley (1999), samples were classified as 'kinds of buildings'; house site and main structural components of house'; other structures associated with buildings or settlements'; and ' spatial organization of settlements.

PMP ***balay 'open-sided' building'** (after R.Green and A.Pawley 1999)

Language name	Term	English gloss
Isneg	balay	House, dwelling, habitation
Cebuano	balay	House
Lahanan	baleh	Open platform adjoined to an apartment in a long house, used for cooking and airing
Malay	balai	Public building, in contrast to a private house
Balinese	bale	A platform raised on pillars with a thatched roof and wall with one or two sides…
Kapampangan	bale	House, dwelling, habitation

PMP ***kamaliR** 'granary shed' (after Tyron 1994)

Language name	Term	English gloss
Ilokano	Kamalig	Granary, storage shed for grains or hay
Isneg	Kamalig	wooden floor under the house(of a wealthy ifugao family) where its inmates sit for the expensive kamalig feast
Casiguran dumat	Kamalig	Granary
Bikol	Kamalig	Temporary shelter of roof and posts but no walls, built in the fields or on the coast to protect harvested crops, boats, etc.
Aklanon	Kamalig	Grain house or shed
Cebuano	Kamalig	Storehouse for farm products, stable for work animals
Kapampangan	kamalig	Granary, storehouse for farm products

POc ***gabwari- 'the area underneath a raised house'**
(after R.Green and A.Pawley 1999)

Language name	Term	English gloss
Tawala	Gaboli-na	Area under a house
Dobuan	Gabura	Area under a house
Duau	Gabule	Area under a house
Sinagoro	gabule	Area under a house
Mapos buang	Gbine	Area under a house
Titan	Kapwalig	Area under a house
Kapampangan	gabun	Area under a house, generally refers to the ground, earth, soil

PMP ***bubuŋ** (after Dempwolff 1938; Zorc 1994);
***buSuŋbusuŋ** (after Blust 1972) **'ridge pole, ridge of the roof'**
(after R.Green and A.Pawley 1999)

Language name	Term	English gloss
Tagalog	Bubong	Ridge of the roof
Toba batak	Bubung	Ridge of the roof
Malay	Bubng	Ridge of the roof
Kapampangan	bubung	Ridge of the roof

PMP ***qatep 'thatch of sago palm leaves'** (after Dutton 1994); **roof, thatch'** (Blust n.d.)

Language name	Term	English gloss

Tagalong	Atip	Thatch
Yami	Atep	Roof
Malay	Atap	Thatch
Ngaju dayak	Hatap	Thatch
Kapampangan	atap	thatch

PMP *sasa(h,Q) 'cut or collect palm leaves for roofing
(after R.Green and A.Pawley 1999)

Language name	Term	English gloss
Itbayaten	Ma-nasah, sasah-en	To cut reeds for use
Tagalong	Sasa	Nipa palm
Aklanson	Sasa	Nipa leaves (for roofing)
	Sasa(h)	To derib nipa leaves
Iban	Tasa?	Collect nipa leaves for roofing
Kapampangan	sasa	Nipa palm

PMP *Kapit 'fasten with battens or slats (after Blust 1980a : 85)

Language name	Term	English gloss
Malay (trenganau)	Kapit	Fasten with slats, as woven grass matting to a frame
Buru	Kapi-h	Pinch, squeeze, clamp, bind in a clamping manner(as thatch)
Kapampangan	kapit	Fasten with slats, as woven grass matting to a frame, clamp, bind in a clamping manner(as thatch)

Par *Sadiri 'house post, pillar (after Blust n. d.)

Language name	Term	English gloss
Amis	Salili	Post
Ilokano	Adigi	Principal post, pillar
Tagalong	Haligi	Post, pillar
Kapampangan	aligi	Post

PMP *turus 'house post' (after R.Green and A.Pawley 1999)

Language name	Term	English gloss
Malay	Turus	Main post (of house, dam)
Javanese	Turus	Stake
Kapampangan	tulus	Stake, small post

PMP * pa(n)tar; bed-frame of wooden or bamboo
(after R.Green and A.Pawley 1999)

Language name	Term	English gloss
Tagalog	Pantal'an	Wooden or bamboo pier
Toba batak	Pantar	Shelf in wood-shed made of wooden or bamboo laths, also the support for a mattress made of sugar-palm mid-ribs
Kapampangan	Batal'an	Wooden or bamboo pier attached to the dwelling house

PMP *ps(I,R)a 'shelf, rack' (after R.Green and A.Pawley 1999)

Language name	Term	English gloss
Tagalog	Palapala	Gangplank
Toba batak	Parapara	Shelf, rack
Malay	Parapara	Shelf, rack
Kapampangan	Palapala	Gangplank, rack

PMP *titey(also *teytey) 'foot-bridge' (after Blust 1989)

Language name	Term	English gloss
Maranao	Titai	Footbridge
Tiruray	Titay	Bridge, cross a bridge
Malay	Titi	Narrow footway for a plank bridge
Old Javanese	Titi	Footbridge
Palauan	Didi	Bridge
Proto ambon	Titay	bridge
Kapampangan	Tete	Bridge, footbridge

PMP *pak(o,u) 'nail' (Blust 1972);
***paqet 'chisel'** (Dahl 1981)

Language name	Term	English gloss
Malay	Paku	Peg nail
Ngaju dayak	Paku	nail
Kapampangan	paku	Peg nail

PMP *dapuR 'hearth, fireplace' (Dempwolf 1938)

Language name	Term	English gloss
Tagalong	Dapog	Fireplace
Toba batak	Dapur	Fireplace
Malay	Dapur	fireplace
Kapampangan	Dapug	fireplace

POc *rapu(R) 'hearth, fireplace; ashes'(after R.Green and A.Pawley 1999)

Language name	Term	English gloss
Motu	Rahu-rahu	Fireplace (ashes)
Marringe	Nak/rofu	Ashes
Nggela	Ravu	Ashes, side of a house where the fire is made…
Arosi	Dohu	White ashes, a fireplace
Kapampangan	Abu	Ashes

POc *qumun 'oven made with hot stones; cook in an earth
(after R.Green and A.Pawley 1999)

Language name	Term	English gloss
Molima	'umula	Stone oven
Nakanai	La-humu	Hearth, to cook on the hearth by covering food with heated stones
Kairiru	Umu/i	Cook in earth oven (sing.)
	Um	Cook in earth oven (pl.)
Nalik	Umun	Earth oven
'Are'are	Uumu	Stone oven

Kapampangan	Tumun	Cook in earth oven

POc or PEOc *ba(e,i) 'fence, boundary marker' (after R.Green and A.Pawley 1999)

Language name	Term	English gloss
Arosi	Baibai	Large logs put around a finished garden
Mae	Pae	Fence, wall
E. Fijian	Bai	Fence round garden or town
Tuvala	Pae	Stones round an earth oven
Kapampangan	Bebe	Coastal area, bank, delta

PMP *banua 'inhabited territory, where a community's garden, houses and other possessions area' (after Blust 1987)

Language name	Term	English gloss
Malay	Benua	Large expense of land
Old Javanese	Wanwa	Inhabited place or area village settlement
Iban	Menoa, menua	Area land and used by a houses, farms, gardens, fruit groves, cemetery…..
Nias	Banua	Sky, heavens, thunder, village, homeland, fellow-villager..
Cebuano	Banwa	Fatherland, town, village
Itbayaten	Vanua	Landing place, port
Kapampangan	Banua	Sky, heavens, highland, anything inside a dwelling house

PPn *malaqe 'open, cleared space used as meeting or ceremonial place' (after Biggs 1993)

Language name	Term	English gloss
Tongan	Mala'e	Village green, park, playground, open market place, etc.
Samoan	Malae	Open space in the middle of avillage, meeting – ground
Maori	Marae	Enclosed space before house, courtyard
Kapampangan	Mula	Cleared land or space, courtyard

7. SYNTHESIS AND PRELIMINARY DISCUSSION

Humanity's three major evolutionary phases are: hunter-gatherer, agricultural and urbanism. The first evolutionary stage is characterized by hunting and gathering types of living. This stage matches the Kapampangans' popular phrase: *papulapulai ampong pasalasalangi* way of life, which literally understood as 'hunting by running' and 'visitor from place to place' respectively. These Kapampangan equivalents have been a common old expression addressed to wanderers and strangers to the province of Pampanga. These ideas reflect the Palaeolithic cultural remains randomly found in the vicinity of Central Luzon. Meanwhile, the Neolithic tradition can be much clearly compared to the ethnological data of the much recent Kapampangan history and language. These cultural period marks the revolution of human achievement which can be collectively termed as Kapampangan *pamanese*, which is 'to care', 'to domesticate', 'to raise' etc. (see table 3).

Table 3. Samples of Kapampangan cognates related to the usually accepted Neolithic practice

Sample phrase (from ethnological findings)	English transliteration	English gloss
pamanése nasi	'rice cooking'	'culinary art'
pamanése tanaman	'raising of plants, like rice'	'farming'
pamanése lasip	'taming of beast/ animals'	'livestock raising'
paman'ásan	'fishing'	'fishing both hunting and aquaculture'
pamangáuang bangka	'boat making'	'boat culture'
pamaglála/ pamaníkat	'weaving'	'weaving tradition'
pamangauang kakurangan	'pottery making'	'both pottery making and utilization'
salud'úran	'catch-rain'	'dry-rice variety'
burákan	'muddy'	'wet-rice variety'
pále	'catch-rain'	'dry-rice variety'

Inference of study can be seen on the following example table of lexical reconstruction, table 4:

Table 4. Kapampangan terms suggestive to the transition pattern of development from the Palaeolithic to Neolithic practices

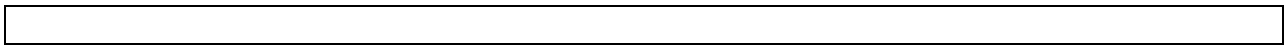
Kapampangan term/ Root word	Present definition	English translation (English gloss)	Archaeological inference
- *tuknangan*	- house; settlement	- stopping place	- cultural marker that virtually separates the Palaeolithic and the Neolithic cultural traditions
tuknang		- to stop	- to settle, by building houses (and granaries), planting like rice, cooking food… ; to retire from running (Palaeolithic way)
- *salangi*	- to visit; to enter another house	- to fire; - to light up (a lamp or torch)	- discovery of fire
sala		- light	- initially, to light up places of habitation like caves and/ or later on houses (possible origin: accidental sparks of light from flint-knapping activities in the production of lithic tools)
- *manése*	- to cook rice; to keep/raise animal…	- the farm, or properties acquire by force of his labor and industry	- a usual accepted practice of Neolithic culture
sese		- care, keep, watch…	- Agriculture of rice planting, fishing, animal domestication, pottery, culinary art, use of pyrotechnology…
- *balé/ balén*	- house/ downtown area	- house; dwelling/ community; nation	- house and settlement building
balé		- habitation	- development of construction and architecture of physical structures like houses, granaries…

Inferences coming from present archaeological findings like the Palaeolithic finds in Nueva Ecija and the Rizal-Bulacan Boundary as well as the possible multiple episodes of settling activities including the evidence of pre-2300 BP red-slip pottery users from Pampanga suggest the continuity of the Upper Paleolithic practice towards the transition to settling of early people of Central Luzon. Moreover, comparative ethnological data available shows the importance of rice agriculture as one of the deciding factor for the new agriculturist to settle down to maintain their farming activities thus enabling them to construct their dwelling with basic features like the hearth, *dapug;* and to construct granaries*,* like *lunglung, kamalig or tambubung* for their harvest. Their farming activities as well as livestock raising tends them to clear more lands, as *mula*. Ethnolinguistic survey and archaeological data suggest that rice was formerly farmed in two ways namely: (a) *paleng salud'uran* or dry-rice agriculture, which is considered as the older specie first domesticated by man; and (b) *paleng burakan* known as wet-rice agriculture. At the Balukbuk area, the early settlers constructed not only their house dwellings but also constructed much bigger structures possibly of the granary-types. The abundance of ceramic materials, of various origin and types not only suggest dynamic trade and commerce but as well as active domestic activities as seen from the material remains found concentrated among their hearths, rubbish pits, burial grounds etc. The density of 13th century post holes which might have been the *tulus, aligi* etc were designed most probably for stability against strong winds and typhoons (Paz 2003).

Moreover, the *balé kúbu* which has become a symbol of folk architecture in lowland Philippines usually used bamboos, sturdy timbers and available palm leaves, like *sasa* (*Nipa fruticans* Wurmb.) and *ilib* cogon grass, *Imperata cylindrica* [L.] P.Beauv.). these might be of the same materials used during the construction of earlier house structures in the area of the Balukbuk plateau. These are light and tough materials which easily yield only to sharp blades (Dacanay 1988) thus the development of this type of architecture might be associated to the early metallurgical technology and the sophistication of Neolithic stone tools of people in the area. The generally accepted metal age of the Philippines coincides with the traditionally labeled Golden Age of pottery around 500BC to 500AD (see Dizon 2001, Peralta n.d.).

Among the linguistic, archaeological analysis and ethnographic possibilities canvasses above, it is possible to include a feasible design of house architecture and settlement pattern in locating significant presence and orientations of features hearths (like PMP *dapuR; POc *rapu(R); POc *qumun), posts (like PMP *turus; Par *Sadiri) and try to define the extent of houses (PMP *balay; POc or PEOc *ba(e,i)), granaries (PMP *kamaliR) and settlements area (like PPn *malaqe; POc *gabwari) in general (figure 8) . In fact the location of the Dizon-I site is located on a plateau which parallels the concept of PMP *banua 'inhabited territory, where a community's garden, houses and other possessions area' (see Blust 1987), the 'sky' and 'highland' of the Kapampangans.

Figure 7. Excavated area of Dizon-I site with its structural features partially interpreted with linguistic reconstructions



8. WORKING CONCLUSION

I have compared evidences from three disciplines bearing on the architecture and settlement of the Austonesian – speakers like the early Kapamapngans who colonized the Southeast Asian archipelago in the second millennium BC (see more R.Green and A.Pawley 1999). The matches provided significant hints on the whole, supportive and encouraging. As is clear in the early Babo Balukbuk settlement example, as it was seen by R.Green and A. Pawley (1999), it allows me to extend the detailed functional interpretation of the structural features of Dizon-I site similar to one of the Lapita site well beyond those which ethnographic analogy alone would have permitted. When other domains are also added, the general results are indeed greatly enhanced.

On the one hand, the comparison highlights the gaps in the data provided by linguistics and archaeology – the two disciplines best equipped to provide evidence of culture historical events – and by comparative ethnology, which plays more of a supporting or critical role, providing useful analogies and distributional evidence. Thus the ethnicity of the archaeologically explored settlement(s) like the early settlers of Babo Balukbuk can be at least partially established towards creating a line of chronological development of both material and language culture, from deng *papulapulai ampong pasalasalangi* 'visiting hunter-gathers of the Palaeolithic, *deng mamanuknangan ampong mamanese*, 'agriculturist settlers' of the Neolithic, to the proto-Kapampangans of the 13th century Babo Balukbuk settlement going up to the current populations of Kapampangans and neighboring Aitas, Pangalatuk, Ilokanos, and Tagalogs of the Central Plain of Luzon.

9. REFERENCES CITED (To be provided upon the final modification of this paper.)