Writing Pictures and Painting Words: The Inherent Hybridity of Maya Writing

Kathryn Marie Hudson and John S. Henderson

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The tendency to simplify the richness and intrinsic hybridity of writing systems is particularly apparent in considerations of the Maya hieroglyphic script. Orthodox approaches tend to focus exclusively on its linguistic dimensions (e.g., Houston, Robertson, & Stuart, 2000; Wichmann, 2002, 2004; Kettunen & Helmke, 2014). Considerations of how this system relates to imagery—spatially and graphically—have been largely limited to a search for pictorial features of graphemes as clues to linguistic readings (e.g., Macri & Looper, 2003; Macri & Vail, 2009). Graphemes—used here to describe elements of the script—have pictorial qualities and often serve as part of the imagery but they also occur in strings or blocks at a standard size so it is useful to distinguish them from other components of imagery. The important point is that script and imagery are inextricably intertwined whenever they co-occur: the space of semantic interpretation occurs at their juncture. Maya writing is an inherently hybrid system in which the linguistic dimensions of graphemes, usually called “glyphs” in the Mayanist literature, must be considered in tandem with imagery. Script and imagery together create a hybrid morphosyntax in which meaning is generated jointly through the use of linguistic and artistic forms; imagery and script cannot be divorced without losing semantic nuance along with, in most cases, a significant part of the basic message.
1. Maya Writing: Its History, Context, and Character

The origins of Maya writing are often traced to the “epi-Olmec” writing system, which likely included several related scripts and which appeared along the western edge of the Maya world during the last two or three centuries BCE. Epi-Olmec writing may have a longer history that is traceable at least in part to graphemes that began to crystallize in Olmec art in the earlier 1st millennium BCE, but Maya writing is very closely related to it and the earliest examples of unambiguously Maya writing appeared, concurrently with an elaborated Maya iconographic system, at essentially the same time in the southern Maya lowlands and adjacent fringe of the highlands (Macri & Looper, 2003, p. 4). The oldest of these examples, with hieroglyphs apparently ancestral to later Maya forms occurs on Monument 1 at El Portón (Fig. 1), dating to approximately 400 BCE (Sharer & Sedat, 1973, 1987; Sharer & Traxler, 2006, pp. 197-201). At San Bartolo a column of ten graphemes is part of an elaborate mural composition painted about 300-200 BCE that seems to celebrate accession to high office (Saturno, Stuart, & Beltrán, 2006, pp. 1281-1282); the script block includes an early version of AJAW (“lord,” “noble,” or “ruler”) (Ibid., p. 1282). A script segment on the slightly later Stela 2 at El Mirador (Hansen, 1991) may also contain a title. The possible titles, the imagery at San Bartolo, and material remains associated with these early monuments, especially monumental public architecture, all indicate that the earliest Maya writing was associated with the emergence of centralized political power and kingship as well as with the beliefs and rituals that legitimated them.

Fig. 1. Map of the Maya world.

In the first centuries of the Common Era, the use of the Maya script became more common, especially at sites in the Guatemalan highlands; some include graphemes that seem to be early versions of later Maya glyphs, while others appear to record non-Mayan languages.
Beginning in the late 3rd century CE, the Maya script became progressively more common in the southern lowlands, especially on stelae where it occurs along with imagery. Script and imagery are integrally related and closely focused on glorification of kings and legitimation of their power. The Maya script was also used on painted walls: script blocks in the few murals that survive focus, like the inscriptions on stone monuments, on dynastic history, royal biographies and genealogies. Graphemes were also painted on pottery and inscribed on shell and stone artifacts, mostly items of personal adornment and ornaments. Their subject matter is quite different, typically the use and ownership of the objects on which they appear.

Both script and imagery declined sharply in frequency during the 9th through 11th centuries, as the centralized political order of city-states failed and almost every facet of the social and economic organization of Maya societies was transformed. In the last two or three centuries of the pre columbian era city-states reappeared in the Maya world, and with them imagery and script on stelae and other sculptural monuments. Script blocks describe political affairs, but the earlier extreme emphasis on recounting the accomplishments of rulers and legitimizing their authority through genealogical and supernatural connections had given way to much simpler and less individually celebratory statements. Four books, painted on plaster-coated bark paper in the northern lowlands of Yucatan during this late period, survive. Their subject matter is quite different from the information conveyed by the monuments and relates almost entirely to divination, astrology, and astronomy, but the writing system is the same. Compositions embody the same joint reliance on graphemes and imagery, but the books are more imagery-intensive than stone monuments.

Most graphemes have clear pictorial aspects. They include logograms representing particular lexical items, a smaller number of syllabograms that encode the phonetic value of CV syllables, and a few graphemes used to signal grammatical functions or categories (for example, cartouches marking signs that name days in the 260-day divinatory calendar). Words can be spelled with logograms alone, with syllabic graphemes alone, or with syllabograms used as phonetic complements (i.e., attached to logograms to indicate which of the possible readings was intended) (e.g., Kettunen & Helmke, 2014, pp. 17-22). Though the Maya script made it possible to write phonetically by using only syllabograms, scribes did not opt to do this. Even very late texts combine logograms and syllabograms and this persistent adherence to a hybrid system indicates that hybridity is an essential feature of the script. Although this un-mobilized potential to write with phonetic graphemes alone is sometimes used to bolster arguments that the Maya script qualifies as “true” writing, such views represent a Western notion of what writing ought to be and obscure the qualities that make Maya writing unique.
2. On the Intersection of Art and Image

Before considering the complex interdependency between Maya writing and imagery, it is necessary to consider more generally the ways in which imagery and writing are known to intersect. These intersections are particularly pertinent to considerations of Maya writing, since the script has strong pictorial dimensions incorporated into the forms of graphemes and most script segments, or script blocks, are closely juxtaposed to pictorial imagery. Script and image are intimately connected in a variety of ways beyond spatial association, however: figures pointing to particular graphemes in a script segment, graphemes as costume elements, figures holding or manipulating graphemes, elements of imagery referring not just to concepts but to specific lexical items and their semantic domains, and other intersections occur with startling frequency. It is unsurprising, therefore, that tz’ib’ and its cognates can refer to both writing and painting in a majority of Mayan languages (Herring, 2005, pp. 6-9). Script and imagery are best conceptualized as complementary dimensions of a single communicative system; the functions of both dimensions are those of writing: to convey information in a graphically stable form across space and through time (Boone, 2011).

Although several studies consider the ways in which Maya writing and imagery intersect (see, e.g., Helmke, 2013; Kettunen & Helmke, 2013; Romero & García, 2005), the integration of this hybrid system has been generally unappreciated. Considerations of how imagery relates to the Maya system of writing—both spatially and graphically—are typically restricted to art historical analyses of composition and iconography (e.g., Stone & Zender, 2011) and to recognition of pictorial features of graphemes as clues to linguistic readings (e.g., Macri & Looper, 2003; Macri & Vail, 2009). Such perspectives are inherently intertextual, suggesting interaction between distinct texts—the linguistic and the iconographic—that may co-reference and transpose one another in semantically significant ways but retain their separable status. Narrower views of this process maintain a relatively rigid distinction between writing and imagery, allowing for targeted intersection only in cases of spatial association or graphic overlap. Broader perspectives align more with Sebeok & Danesi’s (2000, p. 31) observation that “a specific text bears meaning in a culture because it often alludes (in part or in whole) to already existing texts,” allowing for the kind of interfusion described by Barry (2010) and suggesting that Mayan compositions—iconographic and linguistic—can be shaped by other textual units.

Orthodox approaches thus posit a kind of complementarity between writing and imagery rooted in the idea that they represent separate “glottographic” and “semasiographic” systems (Boone, 2011) capable of interacting in certain contexts. This parallels the long tradition in Maya scholarship of separate treatment—by different sets of scholars with different training and different intellectual ancestries—of script and image. It reflects a distinctly Euro-centric perspective in which art, though sometimes accompanied by written language, is necessarily distinct and
inherently non-linguistic. Such perspectives align with the evolutionary view that writing (and, by extension, literacy) represents a distinct cultural achievement prerequisite for “advanced” social development (see e.g. Cipolla, 1969; Sanderson, 1972; Street, 1984); its presence in an ancient society is often viewed as evidence of the kinds of sociocultural and political complexity that attracts both popular and academic/institutional support (see Hudson, 2016). Given Western assumptions about the nature of writing and how it can and should function, it is unsurprising that epigraphic analyses—which began with decipherment processes based on these etic assumptions—continue largely to dissociate word and image, except insofar as the pictographic qualities of graphemes and imagery associated with texts offer clues to meanings and subject matter. The role of imagery and other kinds of physical notation in the emergence of writing systems has also been considered from varying geographic and temporal perspectives (see, e.g., Baines, 1989, 2007; Boltz, 1986; Dreyer, 1998; Justeson, 1986; Schmandt-Besserat, 1982, 2006, 2007), but the categorical and conceptual separation of linguistic and non-linguistic systems remains.

We adopt a different perspective and posit that Maya writing and iconography are not distinct entities that may interact, but instead represent two dimensions of a single polygraphic system. An early description of Mesoamerican polygraphy occurs in Valadés (1989 [1579]), who used the term to describe a system of indigenous polysemy intended to protect secret information. Valadés’ approach is evocative of later definitions (e.g. McCracken, 1948), but Brokaw (2010, p. 118) notes that “in the larger context of his [Valadés’] discussion the term ‘polygraphy’ seems to suggest that Mesoamerican iconography employs different types of semiotic conventions that function together or complement each other.” He further describes polygraphic systems as semiotically heterogeneous—thus implying an inherent polysemy—and suggests that they can involve either the use of multiple media or the incorporation of different semiotic conventions in a single medium (Ibid., p. 118). It is the latter of these possibilities that concerns us here.

Our view of Maya writing and iconography as representative of a singular polygraphic system aligns generally with the analyses of Greimas & Courtés (1979 [1993], 1982; see also Post, 2014, pp. 135-136), who view writing systems simultaneously as visual representations of spoken language and as graphic systems that form part of a broader visual semiotic system. A degree of graphic pluralism is inherent in this perspective since multiple semiotic principles are defined as co-occurring within a singular unifying system (see Bender, 2010), but this plurality is only indicative of coexistence within a coordinating framework. If writing represents one dimension of a broader—and, by implication, singular—semiotic system, it is necessary to adopt a dynamic view of polygraphy in which the coexistence of multiple systems within a broader semiotics is characterized by a kind of visual co-articulation. In this view, the graphic constituents of writing are not necessarily limited to linguistic contexts but can occur in other kinds of visual
compositions with concomitant affects on their semantics. Similarly, the graphic elements associated with the non-linguistic dimension(s) of the broader semiotic system need not remain only in the realm of iconography but can occur as part of language-based compositions.

A historical view of Maya writing supports its characterization as part of a dynamic polygraphic system. Imagery systems in Mesoamerica, like those in other parts of the world, predate the development of writing. It is thus conceivable that a writing system whose forms overlap considerably with forms found in imagery derived from its iconographic predecessors in a way that facilitated its development within a pre-existing graphic schema. This aligns with Bender’s (2010, p. 177) observation that “[n]ew graphic systems may be absorbed into preexisting semiotic systems and understood through preexisting ideologies…[a]lternatively, the ‘same’ graphic system may start to take on new functions or semiotic values”; it also fits the available evidence on the emergence of Maya writing. Although too few early texts exist to allow for substantive direct evidence of this process, considerable support comes from the nature of the script and its relationships with iconography.

The function of both script and iconography is to convey information across space and through time (Boone, 2011). In the Maya case, graphemes had strong pictographic dimensions and imagery conveyed linguistic information. Both dimensions of the system worked in tandem towards this aim in a manner indicative of their status as two dimensions of a single polygraphic system. This is arguably a result of the development of the script from pictorial elements through the increasingly close association of increasingly stylized and conventionalized iconographic elements with stable, widely shared meanings. An early stage of the process may be visible in the sign-like elements that occur on Middle Formative Olmec celts. Many of these—such as the pictographic but markedly standardized representations of maize (see Diehl, 1990), the maize god (see Joralemon, 1971; Medellín, 1971), and quetzal birds (see Joralemon, 1971)—have relatively fixed semantics that articulated with broader patterns of cultural association and significance (see Taube, 2000). These connections facilitate graphic repurposing and standardization through their links with well-understood meanings and interaction with other kinds of symbolic systems (Ibid.); consequently, they can foster the development of a writing system within the boundaries of a preexisting iconography.

By at least the early Common Era, Maya writings reflect a thoroughly hybrid system in which script and imagery are used jointly to convey richer and more complex messages than would be possible with separate systems. Linguistic information is conveyed in greater detail in the script register, and non-linguistic information in the imagery register, but each graphic dimension conveys both kinds of information in a coalesced and co-referential manner. The graphemes of the Maya script have clear pictorial dimensions and most texts are thoroughly integrated with pictorial imagery. Graphemes appear in imagery as labels, indicating
the materials or qualities of objects and the names and titles of persons. They occur as costume elements, especially in headdresses, again indicating names, titles, and other aspects of individual identities. Figures hold, sit or stand on, and otherwise interact with graphemes that serve as stand-ins for objects that might have been represented pictorially. Imagery refers not just to concepts in rebus fashion, but to specific lexical items and their semantic domains.

Script and image are also inextricably intertwined in more subtle ways that go far beyond these kinds of juxtapositions and the simple complementarities they imply. Imagery can condition reading of a text. The layout of graphemes in graphic space may signal a partitioning into segments that is not so clearly marked by the graphemes alone. A figure pointing to graphemes in a script block may provide a focus marker and/or indicate a particular relation between grapheme and image, as in the case of a personal name. This is true even in cases where only written language is present, since compositions consisting only of graphemes are still clearly part of a larger graphic system. The obvious pictorial features of most graphemes, which are a subset of the iconographic elements in imagery, inevitably convey connotatively a rich array of meanings, and expansive semantic domains. The pictorial dimensions of graphemes are highly variable, in terms of their degree of stylization; highly stylized and more representational versions of a grapheme may occur in the same word. Conversely, compositions without graphemes as isolable elements in the imagery nonetheless convey linguistic information through recognizable relationships between iconographic elements and particular graphemes as well as through spatial relations between imagery and graphemes.

The Maya script thus represents a transition to writing in which an existing system of imagery was adapted to serve two distinct but related functions. This process of reworking allowed the script to develop in a manner distinct from the kinds of concatenation and prescriptive arrangement that are usually associated with written language. Though many Maya script blocks adhere to a columnar arrangement and follow the syntactic principles of the language represented by them, the script’s situation within a broader polygraphic system fosters considerable creativity. Elements of this system—both iconographic and orthographic—interact in a variety of ways to form a wide range of textual types that exist simultaneously on denotative and connotative planes (cf. Hudson & Henderson, 2015). This allows for a richer semantics and indicates a system in which script adapts to imagery even as imagery incorporates script and linguistic elements.

3. Pictographic aspects of the Maya script

Many graphemes in the Maya script have very clear pictographic qualities and plausible arguments can be offered for an original pictographic character for most or all of the remainder. This aligns with the claim that the graphemes used in the Maya script represent a subset of Maya imagery that has been stylized and
conventionalized in particular ways. One of the clearest examples is the logogram CHOK, “scatter” (Kettunen & Helmke, 2014, p. 81), which depicts a human hand with a series of small circles in front of and below it, as though scattering seeds or drops of liquid (Fig. 2). The environments in which the grapheme occurs indicate that it must refer to a ritual practice in which rulers engaged, especially at numerically even, period-ending, calendar positions. In several cases, script blocks that contain this grapheme accompany imagery depicting the protagonist of the composition with hand extended, evidently in the act of scattering whatever the substance may be (Love, 1987). On Nim Li Punit Stela 1, the next glyph block in the string, where the object of the verb is to be expected, includes the grapheme for the syllable “ch’a” and another that may be the syllable “ji” (Kettunen & Helmke, 2014, pp. 74-75). This would spell ch’aj, “drop,” which can also mean “incense” (Kaufman & Justeson, 2003, p. 540; Kettunen & Helmke, 2014, p. 104), so it may specify the substance being scattered, which is not identified by the generalized image.

Pictographic qualities can also be discerned in syllabic signs. The grapheme for the syllable “ka” has a comb-like form—a stylized reference to a common way of depicting the fin of a fish, KAY. Syllabic “ka” can also be rendered more representationally, sometimes as the whole fish. A very unusual jar from Río Azul in the northern lowlands of Guatemala (Stuart, 1988; Hall et al., 1990) utilizes the stylized variant and the full fish together to spell cacao (ka – ka – w[a]) presumably to add visual interest to the composition (Fig. 3). Interestingly, chemical analysis revealed traces of a cacao beverage inside the jar. Similarly, the central element of the grapheme that encodes the syllable “b’e” is a footprint, which also stands for a road, B’E. Sometimes parallel lines depicting the edges of a road frame the footprint. In both imagery and script, the same or very similar graphemes are used to write “road” and sometimes “arrive” (or possibly another travel-related lexical item) (Fig. 4). The spatial arrangement of graphemes in relation to other graphemes can also be considered pictorial, and spatial disposition can carry semantic information.
Fig. 2. Nim Li Punit, Stela 1. The figure on the right scatters a substance depicted with small circles below his outstretched hand. The 3rd grapheme in the column on the right denotes the verb CHOK. © 2000 John Montgomery.
Fig. 3. Left: Dresden Codex page 25. Common spelling of *kakaw* (ka-ka-w[a]) using the stylized graphemes for “ka” and “wa.”; after Förstemann (1892).
Right: Rio Azul Temple 19, lock-top jar from a royal tomb that contained chemical traces of cacao. The first grapheme in the string on the lid spells *kakaw* more elaborately, substituting an entire fish for one of the stylized fish fin versions of “ka”.

Fig. 4. Dresden Codex, page 65. Chaak, the rain deity, with walking stick and pack on a road marked with footprints. The footprints convey B’E, “road” mimetically and logographically; in other contexts a footprint denotes the syllable “b’e”; after Förstemann (1892).
One way of writing “dawn,” PAS, presents a particularly interesting example of the complementarity of text and image (Fig. 5). The graphemes for K’IN, “sun, day,” KAB’, “earth,” and CHAN, “sky” are juxtaposed so that the sign for “sun” emerges from between the superimposed signs for “earth” and “sky.” This placement of the K’IN grapheme between KAB’ and CHAN physically positions the sun at the juncture of the earth and the sky; it is a visual representation of the process involved in dawn or daybreak, when the sun rises from the place where the earth meets the sky. The iconographic dimension of the Maya system is thus more salient within this composition than its linguistic counterpart. The normal linguistic values attached to the three logograms do not seem to relate to words meaning “dawn” and, in effect, the constituent graphemes function in this context as ideograms rather than logograms. This is further evidenced by the relative scales of the graphemes: K’IN is noticeably smaller than KAB’ and CHAN, which would be the expected and observed proportion at the time of daybreak in the physical world.

![Graphemes denoting pasaj, “dawn.” The grapheme for “sun” or “day” emerges from between the superimposed graphemes for “sky” and “earth.”](image)

Compositions associated with Copán’s Temple 11, part of the city’s elevated palace complex, also reflect the importance of pictographic elements of graphemes and of their spatial disposition. Script blocks were carved on both walls of the corridors converging on the temple’s central space. The text on one of the walls of each corridor was carved with mirror-imaged graphemes. This affects the appearance of asymmetrical graphemes, most strongly those that have the form of profile human heads. In virtually all other contexts, graphemes representing heads face to the reader’s left; in the mirrored texts at Copán head-based graphemes face to the viewer’s right. The head graphemes of each corridor face in the same direction: toward the doorway leading to the building’s exterior.
4. Graphemes within Imagery Space

Since graphemes comprise a variably stylized subset of imagery, it can be difficult to distinguish them from other kinds of graphic representation. However, graphic elements recognizable as graphemes and components of graphemes (because they also occur in script blocks at a standard size) frequently appear in the imagery space of Maya compositions. The most straightforward usage of graphemes within imagery is to provide labels that indicate peoples’ names and titles, designate objects, and specify the contents of ceramic vessels and bundles.

Throughout Mesoamerica, dress and bodily adornment were closely connected with personal, ethnic, and other kinds of identity (Jansen & Perez, 2007, pp. 27-29). Headgear is a particularly important locus for markers of names, titles, and other indicators of these aspects of personhood. Heads, anthropomorphic and zoomorphic, are particularly common in depictions of headdresses: they often seem to refer to supernatural beings who are central to the social persona of the wearer of the headgear. Graphemes designating proper names, and their constituent elements, are used as items of dress, particularly headgear, and often identify people precisely.

The main figure depicted on the front of Stela 31 at Tikal is Sihyaj Chan K’awiil (Martin & Grube, 2008, pp. 34-36), which means sky-born K’awiil (the deity of royal lineage and ancestry). A set of graphemes identical to one of the ways that his name is spelled in script blocks appears as an element of the headdress (Fig. 6). An additional pictorial dimension of this spelling is that a grapheme depicting a K’awiil figure emerges from a cleft in the grapheme for CHAN, “sky.” Sihyaj Chan’s left arm cradles an anthropomorphic head with pronounced hair that is tied into a bun on top. Immediately above that is a pair of graphemes that together signify AJAW, “lord.” The combination of the hair and the dual AJAW grapheme is a slightly abbreviated but clear reference to the kingship of Tikal. In script blocks the usual royal title is written with the dual AJAW grapheme above a grapheme that is a stylized version of the tied-up hair; the combination reads MUTUL AJAW, “lord of Mutul,” the ancient name of Tikal. It is very often preceded by the grapheme for K’UHUL, sacred. In this form, “sacred lord of Mutul,” it is the Tikal version of the “Emblem Glyph” which specifies a title (“sacred lord of [polity]”) which was held by the lords of almost every Maya city-state. A downward-looking head at the top of the image depicts Yax Nuun Ahiin, Sihyaj Chan’s father, who preceded him on the throne. His name is typically written with the graphemes for YAX, “green,” NUUN, “knot,” (?) and AHIIN, “caiman.” His headdress features the grapheme for YAX attached to the curly-nosed head of a caiman.
Fig. 6. Tikal Stela 31. Highlighted sections show elements in the imagery that correspond to graphemes used in the script to spell Sihyaj Chan K’awiil, Yax Nuun Ahiin, and the “lord of Mutul” (Emblem Glyph) title; after Jones & Satterthwaite (1982, Fig. 51).

The marking of identity through headdress elements already had a very long history by the time Stela 31 was designed. It is clearly attested in the imagery and graphemes of epi-Olmec writing. This script includes a series of titles that are
written with the profile of a human head wearing a headdress that is composed of a grapheme for “reed” preceded by another grapheme (Kaufman & Justeson, 2001, pp. 2.30-2.31). The dual Maya grapheme for AJAW, “lord,” that is used to record the Emblem Glyph title is one of a series corresponding to the headdress elements in the epi-Olmec titles. In a reversal of the typical reading order in the Maya script, the AJAW grapheme appears on top of the grapheme that specifies the particular polity, despite indications that it would have been pronounced afterward. Moreover, though placement to the left is a very common equivalent to superposition, the AJAW grapheme never appears to the left of the polity name. These odd features make perfect sense if the combination of signs was conceptualized pictographically as a headdress worn by the polity grapheme; that is precisely what is depicted in the object held by Sihyaj Chan on Stela 31 (Fig. 6).

In addition to the headdress, the forehead is a preferred location for graphic indicators of identity. Alternative ways of writing AJAW—both in imagery and script—involves a profile head with a stylized AJAW grapheme or a small image of a deity wearing a distinctive cap (the so-called jester god) on the forehead. The grapheme that marks women’s names and titles is a profile head distinguished by a curly lock of hair drooping onto the forehead. Both portraits of K’awiil, deity of royal descent, and graphemes that name him are marked by a distinctive object embedded in the forehead: a mirror, an axe, a smoking tube or cigar (Fig. 6). The distinguishing feature of many other portraits of deities and of the profile head graphemes that name them is a distinctive graphic element attached to the forehead (Macri & Looper, 2003, pp. 134-178).

Graphemes in image space—that is, not in script blocks—often function to indicate materials and qualities of things. These graphemes can be considered qualifiers, classifiers, or semantic indicators; they are in effect another kind of label. The grapheme for TUN, “stone” (which also functions as the name of the day KAWAK in the 260-day divinatory calendar) marks materials as stone (Figs. 7, 16). The TE’ grapheme identifies wood in the same way (Figs. 8, 10); the two small curved elements of the grapheme also appear on depictions of wood in ways that suggest that they have a pictographic character as representations of buds. Water and earth are marked in much the same way (Figs. 5, 8). The KAB’AN graphemes on the sides of the sarcophagus of Pakal, the 7th century king of Palenque, mark the background plane as representing the earth, kab’, from which sprout the ancestral kings of the city conceptualized as trees (Schele & Mathews, 1998, Fig. 3.26). Colors can be indicated in a similar way, as when the K’AN grapheme marks an object as yellow.
The “grape cluster” on the forehead and nose of the head is a key element of a grapheme which can stand for TUN, “stone” (as well as for the calendar day KAWAK). Here it marks the deity as a personified witz, “mountain.” By extension, the temple building and the tall platform on which it stands are identified as mountains and as animate.
Graphemes within image space may also function as stand-ins for objects that might otherwise have been depicted mimetically. On pages 25-28 of the Codex Dresden, the main feature of the grapheme that encodes the syllable “po” is infixed into the images of smoking material atop incense burners (Fig. 9). The same grapheme appears in the corresponding script blocks as part of the spelling of *pom*, “incense” (Lounsbury, 1973). Three TUN graphemes, denoting “stone,” appear atop the poles in an image of a deadfall on page 91 of the Codex Madrid (Fig. 10). As Seler (1902 [1891], p. 552) noted long ago, the graphemes replace more realistic representations of stones; alternatively, they can be interpreted as labels indicating that the three objects have the properties of stone. Distinctive elements of the TUN grapheme on the body of a drum that is part of an elaborate depiction of ritual (Fig. 11) painted on the wall of a temple at Santa Rita, in northern Belize, in the last century or two before the Spanish invasion (Gann, 1901, Pl. XXXI) have a more complex function. They do not mark the material of which the drum is made, but the *tun* or *tuun* value of the grapheme is homonymous or nearly so with a word for drum in the Quichean and Mamean branches of the Mayan family (Kaufman & Justeson, 2003, p. 751). TUN has not been documented as a word for “drum” in the lowland Mayan languages that are definitely represented in ancient Mayan texts, but Yucatec *tunkul* may be a related form.
Fig. 9. Dresden Codex, page 28. The central element of the ball of incense burning on the censer at lower left is the central element of the grapheme in the upper text, the grapheme for “po,” here conflated with the syllabogram for “mo” (the dotted circle) to spell pom (po-m[o]), “incense.” After Förstemann (1892).
Fig. 10. Madrid Codex, page 91. The left scene depicts an armadillo in a deadfall. Three signs, which denote TUN, “stone” can be interpreted as replacing more realistically rendered stones, or as indicators of the material of the three objects. The saplings used for snares in the third and fourth scenes are marked with the key element of the TE, “tree, wood” grapheme.

After Brasseur de Bourbourg (1869-1870).

Fig. 11. Santa Rita, Structure 1. Mural painted on the west wall of a late precolumbian temple. Distinctive elements of the grapheme denoting TUN, “stone” – “grape clusters” and “x”s – are used here as a label: the word for one kind of drum, tun, is homophonous. After Gann (1901, pl. xxxi).
The spatial relationships of imagery with script blocks were often designed to clarify the relations between script and mimetic fields. The particular form of the juxtaposition may add semantic information by clarifying the referents of particular graphemes. The simplest form this takes is the layout of script blocks so that they frame or are otherwise spatially associated with a particular part of the image, indicating that these graphemes refer specifically to that image element, most often a human figure (Fig. 12). A wall panel from a palace at Palenque depicting the 8th century ruler Ahkal Mo’ Nahb receiving a headdress that was a key component of royal regalia from his parents (Fig. 13) illustrates a more direct connection of image and script.

Fig. 12. Yaxchilán, Structure 42, Lintel 41. “Bird Jaguar IV”, who ruled Yaxchilán in the mid-8th century, and one of his wives. The script block in the upper left gives the date and refers to military conflict. The grapheme string in front of Bird Jaguar’s headdress includes his name and titles. The Queen’s names and titles, just above her head, are smaller, incised into the background rather than raised in relief, and depart from the orthogonal orientation, marking them—and her—as subsidiary. © 2000 John Montgomery.
Feathers at the top of the headdress enter the space of the script block to overlap part of the string of graphemes that names Ahkal Mo’ Nahb (Bassie-Sweet, Hopkins, & Josserand, 2012, pp. 207-209); the identity of the central figure receiving the headdress as Ahkal Mo’ Nahb is not otherwise directly marked. Human figures may undertake even more direct relationships with script blocks. A polychrome vessel buried with the late 7th-early 8th century Tikal king Jasaw Chan K’awiil depicts an enthroned lord gesturing so that his right hand extends into the script block, touching two of the title graphemes that identify him (Culbert, 1993, Fig. 69) (Fig. 14).
Writing as Imagery: The Semantics of Arrangement

Imagery often evokes/refs to particular words and semantic domains; this is the converse of placement of individual graphemes within imagery space as labels or stand-ins for depictions of the objects to which they refer. However, the intertwining of script and image can involve much more subtle and complex relationships in which the particular arrangement of graphemes in relation to elements of imagery and within the conceptual space defined by imagery convey important semantic and syntactic information. In these cases, the script is arranged to form an image and the two dimensions of the Maya polygraphic system coalesce to form a single entity with a unified—albeit multi-level—semantics.

5.1. Copán Stela J

The monuments of Copán, the capital of a substantial regional state near the eastern edge of the Maya world (Fig. 1) from the 5th through the 8th centuries CE (Fash, 2001; Andrews & Fash, 2005), combine elaborate imagery with unusual and complex script layouts. They provide striking illustrations of the hybrid nature of Maya writing and of its position as part of a broader polygraphic system; none is more illustrative of the interplay between imagery and writing than Stela J. Stela J, located on the eastern side of the city’s main plaza, was dedicated in CE 702 by Waxaklajuun Ub’aah K’awiil (nicknamed “18 Rabbit” by early epigraphers) (Schele & Mathews, 1998, pp. 133-174; Martin & Grube, 2008, pp. 214-225).
Like most of his later monuments, Stela J emphasizes his position as the 13th in a dynastic succession from the 5th century king, Yax K’uk’ Mo’, who was regarded as a founder figure. Unlike them, it does not bear his portrait. Script blocks on the narrow sides of the stela follow the standard paired-column format and have no accompanying imagery. The broad east and west faces are much more unusual (Hudson & Henderson, 2015). The long script segment on the eastern face of the monument (Fig. 15, oriented away from the plaza and towards the residential zone of Las Sepulturas, has a unique layout: the relief carving represents the constituent graphemes as though they had been painted on the strips of a mat. The west face of the stela (Fig. 16) also has a highly unusual composition, with graphemes organized into short columns and rows that frame a stylized face.

The long east script string, (Fig. 15) which begins near the upper right-hand corner of the stela, has four sections. The first records the date on which the monument was dedicated (9.13.10.0.0 in the Maya Long Count, equivalent to 24 January AD 702) and the ritual activity performed by Waxaklajuun Ub’aah K’awiil to celebrate the midpoint of K’atun 13 (i.e., the day that fell exactly midway between 9.13.0.0.0 and 9.14.0.0.0). The text then refers to an important round date—9.0.0.0.0, the turn of the B’ak’tun on 9 December AD 435—nearly three centuries in the past and to the taking of office by the dynastic founder Yax K’uk’ Mo’. The third section moves forward in time to record the accession on 9.9.14.17.5, 6 February AD 628 of K’ahk’ Uti’ Witz K’awiil, Waxaklajuun Ub’aah K’awiil’s predecessor on the throne. The final passage refers to Waxaklajuun Ub’aah K’awiil’s own accession on 9.13.3.6.8, 7 July AD 695. The thrust of the script string is to situate Waxaklajuun Ub’aah K’awiil historically in a way that confers political advantage, connecting his accession to that of his immediate predecessor and, even more importantly, placing him in the context of Yax K’uk’ Mo’s seating in office and to the political activities attending the dynastic founding in the distant past.

The mat imagery was an equally important component of the monument’s message. Representations of mats were common in Mesoamerica and conveyed a range of meanings pertinent to constructions of legitimacy and power (Hudson & Henderson, 2015). Among the Maya, some versions of this motif appeared as knots signifying ancestors or ancestral connections (see Wagner, 2005) while others—such as the example found on Stela J—referenced mechanisms of legitimation beyond ancestral ties and require a broader interpretive lens. This more general significance was salient at every scale, from kingship to family head, and would have been known to all inhabitants of the region. In the case of Stela J, the layout of the text does not resemble a knot but rather represents a mat and its more general connotations. The use of this element to structure the face of a royal stela directed toward the end of the formal causeway, by which people from elite residential zones—as well as the rest of the eastern valley and more distant areas—would have entered the civic center, would have facilitated reading of the monument even among those who might not have been literate in the script.
Fig. 15. Copán, Stela J, east face. The graphemes of the text recounting the accession and ancestry of the 8th century ruler Waxaklajun Ub’aah K’awiil are arranged as though they had been painted on the strips of a mat, which stood for legitimate authority throughout Mesoamerica. After Agurcia Fasquelle & Veliz (2010, p. 249).
Fig. 16. Copán, Stela J, west face. The grapheme segments are arranged so that they frame a face, whose graphic elements identify it as a mountain and cave, a place of origin, where ancestors dwell, and connect it with the water-mountain metaphor for the sovereign city-state, seat of legitimate authority. After Agurcia Fasquelle & Veliz (2010, pp. 242-243).
The script strings on Stela J’s west face are very difficult to interpret. In addition to what seems to be unusual syntax, the layout, with short vertical and horizontal segments laid out to frame a stylized face, contributes uncertainty about the reading order of the segments. The subject matter is distinct from that on the east face: apart from a possible oblique reference to a dynastic founder in what is likely the first passage, the script strings deal entirely with deities and with mythic times and places. Three passages name days that have the important ritual almanac position 1 Ajaw. Two of them are concerned with the endings of very long time periods and refer to deities and mythic places. The most straightforward section refers to the waning efficacy of deities at the time of the dedication of the stela. This passage is remarkably similar to sections of a much earlier text on Tikal’s Stela 31 (Stuart, 2011) that deal with deities who are “diminished” at the midpoints of K’atuns and with rulers who tend to—or, perhaps, renew—them. At least two of the same deities appear to be named on the west face of Stela J. These script strings thus serve to relate Waxaklajuun Ub’aah K’awiil, who presided over K’atun 9.13.0.0.0, to ancestral deities and the mythic places they inhabited.

The structure and layout of the script on the west face may have allowed for alternative reading orders of the constituent segments. Intended or not, one function of the unusual organization may have been to free readers from the rigid order prescribed in conventional Maya script strings. The layout of the script in relation to the imagery on the west face (Fig. 16) also encodes critical components of the message of Stela J. The positioning of the graphemes creates the image of a face, strikingly similar to a mask composition on the west (rear) face of Stela B. Maya cosmology—like belief systems elsewhere in Mesoamerica—held that all things were animate and thus could be given faces. This focus on animacy is one reason for the widespread use of masks in Maya culture, and it does not require a large interpretive leap to conclude that Stela J itself was conceptualized as a living thing.

The two narrow rectangles at the center of the face form the eyes of the face, with pupils defined by cross-hatched angles. The placement of the pupils may be a reference to the sun god, who is sometimes depicted as cross-eyed. Curls in the area below the eyes swirl upward, suggesting nostrils. The open rectangle at the base of the face is the mouth, and the T-shaped element may indicate a filed tooth similar to the one seen on many depictions of Maya deities.

The TUN sign on the wrinkled brow just above the eyes denotes stone, suggesting that the face is that of an animate mountain, witz. The inverted triangle of scallops in the mouth and in the cleft at the top of the head, likely variants of the TUN sign, reinforce the cave reading. The wavy lines that enclose and depend from the TUN variants resemble depictions of liquids in Maya imagery. Dripping stones, a reference to stalactites, would be entirely appropriate in the context of a representation of a cave association. A dripping tooth would be particularly evocative. In Mesoamerica, caves are widely conceptualized as the dwelling places of the ancestors (Henderson and Hudson, 2016), so a cave reference in the imagery
would echo the emphasis on ancestors—both human and divine—in the script strings. Caves are also closely associated with springs and are often considered to be sources of rain and water in general. The juxtaposition of *witz*, “mountain” and water symbols also strongly suggests another fundamental Mesoamerican concept: water-mountain, a pan-Mesoamerican metaphor for the city-state, its sovereignty, and the legitimacy of its ruler’s authority.

The imagery of Stela J combines with the script to convey extraordinarily rich and complex meanings. The script, with its clear emphasis on the dynastic and genealogical sources of Waxaklajuun Ub’aah K’awiil’s authority—his connection to his predecessor and to Yax K’uk’ Mo’, the dynastic founder—are inextricably intertwined with the image of the mat (Fig. 15), embodying legitimate authority; the cave, the place of origin and abode of the ancestors; and the water-mountain, embodying the sovereignty of the city-state. The monument was placed at an entrance to Copán’s civic core, perhaps the main entry point from the valley to the east and more distant regions beyond. The mat, a pan-Mesoamerican symbol of power and legitimate authority, faces the formal entry causeway. The basic message—that Copán was a place of power and Waxaklajuun Ub’aah K’awiil held legitimate authority there—would have been perfectly intelligible to all visitors, whatever their degree of familiarity with Maya city-state culture. It may be that a substantial fraction of the visitors arriving on the Sepulturas causeway were not culturally or linguistically Maya. Interplay of text and imagery on Stela J made it an embodiment of the sovereignty of the city-state and of the legitimacy of Waxaklajuun Ub’aah K’awiil’s authority and guaranteed that individuals entering the city received the intended message.

The arrangement of monuments with related content in architectural space can also contribute to meaning and clarify syntax. Stela J was one of a series of monuments that Waxaklajuun Ub’aah K’awiil caused to be placed in Copán’s central public plaza during his reign. Each combines script blocks with his portrait and other complex imagery. Stela D is set at the north end of the plaza, a location associated with the celestial realm in Maya thought; Waxaklajuun Ub’aah K’awiil’s gaze to the south encompasses most of the grand space, filled with monuments displaying his public personae. Placement of stelae within the plaza—in relation to the east-west cardinal direction and to the left and right sides of Waxaklajuun Ub’aah K’awiil’s portrait on Stela D—correlates with the emphases of their compositions. Stela C bears two portraits: the one on its east face depicts a young Waxaklajuun Ub’aah K’awiil with many references to vigor and virility while the western image shows a more mature king. This arrangement reflects associations that appear in many facets of Maya practice: between east and youth, west and seniority. Stela H, near the eastern edge of the main part of the plaza, depicts Waxaklajuun Ub’aah K’awiil in a hybrid costume that combines the jaguar skin kilt worn by male rulers with a long skirt of the kind typically seen on depictions of women (though it can also be worn by the maize god). The skirt and the shell elements at the waist suggest
that Stela H was meant to convey female associations that contrast with the emphasis on distinctively male elements in the monuments of the western cluster. This arrangement is entirely consistent with Maya right/left associations.

5.2. The Temple of the Inscriptions at Palenque

The Temple of the Inscriptions at Palenque (Fig. 1) was a mortuary monument to one of its great early kings (Martin & Grube, 2008, pp. 176-189; Schele & Mathews, 1998, pp. 95-132). Pakal, who occupied the city’s throne for most of the 7th century, was buried in a huge stone sarcophagus in a chamber covered by the tall terraced platform supporting a mortuary temple. The sarcophagus lid bears an elegant depiction in relief of Pakal in front of the world tree that marks the vertical axis of the universe (Fig. 17). Multiple versions of the grapheme that marks supernatural things and connotes the quality of brightness and preciousness (Stone & Zender, 2011, pp. 70-71) appear on the trunk and branches. At its base is the partly skeletal head of an underworld deity; the grapheme for k’in, “day,” “sun” set into its forehead presumably identifies it as an underworld aspect of the sun. Pakal, in death, falls into its fleshless jaws (and perhaps is reborn from them as well).

A long script string on the lid’s vertical edge runs around its full circumference. It records the deaths of Pakal, his parents, and a series of prior rulers and nobles, many of whom are depicted on the sides of the sarcophagus itself as trees emerging from the earth (Lounsbury, 1974; Schele & Mathews, 1998, pp. 110-132; Guenter, 2007). Hopkins & Josserand’s (2012) analysis of this text identifies the same patterns that structure modern narrative texts in Chol. One aspect of texts in what they identify as a Mayan narrative tradition is division into episodes, with special devices marking the transitions between them. In the sarcophagus lid script string, each side of the lid is occupied by one episode; the beginning of each new episode is marked by reference to a time earlier than the last date previously mentioned. The same kind of temporal flashback is one of the devices that marks episode transitions in Chol narratives.
Fig. 17. Palenque, Temple of the Inscriptions, sarcophagus lid. Pakal, the 7th century ruler buried in the sarcophagus, falls into the jaws of the underworld in front of the world tree that connects the heavens and the underworld. Graphemes on the trunk and branches are indicators of supernatural qualities. A long script string recording the deaths of Pakal, his parents, and earlier rulers extends around the edge of the lid; portraits of many of them, depicted as trees emerging from the earth, appear on the sides of the sarcophagus itself. Drawing by Linda Schele, © David Schele.

The graphemes on the south side of the lid, facing the door of the tomb chamber, record the climax of the narrative, the death of Pakal, the event commemorated by the Temple and all of its appurtenances. The script string begins on the east edge of the lid (Hopkins & Josserand, 2012), to the viewer’s right, and reads from left to right, so that it follows the order of the Maya ritual circuit: east, north, west,
south. Shifting registers, the imagery on the top of the lid, depicting the world tree, continues the sequence with the fifth direction: center or nadir-zenith. The death of Pakal is recorded on the edge that is just below the skeletal jaws at the base of the world tree: that is, in the underworld. Lady Sak K’uk’ and K’an Mo’ Hiix, Pakal’s mother and father, are depicted on the sarcophagus sides just below, also in the underworld. Their busts are repeated on the opposite, north, side of the sarcophagus; this places them simultaneously above the world tree, that is, in the celestial realm, which is another appropriate location for ancestors.

The same association of south with the underworld and north with the celestial realm is encoded in the structure of the twin pyramid complexes built at Tikal to commemorate the reigning king at the end of each katun in the 7th and 8th centuries (Jones, 1969; Ashmore, 1989, 1991; Ashmore & Sabloff, 2002). Terraced platforms on the east and west evoke the path of the sun; a southern building has nine doorways, referring to the nine levels or regions of the underworld. The ruler placed a stela with script and imagery celebrating his accession and genealogy in an enclosure on the north side, the celestial realm. These directional associations can be found in many other aspects of Maya thought and practice as well.

5.3. Throne 1 at Piedras Negras

Ruler 7, lord of Piedras Negras on the Usumacinta (Fig. 1), commissioned Throne 1 (Fig. 18) toward the end of the 8th century (Satterthwaite, 1944-1954; Coe, 1959; Herring, 2005, pp. 206-228). The stone bench was set into a niche in one of the rooms of a grand elevated palace in the city’s West Acropolis complex. Strings of graphemes occupy the front edge of the bench and its legs. The backrest has the form of a highly stylized face that shows very strong similarities with the faces on Stelae J and B at Copán and other visages that represent mountains. An elliptical device in the forehead seems to mark the face as also belonging to K’awiil, a supernatural being intimately connected with royal power and ancestry, and serves to frame a string of four graphemes. Busts of male and female figures appear in the eyes. The signs in the forehead device name one of Ruler 7’s key vassals and a woman who is probably his consort. The figures in the eyes are very simply dressed, making it unlikely that they portray the living individuals named in the text just above. It is more probable that they are intended to represent a generic ancestral pair, and by extension, ancestors, fathermothers, in general. Ruler 7, who commissioned the bench, would have been enthroned in his palace before an image of a mountain, abode of the ancestors, that incorporated references to the ancestors who dwelt there and to K’awiil, the patron deity of royal ancestry. This usage, in which a pair of elements refers to a class of things or beings to which they belong and whose limits they may define, is equivalent to the pattern of parallelism of elements (best known in the form of couplets) that is a favored mode of Mayan discourse and literature (Monod Becquelin, 1979; Hull, 2012; Christenson, 2012), but in the mimetic register.
Fig. 18. Piedras Negras, Throne 1. The backrest of this late 8th century throne is a stylized face that bears features of mountains and of K’awiil god of royal power and ancestry. Busts in the eyes stand for a generic ancestral pair, fathermothers. The pairing of elements to define a class of beings reflects the importance of parallel elements, especially couplets, in Mayan discourse and literature; here they appear in the mimetic register.

6. Concluding Remarks

It is certainly true that not all messages and concepts are reducible to words. Complex imagery may employ the organization of space, relations between figures and background, and color to convey very detailed information in highly nuanced ways that would be difficult to reduce to script (Gruzinski, 1987, p. 47; 1991). However, the complementarity of script and image in Maya writing is not simply a shift from textual to mimetic register. Nor is it reiteration of content, unchanged, in another register. Something is added to the message and often it is linguistic information. The relationship of script and imagery in Maya writing is intimate and fundamental, not the occasional choice of some artists and scribes to incorporate another register. The essence of Maya writing is simultaneous, coordinated communication of meanings through script and imagery. The regular use of both registers can be understood as a dimension of a key feature of Mayan discourse and writing: the presentation of related but (at least subtly) different versions of the same concept in parallel structures, particularly couplets (Lounsbury, 1980; Bassie-Sweet, 1991, p. 170).
Incorporating multiple registers/channels into a hybrid writing system creates a distinctive kind of syntax. Reliance on grapheme strings in script blocks constrains the message in terms of ordinary syntax, in the same linear way as in spoken language. Coordinated use of graphemes and imagery permits the construction of very complex messages that can simultaneously take advantage of syntactic understandings and convey meanings in ways that are freed from linear constraints and can therefore allow for simultaneous alternatives, none of which must be signaled as primary.

Copán’s Stela J reflects this syntactic flexibility very clearly. Specific references in imagery to Copán as a sovereign polity and to the legitimacy of the authority of its ruler communicate critical dimensions of the message: the reader is entering a particular political domain with a legitimate power structure. These elements are not expressed in any explicit way in the script strings, which deal with the accession of Waxaklajuun Ub’aah K’awiil, his connection to the dynastic founder, and his links with the cults of ancestral deities. Nothing in the hybrid composition prescribes a particular ordering of elements in the imagery in relation to those in the script strings. Imagery and graphemes placed in the spaces it creates are liberated from the linearity of grapheme strings, providing a syntactic freedom that could be quite useful. Relationships could be indicated more flexibly and without necessarily implying sequence. Legitimate authority referenced by the mat on the east face of Stela J can be read as characterizing Waxaklajuun Ub’aah K’awiil, or Yax K’uk’ Mo’, or the polity they ruled, or to all of these. Conveying these alternative readings under ordinary linear constraints of syntax would be significantly more complex.

One function of conveying key elements of messages through imagery—whether intentional/designed or not—would have been to make them interpretable for readers who were not trained in the script. Even for readers well versed in the script, the process of reading the imagery would have required devoting a different kind of attention to the overall composition. This additional engagement with the message may have enhanced retention of its critical elements, just as writing notes by hand increases recall in comparison with recording a spoken version. Smith (2008) was thus correct in asserting that signs are inextricably bound to those who encode and decode their meanings, though it is worth adding that they are also bound to the conventions of the sociocultural context(s) in which they occur. In the case of Maya writing, the graphemes that constitute the script and the imagery with which they co-occur form a dynamic polygraphic system that is inextricably rooted in broader systems of cultural signification and thus tailored to the cultural understandings of a particular audience. This is evocative of views of texts, broadly defined, as primary cultural constructions intimately bound to the systems of cultural codes that animate their semantics (see Uspenskij et al., 1973; Nöth, 1995). Maya writing occurs at the intersection of two of these codes—that of the script and that of the imagery—and must be understood as part of a broader tradition of literacy than its students have typically imagined.
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