The Maya *Ajawtaak* and Teotihuacan Hegemony *c.* 150–600 CE

Trenton D. Barnes

This study considers the role played by Teotihuacan in the emergence of the office of the Classic Maya ajawtaak, *or 'lords'. I argue that the synthesis of this office at the site of Tikal was influenced by the building of Teotihuacan's Pyramid of the Feathered Serpent between about 180 and 230 CE. Prior to and in concert with this building's construction, Teotihuacanos orchestrated the sacrifice of an estimated 200 or more individuals, some number of whom resided beyond the Basin of Mexico before burial. Osteological traits consistent with origins in the Maya region are present among these sacrifices. The Pyramid of the Feathered Serpent features mirror and obsidian icons, which later grew to prominence in the self-presentations of the* ajawtaak. *I note that around the time of this monument's construction, Tikal's obsidian corpus changed in ways that paralleled similar, earlier changes that had occurred to obsidian procurement strategies at Teotihuacan. I conclude that from about 200 CE, some Classic* ajawtaak *observed the religion that cohered with the building of Teotihuacan's Temple of the Feathered Serpent. The* ajawtaak *occupied a unique positionality in Early Classic Mesoamerica that was neither essentially Teotihuacan nor essentially Maya, but a dynamic syncretism of the two ethnicities.*

> Their gods came from [the place named Tulan Zuyua]. It wasn't really here [...] but rather there that the tribes, great and small, were subjugated and humiliated. When they were cut open before Tohil, all the peoples gave their blood, their gore, their sides, their underarms. *Popol Vuh* (Tedlock 1995, 156)[1]

Scholars have debated the nature and significance of Teotihuacan–Maya contacts during the Mesoamerican Early Classic period, which this article defines as spanning about 180–600 CE, since the documentation by Kidder, Jennings and Shook (1946) of Teotihuacan-style buildings, mirror backs and other grave furnishings at Kaminaljuyu. Teotihuacan (*c.* 100 BCE–800 CE), located in the central Mexican highlands (Fig. 1), was the earlier of the two largest cities of Mesoamerica. It was also the region's most influential polity along both geographic and chronological dimensions (Hirth *et al.* 2020, 21). 'Maya' is the historiographic construct used in discussions of pre-modernity to refer collectively to those Mesoamericans who lived east of the Isthmus of Tehuantepec (Fig. 1). They built and inhabited dozens of city-states, including the Classic capitals of Tikal, Kaminaljuyu and Copan, and are renowned by scholars and non-specialists alike for their exquisite art styles and hieroglyphic writing system, among other distinguishing achievements. Recent scholarship has stressed that the adoption of Teotihuacan cultural attributes within Maya society was concentrated among elites, those persons who inhabited palatial architectural groups called 'acropolises' (Braswell 2003a; Demarest & Foias 1993, 171–2; Marcus 2003, 338). Heeding these findings, this study considers the role played by Teotihuacan in the synthesis of the Classic period form of the Maya *ajawtaak* (singular *ajaw*), a term connoting 'lords', but perhaps having roots in the meaning

 © The Author(s), 2024. Published by Cambridge University Press on behalf of the McDonald Institute for Archaeological Research. This is an Open Access article, distributed under the terms of the Creative Commons Attribution licence (http://creativecommons.org/licenses/by/4.0/), which permits unrestricted re-use, distribution and reproduction, provided the original article is properly cited.
doi:10.1017/S0959774324000234 Received 26 Jul 2022; Accepted 26 Jun 2024; Revised 18 Jun 2024

https://doi.org/10.1017/S0959774324000234 Published online by Cambridge University Press

Figure 1. *Map of central and eastern Mesoamerica marked with sites mentioned in the text.*

'shouters' or 'proclaimers' (Martin 2020, 69; Stuart 1995, 190–91).

While scholars have tended to emphasize bodies of evidence from either individual city-states or of isolated sorts, such as glyphic inscriptions (Stuart 2000) or costuming (C. Millon 1973; Stone 1989), in investigations of Teotihuacan–Maya interactions, this study addresses a multi-sited and multi-formal corpus that coheres around expressions of the Teotihuacan cult of the mirror as they manifested among Maya *ajawtaak*. While I discuss Tikal, where the office perhaps first took on its Classic form, at length, I situate this city-state's history alongside that of a dozen other Mesoamerican sites. I recently argued (Barnes 2024) that among the residents of Teotihuacan, whom I refer to as Teotihuacanos, the Teotihuacan cult of the mirror evoked both the weaponization of obsidian and, more metaphorically, obsidian's capacity to spill blood or to 'scatter' in warring and other sacralized bloodletting activities. This cult codified around 180–230 CE (Gómez Chávez *et al.* 2016; Sugiyama 1998, table 3.1) with the building of Teotihuacan's Pyramid of the Feathered Serpent, that city's third largest edifice. This building's façade integrated some number of actual mirrors formed of obsidian disks as well as hundreds of monumental sculptures of petalled mirrors from which emerge the Feathered Serpent (Fig. 2) (Taube 1992a). A second head appears on the façade, this one a headdress positioned atop the body of the serpent (Sugiyama 2005; Taube 1992b), a possible war helmet or crown. Prior to and in concert with this building's construction, elite Teotihuacanos orchestrated the capture and sacrifice of an estimated 200 or more individuals, some number of whom likely resided for extended periods beyond the Basin of Mexico, as indicated by osteological analyses (Price *et al.* 2021; Serrano Sánchez *et al.* 1997; Sugiyama 2005; White *et al.* 2002). Isotopic signatures and dental modifications consistent with those known from the Maya region have been documented among these remains, though the presence of Mayas in the programme has yet to be confirmed incontrovertibly.

Scholars have remarked little upon how the conduct of this large human sacrifice at Teotihuacan impacted Mesoamericans living beyond the Basin of Mexico. Here, I observe that the taking of captives to form the Feathered Serpent Pyramid's sacrificial programme occurred contemporaneously to a pattern of acropolis destructions at several polities in the Maya region. The following century witnessed numerous changes to Maya elite authority, including the introduction of Teotihuacan-style architecture and artifacts to eastern Mesoamerican acropolises, modifications to obsidian use strategies at Tikal, and the emergence of the office of *ajaw*. While the term *ajaw* predated the second and third centuries, in the late second century, the practices of the office it described began to take on a new, distinctly Classic form (Freidel & Schele 1988; Martin 2020, 77, 390). Considering practices of the exploitation of obsidian, and the centring of resplendence and mirror symbolism among the Maya *ajawtaak* between around 150 and 600 CE, I argue that some Early Classic *ajawtaak* observed the Teotihuacan cult of the mirror and, by extension, the religion of sacred warfare

https://doi.org/10.1017/S0959774324000234 Published online by Cambridge University Press

Figure 2. *Tenon heads of the Pyramid of the Feathered Serpent, Teotihuacan. (Photograph: author.)*

that cohered with the building of Teotihuacan's Temple of the Feathered Serpent. These findings suggest that the *ajawtaak* occupied a unique positionality in Early Classic Mesoamerican society that was neither essentially Teotihuacan nor essentially Maya, but a dynamic syncretism of the two ethnicities that was indispensable for the refinement of indigenous Mesoamerican understandings of each.

Lords of Resplendence

By around 200 CE, the Maya *ajawtaak* began to integrate allusions to reflectivity, brilliance and obsidian into many consequential aspects of their lives. A survey of the Classic dynasties reveals that crucial transitions in a ruler's life were often described through explicit or allusive invocations of luminescence. For instance, it was later in terms of a compound integrating a sign connoting 'shining' or 'resplendent' that heirs apparent were at times designated at Palenque at around the age of six (Schele & Miller 1983; Stuart 2010, 291).[2] Further, these rulers typically took as their patron of royal lineage a lightning deity called K'awiil (God K) (Stuart 1987, 15), who has been linked to obsidian due to the appearance of a smoking reflectivity sign in the forehead (Fig. 3) (M. Coe 1988, 227–8; Schele & Miller 1983, 11) and the Mesoamerican belief that dark, reflective stones resulted from lightning strikes (Agurcia Fasquelle *et al.* 2016, 8; Stuart 2010, 291–2). Coe, noting the substitution of a serpent for one of the deity's feet, proposed that K'awiil was the Maya equivalent of the later Mexican god of obsidian, Tezcatlipoca, who has not a serpent, but a mirror in the place of one foot and whose name translates as 'Smoking Mirror' (M. Coe 1973, 16). Many rulers, including Sihyaj Chan K'awiil II, or 'Sky-born K'awiil II', of Tikal (Martin 2003, 7), whose father was likely installed by Teotihuacan (Stuart 2000), integrated K'awiil, and hence a suspected allusion to lightning and obsidian, into their regnal names. Others, such as K'uk' Mo', 'Quetzal Macaw', of Copan, addended a term connoting solar brightness to their names at the moment of their investitures; K'uk' Mo' became K'inich Yax K'uk' Mo', 'Sun-Faced New Quetzal Macaw', after performing the enigmatic act of *ch'am K'awiil*, 'tak[ing] the K'awiil', possibly atop a pyramid at Teotihuacan (Fash *et al.* 2009, 212; Stuart 2004, 233). When the later rulers of Xultun punctured their skin with the intent of letting blood in rituals of

https://doi.org/10.1017/S0959774324000234 Published online by Cambridge University Press

Figure 3. *K'awiil, the Maya patron deity of lightning and royal dynasties. (Left) obsidian flake incised with an image of K'awiil; (right) K'awiil held in the palm of an elite Maya lady. (Photographs: author.)*

deity embodiment, they were attended by ranked courtiers called *Taaj*, 'obsidian' (Saturno *et al.* 2017), and Yaxchilán's Lintel 25 incorporates a text that, in an inscription concerning dynastic legitimacy, bloodletting and K'awiil, is written primarily in inverted reverse, as if viewed upon a mirror's face (Fig. 4) (Matsumoto 2012). This sculpture shows two Maya elites, one of whom emerges dressed as a Teotihuacan warrior from one head of a bicephalic serpent or centipede. At their deaths, mourners placed gleaming pyrite encrusted plaques of a sort associated with Teotihuacan (Kovacevich 2016; Taube 1992a) in the graves of *ajawtaak*, a behaviour that persisted into the Postclassic period, and the most sumptuous elite burials of eastern Mesoamerica were sealed with quantities of obsidian or flint chippings and eccentric blades (M. Coe 1988, 232), the latter at times knapped into silhouettes of K'awiil or of profile figures holding mirrors before their chests. Thus, from childhood and into the afterlife, the *ajawtaak* often expressed their identities as matters of resplendence.

The beginnings of the Classic period in the Maya region centre around the southern lowlands

https://doi.org/10.1017/S0959774324000234 Published online by Cambridge University Press

Figure 4. *Lintel 25, Yaxchilán. (Photograph: author.)*

of the Peten Basin, and particularly Tikal. Some earlier scholarship has regarded the appearance of Initial Series calendrical notations in the area as the signal diagnostic development of the epoch. Tikal's Stela 29 incorporates the earliest known notation of this kind, 8.12.14.8.15 13 Men 3 Zip, or 6 July 292 CE (Shook 1960). However, considering Tikal's ceramic evidence, W. Coe remarked,

> What we conveniently refer to as 'Pre-Classic,' (with the conviction that we do not satisfactorily know what is meant by it) is believed to have ended at Tikal somewhere between A.D. 200 and 250. The final century of local Pre-Classic time saw the introduction at Tikal of new forms of pottery referred to in toto as Cemi vessels. (W. Coe 1965a, 22)

Thus, Coe might have placed the beginning of the Classic Period as early as 200 CE, and he noted that Tikal's ceramic corpus had begun to change somewhat earlier, findings more recently reaffirmed by Culbert (2003; 2019). Developments in elite engagements with obsidian followed a similar timeline at Tikal, as discussed below.

Though most indices suggest that the Classic period indeed began at Tikal in the Maya region,

https://doi.org/10.1017/S0959774324000234 Published online by Cambridge University Press

changes there were preceded by a cultural rupture of a more pronounced nature at Teotihuacan, located approximately 1300 km to the west of Tikal: namely, around 180 CE (Gómez Chávez *et al.* 2016; Sugiyama 1998, table 3.1), Teotihuacanos began to construct the Pyramid of the Feathered Serpent, which numbered among the costliest and most intricate monuments of Mesoamerican history, and to inter beneath and alongside it a complex human sacrificial programme of an estimated 200 or more individuals (Cabrera Castro 1993; Cabrera Castro *et al.* 1991; Dosal 1925; Gómez Chávez 2013; Sugiyama 2005). This monument's sculptural programme and offertory deposits emphasized religious devotions concerning mirrors and allusions to blood spilling, two concerns that likely had as their shared conceptual and practical fulcrum the exploitation of obsidian (Barnes 2024).

In a pathbreaking chapter entitled 'The arrival of strangers', Proskouriakoff (1993, 8) argued on the basis of her study of stelae from the Peten Basin that persons from Uaxactun wielding 'weapons originating in the Mexican highlands' deposed a fourth-century *ajaw* of Tikal, Chak Tok Ich'aak I ('Jaguar Paw' in Proskouriakoff). She wrote of the protagonist of Uaxactun's Stela 5 that 'He holds an atlatl (dart-thrower) and a club set with flint knives, and feathers are conspicuous in his costume'. Given the relative dearth of flint and the conspicuous abundance of obsidian in Teotihuacan's archeological record (Carballo 2007; Hirth *et al.* 2019; R. Millon 1973, 45–6; Pastrana & Domínguez 2009; Spence 1981), the depicted club was perhaps more likely set with the latter material. Nonetheless, Proskouriakoff identified the figure's weaponry as indication of an enhanced Teotihuacan-related martial presence in the Peten during the late fourth century, a series of events that scholars have since come to call the 'Entrada'. More recent epigraphic readings by Stuart (2000) have replicated key aspects of Proskouriakoff's historical reconstruction. However, in at least two instances of the development of an enhanced Teotihuacan presence in the Maya region—at the polities of Tikal and Copan (Stuart 2000; 2004; Fash *et al.* 2009)—Uaxactun appears not to have mediated Teotihuacan's presence, which moreover was not solely martial, but also involved the assumption by key historical figures of new, semi-divine statuses and titles.

This article pursues the furtherance of Proskouriakoff's proposal that Teotihuacan affiliates meaningfully impacted the organizations of Early Classic Maya polities, and builds upon W. Coe's observation that the Early Classic likely commenced at Tikal decades in advance of the date recorded on Stela 29. It advances these two lines of reasoning through recognition that the building of the Temple of the Feathered Serpent and the orchestration of its accompanying human sacrificial programme likely had far-reaching implications for Mesoamericans beyond the Basin of Mexico, including the Maya. While this study affirms the essential accuracy of Proskouriakoff's hypothesis that Teotihuacan-related persons at times altered the course of Maya history, it argues that the fourth-century presence of central Mexicans in the Maya region did not constitute an 'arrival of strangers'.

The first Teotihuacan 'entrada'

By 150 CE, the Maya capital of El Mirador (Fig. 1), the largest city of late Formative Mesoamerica, had lost much of its formerly sizeable population (Dunning, Beach, & Luzzadder-Beach 2012, 3652). Sixty km southeast of El Mirador, Tikal, which had already been inhabited for seven centuries or more, also witnessed considerable transformations, though of a seemingly different sort, over the following century (W. Coe 1965b). Tikal's residents had long terminated monuments through demolitions, so it is to some degree unsurprising that the University of Pennsylvania Tikal Project (PTP) documented the destruction of a number of structures and sculptural elements of the polity's North Acropolis between about 150 and 250 CE. However, the character of these terminations meaningfully diverged from earlier precedents and did so alongside the first appearance of Cemi ceramics. This century also saw substantial modifications to the city-state's obsidian corpus, including the first appearance of sizeable quantities of greenish-black obsidian from the Mexican reserves at Pachuca (Sierra de las Navajas) (Moholy-Nagy 1999, fig. 4), which were then being intensively mined by Teotihuacanos (Hirth *et al.* 2019; Pastrana & Domínguez 2009; Spence 1984). I return to a discussion of developments in Tikal's obsidian corpus below.

Structure 5D-22-4th-B of Tikal's North Acropolis was initially renovated in a way that partially destroyed and otherwise interred a series of earlier, Formative-style stucco masks that adorned its façade, resulting in Structure 5D-22-4th-A. At around the same time, a new 'palace-like' structure, 5D-26-4th, was built atop a refinished adjacent floor (W. Coe 1965b, 1415–16). Soon thereafter, however, Structure 22-4th-A was incinerated and a 'perilous cut' penetrating 5 m into the Acropolis was made (W. Coe 1965b, 1416). Inside, the PTP documented Burial 125, which incorporated an antechamber filled

https://doi.org/10.1017/S0959774324000234 Published online by Cambridge University Press

with large quantities of obsidian alongside more numerous chert flakes, the first occurrence of this practice known to Tikal (Moholy-Nagy *et al.* 2013, 90; W. Coe 1990, 336). Though the primary chamber of Burial 125 contained only the body of the deceased—a large male who had been laid supine with his head oriented towards the east—and was otherwise left unfilled, in later periods, the inclusion of dark, luminous stones before the primary chambers of graves became a key signal of a sumptuous elite interment within (M. Coe 1988, 232). W. Coe obtained a radiocarbon date from the tomb of 173 ±45 CE from a piece of burned chicle wood (W. Coe 1965b, 1416). Considering the unprecedented placement and treatment of the burial, it is of interest that this date aligns well with the calculated reign of Yax Ehb Xook, Tikal's first enumerated dynast, as assessed independently by Jones (1991, 109) and Mathews (1985, 31). Martin (2003, 5), however, has suggested that this reign occurred *c.* 100 CE.

In this same interval, Structures 5D-Sub.8-2nd and 26-4th were, respectively, wholly and partially razed (W. Coe 1965b, 1416–17). A grand stairway that led to the structure that replaced 26-4th then established a new centre line of the North Acropolis, which was maintained for the remainder of Tikal's Classic habitation. In around 200 CE, Miscellaneous Stone 69 was fragmented, charred and buried, and every structure of the Acropolis's Floor 6 was demolished before being replaced by a new platform, Floor 5. Archaeologists have documented parallels to these Tikal events at other key Maya sites further south: at Kaminaljuyu, which sits in advantageous proximity to the obsidian mines of El Chayal, between around 200 and 250 CE, many sculptures were smashed and the site core set ablaze (Arroyo 2020, 438; Ohi 1994; Popenoe de Hatch 2002, 288), while along the Pacific coast of present-day Escuintla, new monumental buildings were erected, and sizeable populations relocated (Bove & Medrano Busto 2003, 50–53).

There is evidence that individuals with close Teotihuacan contacts had arrived in the Maya region by around 200 CE. At Structure F-8 of Altun Ha, located 10 km inland of the Caribbean coast, Mesoamericans interred a burial, F-8/1, that incorporated a cache of a few hundred artifacts, many of Teotihuacan style, if not actual manufacture (Pendergast 1971). Burial F-8/1 was Altun Ha's first complex tomb, and its excavator, Pendergast, believes that it belonged to a royal (Pendergast 2003, 237). Among the offerings of this cache were mixed around 22 shattered Teotihuacan-style ceramic vessels and 258 pieces of Mexican Pachuca obsidian that artisans had knapped into forms conspicuously akin to obsidian offerings being deposited in the same period among caches made at Teotihuacan's Temple of the Feathered Serpent. Pendergast obtained a radiocarbon date of around 20 BCE from a spondylus shell, indication that some local heirlooms were integrated into the burial. Isotopic analyses by White, Longstaffe and Law (2001) found that the mature male interred in the grave probably lived in the Maya region for his entire life. The large number, complexity and undisturbed find context of the assembled Mexican artifacts suggest that they may have arrived from central Mexico with no or few intermediaries, though it is also possible that a resident of Altun Ha may have journeyed to Tikal, Kaminaljuyu or some other place in contact with Teotihuacan and obtained the Mexican-style objects while there. Alternatively, they may have arrived from the Mexican highlands following multiple visits to Teotihuacan by Mayas or by Teotihuacanos to Altun Ha. Whatever their precise origins, these Mexican-style offerings likely resulted from some manner of engagement between Teotihuacanos and Mayas.

Altun Ha's F-8/1 cache suggests that Teotihuacanos were aware of the various razing events, burnings, and resettlements, among other changes, that occurred at Maya sites between about 150 and 250 CE (Canuto *et al.* 2020, 392). However, firmer evidence of Teotihuacan involvement in the emergence of the Early Classic in the Maya region appeared no later than 250 CE, when variations on a Teotihuacan-style architectural profile known as *talud-tablero* were erected at Tikal (Marcus 2003, 347) and began to become, in Laporte's terms, 'amply distributed throughout Mesoamerica' (Laporte 2003, 205). While many variations on *talud-tablero* appeared in later Mesoamerica, Teotihuacan's widely disseminated iteration of this profile was formally distinguished by its hard angularity and vertical upper *tablero* inset with a sunken panel (Fig. 5a–c). This style developed in modest, ephemeral forms at sites in Formative Puebla and Tlaxcala, which may assure scholars of its origins in central Mexico (Gendrop 1984). However, by the time of its completion around 230 CE, Teotihuacan's Temple of the Feathered Serpent incorporated a stone-built, monumental articulation of this profile, after which time Mexican-style *talud-tablero* became identified with Teotihuacan. By the end of the third century, *talud-tablero* structures appeared at Tikal on both monumental structures of the Mundo Perdido Group, located southwest of the North Acropolis (Fig. 5b), as well as in Group 6C-XVI, a large set of rooms

https://doi.org/10.1017/S0959774324000234 Published online by Cambridge University Press

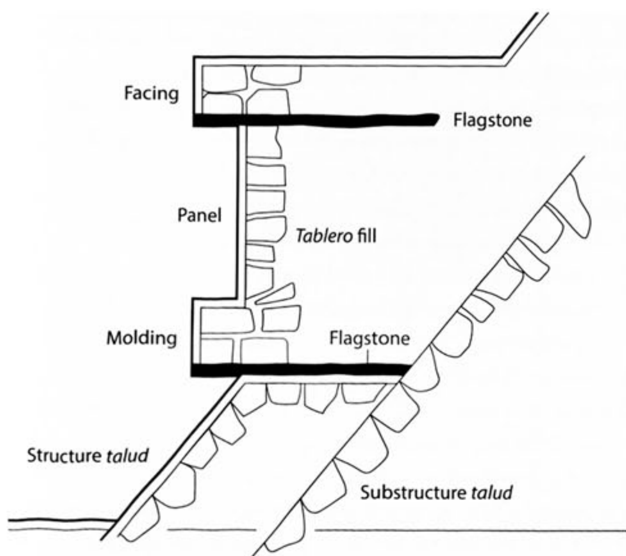

Figure 5. *Teotihuacan-style* talud-tablero*. (Top) diagram of Teotihuacan* talud-tablero *(Drawing: Hillary Olcott, after Moctezuma and López Luján 1993: fig. 3); (centre) at Tikal's Mundo Perdido; (bottom) at Kaminaljuyu. (Photographs: author.)*

and courtyards that bear striking formal resemblances to contemporaneous Teotihuacan apartment compounds (Laporte 2003, fig. 7.3). It is clear, then, that the influence of Teotihuacan's Temple of the Feathered Serpent manifested at Tikal in the form of architectural evocation no later than around 250 CE.

Teotihuacan architectural and martial expansions

Architects embedded several obsidian disks into the mud walls of Kaminaljuyu's Structure D-III-1 (River & Schávelzon 1984, 51). While Structure D-III-1 employs inset *tableros* in a neo-Teotihuacan style, their somewhat haphazard manufacture and lack of lower *taludes* lends them a 'provincial' feel (Gendrop 1984). While the source of the obsidian used in this façade remains undetermined, nothing akin to these inlays of an earlier date is yet known from the Maya region. The sole available viable precedent occurs at Teotihuacan's Temple of the Feathered Serpent, where obsidian disks were likely used as the inlay of the eyes of some number of 300–400 tenoned sculptures of mythological reptile heads (Fig. 2). Though Rivera and Schávelzon (1984) found that Structure D-III-1 dates to between the Arenal and Aurora ceramic phases, it is difficult to situate it temporally because the chronology of Kaminaljuyu remains uncertain in both relative and absolute terms (Arroyo *et al.* 2020; Love 2018). Braswell (2003b, 95) obtained four radiocarbon dates from a nearby structure within the same area of Kaminaljuyu, the Palanga Group, of 84–220 CE, 153–320 CE, 285–450 CE and 422–568 CE, but did not specify their material basis or find context within the architectural sequence. Regardless of the precise dating of Structure D-III-1's façade, the embedding of obsidian disks into its *tableros* suggests that its architects intended to replicate, in a localized style, key features of Teotihuacan's Pyramid of the Feathered Serpent.

Kubler (1974, 26) argued that aspects of Teotihuacan-style *talud-tablero* 'reappear at distant places in Guatemala and Yucatán, signifying at least some continuity of meaning both in time and in space'. He went so far as to suggest 'that [*talud-tablero*] is, in itself and of itself, a major indicator of

https://doi.org/10.1017/S0959774324000234 Published online by Cambridge University Press

meaning, specifying both the function of the building and the ethnic identity of the builders', and further remarked that 'Certain profiles (especially the tablero and talus of Teotihuacan or the dentation of Monte Alban) reappear far away from their origins, both as colonial forms (Kaminaljuyu) and as revival or renascent forms (Tula, Chichen Itza)'. For Kubler, Teotihuacan *talud-tablero* was an archetypal manifestation in Mesoamerica of architecture's deployment as a mode of colonialist ethnic expression. Scholars have more recently favoured the characterization of Teotihuacan's presence in the Maya region as hegemonic rather than colonial in nature (Canuto *et al.* 2020; Fash 2020, 482–3; Martin 2020, 353). Nevertheless, scholars generally accept Kubler's view that the construction of *talud-tablero* façades outside of Teotihuacan in some manner reflects the city's influence.

Of construction in the city itself, Kubler suggested that Teotihuacan's architectural history may be subdivided into two major episodes, the first occurring in around 200 CE and the second in the Middle Classic. These periods correspond, respectively, with the building of Teotihuacan's monumental urban core, which culminated in the completion of the Temple of the Feathered Serpent, and the expansion and re-building of Teotihuacan's 2000–2300 apartment compounds (Kubler 1974). Each of these two labour- and material-intensive upsurges in Teotihuacan building was preceded by a marked increase in Teotihuacan obsidian manufacturing and episodes of increased militarism abroad (Millon 1976; see also Taube 1992b).

Findings from the Temple of the Feathered Serpent indicate that between around 150 and 200 CE Teotihuacan procured, through probable warfare, 200 or more human captives for eventual sacrifice (Cabrera Castro 1993; Cabrera Castro *et al.* 1991; Dosal 1925; Gómez Chávez 2013; Sugiyama 2005). Of the individuals buried in this programme, 72 have been identified as having been presented as warriors because they were younger adult males who were accompanied by the attributes of the Teotihuacan military, including slate 'mirror' disks positioned at the lower back, and accompaniment by numerous obsidian weapons in the forms of spear points and blades. Around two-thirds of a tested sample of these individuals spent substantial periods of their earlier lives beyond the Basin of Mexico, as indicated by isotopic analyses (Price *et al.* 2021, 218; White *et al.* 2002). These individuals who lived for some time beyond the Basin of Mexico have at times been interpreted as having been actual Teotihuacan soldiers who were foreign recruits to the city's military (Cowgill 2015, 97). However, this interpretation has few, if any, known parallels in Mesoamerican history. It is therefore perhaps more probable that the Teotihuacan dress of these sacrifices anticipated a practice documented among the later Mexica Aztecs of central Mexico in which captives were at times held for prolonged periods, in some cases for perhaps a decade or more (Moreiras Reynaga *et al.* 2021), before being dressed as idealized manifestations of Mexica Aztec warriors immediately prior to their sacrifice (Carrasco 1999).

The available osteological data provide strong, if not yet definitive, evidence that individuals who originated in the Maya region numbered among these sacrificed people. Isotopic signatures obtained from samples from the Pyramid of the Feathered Serpent burials overlap with those known from the Maya region, including the Peten Basin (Río Azul), the Guatemalan highlands (Kaminaljuyu) and the Caribbean coast (Altun Ha) (White *et al.* 2002, fig. 2). These areas are, notably, three of the four known subregions or polities within the Maya region of the emergent Early Classic where scholars have documented either the deposition of Teotihuacan-style artifacts or the occurrence of termination events that were eventually followed by the erection of Teotihuacan-style *talud-tablero* buildings.

Additionally, several of the victims displayed dental modifications, including filings and jade inlays (Serrano Sánchez *et al.* 1997; Sugiyama 2005), of a manner associated at some Maya polities with upwards of one-third of adult burials (Williams & White 2006). By contrast, dental modifications are exceedingly uncommon among Teotihuacan residential burials, and only 3 of the 18 types of dental modifications found among the Pyramid of the Feathered Serpent burials had otherwise been documented at Teotihuacan prior to the excavation of that monument's sacrificial programme (Sugiyama 2005, 112). The presence of inlays, particularly of jade, which is known to occur in Mesoamerica only in the Motagua River Valley of the Maya region, is of interest, for Tiesler, Cucina and Ramírez-Salomón (2017, 279) have suggested that inlays may have signified elite status among the ancient Maya. However, it is premature to disqualify the possibility that inlays were at times adopted by lower-status Mayas who wished to emulate societal elites. These osteological data, while not conclusive, do point towards the viability of the possibility that Teotihuacanos may have integrated captured Mayas, possibly from the areas near Tikal, Kaminaljuyu and Altun Ha, into the human sacrificial programme of the Pyramid of the

https://doi.org/10.1017/S0959774324000234 Published online by Cambridge University Press

Feathered Serpent. The need to explore this hypothesis further is underscored by the termination events that occurred between about 150 and 250 CE at several Maya polities and the contemporaneous or subsequent appearance at those sites of Teotihuacan-style artifacts and architecture.

The second period of well-documented Teotihuacan militarism began in the late fourth century. Several Mayan inscriptions attest the arrival of a Sihyaj K'ahk', or 'Fire is Born', to eastern Mesoamerica following the inauguration of 'Spear-Thrower Owl' on 8.16.17.14.9 11 Ahau 3 Uayeb (20 August 374 CE) at a place called 'Puh' (Stuart 2000, 478). 'Puh', meaning 'Place of Reeds,' was the Classic Mayan equivalent of the Nahuatl term Tollan, Tulan or Tula. While the terms Puh and Tollan later gained a more general usage connoting something akin to 'great city', several scholars, considering the available evidence from central Mexico, the Maya region and elsewhere now concur that this usage metaphorically likened later cities to a historical primogenitor to which later Mesoamerican polities aspired: Teotihuacan (Boone 2000; Carrasco *et al.* 2000; Fash 2020, 496; García-Des Lauriers 2020, 427; López Austin & López Luján 2000; Martin 2020, 125–6; Stuart 2000).

A passage from the sixteenth-century K'iche Maya *Popol Vuh*, which numbers among the most important Maya oral histories recorded in the early Spanish colonial period, is of interest. It speaks of a Tulan Zuyua where a large human sacrifice was carried out before Tohil, the K'iche' term for K'awiil, the Classic Maya deity of lightning and perhaps by extension, obsidian, whom I introduced above. This sacrifice preceded the receipt by the many peoples of their gods, a seeming reference to the Mesoamerican practice in which polities adopted specific patron deities for veneration.

> Their gods came from [the place named Tulan Zuyua]. It wasn't really here [...] but rather there that the tribes, great and small, were subjugated and humiliated. When they were cut open before Tohil, all the peoples gave their blood, their gore, their sides, their underarms. (Tedlock 1995, 156)

While it is methodologically unsound to interpret sixteenth-century documents uncritically as windows onto the more ancient past, this passage does contain intriguing parallels to what is known about the events surrounding the construction of the Pyramid of the Feathered Serpent. The meaning of the term 'Zuyua' remains elusive, but it refers to some manner of political–religious governance involving the adoption by polities of patron gods (López Austin & López Luján 2000). While this passage of the *Popol Vuh* is certainly to some degree mythological, there is perhaps also some kernel of historical truth to its description of an event at 'Tulan Zuyua' that saw a large sacrifice carried out before Tohil (K'awiil). In most available sources, the concept of Tollan is inseparable from that of the god-man Quetzalcoatl, the Nahuatl term for 'Feathered Serpent' (López Austin & López Luján 2000).

Stuart reconstructed important aspects of the fourth-century appearance of seemingly militarized Teotihuacanos to the Maya region, arguing that the Tikal ruler Yax Nuun Ahiin I, the father of the aforementioned Sihyaj Chan K'awiil II, replaced Chak Tok Ich'aak I ('Jaguar Paw') following his assassination under suspected Teotihuacan auspices on 8.17.1.4.12 11 Eb 15 Mak' (16 January 378 CE) (Stuart 2000). I observed that an interval of 1352 days passed between the dates 8.16.17.14.9 and 8.17.1.4.12. The precise day count of this duration may have been significant for Mesoamericans, as it possibly alluded to two figures of great consequence for their numerology, 13 and 52. For example, Mesoamericans counted 13 days in each of the 20 months of their religious calendar, and 52 years comprised a Calendar Round, a duration with social significance akin for Mesoamericans to that of the present-day century. This day count is also mathematically elegant, having a prime factorization of [2×2×2×13×13]. It seems improbable that this duration occurred arbitrarily. Stuart (1996) earlier established that the Classic Maya counted periods of days between important events in the lives of the *ajawtaak*. My finding provides indication that Teotihuacanos may have participated in these Maya practices of dynastic time-keeping.

Given that episodes of prolific obsidian exploitation and warring activities coincided with the two intervals of resource intensive architectural construction within Teotihuacan identified by Kubler, there is reason to infer that Teotihuacan's relations with other Mesoamericans, including Mayas, were not invariably peaceable, and that the Mexican capital's motives for these interactions were in part economic. However, Teotihuacanos apparently were interested in more than economic gain alone. The appearance of *talud-tablero* architecture at certain contact sites beginning in around 250 CE indicates that the individuals who lived in or were attached to these buildings sought to signal to other members of Maya society some affiliation with, or specialized knowledge of, Teotihuacan. There is suggestion that intellectual and religious ideas, perhaps concerning

https://doi.org/10.1017/S0959774324000234 Published online by Cambridge University Press

calendrics and Teotihuacan's mirror cult and obsidian venerations—the latter as indicated by the façade of Kaminaljuyu's Structure D-III-1—circulated between Teotihuacanos and certain Mayas. Recent scholarship has found that these Early Classic Maya who cultivated Teotihuacan contacts were elites (Braswell 2003c), and in certain instances it is clear that these Maya elites held the title of *ajaw* (Fash *et al.* 2009; Stuart 2000).

The monopolization of force in Tikal's Terminal Formative to Early Classic transition

Most obsidian that originated in the Maya region came from the mines at El Chayal, which is located about 20 km northeast of Kaminaljuyu (Houston 2014, 25). In an early study of ancient obsidian mining at El Chayal, M. Coe and Flannery, referring to earlier research by Holmes at Pachuca, observed, 'Holmes discovered several large depressions at the Sierra de las Navajas that represented quarrying pits exactly like those at El Chayal, and these depressions were surrounded by waste flakes' (M. Coe & Flannery 1964, 48; Holmes 1900). The semblances between the Mexican and Guatemalan exploitation methods extend beyond surface observations. In this subsection, I turn to an analysis of Tikal's internal obsidian corpus to suggest that its chronology, corpus composition, artifact forms, and symbolism indicate that a common *modus operandi* may have been to some extent in use at Pachuca by Teotihuacanos and El Chayal, which provided Tikal with most of its obsidian. I observe, however, that in addition to the greater abundance of this material at Teotihuacan, Tikal's use of El Chayal obsidian differed in one other key respect: while obsidian was ubiquitous and seemingly available to most society members at Teotihuacan, at Tikal it fell primarily into the hands of elites.

Most ancient Maya artworks that depict obsidian portray either its weaponization or its use in scrying mirrors (e.g. Fig. 6). In many respects, it is remarkable that Maya artists portrayed obsidian at all, for as Houston remarked, '[obsidian] is, for most of its [Maya] users and producers, decidedly foreign. At Piedras Negras, during the Late Classic period, it drips with elements linked to the Mexican city of Teotihuacan, an imperial capital that had, at the time of these sculptures, fallen into irrelevance' (Houston 2014, 25). While obsidian had many uses at Tikal, Teotihuacan and elsewhere, in the Mesoamerican Early Classic, the most consequential of these may have been its potential for inflicting injuries. Changes that began to manifest in Tikal's obsidian corpus around 150–250 CE attest the application of a particular Teotihuacan logic of the exploitation of this material, one that viewed it not so much as a trade good or gift, as it has often been discussed (Spence 1996), but as weaponry. In the Early Classic, obsidian possibly produced a Mesoamerican manifestation of what Weber (1946) described as a 'monopoly of the legitimate use of physical force' (see also Carballo 2007, 182), though it is doubtful that such a monopoly was ever fully achieved. These observations should be considered alongside the fact that countless *ajawtaak* of the Classic period expressed their social disconnection from other Mayas by presenting themselves as Teotihuacan warriors (Stone 1989). They also observed many resplendence devotions, enumerated above, and ritually spilled blood, an act often depicted as transpiring in the presence of a bicephalic serpent or centipede (Fig. 4), charismatic acts that, in the Weberian (1968) sense, possibly sought to legitimate their political authority and command of force.

Incisive and rigorous analyses of Tikal's obsidian corpus have been published over recent years by Moholy-Nagy and her collaborators on the PTP, and I draw upon their research in the following considerations. All calculated percentages are my own, but are based on the figures published in their research. Between about 150 and 250 CE, Tikal began to import obsidian on a larger scale than any other Maya lowlands polity (Moholy-Nagy *et al.* 2013, 79–80). A total of 62,415 obsidian artifacts have been found there (Moholy-Nagy *et al.* 2013, table 7). Whereas 100 obsidian artifacts date to the preceding seven centuries, no fewer than 180 objects coincide with the single century of the Cimi ceramic phase (Moholy-Nagy *et al.* 2013, table 6). Obsidian sourcing patterns also changed in this period. Though two-thirds of Tikal's pre-150 CE obsidian came from the San Martin Jilotepeque obsidian reserves, between about 150 and 550 CE, 1191/1229, or 96.9 per cent of assessed obsidian implements from Guatemalan sources came from El Chayal (Moholy-Nagy *et al.* 2013, 87).

Analysis of Pachuca obsidian at Tikal presents a similar chronology: while as few as six pieces of Mexican green obsidian arrived in Tikal before around 150 CE, no fewer than 578 artifacts of Pachuca obsidian date to the Early Classic period (Moholy-Nagy 1999, fig. 4). Though Pachuca obsidian made up only about 6.5 per cent of Tikal's Early Classic obsidian assemblage, this represents a 600 per cent increase in relative volume, and a 7200 per cent increase in absolute volume of the presence of this material over all preceding eras. These figures, while striking, should be evaluated alongside

https://doi.org/10.1017/S0959774324000234 Published online by Cambridge University Press

Figure 6. *A Maya lord peers into an obsidian mirror on a Late Classic Maya polychrome vessel, Kaminaljuyu, Museo Miraflores, Guatemala. (Photograph: author.)*

acknowledgement of the 'law of superposition', the reality that within a series of sedimented layers, those layers nearest to the surface are most readably available to observation. Nonetheless, the PTP engaged in extensive trenching, often to the level of unmodified earth, and changes to the accumulation of obsidian in Tikal's archaeological record on this scale are unlikely to reflect this principle alone.

1055 artifacts, or about 80 per cent of 1331 pieces of Mexican obsidian identified from Tikal took the form of prismatic blades (Moholy-Nagy 1999, 304). The second most common artifact type produced of Mexican obsidian, representing about 14 per cent of the known corpus, was that of projectile points and unstemmed knives, described together by Moholy-Nagy as 'thin bifaces'. Of a total sample of 580 thin bifaces examined by Moholy-Nagy, 182 came from Mexican sources, two from Ixtepeque, and none from El Chayal. 396 additional thin bifaces were classified as 'Unsourced Gray/Black' (Moholy-Nagy 1999, table 2). At minimum, 29 per cent of Tikal's evaluated thin bifaces were formed of Mexican green obsidian and 31 per cent from any Mexican source. The remaining two-thirds, all grey material, has thus far not been attributed. The overrepresentation of Pachuca glass and the absence of documented El Chayal obsidian among these points and knives suggests that Mexican materials may have been preferred for these forms.

Teotihuacanos began to mine obsidian intensively around 100–200 CE (Spence 1981), an interval that preceded and then overlapped with the rise in obsidian importation from El Chayal to Tikal around 150–250 CE. It was also during the second century that Teotihuacanos began to rely heavily on Pachuca obsidian, a behaviour that may have served as precedent for Tikal's turn towards strong dependence on El Chayal obsidian beginning around 150 CE.

https://doi.org/10.1017/S0959774324000234 Published online by Cambridge University Press

Despite the apparent increase in the importation of obsidian to Tikal over the Early Classic, this material almost solely entered into the hands of individuals living in and near the city's centre. In the late second century, Tikal's residents interred Burial 125, mentioned above, the first known grave to incorporate an antechamber filled with quantities of obsidian and flint chippings. This suggests that Tikal's elites began around this time to regard shining stones in a manner that differed from their approaches to these materials in earlier periods.

The PTP, defining Group 5D-2 as Tikal's spatial centre, superimposed radiating concentric circles, designated 'zones', on the Tikal Map (Carr & Hazard 1961; Moholy-Nagy *et al.* 2013, 87). Zone 1 had a diameter of 0.5 km and 25 concentric rings thereafter measured 0.5 km across, comprising a total of 26 zones. Of Tikal's 62,415 total recovered obsidian artifacts, 51,132 or 81.9 per cent were found in Zone 1 (Moholy-Nagy *et al.* 2013, table 7). 61,052 or 97.8 per cent occurred within Zones 1–4. Of the 2.2 percent of obsidian that remained, concentrations occurred at Zones 9–11 and Zone 20, where 534 fragments and 501 fragments were recovered, respectively. Mexican obsidian paralleled this distribution: of the 556 Pachuca green artifacts collected by the PTP, only 11 were recovered beyond Zone 4.

While there is much merit to Spence's (1996) argument that Mexican obsidian documented in the Maya region was at times appreciated as a form of elite gift, this suspected application does not exclude the possibility that this medium was also weaponized. Indeed, while I am unaware of imagery that shows a Teotihuacano gifting or exchanging obsidian, numerous Teotihuacan artworks and works in a Teotihuacan style documented in the Maya region depict obsidian in the form of weaponry. Weaponization likely was, therefore, the more salient application of obsidian for Early Classic Mesoamericans.

The significance of Mexican Pachuca obsidian's arrival in Tikal beginning in the decades before 200 CE and persisting throughout the Early Classic period likely lies not solely in its absolute volume relative to all obsidian from the site, but its contemporaneity to other shifts in obsidian exploitation and their seeming replication of slightly earlier Teotihuacan patterns of obsidian manipulation. The turn at Tikal towards the nearly exclusive sourcing of obsidian from El Chayal, as well as the appreciable rise in the volume of obsidian imported to the site, suggest that more than Pachuca obsidian alone was transmitted to the Peten from central Mexico, but also a particular Teotihuacan logic of obsidian exploitation. By no later than 250 CE, Tikal's elites possibly began to employ a consequential *modus operandi* of obsidian procurement and symbolism that had synthesized earlier in central Mexico. The seemingly restricted distribution of obsidian at Tikal contrasts with the wider availability of this material at Teotihuacan. Its presence at Tikal's site centre in forms befitting weaponry—as is perhaps exhibited most clearly by the imported Mexican bifaces—and regularized spatial distribution beyond the site core may indicate the enactment by Tikal's elites of something akin to a 'monopoly of force'. The various early indices of Teotihuacan's presence in the region and the later mirror devotions observed by some *ajawtaak* suggest that this arraying of 'force' by Tikal's elites likely took as a key precedent the human sacrificial programme of Teotihuacan's Temple of the Feathered Serpent.

Conclusions

Findings pertinent to this study are currently emerging from Teotihuacan and Tikal. Gómez Chávez (2013; 2017) recently encountered an artificial cave located beneath the Pyramid of the Feathered Serpent inside which Mesoamericans deposited thousands of offerings, among them objects possibly sourced from the Maya region, such as Motagua jade, rubber balls, amber and marine shells (García-Des Lauriers 2020, 419–22). A carved jade and a seashell possibly showing the 'vulture head' logogram of the glyph for '*ajaw*' are present (Robb 2017, cat. 39 & 56). At Tikal, Houston and colleagues (2021) have reported a large, previously unknown set of platforms enclosing a rectangular plaza that they tentatively interpret as a possible replica of Teotihuacan's Ciudadela, a monumental enclosure that contains the Temple of the Feathered Serpent. These findings confirm that much is yet unknown about the nature of Teotihuacan–Maya interactions, but contribute to the considerable evidence that they were consequential for both cultures.

This study has examined expressions of these exchanges in elite contexts at sites including Teotihuacan, Tikal, Kaminaljuyu and Altun Ha. I have sought to contextualize the beginnings of the Early Classic period in the Maya region alongside acknowledgement of the human sacrificial programme of Teotihuacan's Pyramid of the Feathered Serpent, which began to take form around 180 CE. In the interval between about 150 and 250 CE, elites at Tikal began to utilize their authority quite differently than they had before. Alterations to the polity's obsidian importation and distribution patterns are one materialization of these changes—and perhaps

https://doi.org/10.1017/S0959774324000234 Published online by Cambridge University Press

Figure 7. *A jade mirror bearer, Burial 5, Temple of the Moon, Teotihuacan. (Photograph: author.)*

a catalyst for others. In this same interval, older forms of architecture at Tikal were successively burned, buried and razed before, in approximately 250 CE, Teotihuacan-style architecture appeared at the site. Pachuca obsidian also appeared in quantity at Maya sites for the first time. This pattern suggests that Teotihuacanos likely interacted with elite residents of Tikal during that century when the office of *ajaw* in its Classic manifestation began to take form.

At Teotihuacan, the building of the Temple of the Feathered Serpent signalled the codification of a new religion in central Mexico, one that centred around mirror devotions, the application of obsidian to warring exploits and, as I have argued elsewhere, probable bloodletting activities (Barnes 2024). It is therefore striking that in later centuries, these behaviours emerged as indispensable attributes of the office of the *ajawtaak*. Additionally, I would observe in passing that the Temple of the Feathered Serpent prominently features hundreds of monumental sculptures of a two-headed reptile, possible precursors of the 'bicephalic' serpents and centipedes that later featured prominently in portraits of the Maya *ajawtaak*, including on Yaxchilan's Lintel 25 (Fig. 4). Whether or not this particular suggestion is borne out by future analyses, there is indication that a handful of elites positioned at strategically advantageous locations on the Maya landscape—for instance, at Tikal, which lies at the centre of the southern Maya lowlands, and at Kaminaljuyu,

https://doi.org/10.1017/S0959774324000234 Published online by Cambridge University Press

which is a short distance from the obsidian mines at El Chayal—came into meaningful contact with Teotihuacanos by around 250 CE.

There is now persuasive evidence that some later Maya elites, including *ajawtaak*, benefited from their interactions with Teotihuacan. For example, K'uk Mo is thought to have been bestowed the right to establish a new dynasty at Copan with Teotihuacan patronage (Fash *et al.* 2009). At Teotihuacan, Maya-style murals from the Plaza of the Columns (Sugiyama *et al.* 2020), *c.* 300–350 CE, and at the finely appointed Tetitla apartment compound (Taube 2003, 285), suggest that certain Maya occupied positions of privilege in that city. In fact, the most elite grave yet known to Teotihuacan, Burial 5 of the Pyramid of the Moon, may incorporate Mayas. It contained three individuals, all respectfully interred in a rare 'lotus' posture that also occurred in graves found in association with *talud-tablero* structures from Kaminaljuyu. The excavators found no indices of the burials having been captives or sacrificed. Rather, they were deposited with fine offerings, including a wooden baton and expertly sculpted jades, one of which took the form of a cross-legged figurine bearing a mirror on its chest (Fig. 7) (Sugiyama 2005, 209; Sugiyama & López Luján 2007, 132–8). In light of the foregoing considerations, there is some suggestion that certain *ajawtaak* of the Mesoamerican Early Classic observed the Teotihuacan cult of the mirror and the religion of sacred warfare (Taube 1992b) of which it was emblematic, which synthesized with the building of the Temple of the Feathered Serpent. Owing to the apparent influence of the building of this structure on Maya elites, the commencement of its construction in *c.* 180 CE seems to constitute the most meaningful index currently available of the inaugural instant of the Mesoamerican Early Classic, which might be defined as spanning *c.* 180–600 CE.

While some *ajawtaak* may have attained great privileges under the auspices of Teotihuacan hegemony, scholars lack clear evidence that Teotihuacan elites regarded them as their own categorical equivalents. Consider that while numerous elite Maya tombs contain Teotihuacan-style artifacts, including Pachuca obsidian, mirror backs and stucco-painted ceramics, a Teotihuacan-style stone 'mask' has not yet appeared in the Maya region, suggestion that certain *ajawtaak* assimilated many but not all attributes of Teotihuacanos. Nevertheless, when these *ajawtaak* at times presented themselves in public performances before their populaces or in their stelae portraits as Teotihuacan warriors (Stone 1989), they must have seemed, to some degree, to their own subjects like 'strangers'. Being perceived as not quite essentially Maya when in the presence of their own subjects, nor as essentially Teotihuacan when they made pilgrimages to the first Tollan, those *ajawtaak* who took on the influences of the Teotihuacan cult of the mirror occupied a singular positionality in Early Classic Mesoamerican society. In contrast and in relation to their positionality, Teotihuacanos and Mayas alike perhaps came to know both themselves and their counterparts who resided across the Isthmus of Tehuantepec.

Notes

1. Tohil is the K'iche' word for a Maya deity of lightning and royal lineage called K'awiil in Classic Mayan inscriptions. This deity was perhaps the equivalent of the Mexica Aztec god called Tezcatlipoca, 'Smoking Mirror', in later Nahuatl.
2. This compound's connotations of accession were first identified by Schele and Miller (1983), who read the sign as 'mirror'. Stuart (2010) more recently argued that the glyph expresses the general concept of reflectivity. This sign also frequently appears on celts where it denotes the objects' shining quality.

Acknowledgements

This research was supported by the Harvard Graduate School of Arts and Sciences, Princeton's Program in Latin American Studies, a Tyler Fellowship from Dumbarton Oaks, a Coleman Fellowship from the Metropolitan Museum of Art and startup funds from the University of Texas at Arlington and Williams College. I first discussed the role of mirror symbolism in Teotihuacan–Maya relations in a talk delivered for the Pre-Columbian Society of Washington, DC, at the invitation of Lucy Wilson. I appreciate the constructive feedback of two anonymous peer reviewers, and of Elizabeth DeMarrais and John Robb, whose thoughtful engagement greatly improved this paper. I thank Tom Cummins, William Fash, Amelia Frank-Vitale, Bryan Just, Colin McEwan, Alberto Morales, Patrick Mullins, Joanne Pillsbury, David Roxburgh, Marian Thorpe and Alexandre Tokovinine, who offered feedback on earlier versions of this work. Any mistakes or omissions do not reflect their input and are entirely my own. I declare no competing interests.

Trenton D. Barnes
Williams College
Lawrence Hall
15 Lawrence Hall Drive
Williamstown, MA 01267
USA
Email: tdb3@williams.edu

https://doi.org/10.1017/S0959774324000234 Published online by Cambridge University Press

References

Agurcia Fasquelle, R., P. Sheets & K. Taube, 2016. *Protecting Sacred Space: Rosalila's eccentric chert cache at Copan and eccentrics among the Classic Maya*. San Francisco (CA): Precolumbia Mesoweb.

Arroyo, B., 2020. Teotihuacan, Kaminaljuyu, and the Maya highlands, in *Teotihuacan, The world beyond the city*, eds K.G. Hirth, D.M. Carballo & B. Arroyo. Washington (DC): Dumbarton Oaks, 435–61.

Arroyo, B., T. Inomata, G. Ajú, J. Estrada, H. Nasu & K. Aoyama, 2020. Refining Kaminaljuyu chronology: new radiocarbon dates, Bayesian analysis, and ceramic studies. *Latin American Antiquity* 31(3), 477–97.

Barnes, T., 2024. Blood, obsidian, and the Teotihuacan cult of the mirror. *Ancient Mesoamerica*. https://doi.org/10.1017/S0956536123000238

Boone, E.H., 2000. Venerable place of beginnings: the Aztec understanding of Teotihuacan, in *Mesoamerica's Classic Heritage: From Teotihuacan to the Aztecs*, eds D. Carrasco, L. Jones & S. Sessions. Boulder (CO): University Press of Colorado, 371–95.

Bove, F.J., & S. Medrano Busto, 2003. Teotihuacan, militarism, and Pacific Guatemala, in *The Maya and Teotihuacan: Reinterpreting Early Classic interaction*, ed. G.E. Braswell. Austin (TX): University of Texas Press, 45–79.

Braswell, G.E., 2003a. Introduction: reinterpreting Early Classic interaction, in *The Maya and Teotihuacan: Reinterpreting Early Classic interaction*, ed. G.E. Braswell. Austin (TX): University of Texas Press, 1–44.

Braswell, G.E., 2003b. Dating Early Classic interaction between Kaminaljuyu and central Mexico, in *The Maya and Teotihuacan: Reinterpreting Early Classic interaction*, ed. G.E. Braswell. Austin (TX): University of Texas Press, 81–104.

Braswell, G.E. (ed.), 2003c. *The Maya and Teotihuacan: Reinterpreting Early Classic Interaction*. Austin (TX): University of Texas Press.

Cabrera Castro, R., 1993. Human sacrifice at the Temple of the Feathered Serpent: recent discoveries at Teotihuacan, in *Teotihuacan: Art from the City of the Gods*, eds K. Berrin & E. Pasztory. New York (NY): Thames & Hudson, 100–107.

Cabrera Castro, R., S. Sugiyama & G.L. Cowgill, 1991. The Templo de Quetzalcoatl Project at Teotihuacan. *Ancient Mesoamerica* 2, 77–92.

Canuto, M.A., L. Auld-Thomas & E. Arredondo, 2020. Teotihuacan and lowland Maya interactions: characterizing a Mesoamerican hegemony, in *Teotihuacan, The world beyond the city*, eds K.G. Hirth, D.M. Carballo & B. Arroyo. Washington (DC): Dumbarton Oaks, 371–408.

Carballo, D., 2007. Implements of state power: weaponry and martially themed obsidian production near the Moon Pyramid, Teotihuacan. *Ancient Mesoamerica* 18, 173–90.

Carr, R.F. & J.E. Hazard, 1961. *Map of the Ruins of Tikal, El Peten, Guatemala*. (Tikal Report 11.) Philadelphia (PA): University Museum, University of Pennsylvania.

Carrasco, D., 1999. The sacrifice of Tezcatlipoca: to change place, in *Aztec Ceremonial Landscapes*, ed. D. Carrasco. Boulder (CO): University Press of Colorado, 31–57.

Carrasco, D., L. Jones & S. Sessions (eds), 2000. *Mesoamerica's Classic Heritage: From Teotihuacan to the Aztecs*. Boulder (CO): University Press of Colorado.

Coe, M.D., 1973. *The Maya Scribe and his World*. New York (NY): Grolier Club.

Coe, M.D., 1988. Ideology of the Maya tomb, in *Maya Iconography*, eds E.P. Benson & G.G. Griffin. Princeton (NJ): Princeton University Press, 222–35.

Coe, M.D. & K.V. Flannery, 1964. The Pre-Columbian obsidian industry of El Chayal, Guatemala. *American Antiquity* 30(1), 43–9.

Coe, W.R., 1965a. Tikal: ten years of study of a Maya ruin in the lowlands of Guatemala. *Expedition* 22, 5–56.

Coe, W.R., 1965b. Tikal, Guatemala, and emergent Maya civilization. *Science* n.s. 147(3664), 1401–19.

Coe, W.R., 1990. *Excavations in the Great Plaza, North Terrace and North Acropolis of Tikal*. (Tikal Report 14, vol. II.) Philadelphia (PA): University Museum, University of Pennsylvania.

Cowgill, G.L., 2015. *Ancient Teotihuacan: Early urbanism in Central Mexico*. Cambridge: Cambridge University Press.

Culbert, T.P., 2003. The ceramics of Tikal, in *Tikal: Dynasties, foreigners, and affairs of state*, ed. J.A. Sabloff. Santa Fe (NM): School of American Research Press, 47–81.

Culbert, T.P., 2019. *The Ceramics Sequence of Tikal: Tikal Report 25B*. Philadelphia (PA): University of Pennsylvania Museum of Archaeology and Anthropology.

Demarest, A.A. & A.E. Foias, 1993. Mesoamerican horizons and the cultural transformations of Maya civilization, in *Latin American Horizons*, ed. D.S. Rice. Washington (DC): Dumbarton Oaks, 147–91.

Dosal, P.J., 1925. Descubrimientos arqueológicos en el Templo de Quetzalcoatl (Teotihuacan) [Archaeological discoveries at the Temple of Quetzalcoatl (Teotihuacan)]. *Anales del Museo Nacional de Arqueología, Historia y Etnografía* 20(3), 216–19.

Dunning, N.P., T.P. Beach & S. Luzzadder-Beach, 2012. Kax and kol: collapse and resilience in lowland Maya civilization. *PNAS* 109(10), 3652–7.

Fash, W.L., 2020. Organization, ideology, and the situational ethics of exchange: new models and fresh perspectives on Teotihuacan abroad, in *Teotihuacan, The world beyond the city*, eds K.G. Hirth, D.M. Carballo & B. Arroyo. Washington (DC): Dumbarton Oaks, 479–503.

Fash, W.L., A. Tokovinine & B.W. Fash, 2009. The House of New Fire at Teotihuacan and its legacy in Mesoamerica, in *The Art of Urbanism: How Mesoamerican kingdoms represented themselves in architecture and imagery*, eds W.L. Fash & L. López Luján. Washington (DC): Dumbarton Oaks, 201–29.

https://doi.org/10.1017/S0959774324000234 Published online by Cambridge University Press

Freidel, D.A. & L. Schele, 1988. Kingship in the late Preclassic Maya lowlands: the instruments and places of ritual power. *American Anthropologist* 90(3), 547–67.

García-Des Lauriers, C., 2020. Gods, cacao, and obsidian: multidirectional interactions between Teotihuacan and the southeastern Pacific coast of Mesoamerica, in *Teotihuacan, The world beyond the city*, eds K.G. Hirth, D.M. Carballo & B. Arroyo. Washington (DC): Dumbarton Oaks, 409–33.

Gendrop, P., 1984. El tablero-talud en la arquitectura Mesoamericana [Tablero-talud in Mesoamerican architecture]. *Cuadernos de arquitectura mesoamericana* 2, 5–27.

Gómez Chávez, S., 2013. The exploration of the tunnel under the Feathered Serpent Temple at Teotihuacan. First results, in *Constructing, Deconstructing, and Reconstructing Social Identity – 2,000 years of monumentality in Teotihuacan and Cholula, Mexico*, eds S. Sugiyama, S. Kabata, T. Taniguchi & E. Niwa. Nagakute: Cultural Symbiosis Research Institute, Aichi Prefectural University, 11–17.

Gómez Chávez, S., 2017. The underworld at Teotihuacan: the sacred cave under the Feathered Serpent Pyramid, in *Teotihuacan: City of water, city of fire*, ed. M. Robb. Berkeley (CA): University of California Press, 48–55.

Gómez Chávez, S., C. Solís, J. Gazzola, *et al.*, 2016. AMS ^{14}C dating of materials recovered from the tunnel under the Temple of the Feathered Serpent in Teotihuacan, Mexico. *Radiocarbon* 59, 1–13. https://doi.org/10.1017/RDC.2016.77

Hirth, K.G., D.M. Carballo & B. Arroyo, 2020. Teotihuacan and the Classic-period Mesoamerican world, in *Teotihuacan, The world beyond the city*, eds K.G. Hirth, D.M. Carballo & B. Arroyo. Washington (DC): Dumbarton Oaks, 1–30.

Hirth, K.G., D.M. Carballo, M. Dennison, S. Carr, S. Imfeld & E. Dyrdahl, 2019. Excavation of an obsidian craft workshop at Teotihuacan, Mexico. *Ancient Mesoamerica* 30, 163–79.

Holmes, W.H., 1900. The obsidian mines of Hidalgo, Mexico. *American Anthropologist* 2(3), 405–16.

Houston, S.D., 2014. *The Life Within: The Classic Maya and the matter of permanence*. New Haven (CT): Yale University Press.

Houston, S.D., E.R. Ramírez, T.G. Garrison, D. Stuart, H.E. Ayala & P. Rosales, 2021. A Teotihuacan complex at the Classic Maya city of Tikal, Guatemala. *Antiquity* 95, e32. https://doi.org/10.15184/aqy.2021.140

Jones, C., 1991. Cycles of growth at Tikal, in *Classic Maya Political History: Hieroglyphic and archaeological data*, ed. T.P. Culbert. Cambridge: Cambridge University Press, 102–27.

Kidder, A.V., J.D. Jennings & E.M. Shook, 1946. *Excavations at Kaminaljuyu, Guatemala*. University Park (PA): Pennsylvania State University Press.

Kovacevich, B., 2016. Domestic production of pyrite mirrors at Cancuén, Guatemala, in *Manufactured Light: Entheogenic shamanism among the ancient Maya*, eds M. Emiliano Gallaga & M.G. Blainey. Boulder (CO): University Press of Colorado, 73–105.

Kubler, G., 1974. Iconographic aspects of architectural profiles at Teotihuacán and in Mesoamerica, in *The Iconography of Middle American Sculpture*, by I. Bernal *et al.* New York (NY): Metropolitan Museum of Art, 25–34.

Laporte, J.P., 2003. Architectural aspects of interaction between Tikal and Teotihuacan during the Early Classic period, in *The Maya and Teotihuacan: Reinterpreting Early Classic interaction*, ed. G.E. Braswell. Austin (TX): University of Texas Press, 199–216.

López Austin, A. & L. López Luján, 2000. The myth and reality of Zuyua: the Feathered Serpent and Mesoamerican transformations from the Classic to the Postclassic, in *Mesoamerica's Classic Heritage: From Teotihuacan to the Aztecs*, eds D. Carrasco, L. Jones & S. Sessions. Boulder (CO): University Press of Colorado, 21–84.

Love, M., 2018. Kaminaljuyu chronology and ceramic analysis: an alternate view. *Latin American Antiquity* 29(2), 260–78.

Marcus, J., 2003. The Maya and Teotihuacan, in *The Maya and Teotihuacan: Reinterpreting Early Classic interaction*, ed. G.E. Braswell. Austin (TX): University of Texas Press, 337–56.

Martin, S., 2003. In line of the founder: a view of dynastic politics at Tikal, in *Tikal: Dynasties, foreigners, and affairs of state*, ed. J.A. Sabloff. Santa Fe (NM): School of American Research Press, 3–45.

Martin, S., 2020. *Ancient Maya Politics: A political anthropology of the Classic Period 150–900 CE*. Cambridge: Cambridge University Press.

Mathews, P. 1985. Maya Early Classic monuments and inscriptions, in *A Consideration of the Early Classic Period in the Maya Lowlands*, eds G.R. Willey & P. Mathews. Albany (NY): Institute for Mesoamerican Studies, State University of New York at Albany, 5–54.

Matsumoto, M., 2012. Reflection as transformation: mirror-image structure on Maya monumental texts as a visual metaphor for ritual participation. *Estudios de Cultura Maya* 41, 93–127.

Millon, C., 1973. Painting, writing, and polity in Teotihuacan, Mexico. *American Antiquity* 38(3), 294–314.

Millon, R., 1973. *The Teotihuacán Map*, vol. I, Urbanization at Teotihuacán, Mexico. Austin (TX): University of Texas Press.

Millon, R., 1976. Social relations in ancient Teotihuacán, in *The Valley of Mexico: Studies in Pre-Hispanic ecology*, ed. E.R. Wolf. Albuquerque (NM): School of American Research, 205–48.

Moholy-Nagy, H., 1999. Mexican obsidian at Tikal, Guatemala. *Latin American Antiquity* 10(3), 300–313.

Moholy-Nagy, H., J. Meierhoff, M. Golitko & C. Kestle, 2013. An analysis of pXRF obsidian source attributions from Tikal, Guatemala. *Latin American Antiquity* 24(1), 72–97.

https://doi.org/10.1017/S0959774324000234 Published online by Cambridge University Press

Moreiras Reynaga, D.K., J.-F. Millaire, X. Chávez Balderas, J.A. Román Berrelleza, L. López Luján & F.J. Longstaffe, 2021. Residential patterns of Mexica human sacrifices at Mexico-Tenochtitlan and Mexico-Tlatelolco: evidence from phosphate oxygen isotopes. *Journal of Anthropological Archaeology* 62, 101296. https://doi.org/10.1016/j.jaa.2021.101296

Ohi, K., 1994. Historia y cultura de Kaminaljuyú [History and culture of Kaminaljuyú], in *Kaminaljuyú (1991–94)*, Tomo 2, ed. K. Ohi. Tokyo: Museum of Tobacco and Salt, 747–53.

Pastrana, A. & S. Domínguez, 2009. Cambios en la estrategia de la explotación de la obsidiana de Pachuca: Teotihuacan, Tula, y la Triple Alianza [Changes in exploitation strategies of Pachuca obsidian: Teotihuacan, Tula, and the Triple Alliance]. *Ancient Mesoamerica* 20, 129–48.

Pendergast, D.M., 1971. Evidence of early Teotihuacan–lowland Maya contact at Altun Ha. *American Antiquity* 36(4), 455–60.

Pendergast, D.M., 2003. Teotihuacan at Altun Ha: did it make a difference?, in *The Maya and Teotihuacan: Reinterpreting Early Classic interaction*, ed. G.E. Braswell. Austin (TX): University of Texas Press, 235–47.

Popenoe de Hatch, M., 2002. New perspectives on Kaminaljuyu, Guatemala: regional interaction during the Preclassic and Classic periods, in *Incidents of Archaeology in Central America and Yucatan: Essays in honor of Edwin M. Shook*, eds M. Love, M. Popenoe de Hatch & H.L. Escobedo. Lanham (MD): University Press of America, 277–96.

Price, T.D., M.W. Spence & F.J. Longstaffe, 2021. The Temple of Quetzalcoatl, Teotihuacan: new data on the origins of the sacrificial victims. *Ancient Mesoamerica* 2021, 215–30.

Proskouriakoff, T., 1993. *Maya History*. Austin (TX): University of Texas Press.

Rivera, V. & D. Schávelzon, 1984. Los tableros de Kaminaljuyú [The tableros of Kaminaljuyu]. *Cuadernos de arquitectura mesoamericana* 2, 51–6.

Robb, M. (ed.), 2017. *Teotihuacan: City of water, city of fire*. Berkeley (CA): University of California Press.

Saturno W., F.D. Rossi, D. Stuart & H. Hurst, 2017. A Maya *curia regis*: evidence for a hierarchical specialist order at Xultun, Guatemala. *Ancient Mesoamerica* 28(2), 423–40.

Schele, L. & J.H. Miller, 1983. The mirror, the rabbit, and the bundle: 'accession' expressions from the Classic Maya inscriptions. *Studies in Pre-Columbian Art and Archaeology* 25, 1–99.

Serrano Sánchez, C., M. Pimienta Merlín & A. Gallardo Velázquez, 1997. Mutilaciones e incrustaciones dentarias en un entierro collective del Templo de Quetzalcóatl, Teotihuacan [Dental mutilations and incrustations in a collective burial of the Temple of Quetzalcoatl, Teotihuacan]. *Estudios de Antropología Biologica* 6, 295–308.

Shook, E.M., 1960. Tikal Stela 29. *Expedition* 2(2), 29–35.

Spence, M.W., 1981. Obsidian production and the state at Teotihuacan. *American Antiquity* 46(4), 781–2.

Spence, M.W., 1984. Craft production and polity in early Teotihuacan, in *Trade and Exchange in Early Mesoamerica*, ed. K. Hirth. Albuquerque (NM): University of New Mexico Press, 87–114.

Spence, M.W., 1996. Commodity or gift: Teotihuacan obsidian in the Maya region. *Latin American Antiquity* 7, 21–39.

Stone, A., 1989. Disconnection, foreign insignia, and political expansion: Teotihuacan and the warrior stelae of Piedras Negras, in *Mesoamerica After the Decline of Teotihuacan A.D. 700–900*, eds R.A. Diehl & J.C. Berlo. Washington (DC): Dumbarton Oaks, 153–72.

Stuart, D., 1987. *Ten Phonetic Syllables*. (Research Reports on Ancient Maya Writing 14.) Washington (DC): Center for Maya Research.

Stuart, D., 1995. A Study of Maya Inscriptions. PhD dissertation, Vanderbilt University.

Stuart, D., 1996. Kings of stone: a consideration of stelae in ancient Maya ritual and representation. *Res: Anthropology and Aesthetics* 29/30, 148–71.

Stuart, D., 2000. 'The arrival of strangers': Teotihuacan and Tollan in Classic Maya inscriptions, in *Mesoamerica's Classic Heritage: From Teotihuacan to the Aztecs*, eds D. Carrasco, L. Jones & S. Sessions. Boulder (CO): University Press of Colorado, 465–513.

Stuart, D., 2004. The beginnings of the Copan dynasty: a review of the hieroglyphic and historical evidence, in *Understanding Early Classic Copan*, eds E.E. Bell, M.A. Canuto & R.J. Sharer. Philadelphia (PA): University of Pennsylvania Museum of Archaeology and Anthropology, 215–47.

Stuart, D., 2010. Shining stones: observations on the ritual meaning of early Maya stelae, in *The Place of Stone Monuments: Context, use, and meaning in Mesoamerica's Preclassic transition*, eds J. Guernsey, J.E. Clark & B. Arroyo. Washington (DC): Dumbarton Oaks, 283–98.

Sugiyama, N., W.L. Fash, B. Fash & S. Sugiyama, 2020. The Maya at Teotihuacan? New insights into Teotihuacan-Maya interactions from the Plaza of the Columns complex, in *Teotihuacan, The world beyond the city*, eds K.G. Hirth, D.M. Carballo & B. Arroyo. Washington (DC): Dumbarton Oaks, 139–72.

Sugiyama, S., 1998. Termination programs and Prehispanic looting at the Feathered Serpent Pyramid in Teotihuacan, Mexico, in *The Sowing and the Dawning: Termination, dedication, and transformation in the archaeological and ethnographic record of Mesoamerica*, ed. S.B. Mock. Albuquerque (NM): University of New Mexico Press, 147–64.

Sugiyama, S., 2005. *Sacrifice, Militarism, and Rulership: Materialization of state ideology at the Temple of the Feathered Serpent, Teotihuacan*. Cambridge: Cambridge University Press.

Sugiyama, S. & L. López Luján, 2007. Dedicatory burial/offering complexes at the Moon Pyramid, Teotihuacan. *Ancient Mesoamerica* 18, 127–46.

Taube, K., 1992a. The iconography of mirrors at Teotihuacan, in *Art, Ideology, and the City of Teotihuacan*, ed. J.C. Berlo. Washington (DC): Dumbarton Oaks, 169–204.

https://doi.org/10.1017/S0959774324000234 Published online by Cambridge University Press

Taube, K., 1992b. The temple of Quetzalcoatl and the cult of sacred war at Teotihuacan, *Res: Anthropology and Aesthetics* 21, 53–87.
Taube, K., 2003. Tetitla and the Maya presence at Teotihuacan, in *The Maya and Teotihuacan: Reinterpreting Early Classic interaction*, ed. G.E. Braswell. Austin (TX): University of Texas Press, 273–314.
Tedlock, D. (trans.), 1995. *Popol Vuh* (rev. edn). New York (NY): Touchstone.
Tiesler, V., A. Cucina & M. Ramírez-Salomón, 2017. Permanent dental modifications among the ancient Maya: procedures, health risks, and social identities, in *A World View of Bioculturally Modified Teeth*, eds S.E. Burnett & J.D. Irish. Gainesville (FL): University Press of Florida, 270–84.
Weber, M., 1946. Politics as a vocation, in *Essays in Sociology*, trans. H.H. Gerth & C. Wright Mills. New York (NY): Oxford University Press, 77–128.
Weber, M., 1968. *Economy and Society: An outline of interpretive sociology*, ed. G. Roth & C. Wittich. Berkeley (CA): University of California Press.
White, C.D., F.J. Longstaffe & K. Law, 2001. Revisiting the Teotihuacan connection at Altun Ha: oxygen-isotope analysis of Tomb F-8/1. *Ancient Mesoamerica* 12, 65–72.
White, C.D., M.W. Spence, F.J. Longstaffe, H. Stuart-Williams & K.R. Law, 2002. Geographic identities of the sacrificial victims from the Feathered Serpent Pyramid, Teotihuacan: implications for the nature of state power. *Latin American Antiquity* 13(2), 217–36.
Williams, J.S. & C.D. White, 2006. Dental modification in the Postclassic population from Lamanai, Belize. *Ancient Mesoamerica* 17, 139–51.

Author biography

Trenton D. Barnes is Assistant Professor of Art, Native American and Indigenous Arts, at Williams College. He holds a PhD in the History of Art and Architecture from Harvard University. His research concerns ancient Mesoamerica, with a focus on Teotihuacan and the Maya.

https://doi.org/10.1017/S0959774324000234 Published online by Cambridge University Press