



The Cascajal Block: The Earliest Precolumbian Writing

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On September 15, 2006, it was reported in the journal *Science* that a stone block inscribed with writing has been found near the Olmec archaeological site of San Lorenzo, Veracruz (Rodríguez Martínez et al. 2006). Clearly associated with the Olmec civilization and dating to between approximately 1000 and 800 BCE, this script is the earliest in Mesoamerica and therefore the Western Hemisphere.

The authors of the article, “Oldest Writing in the New World,” are María del Carmen Rodríguez Martínez, Ponciano Ortíz Ceballos, Michael D. Coe, Richard A. Diehl, Stephen D. Houston, Karl A. Taube, and Alfredo Delgado Calderón.

The “Cascajal block” (Figures 1, 2), as it is known by virtue of its find spot, was first brought to the attention of Rodríguez Martínez and Ortíz Ceballos in April 1999, when local authorities from the Municipality of Jáltipan, Veracruz, asked that inspectors from Mexico’s National Institute of Archaeology and History (INAH) be dispatched to examine objects that had been found in a local gravel quarry



Figure 1. Detail of the incising on the Cascajal block. Photo: Karl Taube.



Figure 2. Richard Diehl and Michael Coe with the Cascajal block. March 2006. Photo: Karl Taube.

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(Rodríguez Martínez and Ortíz Ceballos 1999). The quarry, which had been mined over the course of several years for road construction materials, proved to be an archaeological site, which was designated El Cascajal.

The four mounds of Cascajal are located in the *ejido* of Lomas de Tacamichapa, within sight of the salt dome on top of which the major Olmec center of San Lorenzo is sited. The mounds themselves date to the Classic period in the latter part of the first millennium of the current era, but they cover evidence of a much earlier occupation. The Cascajal block was found in a heap of debris that resulted from the destruction of a large part of one of the mounds (down to a depth of 2.5 meters), during the course of which local workers collected an assortment of ceramic sherds, fragments of clay figurines, and broken ground stone artifacts. Divorced from its stratigraphic context, the Cascajal block has been dated by its general association with these materials, crosschecked by iconographic analysis.

Roughly seventy-five percent of the materials in question date to the Formative Period.¹ Of these, all but a few sherds can be securely attributed to the San Lorenzo phase (uncalibrated 1200-900 BCE), while the remaining few belong to the Palangana phase (calibrated 800-400 BCE).² Palangana is a minor phase of the San Lorenzo sequence (Coe and Diehl 1980:200-208), but it is contemporaneous with the main occupation of the Olmec site of La Venta in Tabasco. The other twenty-five percent of the materials belong to the Terminal Classic Villa Alta phase at the end of the first millennium CE. The authors are led to conclude:

It seems probable, therefore, that the block, and its incising, can be dated to the San Lorenzo phase, perhaps towards the end of San Lorenzo B, that is to say, about 900 BCE. This dating is in agreement with the Olmec iconography that must have given rise to this script in the first place. (Rodríguez Martínez et al. 2006:1611)

The bearing of Olmec iconography on the dating of the Cascajal block will be considered below. Suffice it for now to say that a considered perusal of Figure 3a should be enough to assure Olmec specialists that the motifs in evidence on the Cascajal block cannot relate to the Terminal Classic and must belong to the Palangana phase at the latest (the purely “Olmec” nature of many of these motifs will be discussed in greater detail below). Modern forgery is clearly ruled out by the authors’ examination of high-resolution photographs, which reveal “unmistakable weathering, including pitting over incisions, with mineralization around the pits and inside the carved lines, a secure sign of ancient surface alteration” (ibid.:1612). This has been confirmed by the experts in INAH’s geological laboratory.

The size of the Cascajal block—roughly fifteen inches on its longest side—can be appreciated in the photograph in Figure 2. Carved from serpentine, five of its six sides are somewhat convex; the flat side is incised with sixty-two glyphs (Figure 3a). “Scrutiny of this surface shows variable patina, vestiges of local orange clay, and the workings of two blades, one blunted and thus ideal for outlines, the other sharper, to make incisions within signs” (ibid.:1612) (Figure 1). The stone had been carefully smoothed to make the writing surface (the authors note the potential to grind it down again to create an “erasable document”) (ibid.:1612).

Is the incising on the Cascajal block truly writing? The authors assert that the Cascajal block meets all the relevant criteria:

¹ The Formative is also known as the Preclassic, particularly in Maya studies.

² The date ranges for the San Lorenzo and Palangana phases are those given in the article (Rodríguez Martínez et al. 2006:1611). The mixture of uncalibrated and calibrated radiocarbon dates presumably arises from the fact that the controversial antiquity of the Olmec was famously established by the advent of radiocarbon dating and its application to La Venta in the 1950s, whereas the longstanding custom in Olmec studies is to use uncalibrated dates. As Richard Diehl explains, “I justify this flouting of modern archaeological practice by observing that we have so few radiocarbon determinations for the critical points in Olmec history that to calibrate them would appear to lend them more validity than they merit” (Diehl 2004:10).

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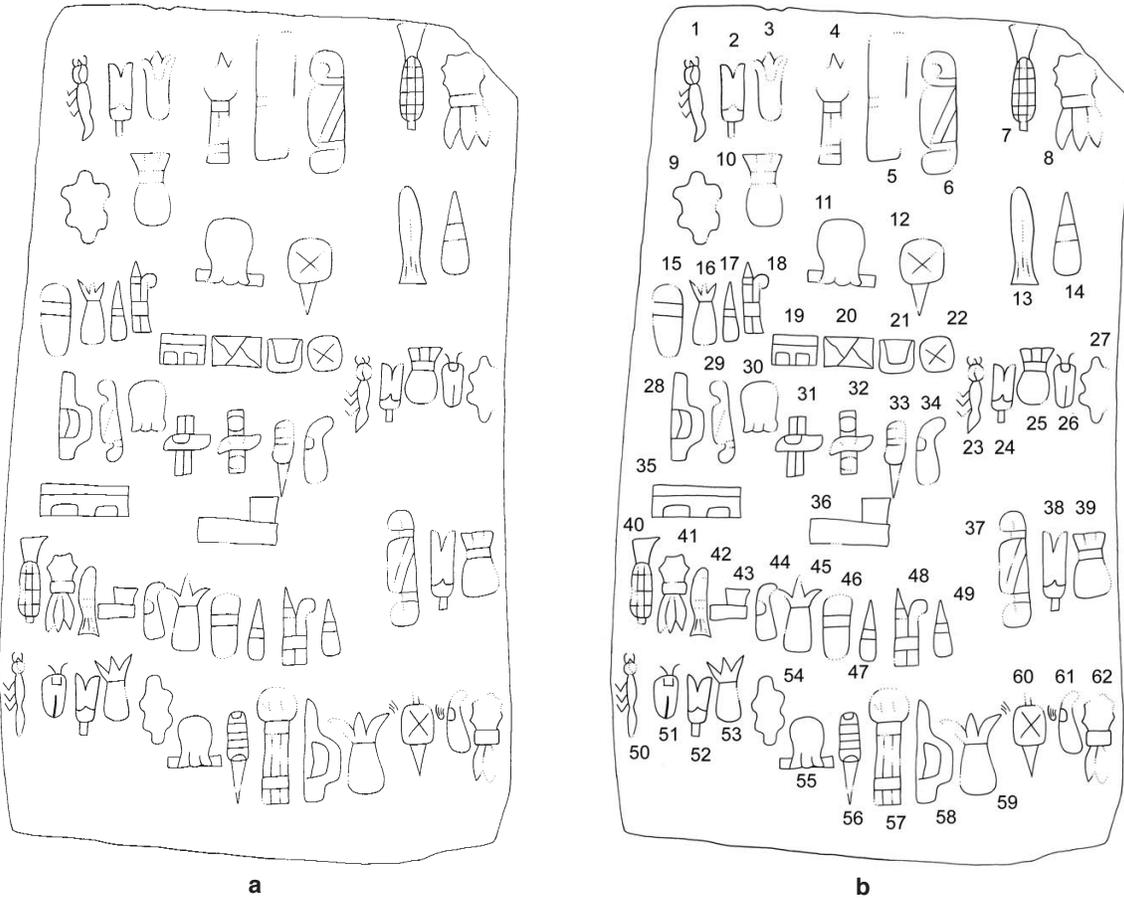


Figure 3. The Cascajal inscription: (a) drawing of the incised glyphs as they appear on the flat side of the block, (b) the glyphs numbered for reference (Rodríguez Martínez et al. 2006:Fig. 4), (c) signary of unique glyphs from the text (Rodríguez Martínez et al. 2006:Fig. 5). Drawings by Stephen Houston.

	4x	3x	2x	1x
1		4	10	22
2		5	11	23
3		6	12	24
		7	13	25
		8	14	26
		9	15	27
			16	28
			17	
			18	
			19	
			20	
			21	

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The text deploys: (1) a signary of about 28 distinct elements, each an autonomous, codified glyphic entity, (2) a few in repeated, short, isolable sequences within larger groupings, (3) a pattern of linear sequencing of variable length, with (4) a consistent reading order. As products of a writing system, the sequences would by definition reflect patterns of language, with the probable presence of syntax and language-dependent word order. (ibid.:1612)

The signary alluded to is reproduced here in Figure 3c. It isolates the unique glyphs of the text's sixty-two, reducing them to twenty-eight distinct signs, three of which repeat four times, six three times, and twelve two times, while seven occur only once. The repeating sequences are illustrated in Figure 4.

The direction of the reading order, and even the orientation of the text, is not entirely certain. With regard to the latter point, a horizontal orientation of the block (as in Figure 5) would have the advantage of creating a roughly columnar layout, in the manner of more than one subsequent Mesoamerican writing system. And the apparent "insect" (Figure 6a), which appears at the beginning (or the end) of a number of the sequences, would be in a more naturalistic position. But the authors point out that the vegetal icons which appear in the text would be expected to sprout from the top, as is consistently the case with Olmec imagery (ibid.:1612). And they see further support for a vertical orientation of the block (and therefore a horizontal orientation of the text) in "the disposition of 'sky-band' elements much like those on Olmec thrones and later, regional iconography" (ibid.:1612) (Figure 6b).

Reading order is less certain.

Most Mesoamerican scripts read left-to-right in unmarked conditions, i.e., when not arranged in unusual architectural settings. Left-to-right is likely to be present here too. Yet there is no strong evidence of overall organization. The sequences appear to be conceived as independent units of information, although, to judge from shared details of the carving, they were recorded by the same hand. (ibid.:1612)

Signs do not repeat in the shorter sequences, but do repeat in the two longest. The limited number of signs is possibly a factor of sample size rather than an indication of alphabetic writing (ibid.:1613). Particularly given the absence of accompanying imagery, the chances of decipherment are slim unless and until the signary is expanded by further discoveries (ibid.:1613). The corpus of signs for Isthmian,

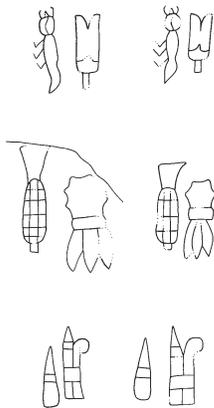


Figure 4. Repeating sequences in the Cascajal text: (a) Sign 4 + Sign 1, (b) Sign 17 + Sign 7, (c) Sign 3 + Sign 19. Drawings by Stephen Houston.

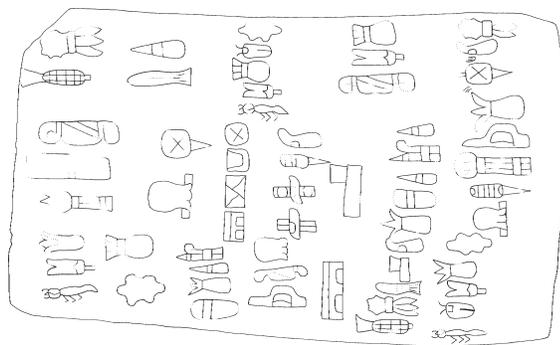


Figure 5. The text of the Cascajal block in roughly columnar orientation. Drawing by Stephen Houston.

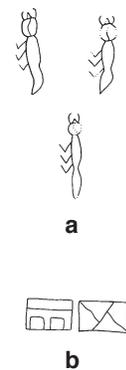


Figure 6. Glyphs from the Cascajal text: (a) Sign 4 'insect,' (b) Sign 11 'sky-band/throne' followed by Sign 22 "mat."

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a writing system from the same general region, was recently augmented by a new find (Houston and Coe 2003), although this has not necessarily led to decipherment (cf. Justeson and Kaufman 1997). The relatively small number of Isthmian texts suggests that even a viable and widely diffused script might not leave a large number of surviving examples (Rodríguez Martínez et al. 2006:1613). Quite possibly the majority of texts in the Cascajal script were carved in wood, given the evidence of a woodworking tradition (from an even earlier epoch) fortuitously preserved in the spring of nearby El Manatí (as documented previously by two authors of the present report [Ortiz Ceballos and Rodríguez Martínez 2000]). Bearing on the possibility that more texts in the Cascajal script are yet to be found is the fact that two objects long-since known to students of the Olmec—the Tlaltenco Celt and the Humboldt Celt—may display horizontally oriented glyphs in the script (this is deemed probable in the case of the Tlaltenco Celt and possible in that of the Humboldt) (Rodríguez Martínez et al. 2006:1613).

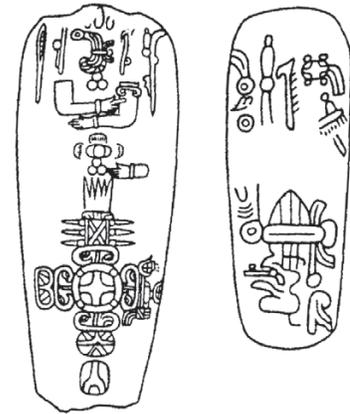


Figure 7. The Humboldt Celt (left) and the Tlaltenco Celt (right). Drawings after Justeson and Mathews (1990:Fig. 1).

In discussing the evidently iconic origin of some of the signs on the Cascajal block, the authors note that Signs 24 and 25, which are paired in the text (Figure 8a), both display eye motifs; these signs suggest the facial markings on Middle Formative Olmec celts (Figure 8b) (*ibid.*:1613). Another pairing, that of a ‘throne’ sign with a ‘mat’ sign (Figure 6b), may be the earliest poetic couplet in the Mesoamerican rhetorical tradition, given that mats as well as thrones are commonly associated with rulership in the region³ (*ibid.*:1613).

Signs 12, 17, and 27 show a thematic preoccupation with maize, or at least the ready use of such signs in the creation of a signary. Sign 6 may be a skin, Sign 8 a strung bead or plaque, Sign 10 a dart tip, Sign 16 an object shown grasped in Olmec iconography, Sign 18 a bivalve, Sign 20 a possible perforator, and Sign 21 a vertical fish. (*ibid.*:1613)



Figure 8. (a) Signs 24 and 25 as they appear together in the text, (b) examples of the Olmec Maize God with cleft elements through the eyes (after Taube 2004:Fig. 11).

Iconographic parallels can be employed to help date the Cascajal block. Signs 12, 16, and 20 are motifs that occur in Early Formative San Lorenzo, while Sign 1’s “cleft element and inverted V-motif” (Figure 8b) is a Middle Formative diagnostic. The authors assign the Cascajal block to the Early and Middle Formative transition, approximately 1000-800 BCE (*ibid.*:1613). Evidence from David Cheetham’s work at an Olmec site in the Soconusco (Cheetham and Clark 2006:Fig. 3) shows that, “[s]imilar signs occur on figurines at Cantón Corralito, Chiapas, Mexico, but even earlier, at 1150 to 1000 BCE in uncalibrated dates” (*ibid.*:1613). Cheetham (2005) had identified these signs as possible writing—and the oldest in Mesoamerica—before hearing of the Cascajal discovery.

What became of the New World’s most precocious writing system? It apparently left no descendants, with no certain link to Isthmian or other Formative writing. This suggests either that it existed in isolation as a purely local system, or that it was more widely employed yet fell into disuse during the course of the several centuries separating it from what were previously thought to be the first examples of Mesoamerican writing, around the middle of the first millenium BCE. The hypothesis

³This association clearly goes back well into the Formative: Karl Taube (personal communication 2006) points to the mat carved on top of the atlantid-supported Olmec throne of Estero Rabon Monument 8. (Taube also observes that Monument 8’s sky-band is identical to Cascajal Sign 11.)

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of a circumscribed isolate would be in keeping with the phenomenon of “shamanic” scripts such as that documented for the western Apache by Basso and Anderson (1975), “scripts devised by religious specialists, with tightly restricted, revelatory functions” (Rodríguez Martínez et al. 2006:1613).

Against this view is the clear linkage of the script to the widely diffused signs of Olmec iconography. The signs and sequences of the Cascajal Block savor of widespread codification, not shamanic idiosyncrasy. (ibid.:1613)

This leaves the hypothesis of what has been termed “script death” (Houston, Baines, and Cooper 2003). The authors allude to “the obsolescence experienced by Indus script at about 1900 BCE, with scriptural silence until the far later introduction of a script from the Near East and intervening regions” (Rodríguez Martínez et al. 2006:1613). They conclude that this issue, and the others raised by the Cascajal block, must be left unresolved until other examples of its writing system are found.

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