The Development of Cities in Lowland Maya Culture

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The study of the nature and development of Classic Lowland Maya settlement patterns has evolved with the constant influx of data being brought back from the field. This data has led to a better understanding of the underlying mechanisms of settlement formation, and a greater appreciation of just how complex and integrated this process was. This paper examines certain milestones in the history of this area of study, how each one contributed to its successors, and the directions continued research likely will take.

Research on the nature and meaning of human settlement patterns the world over has been somewhat less than consistent over the last few decades, since its emergence as an area of academic concern. Some of the most fundamental inconsistencies have arisen as the result of a lack of consensus on the precise definition of different settlement types, in particular, that of the city. In pursuing such a definition, what has often been overlooked is the dynamic quality of the city as being both the effect of social change and the cause of subsequent change (Marcus, 1983b: 195). The city can therefore be said to exist and develop within a symbiotic relationship with both its population and its neighbouring counterparts. Further inconsistencies are born out of the varied emphases of purposed research schemata. The majority of classification schemes are based on one or more of five recognized variables (Marcus, 1983b: 196):

1) size of either the population or the geographical area
2) physical location
3) socio-political function
4) hierarchical position
5) morphology

Each of these variables is dependent on the most basic of dichotomies, that between planned and unplanned cities (Dioxidis, 1968: 347). Planned and unplanned cities each exhibit uniquely characteristic patterns of settlement.

Settlement pattern analyses are often conducted in the form of a rank ordering of related archaeological sites. The formation of such site hierarchies is frequently based on the relative socio-political authority bestowed on the known sites in a specified geographical region. Here three of the five variables mentioned above, physical location, socio-political function, and hierarchical position, are incorporated into a single generalized analytical scheme. This paper is intended as an examination of such settlement pattern research schemes, both past and present, as they have been applied to the study of Lowland Maya political organization. It is also meant as an assessment of the advantages and disadvantages of such research schemes and of the overall direction in which these studies are headed. This review will involve the description of both methodologies and resultant interpretations, the latter of which will function as a gauge of the adequacy of such efforts.

PROPOSED MODELS OF THE CITY AND ITS HIERARCHICAL STATUS

During this century a number of models of city structure have been put forward to account for the observed distribution of archaeological features in the field.

Burgess: The Concentric Model

Figure 1: The concentric zone model.
I. city center;
II. zone in transition: a. inner belt, b. outer belt;
III. zone of workers' residences;
IV. zone of middle class residences; and
V. commuters' zone
(redrawn from Marcus, 1983: 10.1).
The concentric model (Figure 1) was formulated by E.W. Burgess in 1923 (Marcus, 1983b: 199), and it suggests that, more often than not, cities have a single central, likely administrative, zone from which expansion occurs outward, forming a series of concentric rings which are occupied by progressively higher or lower status individuals (Burgess, 1925: 51-53). In the time since Burgess published his ideas, additional fieldwork has shown that, within the context of Mesoamerican settlements, this model represents development within the ideal conditions of peace and mutual co-operation. These conditions, we have since learned, were seldom, if ever, the reality of Mayan civilization. As a consequence, archaeologists have expanded this model to account for the observed physical irregularities in the patterns of Mayan occupation. Thus revised, the model comes to be representative of a large number of Mesoamerican cities.

Hoyt: The Sector Model

The further elaboration of Burgess’ original model has yielded what is referred to as the sector model (Figure 2). Homer Hoyt (1939) is the theorist whose name is most often recognized in association with this model. He noted that once differential land use has been established in or around a city centre, the pattern would be perpetuated throughout the course of settlement expansion. The resultant settlement geometry would consist of varying sizes of pie-shaped wedges radiating out from the city-centre. Perhaps the most noteworthy Mesoamerican city to which this model can be applied is Teotihuacan. The city's axial (along x-y axes) growth, and rectangular grid system facilitated the construction of high status residences along the street of the Dead, the main North-South avenue of the city.

Harris and Ullman: The Multiple Nuclei Model

Ongoing field investigations after the 1930's, produced results which warranted other modifications to the city model. One such modification is the multiple-nuclei model (Figure 3) which features an organization of the city based on the function of several loci of activity. Harris and Ullman (1945) developed what may be seen by some as a more comprehensive rendering of settlement patterning. The incorporation of the Native perspective on city life as documented in post-conquest literature can, despite the inherent biases of the non-local authors, be an invaluable resource for the archaeologist pursuing an understanding of Native settlement patterns. These sixteenth century records indicate that the Native saw the city as occupying a position in a socio-political hierarchy where the city of the ruler represented the apex of this system (Harris and Ullman 1945: 208).

Such hierarchies are defined on the basis of either political power, economic role, religious significance or some combination of these attributes. Considering the
prominence of temples amongst the varied multitude of Mesoamerican architecture the central role of religion in Mesoamerican culture is clearly evident. Therefore, the frequency with which Mesoamerican cities are found to be situated at the top of a regional religious hierarchy is, as one would expect, quite high. Surprisingly, this reality has been seldom recognized in settlement research schemata (Harris and Ulman 1945: 239). This may, in part, be the result of the complexity of the task of ascertaining the functional dominance hierarchies of different cities; determining, in other words, which of the political, economic or religious roles takes precedence as the centre’s primary function.

Figure 4: An equilateral triangle illustrating the diversity and relative importance of various urban functions (redrawn from Marcus, 1983: Figure 10.21).

Figure 4 is a ternary, or triangular, graphic representation of the relative scale of socio-political functions within the different centre types. It illustrates the centrality of religion in Mesoamerica as well as the functional multiplicity of a significant number of centres. In the following section, methods for investigating the nature of the development of cities and the hierarchies they comprise are discussed.

ANALYTICAL METHODOLOGIES

In a more general approach to the study of human settlement, Constantinos Doxiadis (1968) employed ekistical techniques to elucidate the nature of cities and their content. He described the composition of human settlement as consisting of a content (man and society) and a container (the physical settlement both naturally and artificially produced). He states:

These two parts, when taken together, make up the human settlement whose largest possible dimensions are defined by the geographic limits of the Earth's surface (and) such a definition of the human settlement implies that it is not merely three-dimensional but four-dimensional. Man and society change continuously ... (Doxiadis 1968: 21)

In this quotation, Doxiadis hints at the dynamic nature of the city/centre that was later to be adopted by archaeologists in re-orienting their settlement research.

In a somewhat more focused approach than what Doxiadis offered, Richard Blanton (1976a) expanded upon regionally based analyses (termed central place theories), which have come to occupy a favourable position in the eyes of many researchers (Andrews, 1975; Ball and Taschek, 1991). One area that Blanton emphasizes is the articulation between the economic and central decision making institutions, as well as examining the implications of this relationship in the study of the cross-cultural variability of such features. He makes a distinction between the patterns of articulation at the upper hierarchical levels and those at the lower levels in terms of the degree of incompatibility of the two systems.

Within the context of economic systems, Blanton identified two exceptions to the general rule of incompatibility: redistributive systems and primate systems (Blanton 1976a: 255). Redistributive systems represent the complete integration of the two systems, and primate systems represent a situation where one centre's range of functions is equivalent to that of the society as a whole, and as a result, becomes the society's sole developed centre. In general, however, the economic and administrative hierarchies tend towards incompatibility.

Blanton offers two reasons for the unlikelihood of the coincidence of the two centre types. First, the distribution of economic centres is often such that they only service a portion of the society, and would therefore be poor candidates for the role of administrative centre. The second reason is the inherent threat of conflict between economic centres as the one endowed with administrative capabilities would gain greater prestige and become the focus of elite purchasing power (Blanton 1976a: 257). He concludes from this that there are conditions under which the administrative institution would become geographically disembedded, relative to its economic counterpart, from the larger hierarchy.

Blanton: Disembedded Capitals

Blanton refers to these decision making centres as disembedded capitals and identifies three distinct types (Blanton 1976a: 258): a capital centre which is a permanent but neutrally located, regional decision making facility; a roving palace which involves the periodic centre to centre movement of a group of ruling elites; and a temporary capital which is the new creation of an incoming ruler. In comparison with the redistributive and primate systems, the disembedding of the administrative centre results in a more stable settlement geometry, as it offers greater serviceability to the society as a whole. Despite the apparent logic of
this argument, what is more often observed in the field, particularly in relation to the lower hierarchical levels, (but present throughout), is significant inter-relatedness between the economic and administrative centres. He suspects that this is due to the appreciable time and energy savings obtained through their confluence, and to the tendency of the decision-making centre to view its economic counterpart as a source of revenue, and therefore of power (Blanton 1976a: 258-9). Blanton's intention in his paper was to promote an expansion in the use of the central place theoretical framework.

Adams and Jones: The Rank-Size Rule

Adams and Jones (1981), as an alternative, invoke the rank-size rule to assess their settlement data. They describe their approach as follows:

The rank-size rule is applied to the data in order to test for the extent of lognormality of centre size distributions among different regions. Boundaries are suggested for possible regional states, and implications for Maya social, political, and economic structures are drawn from the patterns elicited. (Adams and Jones 1981:302)

Adams and Jones focus their attention on the Tikal, Calakmul, Rio Bec, and Chenes regions, and chose as their index of centre size the number of courtyards added to twice the number of acropolises (Adams and Jones 1981: 308-9).

This study derives its results largely on the basis of the observable archaeological record and without, perhaps, offering sufficient consideration to the dynamic inter-relationships between the institutions represented by the architecture of the archaeological record. Avenues of investigation such as nearest neighbour analysis (distance as related to function), can be used for such assessment. The results of Adams and Jones' work will be considered further in the section on interpretation.

Dynamic Institutional Relationships

David Freidel (1983a), within the context of the examination of Lowland Yucatan political systems discusses Maya social dynamics. He commends the relatively recent trend towards the incorporation of a vertical dimension, that of social dynamics, into the study of Maya political organization as a compliment to the pre-existing geographical one. Such an inclusion, in Freidel's opinion, allows a greater appreciation for the dynamics inherent in the patterns of settlement. As a result, such patterns can be viewed as both a process of simplification, and of elaboration, which together correspond to the frequent observation in the archaeological record of apparently contradictory developmental sequences (Freidel 1983a: 378). This evidence can be viewed as being indicative of the integral nature of social mechanisms like the basis of Maya social consciousness.

Research in this area often attempts the elucidation of the dynamic qualities of Maya politics through the use of ethnographic analogy. William Sanders (1981) set out to draw an analogy between Classic Maya, Kirmman Basin (Iran) and Buganda (Sub-Saharan Africa) social organization, and Adams and Smith (1981) made an effort to draw one between the Maya and the feudal societies of Europe, Japan and East Africa (eg: Rwanda and Burundi) (Adams and Smith 1981: 336). In the final two sections of this paper, the results of some of these types of methodologies will be considered in terms of what they reveal about Lowland Maya political organization and its manifestation in settlement patterns, and what questions are left for future research projects to consider.

INTERPRETATIONS

Adams and Jones rank-ordering analysis

Adams and Jones (1981) base their analysis of Maya settlement patterns on the assumption "that rank-ordering by architectural mass is valuable because the patterns it elicits from the data are some how reflective of economic, political, and social rankings" (Adams and Jones 1981: 310). They identify four orders of ceremonial centres on the basis of the number of courtyards present, with the highest (or first order) centres consisting of 20 of more courtyards and the lowest (or fourth order) centres consisting of less than five (Adams and Jones 1981). Using a simple calculation to estimate population, Adams and Jones plotted double logarithmic scaled graphs of centre size versus rank for each of the study regions, in order to determine the distributional patterns of the centres.

Their results indicate that the central Lowland Tikal and Calakmul regions show a rank-size distribution or a continuous progression of centre sizes, while further north, the Rio Bec and Chenes regions more closely approximate a plural distribution pattern (a pattern where several equally large centres represent the majority of existing sites) (Adams and Jones 1981: 311). According to Adams and Jones, these results suggest that Tikal and Calakmul represented the capitals of competing states whose ranges of influence at times far exceeded that identified in their paper. In contrast, the pluralistic pattern of the other two study regions is, in their opinion, indicative of non-centralization and the local repetition of political forms. As mentioned above, this analysis borrows heavily on the physical evidence left behind by Mayan civilization.

The dynamic nature of the socio-political relationships represented by the distribution of ancient architecture is not properly taken into account in reaching these conclusions. These results might therefore be viewed as even more preliminary than Adams and Jones seem to imply. Adams and Jones do, however, justifiably treat the Maya centres as city-level developments, in contrast to the highly questionable assertion made by Sanders and Webster (1988), that such centres only achieved the status of advanced

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chiefdoms. Chase, Chase, and Haviland (1990) offer a commentary arguing against the notion of limited Maya socio-political development.

Ball and Taschek: Integrated Systems of Polities

In their study of Late Classic Lowland Maya political organization in the upper Belize Valley, Ball and Taschek (following Sanders and Webster), employ a classificatory framework suggested by Fox (1977). Ball and Taschek, in improving on Sanders and Webster's approach, introduced needed modifications to Fox's scheme. They are, as a result, able to avoid the confusion generated by the imprecise use of the terms "city" and "urban" created by Sanders and Webster's direct application of Fox's ideas.

Ball and Taschek's research focused on the smaller major centres of the Mopan-Macal Triangle. They identified six centre places there which are representative of a distinct, Late Classic, community (Ball and Taschek 1991: 151). The major centres of these communities are Naranjo, El Pilar, Buena-Vista, Baking Pot, Las Ruinas, and Pacbitun (Ball and Taschek 1991; see Figure 5).

They use their modified form of Fox's typology to organize these settlements into an hierarchical arrangement which includes the addition of "several lower order functional categories to characterize additional centre place units that (were) identified in the field" (Ball and Taschek 1991: 156). They write:

Our recognized categories include headman's residential compound (Plazuela group), villa or manor (Plaza group), regal-residential centre (isolated palace complex), regal-ritual centre, and regal-ritual city. (Ball and Taschek 1991: 157)

These centres (and the activities carried out at them) evidently form the basis of their integration into the larger polity. Ball and Taschek expand the scope of their interpretation to suggest that

... interstate systemic linkages appear to have been forged and maintained through the actions of local elites trying to ensure their own positions or enhance their prestige by means of advantageous alliances. (Ball and Taschek 1991: 161)

They submit, accordingly, that there is no evidence indicative of any degree of state confederation within the Late Classic period of the Southern Lowland Maya. They surmise rather that the available data points to an integrated system of communities of common ideology and mutual jealousy (Ball and Taschek 1991). The above-mentioned settlements are therefore secondary in nature within the larger Late Classic Naranjo state (Ball and Taschek 1991: 162). They conclude that

... the archaeological record of central place form, distribution, and function from the upper Belize Valley plainly fits the pattern that might be expected to have developed within a socio-political system of the segmentary-state type. (Ball and Taschek 1991: 162)

Thus for Ball and Taschek, Classic Maya civilization was comprised of not one polity, but instead, an integrated system of polities such as Tikal, Caracol and Naranjo. Their work points to the importance of a detailed accounting of the nature and function of any given site-type in any attempt to ascertain its role in the ancient society.

CONCLUSIONS

In evaluating, in the mid-1980s, the status of Mayanist studies of settlement patterns, and therefore of socio-political organization, Jeremy Sabloff (1983) suggested that often the models put forward by researchers deal with the archaeological record without due consideration to the integrated behaviour systems underlying the archaeological material (Sabloff 1983: 416). To distinguish a pattern of settlement from an archaeological record consisting potentially of several such patterns, the archaeologist has two general avenues of approach open to him or her. The first is to isolate the physical and cultural variables manifest in the patterns of settlement. The second is to investigate how socio-political organization is expressed in such patterns (Sabloff 1983: 417). Either task can be accomplished through the use of bridging arguments to traverse the gap between the archaeological database and the goals of research. More recent analyses (de Montmollin, 1989; Chase, Chase and Haviland, 1990; Ball and Taschek, 1991) have begun to factor such a notion of settlement dynamism into their interpretations. But its integration is, as yet, incomplete.
De Montmollin (1989), in his examination of the Rosario polity, emphasizes that the study of the links between Maya settlement and politics should include, in part, a recognition that the representativeness of material remains must be considered variable (De Montmollin 1989: 51). Measurements of such variability gauges the less than straight-forward relationship between socio-political process and material (in this case architectural) product.

A step in the right direction has been the realization of the dual properties of an individual community. Ball and Taschek (1991), in re-iterating the observation made by Marcus (1983) (among others), write:

A community embodies in microcosm the institutions, structure, and organization of its inclusive society. In part both product and producer of the larger social order, the community reflects, and at the same time is a factor in, the structure and organization of this order. (Ball and Taschek 1991: 162)

It is the acceptance of this assessment of the nature and dynamics of the settlement-politics relationship and its defining role in Mayan civilization that has, and will continue to guide, the more fruitful research schemata concerned with Lowland Maya political organization.

REFERENCES


