

## EMBODIED SIGNS: READING GESTURE AND POSTURE IN CLASSIC MAYA DANCE

Mark Wright and Justine Lemos

*In this article, we couple Peircean semiotic theory with Laban movement analysis (LMA) to interpret scenes of Classic period Maya dance. We focus primarily on depictions found on polychrome ceramics that feature the dances of the Maize God and contrast them with those featuring the waxy creatures that inhabit the underworld. We interpret their inner emotional states based on their postural and gestural vocabularies using LMA, developed for that very purpose. The body can be considered a semiotic sign, and is therefore capable of simultaneously conveying iconic, symbolic, and indexical meanings. Maya dance has typically been interpreted at the iconic or symbolic levels, which reveal its mimetic or representational qualities. We explore the indexical qualities of the bodies of the dancers, and propose that shifting our attention to the indicative mode enables us to gain yet more insight into their embodied states.*

*En este artículo combinamos la teoría semiótica peirceana con el Análisis del Movimiento Laban (LMA) para interpretar escenas de la danza Maya del período Clásico. Nos enfocamos principalmente en las imágenes de las cerámicas policromadas que representan las danzas del Dios del Maíz y las contrastamos con las imágenes de las criaturas waxy que habitan el inframundo. Interpretamos sus estados emocionales, basándonos en su vocabulario postural y gestual a través del LMA, lo cual se desarrolló precisamente para ese propósito. El cuerpo mismo se podría considerar como un signo semiótico, y como tal, podría expresar los significados icónicos, simbólicos e indexicales simultáneamente. La danza Maya se ha interpretado típicamente a nivel icónico o simbólico para revelar sus cualidades miméticas o representacionales. Con este estudio exploramos las características indexicales de los cuerpos de los bailarines, y sugerimos un enfoque más centrado en el modo indicial para obtener una mejor perspectiva de sus estados personificados.*

**A**nthropological interpretation of archeological materials can be a tricky business, particularly when such interpretations attempt to vicariously access the emotional states and embodied experiences of individuals who lived in cultural and temporal contexts far removed from our own. Nevertheless, in recent years a variety of analytical approaches have demonstrated their effectiveness in offering nuanced glimpses into the lived experience of ancient peoples (Houston 2001; Joyce 2005; Lock and Farquhar 2007; Tiesler 2014). In that vein, we argue that the postures and gestures of dancing figures depicted in Classic Maya art offer entry into their innermost emotional states when interpreted as semiotic indices.

Our analysis focuses on the postural and gestural vocabularies that characterize the dances of the Maize God and those of the *waxy* beings that inhabit the underworld. Methodologically, our examination rests primarily on iconographic depictions of dance found on Late Classic polychrome ceramics originating in the Maya Lowlands (Boot 2003; Looper 2009; Reents-Budet 1994; Robicsek and Hales 1981). We use Laban movement analysis (LMA) as a methodological platform to describe various postural attitudes depicted in scenes of dance, then turn to Peircean semiotic theory to explore their potential indexical qualities. Because neither of these particular analytical tools have gained widespread traction among students of the ancient Maya, we begin

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with a brief overview of each before proceeding with our own analysis.

### Peircean Semiotic Theory

When discussing semiotic theory, clarification is needed as to precisely which branch of semiotics is referenced. Confusingly, two unrelated forms of semiotic theory arose in the nineteenth century, and both have maintained a foothold in the fields of archaeology and anthropology. The first came courtesy of the Swiss linguist Ferdinand de Saussure, who established the field of semiology (*sémiologie*), “a science that studies the life of signs within society” (Saussure 1966:16 [1916]). The second was developed independently by the American polymath Charles Sanders Peirce, which he dubbed “a science of semeiotic” (Peirce 1998:482). The Peircean model presents a sweeping phenomenological approach that is rooted in categories of signs, which is conducive to anthropological interpretation. Preucel (2006:3–4) highlighted the inadequacies of the Saussurian model for adducing meaning from material culture and strongly encouraged archaeologists to embrace a Peircean semiotic approach instead.

In Peirce’s (1992 [1894]) taxonomy of sign-forms there are three predominant modes of signs: icon, index, and symbol. These classes of signs overlap and are not mutually exclusive. A single sign, for example, might be an icon, a symbol, and an index simultaneously (Chandler 2002:43). Icons function by resembling that which is represented. Indices refer to their object via a relationship in time and space. Symbols are arbitrary; they refer to their object by means of convention, such as flags or traffic lights. To illustrate, an icon of a mouse would be a drawing meant to resemble a mouse. A symbol of mouse would be the word “mouse.” An index of a mouse would be the “Eek!” sound emitted by a person startled by seeing one. An indexical sign reflects a causal relationship, one of indication, such as smoke for fire, or a broad smile indicating someone is happy. It is the index, as a sign type, with which we are most concerned throughout this paper.

The application of Peircean semiotics to the interpretation of archaeological materials is a

fairly recent phenomenon, but it has proven effective and enlightening (Hutson et al. 2012; Preucel 2006; Preucel and Bauer 2001). Carballo (2014:197) highlights the utility of semiotics in archaeology but notes that the notion of indices is “particularly valuable for studying ritual as a form of differential communication saturated with signs and generated through performance.” In Mesoamerica generally and among the Maya specifically, the body itself “is a key symbol and a transmitter of social information through its artistic depiction, spatial positioning, and metaphorical reference” (Palka 2002:420). Such culturally specific metaphors have the power to shape the way individuals experience the world in very real ways (Lakoff and Johnson 1980). Maya art often uses a “non-verbal vocabulary of gesture” that enables emotions and attitudes to be expressed without words (Eisner 1990:100). Although some elements of this gestural vocabulary transcend cultural barriers, others appear to be specific to the Classic Maya (Wichmann and Nielsen 2016:301).

Comparatively few archaeologists have embraced semiotic interpretations, which Hutson and colleagues (2012:298) suggest may be due to wariness in the field of what may seem like yet another jargon-filled theoretical trend (see also Chippindale 1993). We echo the authors’ assertion that semiotic theory is neither a passing trend nor an uneasy fit between “exotic theory and local data” (Hutson et al. 2012:298), but rather a powerful and broadly applicable interpretive tool.

Although the artistic conventions surrounding Classic Maya dance may serve as indexical markers of the context in which a particular scene was produced (Looper 2009:104), the nature of signs is polysemous—they may point to more than one meaning at a time. Our particular focus on indexicality follows the lead of a handful of Mesoamerican scholars. To highlight just a few, Hutson et al. (2012:207) interpret *sabes* in the Yucatan as indices of inclusion by virtue of the physical connectedness they create between center and periphery. Baron’s (2016) recent book explores, among other things, the indexical linkages between patron gods and local identity formation. Hendon (2009:224–225) argues that the *hachas* and yokes curated in a noble home at Late

Classic Copan (Group 9N-8 Patio A) served as indexical markers of “foreignness,” even if those who donned them were in fact local and only assumed a “foreign” identity for ritual purposes. Hendon and coauthors (2014:47) explore the iconic aspects of animal figures that commonly appear on polychrome vessels in the Ulúa Valley, which also served as indexical markers of local identities when preferences for specific animals arose in different subregions; furthermore, they note that the general uniformity of Ulúa Polychromes served to index the shared knowledge of a larger cultural tradition (Hendon et al. 2014). Joyce’s (2014:17) semiotic analysis of the Playa de los Muertos figurines from Middle Formative Honduras suggests the twined and woven textiles represented on the figurines “would have indexically invoked assessments of the skill and labor required to make objects such as fine plain-weave cloth and complex twined textiles.”

### Laban Movement Analysis

Rudolf Laban (1879–1958) developed his theories and descriptive systems of movement out of an express desire to help spectators not only understand but truly *experience* the same emotional state as the performers they observe (Burton et al. 2016:28; Laban 1972). His system enables a close reading of the posture, gesture, and movement vocabularies of the human body. Bartenieff and Lewis (1980:16) suggested three ways in which Laban analysis could be used: the study of “body structure and morphology;” the pathways and “spatial tension” of movements; and the study of Effort<sup>1</sup>, which refers to the postural attitudes of an individual “in relation to space, weight, time, and flow.” Each of the Effort elements are defined diametrically: Space Effort is either Direct or Indirect, Weight Effort is Strong or Light, Time Effort can be Sudden or Sustained, and Flow Effort is either Free or Bound. In Laban’s calculus, when two of these Effort factors are combined they constitute a *state*<sup>2</sup>. When three of the Effort factors combine, they constitute a *drive*<sup>3</sup>.

It is the Effort qualities that are of particular interest to this study. Bartenieff and Lewis (1980:59) note that “a variety of inner states can be described in the movement manifestations of

two Effort combinations.” That is, the states and drives of LMA, by design, reveal inner emotional states. For example, there is little difference in the qualities of Space and Time between someone violently punching their hand forward vs. lightly “fist bumping” a friend—each is of the same duration and moves in the same direction—but the Effort quality of the two motions is dramatically different. One is Strong, the other Light. The former might register as an expression of anger or frustration, but the latter is understood to be a friendly affirmation or greeting. We argue that such Effort qualities can be detected in Classic period depictions of dance.

Anthropological studies of dance have generally examined movement, posture, and gesture as icons (Downey 2005; Ness 2004; Srinivasan 2007). Among the Maya, for example, scholars have suggested that dances are mimetic in that they *replicate* “the sway of maize” (Looper 1991:54), the “motions of animals” (Houston et al. 2006:255), or the flight of birds (Taube 2009:46). Although proper identification of the iconic mode of these dances is crucial to our interpretations, the study of other types of sign making in dance processes can amplify our overall understanding of them (Lemos 2012). Ness (1992) pioneered the application of Peircean semiotic theory to the field of dance ethnography. She found that semiotic indices pointed to “something else also present or evident in the performance context” (Ness 2008:8), which might include signs of trance (indexed by shaking, shivering, eye rolling), or a drunk person’s weaving walk—an index of the fact that the person is inebriated. Not only is dance representative, it is also indicative.

We are mindful of the objections that may be raised in our effort to adduce meaning from idealized, static, two-dimensional images of dance produced by artists who are far removed from us temporally and culturally (see Looper 2009:103–106). Complicating the matter further, we lack provenience for a large percentage of these Classic period ceramics because they were wrested from their original context by looters, leaving us to cobble together clues from disparate datasets (Reents-Budet 1998:82). Art historians caution that there may be a disconnect between the intended meaning as expressed by a particular

performer and the message as conveyed by the artist depicting the performance, and yet another disconnect between the artist's depiction and meaning ascribed by observers who view artwork through different cultural lenses (Gombrich 1999:272). Although this certainly holds true for us in our examination of ancient Maya art, such divisions between performer, artist, and viewer may have been less pronounced in their original context. Late Classic polychrome ceramics were indisputably elite objects: elite artists depicted elite performers on vessels created exclusively for elite consumption (Reents-Budet 1998:78; Rice 2009; see also Wichmann and Nielsen 2016:307). Hidden from the gaze of the commoners, these relatively small works would have required close proximity for interpretation (see Joyce 2014:74), much like the scenes of dance carved into the panels and lintels in the walls of temples and palaces, with access limited to elites.

Concerning our ability to detect emotional states from ancient works of art, Houston (2001:207) noted that Classic Maya depictions of the body are "unusually expressive, with a degree of verisimilitude or 'naturalism' that is deceptively transparent to Western gaze." He pointed to the detailed depictions of both facial expressions and bodily postures that convey nuanced emotional states such as torment, fear, despair, lust, and grief. Although there were unquestionably distinctive beliefs and practices between, and even within, different Classic period polities, there appears to have been something of a "codification of bodily movement and position" across the Lowlands that provided the Classic Maya with a "shared, connective communicative identity (perhaps even representing a concept of elite practice), while simultaneously emphasizing difference and inequality between individuals" (Jackson 2009:75–76). In sum, the messages Maya elites hoped to convey through their postural attitudes, both actual and those idealized in their artwork, likely came through loud and clear to their intended audiences.

Emotional states are easily identified when there is congruence between an individual's facial expression, body language, and voice, but surprisingly, recent studies have revealed that the body alone is capable of conveying certain

human emotions to virtually the same degree as isolated facial or vocal expressions (Coulson 2004; de Gelder 2009). This holds true even in static images with limited vantage points (Coulson 2004:132), or when postural attitudes are conveyed by faceless humanoid avatars (Kleinsmith et al. 2011). On that note, LMA has rather unexpectedly been thrust into the twenty-first century by STEM fields (science, technology, engineering, and mathematics) in their quest to imbue human-like attributes into everything from video game avatars to artificially intelligent robots (Burton et al. 2016; Chi et al. 2000; Zacharatos et al. 2014).

Accurate identification of emotional states communicated via physical expressions, be they human, robot, or computer-generated humanoid avatar, is further enhanced when the viewer understands the context in which the expression in question is elicited (Carroll and Russell 1996; Zhang and Sharkey 2011; see also Gombrich 1982; Lakoff and Johnson 1980). There are, of course, both similarities and differences in the meanings associated with distinct bodily posture (Kleinsmith et al. 2006), but intracultural identification of certain emotional states based on an individual's posture is quite consistent (Elfenbein and Ambady 2003), so much so that, in what may sound to some like the seeds of a dystopian future, artificially intelligent robots are being programmed with LMA "to create reciprocal interactive behaviors that appear natural and are not restricted to simple imitation" (Lourens et al. 2010:1263; see also McColl et al. 2016).

Although most of this type of research involving LMA is being driven by future-oriented fields, many of their findings are equally applicable to ancient Maya art. Combined with our emerging understanding of the consistency of elite messaging practices during the Classic period, we feel confident that LMA is an appropriate, if not optimal, tool for interpreting the idealized two-dimensional static depictions of Maya dance.

### Classic Maya Dance

Dancing was one of the most common rituals performed by Classic Maya rulers throughout their

reigns. Grube (1992) was the first to translate the T516 glyph as ‘to dance.’ Phonetically, the glyph is read as *ahk’ot* and may be semantically related to the term for “give,” *ahk’* (Macri andLooper 2003:206). *Ahk’* also serves as the root for *yahk’a(w)*, “he/she gives (it),” which is used in the context of offerings made to the gods (Looper 2009:17). In essence, the dances may be seen as offerings or tributes to the gods, and dance continues to be an acceptable form of prayer among traditional Mesoamerican communities (Houston 2006:144; Looper 2009:18).

Dances were associated with a wide variety of events: deity impersonation rituals, sacrifices, heir designation and other dynastic events, warfare, and visits by overlords (Looper 2009:5). Dances and public spectacles need not be seen as purely religious events, as they also served sociopolitical functions in legitimizing the power of a ruler (Houston 2006; Looper 2009:5; Schele and Miller 1986). As Sahagún (1950–1982 [1575–1578]:8:150) noted, among the Aztec, dancing was one of the primary responsibilities of the ruler and was done “in order to hearten and console all the peers, the noblemen, the lords, the brave warriors, and all the common folk and vassals.” Among the Classic Maya, public ceremonies were sometimes marked with the glyphic expression *cha’nil* (literally, “something being watched”; Tokovinine 2003:3). The expression occasionally occurs in conjunction with glyphic references to dance, which suggests that certain royal dances were intended to be performed in front of an audience (Looper 2009:18; Tokovinine 2003).

One of the earliest iconographic depictions of dance in the Maya area comes from the San Bartolo west wall mural (ca. 100 BC). The Maize God dances inside the quatrefoil carapace of the earth turtle while tapping his turtle shell drum pectoral in preparation for his resurrection (Taube et al. 2010: Figure 46). Curiously, over seven centuries pass before the first known textual reference to dance occurs. The earliest use of the dance glyph, found on Altar L at Quirigua, dates to AD 653 (Looper 1991:91). Other early references (AD 668–733) come from Dos Pilas, Naranjo, Piedras Negras, and La Corona. From AD 752–780, most dance references are limited to the Yaxchilan region. After about AD 780,

glyphic references to dance are found scattered throughout the Maya area (Looper 2009:18).

Proskouriakoff was the first to propose that the raised-heel motif was indicative of formal scenes of dance, noting that the dancers’ motions always appeared “restrained” (1950:28). Building on Proskouriakoff, Miller (1981) noted that this pose includes bent knees, horizontal “turn-out” of the feet and hips, and a single foot placed on “three-quarter” *pointe*. Looper (2001:118) suggests the raised-heel motif is better understood as a “conventional reference” to dance rather than a literal depiction of specific dance movements, noting that even in instances when glyphic references to dance accompany the scene, the dancer typically maintains a “highly rigid pose.”

Specific hand gestures are often used in conjunction with the raised-heel motif in scenes of dance, but identical gestures are sometimes used by non-dancers as well (Ancona-Ha et al. 2000), suggesting that hand gestures alone do not indicate dance (Miller 1981:133–134). One of the more common gestures involves the hand bent back sharply at the wrists with the palm facing outward and the fingers slightly flexed (Miller 1981:134). In addition to the standard lifted-heel pose, many of the dancers are depicted bending at the waist (Miller 1981:133), the significance of which we will return to below.

Our attempt to read the bodies of dancers as multilayered repositories of semiotic information aims to complement previous studies of Maya dance that have explored dance performance contexts as well as the iconic aspects of posture, gesture, and costuming (Houston 2006; Houston et al. 2006; Looper 2001, 2009; Taube 1985, 2009). Following Naerebout (1997:234, cited in Looper 2009:103), we resist any attempt to reconstruct the dances themselves. Our arguments rest on iconography, not choreography. What follows is an analysis of two of the most common categories of Classic Maya dance—those of the Maize God and those of the *wahy* beings—filtered through the lenses of both LMA and Peircean semiotics.

### The Refined Body of the Maize God Dancer

One of the most widespread motifs in Maya art is the dancing Maize God (Looper 2009:149;



Taube 2009:42). It is especially prominent on Holmul-style vessels (Looper 2008, 2009) and on the “Tikal Dancer Plates” (Boot 2003). Such scenes are so common that Taube suggested, “if there is a Classic Maya god of dance, it would be the maize god” (Taube 2009:42). The Maize God was one of the fundamental components of the “shared vocabulary” that transcended distinctive identities formed by both political boundaries and social classes across the Maya lowlands (Inomata 2007; Jackson 2009; Reents-Budet 1998).

As depicted on Maya polychrome ceramics, Maize God dancers almost always have a distinctly vertical spinal alignment (K0097, K0621, K0622, K0633, K0703, K1271, K1837, K3388, K4464, K4619, K5648, K5941, K7434, K7720, K8088, K8190, K8533). Kurath and Marti (1964:140) were the first to highlight the “erect posture” of a Maize God dancer “with feet in classic ballet ‘third position’—one foot half across the other—probably in a jump, with the dancer flipping his feet, arms extended, hands down from the wrists,” depicted on one of the Tikal Dancer plates (Figure 1). They use Labanotation to provide a detailed description of the Maize God’s specific posture and gesture, which forms a basis from which we can begin formulating qualitative statements about the depictions. How is the body of the dancer positioned within Space? What type of Effort is conveyed by the dancer’s posture and gesture? What meanings might these postural attitudes convey to the viewer?

Meanings can often be adduced from the visual perspectives that artists chose when depicting their subjects, particularly those relating to frontal versus profile views of the head or body (Klein 1976; Palka 2002; Schapiro 1973:37–49). In two-dimensional Classic Maya art, however, the heads of all full-length figures are almost unfailingly depicted in profile view. Although frontality of the torso often denotes “peak figures” and establishes hierarchical relationships in Classic Maya art (Palka 2002), shifting perspectives of the Maize God dancers’ bodies may simply represent different moments from the same dance. Indeed, both frontal and profile perspectives of the Maize God’s dance are sometimes depicted on opposite sides of the same vase (K517, K621, K3400, K5977).

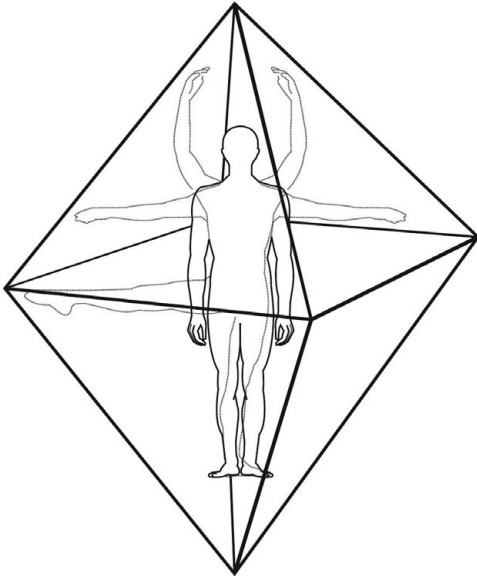
Significant variation exists within and between regional styles regarding the frontality of Maize God dancers (Looper 2009:117–131). Long-established conventions may have governed such artistic decisions. As Looper (2009:92) noted, “the representation of dance poses in Maya art is very much determined by the need to avoid foreshortening and oblique views of the body.” Unlike frontality, however, their verticality remained remarkably consistent, which forms the foundation of our analysis here.

Vertical posture is often used cross-culturally as an indexical marker of training, technique, poise, and regality (Miettinen 1992:99). Semiotic indices and icons are not mutually exclusive, however, so the Maize God’s postural verticality may also be an iconic sign that is representational of his identification with the *axis mundi*. Among the Classic Maya, royal bodies in general tend to be depicted with this same erect posture, and indeed, the body of the ruler is also conceptualized as a living *axis mundi* (Houston et al. 2006; Schele and Miller 1986:77; Taube 1996, 1998). The depiction of Pakal on the lid of his own sarcophagus provides one of the rare examples of a ruler in the guise of the Maize God whose posture is neither rigid nor vertical. To the contrary, his pose is that of a newborn infant. In this depiction, Pakal dons the garb of the Maize God not to recreate the god’s dance, but rather to mimetically enact his rebirth (Martin 2002; Taube 1994). Importantly, from Pakal’s resurrecting body springs the World Tree. In Classic Maya cosmology, the Maize God’s resurrection as the World Tree brings order to the chaos, centers the cosmos, and provides new life to humanity (Martin 2006:179). As such, the vertical posture of the Maize God, and that of the rulers who dance in his guise, functions as an iconic sign representing the *axis mundi*, “the place of transformation, mediation, and balance” (Stross 1992:102).

In addition to their verticality, the bodies of Maize God dancers are also focused and directional. There is little ambiguity in their attention to Space; their gestural focus is specific. Their arms appear to have a one-dimensional, sagittal, Spoke-like movement process, forward from the core of the body to the periphery of their kinesphere, pinpointing a specific spatial goal



Figure 1. Example of Tikal Dancer Plate. Excavated from Uaxactún Burial a3 (painting by M. Louise Baker, courtesy of the University of Pennsylvania Museum [Image 165116]). (Color online)



**Figure 2. Octahedral Movement Constellation (illustration by Timothy Turner).**

with the gesturing arm. Their gaze, like their bodies, is typically focused and directional, although sometimes they appear to gaze into the distance, far beyond their gesturing arm. Although the spine of the dancer remains vertically aligned, the distal parts of the body (particularly the arms and hands) are typically positioned at points within an octahedral pattern (Figure 2). This pattern is found on nearly all Holmul Maize God dancer vessels (see, for example, K0633, K3388, K4619, K5977, K7434, K7720, K7814, K8088, K8190). Such spatial clarity is one of the defining characteristics of the Maize God's dance.

Determining Space qualities from two-dimensional art has obvious limitations, so we are fortunate to have at least one well-preserved, fully in-the-round bust of the Maize God to analyze (Figure 3). Burdick (2010:93) notes that such three-dimensional figural sculptures from across the Maya area “exemplify the energy and vitality that artists aimed to evoke in two-dimensional works.” The bust (that originally adorned Structure 10L-22 at Copan) furnishes us with a dynamic, three-dimensional rendering of the Maize God's peripheral spatial tension (defining the boundary around his kinesphere), as well as his engagement in an octahedral movement constellation.



**Figure 3. Maize God sculpture from Copan (note the peripheral spatial tension and controlled gestures). Drawing by Linda Schele, reproduced courtesy of the Los Angeles County Museum of Art [SD-3518].**

The hand gestures of the Maize God dancers exhibit peripheral spatial tension by calling attention to the distance between his core and the edge of his kinesphere. Although the fingers are deployed with delicacy and refinement, they nevertheless convey a sense of bound, contained energy (see especially K8533, K9190, K8088, K7814, K7720, K7434, K7013, K5977, K5648, K4619, K4464, K3389, K1837, K0633). Chi and colleagues (2000) note that isolated gestures in the limbs may lack impact, but “when its Effort and Shape characteristics spread to the whole



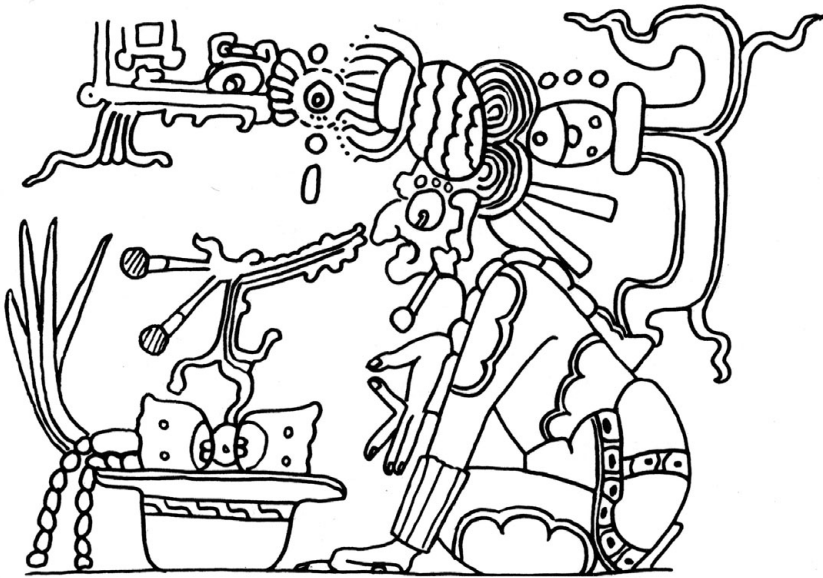


Figure 4. Supernatural scribe forming “Gesture 14” (drawing by Jorge Pérez de Lara and Mark Van Stone).

body, a person appears to project full involvement, conviction, and sincerity.” This is evident in the hand and arm movements of the Holmul Maize God dancers, which are always engaged in forward (sagittal) space, either directly forward or on the forward-high diagonal. Nevertheless, the Tikal Dancers often show the arms positioned on the high-side diagonal, suggesting a vertical rather than sagittal movement process. Nevertheless, either pattern exhibits an attention to an octahedral Space Harmony progression.

The Maize God dancers typically display a distinct wrist flexion and form spatially clear, exacting hand gestures. Catalogued using LMA, this wrist flexion shows a strongly defined kinesphere, peripheral spatial tension, and Bound Effort. Maya scribes, both human and supernatural, often display this same type of distinctive hand gesture (Figure 4). The scribal arts would have required similar levels of discipline, and thus their distinctive hand gestures are likewise indexical markers of their own training and proprioceptive control (see Herring 2005:24). By way of contrast, the individual being held up by his companions in K1092 (Figure 5) has slack hands, and his lack of distinct, spatially precise gestures stand in contrast to other figures in the scene. He also lacks an upright vertical

dimensional posture. His attention to Space is neither direct nor focused. His knees appear weak, as if he cannot hold himself upright. His posture and gestures are easily recognizable indexical signs that he is drunk.

The two most common gestures formed by the Maize God dancers are what Ancona-Ha and coauthors (2000:1075, 1081) have designated “Gesture 1” and “Gesture 14.” In Gesture 1 (Figure 6), the palm faces outward with the fingertips pointing down. It is commonly found in supernatural palace scenes featuring the god Itzamnaaj, where he appears to use the gesture as a salutation or greeting as he sits upon his throne, although high-ranking human elites occasionally mimic it in palace scenes as well (Ancona-Ha et al. 2000:1075). With Gesture 14 (see Figure 4), the thumb either touches or almost touches the tip of one of the fingers (Ancona-Ha et al. 2000:1081). Although rarely found on the Tikal Dancer plates, it is by far the most commonly used by the Holmul Maize God dancers (Looper 2009:125). The gesture is never sloppy or arbitrary. Typically, a single finger delicately touches the thumb (K0633, K1837, K3389, K4464, K4619, K5648, K5977, K7013, K7434, K7720, K7814, K8088, K9190, K8533). Because Gesture 14 is used in such a wide variety of situations

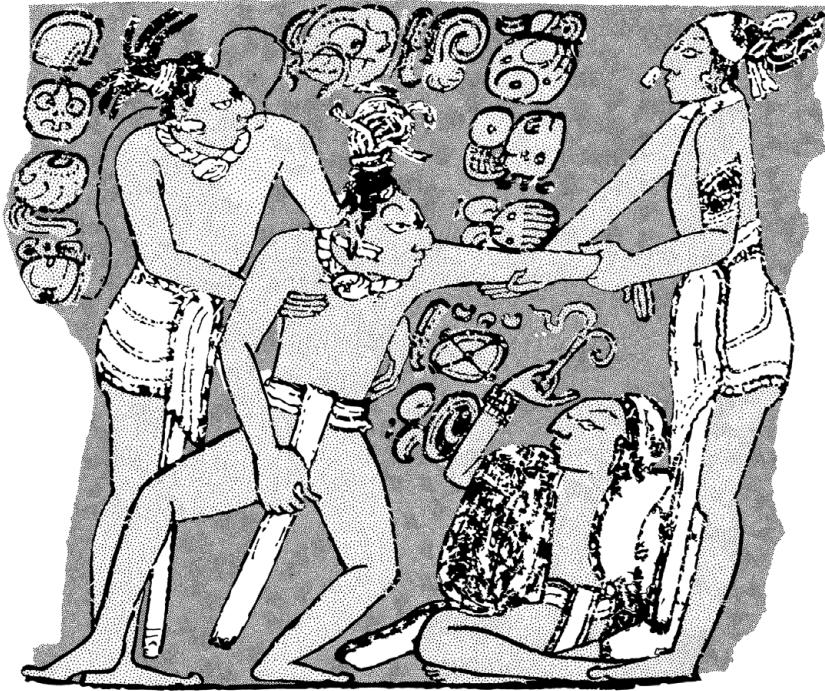


Figure 5. Scene of drunkenness from K1092 (drawing by Emily Davis-Hale).

and by a broad range of characters, it is difficult to offer any precise interpretation of either its iconic or symbolic meanings (Ancona-Ha et al. 2000:1082). Nevertheless, we may still glean semiotic information from it by exploring the potential meanings it carries as an indexical sign.

Distinctly crystallized gestures such as these often serve as indexical signs of proprioceptive refinement (Kendon 1988; McNeill 1992). Our analysis finds that the dance of the Maize God is neither improvisational nor loose. The entire dance appears controlled, regal, and civil. The clearly defined hand gestures of the Maize God dancers and cultivated sense of refinement make clear that they are exhibiting trained, choreographed dance behavior. Among the Classic Maya, “refinement was read into bodily equipoise,” and “civility lent a particular appearance and feel to entire performative situations and physical conditions” (Herring 2005:79). Verticality, upright stance, and posture are aligned to present the Maize God dancers in a sublimely human or metahuman state. Their embodied schema exhibit a rarified sense of movement. This crystallization of vertical alignment and

directly focused Light/Bound gesture is found in many styles of dance cross-culturally and often used to portray a sense of “withheld strength” (Miettinen 1992:99). This sense is augmented by the lower bodies of many Maize God dancers, which exhibit a Strong Weight Effort. They appear to be strongly rooted into the ground, with the weight center of the body flowing downward into the earth, while the upper body floats upward, supported by the base.

The Maize God dancers’ combination of Weight-Effort with Bound Flow and Direct Attention to Space leads us to postulate that they are engaged in what Laban analysts call “Spell Drive,” a compelling, nearly hypnotic combination of movement efforts. As Bartenieff and Lewis (1980:61) note, “Without Time’s sense of urgency or delay to loosen the stability, the steadfastness of Space/Weight becomes inescapable when Flow’s ‘goingness’ is added to it, and a spell-like intensity is created.” Classic Maya elites entered into this state through dances performed during costumed deity impersonation rituals, wherein they believed they merged with, or even embodied, the supernatural

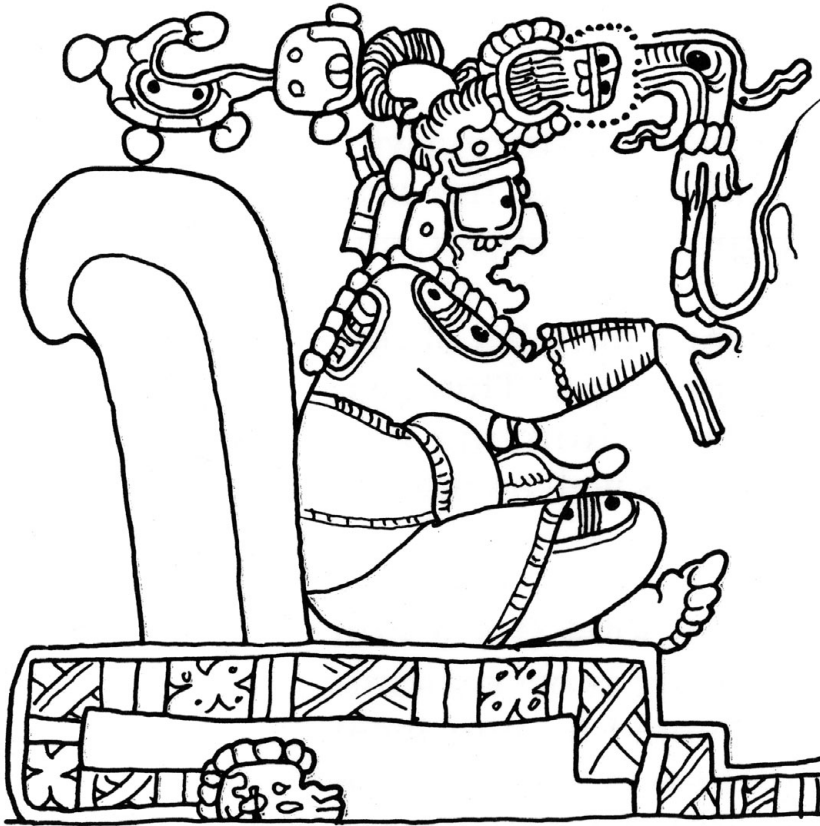


Figure 6. Itzamnaaj using “Gesture 1” as an apparent greeting in a supernatural palace scene. Such controlled gestures serve as indexical markers of proprioceptive refinement among both gods and elites (drawing by Jorge Pérez de Lara and Mark Van Stone, in Ancona-Ha et al. 2000:1075).

being in a very real way (Houston et al. 2006:270; Taube 2009:45). As Danielsson (2002:181) noted, “masks enable embodiment of disembodied states” in transformative situations. Although it can be difficult at times to determine if a scene is intended to depict an actual supernatural being or merely a human impersonator (Freidel et al. 1993:262), our interpretive approach remains unaffected due to the perceived ontological unity that exists between the dancer and the gods during such ritual moments (Houston et al. 2006:270; see also Lakoff and Johnson 1980). The Maize God, of course, was the most commonly impersonated deity during such ritual dances (Taube 2001:306).

Previous analyses of the posture and gestures of the Maize God dancers have focused on their iconic aspects by noting that they are imitative of the maize plant. Complemented by an indexical

analysis, those same scenes also reveal their posture and gestures to be indicative of the dancers’ training in specific movement technique. This movement technique is in turn indexical of a refined sense of harmony and equipoise. The bodies of the Maize God dancers are thus made “literate,” fluent in the language of refined movement that is choreographed, specific, and meaning-making. It was up to the artists to make them legible to the viewer, however. Houston (2001:215, expounding on the work of Levy [1984]) emphasizes that affect—the subjective states attributed by one person to another—was “hypercognated” or “elaborated and explicitly highlighted” in Classic Maya art, noting that “by their very appearance in painting and sculpture, affect, fear and despair, drunkenness, lustful abandon and grief must have been subject to comment and dissection. In a word, they were

hypercognated by the Classic Maya. But the absence of such affect must also have been hypercognated, as part of an idealized mode of self-constraint and concealment of emotion behind stylized gesture.” Filtered through our semiotic lens, that means we may read the controlled, refined affect of the Maize God dancers not only for what they are, but also in terms of what they are not: they are expressly not wild or unrestrained, a point to which we will return.

We speculate that vestiges of this dance may still be manifest in traditional Maya communities today. Among the Tzutujil Maya of Santiago Atitlán, Guatemala, for example, a powerful priest known as a *nab'eysil* performs a ritual dance which Christenson (2006) describes as being “stately,” “slow,” “restrained,” and “purposeful.” Significantly, the priest dances while holding the sacred bundle of Martín, the patron of the maize harvest. The dance “consists mostly of small, purposeful steps with the knees slightly bent, the arms held downward and away from the body, and rhythmically leaning his body from side to side” (Christenson 2006:240–241). At the end of the dance, the *nab'eysil* holds his arms outward and slightly down in a “crucifixion-like pose.” One of the Tzutujil men explained that the pose represented “a maize plant as it grows out of the earth with its leaves extending outward away from the stalk” (Christenson 2006:241–242), vividly illustrating the concept that bodily posture and gesture function as iconic signs. Although this ethnographic description is tantalizingly similar to those offered by iconographers concerning the Classic period Maize God dancers, caution warrants we present it here by way of analogy rather than as a rubric for interpretation (Taube 2014; see also Bricker 1981:130–133).

### Gestural Vocabulary of the *Wahy* Creatures

In dramatic contrast to the refined gestures that typify the Maize God are those of the strange *wahy* creatures that populate the underworld<sup>4</sup>. The *wahy* are a common type of supernatural being, although they are not technically considered gods. Not only are they never granted the divine epithet *k'uh* (sacred, holy), they are

also never shown in direct interaction with such sacred beings (Grube 2004:74). They are generally depicted as fantastical or frightening creatures that combine anthropomorphic, zoomorphic, or skeletal features (Calvin 1997; Grube 2004:215). Although not completely understood, some Classic period *wahy* entities may have been personifications of disease, illnesses, or sorcery (Grube 2004; Helmke and Nielsen 2009; Houston and Inomata 2009:208; Stuart 2012; Zender 2004:72–77).

As with the Maize God, elites commonly impersonated these entities by wearing particular masks and costume elements during their ritual performances. Scenes of dancing *wahy* creatures are extremely common on Classic period ceramic vessels (Grube 1992:214), and as with the Maize God dancers, their postural and gestural characteristics are ripe with semiotic meaning. To illustrate, we turn first to an elegantly executed *Ik'*-style vessel, the Altar de Sacrificios Vase (Figure 7), painted by the same artist who created K791. The artist was sponsored by the ruler K'ihnich Lamaw Ek', and we know of at least two other vases painted by the same hand, which likewise feature *wahy* creatures (Halperin and Foias 2010; Reents-Budet et al. 2007). On both the Altar Vase and K791, the *wahy* beings dance with a downward, internal focus, yet their bodies appear light and luminous. Their kinesphere has shrunk. The dancers look away from their hands.Looper (2009:224) describes their dance postures as “strongly hunched or agitated.” Their eyes focus downward, as if concentrating on inner processes or visions, which find physical expression in private, personal movement processes. The internal focus of these dancers seems indicative of a remote state. They appear to be experiencing an otherworldly reality, one of trance or ecstasy. Unlike the vertical position of the Maize God dancers, the *wahy* dancers bend at the waist, and their torsos appear fluid and loose, engaged in a process of free-flowing energy. Their dance is wholly unconcerned with spatial precision or articulation. Their movement is not Bound or contained. Their legs and feet step lightly on the ground. In stark contrast to the Strong Weight displayed by the Maize God dancers, the *wahy* creatures do not appear rooted into the earth. To the contrary, they seem





Figure 7. Dancing *wavy* being. Note the downward focus, Light Weight, and Free Flow efforts. Detail from the Altar de Sacrificios vase. Museo Nacional de Arqueología y Etnología, Guatemala City. Excavated from Burial 96 of Structure A-III (Adams 1971. Drawing by Linda Schele, courtesy of the Los Angeles County Museum of Art [SD-5504].

to almost float away from it, unconstrained by gravity, perhaps indexical of an out-of-body experience or a “dreamlike vision” (Werness-Rude and Spencer 2015:19).

### Discussion

The gestural vocabularies of the dances of the Maize God dancers and those of the *wavy* are qualitatively and indexically far removed from each other. Every Effort quality (Space, Weight,

Time, and Flow) associated with the *wavy* creatures stands in polar opposition to those of the Maize God. The Effort qualities of the Maize God’s dance involve Direct Space, Strong Weight, Sustained Time, and Bound Flow. Those of the *wavy*, in contrast, involve Indirect Space, Light Weight, Sudden Time, and Free Flow Efforts. Recalling Houston’s (2001) discussion of hypercognition, we can define each of their affects both in terms of what they are and what they are not. Regardless of the culture-specific

meanings that may be associated with these two types of dance, the message is still clear: they are diametrically opposed to each other.

The dramatically different movement vocabularies of the Maize God dancers and the *wahy* beings has previously been recognized as representing the concepts of order and chaos, respectively (Looper 2009:226). The tension between these opposing forces continues to frame the worldview of modern Maya peoples. Among the Yucatec Maya, for example, the word *toh* literally means “straight” or “truth,” but it also connotes moral rectitude and ethical correctness (as do its cognates in several other Mayan languages; Taube 2003:465). The majority of the depictions of the dancing Maize God show him engaging in straight-line movement processes, both in the core (spine and torso) and distal parts (arms and legs) of his body. Iconically, the postural vocabulary of the Maize God is cultivated, ordered, and bounded. In this sense it resembles the milpa, which itself is a microcosm of the ordered universe.

In contrast, the *wahy* dancers are unconcerned with the sort of proprioceptive control or refinement exhibited by the Maize God dancers. Out of control, the *wahy* demons are often depicted in positions of extreme contortion and with bizarre proportions, often to humorous effect (Taube 1989:484; Wichmann and Nielsen 2016:302). The scenes are typically set in the underworld, which is conceptually linked to places like caves that lack “internal order and spatial divisions” (Stone 1995:16–18) or the wild, untamed forest (Taube 2003:467–468). Thick, knotted forest growth is referred to as *lob’* in Yucatec, a word that is likewise used to denote that which is evil and dark in other Mayan languages (Barrera Vásquez et al. 1980:219, 454–456; Hofling and Tesucun 1997:416; Taube 2003:466).

Although there are many depictions of *wahy* creatures on Maya polychrome ceramics, which we did not address in this short analysis, our survey indicates that bodily contortion and distortion of perspective are intentionally emphasized in such scenes. Unlike the extremely rarified upright dance of the Maize God, the *wahy* move with little or no attention to space. Indeed, their posture often appears to defy the normal limits of bodily capability. It is as if they threaten to

spill outside the boundaries of their own skin (as on K5010 and K1379). The *wahy* dancers exhibit little attention to the direction their bodies move in space and effectively embody the chaotic, undefined boundaries of the “forest” in contrast to the “carefully delineated world of humans” (Taube 2003:469).

Signs are, by their nature, both polysemous and imbricative (Preucel 2006:155). We suggest the bodily postures of the Maize God dancers and those of the *wahy* creatures are themselves signs that convey multiple meanings. The body of the Maize God dancer may be iconic of multiple things at once: the maize plant itself, the milpa, the *axis mundi*, even the order of the cosmos. Concomitantly, their controlled, refined dances serve as indexical markers of their individual training and skill. As noted previously, Joyce (2014:75) emphasized that iconographic depictions of textiles on Mesoamerican figures were capable of “indexing labor, skill, and social personhood,” not only of the artists who made the figurines, but also of those who made the textiles that were represented on the figurines. Our indexical analysis of Late Classic polychrome ceramics leads us to draw similar conclusions about Maya dancers and the artists who depicted them.

## Conclusions

Some fifty years ago, Kurath and Marti (1964:26) suggested that the movements and gestures of Maya dancers could provide a glimpse into their innermost emotional states. We have attempted to deliver on their suggestion by analyzing Classic period scenes of dance through the lenses of both LMA and Peircean semiotic theory. We believe this particular amalgam of approaches offers a unique but methodologically robust platform that can be effectively used to draw meanings from Classic period iconography, which have previously gone unnoticed. In effect, we consider these methods to be translation tools that have the potential to increase our fluency in ancient Maya body language.

The application of Peircean semiotic analysis has allowed us to postulate that these movement processes are indexical markers of cultural training. In understanding the movements of

the Maize God dancers as indices of specific cultural training, we approach understanding the symbolic mode of Classic Maya dance. Why? Because cultural training is rule driven and therefore symbolic of the technical language-like aspects of the dance. It is tempting to consider the depictions of dance as “true signs” that depict social status (Ancona-Ha et al. 2000). However, it is the layered nature of dance—its ability to “work” iconically, symbolically, and indexically—that makes it such a rich repository of cultural information.

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*Data Availability Statement.* Photographs of all polychrome ceramics analyzed or cited in this study are available through the Maya Vase Database ([www.mayavase.com](http://www.mayavase.com)) or the sources listed in the references.

## References Cited

- Adams, Richard E.W.  
1971 *The Ceramics of Altar de Sacrificios*. Papers of the Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge.
- Ancona-Ha, Patricia, Jorge Pérez De Lara, and Mark Van Stone  
2000 Some Observations on Hand Gestures in Maya Art. In *The Maya Vase Book*, Vol. 6, edited by Barbara Kerr and Justin Kerr, pp. 1072–1089. Kerr Associates, New York.
- Baron, Joanne  
2016 *Patron Gods and Patron Lords: The Semiotics of Classic Maya Community Cults*. University of Colorado Press, Boulder.
- Barrera Vásquez, Alfredo, Juan Ramón Bastarrachea Manzano, William Brito Sansores, Refugio Vermont Salas, David Dzul Góngora, and Domingo Dzul Pot  
1980 *Diccionario Maya Cordemex, Maya-Español, Español-Maya*. Ediciones Cordemex, Merida.
- Bartenieff, Irmgard, and Dori Lewis  
1980 *Body Movement: Coping with the Environment*. Gordon and Breach Science Publishers, New York.
- Boot, Erik  
2003 An Annotated Overview of “Tikal Dancer Plates.” *Mesoweb*: [www.mesoweb.com/features/boot/TikalDancerPlates.pdf](http://www.mesoweb.com/features/boot/TikalDancerPlates.pdf), accessed May 25, 2015.
- Bricker, Victoria Reifler  
1981 *The Indian Christ, the Indian King*. University of Texas Press, Austin.
- Burdick, Catherine E.  
2010 *Text and Image in Classic Maya Sculpture*. PhD dissertation, Department of Art History, University of Illinois, Chicago.
- Burton, Sarah Jane, Ali-akbar Samadini, Rob Gorbet, and Dana Kulic  
2016 *Laban Movement Analysis and Affective Movement Generation for Robots and Other Near-Living Creatures*. In *Dance Notations and Robot Motion*, edited by Jean-Paul Laumond and Naoko Abe, pp. 25–48. Springer, New York.
- Calvin, Inga  
1997 *Where the Wayob Live: A Further Examination of Classic Maya Supernaturals*. In *The Maya Vase Book*, Vol. 5, edited by Barbara Kerr and Justin Kerr, pp. 868–883. Kerr Associates, New York.
- Carballo, David M.  
2014 *Obsidian Symbolism in a Temple Offering from La Laguna, Tlaxcala*. In *Obsidian Reflections: Symbolic Dimensions of Obsidian in Mesoamerica*, edited by David M. Carballo and Marc Levine, pp. 195–221. University of Colorado Press, Boulder.
- Carroll, James M., and James A. Russell  
1996 Do Facial Expressions Signal Specific Emotions? Judging Emotion from the Face in Context. *Journal of Personality And Social Psychology* 70(2):205.
- Chandler, Daniel  
2002 *Semiotics: The Basics*. Routledge, London.
- Chi, Diane, Monica Costa, Liwei Zhao, and Norman I. Badler  
2000 The EMOTE Model for Effort and Shape. *Proceedings of the 27th Annual Conference on Computer Graphics and Interactive Techniques*, pp. 173–182. ACM Press/Addison-Wesley Publishing Co., New York.
- Chippindale, Christopher  
1993 *Ambition, Deference, Discrepancy, Consumption: The Intellectual Background to a Post-processual Archaeology*. In *Archaeological Theory: Who Sets the Agenda?*, edited by Norman Yoffee and Andrew Sherratt, pp. 27–36. Cambridge University Press, Cambridge.
- Christenson, Allen J.  
2006 *Sacred Bundle Cults in Highland Guatemala*. In *Sacred Bundles: Ritual Acts of Wrapping and Binding in Mesoamerica*, edited by Julia Guernsey and F. Kent Reilly, pp. 226–246. Boundary End Archaeology Research Center, Barnardsville, North Carolina.
- Coulson, Mark  
2004 *Attributing Emotion to Static Body Postures: Recognition Accuracy, Confusions, and Viewpoint Dependence*. *Journal of Nonverbal Behavior* 28(2): 117–139.
- Danielsson, Ing-Marie Back  
2002 (Un)masking Gender—Gold Foil (Dis)embodiments in Late Iron Age Scandinavia. In *Thinking through the Body: Archaeologies of Corporeality*, edited by Yannis Hamilakis, Mark Pluciennik, and Sarah Tarlow, pp. 179–199. Kluwer Academic/Plenum Publishers, New York.
- de Gelder, Beatrix  
2009 *Why Bodies? Twelve Reasons for Including Bodily Expressions in Affective Neuroscience*. *Philosophical Transactions of the Royal Society of London B: Biological Sciences* 364(1535):3475–3484.
- Downey, Greg  
2005 *Learning Capoeira: Lessons in Cunning from an Afro-Brazilian Art*. Oxford University Press, New York.

- Eisner, Will  
1990 *Comics and Sequential Art*. Revised edition. Poor-hous Press, New York.
- Elfenbein, Hillary A., and Nalini Ambady  
2003 Universals and Cultural Differences in Recognizing Emotions. *Current Directions in Psychological Science* 12:159–164.
- Freidel, David, Linda Schele, and Joy Parker  
1993 *Maya Cosmos: Three-Thousand Years on the Shaman's Path*. William Morrow and Company, New York.
- Gombrich, Ernst H.  
1982 *The Image and the Eye: Further Studies in the Psychology of Pictorial Representation*. Phaidon, Oxford.  
1999 Aby Warburg: His Aims and Methods: An Anniversary Lecture. *Journal of the Warburg and Courtauld Institutes* 62:268–282.
- Grube, Nikolai  
1992 Classic Maya Dance: Evidence from Hieroglyphs and Iconography. *Ancient Mesoamerica* 3:201–218.  
2004 Akan—The God of Drinking, Disease and Death. In *Continuity and Change: Maya Religious Practices in Temporal Perspective. Fifth European Maya Conference, University of Bonn, December 2000*, edited by Daniel Graña-Behrens, Nikolai Grube, Christian M. Prager, Frauke Sachse, Stefanie Teufel, and Elisabeth Wagner, pp. 59–76. *Acta Mesoamericana* 14. Verlag Anton Sauerwein, Markt Schwaben, Germany.
- Halperin, Christina T., and Antonia E. Foias  
2010 Pottery Politics: Late Classic Maya Palace Production at Motul de San José, Petén, Guatemala. *Journal of Anthropological Archaeology* 29(3):392–411.
- Helmke, Christophe, and Jesper Nielsen  
2009 Hidden Identity and Power in Ancient Mesoamerica: Supernatural Alter Egos as Personified Diseases. *Acta Americana* 17(2):49–98.
- Hendon, Julia A.  
2009 *Houses in a Landscape: Memory and Everyday Life in Mesoamerica*. Duke University Press, Durham.
- Hendon, Julia A., Rosemary Joyce, and Jeanne Lopiparo  
2014 *Material Relations: The Marriage Figurines of Prehispanic Honduras*. University of Colorado Press, Boulder.
- Herring, Adam  
2005 *Art and Writing in the Maya Cities A.D. 600–800: A Poetics of Line*. Cambridge University Press, Cambridge.
- Hofling, Charles Andrew, and Felix Fernando Tesucun  
1997 *Itzaj Maya-Spanish-English Dictionary*. University of Utah, Salt Lake City.
- Houston, Stephen D.  
2001 Decorous Bodies and Disordered Passions: Representations of Emotion Among the Classic Maya. *World Archaeology* 33(2):206–219.  
2006 Impersonation, Dance, and the Problem of Spectacle Among the Classic Maya. In *Archaeology of Performance: Theaters of Power, Community, and Politics*, edited by Takeshi Inomata and Lawrence S. Coben, pp. 135–155. AltaMira, Lanham, MD.
- Houston, Stephen D., and Takeshi Inomata.  
2009 *The Classic Maya*. Cambridge University Press, Cambridge.
- Houston, Stephen D., David Stuart, and Karl Taube  
2006 *The Memory of Bones: Body, Being, and Experience among the Classic Maya*. University of Texas Press, Austin.
- Hutson, Scott R., Aline Magnoni, and Travis W. Stanton  
2012 “All That is Solid...”: Sacbes, Settlement, And Semiotics At Tzacaul, Yucatan. *Ancient Mesoamerica* 23:297–311.
- Inomata, Takeshi  
2007 Knowledge and Belief in Artistic Production by Classic Maya Elites. In *Rethinking Craft Specialization in Complex Societies: Archaeological Analyses of the Social Meaning of Production*, edited by Rowan Flad and Zachary Hruby, pp. 129–141. *Archaeological Papers No. 17*. American Anthropological Association, Arlington, Virginia.
- Jackson, Sarah E.  
2009 Imagining Courtly Communities: An Exploration of Classic Maya Experiences of Status and Identity Through Painted Ceramic Vessels. *Ancient Mesoamerica* 20:71.
- Joyce, Rosemary  
2005 Archaeology of the Body. *Annual Review of Anthropology* 34:139–158.  
2014 Ties That Bind. In *Wearing Culture: Dress and Regalia in Early Mesoamerica and Central America*, edited by Heather Orr and Matthew Looper, pp. 61–78. University of Colorado Press, Boulder.
- Kendon, Adam  
1988 How Gestures Can Become Like Words. In *Cross-Cultural Perspectives in Nonverbal Communication*, edited by Fernando Poyatos, pp. 131–141. C.J. Hogrefe, Lewiston, New York.
- Klein, Cecelia F.  
1976 *The Face of the Earth: Frontality in Two-dimensional Mesoamerican Art*. Garland Publishing, New York.
- Kleinsmith, Andrea, P. Ravindra De Silva, and Nadia Bianchi-Berthouze  
2006 Cross-Cultural Differences in Recognizing Affect from Body Posture. *Interacting with Computers* 18(6):1371–1389.
- Kleinsmith, Andrea, Nadia Bianchi-Berthouze, and Anthony Steed  
2011 Automatic Recognition of Non-Acted Affective Postures. *IEEE Transactions on Systems, Man, and Cybernetics, Part B (Cybernetics)* 41:1027–1038.
- Kurath, Gertrude, and Samuel Marti  
1964 *Dances of Anahuac: The Choreography and Music of Precortesian Dances*. Vol. 38. Wenner-Gren Foundation, New York.
- Laban, Rudolf  
1972 *The Mastery of Movement*, 3rd ed. Revised and enlarged by Lisa Ullman. PLAYS, Inc. Boston.
- Lakoff, George, and Mark Johnson  
1980 *Metaphors We Live By*. University of Chicago Press, Chicago.
- Lemos, Justine  
2012 Radical Recreation; Non-Iconic Movements of Tradition in Keralite Classical Dance. *Recherches Anthropologiques: Semiotic Inquiry* 32:47–82.
- Levy, Robert  
1984 Emotion, Knowing, and Culture. In *Culture Theory: Essays on Mind, Self, and Emotion*, edited by Richard A. Shweder, and Robert A. LeVine, pp. 214–237. Cambridge University Press, Cambridge.
- Lock, Margaret, and Judith Farquhar (editors)  
2007 *Beyond the Body Proper: Reading the Anthropology of Material Life*. Duke University Press, Durham.



- Looper, Matthew G.  
 1991 The Dances of the Classic Maya Deities: Chak and Hun Nal Ye. Master's thesis, Department of Art and Art History, University of Texas at Austin.  
 2001 Dance Performances at Quirigua. In *Landscape and Power in Ancient Mesoamerica*, edited by Rex Koontz, pp. 113–135. Westview Press, Boulder, Colorado.  
 2008 Stylistic Analysis of Dancing Maize Gods on Polychrome Ceramics. *Glyph Dwellers* No. 25, <https://nas.ucdavis.edu/sites/nas.ucdavis.edu/files/attachments/R25.pdf>, accessed May 18, 2015.  
 2009 *To Be Like Gods: Dance in Ancient Maya Civilization*. University of Texas Press, Austin.
- Lourens, Tino, Roos Van Berkel, and Emilia Barakova  
 2010 Communicating Emotions and Mental States to Robots in a Real Time Parallel Framework Using Laban Movement Analysis. *Robotics and Autonomous Systems* 58:1256–1265.
- McCull, Derek, Alexander Hong, Naoaki Hatakeyama, Goldie Nejat, and Beno Benhabib  
 2016 A Survey of Autonomous Human Affect Detection Methods for Social Robots Engaged in Natural HRI. *Journal of Intelligent & Robotic Systems* 82:101–133.
- McNeill, David  
 1992 *Hand and Mind: What Gestures Reveal About Thought*. University of Chicago Press, Chicago.
- Macri, Martha, and Matthew Looper  
 2003 Nahua in Ancient Mesoamerica: Evidence from Maya Inscriptions. *Ancient Mesoamerica* 14:285–297.
- Martin, Simon  
 2002 The Baby Jaguar: An Exploration of its Identity and Origins in Maya Art and Writing. In *La organización social entre los mayas prehispánicos, coloniales y modernos. Memoria de la Tercera Mesa Redonda de Palenque*, edited by Vera Tiesler Blos, Rafael Cobos, and Merle Green Robertson, pp. 49–78. Instituto Nacional de Antropología e Historia, Mexico.  
 2006 Cacao in Ancient Maya Religion: First Fruit from the Maize Tree and other Tales from the Underworld. In *Chocolate in Mesoamerica: A Cultural History of Cacao*, edited by Cameron L. McNeil, pp. 154–183. University Press of Florida, Gainesville.
- Miettinen, Jukka O.  
 1992 *Classical Dance and Theatre in South-East Asia*. Oxford University Press, Oxford.
- Miller, Virginia Elizabeth  
 1981 Pose and Gesture in Classic Maya Monumental Sculpture. PhD dissertation, Department of Art History, University of Texas at Austin.
- Naerebout, F.G.  
 1997 *Attractive Performances: Ancient Greek Dance: Three Preliminary Studies*. J.C. Gieben, Amsterdam.
- Ness, Sally Ann  
 1992 *Body, Movement, and Culture: Kinesthetic and Visual Symbolism in a Philippine Community*. University of Pennsylvania Press, Philadelphia.  
 2004 Being a Body in a Cultural Way: Understanding the Cultural in the Embodiment of Dance. In *Cultural Bodies: Ethnography and Theory*, edited by Helen Thomas and Jamilah Ahmed, pp. 121–144. Blackwell Publishing Ltd, Oxford.  
 2008 The Inscriptions of Gesture: Inward Migrations in Dance. In *Migrations of Gesture*, edited by Carrie Noland and Sally Ann Ness, pp. 1–30. University of Minnesota Press, Minneapolis.
- Palka, Joel W.  
 2002 Left/Right Symbolism and the Body in Ancient Maya Iconography and Culture. *Latin American Antiquity* 13:419–443.
- Peirce, Charles Sanders  
 1992 [1894] *The Essential Peirce: Selected Philosophical Writings*. 2 vols. Indiana University Press, Bloomington.  
 1998 *The Essential Peirce: Selected Philosophical Writings: Vol. 2 (1893–1913)*. Indiana University Press, Bloomington.
- Preucel, Robert W.  
 2006 *Archaeological Semiotics*. Blackwell Publishing, Malden, Massachusetts.
- Preucel, Robert W., and Alexander A. Bauer  
 2001 Archaeological Pragmatics. *Norwegian Archaeological Review* 34:85–96.
- Proskouriakoff, Tatiana  
 1950 *A Study of Classic Maya Sculpture*, Publication No. 593. Carnegie Institution of Washington, Washington, DC.
- Reents-Budet, Dorie  
 1994 *Painting the Maya Universe: Royal Ceramics of the Classic Period*. Duke University Press, Durham, North Carolina.  
 1998 Elite Maya Pottery and Artisans as Social Indicators. In *Craft and Social Identity*, edited by Cathy Costin and Rita Wright, pp. 71–89. Archaeological Papers of the American Anthropological Association 8, Washington, DC.
- Reents-Budet, Dorie, Antonia Foias, Ronald L. Bishop, James Blackman, and Stanley Guenter  
 2007 Interacciones políticas y el sitio Ik' (Motul de San José): Datos de la cerámica. In *XX Simposios de Investigaciones Arqueológicas en Guatemala*, edited by Juan Pedro Laporte, Bárbara Arroyo, Héctor E. Mejía, pp. 1141–1160. Instituto de Antropología e Historia de Guatemala, Asociación Tikal, Guatemala City.
- Rice, Prudence  
 2009 Late Classic Maya Pottery Production: Review and Synthesis. *Journal of Archaeological Method and Theory* 16:117–156.
- Robicsek, Francis, and Donald M. Hales  
 1981 *The Maya Book of the Dead: The Ceramic Codex*. University of Virginia Art Museum, Charlottesville.
- Sahagún, Fray Bernardino de  
 1950–1982 [1575–1578] *Florentine Codex: General History of the Things of New Spain*. 11 vols. Translated by Arthur J.O. Anderson and Charles E. Dibble. School of American Research and the University of Utah, Santa Fe, New Mexico.
- Saussure, Ferdinand de  
 1966 [1916] *Course in General Linguistics*, edited by Charles Bally and Albert Sechehaye. Translated by Wade Baskin. McGraw-Hill, New York.
- Schapiro, Meyer  
 1973 *Words and Pictures: On the Literal and the Symbolic in the Illustration of a Text*. Mouton, The Hague.
- Schele, Linda, and Mary Ellen Miller  
 1986 *The Blood of Kings: Dynasty and Ritual in Maya Art*. Kimbell Art Museum, Fort Worth, Texas.
- Srinivasan, Priya  
 2007 The Bodies Beneath the Smoke or What's Behind the Cigarette Poster: Unearthing Kinesthetic Connections in American Dance History. *Discourses in Dance* 4:7–48.

- Stone, Andrea J.  
1995 *Images from the Underworld. Naj Tunich and the Tradition of Maya Cave Painting*. University of Texas Press, Austin.
- Stone, Andrea, and Marc Zender  
2011 *Reading Maya Art: A Hieroglyphic Guide to Ancient Maya Painting and Sculpture*. Thames & Hudson, New York.
- Stross, Brian  
1992 Maize and Blood: Mesoamerican Symbolism on an Olmec Vase and a Maya Plate. *RES: Anthropology and Aesthetics* 22:82–107.
- Stuart, David  
2012 Maya Spooks. *Maya Decipherment: Ideas on Ancient Maya Writing and Iconography*. <https://decipherment.wordpress.com/2012/10/26/maya-spooks/>, accessed April 17, 2016.
- Taube, Karl  
1985 The Classic Maya Maize God: A Reappraisal. In *Fifth Palenque Round Table, 1983*, edited by Virginia M. Fields, pp. 171–181. Pre-Columbian Art Research Institute, San Francisco.  
1989 Ritual Humor in Classic Maya Religion. In *Word And Image in Maya Culture: Explorations in Language, Writing, And Culture*, edited by William F. Hanks and Don S. Rice, pp. 351–382. University of Utah Press, Salt Lake City.  
1994 The Birth Vase: Natal Imagery in Ancient Maya Myth. In *The Maya Vase Book*, Vol. 4, edited by Justin Kerr, pp. 652–685. Kerr Associates, New York.  
1996 The Olmec Maize God: The Face of Corn in Formative Mesoamerica. *RES* 29(30):39–81.  
1998 The Jade Hearth: Centrality, Rulership, and the Classic Maya Temple. In *Function and Meaning in Classic Maya Architecture*, edited by Stephen D. Houston, pp. 427–478. Dumbarton Oaks, Washington, DC.  
2001 Dance. In *The Oxford Encyclopedia of Mesoamerican Cultures*, edited by David Carrasco, pp. 305–308. Oxford University Press, Oxford.  
2003 Ancient and Contemporary Maya Conceptions about Field and Forest. In *The Lowland Maya Area: Three Millennia at the Human-Wildland Interface*, edited by Arturo Gomez-Pompa, Scott L. Fedick, and Juan J. Jimenez-Osornio. Food Products Press, New York.  
2009 The Maya Maize God and the Mythic Origins of Dance. In: *The Maya and their Sacred Narratives: Text and Context in Maya Mythologies, Proceedings of the 12th European Maya Conference*, edited by Geneviève Le Fort, Raphaël Gardiol, Sebastian Matteo, and Christophe Helmke, pp. 41–52. Acta Mesoamericana 20, Anton Saurwein Publishing, Markt Schwaben, Germany.
- Taube, Karl A., William A. Saturno, David Stuart, and Heather Hurst  
2010 *The Murals of San Bartolo, El Petén, Guatemala, Part 2: The West Wall*. Ancient America 10. Boundary End Archaeology Research Center, Barnardsville, North Carolina.
- Taube, Rhonda  
2014 The History of the Dance in Mesoamerica. In *The Maestro and the Dance*, edited by Peter Markman, pp. 104–129. Xipe Projects: Latin American Masks and Popular Art. Huntington Beach, California.
- Tiesler, Vera  
2014 *The Bioarchaeology of Artificial Cranial Modifications. New Approaches to Head Shaping and its Meanings in Pre-Columbian Mesoamerica and Beyond*. Springer, New York.
- Tokovinine, Alexandre  
2003 A Classic Maya Term for Public Performance. *Mesoweb*: [www.mesoweb.com/features/tokovinine/Performance.pdf](http://www.mesoweb.com/features/tokovinine/Performance.pdf), accessed August 13, 2015.
- Werness-Rude, Maline D., and Kaylee R. Spencer  
2015 Imagery, Architecture, and Activity in the Maya World: An Introduction. In *Maya Imagery, Architecture, and Activity: Space and Spatial Analysis in Art History*, edited by Maline D. Werness-Rude, and Kaylee R. Spencer, pp. 1–105. University of New Mexico Press, Albuquerque.
- Wichmann, Soren and Jesper Nielsen  
2016 Sequential Text-Image Pairing among the Classic Maya. In *The Visual Narrative Reader*, edited by Neil Cohn, pp. 282–313. Bloomsbury, London.
- Zacharatos, Haris, Christos Gatzoulis, and Yiorgos L. Chrysanthou  
2014 Automatic Emotion Recognition Based on Body Movement Analysis: A Survey. *IEEE Computer Graphics and Applications* 34(6):35–45.
- Zender, Marc  
2004 A Study of Classic Maya Priesthood. PhD dissertation, Department of Archaeology, University of Calgary, Canada.
- Zhang, Jiaming, and Amanda Sharkey  
2011 Contextual Recognition of Robot Emotions. *Towards Autonomous Robotic Systems*, edited by Roderich Groß, Lyuba Alboul, Chris Melhuish, Mark Witkowski, Tony J. Prescott, and Jacques Penders, pp. 78–89. Springer, Berlin.

## Notes

1. We will follow the standard practice of capitalizing key terms from Laban movement analysis to distinguish them from common English usage throughout this paper.
2. The *states* are Awake (space + time), Dream (weight + flow), Stable (weight + space), Mobile (time + flow), Remote (flow + space), and Rhythm (weight + time).
3. The *drives* are Action (space + weight + time), Vision (time + space + flow), Spell (weight + space + flow), and Passion (time + weight + flow).
4. The orthography of *way* vs. *wahy* is unsettled. Our usage follows Stone and Zender (2011:233, note 7).

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