

## Another Look at the Maya Ballgame

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I have long been intrigued by the fact that the scenes of ball playing on Classic Maya painted or carved vases seem to bear little relation to what Mesoamericanists have long accepted as the standard form of this famous sport and/or religious event, that is, a team game played with a solid rubber ball in a special court with a ground plan in the form of a capital "I"<sup>1</sup>. Take, for instance, a well-known Late Classic Maya vase in the Leiden Museum (figure 1). Between the two protagonists, each protected by heavy "yokes" or belts and knee pads, is a huge, distorted ball – apparently as much as 80 cm or more in diameter – being played not in a standard court but against what seems to be a set of stairs or perhaps a stepped platform.

One could explain this away as an example of individual artistic license, and certainly there is a bit of exaggeration in the Leiden vase. But similar representations of "impossibly large" balls bouncing off stairs are found on a number of other Maya vases and even on Late Classic reliefs from the Usumacinta area. When there is a repetitive pattern, it must be explained. Here is my working hypothesis: these scenes are largely based on reality, not imagination – the ancient Maya artists were depicting what they actually saw. If so, then this was another kind of ball game, played with a different kind of ball<sup>2</sup>.

There is one major problem, however: a solid rubber ball the size of the ones depicted in the art would be impossibly heavy. The specific gravity of natural rubber is .95 (that is, 5 per cent less than an equal weight of water)<sup>3</sup>. Most authorities believe that the ball used in the standard game was about 20 cm in diameter; its weight would therefore have been ca. 4 kg<sup>4</sup>. Even at this size, the fast-bouncing ball

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<sup>1</sup> See Scarborough and Wilcox 1991 for a collection of essays covering most aspects of the standard ballgame as it was played throughout Mesoamerica.

<sup>2</sup> The six published volumes of *The Maya Vase Book* by Justin Kerr contain many rollout images of the non-standard ballgame.

<sup>3</sup> An indispensable book on ancient and modern (industrial) rubber is by Charles Morrow Wilson (1943), who gives its specific gravity as .90. However, scientists at the Uniroyal laboratory in Connecticut have told me it is .95. According to Wilson, the natural rubber used in pre-Columbian Mesoamerica was derived from the *Castilloa elastica* tree, native to the southern Gulf Coast. Its latex was coagulated by mixing it with the juice from morning glory vines. Apart from rubber balls, Mesoamericans used rubber for incense, as medicine, and for spattering on paper to be ritually burned (STONE A. 2002).

<sup>4</sup> The formula for determining the weight of a solid ball made from natural rubber is thus  $\frac{4}{3} \times \pi \times r^3 \times .95$ .



Figure 1 – Rollout of a Late Classic Maya vase (K 2912), showing a ballgame in progress. The giant ball is being played against a set of large steps. The glyph on the ball is a variant of “14 nab”. Photograph © Justin Kerr.

would have been a dangerous missile necessitating protective padding on the part of the player. Mary Miller and Karl Taube have commented on this dilemma: «Some very large balls are depicted in Maya and West Mexico art; a solid rubber ball 30 cm or 12 inches in diameter would weigh 3.5 kg or 7.5 lb and could have maimed or killed an off-balance player» (MILLER M. E. – TAUBE K. 1993: 44).

However, these authors have been faulty in their calculations: a 30 cm ball would actually weigh no less than 14.1 kg or about 31 lb and have been far more lethal than they thought. A solid rubber ball of 80 cm. diameter would weigh 255 kg, and at rest would certainly collapse of its own weight! I therefore believe that the practical upper limit for the diameter of a solid ball must have been between 20 and 25 cm.

There is a solution to this problem: the oversize ball depicted in Classic Maya art was actually hollow, not solid, and thus would have resembled a modern volleyball or even a beach ball. As has been demonstrated in the classic survey by Theodore Stern (1948), the rubber ball game was played over wide areas of tropical South America, including the Antilles (the game – and rubber itself – were first witnessed in Haiti by the Spaniards). Among some of these peoples the balls were hollow, and produced by a variety of methods. For example, using latex from the sap of the *Hancornia speciosa* tree, the Paressí of central Brazil made rubber balls of up to 20 cm in diameter: «A layer of latex is laid over a gently concave piece of wood, and when it becomes firm is removed and rolled around until the edges touch and are pinched together with the fingers. Through a small hole, left open for this purpose, the ball is blown up. Then the hole is sealed and the entire surface built up with latex until it reaches the desired thickness» (STERN T. 1948: 13).

I have little doubt that through such relatively simple technology, the Classic Maya could have made balls as large as those depicted on ceramics and in the reliefs.

Francis Robicsek and Donald Hales (1981: 172) were the first to note that these oversize objects are usually inscribed with a glyphic compound (ordinarily T. 23: 501), preceded by a bar-and-dot coefficient which is 9, 12, 13, or 14. Following a suggestion by Nicholas Hellmuth, they ventured that the whole combination might record the “score” at that particular point in the game.



Figure 2 – Rollout of a polychrome, Late Classic vase (K2803). The ball is marked with the glyph “14 nab”. Photograph © Justin Kerr.

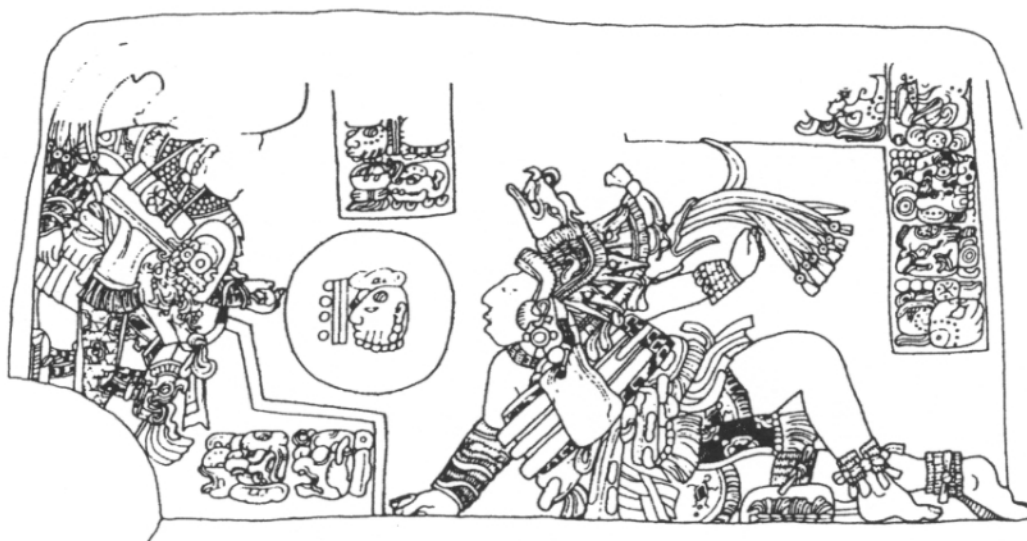


Figure 3 – Limestone panel of ballplayers from “Site Q” (El Perú) in the Art Institute of Chicago. “14 nab” is carved on the ball. From COHODAS M. 1991, fig. 14.4.

The T. 23:501 compound is now known to be read as **na-b(a)**, *nab*. In their great catalogue “The Blood of Kings”, Linda Schele and Mary Ellen Miller (1986: 255) were puzzled by the meaning of *nab* (or *na:ab*), which they took to be the Maya word for water-lily or still water, but senseless in this context. They were also mystified by the coefficients, but suggested that they could refer to the number of human sacrifices at stake – in line with their hypothesis that royal ballgames were played with captive opponents destined for decapitation.

Let us examine another possibility for translating *nab* or *na:ab*, and making sense of the accompanying numbers. In the Cordemex dictionary of the Yucatec

Maya language appear a number of entries for this word, compiled from early Colonial period vocabularies like the Motul as well as from later dictionaries (BARRERA VÁSQUEZ A. editor 1980: 545). Here are just a few:

NAB	<i>palmo</i> <i>cuenta para palmos</i> <i>classificador de [o para] palmos</i>
NAAB	<i>palmo</i> <i>medida de palmo</i> <i>la cuarta parte de la vara castellana</i>

In English, a *palmo* is a "handspan", the distance between the tip of the thumb and the little finger, with hand outstretched. The old Spanish linear measure *vara* was 83.6 cm; if a *palmo* was  $\frac{1}{4}$  of a *vara*, it would be a span of about 21 cm or  $8\frac{1}{4}$  inches.

I here maintain that the glyph compound on the surface of these inflated rubber balls indicates the circumference of the ball itself, expressed as handspans, and has nothing to do with the game's score or with human sacrifice. If my assumption is valid, then the real diameters of these pictured objects can be calculated:

9 <i>nab</i>	58.2 cm (22.9 inches)
12 <i>nab</i>	77.6 cm (30.5 inches)
12 <i>nab</i>	84.0 cm (33.1 inches)
14 <i>nab</i>	90.6 cm (35.7 inches)

Now, it must be admitted that such rubber balls are very large, but I should point out that each spring, in one of the college compounds that make up Yale University, opposing teams compete in a game called "bladderball" in which the ball itself is up to eight feet (2.4 m) in diameter!

What kind of a game, then, would it have been in which very large, hollow balls were put in play? The players are always shown wearing equipment that is considered orthodox for the standard ball game: "yokes" or heavy, padded belts and a protective pad on one knee. They also propel the ball with the hips or buttocks, as in the standard game. Yet the pictorial art is highly consistent in *not* depicting the sloping batter or interior surface of a standard, I-shaped court, but rather a single set of large steps. This is found not just on painted vases, but also on the "Site Q" panels (see, for instance, SCHELE L. – MILLER M. E. 1995: Pl.101a); on the sculptured step in front of Structure 33 at Yaxchilan (GRAHAM I. 1982: 155-162); and in drawings 21, 31, and 51 in Naj Tunich Cave (STONE A. 1995: 150-152).

The iconography of these ballgames associated with stairs includes explicit references to human sacrifice of captives - bound captives and skulls are sometimes delineated inside these huge objects (see SCHELE L. – MILLER M. E. 1995: fig. VI. 7; however, in the interests of practicality, I think it is improbable that balls literally contained human bodies or heads!). In a study of ballgame architecture, Mary Miller and Stephen Houston (1987) proposed that in these scenes, the Classic

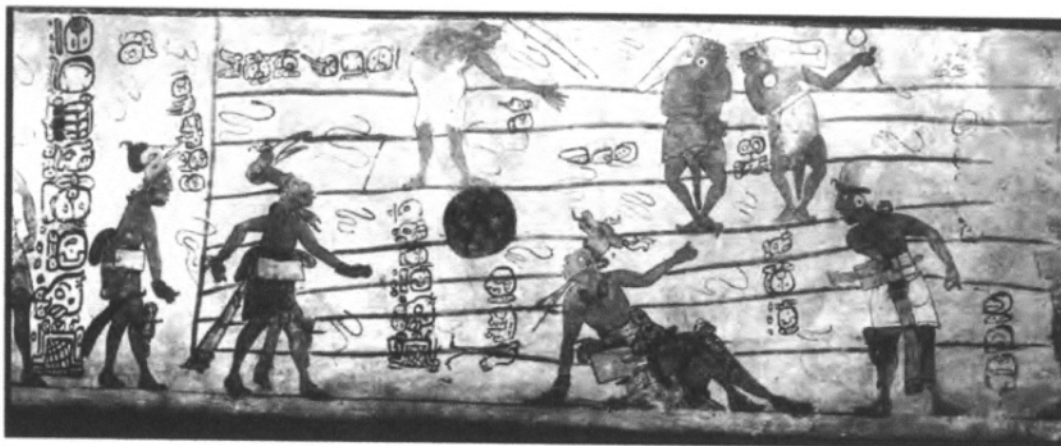


Figure 4 – Rollout of ballgame on a Late Classic polychrome vase (K5435). In this scene taken from real life, the onlookers are actually standing on the steps against which the inflated ball is being played. Photograph © Justin Kerr.

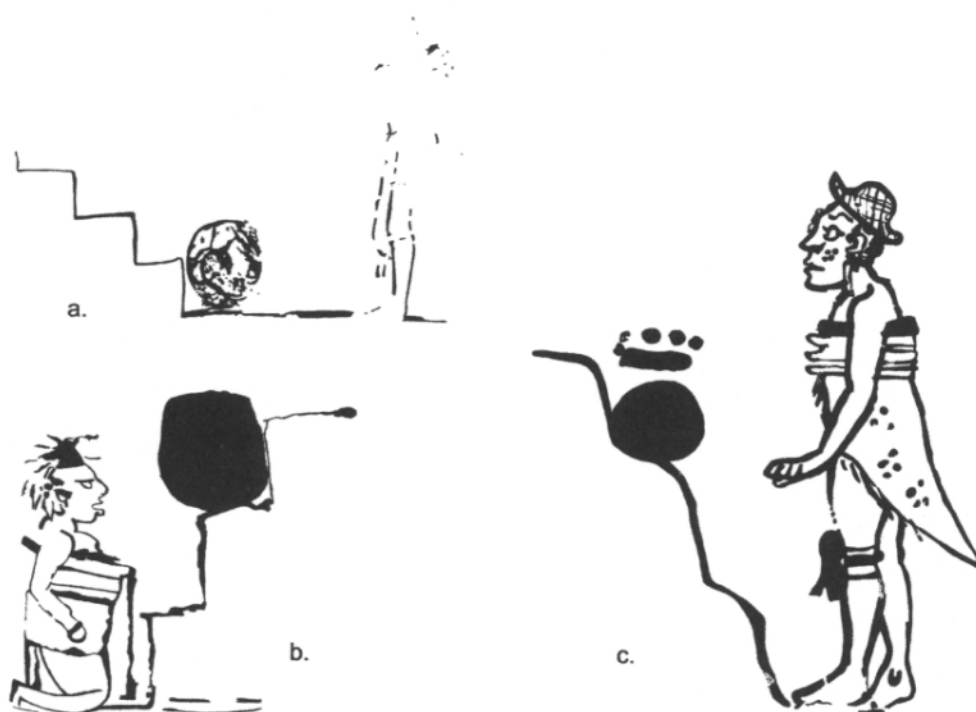
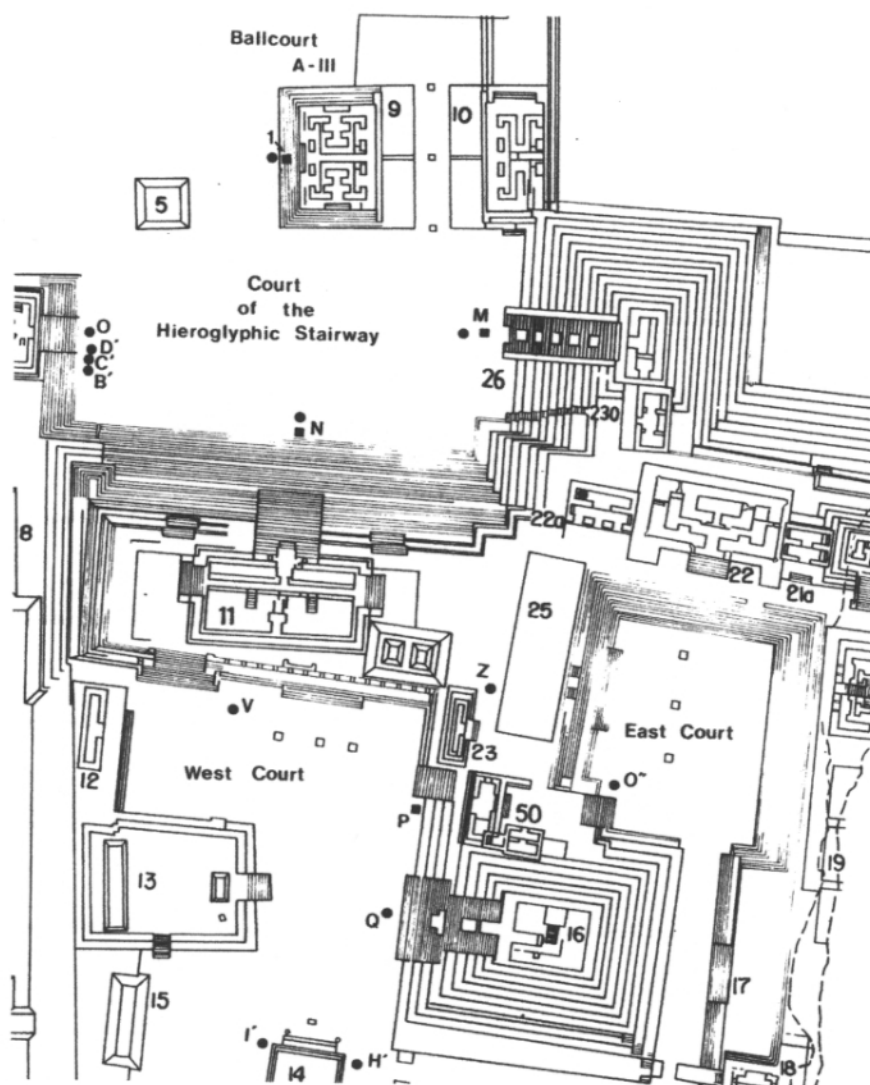


Figure 5 – Drawings from Naj Tunich Cave, Petén, Guatemala. The hat and facial markings of the player in *c* identify him as Hunhapú, one of the Hero Twins of the *Popol Vuh* epic.

Maya artist has conflated two ritual moments: 1) the “actual” ballgame, which would have been played in a standard ballcourt, and 2) the sacrifice of a captive lord, who had been forced to play a losing game with the victors, atop a stairway. This is a line of reasoning followed and expanded upon by ~~Oscar~~ Chinchilla Mazariegos (1992), basing himself on new readings of accompanying glyphs.

Oswaldo

Nonetheless, I think again that we must take these scenes as representations of something real: whatever their devotion to the orthodox game in the standard court, the Classic lords also played a different and highly important game with an inflated ball bounced off of stairs. Our reluctance to accept this stems from a commonly held misapprehension that there was only one kind of ball game in ancient Mesoamerica. That this is wrong can be proved by the famous murals of Tepantitla, in Teotihuacan. As María Teresa Uriarte has shown in her study of 1992, a variety of games were played in that Early Classic city: stickball (in a court with or without movable markers), football, standard Mesoamerican ball in a walled court (perhaps within the Avenue of the Dead), and – most important for us – a ball game played against stairs.



*Figure 6* – Map of the central part of Copán, Honduras. On the north, three markers are set into the floor of Ballcourt A-III; these are matched by sets of three markers in both the West Court and East Court. The latter are lined up with staircases against which the game could be played. From FASH W. 1991: fig. 8.



In a Classic Maya city, where might those stairs have been? Unfortunately, the possibilities are almost infinite, since any large structure with extensive steps might have served – a courtyard, the frontal stair of a pyramid, a stepped platform, and so on. But the evidence from Copán suggests that the game was far more localized than this. Set into the mainline of the floor of the justly famous Ballcourt A-III of the city are three carved stone markers, probably delimiting the zones involved in scoring the game: one in the center, and one near either end of the court. Similar markers, whether of stone or merely painted on the plaster probably indicated zones in other standard Maya ballcourts. As ~~Oscar~~ Chinchilla Mazariegos (1992) has pointed out, there are two other marker-like sets of stones placed in floors at Copán. One of these is runs down the center of the East Court, and is firmly oriented to the staircase in front of Structure 25. Another such triad, this time carved with representations of the god K'awil, is located in the West Court, and is oriented to the staircase in front of the "Reviewing Stand" of Temple 11. I suggest that these marker sets functioned like those in Ballcourt A-III, but in this case serving to score the game with the inflated rubber ball, which in Copan was confined to these two courts.

In Group 6C-XVI in the southwestern quadrant of Tikal, an archaeological project directed by Juan Pedro Laporte M. uncovered an Early Classic painted mural dating to about 370 AD; lined up on either side of a frontal stair are seven ballplayers divided into two groups (CHINCHILLA MAZARIEGOS O. 1992: 163), as though awaiting the signal to start playing.

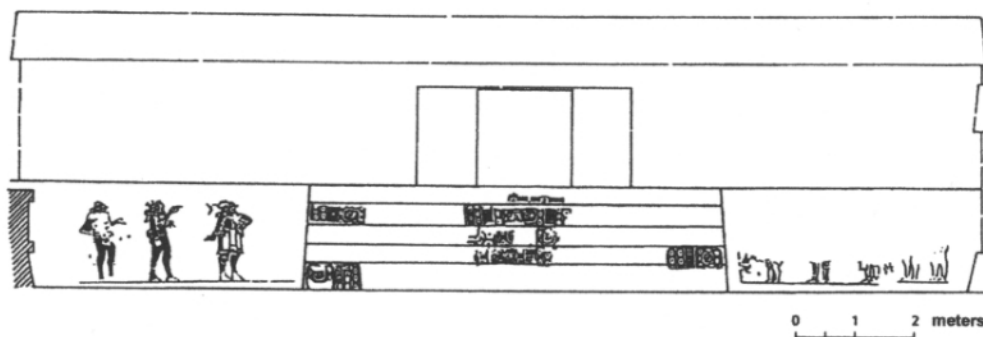


Figure 7 – Early Classic mural in Group 6C-XVI, Tikal. Drawing by J.P. Laporte, from CHINCHILLA MAZARIEGOS O. 1992.

This alternative game may have been even more important to the Maya kings and the nobility than the orthodox one. Standard ballcourts do exist in all major Classic Maya cities, but with the exception of Copán, they are generally few and small, given the size and population density of these great centers. The huge site of Palenque, for example, has only one standard ballcourt of no great distinction, and even at Tikal they are in scant numbers considering the vast scale of the city. Contrast this situation with the much smaller Gulf Coast site of El Tajín, which possesses no less than ten standard ballcourts.

There is still much to be learned about Classic Maya culture and its sacred spaces, including the richly symbolic ballgame, but we must look at our data from the past with fresh viewpoints.

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