Reinterpreting the Plaza de los Glifos, La Ventilla, Teotihuacan

Nielsen, Jesper; Helmke, Christophe

Published in:
Ancient Mesoamerica

Publication date:
2011

Document version
Publisher's PDF, also known as Version of record

Citation for published version (APA):
http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=8469123&fulltextType=RA&fileId=S0956536111000289
REINTERPRETING THE PLAZA DE LOS GLIFOS, LA VENTILLA, TEOTIHUACAN

Jesper Nielsen and Christophe Helmke
Department of American Indian Languages and Cultures, Institute for Cross-Cultural and Regional Studies, University of Copenhagen, Artillerivej 86, DK-2300 Copenhagen S, Denmark

Abstract

We present a reinterpretation of the unique group of painted glyphs of the Plaza de los Glifos, in the La Ventilla residential area (ca. A.D. 300–450) situated in the ancient central Mexican metropolis of Teotihuacan. Based on a careful review of previous interpretations of the glyphic La Ventilla floor, the writing system, and the possible language(s) of Teotihuacan, we suggest that the majority of the 42 glyphs are not references to toponyms or titles, but are related to disease-causing entities and curing rituals. Crucial to this proposal is the identification of two glyphic representations of a ‘deer-snake,’ a supernatural creature closely tied to diseases and ailments known throughout most of Mesoamerica and beyond, before and after the conquest. We further argue that contemporary and colonial concepts and practices concerning illness and curing offer ways of understanding several other glyphs from La Ventilla and may serve to account for the unusual placement of the signs.

Recent years have witnessed a renewed interest in the writing system and iconography of the Early Classic central Mexican metropolis of Teotihuacan. Three key junctures have been instrumental in this new focus on the visual communication of Teotihuacan. First, James C. Langley’s (1986, 2002) important studies and catalogues of signs employed in Teotihuacan writing; second, the massive two-volume documentation and discussion of Teotihuacan’s mural art published by the Universidad Nacional Autónoma de México (de la Fuente 1995–1996); and, third, Karl Taube’s (2000a, 2002) seminal articles “The Writing System of Ancient Teotihuacan.” An outcome of these milestones is an increased number of publications and dissertations on the subject, resulting in renewed discussions about various aspects of the city’s history, such as social organization, religion, and contact with other areas of Mesoamerica.

One of the most fascinating examples of Teotihuacan writing, but also one of the least understood, is the unique group of glyphs painted in the Plaza de los Glifos in a residential compound of the La Ventilla area, known as the Conjunto de los Glifos (see Cabrera Castro 1996a; Cervantes Reyes 2007; Langley 2002; Valdez Bubnova 2008). In this article we wish to forward a review of this glyphic text and an interpretation that differs from previous analyses of the plaza, most of which posit that the glyphs mainly represent toponyms and titles. In contrast, we will suggest that the glyphs are most likely related to disease-causing entities and associated cleansing and curing rituals. In Mesoamerica the notion that diseases are personified and sentient beings has a lengthy history and deep-seated origins reaching back to the formative past (Campbell and Kaufman 1976:85; Kaufman 2003:1260, 1367–1368; Wichmann 1995:223). Thus, diseases were, and still are, conceptualised as beings which can be addressed and engaged by human interlocutors (Holland and Tharp 1964:42; Miller and Taube 1993:78; Nicholson 1971; Vogt 1993:61–89). The remarkable similarities between the ancient entities and those invoked in the medical incantations and remedies of the Colonial period and those of present day curanderos, provide us with an opportunity to identify personified diseases in ancient Mesoamerica, including the glyphs rendered at the Conjunto de los Glifos.

Our new interpretation also offers an explanation for the unusual horizontal placement of the glyphs on a floor and altar surface. This explanation is based both on pre-Columbian evidence as well as the ethnohistoric and ethnographic records which together provide a framework for ancient practices and concepts. Importantly, our suggestion is founded on a comparative study of Mesoamerican concepts of disease and curing in general, and new understandings of ancient Maya ideas about personified illnesses in particular (Helmke 2008:159–161; Helmke and Nielsen 2009; Stuart 2005:160–161; Zender 2006). Engagingly, one of the well-documented disease-causing creatures encountered in the Maya and Aztec records occurs twice in the Plaza de los Glifos.

LANGUAGE AND WRITING AT TEOTIHUACAN

While significant headway into an understanding of the general principles of Teotihuacan writing and visual communication has been made during the last few decades (e.g., Berlo 1989; Browder 2005; Langley 1986; Millon 1973; Nielsen and Helmke 2008; Taube 2000a), consensus concerning the language or languages of the ancient metropolis is hard to find (Figure 1). Whereas some scholars, mainly archaeologists and epigraphers, have tended to favor an early variant of Nawa’l (Cabrera Castro 1996b; Coe 1962:115–116; Cowgill 1992; Dakin 2003; Dakin and Wichmann 2000; Macri 2005; Taube 2000a; Wichmann 1999:320), linguists for the most part have been inclined to rule out the Nawa’l language group since they generally correlate the arrival of Nawa-speakers to Mesoamerica with the fall of Teotihuacan sometime between the sixth and seventh centuries a.d. (see Campbell 1997:161;
Kaufman 1976:113–115, 2001:6–7, 28–29). In contrast, Totonakan has its share of proponents, and has been deemed a plausible candidate for the language of Teotihuacan (see Kaufman 2001:6–7, 28–29). In fact Lyle Campbell (1997:161) has stated that “ethnohistorical and loanword evidence suggests the Totonacs are the strongest candidates for the builders of Teotihuacan, the most influential Mesoamerican city in its day… and this inference is supported by a small but significant number of Totonacan loanwords in Lowland Mayan languages, Nahuatl, and other Mesoamerican languages.” The influential linguist Terrence Kaufman (2001:6–7) also noted that “there is a set of Totonako loans common to all forms of Nawa, one characteristic phonological trait, one borrowed derivational suffix, and certain semantic strategies in word formation that reflect Totonako,” which indicates close contact between Nawa and Totonak during the Classic period (ca. a.d. 500–1000) in the vicinity of the Valley of Mexico. More recently, Kaufman and his colleague John Justeson (Kaufman and Justeson 2008:65) suggested that Teotihuacan was: “inhabited by a base population consisting mainly of Totonakans and an elite class of a third, northern branch of the Mije-Sokean family” (see also Kaufman 1976:114, 2001:7, 28–29; Michel de Guerrero 2005: 48–61; Wichmann 1999:318–319). So far, however, there is little or no archaeological evidence to support the hypothesis that the population of Teotihuacan was separated in two such distinct social groups or classes of different linguistic and ethnic affiliations. As for groups of Nawa speakers, Kaufman and Justeson (2008:73) conclude that they “had no cultural importance in Mesoamerica before the Epi-Classic Period.” Yet, they also state that Nawa languages may have moved into the Basin of Mexico as early as a.d. 500 (Kaufman and Justeson 2008:78), and in this scheme, Nawa-speakers may actually have been living in Teotihuacan in the Early Classic, but without leaving any significant cultural or linguistic “footprints.”

Key pieces of evidence in this debate are certain lexical items that appear under Teotihuacan influence, which are attested in the glyphic record of the Classic Maya. As first pointed out by epigrapher David Stuart, one of the most significant terms is koskaʔ, which is rendered on Stela 31 at Tikal, dating to a.d. 445 (Figure 2b). Furthermore the glyphic compound is paired off with a logogram depicting a woven mat throne (ikpalli) that is typical of central Mexican cultures (see Taube 2000a:19, 36, 51, Note 10), and the glyphs form part of a caption to a regal figure dressed entirely in Teotihuacano military garb, replete with a spearthrower and a shell-plated helmet in the form of the Teotihuacano.

All entries are provided as in the original sources unless we felt that there was sufficient consensus to present a form in an updated modern orthography modelled on those formulated and employed by Terrence Kaufman, especially for Mayan and Nawan languages. In order to homogenize the orthography between different Amerindian languages the following vowels are used here: a, ä, e, o, i, u, ü, á [ɔ] with long vowels: a:, e:, i:, o:, u: leaving accent aigu to mark stress and apostrophe [’] to mark glottalization. The following consonants are used in this paper: b’ [ɓ], ch [tʃ], g, h [ɦ], j [ħ], k, k’, kʷ, l, l’, m, n, ng [ŋ], nd, p, q [qG], r, s, t, tl [ɬ], tz [¢], v, w, x [ʃ] and ʔ are used in this paper. Otherwise all entries are presented as they are in the original source, for Otomi in particular. Angled brackets <…> are used to render either colonial spellings of terms, or more recent items whose spelling or orthography is deemed inadequate. Names of culture groups are left in their original spellings as for example Olmec, Aztec and Mixtec, but the language names are updated as with the case of Mixtek.
war serpent (Figure 2a). The term *koskaʔ*, which is not readily etymologized in Classic Mayan, has been identified as a loan word and related to Nawatl *ko:ska-tl* 'jewel, bead, necklace' (Boot 2010: 154–155; Pallán Gayol and Meléndez Guadarrama 2005:14). The various cognate sets assembled by Wick Miller (1987:73) for 'necklace' include for Southern Yuto-Nawan: Tarawmara (Tarahumara) golowa 'collar' (Coordinación Estatal de la Tarahumara 1995:1.29, 2.16), and corogá 'collar' (Hilton 1993: 22, 91), for proto-Sonoran *koroka* 'collar', Warijío (Guarijío) koloká 'sogillo', Kahitan (Mayo) kó:kam 'necklace,' and Nawatl *ko:ska-tl* 'collar.' To these should be added proto-Nawatl *ko:ska* 'collar' (Dakin 1982:145, Note 183c), as well as Pipil *kuska-t* 'soguilla, collar' (Campbell 1985:30, 300), and *kus-ti* 'soguilla, collar, perla (cuenta)' (Campbell 1985:40, 301). The cognate set (Miller 1987:73) for Northern Yuto-Nawan includes the following: Monache (Mono) qakki ‘beads,’ Shoshoni kotokki ‘necklace,’ Chemehuevi kaag(i) ‘necklace, neck thing’ (Press 1979:149, 167), Cupeño qínexa ‘beads,’ Cahuilla -qénxa- ‘to have around the neck (as beads),’ and Luiseño qénxa-t ‘necklace, beads’ (Campbell 1997:134). The forms encountered suggest that the proto-Southern-Yuto-Nawan form resembled *ko:roka*, marking the proto-Nawatl form *ko:ska* as wholly embedded into Yuto-Nawan and ruling out the possibility that it represents a loanword into Nawatl from a Mesoamerican language. The deliberate pairing of the term *koskaʔ* with epigraphic and iconographic elements and material culture that are clearly tied to contemporary Teotihuacan, has been taken as evidence that the word *koskaʔ* equally finds its origins in the language of this distant metropolis (see Boot 2010:154–155; Pallán Gayol and Meléndez Guadarrama 2005:14). Consequently, based on the analysis of *koskaʔ* presented here it is implicit that Nawatl was represented at Teotihuacan in one form or another; even if it was only among a soldierly or mercenary stratum of society.

Most recently it has been proposed that a segment of the glyphic text of Stela P at the site of Copan, Honduras, records what may be general Nawatl (Wagner and Prager 2008). In this text, dated to a.d. 623, the terms *mapatz’in, kilkum* as well as possibly *wakut* occur, as part of a sequence headed by *yax k’uh* ‘first gods’ and *yax ajaw* ‘first kings.’ Respectively, these terms can be related to Nawatl *mapach-in* ‘raccoon’ (Procyon lotor), and *wakutz’in* ‘Laughing Falcon’ (Herpetotheres cachinnans), although *kilkum* remains difficult in its attribution (Una Canger, personal communication 2009). Although the context of these animal names remains obscure, what is striking is the fact that these apparent Nawatl terms occur sequentially in the text, standing out from the other segments that are clearly rendered in Classic...
Maya. The evidence from Copan would imply that Nawatł, by means of Teotihuacano influence, somehow filtered into Maya texts of the seventh century.

Similarly, the term ko’haw, for Teotihuacano shell-plated helmets (von Winning 1981), is found in the Classic Maya inscriptions from the western Maya Lowlands between a.d. 658 and ca. 690 (Figure 2c-f), and survived in colonial Tzotzil as kov ‘helmet, quijote, armadura’ (Laughlin 1988:224). Attempts have been made to relate ko’haw to proto-Nawatł *k’aʔ- ‘head’ (Macri and Looper 2003:290–291), remarking also that certain colonial entries for headgear are build on the same root (Boot 2010:148; Dakin 1982:146, Note 188; Pallán Gayol and Meléndez Guadarrama 2005:19). Much more promising in this respect is the possibility that koʔ stems from proto-Mije-Sokean *koʔ-, a prefix for ‘items pertaining to the head’ as seen in Oluta Mijean koʔ-pa’ n ‘sombrero,’ koʔ-xilk ‘sesos,’ koʔ-taki ‘calvo,’ in proto-Mije-Sokean *koʔ-moná ‘headgear’ (Kaufman and Justeson 2008:57), and *koʔ-púk ‘head’ (Wichmann 1995:539), ultimately loaned to Nawatł as kopak-tili ‘palate of mouth’ and k-pák ‘above’ (Kaufman 2001:8, 2002:17). Based on this analysis the likely donor language of ko’haw is a form of Mijek-Sokean, which thereby aligns itself with the more recent model, proposed by Kaufman and Justeson (2008; see also Kaufman 2001:6–7; 2002:10–30; Michel de Guerrero 2005:48–61). This review of loanwords found in Maya texts that may find their source in Teotihuacano shows that these cannot be tied to a single language family, but instead can be attributed to either the Yuto-Nawan or Mije-Sokean language stocks.

It bears remarking that the writing systems of Mesoamerica, which have succumbed to full or partial decipherment, show that their origins are to be found within the linguistic families of the language(s) that they record. Thus Maya hieroglyphs were devised for an archaic Ch’ language (Urcid 2001). As a result, it is plausible that the script as a whole was rendered. Simply transposing logographic values from one language between scripts cannot be used inherently as a means of “decipherment.” While it cannot be excluded at present that some early form of Nawatł (possibly proto-Nawatł) played a role at Teotihuacan, the best case would rely on phonetic decipherments that support Nawatł identifications, rather than outright assumptions of language affiliations, without extensive testing for all potential candidate language groups. It should be remarked that Karl Taube (2000a:51, Note 5) in commenting on the so-called “twisted root” sign (which clearly functions to render a locative) suggested that it might serve as Nawatł -tan ‘place of,’ by matching ‘root’ to the form tlalenwát ‘raíz, raíz purgante, nubarro,’ which allegedly by means of rebus and acrophony would produce the locative suffix. The term in question has, however, not been segmented correctly, since it ought to be segmented morphologically as tls-nelwa-tl in which nelwa is ‘root,’ preceded by an object prefix and suffixed by an absolutive (Una Canger, personal communication 2007). Based on this example it is clear that Taube, while cautious, does seem to entertain the possibility of Nawatł having been spoken at Teotihuacan. We concur with Taube, however, that the root sign will by means of rebus principle help to identify the language in which the script was written, with a locative and a phonologically similar word for ‘root,’ or even figuratively ‘hair,’ matching in one of the candidate languages. It is clear that there is currently no agreement among scholars as to what language, or languages, were spoken at Teotihuacan in the Early Classic period. Nevertheless, based solely on the currently prevailing linguistic models and the glyphic data from the Maya area, a combination of Totonakan, Nawatł, and a now extinct form of Mije-Sokean seem likely candidates as languages originally spoken at Teotihuacan. From there it stems that the Early Classic texts at Teotihuacan recorded one or several of these languages. Before some kind of consensus has been reached on the issue of language attribution, it would seem premature to propose readings of Teotihuacan texts found at La Ventilla, or elsewhere.

In general, the Teotihuacan script resembles other, better-known writing systems from western Mesoamerica and it is possible that the Teotihuacan writing system should be categorized as a so-called “open” writing system akin to those of the later Mixtec and Aztec, meaning that it is characterised by a large proportion of logograms with few and little use of phonetic signs, thereby having the potential to serve in multilingual contexts with greater ease.
(Houston 2004:276–278; see also Lacadena 2008), something that would be of great value in a probably multiethnic Teotihuacan and its vast hinterlands. In this article we do not attempt to present any phonetic decipherments of the hieroglyphic signs from the Conjunto de los Glifos. Instead, we will concentrate on identifying the character and general meaning of this so far unique group of signs.

THE CONJUNTO DE LOS GLIFOS
The large residential area of La Ventilla is located in the southwestern part of Teotihuacan, just outside the modern ring-road that encircles the site epicentre, known as the periférico, and consists of several residential and ritual structures arranged around open courtyards (Figure 3). The Conjunto de los Glifos, also known as Sector 2 of La Ventilla, can be broadly dated to the Late Tlamimilolpa or Early Xolalpan phase (ca. A.D. 300–450), or slightly earlier on the basis of architectural stratigraphy, burials and associated ceramic deposits (Cabrera Castro 1996a:418–422; King and Gómez Chávez 2004:204; Taube 2000a:15; also Rubén Cabrera Castro, personal communication 2009). The Plaza de los Glifos, of the compound of the same name, is defined by the remains of four masonry structures, whose alignment conforms to the orientation of Teotihuacan’s urban planning with each facing onto a plaza, or more properly-speaking a courtyard, measuring at its widest 12.2 m north-south by 9.2 m east-west (Figure 4a). The courtyard has the distinction of having three structures (on all sides except the west) that exhibit broad porticoes with Gulf Coast architectural features, namely squared and U-shaped tableros with lateral and superior, but no basal, moulding (King and Gómez Chávez 2004:202; also Rubén Cabrera Castro, personal communication 2009). These three structures were originally all embellished

![Map of epicentral Teotihuacan showing the location of the Conjunto de los Glifos of La Ventilla. Map adapted from René Millon (Pasztory 1988:Figure III.5), and Bruno Ortiz Marin (Cabrera Castro 1996c:Lámina 1).](image)
with red pigment, a marker of non-residential special function structures in Mesoamerica. In contrast, the larger and pyramidal western structure (Figure 4b) was finished with a coat of white stucco and while it was not furnished with a portico it exhibits typical Teotihuacano talud-tablero architecture (King and Gómez Chávez 2004:202), as does the remainder of extant architecture of the Conjunto de los Glifos. The principal point of access identified for this compound, from the street running north-south along the eastern perimeter of the compound, is via a passage (running between the northern and eastern structures), which leads to the north-eastern corner of the courtyard (Figure 4c). Other passages lead out from the north-western and south-western corner of the courtyard to corridors running along the sides of the western structure (Figure 4d and 4e), both connecting to another courtyard located immediately adjacent to the west (Figure 4f). The northern and eastern structures are flanked by lateral structures each with a series of small rooms, with doorways facing onto the courtyard, thereby conforming to the general architectural orientation. The presence of special function structures with distinctive Gulf Coast architecture and glyphic signs painted onto architectural elements of that courtyard suggest that it was the most important locus within the group. Unlike previous interpretations that have treated the western structure of the Plaza de los Glifos as the one of greatest import on account of its size and differential coloration (King and Gómez Chávez 2004:202, 207), we view the northern structure as the most significant (Figure 4g). In large measure our interpretation is based on the orientation of the glyphic signs, since these all are arranged for a reader standing at the northern end of the plaza looking south. Thus all signs have their bases on the northern side and all figurative signs, or head-variants—regardless of whether these were painted on floors or walls—uniformly face to the readers’ left, which is to say to the east. As a result the orientation of the glyphs appears to be conditioned by the position of prospective readers vis-à-vis the north-eastern points of ingress into the courtyard.

The Conjunto de los Glifos has the additional distinction among Teotihuacano compounds of exhibiting several areas of paintings rendered on floor surfaces rather than walls, as is otherwise typical. The placement of glyphic signs, or iconographic motifs, on floors is a relatively rare feature, not only at Teotihuacan, but in Mesoamerica in general. We will return to a possible explanation of the unusual placement later. Previous researchers (e.g., Cabrera Castro 1996b:422) have also noted that the style of the glyphs differ from the known corpus of Teotihuacan iconography and writing, and we believe this may indicate that they belong to a style of writing that was normally reserved for media other than mural paintings, such as painted codices or screen-fold books. All the paintings in the Conjunto de los Glifos are rendered monochromatically in dark red, and the three major areas include: (1) the glyphs in the courtyard of the Plaza de los Glifos (Cabrera Castro 1996a; Taube 2000a:13–15; King and Gómez Chávez 2004:204–208, 216–223; Ruiz Aguilar 2007; Valdez Bubnova 2008);
(2) a priestly figure depicted in a lateral room to the northern structure of the Plaza de los Glifos (Cabrera Castro 2000:214–215; Cabrera Castro and Padilla 1997:401); and, (3) two groups of “animalitos fantásticos” in rooms at the north-western extent of the compound (Cabrera Castro 1996c:41, 2003, 2005; see also King and Gómez Chávez 2004:204, Note 2) that are nearly identical in all respects to those depicted in the ‘mural de los glifos’ (Zone 5A, Room 23, Mural 2) (Cervantes Reyes 2007:62–63, 252–253; de la Fuente 1995a:Figure 16.5; Langley 1993:Figure 8), as well as those found on the floor of Portico 24 at Tetitla (de la Fuente 1995b:283–284; Miller 1973:128) (Figure 4).

In the Plaza de los Glifos, of the 42 separate glyphic signs (Figure 5), 35 are painted on the stuccoed floor of the courtyard, whereas five were executed on the face of terraces and walls and two were rendered on the surface of the low masonry altar set within the centre of the courtyard. The upper surface of the altar exhibits soot-blackening and charring indicating that this was where censers were placed and incense burned. Of the glyphic signs rendered on terrace faces, two were rendered on the face of the eastern basal terrace of the western structure (to the south of the axial outset stair) and three were rendered on the south wall of the southern corridor. Despite previously published drawings of

Figure 5. Plan of the Plaza de los Glifos indicating context and location of each glyphic sign and the depiction of the priestly figure. Adapted from plans in Cabrera Castro (2003:24, Figure 1) and Padilla and Ruiz Zúñiga (1995:174). Plan drawn by Christophe Helmke.
the glyphic signs it should be remarked that the preservation of the signs varies from excellent to almost completely eroded faint outlines. It is unclear whether the faint signs were much more visible upon discovery than they are at present, but if these have always been faint and indistinct it follows that several of the previously published drawings of these signs should be treated cautiously. The drawings of the glyphs that we present here (Figure 6) follow the designations attributed by Cabrera Castro (1996a: Láminas 2 and 3), but signs that are completely eroded and too indistinct are marked as such.

At some later point, once the glyphs had already been painted and the associated floor surfaces had partly decayed, a phase of architectural refurbishment took place in which the courtyard was filled by an approximately 0.7 m thick core deposit to raise the flooring surface of the courtyard to that of the surrounding porticoes (King and Gómez Chávez 2004:204; also Rubén Cabrera Castro, personal communication 2009). The deposition of this core is undoubtedly responsible for the preservation of the fragile glyphic signs and rules out the possibility that the glyphs were painted at some later phase (see Taube 2000a:13). After the compound’s abandonment several areas were affected by intrusive trenches that can be characterised as looting (Rubén Cabrera Castro, personal communication 2009). The trenches penetrate through later architecture and affected the earlier Plaza de los Glifos with one such trench running right through the middle of the courtyard’s masonry altar and another partly up the primary axis of the western structure (Figure 5). Although the dating of these intrusions is difficult to establish, the alignment of the trench to the masonry altar implies that those conducting the looting still retained the memory of concealed architectural features, which has a bearing on the dating of the looting episodes (Rubén Cabrera Castro, personal communication 2009).

Many of the glyphic signs are enclosed by painted quadrangles (of varying sizes) forming a grid of intersecting red lines (Cabrera

| Figure 6. The glyphs from the Plaza de los Glifos in numerical sequence. All glyphs are oriented as they are in situ, with north at the bottom and south at the top of the figure. Drawings by Rubén Cabrera Castro (1996d:33) with amendments based on examinations made during the 2009 field season. Glyphs that are completely eroded or too faint to discern are marked by asterisks. Drawings not rendered to scale. |
Castro 1996a, 1996b; Cabrera Castro and Padilla 1997; Padilla and Ruiz Zúñiga 1995). Based on careful examination it appears that the lines were applied at some point after the glyphs had been rendered. This conclusion stems from our observation that the glyphs were painted at least twice, with the initial glyphs rendered in broad lines that are now partly effaced and thus lighter (Figure 7a). The later re-painting was dutifully applied to follow the initial outlines, but was rendered with narrower brush strokes in a less-weathered and thus darker red pigment. This can be seen with several glyphs where the initial broader and lighter outlines are visible below the later renditions (Figure 6, Glyphs 3, 5, 7, 9, and 13). Also, certain small sections of the original glyphs were not re-painted leaving only the lighter underlying pigment visible in those areas (Figure 6, Glyphs 2, 3, and 20) and it would thus seem plausible that the glyphs that exhibit significant erosion (Figure 6, Glyphs 18, 23, 25, 34, 38, 39, 41, and 42) were simply never re-painted. As a result it is clear that the glyphs had been painted and left exposed for a sufficient period of time for those to become weathered and require re-painting. The two phases of glyph paintings both appear to precede the grid of red lines. A patch of spilled paint is splattered over the glyphic elements (Figure 8a) and it is noteworthy in this regard that the spilled paint matches the coloration of the red grid lines almost exactly, suggesting that these are part and parcel of the same episode. In addition, at the southern end of the courtyard a section of red line runs from the floor surface vertically onto the terrace of the western structure (Figure 8b). In the southern passage a red line was painted horizontally onto the southern wall, a line which matches the level of the core deposit (Figure 8c). The same is found in Courtyard 13 at Tetitla where the upper moulding of the tablero and the stair side of the eastern structure (Portico 13) exhibits a similar horizontal red line, corresponding also to the level of core filling the courtyard (Figure 8d) (Miller 1973:119, 140). Based on this evidence one possibility that must be considered is that the grid of red lines in the Plaza de los Glifos is a secondary addition that preceded the architectural refurbishments, at least in some cases serving as masons’ trace lines. As a result the relationship between the grid and the glyphs they enclose should be the subject of further scrutiny. As part of previous treatments, the grid of red lines has been taken as forming an integral part of the composition, thereby furthering comparisons to Postclassic codices (King and Gómez Chávez 2004: 204–207; Taube 2000a:35, 2008:10–12; Wagner 2004).

PREVIOUS INTERPRETATIONS

So far, the most ambitious attempt to read the La Ventilla glyphs was published in 2004 by King and Gómez Chávez. As already mentioned, the authors argue that the language of Teotihuacan was proto-Nawatl-Pochutek, and they use this reconstructed language as the key to their decipherment of the La Ventilla glyphs (King and Gómez Chávez 2004; see also Ruiz Aguilar 2007:44–71). However, there are a number of problems in their approach beyond the language issue already touched upon. In terms of the method applied, their decipherment is based on comparisons with Late Postclassic Aztec writing (completely bypassing the crucial Epiclassic and Early Postclassic scripts). The comparative approach in itself is not without merit, and researchers agree that there are continuities between the writing systems (as well as many other cultural elements) of Classic and Postclassic highland central Mexico (Berlo 1989, Taube 2000a). Yet, as pointed out by Stephen Houston and Michael Coe in their discussion of Isthmian writing (Houston and Coe 2003), a number of criteria should be met before a successful decipherment can take place. These criteria include: (1) A large textual corpus including complete sentences; (2) A correct and provable identification of the language encoded by the script; (3) The existence of one or more bilingual texts, one of which is an already deciphered script; (4) A well-understood cultural context of the writing system in question; and, finally, (5) In case the script is logo-syllabic or primarily logographic, accompanying pictorial references are usually required to achieve a full understanding of the text (Houston and Coe 2003:151). In the case of the Teotihuacan writing system Criteria 1, 2 and 3 are mostly lacking, and while Criteria 4 can be said to be met to some degree, Criteria 5, the often crucial and highly informative combination of text and image, is unfortunately not met in the case of La Ventilla. It also needs to be emphasized, that despite some of the shared fundamental features of the Aztec and Teotihuacan writing systems, there are also marked differences. For example, the calendrical references to days and years that figure so prominently in Aztec (and Epiclassic period) writing and iconography, are nearly absent in the known Teotihuacan

Figure 7. (a) Example of a re-painted glyph (Glyph 3) in which the original coat of paint is grey and the subsequent coat is rendered in black; (b) Glyph 39 as initially recorded and published (drawing by Rubén Cabrera Castro); (c) The remains of the same glyph (Glyph 39) as documented in 2009, in scale with (b).
corpus, as are seemingly most of the phonetic signs known for Aztec writing (Lacadena 2008).

Previous interpretations of the La Ventilla glyphs have centred on their possible toponymic, onomastic and titular content (e.g., Cabrera Castro and Padilla 1997:403–404; Wagner 2004). King and Gómez Chávez follow this line of interpretation, suggesting that the majority of signs have a toponymic value, while the remainder are names and titles of individuals, or refer to specialized barrios. Viewed as a whole, they find it plausible “que la Plaza de los Glifos haya funcionado de manera similar a una sala de consejo, un tribunal de cuentas o un ágora” (King and Gómez Chávez 2004:206), and they suggest that representatives would have stood in the quadrangles during such meetings or gatherings. Since the grid lines may well be a secondary addition, it is unclear how compatible this finding is with the idea that these enclose areas for standing. Looking closer at some of the alleged decipherments, it becomes apparent that they are far from substantiated, and in large measure appear to be attempts to fit the signs into toponymic interpretations (King and Gómez Chávez 2004:222–223). Two examples will suffice to illustrate this. The face of an old man (Figure 6, Glyph 13) is equated with the Aztec manner of representing an old male person, or we:weʔ in Nawatl. The iconographic resemblance between the two signs is striking, but King and Gómez Chávez go on to assume that, as in documented Aztec cases where a “teeth and gum” sign (providing a -tlan ‘place of’ suffix) is attached to the head to write we:weʔtlan ~ <Huehuetlan> ‘Place of the ancients,’ the same accounts for the La Ventilla example (King and Gómez Chávez 2004:222, Figure 10). Yet, at La Ventilla there is no other sign attached to the old male head making the toponymic interpretation dubious, not the least since the head could potentially have other meanings completely unrelated to place names. In fact, in light of the Mije-Sokean model of Teotihuacano language proposed by Kaufman the head of the old man could equally well stand logographically for proto-Mije-Sokean *na:waʔ or proto-Mijean *na:wa(y) ‘old man’ which was loaned into Nawatl as na:wa ‘people,’ or na:wal-li ~ na:wal-in ‘shape-shifter’ (Campbell and Kaufman 1976:85; Kaufman 2001:8; see also Wichmann 1999:307). The same sign occurs in the murals of Tepantitla where it is suffixed by the numeral 10, another logogram. Consequently, without phonetic complementation that could reinforce the logographic value, the proposed reading remains unsubstantiated. Next, a glyphic collocation (Figure 6, Glyph 16) combining a hummingbird marked with three circular elements and an unidentified object, is read simply as ketzal-tototl ‘quetzal/feather-bird,’ which is then seen to refer to the place Ketzal-lan ~ <Quetzalan> ‘Quetzal-place,’ although, once again, there is no indication of a locative suffix or other marker (King and Gómez Chávez 2004:222–223, Figure 11). In this case also, there is no visual congruity between the avian figure depicted and the manner in which quetzals are rendered in Teotihuacano iconography. These and other proposed readings are highly problematic since (1) they are unaccompanied by clear phonetic signs that demonstrate any clear connection between the logograms and proto-Nawatl-Pochutek (or any other language), and (2) because they do not provide any solid evidence for the incidence of locatives which might support that the signs refer to place names.

What is also disturbing to the toponymic interpretation is that none of the alleged place names suggested by King and Gómez...
Chávez display any of the usual “geographical substantives,” such as mountains, trees, or the so-called ‘shallow bowl’ signs that otherwise occur in the inventory of Teotihuacan toponymic signs, as well as in Epiclassic and Nawa writing (Nielsen and Helmke 2008; Taube 2000a). The “twisted root” sign, undoubtedly a locative suffix, first identified by Taube (2000a: 9, 22), and frequently utilized at both Teotihuacan and Xochicalco, might also occur in the Conjunto de los Glifos, but only once, in an unusual combination with what seems to be architectural elements (Figure 6, Glyph 39). Based on our examination of the sign in 2009 we found that hardly any traces of the sign remain. A previously published photograph (Cabrera 1996a:Figure 39) shows that the glyph was originally found in a similar condition, in which it is also not possible to verify the incidence of a twisted root sign (Figure 7b and 7c). This suggests that the earlier drawing produced for this glyph should be treated with caution. It must be conceded that while both the human arm of Glyph 2 and the agave thorn of Glyph 6 (see Figure 6) resemble certain Nawa toponyms (Berlo 1989: 22), the complete absence of the most common geographical substantives and locative suffixes make it unlikely that the majority of the La Ventilla glyphs indeed refer to place names.

HORNED SERPENTS AND PERSONIFIED DISEASES

Some glyphs, however, may rightly refer to names and titles, but based on the evidence that we have gathered we will suggest that the names are not those of historic individuals or social groups, but rather those of diseases or disease-causing entities. One of the most intriguing glyphs of La Ventilla shows a snake with deer antlers (appearing twice in Figure 6; see Glyphs 9 and 11) and while we agree that the two glyphs do not help us in determining the language of Teotihuacan (since the signs are logograms), we believe it is exactly these two-der-serpents that provide an excellent point of departure for a revised interpretation of the whole group of glyptic signs at the Conjunto de los Glifos. In their treatment of the Plaza de los Glifos King and Gómez Chávez (2004: 216) run up against these deer-serpents since they clearly do not represent a toponym, but a supernatural entity known from several cultures and languages of Mesoamerica and beyond (Helmke 2008: 161–164; Helmke and Nielsen 2009).

Outside of Mesoamerican ethnographic and linguistic data reveal the existence of similar horned serpents among several North American cultures, including the Lakota-Dakota Sioux, Creek, Cherokee, Shawnee, Fox, Ojibwa, Algonquin and Micmac (Bierhorst 1985: 203; Lankford 2007: 110–119) (Figure 10). Antecedents can be traced back to artifacts of the Mississippian mound-builder cultures (Lankford 2007), dating to a.d. 1200–1450, which depict various forms of horned serpents (Figure 9g), known in the Mississippian literature as “Horned Water Serpents” (Lankford 2007: 110–119). Such horned serpents are known as a-bich-kam (Algonquin) and che-pich-kaam (Micmac) and among the Fox Indians it is known to cause illness and swelling of the limbs or jaw (Lankford 2007: 119–120). Another type of horned serpent, the Sisiyutl, is known from the mythology of the Kwakwaka’wakw [Kwakiutl], Nuu-chah-nulth [Nootka], and other cultures of the Northwest Coast of North America (Figure 9e) (Boas 1897:371–372, 1966; Curtis 1915:279–282; Holm 1972:57; Jonaitis 1991:60–61, 90–91, 182–183, 224–225). The Sisiyutl of the Northwest Coast cultures is an aquatic double-headed snake with curled horns atop each of its heads. It is a creature of great strength and “a human who caught sight of this creature might suffer a horrible death…contact with a sisiyutl’s blood is also said to petrify human skin;” conversely “those fortunate enough to acquire its scales, spines, or blood might use it to their own advantage” (Jonaitis 1991:61). North American horned serpents were associated with a watery underworld, winds, rain, diseases, and their cures, suggesting that the association between these supernatural creatures and illness and curing was widespread. Whereas examples of horned serpents are also known among the historic Hopi and the prehistoric Anasazi and Mogollon cultures of
the American Southwest (Geertz 2010; Phillips et al. 2006:17–18; Schaafsma and Taube 2006) (Figures 9c and 10). What is truly remarkable is that the La Ventilla examples are among the earliest dated examples of deer-snakes that we know of. One earlier glyphic 'deer-snake' reference may be found on Stela 10 of Kaminaljuyu, Guatemala (G6-H6), a monument that has been dated stylistically to between 50 B.C.–A.D. 100 (Erik Boot, personal communication 2009; see also Fahren 2001:90; Parsons 1986:69–70, 120, 128). The example in question is rendered glyphically as T671.764 (Thompson 1962:271–275, 363–365), possibly read chij-ka’an ‘deer-snake.’ Here the spelling suggests that the text was rendered in proto-Ch’olan-Tzeltalan and provides an early form of the fifth day of the Tzolk’in calendar, known as Ch’ik’chan in sixteenth-century Yukatek (Schele 1989:147; Thompson 1960:75). As such, Kaminaljuyu and Teotihuacan would appear to be, based on present evidence, some of the earliest places to exhibit the notion of ‘deer-snakes,’ and presumably its associated connotations and mythology. In consequence, these instances suggest either a widespread diffusion from Mesoamerica, or that horned serpents are reflections of an ancient and deep-seated stratum of Amerindian mythologies.

Within Mesoamerica the melding of deer and snake are known from a series of languages where they appear as a compound of the words ‘deer’ and ‘snake,’ designating large snakes, especially boas (Boa constrictor) (Figure 10). The repeated occurrence of the ‘deer-snake’ compound in a variety of native American languages has been treated as a type of linguistic loan known as a calque, which is to say as a literal translation, rather than the adaptation of a loanword directly from the donor culture (Campbell et al. 1986:553, 554; Smith-Stark 1994:20, 36). In linguistics it is stipulated that the grouping of terms and the concept behind particular calques originally stem from the language of one specific culture group and by means of literal translations are adopted into other

Figure 10. Distribution of North American and Mesoamerican languages that exhibit the calque ‘deer-snake’ in their vocabulary and mythology. Archaeological cultures (Classic Maya, Mogollon, Anasazi and Mississippian Moundbuilders) are rendered in diagonal hatching. Findspots of the deer-snakes and horned serpents represented in Figure 9 are rendered alphabetically. Scale is variable in this UTM projection and the scale bar is computed in relation to the centre of the map. Based on maps in Golla et al. (2007) and Kaufman (1994). Map drawn by Christophe Helmke.
languages as loan-concepts, implying that the particular social context of the exchange is a bilingual one. The most exhaustive study of the distribution of such calques in Mesoamerica (Smith-Stark 1994) found that ‘deer-serpents’ are clearly represented in several languages (and language families), either as calques or as loanwords (Table 1). Smith-Stark (1994:20, 36, Tables 1–3) has suggested that the calque ‘deer-snake,’ in addition to those presented here in Table 1, is also represented in Mixtec (Oto-manguean), Sayultek and Olutek (Mije-Sokean), as well as Akatek and Poqomchi (Oto-manguean), Sayultek and Olutek (Mije-Sokean), as well as Akatek and Poqomchi (Mayan). We have gone back to the original sources that are cited, but have not been able to corroborate that the calque is actually attested in these languages. Otherwise the data that Smith-Stark presented may well stem from his own field notes, whereas the calque is actually attested in these languages. Otherwise the data that Smith-Stark presented may well stem from his own field notes, whereas the calque is actually attested in these languages.

For the Classic Maya (A.D. 550–850) we are fortunate to have several depictions of such chij-kāh ‘deer-snake’ in the iconography, some of which are accompanied by glyphic captions that confirm the identification (Figure 9a). The glyphic captions reveal that these deer-snakes fall under the category of supernatural creatures known as waḥy, a term derived from the widespread verb waḥy ‘to sleep, dream, transform by enchantment.’ As such these waḥy entities have generally been treated as analogous to ná: wał-li ~ <nagual> of the Aztecs in form, function and meaning (Grube and Nahm 1994; Houston and Stuart 1989; López Austin 1988; Velázquez García 2009:570–634). On the basis of additional linguistic entries for the cognates way, way and waḥy in various Lowland Maya languages it is clear that these terms also designate ‘animal companion spirits’ and make reference to ‘sorcery’ as well as ‘contagion’ and ‘infection.’ In consequence waḥy entities are now viewed as malignant ailments that can be embodied as companion spirits in dreams and wielded onto others to cause disease (Stuart 2005; Zender 2006). Elsewhere we have followed this line of reasoning and have been able to match up several of the Classic period waḥy creatures to personified diseases invoked in medical incantations recorded in Colonial Yukatek manuscripts. Based on these cross-references we have been able to indentify that centipedes and the kʾahkʾ ‘fire’ waḥy are said to cause various types of ulcers, whereas the chij ‘deer’ are related to cramps and spasms, and an assortment of birds and winged creatures bring about attacks of seizures, asthma and even death (Helmkne and Nielsen 2009).

**PERSONIFIED DISEASES, SNAKES AND RAIN DWARFS**

Having reviewed personified diseases among the Maya, let us consider some related beliefs and practices from western Mesoamerica, beginning with the well-known paper images of the present-day Nawa, Otomi, Tepewa, and Totonak (Dow 1986, 2001; Sandstrom and Sandstrom 1986, 2009) (Figure 11a–h). Among the earliest examples of such paper images are those shown streaming from the banner held by Teskalti:po:ka on one of the polychromatic altars at the Late Postclassic site of Tizatlan in Tlaxcala (see Caso 1996; Noguera 1929) (Figure 11i). The images represent a complex pantheon of spirits and other supernatural beings. Some paper images depict seed spirits, others natural phenomena, including the animating forces of disease-causing spirits (known as eleka-tl ‘wind, air’ or eleka-meʔ ‘winds’ in Nawat, and zaki in Otomi), and it would be possible to produce an inventory of these images akin to the ones covering Classic Maya waḥy creatures (e.g., Grube and Nahm 1994). Among the Nawa of Tlayacapan (Morelos, Mexico) small dolls are made to represent the aires, some of which may take the shape of bulls, coyotes, snakes, lizards, scorpions, centipedes and toads. The dolls are used in curing rites, since aires may cause a number of diseases and ailments, including earaches, headaches, rashes, pimples, cold sores, blisters, warts, eye sores, tics, twitches, inexplicable pains, anesthesias, paralysis, and palsy (Ingham 1986:162–163). Thus, Sandstrom and Sandstrom (1986:86–98) discuss and depict no less than 26 Nawa paper images of disease-causing spirits. Among the Otomi the dangerous spirits or winds, called judioς or espiritus de ataque (Sandstrom and Sandstrom 1986:142–143), that cause illness are characterized by part-human monsters with animal heads, tails and wings, and among them we find Ra Zeʾmi Ngɨ Nɨtu “Presidente del Infierno” (Figure 11a), who is the leader of all underworld spirits. Also worth mentioning are Ra Puni “Señor Nawal” (Figure 11c), a flying sorcerer with an upturned nose, possibly that of a leaf-nosed bat, sent by Ra Zeʾmi Ngɨ Nɨtu to suck the blood of newborn babies, and Mu Xandiloh “Señor del Monte” (Figure 11d) who sends disease to neglectful people (Sandstrom and Sandstrom 1986:149, 163).

Furthermore, groups of water, thunder and lightning spirits that include Tia:lok and Tepikoton figurine prominently as disease-causing beings, and are highly ambivalent in that they provide water and rain but also drown people and demand offerings.

---

**Table I. Calques for ‘deer-snake’ and loanwords of such calques attested in Mesoamerican languages**

<table>
<thead>
<tr>
<th>Language</th>
<th>Entry</th>
<th>Family</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nawat</td>
<td>masa:-ko:wa:tl</td>
<td>Nawan</td>
<td>Karttunen 1992:142; Molina 2001:50r; Siméon 1977:242 (see also Figure 9b)</td>
</tr>
<tr>
<td>Pipil</td>
<td>masa:-ka:wa:-t</td>
<td>Nawan</td>
<td>Campbell 1985:337</td>
</tr>
<tr>
<td>Wave</td>
<td>xikutu-ndiuk</td>
<td>Wavean</td>
<td>Stairs Kreger et al. 1981:182, 203</td>
</tr>
<tr>
<td>Chiapas Soke</td>
<td>nolaj:-tzan</td>
<td>Mije-Sokean</td>
<td>Harrison et al. 1981:85, 262</td>
</tr>
<tr>
<td>Chiapas Soke</td>
<td>tzij:-chan</td>
<td>Mije-Sokean</td>
<td>Engel &amp; Allhiser de Engel 1987:202, 203, 268</td>
</tr>
<tr>
<td>Chi orti</td>
<td>chij:-chan</td>
<td>Mayan</td>
<td>Wisdom 1950:694, 721, 771</td>
</tr>
<tr>
<td>Classic Maya</td>
<td>chij:-ka:hi</td>
<td>Mayan</td>
<td>Helmkne 2008:161–164 (see also Figure 9a)</td>
</tr>
<tr>
<td>Chontal Maya</td>
<td>masakub:</td>
<td>Mayan</td>
<td>Keller and Luciano 1997:18, 361, 371, 502</td>
</tr>
<tr>
<td>Chontal Maya</td>
<td>masakub:</td>
<td>Mayan</td>
<td>Keller and Luciano 1997:18, 321, 371</td>
</tr>
<tr>
<td>Tzotzil</td>
<td>chih:-chan</td>
<td>Mayan</td>
<td>Laughlin 1975:118, 123, 124, 506</td>
</tr>
<tr>
<td>Tzeldal</td>
<td><a href="">gluch:-chon</a></td>
<td>Mayan</td>
<td>Ara 1986:296, 475</td>
</tr>
</tbody>
</table>
We repeatedly find diseases or aires associated with water, rain and lightning (Dow 2001:75–76), and William Madsen (1960) provided several examples of this in his ethnographic study of the Nawa village of Tecospa (Distrito Federal, Mexico). To the Tecospans, a number of illnesses are due either to "evil winds," most often the water spirits, or to sorcerers, who can send the winds to attack people (Sandstrom 1978:8–9). Sorcerers or witches are believed to have animal helpers or na:wal such as cats, owls, tarantulas, lizards, frogs or toads in their stomachs, and "the witch can sicken his victim by sending one of these animals into his body" (Madsen 1960:131–133, 181–185). These are said to live in mountain caves and their chief is the yeye-kow:at-il 'wind-snake,' which Siméon (1977:144) glosses as 'serpiente cascabel.' The water spirits have human helpers and: "When the dwarfs need more servants they blow their breath at good people, causing them to fall ill with the disease called 'cave air'" (Madsen 1960:132), an illness also called yeyeka-kow:at-siwi-stli (a dialectal variation of efeka-kow:at-siwi-stli a 'wind-snake' ailment; see Ortiz de Montellano [1990:210–211]) and with symptoms like rheumatism, paralysis and twisted mouth (Figure 12). Given that rain, lightning, storm and wind were closely related entities in pre-Columbian central Mexican religion and world-view, as they still are, it would
seem that the concept of disease-bringing winds or malos aires encountered today is at least partly a phenomenon of Mesoamerican origin, and which later fused with similar European beliefs (Ingham 1986:157–159, 169–170; López Austin 1972).

An important bridge between the ethnographic accounts and the pre-Columbian era is the Treatise on the Heathen Superstitions written by parish priest Hernando Ruiz de Alarcón in 1629 (Andrews and Hassig 1984). Ruiz de Alarcón recorded several of the incantations and descriptions of illnesses he encountered among the Nawa of Guerrero, and from him we learn that snakes were considered the source of several ailments, thus they are said to cause both “burning” and blood-shot eyes, as well as stomach and back pains affecting the vertebral bones (Andrews and Hassig 1984:169, 185, 192). Green spiders more generally cause harm, whereas butterflies of various colours bring chest pains to children (Andrews and Hassig 1984:179–182). Birds, and more specifically quails, are described as a cause of broken bones, while comets, spiders and the Chichimec are linked to ailments such as burning itching, rashes and inflammations (Andrews and Hassig 1984:190–197). Many of these diseases and ailments described by Ruiz de Alarcón are named ko:wa:-siwi-stli — *<coaciuiztli>* — in which *<coaciuiztli>* has been translated as ‘gota, o perlêia (Molina 2001[1571]:Folio 23r; see also Andrews and Hassig 1984:178), but with a more literal meaning of ‘to be like a serpent,’ a category of diseases sent by the deities of the Tlalok complex as punishment, but also “said to derive from cold winds and winds issuing from caves” (Ortiz de Montellano 1990:156, Table 8.1; see also Ortiz de Montellano 1986:Table I for references). An extensive review of the Nawatl literature reveals that the suffix –siwi — *<ciui>* imbues the preceding noun, or compound, with verbal qualities, as recorded by the Nawatl grammarian Antonio del Rincón (1885[1595]:42–43, Folio 39v)) (Una Canger, personal communication 2009). The most abundant examples of such ailments are documented in the Codex Florentino (Sahagún 1979), where just some examples include *<ix–ciutili–ciutili>* lit. ‘eye-star’ for ‘films over the eyes’ (Book X:144), *<ix–tamaconli–ciutili>* lit. ‘eye-toad’ for ‘crab lice under the eyelids’ (Books I:39, 73; X:144), *<ix–tezcaiciuti>* lit. ‘eye-mirror’ for ‘blindness from cataracts’ (Books I:39, 73; X:144), *<tochi–ciutili>* ‘rabbit’ for ‘skin blemish’ (Book X: 137), *<coca–ciutili>* ‘snake’ for ‘gout, atrophy’ (Books X:90; XI: 69, 76, 88, 92), or *<tozca–miuaoa–ciutili>* lit. ‘throat-maize flower’ for ‘sore throat’ (Books I:17, 71; IV:128). Tracing such Nawa concepts of illness back to the Conquest and Early Colonial periods, the Franciscan friar Bernardino de Sahagún and his Nawa informants also relate that “he who was palsied, cramped, stiffened, paralyzed” would pay tribute to and make offerings to Tlalok and his helpers at specific mountains associated with these deities (Ortiz de Montellano 1990:158–159, 163–164; Sahagún 1950–1982:147). An important aspect of the Aztec understanding of disease is that several of the major deities not only cured diseases, but also inflicted them. For example, Durán (1971:135) refers to ketzal-kow:i–ti: ~ *<quetzaloaot>* as an “advocate for tumors, eye diseases, colds, and coughing,” while other sources relate that Xipe Totek would afflict people with skin diseases such as pimples, festering sores, skin infections and eye diseases (Schedel 1968:26–28; see also López Austin 1974:216–217, Ortiz de Montellano 1990:131–132; Romero López 2006:156–158). In general, researchers have failed to emphasize these negative aspects and contradictory, or rather supplementary, characteristics of Mesoamerican deities and supernatural beings (see discussion in Sandstrom and Sandstrom [2009]), and as shown above, the Aztec rain god Tlaloc, and the closely related winds, were, and continue to be, associated with a number of illnesses.

In sum, the evidence from central Mexico shows that religious specialists had the knowledge and power to both cure patients and afflict enemies with illnesses (Dow 1986:62; Madsen 1960:201), abilities they shared with, and learned from, the gods. The paper figures, representing the personified ‘essences,’ illustrate how the illnesses often are, and most probably were, perceived as humanoid or animal-like beings. The brief comparison with data from the Classic and colonial Maya strongly suggest the existence of a common Mesoamerican concept of personified or animated illnesses that could be manipulated by religious specialists within differing social strata with both malevolent and benevolent intentions.

**WATER SPIRITS AND DEER-SERPENTS: REINTERPRETING THE PLAZA DE LOS GLIFOS**

With the observations presented above in mind, we return to the glyphic signs from the Plaza de los Glifos at La Ventilla (Figure 13). We thus offer an alternative interpretation of the glyphic text bearing on the previous discussion of disease-causing spirits and prominent among them, the Rain or Storm God and his helpers. Before discussing individual signs and their connotations we need to comment on the reading order of the text and some internal patterning. As has been mentioned above all figurative glyptic elements, or glyphs depicting head-variants (to borrow a term from Maya epigraphy), face east and have their bases to the north (Figure 14). This indicates that the glyphs are arranged for readers standing at the north, looking south. It is also a well established practice for logographic writing systems that the reading order runs counter to the direction in which figurative signs face. In the case of the Plaza de los Glifos this results in a dominant reading order from left to right (east to west), as is especially clear for the linear series of glyphs at the northern end of the courtyard (Figure 14, Glyphs 1–18). This feature implies that the northern structure somehow had a dominant role in the function of the courtyard and its glyphic text. The one exception entails Glyph 28 that represents a partly eroded Tlalok head, which faces south, having its base to the east (Ian Robertson, personal communication 2010). Whether this has a bearing on the overall reading order, or somehow semantically qualifies that particular glyph remains unclear, however.
Based on the dominant reading order the first sign in each of the major linear sequences depicts the head of a *Tla:lok*-like deity (Figure 14, Glyphs 1, 31, 40, and 28). The internal patterning that can be observed for the glyphs in the northern linear sequence consists of sets of two or three, with figurative or head-variant glyphs typically occurring in first position and more geometric signs or glyphs depicting animals occupying secondary positions within sets. As such this ordering is strikingly similar to that found in the almanac pages of the later Aztec *Codex Borbonicus* (1974), where the omens and auguries are represented as various types of birds or butterflies hovering besides one of the thirteen deities to which they pertain (Figure 15b, d, and f). In the analogous pages of the *Codex Tonalamatl Aubin* (1901), the deities are abridged to head-variants, which are belched from the beaks of winged creatures (Figure 15e), a conflation that underscores the close relation between the divinities and their omens as well as the fluidity of the writing system. The birds of omen depicted in the *Codex Borbonicus* (1974:3-20) include differently coloured parrots and parakeets, turkeys, scarlet macaws, horned owls, and hummingbirds with distinctive narrow, pointed beaks. Similarly in the Plaza de los Glifos, the glyphs depicting birds all occur in secondary positions suggesting that they function as modifiers to, or provide attributes for, the preceding glyph (Figure 15a and 15c). In particular the first hummingbird encountered in the text (Glyph 12) would serve to qualify the deer-serpent glyph (Glyph 11) that precedes it; as would the nested bird (Glyph 16) to the preceding anthropomorphic head-variant (Glyph 15), with the pattern repeated also for Glyphs 19 and 20 (Figure 14). Finally, the geometric Glyph 34, which some have interpreted to represent a water-lily (Ian Robertson, personal communication 2010), is here interpreted as depicting a butterfly, since similar examples are found in the iconography of the Aztec and Mixtec (see Taube 2000b:Figures 10.11f, 10.20d, 10.20g, and 10.30b).

The reading order for the grouping of glyphs at the southern end of the courtyard is more difficult to ascertain since it is not organized into a linear sequence, but in three columns of three glyphs each (Figure 16a). However, bearing in mind that the reading order is from left to right and that head-variants tend to occur first, followed by signs that appear to serve as qualifiers, the reading order apparently entails beginning with the first column and reading it vertically from top to bottom (Glyphs 31, 30, and 29). The second column is presented precisely in reverse to the first, with the butterfly at the top of the column (Glyph 34) and *Tla:lok* entities at the bottom. The third column in turn matches
the configuration of other sequences with a Tla:lok at the top (Glyph 37) and a hummingbird in second position (Glyph 36). Based on this arrangement the only resolution conforming to the internal patterning would be a boustrophedon ('as the ox ploughs') reading order starting with the left-most column read vertically from top to bottom, then reading the second column at the right in reverse order and then ending with the third and right-most column in the same sequence as the first (Figure 16b, Glyphs 31, 30, 29, 32, 33, 34, 37, 36, and 35). Typically boustrophedon reading orders are known from the early stratum of script development before a standard reading order has gained prominence, and considering that the La Ventilla glyphs are among the earliest examples of Teotihuacano writing, this interpretation meshes with the available data. Boustrophedon reading orders in Mesoamerican scripts are

Figure 14. Diagrammatic plan of the Plaza de los Glifos oriented according to dominant reading order, preserving the relative size and disposition of the glyphs. Question marks indicate the location of possible glyphs that are eroded beyond recognition. Drawings by Rubén Cabrera Castro and Christophe Helmke.
known from Mixtec genealogical codices as well as Aztec annals and as such are restricted to writing systems to the west of the Isthmus of Tehuantepec (Boone 2000:61–62). The probable example of boustrophedon in the Plaza de los Glifos thus conforms also to the geographic distribution of this script feature in Mesoamerica. The Aztec Codex Boturini (Johansson K. 2007), provides clear examples of sequences of numbered year signs that are rendered in boustrophedon (pages 6, 7, 8, 10, 13–14, 16, and 19) with pages 13–14 providing the same exact reading order as that posited for the Plaza de los Glifos (see Figure 16c).

As for the inventory of signs in the Conjunto de los Glifos, it includes the heads of no less than seven Tla:lok-like Rain or Storm Gods (Figure 6, Glyphs 1, 30, 31, 32, 33, 37, 40, and possibly 28), identifiable as the prototype of the later Tla:lok deity of central Mexico (Langley 1992:248–259; Pasztor 1974; von Winning 1987). Each Tla:lok head is further distinguished by specific elements, including for example what may be a branch or frond (Glyph 1), a human leg with flames attached ( Glyph 33), an elaborated headdress (possibly a variant of the Mexican Year Sign headdress with a distinctive heron feather) (Glyph 32), a dotted circle, possibly for the coefficient ‘one’ ( Glyph 30) (Taube 2008:4), while another Tla:lok head is combined with what appears to be an unlit torch ( Glyph 31), and yet another exhibits a single flame at his forehead ( Glyph 40). The variation among these Tla:lok entities, or rain and water deities, brings the later Nawa traditions to mind, and we suggest that the glyphs refer to different categories or aspects of Teotihuacan water spirits (on par with the Aztec awatoton and e’ekame? entities). It stands to reason that the diseases or symptoms that they cause would be enumerated in the secondary qualifying glyphs.

Furthermore, four avian figures must be emphasized some of which resemble hummingbirds (Figure 6, Glyphs 12, 16, 20, and 36), and at least four carnivorous creatures (Glyphs 7, 14, 17, and 42). The hummingbirds all appear to represent the disease attributes of particular entities and as such would relate to medical practices and beliefs similar to those documented among the Aztecs where the small birds were said to cause sterility, but could cure pustules and epilepsies (Ortiz de Montellano 1990:143, 172). Hugo Nutini and John Roberts (1993:42) also note that among the Nawa of Tlaxcala hummingbirds, as well as toads and snakes, possess “inherent weather-controlling properties.” Of the carnivores, too, are apparently entities in their own right ( Glyphs 7 and 17), each associated with either flames or depicted devouring a heart. The remaining carnivores appear to serve as attributes with Glyph 14 possibly depicting a spotted feline serving to qualify the entity referred to by the aged human head ( Glyph 13), whereas the carnivore with bleeding human heart ( Glyph 42) would qualify the preceding fire-Tla:lok ( Glyph 40). These carnivores could equally well refer to illnesses, and the presence of flames in at least four glyptic compounds ( Glyphs 7, 33, 40, and 41), is reminiscent of the Maya ulcer ailmens. H.B. Nicholson (1971:442) lists a number of Nawatl names for sorcerers, among them te-ko-ch-tla:ski (‘one who is the sleep-thrower’), te-ko-tz-k’a:ni (‘one who is the calf [of leg]-eater’), te-yo-lo-lok-k’a:ni (‘one who is the heart-eater’), te-tle-pa-ketski (‘one who is in the fire stands’), te-e-wilo-tliah-ti (‘one who is the skin-burner’) and mo-metz-kopi:nki (‘who self-leg-disarticulator’). The rather gruesome titles clearly refer back to the malevolent actions performed and illnesses and suffering they result in, and some of them may correspond to the above-mentioned glyphs from La Ventilla.

Most of the qualifying signs, such as the two incense pouches ( Glyphs 4 and 5), the agave thorn for bloodletting ( Glyph 6), and the possible calendrical signs ( Glyphs 22 and 35) would also fit into an overall interpretation of the floor as related to curing and cleansing rituals. Thus, Aztec calendar priests, or to:nal-po:wke (lit. ‘sun-counters’ or ‘diviners’), also employed their calendrical knowledge in order to “diagnose illnesses and develop cures” and various types of sacrifices often form part of curing ceremonies (Boone 2005:15–17; 2007:85, 110–113).

Most striking, however, are the two aforementioned serpents with deer antlers ( Glyphs 9 and 11), which stand as entities in their own right each qualified by an unidentified object ( Glyph 17) and the possible calendrical signs ( Glyphs 22 and 35) would also fit into an overall interpretation of the floor as related to curing and cleansing rituals. Thus, Aztec calendar priests, or to:nal-po:wke (lit. ‘sun-counters’ or ‘diviners’), also employed their calendrical knowledge in order to “diagnose illnesses and develop cures” and various types of sacrifices often form part of curing ceremonies (Boone 2005:15–17; 2007:85, 110–113).
and even death” (cited in Ingham 1986:112; Sahagún 1950–1982:XI:79–80). In her study of Ioan Bapista’s *Confesionario en lengua mexicana y castellana* (1599), Berenice Alcántara Rojas shows how the *masakosawatil* merged with popular European beliefs in dragons. In Bapista’s text the ‘deer-snake’ is a devilish creature living in *Mik-tla:n* ‘death-place’ which, together with animals such as serpents, toads and foxes, cause illnesses (Alcántara Rojas 2005:389–391). Alcántara Rojas also provides examples of much more positive aspects of the *<mazacuata>* among the modern Nawa of Puebla, where it is seen as a sign of abundance and rich harvests.

The evidence from both the Maya and Aztec strongly suggest that the two deer-serpents of *La Ventilla* were part of a pan-Mesoamerican belief system, and thus associated with the concept of personified or animate diseases. The *Tla:lok* entities or water spirits, as well as several other signs, further support the hypothesis that a significant number of the *La Ventilla* glyphs are related to personified disease-causing agents, the illnesses they cause, and to curing rituals. Exactly how the floor was used is impossible to say at the moment without additional data. It may, however, have functioned as a more permanent version of the systematic arrangements, according to which the spirit paper figures are laid out, on and around altars, by present-day Nawa and Otomi *curanderos* to attract the spirits (Dow 1986; Galinier 2004:67–83; Sandstrom and Sandstrom 1986:40, 104, Plates 3 and 11) (Figure 17). Thus, the images are described as: “powerful magnets capable of attracting spirits.” Once attracted by the image, the spirits can be presented with offerings and sacrifices “as a way of inducing them to cooperate,” or the paper images can be destroyed in order to “remove disease-causing *ejecatl* from a patient’s body or surroundings” (Sandstrom and Sandstrom 1986:104–105).

Among the Tlapanec of Guerrero, items such as pine needles and a type of grass known as *sakate* are placed on an altar or the ground itself in specific rows and precise patterns in healing rituals addressed to the earth lord (see Boone 2007:162). This dovetails nicely with the observation that the central altar in the *Plaza de los Glifos* was an area in which lit censers were placed and goes a long way to underlining the ritual nature of the plaza.

Finally, we would like to mention the human figure painted on the floor at the rear of a small lateral room, to the east of to the northern structure of the *Plaza de los Glifos* (Figure 18). The figure conforms exactly to the orientation of the glyphs, with feet to the north and head to the south; it also shares a very similar red coloration and appears to form part of the same occupation level (Cabrera Castro and Padilla 1997:401). The orientation of the figure, its coloration and its presence within a room of the northern structure all suggest that this figure may have formed an integral part of the functions of the courtyard and may serve to illustrate some of the activities that took place here. The figure has been interpreted as a representation of the Aztec canine deity Xolotl (Cabrera Castro 2000:214–215; Cabrera Castro and Padilla 1997:401) and as evidence of a phallic cult at Teotihuacan (Ruiz Aguilar 2007:72–82). A male figure is shown amidst flowers with a prominent erect penis, an extremely rare motif in Teotihuacan iconography, and body fluid (blood, semen, or urine) is emanating and dripping from the member. Whether a bloodletting is represented is difficult to determine because of damage of the left side of the painting, but the figure does not seem to hold a bloodletting instrument or incense pouch in his outstretched right hand. Instead a stream marked by stylized eyes connects the right hand to the figure’s penis, although the
The direction of flow remains open to discussion. It is also noteworthy that the stream connects to a drainage hole at floor-level that perforates the wall. One stream of fluid clearly drips towards the flowers on the ground and could well suggest an offering linked with fertility and abundance, although the flowers may alternatively have served as a complex symbol or metaphor signalling a sacred environment, rather than specifically referring to fecundity and growth (Hays-Gilpin and Hill 1999; Taube 2006). The flowers reappear attached to the speech scroll emanating from the object behind him. The latter has previously been seen as a strap-handle olla or jar, but is also highly reminiscent of the tobacco gourds carried on the back of Aztec priests (Miller and Taube 1993: 136–137; see also Codex Borbonicus 1974:21). The elaborate and unique headdress includes a set of goggles and two rosettes with a cone-shaped element similar to Late Postclassic Aztec headdresses worn by deities, impersonators, and priests (e.g., Codex Borbonicus 1974:10, 12, 30, and 34). Cabrera Castro (2000:214) described the face of the person as that of a canine, but although the person displays

Figure 17. Curandero pattern according to which paper figures are laid out (adapted from Sandstrom and Sandstrom 1986:40).
some clearly distinguishable teeth in the lower jaw, we find this insufficient to describe him as canine and hence identify him as an early form of Xolotl. In sum, the action, headdress and paraphernalia indicate that this is a priestly figure, and the unusual display of genitalia is in keeping with the restricted access and private context of the room in which it was painted. Considering the pairing of the imagery with the drainage hole, one is left to wonder if this structural feature somehow involved libation rituals associated with the iconography. If the imagery is an indication of the types of activities that took place here it is possible that the room served as a secluded retreat for the ritual specialists responsible for the ceremonies taking place in the Plaza de los Glifos.

CONCLUSION

We have discussed concepts and representations of disease-causing spirits in pre-Columbian Mesoamerica, and our comparisons with post-Columbian traditions reveal interesting similarities and continuities at many levels. We have attempted to show how there was, and still is, a widespread belief in personified and animate illnesses that often take the form of strange spirit beings or composite animals that are either poisonous or associated with the underworld. A point in our research has been to emphasize the continuity as well as the antiquity of the ideas relating to personified diseases, and with the new understanding of the ‘deer-snakes’ from La Ventilla in Early Classic Teotihuacan we have provided further evidence that these beings are an integral element of Mesoamerican world-view and cosmology and they probably have been since the earliest Mesoamerican civilizations.

The intimate relationship between supernatural beings and spirits (both malevolent and benevolent) and religious specialists is exemplified in William Madsen’s study from Tecospa, where the rain dwarfs also play an important role in choosing future curers. Thus, one of Madsen’s informants made a drawing of three rain dwarfs blowing upon and whipping an individual destined to become a curer (Madsen 1960:132) (Figure 12). Such curers, specialized in curing ‘cave airs,’ “die twice a year, and their spirits go to a rain-dwarf cave to receive instructions for curing [...] remaining dead for half an hour or so while their spirit attend the general meeting [conducted by the Wind Snake] of healers and rain dwarfs” (Madsen 1960:183). Close encounters with creatures of the otherworld such as these, or with the decidedly malevolent cave-dwelling masa:ko:wa:tl, and opening the “portals” to the underworld constituted a violation of the normal cosmological order and contact with the beings of this realm was no doubt considered a dangerous affair in pre-Columbian times as it is today. This explains why mentions of such spirit beings are mostly private, diminutive, and apparently reserved for rituals and ceremonies primarily at family, lineage, or compound level. Thus, references to Maya wahy and other spirits, in glyphic form, in iconography, or in Latin letters in colonial documents, seem to be reserved to the eyes of a select few or were destroyed after use, as in the case of the Nawa and Otomi paper images.

The relatively secluded location of the Plaza de los Glifos, situated in an enclosed residential compound, would no doubt be an ideal space in terms of dealing with disease-causing spirits and curing. However, Teotihuacan abounds with hundreds of structurally similar compound plazas or patios which show no traces of floors painted with glyphs. This suggest that the Plaza de los Glifos of La Ventilla, and possibly some of the adjoining structures as well, was home to or was regularly used by curers or healers. Aztec physicians, healers, and sages (known as titi:sii ‘healers’ and tlamatinimel ‘wise-persons, sages’) are known to have been organized in special neighbourhoods (Boone 2007:26–27; Viesca Treviño 2001:48), and we find it plausible that the Plaza de los Glifos and nearby buildings served a similar function in ancient Teotihuacan society.

Further research and archaeological excavations may clarify whether the inhabitants of this section of La Ventilla were full-time ritual practitioners, or whether they were involved in other economic
RESUMEN

En este artículo se presenta una reinterpretación del grupo de glifos teotihuacanos que fueron pintados en la Plaza de los Glifos del complejo residencial del barrio de La Ventilla (fechados alrededor de 300–450 d.C.) que se encuentra en la antigua metrópolis de Teotihuacan, en el centro de México. En el presente trabajo, ofrecemos una breve reseña del estado actual del conocimiento que se tiene sobre el sistema de escritura teotihuacano, con atención especial al debate sobre la lengua, o las lenguas, que se emplearon en Teotihuacan. Aunque hay indicios que señalan que lenguas relacionadas al totonako, mije-soke y nawaí estarían relacionados con entidades que causan enfermedades y con rituales de curación. Para nuestra propuesta, es crucial la identificación de dos representantes de glifos que están relacionados con enfermedades y con rituales de curación y que representan topónimos y títulos. Llegamos a la conclusión de que la mayoría de los 42 glifos no parecen referirse a los glifos de La Ventilla sugeridas por Timothy King y Sergio Gómez Chávez en 2004, que sugieren que los glifos están escritos en una forma del [pre]proto-nawatl-pochuteko y que representan topónimos y títulos. Llegamos a la conclusión de que la mayoría de los 42 glifos no parecen referirse a topónimos. Dejando a un lado la cuestión del desciframiento, ofrecemos una serie de interpretaciones alternas proponiendo que los signos glíficos están relacionados con entidades que causan enfermedades y con rituales de curación. Para nuestra propuesta, es crucial la identificación de dos representaciones glíficas de una ‘serpiente-venado,’ criatura sobrenatural estrechamente asociada con enfermedades y conocida en muchas culturas y lenguas mesoamericanas y del Norte de América, antes y después de la conquista. Entre las culturas del Norte de América estas serpientes se conocen más a menudo como ‘serpientes con cuernos,’ pero se comparan estrechamente con la ‘serpiente-venado’ de Mesoamérica. También discutimos conceptos contemporáneos y coloniales así como prácticas relativas a deidades y su papel en la enfermedad y el curanderismo, que ofrecen medios de interpretación a otros glifos de La Ventilla. Por lo tanto, los siete ejemplos de cabezas, semejantes a la divinidad Tla:lok, que figuran prominientemente se comparan con registros históricos y etnográficos que revelan cómo deidades y espíritus del agua y de la lluvia fueron, y continúan siendo, a menudo concebidos no sólo como entidades benevolentes sino también potencialmente muy peligrosas y capaces de someter a los seres humanos a una gran variedad de enfermedades. Una comparación con las prácticas actuales de los nawa y otoño también proporcionan un marco posible para entender la posición inusual de los glifos, ya que estos grupos emplean figuras de papel que representan espíritus patógenos colocándolas en el suelo, a veces en alturas o cerca de ellos, durante rituales de curanderismo. También realizamos comparaciones con códices aztecas donde se enlistan augurios para proponer un orden de lectura (conocido como bustrofeden) de secciones específicas del piso glífico. Además, un examen cuidadoso del piso glífico, de los glifos individuales y del contexto arqueológico, indica que los glifos fueron repintados por lo menos una vez y que el patrón cuadriculado de líneas rojas no formaba parte del diseño original. Finalmente, concluimos que la Plaza de los Glifos y algunas de las estructuras circundantes pueden haber sido el hogar de curanderos de Teotihuacan, o bien un espacio utilizado regularmente por ellos.

ACKNOWLEDGMENTS

We would like to extend our gratitude to Mexico’s Instituto Nacional de Antropología e Historia, and to the members of the Consejo de Arqueología, in particular, for issuing a research permit [P.A. 14/09, 401-1-666] allowing us to conduct our documentation project at Teotihuacan in 2009. In particular we would like to thank Arqullo, Roberto García Moll, Lic. Alfonso de María y Campos Castello, Arqullo, Salvador Guillm Arroyo, Lic. María del Perpetuo Socorro Villareal Escárbaga, and Arqullo. Alejandro Sarabia González. For letters of introduction, assistance and encouragement we thank her Excellency Martha Bárcena Coqué, Ambassador of Mexico to Denmark. In matters of correspondence and accounting of project finances we also thank Arqullo. Pablo Sereno, Patricia Ápaez Legorreta, Dolores Juárez, as well as Lykke Ditlafsen and Jane Engeldal Poulsen. Many heartfelt thanks to Rubén Cabrera Castro for his kind assistance and for granting us access to the Conjunto de los Glifos to document the glyphs. Of the photographs that we have secured, those included here are presented with the courtesy of INAH. This project would not have been possible without funding from the Research Council for the Humanities of the Danish Ministry of Science Technology and Innovation [Case no. 273-08-0218], as well as funds from the Institute of Cross-Cultural and Regional Studies, University of Copenhagen. Whilst in the field we greatly benefited from the boundless help, hospitality and friendship of Verónica A. Vázquez López and Montserrat Salinas Rodrigo. We are thankful for stimulating discussions, editorial assistance and the keen insights of Erik Boot, Rubén Cabrera Castro, Una Canger, Casper Jacobsen, Harri Kettunen, Natalia Moragas Segura, Carlos Pallán Gayol, Alan R. Sandstrom, Karl Taube, Soren Wichmann, and Marc Zender. Since first submitting this article for publication we have had the opportunity to discuss our proposals with Sergio Gómez Chávez and are pleased to exchange our ideas on the language(s) and writing of Teotihuacan. We are particularly grateful for the thorough and constructive edits of our reviewers James C. Langley, Esther Pasztor and Ian Robertson. Despite the valued insights of our colleagues and reviewers, we retain the responsibility for all interpretative shortcomings.

REFERENCES

Alcántara Rojas, Berenice
Andrews, J. Richard, and Ross Hassig
Ara, Fray Domingo de
1986 Vocabulario de la lengua tzeltal según el orden de Copanabastla. Fuentes para el Estudio de la Cultura Maya, No. 4. Instituto de Investigaciones Filológicas, Centro de Estudios Mayas, Universidad Nacional Autónoma de México, Mexico City.

Aschmann, Herman Pedro
1973a Castellano – Totonaco Totonaco – Castellano: Dialecto de la Sierra. Serie de vocabularios y diccionarios indígenas Mariano Silva y Aceves, No. 7. Instituto Lingüístico de Verano, Mexico City.

Aschmann, Pedro
1950 Vocabulario de la lengua Totonaca. Coordinación Alfabética del Totonaco de la Sierra de Veracruz y de Puebla, Departamento de Lingüística Aplicada, Instituto Lingüístico de Verano, Mexico City.
Engel, Ralph, and Mary Allhiser de Engel
1987 *Diccionario Zoque de Francisco León*. Serie de vocabularios y diccionarios indígenas Mariano Silva y Aceves, No. 30. Instituto Lingüístico de Verano, Mexico City.

Fahsen, Federico

Galiner, Jacques

Geertz, Armin W.

Golla, Victor, Ives Goddard, Lyle Campbell, Marianne Mithun, and Nikolai, and Werner Nahm

Grube, Nikolai, and Werner Nahm

Harrison, Roy, Margaret Harrison, and Cástulo García H.

Hays-Gilpin, Kelley, and Jane H. Hill

Helmke, Christophe

Ingham, John M.

Johnson, Patrick

Jonaitis, Aldona (editor)

Karttunen, Frances

Kaufman, Terrence

Kaufman, Terrence, and John Justeson
2001 *Epi-Olmec Hieroglyphic Writing and Texts*. In *Notebook for the XXVIh Maya Hieroglyphic Forum at Texas*, pp. 1–101. Department of Art and Art History, University of Texas at Austin, Austin.

Kaufman, Terrence, and John Justeson

King, Timothy, and Sergio Gómez Chávez

Lastra, Alfonso

Lacadena, Alfonso

Lacadena, Alfonso, and Soren Wichmann
2002 The Distribution of Lowland Maya Languages in the Classic Period. In *La organización social entre los mayas: Memoria de la Tercera Mesa Redonda de Palenque, Vol. II*, edited by Vera Tiesler, Rafael Cobos, and Merle Greene Robertson, pp. 275–319. Instituto Nacional de Antropología e Historia and the Universidad Autónoma de Yucatán, Mexico City and Merida.

Langley, James C.


Reinterpreting the Plaza de los Glifos, La Ventilla, Teotihuacan

Lankford, George E.

Laughlin, Robert M.

López Austin, Alfredo

López Austin, Alfredo

López Austin, Alfredo

López Austin, Alfredo

López Austin, Alfredo

Madsen, William

Madsen, William

Macri, Martha J.

Macri, Martha J., and Matthew G. Looper

Madsen, William


Méndez, Sigvald

Milan, Clara

Miller, Arthur G.

Miller, Mary, and Karl Taube

Miller, Wick R.
1987 Computerized Data Base for Uto-Aztecan Cognate Sets. Manuscript on file at the Department of American Indian Languages and Cultures, University of Copenhagen, Copenhagen.

Millon, Clara

Monzón, Noemí Castillo Tejero

Morley, Anthony

Ortiz de Montellano, Bernard

Ortiz de Montellano, Bernard

Padilla, Rómán, and Julio Ruiz Záhiga

Pallán Gayol, Carlos, and Lucero Meléndez Guadarrama

Phillips Jr., David A., Christine S. Vanpool, and Todd L. Vanpool

Press, Margaret L.

Reid, Aileen, and Ruth G. Bishop

Reilly, F. Kent III

Romero López, Laura Elena

Ruiz Aguilar, José Manuel

Sahagún, Bernardino de

Sandstrom, Alan R.

Sandstrom, Alan R., and Pamela E. Sandstrom

Schaafsma, Polly, and Karl A. Taube
2000 Sorcery and Counter-Sorcery among the Nahua of Northern Veracruz, Mexico. Manuscript on file at Indiana University–Purdue University, Fort Wayne.

Schele, Linda

Schele, Linda
1968 Medicine in Mexico: From Aztec Herbs to Betatrons. University of Texas Press, Austin.

Simón, Rémi
1977 Diccionario de la lengua nahua o mexicana. Siglo Veintiuno, Mexico City.

Smith-Stark, Thomas C.

Taube, Karl

Urcid, Javier

Valdez Bubnova, Tatiana

Velasquez Garcia, Erik
2009 Los vasos de la entidad política de ’Ik’: una aproximación histórico-artística; Estudio sobre las entidades anímicas y el lenguaje gestual y corporal en el arte maya clásico. Unpublished Ph.D. dissertation, Facultad de Filosofía y Letras, Universidad Nacional Autónoma de México, Mexico City.

Viesca Treviño, Carlos

Vogt, Evan Z.

von Winning, Hasso

Wald, Robert F.

Wichmann, Søren


Wisdom, Charles
1950 Ch'orti’ Dictionary. Transcribed and transliterated by Brian Stross. Manuscript on file at the Department of Anthropology, University of Texas, Austin.

Zender, Marc