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The Convergence of Humanistic and Scientific Approaches in Maya Archaeology

Las investigaciones sobre la arqueología maya tradicionalmente iban desarrollándose a través de estudios 'humanísticos' del arte, la arquitectura, la escritura jeroglífica y del sistema calendárico. En las décadas recientes, sin embargo, tendieron a dominar este campo aproximaciones 'científicas', como lo son los estudios de patrones de población, evaluaciones demográficas, análisis de subsistencia y similares. Aquí sostenemos la tesis de que entre criterios 'humanísticos' y 'científicos' no necesariamente ha de darse una dicotomía y que ambos no entran en conflicto. Las investigaciones mayas recientes más bien demostraron cómo estos dos enfoques convergieron para esclarecer problemas de economía agrícola, contactos externos o foráneos, de ideologías y de organización socio-política.

Is there a necessary conflict between scientific and humanistic approaches in archaeology? In recent years we have seen the discipline of archaeology moving rapidly toward a more scientific orientation. By "scientific" I do not refer primarily to all of those adjunctive aids that have come to the assistance of archaeology from the physical, chemical, and natural sciences in the last few decades. These have been important, in their particular applications as well as for the ambience they have created; but they are not the crux of the "scientific" orientation. What is referred to, rather, is exactitude in measurement and description, quantification of data and their handling, and, to grow more daring, a search for



cause-and-effect relationships in the events of the past that we are studying (Willey 1977). If "scientific" stands for measurement, quantification, and prediction, I am letting the term "humanistic" do the same for esthetic concern, qualitative interest, and uniqueness in human events. Is there a categorical opposition between these two sets of polarities? Must one be pursued to the exclusion of the other?

It is my position here that a true understanding of the past demands both approaches. An antiquarian concern with the particulars of curiosae is obviously limiting; even the most dedicated particularist must come to appreciate the specific in the light of greater contextual information. Conversely, it is my opinion that the search for broad trends or "laws" pertaining to past human behavior will be more discerning when it takes cognizance of particular events.

In my opinion, recent researches in Maya archaeology demonstrate this. For a long time Maya investigations were essentially in the humanistic tradition. Nineteenth century explorers and scholars directed their attentions to the great monuments of the Mexican and Central American jungles, to the architecture of palaces, to sculptures and stelae, and, above all, to the hieroglyphic texts found carved on these monuments (Willey and Sabloff 1974). In the 20th century these humanistic pursuits began to be supplemented by the more scientific concerns of "dirt archaeology", by stratigraphy, pottery typology, and sherd and artifact statistics. This was broadened further with the investigation of settlement pattern studies and an interest in site sizes and distributions and ancient population estimates. Still more recently the Maya archaeologist has concerned himself with questions about Maya subsistence, political organization, and the roles of trade and warfare – in a word, about the processes involved in the rise and fall of Maya civilization (Culbeet 1973; Adams 1977). Do these more recent concerns preclude a continued interest in the humanistic pursuits? Can the two research traditions be melded? Unlike some areas of New World archaeology, where a humanistic tradition has been only feebly developed, if at all, I think that the Maya area is an excellent setting in which to demonstrate the convergence of the two traditions.

THE LOWLAND MAYA SUBSISTENCE PROBLEM

As an example of such convergence, let me begin with one of the most basic concerns of Maya archaeology. How were the people who created the brilliant Classic Maya civilization sustained in a tropical forest environment that appears to be something less than an ideal setting for high level agricultural production? On the face of it, this seems a question wholly

within the scientific domain, a matter for archaeologists of such persuasion, abetted by agronomists and soil scientists. Sixteenth century Spanish writers reported that the Maya practiced *milpa* or swidden cultivation, primarily of maize. This kind of agriculture demands land plots 5 to 10 times the size of the actual annual growing field so that long-term fallowing of previously used fields may be allowed. Today, the modern Maya farmer still follows this strategy. The harvest yields from such a system are relatively low. Thus, the problem was posed in Maya archaeology: how did the ancient Maya achieve what they did with this apparently limited subsistence potential?

The problem was argued back and forth for a good many years with no generally accepted solution (Meggers 1954; Dumond 1961; see Sabloff 1973, for summary). By the end of the 1960's, however, settlement pattern studies – “house mound” counting – had been carried to where there was no longer any question that Precolumbian Maya Lowland populations had been much too large for support solely by swidden cultivation (Turner and Harrison 1978). This pushed archaeologists into looking for evidences of other modes of food-production or food-getting. Various hypotheses were advanced and examined. What was the potential of fishing and coastal resources (Lange 1971)? What of land game (Wiseman 1978)? How important were root crops (Bronson 1966) or tree crops (Puleston 1968)? The matter of possible intensive techniques for maize cultivation was also further explored. In some regions, particularly in the Rio Bec country of southern Campeche, extensive artificial terrace features were discovered (Turner 1974); and of even greater interest was the revelation that the Maya had pursued certain hydraulic methods of cultivation (Siemens and Puleston 1972).

The term “hydraulic methods of cultivation” immediately bring to mind canal irrigation. While this technique may have been used to a limited degree in some parts of the Maya Lowlands (Matheny 1978), the problems that confronted the Maya farmer were more often those of too much water and the need for proper drainage. Direct archaeological field data for this kind of hydraulic management have come from along the Rio Candelaria in southern Campeche where patterns of raised artificial ridges can be seen in the seasonally inundated lowlands bordering the stream (Siemens and Puleston 1972). Additional raised fields of this sort have also been reported from along the Río Hondo in northern Belize (Harrison 1978). Such fields served to elevate the actual growing areas above flooding, providing drainage for plants. Furthermore, it is also possible that the canals between the fields were excellent breeding waters for fish (Thompson 1974). Besides these riverine artificial fields there is the even more impressive possibility that huge tracts of the *bajos* or

swamps of the southern Lowlands had been prepared for this canal and raised field type of cultivation. Over 200 square kilometers of what may be such raised fields have been reported from southern Quintana Roo, near the major Maya site of Tzibanche (Harrison 1978). These have been spotted in aerial surveys, and air photos from other regions, including the Bajo de Santa Fe, near Tikal, show canal-linked grid lines separating apparent rectangular fields (Turner and Harrison 1978). Detailed investigation on the ground is needed, but if the *bajo* phenomena do turn out to be cultivation zones — as those along the Candelaria and Hondo Rivers quite certainly are — this will drastically alter our reconstructed image of ancient Maya agriculture. Such raised fields, in lagoon, swamp, or sluggish riverine conditions, would have been comparable in their operation and high productivity to the *chinampas*, or “floating gardens” of Central Mexico (M. D. Coe 1964).

But how can any of this articulate with a humanistic approach? Interestingly enough, it does. D. E. Puleston has shown us how in an imaginative and appropriately titled paper, “The Art and Archaeology of Hydraulic Agriculture in the Maya Lowlands” (Puleston 1977). Referring to both the canals and raised fields, Puleston says: “... they combine into a single fascinating system, one conducted to serve a civilization that understood and commemorated in its iconography the ecological interrelationships it was built on” (1977: 450). To begin with, we know that such canals and fields had a considerable antiquity, at least in some regions of the Lowlands. Radiocarbon dates from a wooden post, that had been cut and set on the edge of an old canal bank in Belize, go back to 1100 B. C.; nearby maize pollen has been dated to 1800 B. C.; and elsewhere in northern Belize we have evidences of pottery-making, sedentary villagers at 2100 B. C. or older (Hammond 1977). Such an antiquity suggests the importance of these cultivation techniques to the Lowland Maya, and their later art, that of the Classic Period, after A. D. 200, strengthens the supposition. Puleston has challenged the traditional view which held that the symbolism in Maya art, insofar as agriculture was concerned, was largely devoted to rain propitiation and to rain gods or Chacs. Instead, Puleston sees numerous aquatic elements in the art which have nothing to do with the Chac theme. These include fish, water birds, turtles, snails, eels, water snakes, and crocodiles — and, above all, the water lily. Significantly, all of these species are at home in lowland tropical Central America and all are especially adapted to sluggish riverine, pond, *aguada*, and *bajo* environments. Some of them are not only in pictorial art but are found incorporated into Maya hieroglyphs. Thus, the water lily flower is a part of the glyph Imix, the first of the Maya 20 day names. It is also the symbol for abundance and is frequently linked to maize symbols.

The lily is also closely associated with Itzam Na, the crocodilian monster and the major god of the Mayas. In Maya cosmology the earth was represented by Itzam Na floating in a pond. On Altar T at Copan the crocodile is shown with lilies tied to his wrists while fish nibble at these lilies and maize sprouts from the god-monster's temples. All of this suggest a poetic, artistic, and religious realization on the part of the Maya of the ecological system which underlay their existence — an existence closely linked to an aquatic environment.

This is not far-fetched. Gerardo Reichel-Dolmatoff (1976), in his ethnological studies of the South American lowland Indians, has given us a very explicit diagram of how the myths and cosmology of a people can be an amazingly accurate summation of their ecological situation and their concern for a preservation of a balance upon which their lives depend. In brief, ideologies and the images of the mind are not random creations out of nothing. They articulate, through whatever screens of fantasy, with the real world — and this applies to people of whatever level of cultural development, the Maya being no exception. In the Maya case, if we are considering all this from the standpoint of a "research approach", it could be argued that the "breakthrough" came first in the scientific sector — with such things as house mound counting, population estimates, the subsistence dilemma, and agricultural techniques. From here Maya archaeologists went on to the discovery of prehistoric cultivation systems. Iconographic interpretations, or re-interpretations, followed. I think it obvious that there is a research "feedback" in this verification of aquatic environments and subsistence symbolism from the humanistic sector of art and iconography.

TEOTIHUACAN-LOWLAND MAYA CONTACTS

Scientific-humanistic research convergence of a quite different kind has been achieved in the problem of Teotihuacan-Lowland Maya relationships. Since the inception of Maya studies it has been realized that this great lowland civilization did not develop in a vacuum; the Maya had been in communication with, and influenced by, other Mesoamerican cultures. But what were the nature of these relationships, the processes of contact? For instance, a distinctive green obsidian, known by source analysis to derive from the Central Mexican Highlands, and frequently recognized as a hallmark of Teotihuacan trading contacts, appears at the Lowland Maya site of Tikal at about the beginning of the 4th century A. D. Shortly thereafter, personages, dressed in a Teotihuacan manner and bedecked with Teotihuacan symbols, are pictured on Tikal monuments. What is the

meaning of all this? Are these only the signs of commercial connections between the Central Mexicans and the Maya? To what degrees were politics, even conquest of Tikal by the Teotihuacanos, involved? What influence did the power of Teotihuacan – the greatest state power of its time in Mesoamerica – have upon Lowland Maya political evolution?

“Hard” archaeological evidence helped to pose these questions which, insofar as they are concerned with process, are “scientifically” oriented; but the exciting insights into what actually happened, as related in human events, have come from recent advances in that most “humanistic” vein of Maya research, hieroglyphic study. These advances begin with Heinrich Berlin’s (1958) discovery that certain Maya glyphs served as “emblems”, or escutcheons, of particular Maya cities or ruling families; and Proskouriakoff (1960, 1963–64) carried this line of historical investigation further with work on dynastic lineages as these had been recorded in Maya texts. For the first time archaeologists began to treat with the ancient Maya as individuals, people who lived back in the 4th and 5th centuries A. D. This type of study has been pursued at Tikal in the wake of the extensive excavations of that site carried out by W. R. Coe (1965) and his colleagues. Several scholars have been involved with this hieroglyphic research there (e. g., Coggins 1979, 1979a, Jones 1977). This summary is based upon their writings, particularly those of Coggins.

Insofar as we can tell, we know that Teotihuacan-Tikal trade contacts began several decades prior to the date of A. D. 378. These are attested to by the presence of green obsidian at the latter site at that time. The Tikal ruler of this period was one “Jaguar Paw” who is identified by glyphs and dress as being of purely Lowland Maya ethnic affiliation. He died in A. D. 378. He was succeeded to the throne by one “Curl Snout” who appears in the Tikal art as a ruler accounted in Teotihuacan style. Thus, it would seem that he was a foreigner, quite possibly a Teotihuacan prince. It is virtually certain that he married “Jaguar Paw’s” daughter, or a female relative of “Jaguar Paw”, tying himself into the old Maya Tikal dynasty and, thereby, legitimizing himself to that degree. He died in A. D. 425, and his tomb was found filled with exotic luxury items, including pottery of Teotihuacan manufacture or inspiration. One matter of special interest pertaining to “Curl Snout’s” reign is that he effected major calendrical changes, celebrating dates in a Mexican, rather than a Mayan, manner. He initiated the custom of erecting stelae on katun (20 year) endings, rather than on particular days in the old Maya Long Count. In so doing, “Curl Snout” synthesized Mexican and Mayan ideas by giving the Maya Long Count calendar new functions of general and popular religious significance rather than using it solely to commemorate the births, accessions, and deaths of the Maya aristocratic elite. Curl Snout’s

heir (a son or grandson), "Stormy Sky" continued these calendrical innovations, and his portraits and tomb contents represent a synthesis of Teotihuacan and Mayan traditions. Throughout his reign, however, there was a gradual slackening off of direct or pure Teotihuacan influence at Tikal. "Stormy Sky" died in A. D. 455, and not long after this Teotihuacan connections appear to have been broken altogether; however, the calendrical innovations introduced by the Teotihuacano rulers were retained, and prestige adhered to their memory. For after A. D. 680, with the revival of Tikal prosperity after a two century-long period of low fortunes, the ruler who came to the throne at that time surrounded himself with symbols and calendrical sanctions reminiscent of the glorious days of "Curl Snout" and "Stormy Sky".

This history of individuals and events, sketchy as it may be, illuminates some of the processes operating in Early Classic Mesoamerica. Although we still cannot say whether or not Teotihuacan actually "took over" Tikal, we can see the strategies of royal intermarriages as the means of firming commercial and probably other kinds of alliances. We also see religious and ideological synthesis at work as a way to social and political control. In this example the "humanistic" approach has been the dominant one, but its findings are seen to articulate with and to help explain both findings and hypotheses generated in the "scientific" sector.

LOWLAND MAYA POLITICAL ORGANIZATION

A third "scientific" and "humanistic" conjunction concerns Lowland Maya political organization. What were the sizes of states or polities and what was their internal organization? Questions like these prompted the first Maya Lowland settlement pattern studies (Willey et al. 1965) which, in part, were attempts to translate the way the Maya had distributed themselves over the landscape into socio-political terms. Since then the problem has been addressed in a more systematic and scientific manner by archaeologists who have employed Central-Place theory in the plotting out and describing "settlement lattices" for the Maya Lowlands (Marcus 1973, 1976; Hammond 1974). In these studies it has been observed that small hamlets or villages are placed more or less equidistantly to form little hexagons around centers or "capitals" of small or tertiary size. These small hexagons, in turn, compose larger hexagons which focus upon secondary centers. And these larger hexagons are seen to be grouped to form still greater territorial units which have at their centers "capitals" of great, or primary, size. It should be explained that research into this matter of defining an hierarchial ordering of Maya Lowland political units is still

in its infancy; the sheer physical problems of mapping numerous small ruins in the jungles are immense. The Central-Place approach, however, provides a frame of reference in which surveys and investigations can proceed.

Its most interesting application to date has been that of Joyce Marcus (1976) who has combined this geographical and social science method with the humanistic pursuit of Maya hieroglyphic texts and monumental art. This has given us a glimpse of how the Maya themselves may have conceived of their political organization. Emblem glyphs have been mentioned – those pertaining to sites and ruling lineages. Such emblems are known from sites of various sizes. To begin at the large end of the site size scale, the Marcus study has shown that the great primary centers, or “capitals”, display in their texts only their own emblem glyph and those of other great or primary centers; but they do not “mention” the emblem glyphs of lesser centers. Secondary centers display their own emblem and that of the primary center of their territory, but they do not “mention” tertiary centers. The latter will mention, in addition to their own emblem, the glyphs of the primary and secondary centers to which they apparently owe allegiance but no others. In this way the Central-Place arrangements of sites and political units have been given rather striking humanistic confirmation.

There is, as can be imagined, considerable debate about much of this – the relative importance of sites as this can be gauged from a combination of size, geographical location, and hieroglyphic references – but what is significant is that we are beginning to see patterns and to infer processes from this combined approach. The overall Lowland Maya political scene was probably never very stable, and it probably was never united under a single great “capital” – although even this remains to be explored further. According to Marcus, the four great primary centers of the Lowlands during much of the Classic Period were Tikal, Copan, Palenque, and Calakmul. These and other centers were tied together by various networks of alliances, many of which had been sealed by dynastic intermarriages. Indeed, a wife from the royal lineage of Tikal seems to have been a prize commodity in many other centers. Such marriages are noted in stela texts, often in conjunction with portraits of the rulers and wives in question. The processes that one infers are those leading to a partially competing-partially cooperating system of city states, linked throughout by an “international” upper class. The scene has its particulars of place and personality, but the situation is not unlike that of other times and places in world history.

CONCLUDING COMMENT

A strong case can be made for the convergence of scientific and humanistic approaches to the problems of Maya archaeology. The chosen examples confirm this — and others could be cited. On one level, I do not think that there can be much challenge to the research effectiveness of such convergences of what are traditionally different — if not sometimes antagonistic — points of view. I am speaking now of the level of specific archaeological reconstruction of past events and lifeways. The challenge, or rejection, will be on another level — that which sees the major purpose of archaeology as the elucidation of cultural process as a step that leads to generalizations, or “laws”, in the cause-and-effect relationships that govern human affairs. On the humanist side, some will simply demurr, saying either that this is impossible or that it does not interest them. On the scientific side the criticism will be that this is not what archaeology is really about, that there can be no causal explanations in historical reconstructions. I would agree with neither side. Rather, I would argue that an understanding of humanistic particulars — of, for instance, the dynastic struggles at Tikal — is the only way to an understanding of the institutional forces at work, of the processes involved, in the rise and fall and interrelationship of states, whether this be in Mesoamerica or elsewhere.

The novelist, F. Scott Fitzgerald once wrote: “Begin with an individual, and before you know it you find you have created a type; begin with a type, and you find that you have created — nothing”. He was referring, of course, to individual personalities, but I rather think that the reference is also pertinent to classes of events, behavioral actions, and the forces and factors involved in them.

Generalization puts uniqueness in perspective, but a full consideration of the unique is the only sound way to successful generalization. Humankind has always responded to the great philosophical abstractions, but a condition of this response has been a relatedness to life, to the human dimension.

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