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Edited by Vera Tiesler

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THE MULTIETHNIC POPULATION OF A TEOTIHUACAN NEIGHBORHOOD CENTER

Bioarchaeological, Archaeometric, and Ancient DNA Analyses

Linda R. Manzanilla-Naim

Throughout the ancient world, cities are places of specialization, interaction, and scenarios of a new way of life not found in villages or towns. In particular, large urban development are rare, and constitute places of important economic and political power, as well as symbolic importance. We may cite Rome, Constantinople, Alexandria, and, of course, Teotihuacan and Tenochtitlan in Mexico.

In Central Mexico, Teotihuacan is the first large city, which constructed itself as one of the archetypic *Tollan* (Manzanilla 1997). Tollan-Teotihuacan attracted people from various regions of Mesoamerica, a fact replicated by the later Tollans: Tollan-Chollolan or Cholula and Tollan-Xicocotitlan or Tula. And this heterogeneity of a population of *ca.* 125,000 persons would become one of the hallmarks of this exceptional city.

Teotihuacan covered a surface of *ca.* 20 km², and one of its main characteristics, brilliand delineated by René Millon (1973), was its orthogonal urban grid; the city may have be divided in four districts or sectors (Manzanilla 2009, 2017a) that housed an inner ring of 22 neighborhoods (Froese et al. 2014), and an outer ring of three main ethnic peripher neighborhoods.

This settlement was the capital of a peculiar type of state, which Manzanilla has called a octopus type" (Manzanilla 2017a), in which the city is the coordination head, and the all sites set in corridors, the tentacles. The huge urban site was surrounded by rural settlement throughout the Basin of Mexico, in an anomalous settlement pattern (Sanders et al. 1979).

The metropolis of the Tlamimilolpa (AD 200–350) and Xolalpan (AD 350–550/570) phase had a strict urban grid oriented to 15 degrees northeast, and it was possibly divided into four districts, from which Manzanilla proposes that the co-rulers of Teotihuacan came from (Manznilla 2009, 2017a). As has been said before, two different rings may be detected in this city a outer ring where the "ethnic neighborhoods" were located (Manzanilla 2012a:57); the Oaxa Barrio or Tlailotlacan (Ortega-Cabrera 2014; Spence 1988, 1992, 1996; Rattray 1993) occpied the West Avenue, and constituted the largest minority in the metropolis; the Merchan

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different sectors of the Gulf Co choacan in West Mexico (Gómez western portion of the city.

These ethnic neighborhoods we ferent from those of the *Teotihu* under altars. People from Oaxa extended position, together with the *Michoacanos* excavated so or partial burials (Manzanilla a

An Interdisciplinary

interdisciplinary project in th amilla 2006, 2009, 2011, 2012a, me southeastern sector, will serve instered multi-specialized migrant messes for the intermediate elite Through analyses that involved pal mee element, ancient DNA, and if the craftsmen were traced to th cossibly Chiapas, and most of the ed.] 2017). Also at Teopancazco. alochthonous objects and raw ma mly by the famous mural painting mabs, crocodiles (Rodríguez Gali doths, volcanic glass to manufact Feracruz, particularly in Burials 2 underline this relation to the ocea

Other projects addressing structure Feathered Serpent, as well a we done isotopic analyses on the hite et al. 2002, 2004a, 2004b local *Teotihuacanos*.

During 13 field seasons (199 inter of Teopancazco extensive bring the following archaeolog 550/570), and Metepec f the other (Manzanilla [ed.] 2 pecialized craft-production (gar borkers, as well as possible medi

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The Multiethnic Population

Chartray 1987, 1988, 1989, 1990) was located to the east, and housed merchants from of different sectors of the Gulf Coast (Price et al. 2000); and a small group of people from inchoacan in West Mexico (Gómez-Chávez 1998) that was based in Structure 19 in El Cuartel, the western portion of the city.

These ethnic neighborhoods were first detected due to their particular funerary practices freent from those of the *Teotihuacanos*, who set down their dead in pits in a flexed position ander altars. People from Oaxaca built tombs with chambers, and the bodies were set in extended position, together with funerary urns, and occasionally with stelae with Zapotec tors; the *Michoacanos* excavated shafts for multiple burials; the *Veracruzanos* preferred secondor partial burials (Manzanilla and Serrano 1999).

An Interdisciplinary Approach to a Multiethnic Neighborhood Center of Teotihuacan

interdisciplinary project in the multiethnic neighborhood center of Teopancazco (Manamilla 2006, 2009, 2011, 2012a, 2012b, 2017a; Manzanilla [ed.] 2012, 2017, 2018, 2020) in be southeastern sector, will serve as an example of multiethnic "house" organizations, which instant multi-specialized migrant craftsmen devoted to the confection of garments and headfor the intermediate elite that headed the neighborhood center (Manzanilla 2007b). Through analyses that involved paleopathologies, activity markers, stable and strontium isotopes, mee element, ancient DNA, and forensics, this diverse population was investigated; the origins The craftsmen were traced to the Basin of Mexico, Puebla, Tlaxcala, Hidalgo, Veracruz, and messibly Chiapas, and most of them experienced nutritional stress in their infancy (Manzanilla 2017). Also at Teopancazco, local and foreign funerary practices were located, as well as Sochthonous objects and raw materials. The symbolic relation to the ocean is established not by the famous mural painting found at the site (De la Fuente 1996), but by importing fish, crocodiles (Rodríguez Galicia 2010; Rodríguez Galicia and Valadez Azúa 2013), cotton wolcanic glass to manufacture the stucco floors (Barca et al. 2013), and craftsmen from Formuz, particularly in Burials 28F, 39, 60D, 71, 72, 65, and 91. Even sea sand was brought to milerline this relation to the ocean (Manzanilla [ed.] 2012, 2018).

Other projects addressing structures such as the Pyramid of the Moon and the Pyramid of Feathered Serpent, as well as neighborhoods such as Tlajinga 33 and La Ventilla 92–94, e done isotopic analyses on the burials found there (Arnauld-Salas 2014; Spence et al. 2004; The et al. 2002, 2004a, 2004b, 2007). Migrants have been detected in these studies, as well coll *Teotihuacanos*.

During 13 field seasons (1997–2005), Linda R. Manzanilla excavated the neighborhood of Teopancazco extensively and exposed over 1,600 m² of its surface. It was occupied the following archaeological phases: Miccaotli–Tlamimilolpa (AD 150–350), Xolalpan 50–550/570), and Metepec (AD 550/570–650), with clear construction levels one on top other (Manzanilla [ed.] 2012, 2018). It displayed functional sectors devoted to ritual, caft-production (garment-making), military personnel, and food preparation for the sectors (see Figure 3.2.1).

The ritual sector of the Xolalpan phase was set in the center of the compound, including the plaza with the altar and the large temple to the east. During the former Tlamimilolpa there was another ritual sector to the northeast (Manzanilla [ed.] 2012, 2018), which was realized" at the end of the Tlamimilolpa period (*ca.* AD 350), by "decapitating" the temple B-261) (Manzanilla [ed.] 2012), and setting nine decapitated individuals on top of it, and 20 in pits in front of it, under a floor.







The administrative sector may have been located to the south of the main plaza; this sector was excavated by Leopoldo Batres in the nineteenth century, so little of it is known, except for the fact that in Room 7, the important mural painting depicting two priests throwing seed and walking towards the altar was found (see De la Fuente 1996).

The military sector was located in the southwestern portion of the compound (Manznilla [ed.] 2012, 2018). In this sector, the burial of a 7-year-old child was found, showing Teotihuacan funerary practices, an another elite figurine, and a miniz gesting that the child was intended

The garment-making sector of cotton cloths brought from Verac marine elements with the help of et al. 2011). For the headdresses, the plumed frames to craft the headd the making of baskets and nets, the (Manzanilla [ed.] 2012, 2018).

A series of kitchens-storeroom tor, the food made of maize was *tamales, atole,* and the preparation (Casar et al. 2017a, 2017b; Manz

Still in the northeastern secto facility stood, with severe pathol ence of miniature vessels with o (Manzanilla [ed.] 2012, 2018; Va

The Inc

Teopancazco yielded 116 forma adults (Manzanilla [ed.] 2017) (s many different body parts were manipulation. Most of the bone

Different funerary practices a disposed in a seated or flexed po Figure 3.2.2); perinatal individu Manzanilla and Serrano 1999). beheaded adult individuals who Figures 3.2.3 and 3.2.4) (Manz (1943) found in Cerro de las M and were buried in pits with or (Manzanilla 2012b); this is seen period in Teotihuacan. Most of

Other examples of foreign skull of a female surrounded b the Mazapa period, as intrusio

This population had the for born babies, four infants (1–5 ge, two adolescents (10–15-yr mles, 21 young adults (20–25middle-age adults (30–40-year ng to the 30–45 timespan, an

One outstanding case was I position, inside a pit located i heater-type censer, a dressed detachable military attire (see

EROOMS

TAILORS' SHOP



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n of the main plaza; this sector little of it is known, except for two priests throwing seed and

n of the compound (Manzold child was found, showing **E**otihuacan funerary practices, and the company of a military figurine with a detachable attire, mother elite figurine, and a miniature theater-type censer (Manzanilla [ed.] 2012, 2018), sugesting that the child was intended to become a guard.

The garment-making sector was set to the northeast; in these rooms, craftsmen cut the sector cloths brought from Veracruz to make the garments, and to attach shell pendants and marine elements with the help of 90 needles and pins, as well as drills and awls (Manzanilla 2011). For the headdresses, the facial portions of mammals were detached and set into the med frames to craft the headdresses. Other manufactures of this neighborhood center were making of baskets and nets, the painting of tripod vessels, and the lacquering of orange wares Manzanilla [ed.] 2012, 2018).

A series of kitchens-storerooms was found to the north of the compound, and, in this secter, the food made of maize was prepared for the workers of the neighborhood center (*tortillas*, *atole*, atole, and the preparation of animal portions – turkey and dog – fed also with maize) Casar et al. 2017a, 2017b; Manzanilla [ed.] 2012, 2018).

Still in the northeastern sector of the compound, but towards the south, a possible medical **icility** stood, with severe pathological cases, the burial of perinatal individuals, and the presince of miniature vessels with corporal paints, suggesting complex preparation prescriptions Manzanilla [ed.] 2012, 2018; Vázquez de Ágredos et al. 2012, 2019).

The Individuals Buried in Teopancazco

Teopancazco yielded 116 formal burials, with 129 individuals, of which 32% were beheaded adults (Manzanilla [ed.] 2017) (see Table 3.2.1). Other human bodies were dismembered, and many different body parts were found with cut marks, exposure to fire, and other traces of manipulation. Most of the bone instruments were made of human bones (Manzanilla et al. 2011).

Different funerary practices are present: some are clearly Teotihuacan practices, with burials isposed in a seated or flexed position in a pit (as those found in Oztoyahualco 15B:N6W3) (see Figure 3.2.2); perinatal individuals in bowls or pot fragments, or infants buried under altars (see Manzanilla and Serrano 1999). Other funerary rituals are clearly foreign, as is the case of the beheaded adult individuals whose heads are each set in a crater and covered by a bowl or lid (see Figures 3.2.3 and 3.2.4) (Manzanilla 2012b; Manzanilla [ed.] 2017), mirroring what Drucker (1943) found in Cerro de las Mesas, Veracruz. Most of the decapitated individuals are males, and were buried in pits with one, two, or 17 heads, or on top of a destroyed temple, by 350 AD Manzanilla 2012b); this is seen as a termination ritual displayed at the end of the Tlamimilolpa period in Teotihuacan. Most of the heads had cinnabar or galena (Ejarque Gallardo et al. 2018).

Other examples of foreign funerary practices are seen in Burial 102 (see Figure 3.2.5), the skull of a female surrounded by her long-bones. We also detected post-Teotihuacan burials of the Mazapa period, as intrusions in the northern alignment of kitchens-storerooms.

This population had the following age-groups (Alvarado and Manzanilla 2017): 23 newborn babies, four infants (1–5 years old), three 5–10-year-old infants, four infants of indefinite ge, two adolescents (10–15-year-old individuals), 16 sub-adults (15–20-year-olds), eight juveles, 21 young adults (20–25-year-old individuals), 19 adults (25–30-year-old individuals), ten middle-age adults (30–40-year-old adults), three adults 40–50 years old, one individual belonging to the 30–45 timespan, and two others of indefinite age.

One outstanding case was Burial 4 (see Figure 3.2.2), a 5–7-year-old infant buried in a flexed position, inside a pit located in the military sector; this child was accompanied by a miniature heater-type censer, a dressed figurine depicting an elite individual, and another figurine with detachable military attire (see Manzanilla 2012b). This child was a local individual, dated to the



Figure 3.2.2 Burial 4, an infant in the military sector of Teopancazco, dated in the Xolalpan phase. *Source:* Photo by L.R. Manzanilla

Xolalpan period; he had an A genetic haplogroup; he also had evidences of contusions in the skeleton (particularly an inflammatory process in the right parietal bone), and the mornant treatment was exceptional, not only for the figurines set around the body, but also for the presence of fire inside the pit (Manzanilla 2012b; Manzanilla [ed.] 2017).

Many new-born babies were buried in the medical facility (northeastern sector) of pancazco, particularly in C353A (Manzanilla [ed.] 2012, 2017; Alvarado-Viñas 2013; Gale 2013), perhaps implying that the women of the neighborhood came to the neighborhood came to the neighborhood enter for childbirth attention; some of these perinatal individuals were sexed by DNA (Alex Sandoval et al. 2014; Manzanilla [ed.] 2017) and showed similar proportions of male and femababies, in contrast to the ratio observed in the adult population of Teopancazco, which predominantly male, with only 15% of the sexed adults being women; these female individuals were mainly migrants working as multicraft specialists (Manzanilla 2015; Manzanilla 2017). The fact that the adults are mainly males stresses the idea that neighborhood centers scenarios for men; Teotihuacan women were based in the apartment compounds surrounded the neighborhood center as specialists competing with men.



3.2.3 Pit AA142–144 with located in a former ri
Photo by L.R. Manzanilla

the northeastern sector, us a pit with two seated adole sigrant and the other came were accompanied with a

dated in the Xolalpan phase.

evidences of contusions in the letal bone), and the mortuary the body, but also for the pres-017).

(northeastern sector) of Teo-Alvarado-Viñas 2013; Gallego d came to the neighborhood were sexed by DNA (Álvarezroportions of male and female of Teopancazco, which were omen; these female individutanilla 2015; Manzanilla [ed.] hat neighborhood centers are nent compounds surrounding e been attached to the neighThe Multiethnic Population



Figure 3.2.3 Pit AA142–144 with 17 beheaded individuals, part of a termination ritual dated by 350 AD, located in a former ritual sector dated in the Tlamimilolpa phase.

Source: Photo by L.R. Manzanilla

In the northeastern sector, under a destroyed temple of the Tlamimilolpa period (C181B-261), a pit with two seated adolescents (Burial 105: male and Burial 108: female) was found; one is a migrant and the other came from the corridor towards the Gulf Coast (Schaaf et al. 2012); they were accompanied with geometric forms of mica (Rosales de la Rosa and Manzanilla



Figure 3.2.4 Some of the decapitated individuals in pits, part of a termination ritual dated by 350 and located in a former ritual sector dated in the Tlamimilolpa phase.

Source: Photo by L.R. Manzanilla

2011), an orange-lacquer bowl from the Mixtequilla Region in Veracruz, an incomplete articulated figurine, and many miniature plates and pots, some cooked and others uncooked, with mineral corporal paints and resins (hematite, galena, cinnabar, jarosite, *Salvia* oil, etc.) (Domench Carbó et al. 2012; Manzanilla 2012b; Natahi 2013; Vázquez de Agredos et al. 2012, 2019. Fire was lit inside the pit.

Different activity markers (roughness and asymmetry in certain articulations and joints; see Manzanilla 2015; Table 3.2.1), have been recognized at Teopancazco (Alvarado-Viñas 2015) Manzanilla [ed.] 2017), as follows. One-fifth of the population buried at Teopancazco (21.55) bore signs of having worked fibers with their frontal teeth (four females and 21 males). We that they were involved in making nets, which are depicted in mural art at Teopancazco (Deffuente 1996) and may have been used to procure the 14 varieties of marine fish (Rodrigge Galicia 2010; Rodríguez Galicia and Valadez Azúa 2013) present at the site; net-making is a indicated by the presence of the bone shuttles (Pérez Roldán et al. 2012) used for net manufacture. Some of the workers of Teopancazco (7.75%, including three women) displayed signs having thrown nets or spears.

With respect to garment-making, which was the main craft at Teopancazco, 6.89% (inclusing one woman) showed signs of having sewn and/or painted for long periods of time; significantly, two of the primary crafts practiced at Teopancazco were the production of garments are headdresses for the intermediate elite managing the neighborhood center, as well as the particulate of polychrome pottery and walls. Numerous examples of bone needles and pins (Manzamatica)



Figure 3.2.5 Burial 102, the skull o cazco's main courtyard Source: Photo by L.R. Manzanilla

et al. 2011), as well as paint-b carment-making sector and to t

Some of the individuals (15 neighborhood center of Teopa acruz. Foreign luxury goods a included pyrites; 47 fragments Tísoc et al. 2012); 21 piec ressels from south-central Puel ware from the Morelos-Guerr region in Veracruz (Manzanilla me Altotonga Region in Verac mements for painting one's bo clena, jarosite, and malachite from the State of Mexico and grams of mica from Oaxaca (types of crabs, and a cro a 2010); 665 marine shells t Mexico, the Caribbean, and t and cloths, probably from Ver muired heavy lifting.

nination ritual dated by 350 🚛 phase.

pracruz, an incomplete articud and others uncooked, with osite, *Salvia* oil, etc.) (Doméde Agredos et al. 2012, 2019).

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Teopancazco, 6.89% (includong periods of time; signifiproduction of garments and tenter, as well as the painting eedles and pins (Manzanilla The Multiethnic Population



Fgure 3.2.5 Burial 102, the skull of a migrant woman surrounded by her long-bones, buried in Teopancazco's main courtyard.

Source: Photo by L.R. Manzanilla

et al. 2011), as well as paint-brush handles (Pérez Roldán et al. 2012), were found in the garment-making sector and to the north of the ritual plaza.

Some of the individuals (15.51%, including four women) had carried heavy loads. The neighborhood center of Teopancazco organized caravans towards the Nautla region in Veracruz. Foreign luxury goods at Teopancazco were abundant (Manzanilla [ed.] 2018) and included pyrites; 47 fragments of greenstone (including serpentine and green quartz) (Melgar Tísoc et al. 2012); 21 pieces of travertine and onyx; gray marble; thin orange pottery vessels from south-central Puebla; pottery from the Ocotelulco region in Tlaxcala; granular ware from the Morelos-Guerrero area; fine and orange lacquer wares from the Mixtequilla region in Veracruz (Manzanilla [ed.] 2018); foreign metamorphic tempers; glass shards from the Altotonga Region in Veracruz, used as an aggregate for stucco floors (Barca et al. 2013); pigments for painting one's body and for pottery and mural painting (particularly cinnabar, galena, jarosite, and malachite) (Vázquez de Ágredos et al. 2012, 2019); ca. 4.4 kg of slate (from the State of Mexico and the Morelos-Guerrero region) (López-Juárez et al. 2012); 72 grams of mica from Oaxaca (Rosales de la Rosa and Manzanilla 2011); 99 fish specimens, two types of crabs, and a crocodile from the Nautla region in Veracruz (Rodríguez Galicia 2010); 665 marine shells belonging to 16 families of marine mollusks from the Gulf of Mexico, the Caribbean, and the Pacific Ocean (Velázquez Castro et al. 2012); cotton fibers and cloths, probably from Veracruz; and non-local flint. Any or all of these goods may have required heavy lifting.

Burial No.	Sex	Age	Phase	¹⁸ O/ ¹⁶ O Altitude	^{87/86} Sr Enamel/ Bone	Haplogroup	Diet Log Ba/Sr	Decapitated	Hypoplasia	Scorbutic Disease	Porotic Hyperostosis		Activity Markers	Dental Mutilation / Cranial Modifications
60	F	25–35	Tl	Low		А	Terr ND 0.223				х	х	HF, ACL	
39	М	20-25	Tl/Xol	Low				х	х	х	Х			
65	F	20-25	Tl/Xol	Low				Х						
91	M?	20-25	Tl/Xol	Low				х						
71	F	16–20	T l/X ol	Low	Migrant 0.707851/ 0.704944			х					Auditory exostosis	
72	M?	18-20	Tl/Xol	Low	0.701211			х			Х			
28F	F?		Late Xol	Low							х			
67	F?		Tl/Xol	LTeo				х			х			Mut A4+B5
74	M		Tl/Xol	LTeo	Migrant 0.705454/ 0.704975	/		х				х		
2	F	25–35	Xol	LTeo	Inv. Migran 0.704625 0.705723		Terr D -1.087				Х		CAM/FBS/ AVR/ACL	/
10A	F	25-30	Xol	LTeo	0.100720	А							CP/FBS	

Table 3.2.1 A sample of the Teopancazco burials.

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13A	М	25-30	Xol-Met		Migrant 0.707336/		Terr D -0.957		
78	М	30-35	Tl	Basin of Mexico	0.704897 Local 0.704665/		Marine -1.682	Х	CP/SP/ ACL/ WLG/
					0.704610				FBS
116	М	20-25	Tl	Basin of Mexico	6.5000385 0.0013355 1.05240000	А	Marine –1.366 Marine		ACL CP/SP/ACL

2 F	25–35 Xol	LTeo	0.704975 Inv. A Migrant 0.704625/ 0.705723	Terr D -1.087	х	CAM/FBS/ AVR/ACL
10A F	25–30 Xol	LTeo	А			CP/FBS

50	М	25–30	Tl/Xol	Basin of Mexico	n		X	Х	X			modification Tab erect
46	Μ	45–50	Tl/Xol	Basin of Mexico	A		x		V			modification Tab oblique Cranial
40	?	20–25	Tl/Xol	Basin of Mexico			X			Х		Cranial
					regions 0.705147/ 0.704700		v					
108	F	10–15	Tl/Xol	Basin, Tlax	adjacent	-1.387						
	V)	22-30		of Mexico Besin	Migrant A	Marine					ACL	
106	М		Tl/Xol	Basin	o stéletet s							
				Tlax/ Hg	0.705459/ 0.704715	-1.692						
105	М	16-30	Tl/Xol		Migrant C	Marine					CP/SP/ACI	
116	Μ	20-25	Tl	Basin of Mexico	A	Marine -1.366						
											ACL	
	W				0.704665/ 0.704610	-1.682					WLG/ FBS	
78	М	30–35	Tl		0.704897 Local	Marine			Х		CP/SP/ ACL/	
I3A	Μ	25-30	Xol-Met		Migrant 0.707336/	Terr D -0.957						

there is a first work later of a

279

Table 3.2.1 (Continued)

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23

M

M

Burial No.	Sex	Age	Phase	¹⁸ O/ ¹⁶ O Altitude	^{87/86} Sr Enamel/ Bone	Haplogroup	Diet Log Ba/Sr	Decapitated	Hypoplasia			Cribra sis Orbitalia	Markers	Dental Mutilation / Cranial Modifications
6	М	20<	Xol?		Migrant adjacent			2			÷.		ACL/CAM/ AVR, CP	
					regions 0.705162/ 0.704700									
101	F	2 mon	T1		Local 0.704808/ 0.704714	А						Х		
103	F	20-24	Tl			D							ACL	
99	М	3–4	Tl			А								
110	М	Perin	Tl			С								
89	F	20-25	Tl/Xol			A (rel 56)			Х	Х				
56	F	Perin	Tl/Xol			A (rel 89)								
59	М	Perin	Tl/Xol			В								
47	F?	16–20	Tl/Xol					Х	Х					Cranial modification
														Tab erect Mut B5
81	M?	18-21	Tl/Xol					Х						Mut B5
90	М	24–30	Tl/Xol					Х					FBS	

30–35 Xol?	Auditory
	exostosis,
	FBS
24–30 Xol	CP, FBS? Incrust E1

Source: Table captions (Manzanilla 2015; Manzanilla [ed.] 2017)

Sex: F: female; M: male (Alvarado-Viñas 2013; Álvarez-Sandoval et al. 2014).

Age: Nona: nonate; Perin: perinate; Adult: adult; Mon: months (Alvarado-Viñas 2013; Gallego 2013).

Chronology: Tlam: Tlamimilolpa phase; Tl/Xol: Tlamimilolpa/Xolalpan transition; Xol: Xolalpan phase; Late Xol: Late Xolalpan; Xol-Met: Xolalpan-Metepec

59	Μ	Perin	Tl/Xol	В				
47	F?	16–20	Tl/Xol		Х	Х		Cranial modification
								Tab erect Mut B5
81	M?	18-21	Tl/Xol		Х			Mut B5
90	M		Tl/Xol		Х		FBS	

21	М	30–35 Xol?	Auditory			
3 3			exostosis,			
			FBS			
23	М	24–30 Xol	CP, FBS? Incrust E1			

Source: Table captions (Manzanilla 2015; Manzanilla [ed.] 2017)

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Sex: F: female; M: male (Alvarado-Viñas 2013; Álvarez-Sandoval et al. 2014).

Age: Nona: nonate; Perin: perinate; Adult: adult; Mon: months (Alvarado-Viñas 2013; Gallego 2013).

Chronology: Tlam: Tlamimilolpa phase; Tl/Xol: Tlamimilolpa/Xolalpan transition; Xol: Xolalpan phase; Late Xol: Late Xolalpan; Xol-Met: Xolalpan-Metepec phases (Manzanilla 2012b; Manzanilla [ed.] 2012, 2018).

Altitude (18/16Oxygen isotopes): LTeo: ca. 300 m lower than Teotihuacan; HTeo: ca. 300 m higher than Teotihuacan; Basin of Mexico: altitudes of the Basin of Mexico, Puebla, and Tlaxcala (including Teotihuacan); Tlax/Hg: Tlaxcala-Hidalgo (Manzanilla [ed.] 2012, 2017).

Strontium isotopes ^{87/86}: Migrant: migrant; Inv. migrant: inverse migrant (a person from Teotihuacan who has been afar for long and returns to the metropolis); Migrant adjacent regions: a migrant from nearby regions (the corridor towards the Gulf of Mexico) (Solís-Pichardo et al. 2017; Schaaf et al. 2012; Manzanilla [ed.] 2017).

Haplogroups (mitochondrial DNA): Rel: related to (Álvarez-Sandoval et al. 2015; Manzanilla [ed.] 2017).

Diet: Terr ND: terrestrial non-desertic; Terr D: terrestrial desertic; Marine: marine component in the diet (Mejía Appel 2011, 2012, 2017).

Paleopathologies: Porotic hyperostosis, Cribra orbitalia (Alvarado-Viñas 2013; Manzanilla [ed.] 2017).

Activity markers: HF: hand flexions; CP: carry heavy weights; SP: garment-makers/painters; CAM: walk long distances + carry heavy weights; FBS: soften fibers with teeth; AVR: throw nets; ACL: squatting for long periods of time; Exostosis: auditory exostoses (Alvarado-Viñas 2013; Manzanilla [ed.] 2017).

Cultural practices: Mut: dental mutilation; Incrust: dental incrustation; Def: cranial modification; Def Tab erect: erect tabular deformation; Def Tab oblique: oblique tabular deformation (Alvarado-Viñas 2013; Alvarado-Viñas and Manzanilla 2018; Manzanilla [ed.] 2017).

Of the 18 individuals (men and women) listed earlier, 16 were found to have squatted for long periods. Perhaps they were also involved in some sort of craft-production; two of them were found in the garment-making sector.

Three cases of auditory exostoses probably caused by diving in cold waters were detected at Teopancazco. Perhaps these can be related to the profusion and diversity of marine shells found at the site. One example is Burial 71 (a sub-adult female immigrant from lower altitudes, perhaps Chiapas or Oaxaca).

It is possible that *Teotihuacanos* and migrants formed a "house society", that is, a complex corporate group articulated by work, ritual practices, festivities, myths of origins (in the ocean), emblems, attires, etc. (Manzanilla 2007b). The attire depicted in the main mural painting of Teopancazco (De la Fuente 1996) is directly related to the ocean, due to the marine elements attached to it; it would be an indexical way to recognize the intermediate elite of this neighborhood in a multiethnic environment (Manzanilla 2006, 2007b, 2009, 2012b, 2012b; Manzanilla [ed.] 2017).

Thus, three groups of people were working at Teopancazco: the local population of the Basin of Mexico, individuals coming from the corridor towards the Gulf Coast of Mexico (Hidalgo, Tlaxcala, Puebla), and migrants from the coast. There is a small group of inverse migrants, that is, *Teotihuacanos* that were abroad most of their lives and came back to the metropolis where they died (Solís Pichardo et al. 2017).

As a result of trace element analysis, we know that some individuals had a diet with a strong marine component (Mejía-Appel 2017), due to the constant provision of 14 varieties of fish from the coastal lagoons of the Nautla region in Veracruz (Rodríguez Galicia and Valadez Azúa 2013). Other individuals had a terrestrial desertic diet, and others, a terrestrial non-desertic diet (Mejía Appel 2011, 2012, 2017).

Thanks to stable isotopes (particularly nitrogen) we know that many workers in this neighborhood center were fed with maize (*tortillas, tamales, atole*), and with animals also fed with maize (dogs and turkeys) (Casar et al. 2017a, 2017b). It is possible that the system of food rations organized by the neighborhood center managers to feed the workers represented a system destined to have them as attached workers and in constant activity (Manzanilla 2011); this system distinguished rations for the foremen from those for full-time workers, and for eventual workers.

The mitochondrial DNA showed that the four Mesoamerican haplogroups (A, B, C, and D) were present at Teopancazco, a fact that underlines the biological diversity of the population of this neighborhood (Álvarez-Sandoval et al. 2015).

From Veracruz came cotton cloths, with which the attractive dresses were crafted (Manzanilla et al. 2011); the 14 varieties of fish, crabs, and the crocodile also came from Veracruz (Rodríguez Galicia 2010), as well as marine shells from the Gulf Coast, the Caribbean, and the Pacific (Velázquez Castro et al. 2012). From Altotonga, Veracruz, came the volcanic shards used to build the floors from Teopancazco (Barca et al. 2013). This fact is important, because it inaugurated a new technological style (Pecci et al. 2016). Some pottery from Veracruz also arrived, particularly the negative-decorated orange-lacquer pottery from La Mixtequilla. And of course, also came the craftsmen from the coastal areas.

It is possible that each of the 22 neighborhoods (Froese et al. 2014) in Teotihuacan had different affinities and allies, and built the different corridors towards sumptuary-good provisioning regions. They competed between themselves, thus tearing apart the corporate tissue of the state. Originally this state was the by-product of a multiethnic pact. The corporate groups lived inside apartment compounds; these were set surrounding neighborhood centers that coordinated the work and ritual activities of those individuals based in each one of them. Each center organized caravans towards differe crafts, and craftsmen.

In the periphery of Teotihuac brought to the city their technolo

The 22 neighborhoods seem 2017a); from these four divisions emerged, to constitute another co

The multiethnic neighborhood of 1997 to 2005, offers an interestiin the structure of a very dynammain element of ethnic identity of to the ocean, particularly to the fauna in this Teotihuacan compobut also marine sand was brought sion of volcanic glass from Altoto of foreign funerary practices from lacquered pottery, and the provigarment depicted in the main r (Kubler 1967).

A total of 116 formal burials Teotihuacan funerary practices; lowing the Mixtequilla (Veracrus center were mainly male adults, of the adults were females, whic larly garment-making. Many adu Mexico, particularly from Puebla Mesoamerica are represented in

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Linda R. Manzanilla thanks all ship" for their support and kn funded by the National Auton Asuntos del Personal Académic Institute for Anthropological F Technology (CONACyT proj thank the National Institute of to do archaeological excavation

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2014) in Teotihuacan had difs sumptuary-good provisionart the corporate tissue of the t. The corporate groups lived borhood centers that coordiach one of them. Each center erganized caravans towards different regions in Mesoamerica to bring raw materials, products, crafts, and craftsmen.

In the periphery of Teotihuacan were the ethnic neighborhoods, and each one of them brought to the city their technologies, expertise, and goods.

The 22 neighborhoods seem to be disposed in four districts in the site (Manzanilla 2009, 2017a); from these four divisions, the four co-rulers (Manzanilla 2017a) of the site may have emerged, to constitute another corporate characteristic of this exceptional society.

Final Comments

The multiethnic neighborhood center of Teopancazco, excavated by Linda R. Manzanilla from 1997 to 2005, offers an interesting case of attached craftsmen, many of which were foreign, in the structure of a very dynamic social unit of Teotihuacan society: the neighborhood. The main element of ethnic identity which stands out in this neighborhood center is the strong tie to the ocean, particularly to the Nautla region in Veracruz. Not only the presence of marine fauna in this Teotihuacan compound is seen (14 types of fish from the coast, crabs, crocodile), but also marine sand was brought to the northeastern portion of the ritual courtyard; the inclusion of volcanic glass from Altotonga, Veracruz, to manufacture the stucco floors; the presence of foreign funerary practices from the Mixtequilla region also in Veracruz, as well as orangelacquered pottery, and the provisioning of cotton cloths from Veracruz to craft the complex garment depicted in the main mural painting of the site, the so-called "priest of the ocean" (Kubler 1967).

A total of 116 formal burials were found at Teopancazco: some were buried following the Teotihuacan funerary practices; but others, such as the 29 decapitated adults, were buried following the Mixtequilla (Veracruz) burial practices. The individuals found in this neighborhood center were mainly male adults, although 22 new-born babies were also found. Fifteen percent of the adults were females, which could compete with the males in craft-production, particularly garment-making. Many adults were migrants from the corridor towards the Gulf Coast of Mexico, particularly from Puebla, Tlaxcala, Hidalgo, Veracruz. The four genetic haplogroups of Mesoamerica are represented in this population, stressing its biological diversity.

Teotihuacan represents a huge intellectual challenge due to its heterogeneity, its corporate organization at the base and summit of this society, its scale and urban grid. We do not have texts that refer us to many aspects of life in the city; nevertheless, many years of interdisciplinary work (Manzanilla 2007a) and extensive excavations have allowed us to grasp life in apartment compounds (Manzanilla [ed.] 1993; Manzanilla 1996); the dynamism of the multiethnic neighborhood centers (Manzanilla [ed.] 2012, 2017, 2018, 2020; Manzanilla 2009, 2015); and the activities in the palaces of the ruling elite (Manzanilla [ed.] 2019; Manzanilla 2008, 2017b).

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References

- Alvarado, Luis Adrián, and Linda R. Manzanilla 2017 Funerary Patterns, Sex and Age Profiles, Paleopathology, and Activity Markers of the People in Teopancazco. In Multiethnicity and Migration at Teopancazco. Investigations of a Teotihuacan Neighborhood Center, edited by Linda R. Manzanilla, pp. 49–69. University Press of Florida, Gainesville.
- Alvarado-Viñas, Luis A. 2013 Tejedores de grandezas. Un análisis de la población de Teopancazco, Teotihuacan, a través de sus actividades ocupacionales. Master's thesis, Universidad Nacional Autónoma de México, Mexico City.
- Alvarado-Viñas, Luis A. and Linda R. Manzanilla 2018 Chapter 5. Cultural modification of the head. The case of Teopancazco in Teotihuacan. In *Social Skins of the Head. Body Beliefs and Ritual in Ancient Mesoamerica and the Andes. Identity*, edited by Vera Tiesler and María Cecilia Lozada, pp. 81-91. University of New Mexico Press, Albuquerque.
- Álvarez-Sandoval, Brenda A., Linda R. Manzanilla, and Rafael Montiel 2014 Sex Determination in Highly Fragmented Human DNA by High-Resolution Melting (HRM) Analysis. PLoS ONE 9(8):e104629.
- Álvarez-Sandoval, Brenda A., Linda R. Manzanilla, M. González-Ruiz, Assumpció Malgosa, and Rafael Montiel 2015 Genetic Evidence Supports the Multiethnic Character of Teopancazco, a Neighborhood Center of Teotihuacan, Mexico (AD 200–600). PLoS ONE 10(7):e0132371.
- Arnauld-Salas, María 2014 Procedencia y dieta de una muestra ósea de La Ventilla 92–94, Teotihuacan. Master's thesis, Universidad Nacional Autónoma de México, Mexico City.
- Barca, D., D. Miriello, A. Pecci, L. Barba, A. Ortiz, L. R. Manzanilla, J. Blancas, and G. M. Crisci 2013 Provenance of glass shards in archaeological lime plasters by LA-ICP-MS: implications for the ancient routes from the Gulf Coast of Mexico to Teotihuacan in Central Mexico. *Journal of Archaeological Science* 40:3999–4008.
- Casar, Isabel, Pedro Morales, Edith Cienfuegos, Linda R. Manzanilla, and Francisco Otero 2017a Paleodiet Reconstruction Based on Carbon and Nitrogen Isotopes of Teeth from Burials in Teopancazco. In Multiethnicity and Migration at Teopancazco. Investigations of a Teotihuacan Neighborhood Center, edited by Linda R. Manzanilla, pp. 84–118. University Press of Florida, Gainesville.
- Casar, I., Pedro Morales, L. R. Manzanilla, Edith Cienfuegos, and Francisco Otero 2017b Dietary Differences in individuals buried in a multiethnic neighborhood in Teotihuacan: stable dental isotopes from Teopancazco, Archaeological and Anthropological Sciences 9(1):99–115.
- Doménech-Carbó, María T., María L. Vázquez de Ágredos, Laura Osete, Antonio Doménech Carbó, Nuria Guasch, Linda R. Manzanilla, and Cristina Vidal 2012 Characterization of Pre-Hispanic Cosmetics Found in a Burial of the Ancient City of Teotihuacan (Mexico). Journal of Archaeological Science 39:1043–1069.
- Drucker, Philip 1943 Ceramic Stratigraphy at Cerro de las Mesas, Veracruz, Mexico. Smithsonian Institution, Washington DC.
- Ejarque-Gallardo, Ángela, María L. Vázquez de Ágredos, and Linda R. Manzanilla 2018 In tlilli in tlapalli: la estructura cromática rojo-negro en una ofrenda ritual del centro de barrio de Teopancazco. In Teopancazco como centro de barrio multiétnico de Teotihuacan. Los sectores funcionales y el intercambio a larga distancia, edited by Linda R. Manzanilla, pp. 353–372. Dirección General de Asuntos del Personal Académico, Instituto de Investigaciones Antropológicas, Universidad Nacional Autónoma de México, Mexico City.
- Froese, Tom, Carlos Gershenson, and Linda R. Manzanilla 2014 Can Government be Self-Organized? A Mathematical Model of the Collective Social Organization of Ancient Teotihuacan, Central Mexico. *PLoS ONE* 9(10): e109966.
- Fuente, Beatriz de la (editor) 1996 La pintura mural prehispánica en México. I. Teotihuacan. Instituto de Investigaciones Estéticas, Universidad Nacional Autónoma de México, Mexico City.
- Gallego, José Ramón 2013 Estudio de la lactancia y el destete mediante el análisis de isótopos estables de carbono y nitrógeno en el colágeno de restos óseos de la población infantil del centro de barrio de Teopancazco, Teotihuacan. Master's thesis, Universidad Nacional Autónoma de México, Mexico City.
- Gómez-Chávez, Sergio 1998 Nuevos datos sobre la relación de Teotihuacan y el Occidente de México. In Antropología e Historia del Occidente de México. XXIV Mesa Redonda de la Sociedad Mexicana de Antropología, Vol. 3, pp. 1461–1493. Sociedad Mexicana de Antropología-Universidad Nacional Autónoma de México, Mexico City.
- Kubler, George 1967 The Iconography of the Art of Teotihuacan. Studies in Pre-Columbian Art and Archaeology 4, Dumbarton Oaks, Washington DC.

- López-Juárez, Julieta, José Ruvalo (XRD), rayos X y luminiscen pizarra de Teotihuacan. In *Estu* by Linda R. Manzanilla, pp. 2 gación Científica, Universidad
- Manzanilla, Linda R. (editor) 199 Instituto de Investigaciones An Manzanilla, Linda 1996 Corporato
- uity 7 (3):228–246. Manzanilla, Linda 1997 Teotihuac
- Urban Societies, edited by Linda Manzanilla, Linda 2006 Estados co
- entes. *Cuicuilco* 13(36):13–45. Manzanilla, Linda 2007a La unida estudio. In *Memoria 2007 de El*
- Manzanilla, Linda 2007b Las 'cas un entorno corporativo. In *Ma* Mexico City.
- Manzanilla, Linda 2008 La icono edited by Guilhem Olivier, pp. ciones Antropológicas, Univers
- Manzanilla, Linda 2009 Corporat Mexico: Craft Specialization, I of Specialization, Hierarchy and pp. 21–42. University of Mich
- Manzanilla, Linda 2011 Sistemas d corredor teotihuacano hacia la
- Manzanilla, Linda R. (editor) 201 Coordinación de la Investigac Autónoma de México, Mexico
- Manzanilla, Linda 2012a 3. Neigl Neighborhood as a Social and spa R. Manzanilla and Michael E.
- Manzanilla, Linda 2012b Introduc Estudios arqueométricos del centro pp. 17–66. Coordinación de F
- Nacional Autónoma de Méxic Manzanilla, Linda 2015 Cooperati
- Central Mexico, as a Case Stud
- Manzanilla, Linda R. (editor) 201 Neighborhood Center. University
- Manzanilla, Linda 2017a *Teotihu* Nacional, Mexico City.
- Manzanilla, Linda 2017b The Xall by Matthew H. Robb, pp. 11
- California Press, San Francisco Manzanilla, Linda R. (editor) 201
- funcionales y el intercambio a large tuto de Investigaciones Antrop
- Manzanilla, Linda R. (editor) 2019
- de Asuntos del Personal Acadén
- Autónoma de México, Mexico Manzanilla, Linda R. (editor) 202
- Dirección General de Asuntos
- la Universidad Nacional Autór Manzanilla, Linda and Carlos Serr ramientos humanos de la antigua

rns, Sex and Age Profiles, Paleo-Multiethnicity and Migration at Ter-Linda R. Manzanilla, pp. 49–69

población de Teopancazco, Teotiniversidad Nacional Autónoma de

aral modification of the head. The y Beliefs and Ritual in Ancient Mesilia Lozada, pp. 81-91. University

2014 Sex Determination in Highly nalysis. *PLoS ONE* 9(8):e104629. , Assumpció Malgosa, and Rafael of Teopancazco, a Neighborhood 132371.

e La Ventilla 92–94, Teotihuacan. o City.

J. Blancas, and G. M. Crisci 2013 P-MS: implications for the ancient scico. *Journal of Archaeological Science*

d Francisco Otero 2017a Paleodiet from Burials in Teopancazco. In *van Neighborhood Center*, edited by sville.

cisco Otero 2017b Dietary Differuacan: stable dental isotopes from

sete, Antonio Doménech Carbó, acterization of Pre-Hispanic Cosco). Journal of Archaeological Science

Mexico. Smithsonian Institution,

Manzanilla 2018 In tlilli in tlapatro de barrio de Teopancazco. In s funcionales y el intercambio a larga General de Asuntos del Personal Nacional Autónoma de México,

Government be Self-Organized? ent Teotihuacan, Central Mexico.

I. Teotihuacan. Instituto de Invesexico City.

el análisis de isótopos estables de n infantil del centro de barrio de tónoma de México, Mexico City. can y el Occidente de México. In a Sociedad Mexicana de Antropología, versidad Nacional Autónoma de

re-Columbian Art and Archaeol-

López-Juárez, Julieta, José Ruvalcaba, and Manuel Aguilar 2012 Aplicación de difracción de rayos X (XRD), rayos X y luminiscencia inducidas por protones (PIXE e IOL) para la caracterización de la pizarra de Teotihuacan. In *Estudios arqueométricos del centro de barrio de Teopancazco en Teotihuacan*, edited by Linda R. Manzanilla, pp. 233–256. Coordinación de Humanidades, Coordinación de la Investigación Científica, Universidad Nacional Autónoma de México, Mexico City

Manzanilla, Linda R. (editor) 1993 Anatomía de un conjunto residencial teotihuacano en Oztoyahualco, 2 vols. Instituto de Investigaciones Antropológicas, Universidad Nacional Autónoma de México, Mexico City. Manzanilla, Linda 1996 Corporate Groups and Domestic Activities at Teotihuacan. Latin American Antiq-

uity 7 (3):228–246.

Manzanilla, Linda 1997 Teotihuacan: Urban Archetype, Cosmic Model. In Emergence and Change in Early Urban Societies, edited by Linda Manzanilla, pp. 109–132. Plenum Press, New York.

Manzanilla, Linda 2006 Estados corporativos arcaicos. Organizaciones de excepción en escenarios excluyentes. *Cuicuilco* 13(36):13–45.

Manzanilla, Linda 2007a La unidad doméstica y la unidad de producción. Propuesta interdisciplinaria de estudio. In *Memoria 2007 de El Colegio Nacional*, pp. 415–451. El Colegio Nacional, Mexico City.

Manzanilla, Linda 2007b Las 'casas' nobles de los barrios de Teotihuacan: estructuras exclusionistas en un entorno corporativo. In *Memoria 2007 de El Colegio Nacional*, pp. 453–470. El Colegio Nacional, Mexico City.

Manzanilla, Linda 2008 La iconografia del poder en Teotihuacan. In Símbolos de Poder en Mesoamérica, edited by Guilhem Olivier, pp. 111–131. Instituto de Investigaciones Históricas, Instituto de Investigaciones Antropológicas, Universidad Nacional Autónoma de México, Mexico City.

Manzanilla, Linda 2009 Corporate Life in Apartment and Barrio Compounds at Teotihuacan, Central Mexico: Craft Specialization, Hierarchy and Ethnicity. In Domestic Life in Prehispanic Capitals: A Study of Specialization, Hierarchy and Ethnicity, edited by Linda R. Manzanilla and Claude Chapdelaine, pp. 21–42. University of Michigan, Ann Arbor.

Manzanilla, Linda 2011 Sistemas de control de mano de obra y del intercambio de bienes suntuarios en el corredor teotihuacano hacia la costa del Golfo en el Clásico. Anales de Antropología 45:9–32.

Manzanilla, Linda R. (editor) 2012 Estudios arqueométricos del centro de barrio de Teopancazco en Teotihuacan. Coordinación de la Investigación Científica, Coordinación de Humanidades, Universidad Nacional Autónoma de México, Mexico City.

Manzanilla, Linda 2012a 3. Neighborhoods and Elite 'Houses' at Teotihuacan, Central Mexico. In The Neighborhood as a Social and spatial Unit in Mesoamerican Cities, edited by M. Charlotte Arnauld, Linda R. Manzanilla and Michael E. Smith, pp. 55–73. University of Arizona Press, Tucson.

Manzanilla, Linda 2012b Introducción. Teopancazco, un centro de barrio multiétnico de Teotihuacan, In Estudios arqueométricos del centro de barrio de Teopancazco en Teotihuacan, edited by Linda R. Manzanilla, pp. 17–66. Coordinación de Humanidades, Coordinación de la Investigación Científica, Universidad Nacional Autónoma de México, Mexico City.

Manzanilla, Linda 2015 Cooperation and Tensions in Multiethnic Corporate Societies Using Teotihuacan, Central Mexico, as a Case Study. *Proceedings of the National Academy of Sciences* 112 (30):9210–9215.

Manzanilla, Linda R. (editor) 2017 Multiethnicity and Migration at Teopancazco. Investigations of a Teotihuacan Neighborhood Center. University Press of Florida, Gainesville.

Manzanilla, Linda 2017a Teotihuacan, ciudad excepcional de Mesoamérica. Serie Opúsculos, El Colegio Nacional, Mexico City.

Manzanilla, Linda 2017b The Xalla Palace in Teotihuacan. In Teotihuacan. City of Water, City of Fire, edited by Matthew H. Robb, pp. 118–123. Fine Arts Museums of San Francisco De Young, University of California Press, San Francisco.

Manzanilla, Linda R. (editor) 2018 Teopancazco como centro de barrio multiétnico de Teotihuacan. Los sectores funcionales y el intercambio a larga distancia. Dirección General de Asuntos del Personal Académico, Instituto de Investigaciones Antropológicas, Universidad Nacional Autónoma de México, Mexico City.

Manzanilla, Linda R. (editor) 2019 El palacio de Xalla en Teotihuacan. Primer acercamiento. Dirección General de Asuntos del Personal Académico, Instituto de Investigaciones Antropológicas, Universidad Nacional Autónoma de México, Mexico City.

Manzanilla, Linda R. (editor) 2020 La población de Teopancazco, un centro de barrio multiétnico de Teotihuacan, Dirección General de Asuntos del Personal Académico, Instituto de Investigaciones Antropológicas de la Universidad Nacional Autónoma de México, Mexico City.

Manzanilla, Linda and Carlos Serrano (editors) 1999 Prácticas funerarias en la Ciudad de los Dioses. Los enterramientos humanos de la antigua Teotihuacan. Universidad Nacional Autónoma de México, Mexico City.

- Manzanilla, Linda R., Raúl Valadez, Bernardo Rodríguez, Gilberto Pérez, Johanna Padró, Adrián Velázquez, Belem Zúñiga, and Norma Valentín 2011 Producción de atavíos y tocados en un centro de barrio de Teotihuacan. El caso de Teopancazco. In La producción artesanal y especializada en Mesoamérica. Áreas de actividad y procesos productivos, edited by Linda R. Manzanilla and Kenneth Hirth, pp. 59–85. Instituto Nacional de Antropología e Historia, Universidad Nacional Autónoma de México, Mexico City.
- Mejía-Appel, Gabriela I. 2011 De pescado los tamales. Patrones de consumo alimenticio en un centro de barrio de Teotihuacan. Estudios de Antropología Biológica 15:13–27.
- Mejía-Appel, Gabriela I. 2012 Elementos traza aplicados al análisis de la paleodieta de Teopancazco. In Estudios arqueométricos del centro de barrio de Teopancazco en Teotihuacan, edited by Linda R. Manzanilla, pp. 325–345. Coordinación de Humanidades, Coordinación de la Investigación Científica, Universidad Nacional Autónoma de México, Mexico City.
- Mejía-Appel, Gabriela I. 2017 Dietary and Food Patterns of the Teopancazco Population. In Multiethnicity and Migration at Teopancazco. Investigations of a Teotihuacan Neighborhood Center, edited by Linda R. Manzanilla, pp. 70–83. University Press of Florida, Gainesville.
- Melgar-Tísoc, Emiliano, Reyna Solís, and José Ruvalcaba 2012 La lapidaria de Teopancazco: composición y manufactura. In *Estudios arqueométricos del centro de barrio de Teopancazco en Teotihuacan*, edited by Linda R. Manzanilla, pp. 257–284. Coordinación de Humanidades, Coordinación de la Investigación Científica, Universidad Nacional Autónoma de México, Mexico City.
- Millon, René 1973 Urbanization at Teotihuacan, Mexico, The Teotihuacan Map; Part 1: Text, Vol. 1. University of Texas Press, Austin.
- Natahi, Sélim 2013 Caractérisation de pigments et mesures des risques sanitaires liés à leur utilisation à Teopancazco. Master's thesis, Institut d'Histoire de l'Art et d'Archéologie, Université Paris I, Paris.
- Ortega-Cabrera, Verónica 2014 La presencia oaxaqueña en Teotihuacán durante el Clásico. PhD dissertation, Facultad de Filosofía y Letras, Universidad Nacional Autónoma de México, Mexico City.
- Pecci, Alessandra, Domenico Miriello, Donatella Barca, Gino M. Crisci, Raffaella De Luca, Agustin Ortiz, Linda R. Manzanilla, Jorge Blancas, and Luis Barba 2016 Identifying a Technological Style in the Making of Lime Plasters at Teopancazco (Teotihuacan, México). Archaeological and Anthropological Sciences 10(2):315–335.
- Pérez-Roldán, Gilberto, Norma Valentín, and Adrián Velázquez 2012 Análisis tecnológico de la industria del hueso trabajado en Teopancazco, Teotihuacan. In *Estudios arqueométricos del centro de barrio de Teopancazco en Teotihuacan*, edited by Linda R. Manzanilla, pp. 311–323. Coordinación de Humanidades, Coordinación de la Investigación Científica, Universidad Nacional Autónoma de México, Mexico City.
- Price, T. Douglas, Linda Manzanilla, and William H. Middleton 2000 Immigration and the Ancient City of Teotihuacan in Mexico: A Study Using Strontium Isotope Ratios in Human Bone and Teeth. *Journal* of Archaeological Science 27:903–913.
- Rattray, Evelyn C. 1987 Los barrios foráneos de Teotihuacan. In Teotihuacan. Nuevos datos, nuevas síntesis, nuevos problemas, edited by Emily McClung de Tapia and Evelyn C. Rattray, pp. 243–276. Instituto de Investigaciones Antropológicas, Universidad Nacional Autónoma de México, Mexico City.
- Rattray, Evelyn C. 1988 Nuevas interpretaciones en torno al Barrio de los Comerciantes. Anales de Antropología 25:165-180.
- Rattray, Evelyn C. 1989 El Barrio de los Comerciantes y el conjunto de Tlamimilolpa: un estudio comparativo. Arqueología 5:105–129.
- Rattray, Evelyn C. 1990 The Identification of Ethnic Affiliation at the Merchants' Barrio, Teotihuacan. In *Etnoarqueología. Primer Coloquio Bosch Gimpera*, edited by Yoko Sugiura and Mari Carmen Serra P. Instituto de Investigaciones Antropológicas, Universidad Nacional Autónoma de México, Mexico City.
- Rattray, Evelyn C. 1993 The Oaxaca Barrio at Teotihuacan. Universidad de las Américas Puebla, Cholula, Mexico.
- Rodríguez Galicia, Bernardo 2010 Captura, preparación y uso diferencial de la ictiofauna encontrada en el sitio arqueológico de Teopancazco, Teotihuacan. PhD dissertation, Facultad de Filosofía y Letras, Universidad Nacional Autónoma de México, Mexico City.
- Rodríguez Galicia, Bernardo, and Raúl Valadez 2013 Vestigios del recurso costero en el sitio arqueológico de Teopancazco, Teotihuacan, Estado de México. Revista Española de Antropología Americana 43(1):9–29.
- Rosales de la Rosa, Edgar, and Linda R. Manzanilla 2011 Producción, consumo y distribución de la mica en Teotihuacan. Presencia de un recurso alóctono en los contextos arqueológicos de dos conjuntos arquitectónicos: Xalla y Teopancazco. In *La producción artesanal y especializada en Mesoamérica. Áreas de*

actividad y procesos productivos, edi Nacional de Antropología e Hi Sanders, William T., Jeffrey R. Pa

- Processes in the Evolution of a Civ Schaaf, Peter, Gabriela Solís, Linda 2012 Isótopos de estroncio apli pancazco. In Estudios arqueométr Manzanilla, pp. 425–448. Coor Universidad Nacional Autónom
- Solís-Pichardo, G., P. Schaaf, T. I Migrants in Teopancazco: Evid Teopancazco. Investigations of a To 163. University Press of Florida
- Spence, Michael W. 1988 Excava Arqueología 5:81–104.
- Spence, Michael W. 1992 Tlailotla *Teotihuacan*, edited by Janet C. Washington DC.
- Spence, Michael W. 1996 Compa enaje a William T. Sanders I, e Antropología e Historia, Arque
- Spence, Michael W., Christine D. Victims: Human Trophies Wo uacan. Ancient Mesoamerica 15:
- Vázquez de Ágredos, María L., Lir y cosméticos funerarios del ba barrio de Teopancazco en Teotihu. Investigación Científica, Coorce Mexico City.
- Vázquez de Ágredos, María L., Sé ity and Meaning of Medicinal and Codices in Pre-Columbian M Ágredos, pp. 24–42. Instituto México, University of Arizona
- Velázquez-Castro, Adrián, Norm de manufactura de los objetos rio de Teopancazco en Teotihuaco Autónoma de México, Mexico
- White, Christine D., T. Douglas Sacrifices at the Moon Pyrami
- White, Christine D., Michael W. and ethnic continuity in the T
- Journal of Anthropological Archae
- White, Christine D., Michael W. 2002 Geographic Identities of
 - can: Implications for the Natu

Pérez, Johanna Padró, Adrián travíos y tocados en un centro de *nal y especializada en Mesoamérica*. and Kenneth Hirth, pp. 59–85. Autónoma de México, Mexico

imo alimenticio en un centro de

a paleodieta de Teopancazco. In edited by Linda R. Manzanilla, vestigación Científica, Universi-

cazco Population. In Multiethnichood Center, edited by Linda R.

ia de Teopancazco: composición co en Teotihuacan, edited by Linda nación de la Investigación Cientí-

p; Part 1: Text, Vol. 1. University

sanitaires liés à leur utilisation à ogie, Université Paris I, Paris. durante el Clásico. PhD disserta-

de México, Mexico City. sci, Raffaella De Luca, Agustin ntifying a Technological Style in *Archaeological and Anthropological*

nálisis tecnológico de la industria nétricos del centro de barrio de Teo-Coordinación de Humanidades, Autónoma de México, Mexico

migration and the Ancient City Human Bone and Teeth. *Journal*

acan. Nuevos datos, nuevas síntesis, cattray, pp. 243–276. Instituto de México, Mexico City. de los Comerciantes. Anales de

Tlamimilolpa: un estudio com-

erchants' Barrio, Teotihuacan. In and Mari Carmen Serra P. Instioma de México, Mexico City. le las Américas Puebla, Cholula,

al de la ictiofauna encontrada en a, Facultad de Filosofía y Letras,

o costero en el sitio arqueológico Intropología Americana 43(1):9–29. onsumo y distribución de la mica arqueológicos de dos conjuntos cializada en Mesoamérica. Áreas de actividad y procesos productivos, edited by Linda R. Manzanilla and Kenneth Hirth, pp. 131–152. Instituto Nacional de Antropología e Historia-Universidad Nacional Autónoma de México, Mexico City.

Sanders, William T., Jeffrey R. Parsons, and Robert S. Santley 1979 The Basin of Mexico: The Ecological Processes in the Evolution of a Civilization. Studies in Archaeology, Academic Press, New York.

- Schaaf, Peter, Gabriela Solís, Linda R. Manzanilla, Teodoro Hernández, Becket Lailson, and Peter Horn 2012 Isótopos de estroncio aplicados a estudios de migración humana en el centro de barrio de Teopancazco. In Estudios arqueométricos del centro de barrio de Teopancazco en Teotihuacan, edited by Linda R. Manzanilla, pp. 425–448. Coordinación de Humanidades-Coordinación de la Investigación Científica, Universidad Nacional Autónoma de México, Mexico City.
- Solís-Pichardo, G., P. Schaaf, T. Hernández-Treviño, B. Lailson, L. R. Manzanilla, and P. Horn 2017 Migrants in Teopancazco: Evidence from Strontium Isotopic Studies. In *Multiethnicity and Migration at Teopancazco. Investigations of a Teotihuacan Neighborhood Center*, edited by Linda R. Manzanilla, pp. 143– 163. University Press of Florida, Gainesville.
- Spence, Michael W. 1988 Excavaciones recientes en Tlailotlaca, el barrio oaxaqueño de Teotihuacan. Arqueología 5:81–104.
- Spence, Michael W. 1992 Tlailotlacan, a Zapotec Enclave in Teotihuacan. In Art, Ideology, and the City of Teotihuacan, edited by Janet C. Berlo, pp. 59–88. Dumbarton Oaks Research Library and Collections, Washington DC.
- Spence, Michael W. 1996 Comparative Analysis of Ethnic Enclaves. In Arqueología mesoamericana. Homenaje a William T. Sanders I, edited by A. M. Mastache et al., pp. 333–353. Instituto Nacional de Antropología e Historia, Arqueología Mexicana, Mexico City.
- Spence, Michael W., Christine D. White, Fred J. Longstaffe, and Kimberly R. Law 2004 Victims of the Victims: Human Trophies Worn by Sacrificed Soldiers from the Feathered Serpent Pyramid, Teotihuacan. Ancient Mesoamerica 15:1–15.

Vázquez de Ágredos, María L., Linda R. Manzanilla, and Cristina Vidal 2012 Antiguas esencias aromáticas

- y cosméticos funerarios del barrio multiétnico de Teopancazco. In *Estudios arqueométricos del centro de barrio de Teopancazco en Teotihuacan*, edited by Linda R. Manzanilla, pp. 211–232. Coordinación de la Investigación Científica, Coordinación de Humanidades, Universidad Nacional Autónoma de México, Mexico City.
- Vázquez de Ágredos, María L., Sélim Natahi, Véronique Darras, and Linda R. Manzanilla 2019 Materiality and Meaning of Medicinal Body Colors in Teotihuacan. In *Painting the Skin: Pigments on Bodies* and Codices in Pre-Columbian Mesoamerica, edited by Élodie Dupey-García and María Luisa Vázquez de Ágredos, pp. 24–42. Instituto de Investigaciones Históricas de la Universidad Nacional Autónoma de México, University of Arizona Press, Tucson.
- Velázquez-Castro, Adrián, Norma Valentín, and Belem Zúñiga 2012 Análisis con MEB de las huellas de manufactura de los objetos de concha de Teopancazco. In *Estudios arqueométricos del centro de barrio de Teopancazco en Teotihuacan*, edited by Linda R. Manzanilla, pp. 285–310. Universidad Nacional Autónoma de México, Mexico City.
- White, Christine D., T. Douglas Price, and Fred J. Longstaffe 2007 Residential Histories of the Human Sacrifices at the Moon Pyramid, Teotihuacan. *Ancient Mesoamerica* 18:159–172.
- White, Christine D., Michael W. Spence, Fred J. Longstaffe, and Kimberly R. Law 2004b Demography and ethnic continuity in the Tlailotlacan enclave of Teotihuacan: Evidence from stable oxygen isotopes. *Journal of Anthropological Archaeology* 23:385–403.
- White, Christine D., Michael W. Spence, Fred J. Longstaffe, Hilary Stuart-Williams, and Kimberly 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 13:217–236.