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Function and Meaning
in Classic Maya Architecture

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A Design for Meaning in Maya Architecture

MARY MILLER
yale university

I N HIS SEMINAL 1961 article, "The Design of Space in Maya Architecture," George Kubler established a series of formal properties as both a basis of Maya architecture and as the basis for comparison with other Mesoamerican, and even Andean architecture. As he pointed out then,

> architecture commemorates a valuable experience by distinguishing one space from others in an ample and durable edifice. Such an edifice does not need to enclose rooms: it may suffice to cancel space by solid masses or to inscribe space. (Kubler 1961: 515)

Kubler went on to identify several key forms: among others, the road/path, the platform, the precinct, the ballcourt, and what he called the building and its various types. In recognizing the value of volume in canceling space, thus creating plazas and framing precincts ("inscribing spaces"), Kubler raised the value of Mesoamerican architecture overall, giving new prestige to the concept of "void." Often bearing a negative, "empty" connotation, the void is key to Maya architecture, the space where meaning enters, anchored by surrounding mass.

But meaning has not been easy to elicit from Maya architecture. Often informally, both Maya archaeologists and art historians have done what Gordon Willey first articulated for the Virú valley, that is, to use the images of architecture from ceramics to interpret and understand specific architectural configurations and overall settlement plan (Willey 1953). Nevertheless, such architectural analysis for the Maya remains in a nascent stage, dependent on archaeological assessment for ultimate confirmation, yet always finding the archaeological evidence wanting; by recourse to the visual and textual evidence from Bonampak, for example, archaeologists assert feather dancing on pyramids, yet no excavation will ever confirm such a practice—e.g., Houston (1984). What Kubler

himself implied in the words cited above he was unable to resolve in 1961: the notion that "architecture commemorates a valuable experience by distinguishing one space from others in an ample and durable edifice." What exactly is the experience that Maya architecture is commemorating after all?

The Classic Maya infused both architectural elements and assemblages with meaning. Although Maya architecture is also often idiosyncratic and local, particular forms and assemblages do emerge as bearers of a fairly consistent message. From the assemblage, one can then move to the larger issue of city planning. Because of the greater localized presence of informative texts and iconography, examples will largely come from the Maya West, from Bonampak, Yaxchilan, Palenque, Piedras Negras, and Tonina, but not exclusively so, and important material from other regions will contribute to an understanding of the meaning.

FORMS OF MAYA ARCHITECTURE

Architecture usually solves the issue of shelter for human beings, and, in this respect, Mesoamerican architecture is like most others. But unlike, say, modern architecture, Mesoamerican architecture keenly depends for its forms on the principles of simple domestic architecture. Kubler identified three fundamental elements in Maya architecture: the platform, the hut, and the path. A fourth element, however, is also critical: steps, articulated as distinct from platform or hut. The ancient Maya then made of these elements all of their man-made elaborations, framed within the precinct. A single anomalous elaboration is the ballcourt, with its inherent, predictable geometry, nonorganic quality, and general absence from the recombinant assemblages formed of the other four.

Completed, the *sacbe* connecting Groups A and B at Uaxactun may seem more than the path across the swamp, although of course it is also nothing more on one level (Fig. 1). And the Maya palace, or what they called the *nah* of various sorts (see Stuart, this volume), is obviously just that, a structure, as compellingly addressed in the formal properties of House E at Palenque, particularly the trimmed shale edge of the mansard roof, cut to look like thatch, lest other more streamlined models make us forget the relationship between the elite Maya architecture and the humble domestic abode. Is it iconography or form that the Maya seek in the appropriation of the hut (Figs. 2 and 3)? The hut goes through many dramatic transformations, from the long galleries of Uxmal or Nakbe to the intersecting webs of the Cross Group; from the tiny space piercing dense mass at the top of Tikal Temple I to its dramatic appearance as a mere section of the whole in the Arch of Kabah. Furthermore, that very hallmark of Maya architecture and even of the Classic period itself, the

Fig. 1   Uaxactun, Groups A and B. Reconstruction by Tatiana Proskouriakoff (after Smith 1950: frontispiece).
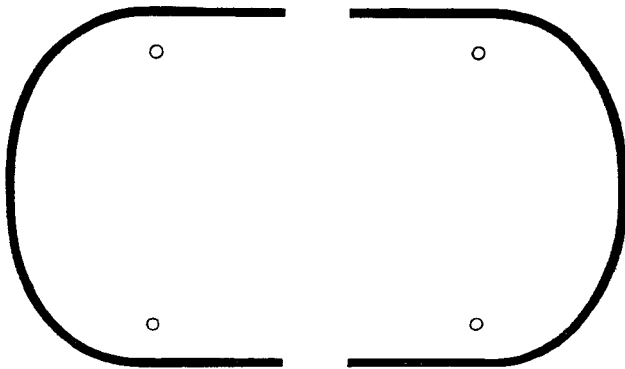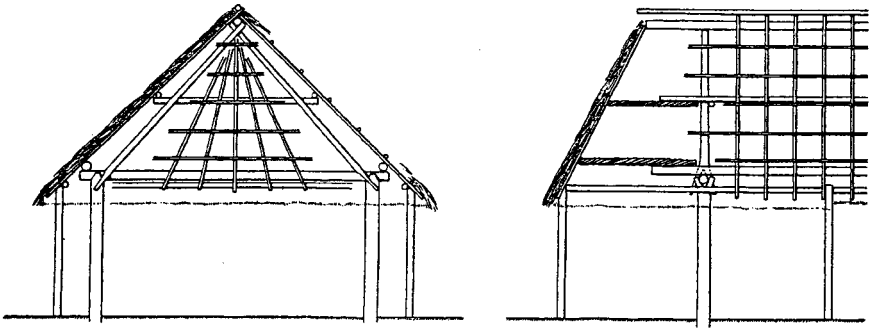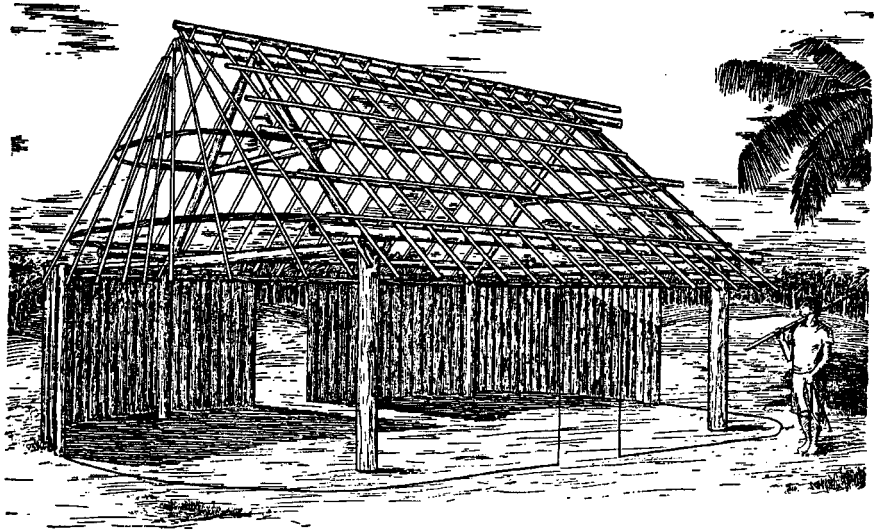
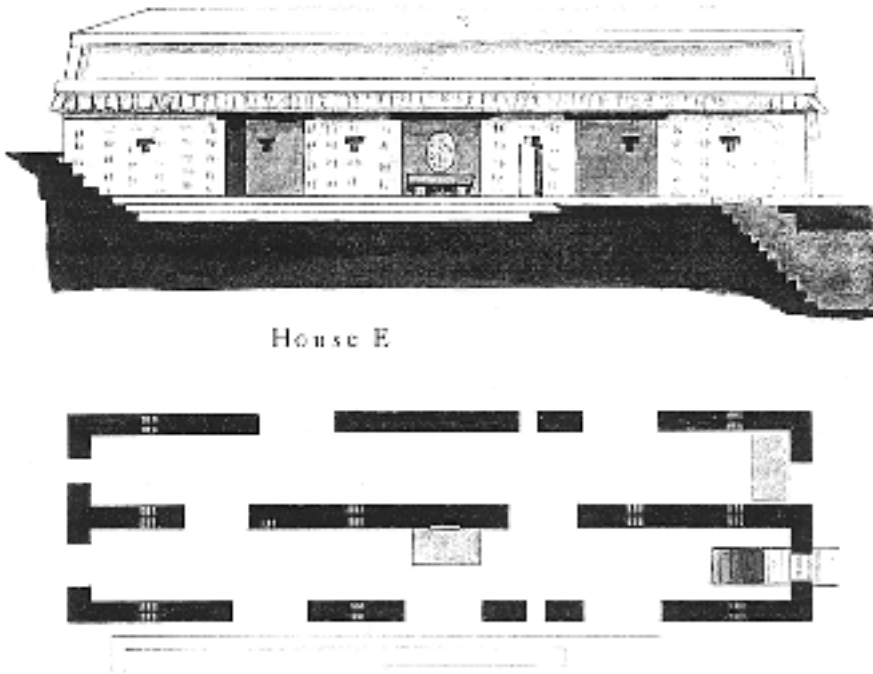Fig. 2   A modern Maya house (after Wauchope 1938: fig. 11).

House E

Fig. 3   View, House E. Drawing and watercolor by Gillett G. Griffin, based on Maudslay 1899–1902, 4: pl. 41.

corbel arch, a configuration described often as the "false arch" and decried as a reflection of the technological ineptitude of the New World in general, is nothing more than the transformation and confirmation of the thatch hip roof in stone. In scale, the platform eventually overtook the house itself, but its relationship to the superstructure is ancient, as is the practice of burying one's dead within its mass. The modern requirement of hallowed ground for interment has meant only that the house, too, if only symbolically, has had to move to the cemetery, and so miniature houses top modern burials. Steps may have always included roughly hewn rocks; in their ceremonial configuration, they are simply precise and finished slabs.

The silent physical spaces, the plazas and the open courts, form voids for the reception of structures and assemblages, particularly by large numbers of individuals. Exterior iconography cannot function without such components: two structures cannot enter a dialogue without the synapse created by open space.

FUNCTION

Sir Eric Thompson long thought that much of Maya architecture functioned as a sort of stage set, with feathered props to be unpacked at a moment's notice. In this, Thompson often made light of Maya imagery and, in one of his most pejorative comments, described a series of Maya architectural façades as if they were selections from Silly Symphonies (Thompson 1954: 204). Because of Thompson's irreverence for his subject in this regard, I have long resisted his larger view. But Thompson was right: Maya architecture does function as backdrop, with public iconography framing repeated public ritual. We can also go a step further, for the architecture confirms ritual and makes it present and living even when it is not being performed. Furthermore, the Maya imbued both architectural space and architectural backdrop with particular meanings, and, for them, the backdrop may well have been as significant as any grander and more labor-intensive construction. For example, Hieroglyphic Stairway 2 at Dos Pilas, set along the plaza and without superstructure, may have been considered as much a building as any funerary pyramid at the site.

Furthermore, architecture brings to life and commits to stone particular aspects of ritual as they are most appropriate to the urban setting. For example, some Maya warfare took place away from ceremonial architecture, whereas other battles surely did take place "downtown," as the Dos Pilas example confirms (Houston 1993: 51–52), and postbattle victory included the destruction of enemy monuments, as, for example, at Piedras Negras, where the great palace throne was smashed and left on the steps of J-6 at the time of that city's final defeat. Until the eighth century, however, most contests may well have taken place away from centers of population, perhaps followed by focused destruction of a few monuments. On Maya sculpture, the image of victory in warfare until the eighth century is exclusively the image of the displayed captive, or, that is, the image of victory that would be seen after the battle and within the ceremonial precinct. From the Early Classic on, the captive trampled underneath is the featured presentation. When active capture enters the visual repertory in the early eighth century, particularly at Yaxchilan and environs, the captives are rendered with conventions that indicate that they are already captured and defeated, stripped of noble attire and adorned with shredded or ripped cloth. Even in the Bonampak battle mural, where the painting might be construed to represent the battle as it took place, in fact the captives there, too, are already defeated, as signaled by attire, posture, and iconography, particularly the broken spear. In other words, the public architectural celebration of warfare celebrates not the battle as it actually took place but battle as it subsequently

might be conceived and reenacted, with no doubt as to outcome. The result is the construction of images that privilege the relationship between captive and captor, rather than the event that yielded such a relationship, and, when that event is indeed featured or narrated, it nevertheless usurps any narrative by visually describing the outcome.

Although most such representations occur on stelae, they are even more graphic when rendered on other architectural features, particularly on stairs. By the Late Classic, stairs normally featured images of victory in war or triumph in ball game (Miller and Houston 1987), frequently with representations that functioned polyvalently, in text ostensibly celebrating the ball game, for example, simultaneously recalling visually both warfare and humiliation of captives. What was the purpose of such architecture? Here we have constructions where the function is clearly registered: such staircases were arenas for symbolic ball games, display, death or torture of captives, and celebration of victory in battle. The earliest examples of carved Maya steps confirm such meaning, for, although they do not carry images, their texts relate victory. Their very construction may be read as punitive: at Naranjo, in the sixth century, Caracol (and perhaps an allied Calakmul) claimed a victory and commissioned a carved staircase at the center of the Naranjo that was then inscribed by Caracol artists. Centuries later, when Naranjo had imposed its will on neighboring Ucanal, one of the slabs of this hated stair was sent to Ucanal, a token in turn of their servitude. In the seventh century, artists carved hieroglyphic stairs within the Palenque Palace, perhaps marking their record of a defeat by Calakmul (Martin and Grube 1995). Such tribute both enforced the ruling order of the day and created the spaces where subsequent warfare and the reigning hierarchies would be celebrated. In some cases, the victory is celebrated by humiliating constructions at the site of the defeated; in others, the victory swells local pride and architectural efforts by conscripting the defeated artists to work to labor in the centers of the enemy. Recognizing the specific function of stairs allows us to isolate the step as an independent architectural feature, manipulated by the Maya and frequently incorporated into larger assemblages and frequently the formal element bridging the agglutinative hut-platform-path elements and the more geometric ballcourt. Given its size, disposition, ability to elaborate hierarchies and accommodate numerous participants, the step is also the most specifically theatrical of all Maya architectural forms. Furthermore, despite the hostile implications that we may read into the making of such steps, their creation may also have indicated the end of active hostilities and a return to economic well-being—a well-being even promoted by the presence of renewed architectural and artistic commissions.

MEANING

When we turn to the subject of meaning, we find that Maya architecture has a number of distinct ends to achieve. On one level, the meaning of the Temple of Inscriptions at Palenque is to embody Pakal, buried at its base, and to stand as his sentinel throughout all time. On another level, the Temple of Inscriptions demonstrates the sheer absolute power of Pakal in his own time: he was so rich and powerful that he could martial the creation of a building to secure his posthumous memory in his own lifetime, rather than depending on his successors to take care of affairs after death, as was more typically the custom. On yet another level, the Temple of Inscriptions narrates a history in which Pakal and his achievements are inscribed, with resonance to people and events deep in a legendary past. Such a monumental narrative places Pakal at the apex of a curve in which any subsequent achievement can be read only as anticlimactic, and he himself may have believed that such a position could be captured architecturally and iconographically. Finally, once Pakal was dead, the Temple of Inscriptions memorialized a particular Maya king, and his physical presence remained a looming and dominating presence at the site, such that Kan Balam, to exercise aesthetic independence, needed to initiate his regime by defining a separate space, without much reference to the program of Pakal, resulting in what seems to be an isolated or hostile gesture. In both programs, we can see the value that the ancient builders placed on their own efforts.

One objective dominates every one of these agendas, however, and that objective is memory. The goal of Maya architecture is to promote a specific set of memories and then to enter them time and again on the mental slate through both visual images and written texts. Today, modern memories of the past in which one has lived are so imposed by repeated exposure to photographs, film, and videos that most of us develop memories of the past built around selective documentation, with increasingly less frequent amplification through review of diaries or journals. The visual memory almost always dominates the verbal one. We may think of the visual record as documentation that we have selected, but much of it has been chosen by others, with a focus largely on celebrations of one sort or another, and the near-monopolization of the mass media frames and limits the viewing of a public history that shapes our personal memories. Since the advent of mass media, human ability to frame an independent memory of either the personal or the public has been under assault. Take, for example, the celebration of the fiftieth anniversary of the Normandy invasion, or D day, in June 1994. For a generation beyond living memory of the World War II

battle, the entire event was recapitulated and encapsulated in a brief series of images and films to implant the visual cues in a younger audience. And, as recent critics of revived early childhood memories of abuse have shown, repeated pictorial and verbal cues can also stimulate memories, both visual and narrative, of events that in fact did not take place or that one has not actually personally experienced.

What happens in a world without mass media? We usually look to the oral tradition to see the formation of communal memories and histories, but I suspect that something rather different happened among the Maya, where, in fact, they promulgated both the written word and the public image. Never mass produced, the figural image was nevertheless everywhere for the Maya: shaped in soft stucco on a monumental scale on the exteriors of buildings, lavishly painted on elite ceramics, carved in historical narratives presented both publicly and privately, even worn as painted designs on elite clothing. In other words, the pictorial formation necessary both to generate memories and to sustain belief was omnipresent in forms with the sorts of details and elaborations that emphasized veracity. This is usually the case with standardized religious imagery but far more unusual as a characteristic of premodern visual history. The Maya themselves initiated this practice with their religious narrative, ultimately weaving the historical into it, and finally, I believe, letting the historical dominate the story altogether by the eighth century. What also may surprise us is that despite a widely recognized vocabulary in both writing and iconography, almost no duplication ever occurs in Maya art. Over time, as static, iconic representations yielded to more active visual ones with both sequence and time depth embedded, the visual began to sustain its own integral narrative. Although the narrative capacity of the representation always lagged behind the narrative capacity of the written Maya word, the narrative quality of Maya art is nevertheless greater than that of any other Mesoamerican art. Memories are not composed of images only, or, to put it verbally, nouns, but are stories in which either the narration or the illustration may dominate but in which both are normally present. The Maya began to exploit this characteristic of memory when their art began to focus on events as well as on protagonists.

In his recent essay on Maya literacy, Houston (1994: 30) has touched briefly on the role that writing plays in stabilizing text and, by extension then, memory. Over time, the Maya image increasingly stabilizes the text and the memory by increasingly specific narrative, as it changes from the purely nominative to the increasingly verbal. Although most directly obvious in the portrayal of individual images, where the "Classic" and static motif identified by Proskouriakoff

(1950) gives way to, say, the freezing of action, the verbal is also inherent any time a series of images are juxtaposed in a particular reading order or in a reading order that requires reenactment to be seen.

Plenty of evidence confirms an active Maya interest in specific historical memories. The Tablet of 96 Glyphs at Palenque, for example, details the lineage linking its penultimate ruler, K'uk', with the great king Pakal, several generations before. Piedras Negras Panel 3 both illustrates and narrates historical events some 50 years before the stone carving was made and offers its one-sided view of the relationship between Piedras Negras and Yaxchilan. Furthermore, that relationship is spelled out in the accumulated offerings and sculptures assembled at O-13, the burial pyramid of Ruler 5, with the reuse of old monuments, and the interment of others, many of which include specifics of a 400-year relationship with Yaxchilan. The viewing of O-13, then, took one into a sort of "memory museum," where particular memories of the past were assembled and shaped onto the structure where at least one and perhaps two or three of the last kings would be buried. Here the particularistic narrative of Maya history becomes the collective, publicly promulgated from a structure that could be both "performed" and performed on.

In this essay, I examine this problem of memory and meaning through monumental architectural configuration, considering both the particulars of public display and the issue of reading order. As we shall see in various examples, configuration can function in a variety of ways, sometimes disseminating memory but at other times operating as a tool of intimidation and as a means of triggering the public display of memory. The configuration of Maya architecture, particularly in its most agglomerated constructions (e.g., Tikal Central Acropolis), often strikes the modern observer as irrational and disordered rather than as precise and ordered. As any sort of aide-mémoire, Maya architectural displays seem to offer the chaotic opposed, for example, to the specificity of linear texts. Such readings, however, devolve from plan reading and experience based on archaeological reconstruction rather than experience of buildings as demanded by the Maya themselves. To see how a complex like the Palenque Palace evolved, or how a court at either Yaxchilan or Tonina functioned, requires us to consider the construction from its approaches and function in the seventh and eighth centuries.

ARCHITECTURAL MEANING IN THE MAYA WEST

Palenque

In the mid-seventh century, King Pakal of Palenque commissioned Houses E, B, and C, in that order, atop the preexisting *subterráneos* (subterranean cham-
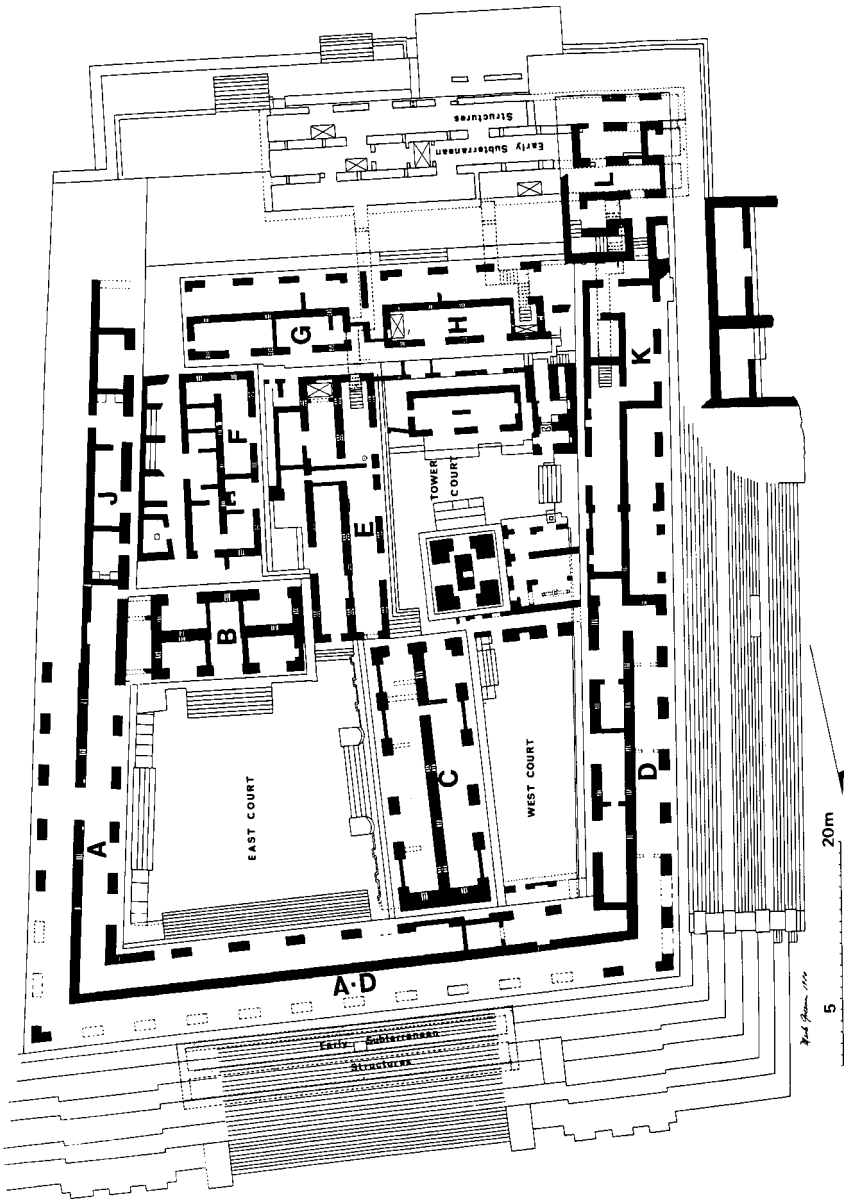
Fig. 4 Plan, Palenque Palace (after Robertson 1983–91, 2: fig. 9).

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Fig. 5   The Oval Palace Tablet, with its throne (after Robertson 1983–91, 2: fig. 92).

bers) of the palace, spokes roughly radiating from an imaginary point at the northern end of House E (Fig. 4). Although House B at one time may have been a grand entrance to the court behind what is now crowded by House F (Robertson 1986: 41), the central west-facing doorway of House E, the *sak nuk nah,* or "white big house" (Stephen Houston, personal communication, 1995), was the focus of the complex, with its throne and commemorative panel of Pakal (Fig. 3). The Oval Palace Tablet not only is a throne; it also features a piece of furniture that probably predated it, a double-headed jaguar throne (Fig. 5). Pakal's picturing of this old throne probably marked its demise or rustication, just as would K'an Xul's depiction of the Oval Palace Tablet a generation later

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on the Palace Tablet, when he consolidated the south as the orientation of the complex.[1] Through installations of sculpture and furniture, Maya lords ensured repeated use of their buildings in a scripted fashion: through such repeated use, the buildings create in their audience a visual litany and attest to the importance of reenactment and reuse in keeping memory alive.

As Pakal and his engineers plotted the development of the palace into a rich complex, they exploited both technology and iconography. Technologically, House E is a remarkable achievement in capturing interior space, an effort most strikingly crowned at Palenque later by the intersecting corbel vaults of the Cross Group or in House A of the palace and probably begun at the Olvidado (Mathews and Robertson 1985). In any case, the parallel galleries of House E were the first step toward such interior space, but the next efforts, Houses B and C, both achieve greater interior height and span greater interior breadth, with the stability of the corbels anchored in part by the roof comb running atop the center spine. Originally conceived and used as a single open space, House B alone of any palace building offered a large but compact interior space. With its small western door to House E, it also offered the opportunity for lords, and perhaps for the king himself, to move unmonitored in and out of Houses B and E. House E, with its dramatic positioning directly over the *subterráneos,* its complex and surprising interior traffic arrangements, and its obvious emphasis on the king enthroned, celebrates the ruler in general and Pakal in particular, repeatedly re-creating framing that establishes the king as ruler and recapitulates throne events. House B does not offer these "photo opportunities" in which a framed picture is created again and again. Rather, it privileges a simple iconography of (1) what were probably lords with serpents under continuous mat motifs and (2) standing lords on exterior piers (Fig. 6). With its distinctive open plan (i.e., the original plan) and stuccoed mat exterior, this building may have been a *popol na,* or council house, of the sort that Fash and others have hypothesized as the function of Copan Structure 22a (Fash 1991: 130–134; Stomper n.d.), placed so that the king's counselors had both special access and status, similar, in fact, to the positioning of Copan Structures 22 and 22a. Subsequent alterations and interior painted additions added the themes of maize and tribute presentation to House B, appropriate subjects for those who support the kingdom economically. Once House F was constructed, additional walls were set in House B, closing access from one side of the structure to the other.

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[1] This pattern of picturing thrones on the occasion of their replacement or termination also occurs with Lintel 3 and Throne 1 of Piedras Negras.

Fig. 6   House B (after Robertson 1983–91, 2: fig. 10).

The grandest element of Pakal's program for the palace, however, was House C, with its soaring vaults (Fig. 7). Whereas all doorways worked equally in House B, the center doorway of House C dominates, with the proportions of the flanking doorways taking their cue from the center but rotated 90 degrees, creating both visual and social hierarchies. The stucco piers on the west façade of House C all feature enthroned and probably masked young lords, perhaps all reiterations of Pakal, but possibly other nobles, and probably all in cutaway bird hoods. Framing and facing the central doorway, these piers seemingly invite others to come in and don elaborate costumes, their faces both revealed and hidden—and unable to be seen except at a distance.

Years later, when Houses A, D, and A-D framed and closed the palace, the Palace Tablet recapitulated the positioning of the Oval Palace Tablet, with its setting in the central doorway of House A-D. But House A-D was no House E. Rather than functioning as any sort of direct entryway to palace rituals, House A-D, with its solid internal wall running the length of the south side of the palace, provides traffic control and management, discreetly channeling visitors and participants in rituals into the two north courts, perhaps thrusting them into an arena of capture and sacrifice on the northeast or transformation on the northwest, all through a façade that seems only to celebrate the succession of a legitimate king.

Fig. 7   House C (after Robertson 1983–91, 2: fig. 198).

Yaxchilan and Bonampak

To see how memory is both the subject and ultimately the object as well of some configurations of Maya architecture, let us start by considering Yaxchilan Structure 44. No stairs appear on any map of the site, but the complex known as the West Acropolis probably featured a flight of stairs running across the isobars of the Bolles map, perhaps leading right to Structure 44. The West Acropolis buildings are oriented largely to the north and east, with Structure 51, now reduced to rubble, undoubtedly dominating the group at the end of the eighth century. Chronologically, with little published archaeology of the West Acropolis, one can feel confident only in asserting the relative priority of Structure 44 (ca. a.d. 740) and relative lateness (ca. a.d. 760) of Structure 42, the only buildings with dated monuments.[2] The presence of an Early Classic stela in front of Structure 44 may argue only for the building having superseded an earlier structure. Later monuments also took their place in front of Structure 44.

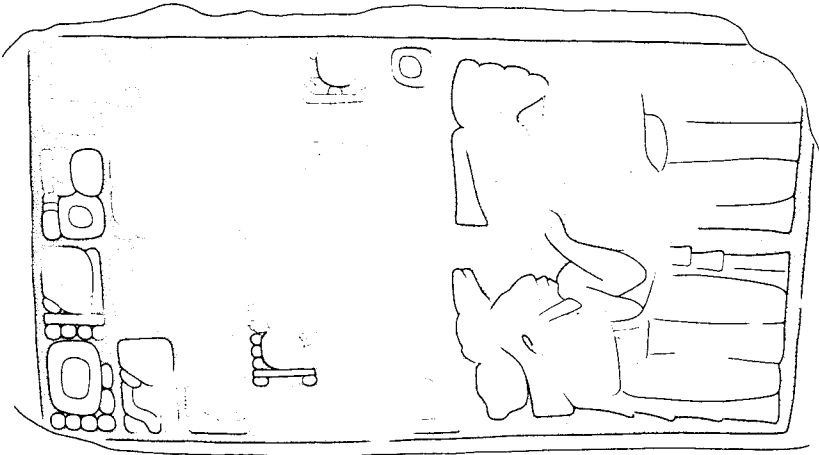The sculptures of Structure 44 would seem to claim a number of Maya firsts:

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[2] Some recent work at Yaxchilan has been published in Japan—see García Moll et al. (1990).
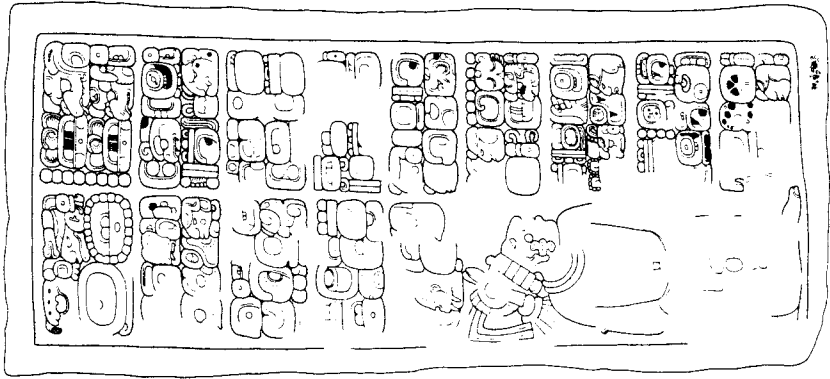
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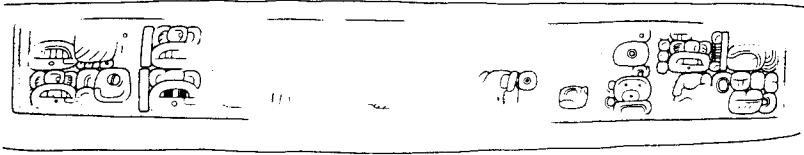
V Riser

VI

Fig. 8   Structure 44, third doorway, as configured by Carolyn Tate (after Tate 1992: fig. 154). Drawing by Ian Graham (1982: 171–173), copyright 1979–82 by the President and Fellows of Harvard College.

as Proskouriakoff noted in 1950, the lintels of this structure are the first to depict capture in progress (Fig. 9). In the early eighth century, the bent posture of Shield Jaguar and the strain visible in his rear leg are both elements with few prototypes. But beyond the stylistic consideration of the lintels is the remarkable introduction of the first figural hieroglyphic stairway; even more importantly, this is the only integrated program of steps and lintels to survive at all. (Here I do not consider the lintels of Structure 33 and the risers of Hieroglyphic Stairway 2 to be programmatically integrated, although their juxtaposition certainly is meaningful.) As such, the steps and lintels work together; the central lintel, for example, depicts a capture and the step reveals its aftermath, the noble captive deployed like a doormat (Figs. 8, 9). Such a configuration animates memory by offering before-and-after images, by taking the normally terse and laconic text with, at best, one associated human representation and giving it here two, thus revealing sequence and detail that makes the memory more accessible and tangible to those who did not experience it themselves. Because the actual capture, perhaps on a battlefield or perhaps at the home of the opposition, did not take place on the West Acropolis, few could have seen it the way it ultimately came to be represented at Yaxchilan, if indeed the pictorial representation has much relationship to the events that actually transpired. Capture on the battlefield was a relatively private affair, but set at the heart of the sacred precinct it is elevated to state ritual and transmitted to the collective memory. But who could see events on the steps of Structure 44? Teobert Maler found steps that run down to a small open gallery below formed by Structures 43, 44, 45, and 46, and from such steps one would have access to a processional walkway that skirts the precinct. Seen from a point on the stairs or even from the plaza far below, a victorious king in front of Structure 44 would stand as a sort of "king of the mountain," and the entire war inventory of Yaxchilan supports such an interpretation, not only at Structure 44 but also at Structure 41, where Shield Jaguar initially presided over his victories.

As the first example of public narration, in which both the capture and its aftermath receive separate treatment, Structure 44 also can be seen as the first intimation of the sort of narrative complexity and time depth that would be revealed more privately in the battle and captive display scenes of the Bonampak murals. There, not only is capture promulgated on the south wall that one confronts on walking into Room 2, but the vast three-wall representation offers detailed time depth, with its sensitive portrayal of anticipation as well as the act accomplished and with the central representation freezing a single and obviously fleeting moment of capture. By comparison, the presentation of humiliated captives on the north wall reads lucidly and statically, but it, too, embeds

time, the time registered through the captives themselves, as if they were ticks of the clock moving from the bold and resistant to the point of torture, to collapse, and to death, the termination of time altogether. Such detailed sequencing not only offers explicit memories and makes them accessible to a viewer who did not personally experience the events, but it also simplifies and sanitizes the events: Bonampak warriors triumph without a scratch; decapitation and heart sacrifice leave no visible blood, thus focusing the viewer's attention to the arcing spurts from the captives' fingers.

In Structure 44, the central lintel (Lintel 45) and step (Step III) are the most important single configurations, for they deal with the individual capture that seems to have vaulted Shield Jaguar into his position of power, a subject celebrated on much earlier Yaxchilan Stelae 19 and 15 set in front of Structure 41. The two stelae depict static, after-the-fact capture, one with both victor and victim stripped and one where they both wear luxurious war bonnets. In both instances, the depiction values equality of ceremonial regalia, elevating captive to the status of the victor and thus glorifying the victory itself. What is different about Structure 44, however, is that the strenuous postures of both Shield Jaguar and his captive infuse the lintel event with energy, whereas Step III is static, like the earlier stelae. But put the two together: the active capture yields to a passive and docile captive to be trod upon (Fig. 9). And the equality of attire yields to appropriation: yes, the captive lord wears a war bonnet on the step, but on the lintel Shield Jaguar wears it, and his captive is bareheaded, as if Shield Jaguar has stripped it off the captive and put it on himself. That is the logical progression of events, and it would seem a straightforward appropriation in an obvious chronological sequence. But now recognize what order in fact the architecture insists upon: one must first see the bound, defeated captive but still in his noble regalia before gaining access to the doorway and seeing his undoing. In other words, neither the experience nor the chronology nor the iconographic sequence is linear; rather, they are bound together and interwoven.

Such interweaving of chronology and iconography takes place with the expanded program of Structure 44 as well. The earliest date of the text, for example, occurs on Step I, with a reference to a date some 140 years before Shield Jaguar's reign, when his ancestor, Knot-eye Jaguar, took a captive named Flint Bat, from Bonampak or Lacanha.[3] Shield Jaguar brings that memory into the present, perhaps as prophecy fulfilled, and links it to his capture of a Bonampak or Lacanha king, Ah Kan. We can read across the rest of the building to wrap

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[3] Here, and elsewhere, many of the names offered are "nicknames" rather than accurate translations.

back to Lintel 46, which unites this same Ah Kan's capture by Shield Jaguar to the capture of Flint Bat by Knot-eye Jaguar but turns it around, starting with an initial series that celebrates Ah Kan's capture—and probably depicting that event as well—and completing the statement by referring back to Flint Bat's demise. Step V offers what seems to be a self-contained variation on this pattern, relating the capture of a Jaguar Hill *ahau* by Bird Jaguar III, Shield Jaguar's father, to the capture of a lord from that same place by Shield Jaguar. Again, I suspect, that one of the agents at work here is the idea of prophecy fulfilled (Sullivan 1989). Only one piece of Structure 44 seems to fall outside what seems to be the stylistic program of the building, and that is Step IV, the only all-glyphic step and the bearer of the dedication of the building itself, thereby offering internal evidence that the step is not to be seen as completely anomalous.

Furthermore, the three upper steps of Structure 44 are carved on both treads and risers, unlike other carved steps, which are carved on one or the other but not both. By confining the captive depiction and capture narration to the treads, the Yaxchilan designer reserves the risers for statements of parentage and personal glorification. Accordingly, although one must step on captives, one can never step on the names of forebears, and they function as supports, elevating whoever stands above. By this configuration, Shield Jaguar both honors his parents and uses them to promote his own status.

As I have previously stated (Miller 1983), the Structure 44 program appears without any known prototype and then is not manifested in the same way again. With its emphasis on the visually expository sequence, its closest parallel would in fact be the Bonampak murals, where the sequence of active capture followed by display on a staircase is akin to Structure 44—and may in fact be the specific staircase of the captives' demise. The Bonampak murals are also in a structure where the lintels, although made 40 or 50 years after those at Yaxchilan, are the only set to recapitulate the postures of the figures on the lintels at Structure 44. The entire kinetic and interactive quality of Structure 44 is also expanded at Bonampak. In this regard, Structure 44 and the Bonampak paintings also bear a resemblance to one another, for both programs exhibit what seem to be a beginning and an end.

But here we might stop and ask a few questions: how do we get from Structure 44 to Bonampak if there are no intermediaries? Did the Bonampak artists travel around and seek out models? Even more to the point, how did Structure 44 come into being in the first place? There are earlier examples of hieroglyphic stairs, always associated with warfare and victory (e.g., Naranjo) but the

entire composition of carved tread, riser, and lintel took imagination and a vision of human power encapsulated in one small building.

Lost Prototypes?

What I would like to propose is that the invention and imagination required to build Structure 44 at Yaxchilan (or Structure 23, for that matter, or even the Bonampak murals) nevertheless built on a tradition that remains only in the realm of guesswork: the lost books of the Classic Maya.

Most Maya hieroglyphic steps are carved on the risers, with only a few carved treads. The subject matter of hieroglyphic stairs is usually victory, but carved risers and treads occasionally treat other subjects, such as the comprehensive lineage history propounded on the Copan hieroglyphic stairs. The orientation of the Structure 44 treads, with their texts framing bound kneeling captives in all cases, has never been easy to interpret, such that they are usually published the way they demand to be read, that is, stelalike, rather than the way they must be experienced (that is, almost always from one side or the other).[4] Inevitably, either orientation is unsatisfactory, given the conflicting exigencies of reading the text or gaining access to the chamber. This leads me to suspect that their current positioning on stair treads is not necessarily the native one for this iconography and text. In fact, I suspect that this format may derive from the Maya screenfold manuscript, where the text of the lintel might come first, followed by depiction of the humiliated and abject captive (Fig. 9). The redundant personal genealogy of the risers might appear only once. Thus, one might well imagine that a book with screenfold leaves opposing Shield Jaguar with his many captives, as well as both historical precedent and prophecy interwoven, may have formed a real or mental prototype for Structure 44. Proclaimed on the grand scale of the building, history, prophecy, and present victory were publicly inscribed.

All history, of course, has a point of view, and the circumstances of Structure 44 offer some interesting insight into the Yaxchilan point of view. In proclaiming victory in the era of Shield Jaguar, victory of the past is recalled, even elevated—without compensatory memory of defeat, even degradation. In the generation of Shield Jaguar's father, for example, Yaxchilan and Bonampak *ahaus* appeared as liege lords of the Piedras Negras king, Ruler 2, and at least one Yaxchilan king named Knot-eye Jaguar is portrayed as a captive at Piedras Negras (on Lintel 12), perhaps the same Knot-eye Jaguar remembered at Structure 44

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[4] Carolyn Tate has been the only student of Structure 44 to publish the steps horizontally (Tate 1992).
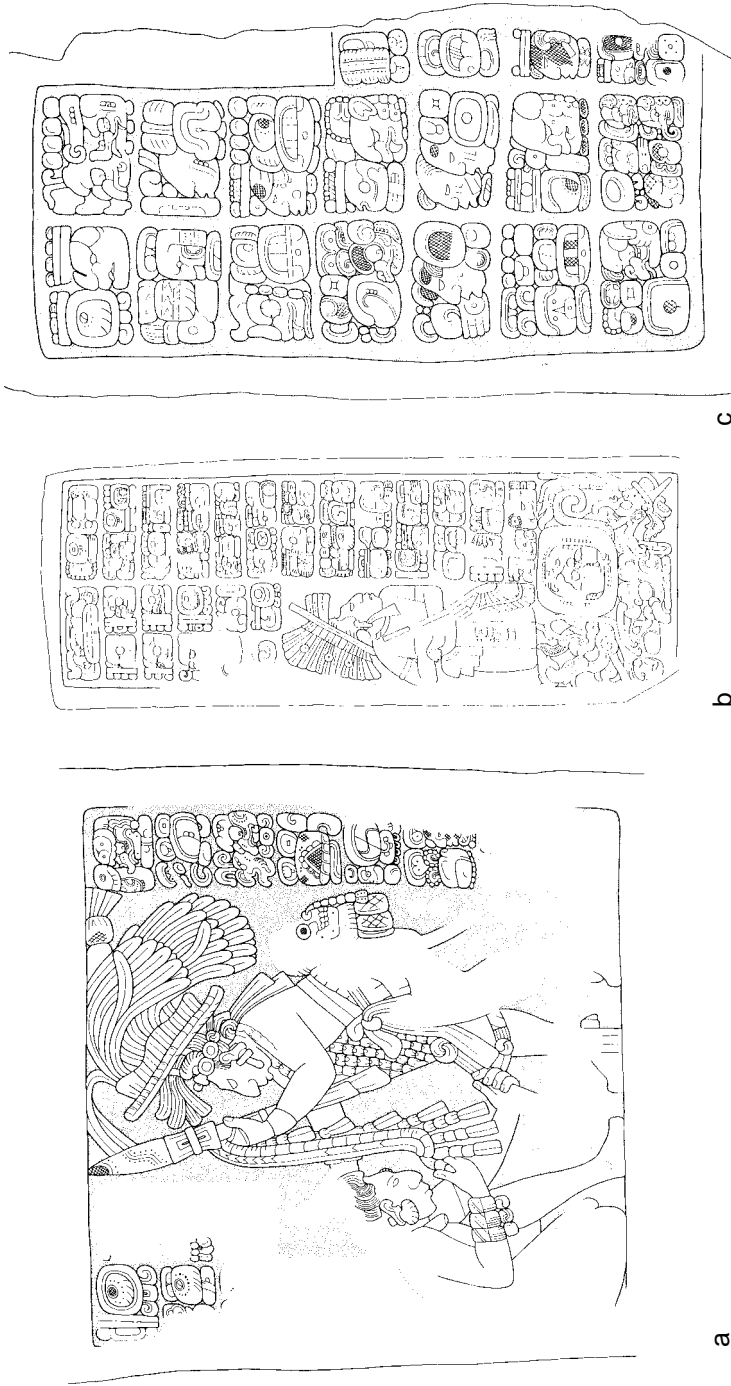
Fig. 9   Structure 44 as a book (a, after Graham 1979: 99; b–c, after Graham 1982: 169, 170).
Copyright 1979–82 by the President and Fellows of Harvard College.

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only in victory. Nevertheless, in these same generations, Yaxchilan may well have dominated Bonampak, and the Structure 44 statements narrate a particular history, in which Yaxchilan dominates Bonampak and without reference to ancillary events at Piedras Negras.

Furthermore, the events of Shield Jaguar's life that form the substantive narrative of Structure 44 were almost all old news by the time the structure went up: why tell the stories of Structure 40 again when surely Shield Jaguar's defeat of Ah Kan, Ah Chuen, and the *y-ahau-te* of the serpent segment place had all made his name some 40 years before the construction of Structure 44? Initially emblazoned on stelae, these proclamations had indeed been news and the definition of a new political order along the Usumacinta. At Structure 44, the same events become part of a reordered and reframed past, perhaps even publicly signaling to us that the books documenting the era had been rewritten, placing Shield Jaguar at the apex of a complex history, but one in which his role had been foretold. By narrating the complex history publicly, the Yaxchilan lords also interpreted the past for the public, establishing the new collective memory.

Tonina

We can read all this at Yaxchilan, but what goes on beyond these local political considerations? Are there Maya prescriptions for mass memory that go beyond the parochial? If we turn to Tonina, we can consider a kingdom not only deeply intertwined in Usumacinta politics but one that retained a distinctive artistic and architectural idiom while nevertheless engaged in and aware of traditions characteristic of its neighbors. The panel featuring K'an Xul of Palenque at Tonina has been recognized as evidence not only of Palencano defeat at the hands of Tonina in the early eighth century but also tributary sculpture performed by Palencano artists (Schele and Miller 1986), the linear and graceful two-dimensional rendering of the captive king contrasting with the three-dimensional format favored by Tonina's own rulers for official portraiture. If we turn back one generation, to the era of Kan Balam at Palenque, we can see an inverted artistic relationship, for the single freestanding stela at Palenque, originally set at the Temple of the Cross, would appear not only to be worked in Tonina style but even crafted of a more porous and probably foreign rock (perhaps even the sandstone of Tonina, although the stela has not been tested), in what may be evidence of tribute paid to Palenque at the end of the seventh century (Fig. 10). Furthermore, the single three-dimensional rendering of a ruler at Yaxchilan, the great three-dimensional sculpture of Bird Jaguar now kept inside Structure 33, bears eroded text that runs down its spine, a feature otherwise limited to Tonina and perhaps further evidence of artistic tribute in the mid-eighth century (Fig. 11).
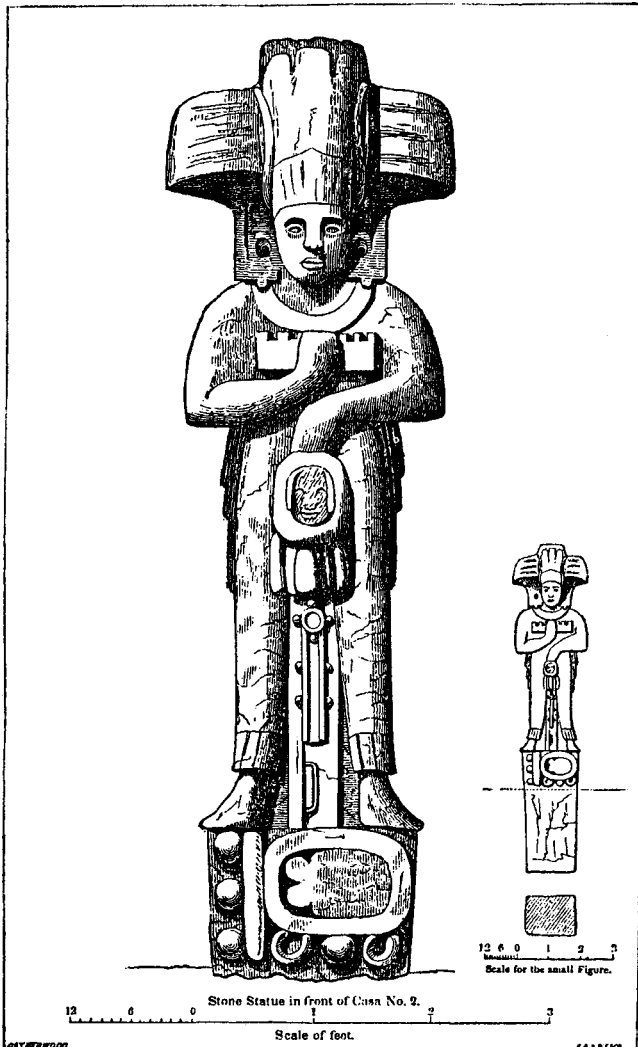
Fig. 10   Stela 1, Palenque (after Stephens 1841, 2: 349).

Over the past two decades, archaeologists have been unveiling the secrets of Tonina, a site initially noted only for its late initial series date (10.4.0.0.0, in 880) and then later for its historical role in derailing Palenque's political trajectory early in the eighth century. As documented by Becquelin, Baudez, and Taladoire, however, with a few recent additions by Yadeun, the architecture of Tonina is particularly hierarchical and structured in its main ceremonial pre-
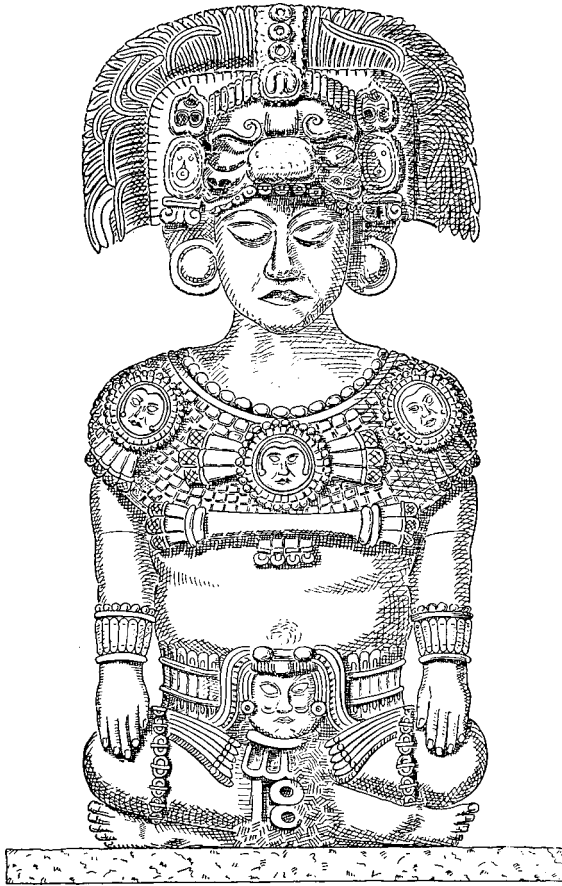
Fig. 11   Seated sculpture from Structure 33, Yaxchilan (after Maler 1901–3: 161).

cinct, a steep natural incline reshaped into seven specific terraces by Tonina lords, with some evidence of Early Classic efforts but in campaigns focused largely in the eighth century (Becquelin and Baudez 1979–82; Becquelin and Taladoire 1990; Yadeun 1992). Few other sites have had their sculptures as dispersed as Tonina has, however, and a profusion of fragments and confusion about original location, even when recovered archaeologically, have created a jigsaw puzzle that seems both to defy archaeology and to plead for more of it.

Like Yaxchilan, Tonina features victorious lords at its apex; its rare two-dimensional ruler portraits are concentrated on an unusual radial structure that may have iconographic value indicating in some way "completion" or even

"apex." Other buildings on the seventh and sixth terraces enshrine rulership, surmounting the hillside like a stepped-back architectural crown. Backing in to the sixth terrace, fifth terrace structures like E5-2 present a calm and static picture of the Tonina ruler. At the base of the site lies a great plaza, or the Esplanade, as it is termed, encompassing a range of buildings featuring rulers, and including a freestanding temple pyramid that might be funerary in nature but that features two ballcourts of distinctive character.

Tonina lords constructed the large H6-2–H6-3 court on a grand scale, in an I-shape, and profusely adorned its façade with informative and enlightening architectural sculpture for the modern viewer. The small G5-1–G5-2 ballcourt sits at a near right angle to its larger mate; streamlined and slight by comparison, the G5 court is open-ended, like most Maya courts, and bears relatively little internal sculpture, as is more common at Palenque, Yaxchilan, Piedras Negras, and Tikal. In the juxtaposition of vaulting rulership and subdued ball game spread across seven terraces, the fundamental relationship between the temple pyramid and the ballcourt is revealed, the same relationship seen condensed, for example, at Tikal, with Temple I and the small ballcourt, or conflated visually, as on the carved risers of Structure 33 at Yaxchilan.

Frequently implicit but rarely explicit is the ritual and historical relationship of warfare to ball game, a subject that Stephen Houston and I have dealt with previously, particularly the issues of underrepresentation and conflation (Miller and Houston 1987). At Tonina, amid many other competing agendas, these particular connections are spelled out, with rulership at the top, victory in warfare and human sacrifice largely set in the middle ranges, particularly on the fifth terrace, and ball game and sacrifice at the base.

The small ballcourt features no surviving architectural sculpture within the court, but it is lined along the exterior of its southern structure by a series of giant *ahau* altars, a sculptural type better known through a single example at Tikal and numerous examples at Caracol, where the form may have been developed to celebrate *katuns* of conquest. The Tikal example of a giant *ahau,* along with Stela 30 the first sculpture to be made after the long wars with Caracol, is even worked in Caracol style, as is the stela itself.[5] In general, although not exclusively, the text and iconography of altars deal with sacrifice. In its round sectioned form, the stone altar may derive from a wood analogue, the stump or the sliced section of a tree, which in a natural form would have continued to weep sap for some time, perhaps the model from nature for the

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[5] Clemency Coggins long ago suggested a connection to Caracol, based on the unusual presence at Tikal of a single giant *ahau* altar commemorating 9.13.0.0.0 (n.d.: 399).
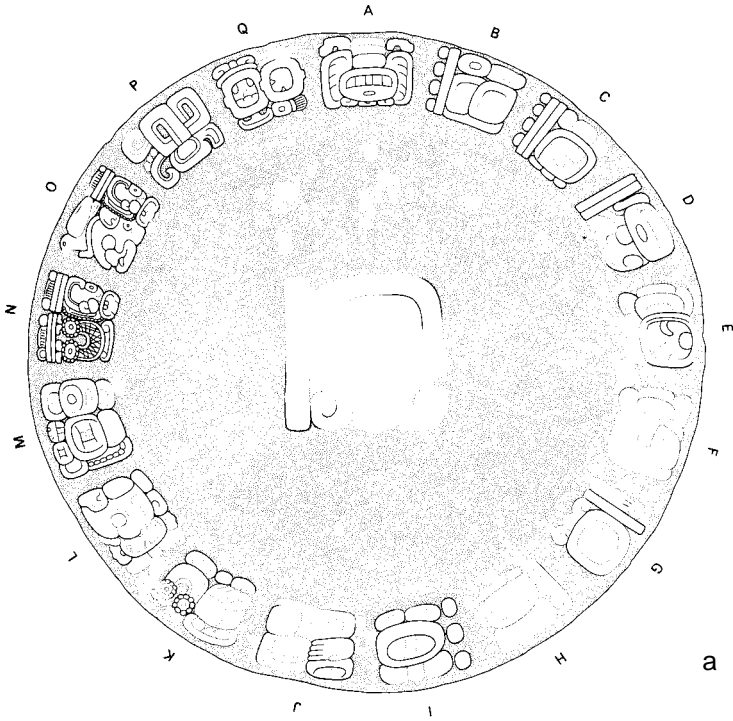
Fig. 12   (a) Giant *ahau* altar, Tonina, Monument 110. Drawing by Peter Mathews (after Becquelin and Baudez 1982, 3: fig. 135); (b) Yaxchilan Altar 10 (after Tate 1992: fig. 120).

bleeding sacrificial victim. With carved concentric text or imagery, the surface of an altar also takes on the image of tree rings, as, for example, at Yaxchilan (Fig. 12b). At the Tonina small ballcourt (G5), the giant *ahau* altars bear laconic texts that can only hint at conquest; nevertheless, aligned like stumps of severed trees these monuments may refer to the victory so specifically spelled out on the fifth terrace (Fig. 12a).

The large ballcourt eschews any such subtlety, for surely few other Mesoamerican courts—and here one might compare Chichen Itza's Great Ballcourt-Tzompantli combination—provide such a deliberate assemblage of and for humiliation. Captive bodies form protruding markers, perhaps once fitted with now lost rings where the human head would be, to indicate the bilateral axis of the court. Sculptors have compressed the captive human forms into the shape of the human phallus, to be repeatedly battered and attacked by aggressive players. Yet these human bodies are framed against massive shields, at once both objects of aggression and trophies of battle. These captive/shield configurations probably once numbered six in all and adorned the symmetrically parallel interior walls of the large court, along its highest tier (Figs. 13 and 14). Usumacinta warriors fought with shields of just this sort and, after the

Fig. 13   Tonina Monument 31, from Ballcourt H. Drawing by Ian Graham (after Baudez and Mathews 1979: fig. 13).
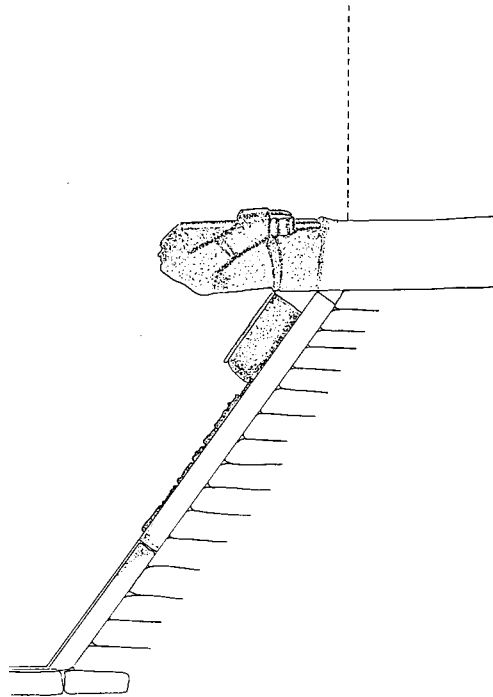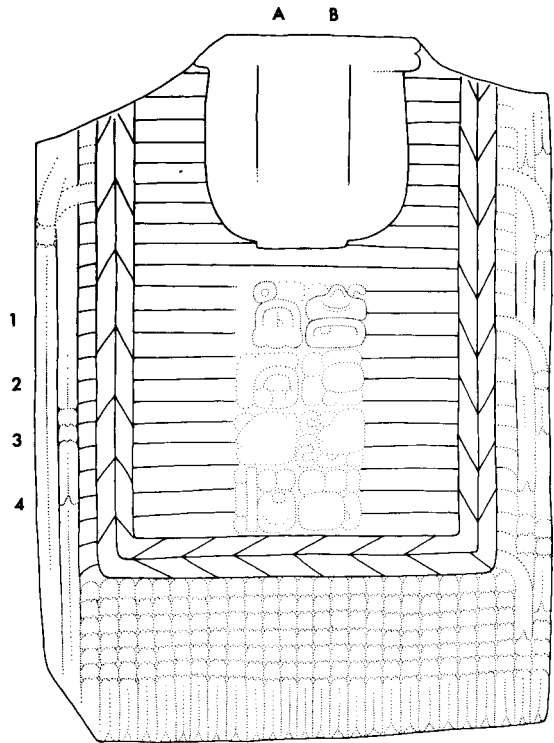
Fig. 14   Tonina Monument
31, from Ballcourt H.
Drawing by Peter Mathews
(after Becquelin and Baudez
1982, 3: fig. 135).

battle, they rolled them up like bedrolls and slung them from their backs before displaying them in victory, perhaps on a ballcourt. But here, the shields are the framework for now-eroded texts that relate victors and captors, with direct reference to Palenque's humiliation at the hands of Tonina. In fact, one Sac Balam named on a fifth terrace slab is named as the subject of capture on one carved shield. But beyond the text is the image on the shield, graphically depicting, despite the serious erosion, truncated human bodies, perhaps bound and trussed images of bound humans from different angles, as if representations of some bouncing ball from a flip book.

Monuments 68, 69, and 51 are ballcourt alley markers of H6, two of them plain round stones and Monument 69 featuring a seated lord with serpent bar.[6] Yet another round monument was described at the larger court by a nineteenth-century visitor. Now lost, the monument described sounds as if it were nearly

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[6] According to Becquelin and Baudez (1982), even Monument 69 is not in its original setting: it was designed for a larger space than its present position.
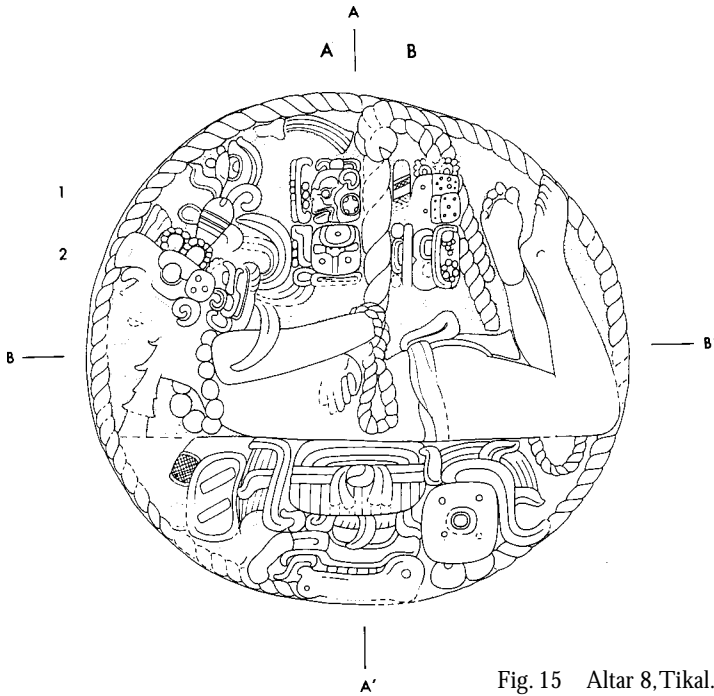
Fig. 15   Altar 8, Tikal.
Drawing by William Coe (after Jones
and Satterthwaite, 1982: fig. 30).

identical to Altar 8 at Tikal (Fig. 15), a monument celebrating ballcourt sacri-
fice (Becquelin and Baudez 1982, 2: 784–785).

The ballcourts at Tonina, then, bear a cohesive and recognizable pattern of
commemorated humiliation. Where the pattern may be most innovative is on
the fifth terrace, where dozens of monuments depicting captives have been
recovered and where dozens of others may originally have been set, including
some from distant contexts (e.g., Monument 27 in Fig. 16). Most recently ex-
cavated monuments on the fifth terrace feature captives, mostly headless. Re-
cent discoveries have included the famous two-dimensional rendering of K'an
Xul of Palenque as well as the prismatic Monument 102 and what may be the
only known example of a female captive. Bearing few dates, these monuments
might generally be assigned to the first half of the eighth century. Smashed in
situ, or hurled down onto the Esplanade, these sculptures may be the most
devastating evidence of the physical destruction Maya lords wreaked upon their
foes.

Archaeologically, Becquelin and Baudez found that fifth terrace structures
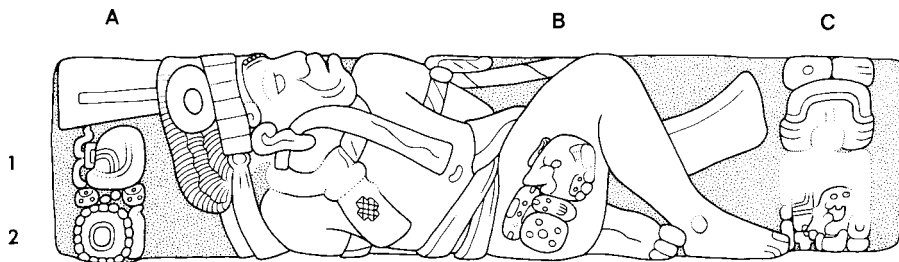
Fig. 16   Tonina Monument 27. Drawing by Peter Mathews (after Becquelin and Baudez 1982, 3: fig. 165).

included many impoverished burials, perhaps the remains of captives or perhaps merely indicative of the economic desperation in the eighth and ninth centuries (Becquelin and Baudez 1979: 45–79). Structurally, rulership at the top yields to captives, with their demise spelled out far below. Although three-dimensional captives formed part of the tableaux, generally three-dimensional ruler figures dominated two-dimensional captive representations.

Although many of the captive figures from the fifth terrace seem, upon first examination, to be unique examples of the form, they nevertheless belong to the broader tradition of rendering captives, commonly seen, for example, at Yaxchilan or Piedras Negras in this same era. Like most sophisticated artistic ateliers and developed traditions, the Maya example demonstrates that stock figures may be repeated. Although we may expect such repetition for the dominant figures, who seek to be represented in such a way as to emulate their predecessors, subsidiary figures, even ones we read as imaginative or unusual in their renderings, may also be conventional. For example, the captive depicted on La Pasadita Panel 1 finds its reversed identity in the Bonampak paintings (Figs. 17 and 18). What is more unusual than the reuse of the form per se is the geographical distance and the time lag between the two renderings, with some 75 years and at least 50 km and the Usumacinta River separating them. Furthermore, although reversing figures in the European tradition is often related to the printmaking tradition and the natural reversals thereof, among the Maya one might suspect simply the sheer common currency of certain images.

By assuming certain conventional representations, we might retrieve the assemblage that Tonina lords once configured on the fifth terrace. Just (n.d.) has recently tried to make sense of the figures by re-creating heads for them and assembling them into two parallel tiers, as facings of E5-11. We need only reverse two of them, for example, to see that they may have analogues elsewhere. Take Fig. 19a, for example, a captive in a strained and contorted seated posture.
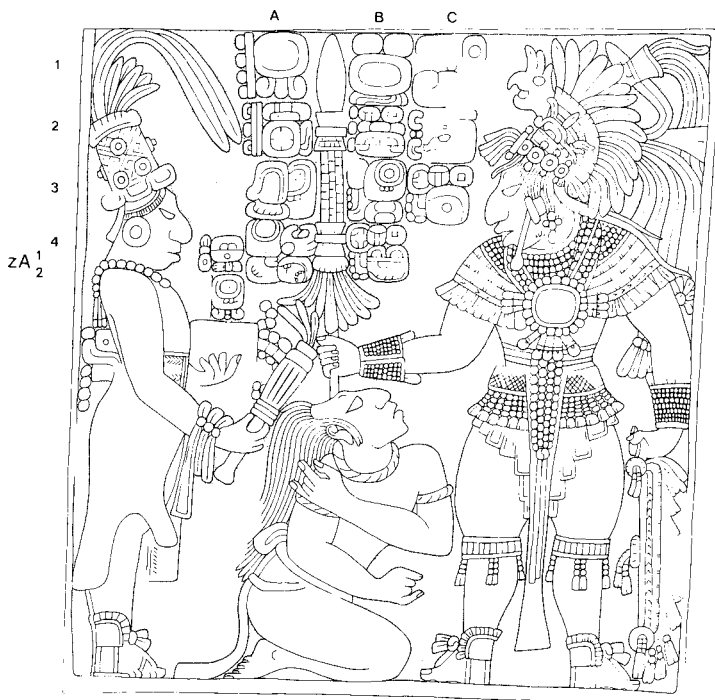
Fig. 17   La Pasadita Panel 1. Drawing courtesy of Ian Graham.

Fig. 18   Detail, Bonampak paintings. Room 2, north wall.
Photograph by Jorge Pérez de Lara © 1995 Project Bonampak/
Proyecto Bonampak.

He, as well as other figures from Tonina, can be assembled, some of them reversed, to form near identities with figures of the Bonampak captive display. A carved fragment of captive hair, thick and coiled, seems again to have been sheared from a Bonampak head (Fig. 19b). The Bonampak paintings clearly belong to the last decade of the eighth century, while the evidence at Tonina points to some 50 to 80 years earlier.

We may well suppose that the principle of "captured art" applies here and that as tributary support Tonina demanded the services of foreign artists. I think the concept of captured art may well be present, but it does not explain the entire phenomenon. Instead, what I believe these duplicated figures across a region stretching from Piedras Negras to Yaxchilan to Tonina and Palenque may also be indicating to us is the sort of training that artists may have received as well as the sort of missing books with stock imagery that we now can only guess at. Across the entire western Maya realm, artists shared some corpus of specific figural representation. Using templates, making tracings, and reversing figures, artists called on their training and their records on paper to devise new groupings or to work out individual figures. But the results were translations of the linear and the small-scale into the monumental and occasionally three-dimensional representations. The translation called for the individual artist's imagination, whether in the conception at Bonampak that makes the stages of degradation of the captives read like pages in a flip book or in the subtle recognition that the nose of the captive on Tonina Monument 27 could be wrapped around the riser onto the tread, inviting greater humiliation (Fig. 16).

CONCLUSIONS

Beyond formal considerations and, ultimately, iconography, architecture can often be read as a metaphor for a mental outlook, a period in history, or an ethnic or societal identity. In such terms, what is Maya architecture the metaphor for? In this case, the forms of domestic architecture, with their openness and egalitarian qualities, are usurped and transformed into tools of control, hierarchy, and power. Individual trappings of war and triumph may be only incidental to the larger project. By the late eighth century, when architecture itself begins appearing in works of art, as, for example at Bonampak, the particular architecture figured is the staircase and the platform. By the end of the eighth century, architecture begins to become the subject of art rather than art's armature. And even the mere suggestion of monumental stairs had become the sign for control and domination. Memory feeds on signs as well as on specific narrative.

Using a vast vocabulary in their writing and iconography, and in their art

a

Fig. 19   (a) Tonina Fragment
95 and (b) Fragment 61 (after
Becquelin and Baudez 1982, 3:
figs. 172b and 182b).

b

and architecture, the Maya developed endless riffs on themes. In the Maya equiva-
lent of the Aztec *calmecac,* they practiced a vocabulary that was both universally
Maya and simultaneously local. By the eighth century, in the western Maya
realm, Maya architectural compositions increasingly focused on the staircase,
committing to public memory a celebration of warfare and sacrifice and in-
creasingly figuring such staircases with conventional images.

Mary Miller

BIBLIOGRAPHY

bibliography
Baudez, Claude, and Peter Mathews
    1979   Capture and Sacrifice at Palenque. In *Tercera mesa redonda de Palenque,* vol. 4 (Donnan Call Jeffers, ed.; M. G. Robertson, gen. ed.): 31–40. Pre-Columbian Art Research Center, Palenque, Chiapas, Mexico.

Becquelin, Pierre, and Claude F. Baudez
  1979–82   *Toniná: une cité maya du Chiapas (Mexique).* 3 vols. Mission archéologique et ethnologique française au Mexique, México, D.F.

Becquelin, Pierre, and Eric Taladoire
    1990   *Toniná: une cité maya du Chiapas (Mexique).* Centre d'études mexicaines et centraméricaines, México, D.F.

Coggins, Clemency
    n.d.   Painting and Drawing Styles at Tikal: An Historical and Iconographic Reconstruction. Ph.D. dissertation, Harvard University, 1975.

Fash, William L.
    1991   *Scribes, Warriors and Kings: The City of Copán and the Ancient Maya.* Thames and Hudson, London.

García Moll, Roberto, et al.
    1990   *La exposición de la cultura maya.* Tokyo.

Graham, Ian
    1979   *Corpus of Maya Hieroglyphic Inscriptions,* vol. 3, pt. 2: *Yaxchilan.* Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge, Mass.
    1982   *Corpus of Maya Hieroglyphic Inscriptions,* vol. 3, pt. 3: *Yaxchilan.* Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge, Mass.

Houston, Stephen D.
    1984   A Quetzal Feather Dance at Bonampak, Chiapas, Mexico. *Journal de la Société des Américanistes* 70: 127–138.
    1993   *Hieroglyphs and History at Dos Pilas: Dynastic Politics of the Classic Maya.* University of Texas Press, Austin.
    1994   Literacy among the Maya. In *Writing without Words: Alternative Literacies in Mesoamerica and the Andes* (W. Mignolo and E. Boone, eds.): 27–49. Duke University Press, Durham, N.C.

Jones, Christopher, and Linton Satterthwaite
    1982   *The Monuments and Inscriptions of Tikal: The Carved Monuments.* Tikal Report, no. 33a. University Museum, University of Pennsylvania, Philadelphia.

Just, Bryan
    n.d.   Captives at Tonina. Manuscript on file, Department of the History of Art, Yale University, 1994.

Kubler, George
    1961   The Design of Space in Maya Architecture. In *Miscellanea Paul Rivet: octogenario dicata*: 515–531. Universidad Nacional Autónoma de México, México, D.F.

Maler, Teobert
    1901–3   *Researches in the Central Portion of the Usumatsintla Valley.* Memoirs of the Peabody Museum of Archaeology and Ethnology, no. 3. Harvard University, Cambridge, Mass.

Martin, Simon, and Nikolai Grube
    1995   Maya Superstates. *Archaeology* 48: 41–46.

Mathews, Peter, and Merle Greene Robertson
    1985   Notes on the Olvidado, Palenque, Chiapas, Mexico. In *Fifth Palenque Round Table, 1983,* vol. 7 (V. M. Fields, ed.; M. G. Robertson, gen. ed.): 7–17. Pre-Columbian Art Research Institute, San Francisco.

Maudslay, Alfred Percival
    1899–   *Archaeology.* Biologia centrali-americana. 5 vols. Porter and Dulau, London.
    1902

Miller, Mary E.
    1983   Some Observations on Structure 44, Yaxchilan. In *Contributions to Maya Hieroglyphic Decipherment* (Stephen D. Houston, ed.): 62–79. Human Relations Area Files, New Haven, Conn.

Miller, Mary E., and Stephen D. Houston
    1987   The Classic Maya Ballgame and Its Architectural Setting: A Study in Relations between Text and Image. *RES: Anthropology and Aesthetics* 14: 47–66.

Proskouriakoff, Tatiana
    1950   *A Study of Classic Maya Sculpture.* Carnegie Institution, Publication 593. Washington, D.C.

Robertson, Merle Greene
    1983–91 *The Sculpture of Palenque.* 4 vols. Princeton University Press, Princeton, N.J.

Schele, Linda, and Mary Ellen Miller
    1986   *The Blood of Kings: Ritual and Dynasty in Maya Art.* Kimbell Art Museum and George Braziller, Fort Worth and New York.

Simpson, Jon Eric S.
    1974   The New York Relief Panel—and Some Associations with Reliefs at Palenque and Elsewhere, Part I. In *Segunda mesa redonda de Palenque,* pt. 3 (Merle Greene Robertson, ed.): 95–105. Robert Louis Stevenson School, Pebble Beach, Calif.

Smith, A. L.
    1950   *Uaxactun, Guatemala: Excavations of 1931–37.* Carnegie Institution, Publication 588. Washington, D.C.

Stephens, John Lloyd
    1841   *Incidents of Travel in Central America, Chiapas, and Yucatan.* 2 vols. Harper's, New York.

Stomper, Jeffrey
    n.d.   The *Popol Na*: A Model for Ancient Maya Community Structure at Copán, Honduras. Ph.D. dissertation, Yale University, 1996.

Sullivan, Paul
    1989   *Unfinished Conversations: Mayas and Foreigners between Two Wars.* Knopf, New York.

Mary Miller

Tate, Carolyn
    1992   *Yaxchilan: The Design of a Maya Ceremonial City*. University of Texas Press, Austin.
Thompson, J. Eric S.
    1954   *The Rise and Fall of Maya Civilization*. University of Oklahoma Press, Norman.
Wauchope, Robert
    1938   *Modern Maya Houses: A Study of Their Archaeological Significance.* Carnegie Institution, Publication 502. Washington, D.C.
Willey, Gordon R.
    1953   *Prehistoric Settlement Patterns in the Virú Valley, Perú.* Bulletin of the Bureau of American Ethnology, no. 155. U.S. Government Printing Office, Washington, D.C.
Yadeun Angulo, Juan
    1992   *Toniná: El laberinto del inframundo.* Gobierno del Estado de Chiapas, Mexico.