

Women in Engineering and Science

Sandra L. López Varela *Editor*

Women in Archaeology

Intersectionalities in Practice Worldwide



Springer

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Contents

Part I Introduction

- 1 Women Practicing Archaeology.** 3
Sandra L. López Varela

Part II The Americas

- 2 Women in US Cultural Resource Management:
Stories of Courage, Ingenuity, Perseverance, and Intellect.** 37
Teresita Majewski
- 3 Women in the Emergence of Archaeology of Mexico
and Central America.** 65
Rosemary Joyce
- 4 Digging in Our Grandmother's Gardens:
Black Women Archaeologists in the United States
from the 1930s to the Present.** 77
Ayana Omilade Flewellen
- 5 The History of Teotihuacan Through the Eyes
of Women Scholars** 95
Linda R. Manzanilla
- 6 Las Mexicanas and their Clay Griddles: Lessons
from Ethnoarchaeology for the Fight Against Poverty** 115
Sandra L. López Varela
- 7 Las Invisibles: The Unrecognized Contributions
of Women to Ecuadorian Archaeology** 141
María Auxiliadora Cordero
- 8 Myriam N. Tarragó, a Woman at the Crossroads
of Argentinian Archaeology** 157
Geraldine Andrea Gluzman

9	Indigenous Archaeologies and the (Re)Action of Women Archaeologists: An Overview of the Brazilian Archaeology Context	179
	Fabíola Andréa Silva	
Part III Europe		
10	Prehistoric Archaeology in Spain from a Feminist Perspective: Thirty Years of Reflection and Debate	201
	Margarita Sánchez Romero	
11	Women’s Pathways in the History of Spanish Archaeology: A New Synthesis	221
	Margarita Díaz-Andreu	
12	The Professionalization of Female Prehistorians in France in the Twentieth Century	243
	Sophie A. de Beaune and Nathalie Richard	
13	Female and Male Archaeologists in Italy from the Unification (1871) to Contemporary Times	269
	Francesca Fulminante	
14	Women’s Contributions to Archaeology in Germany Since the Nineteenth Century	283
	Doris Gutschiedl-Schumann, Julia Katharina Koch, and Elsbeth Bösl	
15	Women as Actors and Objects: The Discovery of ‘Venus’ Figurines in Present-Day Austria	309
	Katharina Rebay-Salisbury	
16	A Safe Space for Women Archaeologists? The Impact of K.A.N. on Norwegian Archaeology	327
	Lisbeth Skogstrand	
17	Moving Big Slabs: Lili Kaelas and Märta Strömberg – Two Swedish Pioneers in European Megalith Research	345
	Tove Hjørungdal	
18	Women in the Archaeology of the Trans-Urals (Russian Federation)	361
	Natalia Berseneva and Sofya Panteleeva	
19	No Pay, Low Pay, and Unequal Pay: The TrowelBlazers Perspective on the History of Women in Archaeology	381
	Brenna Hassett, Victoria L. Herridge, Rebecca Wragg Sykes, and S. E. Pilaar Birch	

Part IV Middle East

20 The Story of Nawala A. Al-Mutawalli, a Woman Archaeologist from Iraq 401
 Nawala A. Al-Mutawalli and Sandra L. López Varela

Part V Africa

21 Women and the Foundation of Egyptian Archaeology 415
 Caroline Arbuckle MacLeod

22 Female Archaeologists in West Africa: The Case of Senegal. 441
 Khady Niang

23 Tanzanian Women in Archaeology 461
 Kathryn L. Ranhorn and Mariam Bundala

24 Women Politics and Archaeology in Sudan 483
 Intisar Soghayroun Elzein

Part VI Asia

25 Women in Southeast Asian Archaeology: Discoveries, Accomplishments, and Challenges 497
 Rasmi Shoocongdej and Miriam T. Stark

26 Swimming Against the Tide: The Journey of a Bengali Archaeologist 515
 Bishnupriya Basak

27 Women in Japanese Archaeology 535
 Naoko Matsumoto

28 Female Scholars and Their Contributions to Chinese Archaeology 559
 Anke Hein, Jade d’Alpoim Guedes, Kuei-chen Lin, and Mingyu Teng

Part VII Australia

29 Women in Australian Archaeology: Challenges and Achievements 593
 Claire Smith, Niamh Formosa, Gwen Ferguson, and Kristen Tola

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Chapter 5

The History of Teotihuacan Through the Eyes of Women Scholars



Linda R. Manzanilla

Early History of the Teotihuacan Valley

Settlement pattern studies of the Basin of Mexico by William T. Sanders and his team (Sanders et al. 1979, 329) included the excavation of houses at the Cuanalan Formative Village, identifying the early occupations of the Teotihuacan Valley (Table 5.1). Between 1974 and 1976, Linda R. Manzanilla and Marcella Frangipane designed a multidisciplinary project to investigate further Late and Terminal Formative (400–80 BCE) houses at Cuanalan, offering, for the first time in the archaeological investigations of Teotihuacan, a comprehensive view of what life was like before the emergence of the Classic metropolis (Manzanilla 1985; Fig. 5.1). The investigation of activity areas and the analytical investigation of the recovered materials revealed a wide-range food crop and harvest system that provided Formative inhabitants with several varieties of maize (*Palomero*, *Arrocillo*, *Cónico*, *Cacahuacintle*, and *Chapalote*; Fuentes-Mata 1978), beans, squash, amaranth, husk tomato, wild onions, cactus, agave, prickly pears, verbena, setaria and medicinal plants. Adding to this subsistence system, inhabitants had access to fruits, for example, Mexican hawthorn (*tejocote*, *Crataegus mexicana*). Surrounded by forests, inhabitants collected pine, oak, and leguminous wood, as well as Cyperus reeds (Álvarez del Castillo 1984, 19; Manzanilla 1985) to build their wattle-and-daub huts, which measured 25 m². Houses were set 9 to 12 meters apart (Manzanilla 1985). Each house had inner hearths and outer roasting ovens, bell-shaped pits, and partial burials in pits. The Formative inhabitants of Cuanalan also hunted and trapped deer, hares, turtles, frogs, and catfish; they also bred turkeys and dogs.

In 2019, Deborah Nichols† (Nichols and Stoner 2019) initiated investigations on the Early and Middle Formative occupations at Altica, which add up to former

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Table 5.1 The chronology of Teotihuacan, based on Linda R. Manzanilla. 2017. Teotihuacan, ciudad excepcional de Mesoamérica. El Colegio Nacional (Opúsculos), México

Late and terminal Formative	400–80 BCE
Classic Period	
Tzacualli phase	1–100 CE
Miccaotli phase	100–200 CE
Tlamimilolpa phase	200–350 CE
Xolalpan phase	350–550/570 CE
Metepec phase	550/570–650 CE
Epiclassic and Postclassic	
Coyotlatelco phase	650–850/900 CE
Mazapa phase	850/900–1100 CE
Aztec phase	1300–1521 CE

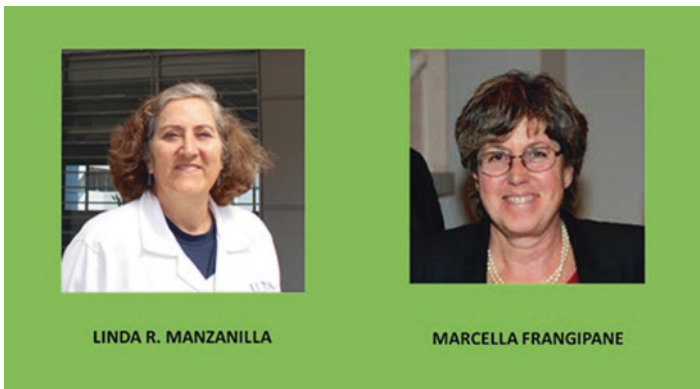


Fig. 5.1 Linda R. Manzanilla (https://unam.academia.edu/LindaManzanilla_) and Marcella Frangipane (<https://www.thebritishacademy.ac.uk/fellows/professor-marcella-frangipane-fba/>), excavated houses and courtyards at Cuanalan (1974–1976), a Formative Village of the Teotihuacan Valley

studies of the early Patlachique phase by Darlena Blucher (1971) at Tlachinolpan; and to those by Carmen Cook de Leonard (1957) at Plaza 1 from the Tzacualli phase (Fig. 5.2). Expanding her in-depth analysis of the domestic activities in the Valley of Teotihuacan, Manzanilla and her team (Manzanilla 1996) investigated Oztoyahualco 15B, an apartment compound located in the northwestern sector of the city. These influential investigations in household archaeology have inspired many women working in Mesoamerica.

The Urban Settlement of Teotihuacan

The Basin of Mexico was populated by villages and hamlets, except for Teotihuacan, where at least 125,000 people lived in a 20 km² city (Fig. 5.3). Teotihuacan inhabitants mined tunnels at different sectors of the northern part of the Valley of



Fig. 5.2 Emily McClung de Tapia (<https://www.comoves.unam.mx/numeros/quienes/155>), Deborah Nichols† (<https://faculty-directory.dartmouth.edu/deborah-l-nichols>) and Nawa Sugiyama (<https://researchmap.jp/nawasugiyama>) have dedicated their studies to the natural setting and resources of the Valley of Teotihuacan

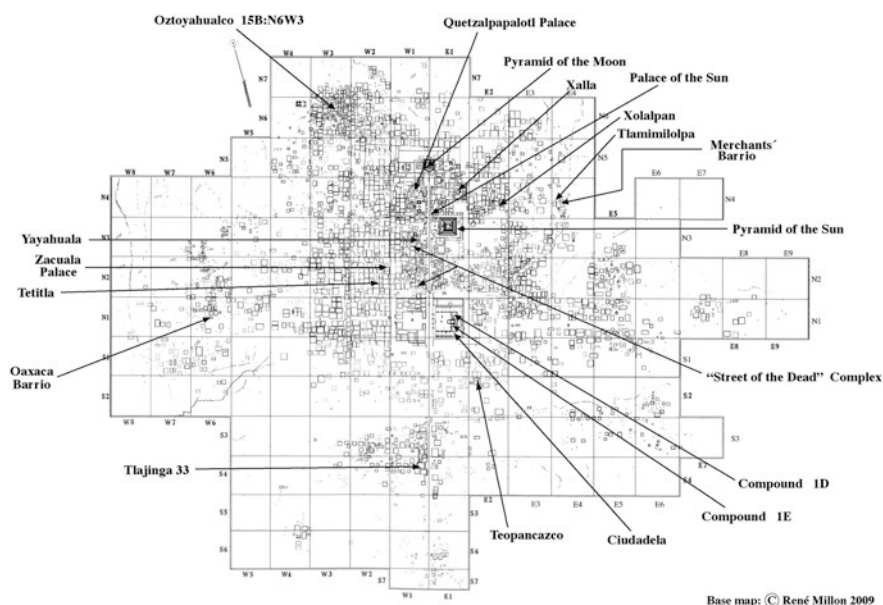


Fig. 5.3 Map of the city of Teotihuacan, displaying its main sectors, (based on René Millon 2009). Map redrawn from Millon's map by Linda R. Manzanilla, César Fernández and Rubén Gómez (see Figure 1.1 in Manzanilla (ed.) 2017 *Multietnicity and Migration at Teopancazco*, University Press of Florida)

Teotihuacan and extracted volcanic scoria and tuff for the massive construction of public and palatial building groups that transformed the early villages into a city at around 150–170 CE (Manzanilla 2015b; Manzanilla et al. 1996; Table 5.1). During the Late Miccaotli phase, the construction of buildings included placing foundation offerings, as revealed by Manzanilla during her excavations of the Xalla Palace (for example Manzanilla 2017a).

At this time, the Valley of Teotihuacan experienced the immigration of people from Puebla-Tlaxcala Valley, after the eruption of the Popocatepetl Volcano around 80 CE (Plunket and Uruñuela 1998) forced them to abandon their Formative villages, that already used the *tablero-talud* construction element present in the building facades of the Late and Terminal Formative, later seen at Teotihuacan. Early villagers placed three structures around a courtyard, which further proves the connections between these areas, although life in the Puebla-Tlaxcala villages seemed more complex than what Manzanilla and Frangipane investigated at the Teotihuacan Formative village of Cuanalan.

During the Tlamimilolpa phase (200–350 CE), the urban planning of Teotihuacan included the existence of an urban grid that divided the city into four districts on a north-south axis with the tracing of the Street of the Dead and an east-west avenue (Manzanilla 2009; Table 5.1). The urban planning included the channeling of the San Juan River, apartment compounds that housed local families, and the construction of neighborhoods in the periphery where migrants lived (Millon 1973). Three main pyramids stand out in the city: the Moon Pyramid to the north, the Sun Pyramid to the northeast, and the Pyramid of the Feathered Serpent to the southeast. In the Moon Plaza and the Sun Plaza, two large congregation plazas were built, along with administrative and religious public buildings on the Street of the Dead. In the middle of the city, the Ciudadela shaped the southern part of the city, and to the west, the Great Compound, which René Millon proposed was the city's primary market, a hypothesis not yet confirmed by archaeological evidence.

Large residential compounds (ca. 3600 m²) along the Street of the Dead, for example, those of Tetitla, Yayahuala, Atetelco, and Zacuala, accommodated the elite. Other compounds were not as opulent, for example, the smaller multifamily compound of Oztoyalco 15B:N6W3 (Manzanilla 1996, 2009). Migrants and the local population were organized in corporate groups. They lived in apartment compounds, surrounded by high walls (Manzanilla 1996). These compounds surrounded ca. 22 neighborhood centers (i.e. Manzanilla 2012), probably headed by nobles of the intermediate elite that organized specialized craft activities by multiethnic groups and the provisioning of sumptuary goods from allied regions (Manzanilla 2009, 2017b). These apartment compounds are an outstanding characteristic of Teotihuacan, not shared by other societies.

A severe crisis may have taken place at the end of the Tlamimilolpa period (ca. 320–350 CE), perhaps related to political events that provoked the eviction of the group of the Feathered Serpent by setting its temple on fire and dismantling its sculptures (Manzanilla 2018; Table 5.1). During this time, the serpent iconography

changed, favoring the use of felines in the Xolalpan phase (Manzanilla 2018; Table 5.1). The Mythological Animals' Mural Painting depicts two serpents challenged by felines, canids, birds of prey. In places such as Teopancazco (Manzanilla 2009, 2012, 2017b), a neighborhood center in the southeastern district of Teotihuacan, different termination rituals took place at around 350 CE. Manzanilla and her team (2009, 2012, 2015a, b, 2017b) have described the decapitation of 29 adult individuals at around 350 CE, following the Mixtequilla mortuary tradition Cerro de las Mesas. During this time, dwellers broke their plain and painted pottery vessels, along with lacquered and foreign vessels, a termination ritual for the Tlamimilolpa phase. The advent of the Xolalpan period (350–550 CE), what is referred to as the “the urban renewal” by Millon (1973), is marked by Teotihuacan inhabitants covering earlier Teopancazco buildings and painting new constructions with red paint, which required a large labor force present in the city.

By 550/570 CE (Manzanilla 2017a, 2018; Soler Arechalde et al. 2006), the extensive evidence of destruction throughout the city, including a massive fire, announces the Teotihuacan collapse (Manzanilla 2017a, 2018; Table 5.1). In the palatial complex of Xalla, located between the pyramids of the Sun and the Moon (Manzanilla 2017a, 2018), Manzanilla found data related to the destruction of the central ritual plaza by intense fire and the archaeomagnetic dating of this event places it by 570 CE (Beramendi Orosco et al. 2021; Soler Arechalde et al. 2006). At the central plaza and adjacent areas, the shattering of sculptures has been registered, for example, at the Quetzalpapálotl Palace, the Priests' House, the Viking Group, and Structure 1D of the Ciudadela (Jarquín Pacheco 2020), even along the Street of the Dead. At Xalla, there is evidence of carbonized wooden roofs on top of the floor of late Xolalpan times. These events may have resulted from an internal revolt towards the ruling elite (Manzanilla 2017a), initiated by the intermediate elite who lived at neighborhood centers to assure their autonomy. After the “Great Fire”, many inhabitants left the city.

After the short Metepec period, there is consistent evidence that Coyotlatelco groups arrived and looted the Classic period city, mainly the Pyramid of the Sun sector and the Xalla palace (Manzanilla 2017a; Table 5.1), marking the beginning of the Epiclassic period (Table 5.1). Behind the Pyramid of the Sun, Linda R. Manzanilla and her team (Manzanilla et al. 1996; Manzanilla 2015b) excavated extensively four tunnels with Epiclassic and Postclassic occupations. Natalia Moragas (2015) excavated two other tunnels, which provided Epiclassic materials (Moragas 2009). Most of the tunnels were initially quarries for construction materials, such as the volcanic scoria and volcanic tuff, while others may have been solar observatories, even places of fertility propitiation (Manzanilla 2015b). Epiclassic pottery studies have been conducted by Claudia López and Claudia Nicolás (López et al. 2006; Table 5.1), and Destiny Crider (Crider et al. 2007). The Aztec period at the Teotihuacan Valley was evidenced by Susan Evans (1988) at Cihuateopan near Otumba. Together with Cynthia Otis, Charlton studied craft specialization and pottery production for this period.

Teotihuacan's Natural Environment and Subsistence Strategies

Women scholars are behind our knowledge about the natural environment of the Valley of Teotihuacan and the exploitation of its rich resources. Emily McClung de Tapia (for example, 1979, 2015) has studied the soil and flora of the Teotihuacan Valley for decades, as well as the evolution of its landscape. Deborah Nichols† (Nichols et al. 1991; Nichols 2020) unveiled the intensive agricultural techniques and water resources used to exploit the environment. Most recently, Nawa Sugiyama (Sugiyama and Somerville 2017) has studied the fauna used in specific ritual contexts, all landscape modifications.

Through their investigations, we now know the Valley of Teotihuacan displays soils that originated from the alteration of volcanic rocks and alluvial and colluvial materials. Following McClung's research, between 1000 and 1 BCE, the presence of flora associated with high humidity conditions indicates Formative people lived in a hot and humid climate, with fluctuations in temperature. These conditions were to change during the Classic and the Epiclassic Periods, which favor semiarid conditions with high temperatures. Enriqueta García (1974) was the first scholar to identify a drought at the end of the Teotihuacan Classic occupation.

The city inhabitants consumed maize, amaranth, beans (black and *ayocote* beans), squash, chili peppers, cheno-ams plants, tomato, cactus, Mexican hawthorn, and Mexican cherries (McClung 1979; Manzanilla 1996). At Oztoyahualco 15B, excavations by Manzanilla (1996) recovered medicinal plants, such as *zapote blanco* or *Casimiroa edulis*. The inhabitants of Oztoyahualco 15B were breeding turkeys, dogs, and rabbits, and other species were hunted or trapped by its inhabitants, for example, white-tailed deer, hare, aquatic fowl, and aquatic animals, such as, turtles, frogs, and freshwater fish. At Tlajinga 33, Storey (1992) identified its inhabitants consumed turkey eggs, doves, and quail. Linda R. Manzanilla (2017b, 2018) suggests many local products were accessible at weekly open markets or *tianguis* held in open spaces attached to each neighborhood center or *barrio*. Whereas foreign products and raw materials came to each neighborhood through caravans organized by the intermediate elite of each neighborhood that transited corridors of sites previously incorporated by alliances (Manzanilla 2009, 2012, 2015a, 2017b, 2018). During the excavations at the Teopanazco neighborhood center, Manzanilla and her team (Manzanilla 2012, 2009, 2017b) identified foreign species and products, including 14 fish varieties from the coastal lagoons of Veracruz, specifically from the Nautla region, as well as, crabs, crocodile; marine shells from the Gulf Coast, the Caribbean, and Pacific Oceans, even cotton cloths and threads for crafting elite garments.

Inside the Pyramid of the Moon, consecration rituals for each of its seven construction levels, which included sacrificial victims and different types of objects, also incorporated the use of plants and animals. McClung de Tapia provided a list of plant macrofossils associated with burials 2, 3, and 4. Burial 2 displayed carbonized remains of cheno-ams, prickly pear, *Eragrostis*, maize, *Salvia*, *Physalis*, *Portulaca*,

Verbena, pine, and oak, while Burial 3 contained carbonized macrofossils of amaranth, maize, *Portulaca*, and oak. Furthermore, in the fill of the Pyramid of the Sun, McClung de Tapia and Barba-Pingarrón determined the presence of carbonized maize, *Portulaca*, cheno-ams, chili peppers, *Physalis*, cactus, and prickly pear. Various animals (canids, felines, birds of prey, serpents) have been identified in ritual contexts. According to Nawa Sugiyama, most of these animals had symbolic roles for Teotihuacan dwellers (Manzanilla 2009).

The City's Sectors

For six decades, women scholars have excavated different sectors of the city (Fig. 5.4). Along the Street of the Dead, dividing the city a north-south axis, Verónica Ortega (2020) has carried out excavations at the Moon Plaza and the Quetzalpapálotl Palace. Under the “Quincunce Altar,” Ortega found five monoliths made with metamorphic greenstone (similar to serpentine), leading to suggest this was a seat of public power at Teotihuacan.

Since 2000, Linda R. Manzanilla (e.g., 2017a, 2018) has been excavating the Xalla palatial complex, linked to the Street of the Dead by a causeway. Excavations



Fig. 5.4 Women investigators who excavated different sectors of Teotihuacan. Laurette Séjourné (<https://www.facebook.com/photo/?fbid=324594934227233&set=ecnf.100068283803601>), Linda R. Manzanilla (<https://www.iiia.unam.mx/academico/3528>), Evelyn C. Rattray† (http://www.humanindex.unam.mx/humanindex/pagina/pagina_inicio.php?rfc=Q0iIRTlzMtIwNA==), Rebecca Storey (<https://www.uh.edu/class/ccs/people/rebecca-storey/>), Verónica Ortega (<http://ppcteotihuacan.org/es/equipo/directores/>), Ana María Jarquín (<https://www.lugares.inah.gob.mx/es/inicio/expertos/13621-jarqu%C3%ADn-pacheco-ana-mar%C3%ADa.html>), Julie Gazzola (https://www.youtube.com/watch?v=AixhPd6p_T0), Nawa Sugiyama (<https://researchmap.jp/nawasugiyama>)

of this palatial complex, covering an area of 55,000 m², provide crucial information about the ruling elite. The palace concentrated most of the mica brought to Teotihuacan from the Ejutla source in Oaxaca. Furthermore, it has extensive evidence of the burning of the palace during the “Great Fire” that destroyed the central core of Teotihuacan by 570 CE (Beramendi Orosco et al. 2021).

The Ciudadela sector was investigated earlier by Ana María Jarquín (Jarquín Pacheco 2020). Her investigations at Structure 1D, a residential compound to the north of the Temple of the Feathered Serpent, revealed the Ciudadela housed different activities of main priestly figures in its five modules, so it was not an area for the ruling elite. Before constructing the Feathered Serpent Pyramid, early buildings not following the Teotihuacan grid were excavated in the Ciudadela by Julie Gazzola.

Nearly 2000 apartment compounds have been identified at Teotihuacan, although some were neighbourhood centers, as we will see further on. On the city’s periphery, Teotihuacan inhabitants built domestic compounds, as demonstrated by Martha Monzón’s (1989) partial excavations of the residential compound at San Antonio Las Palmas. Life on the periphery was unveiled by Linda R. Manzanilla and her interdisciplinary team (Manzanilla 1996, 2009), who extensively excavated the Ozttoyahualco 15B compound in 1985–1988. Three nuclear families lived in a building surrounded by high walls at this compound. Manzanilla’s project individuated the three apartments by locating their kitchens and ritual courtyards (Manzanilla 1996). Manzanilla (2009) suggested that these three families constituted a corporate group, with each family venerating a different patron deity in their ritual courtyard. Members of this corporate group were stucco workers and masons. Although most of the inhabitants of Ozttoyahualco 15B were local people, strontium isotope analysis (Price et al. 2000) detected that some members of these families came from other regions of Mesoamerica, perhaps the Gulf Coast of Mexico. Evidence of inequality among these families is evident in that one of them had the largest ritual courtyard, where its members revered the Storm God of Teotihuacan. Indeed, this family had access to foreign goods, raw materials, and the resources to decorate their house with unelaborated mural paintings (Manzanilla 1996, 2009).

Excavations at Teopanaczo (1997–2005) by Manzanilla (2009, 2012, 2017b, 2018) have helped differentiate between multifamily apartment compounds and neighborhood centers. Recently, Manzanilla (2009) suggested that apartment compounds such as Ozttoyahualco 15B were built around neighborhood centers such as Teopanaczo. Hypothetically, these 22 neighborhoods identified so far distributed within the city’s four districts. Neighborhood centers had a ceremonial plaza where rituals were performed and included an administrative area, a sector for guards, and a residential area for the household that managed the neighborhood. These neighborhood centers were dynamic social units organized by the intermediate elite. Multiethnic groups produced highly specialized crafts in these compounds. A series of kitchens and storerooms located in the periphery of the center were used to feed the workers. In the craft-production area for making garments, many of the craftsmen were migrants (Manzanilla 2009, 2012, 2015a). Sumptuary goods were brought from other Mesoamerican regions through a caravan system (Manzanilla 2009, 2012, 2015a, 2017b), headed by nobles. These caravans brought back foreign

sumptuary and foreign goods from the coastal lagoons of Veracruz (14 varieties of fish, crabs, crocodile, coastal birds, cotton cloths); pottery from the Mixtequilla region; and volcanic glass from Altotonga, Veracruz (Barca et al. 2013), as well as, travertine and thin-orange ware from central Puebla, and minerals probably for the making of cosmetics. Skeletal remains had activity markers suggesting these individuals spent many hours squatting during the making of garments and fiber softening; other activity markers point to net throwing. Still, other markers suggest some dived in cold waters, and others had to walk many kilometers carrying a heavy freight (Manzanilla 2015a, 2017b). According to $^{87/86}\text{Sr}$ isotopes and stable isotopes, a large group of craftsmen at Teopancazco came from Puebla, Tlaxcala, Hidalgo, Veracruz, and some perhaps from Chiapas and Oaxaca (Manzanilla 2012, 2017b). Most were fed with maize (*tortillas*, *tamales*, *atole*) and cooked domestic animals also fed with maize (turkeys, dogs) (Manzanilla 2017b). Genetic studies defined the four haplogroups identified for Mesoamerican populations in one single neighborhood center of Teotihuacan (Álvarez-Sandoval et al. 2015; Manzanilla 2017b). Most likely, these migrants from Tlaxcala, Hidalgo, Puebla, Veracruz, and other areas as well, were attracted to the thriving city of Teotihuacan, which offered them better-living conditions (Manzanilla 2012, 2015a, 2017b, 2018), as several of these individuals suffered nutritional stress during infancy.

Foreign neighborhoods occupied the site's periphery, for example, the Merchants' Barrio, excavated by Evelyn C. Rattray† (for example 1989). There, merchants from Veracruz built circular adobe structures, uncharacteristically of Teotihuacan architecture and its urban grid (Rattray 1989). Recently, Verónica Ortega's (2014) explorations of the Oaxaca Barrio identified three groups of people concentrated along the Western Avenue, supported by a vast range of urns and tombs with chamber and antechamber, as found in Monte Albán. The extensive network of communication with other Mesoamerican areas has been documented by Nawa Sugiyama (Sugiyama et al. 2016), who has been working at the Colonnade Plaza in front of the Pyramid of the Sun; her project exposed destroyed Maya mural paintings, similar to the ones discovered earlier at Tetitla.

At Teotihuacan, there are other residential compounds (ca. 3600 m²) with mural paintings, such as Tetitla, Zacuala and Yayahuala, which were studied by Laurette Séjourné (1959, 1966). Located in the southern periphery of Teotihuacan is Tlajinga 33, where Rebecca Storey (1992; Storey and Widmer 1989) excavated, finding a shift in economic activities from the Tlamimilolpa period to the Xolalpan period, as their dwellers specialized in lapidary first, and then began crafting San Martin Orange ware pottery.

Craft Specialization

Women archaeologists have been vital in identifying craft specialization and production of various objects (Fig. 5.5). Hilda Castañeda (1976), for example, analyzed grinding instruments from the Teotihuacan Project headed by Ignacio



Fig. 5.5 Women experts in Teotihuacan pottery and lapidary production. Florencia Müller (https://antropowiki.alterum.info/index.php/Emilia_Florencia_M%C3%BCller), Evelyn C. Rattray† (http://www.humanindex.unam.mx/humanindex/pagina/pagina_inicio.php?rfc=Q0IIRTizMTIwNA==), Martha Sempowski (<https://www.archaeologicalconservancy.org/update-east-new-york-archaeological-preserves/>)

Bernal. Julie Gazzola (2005) described the production of high-status lapidary work at La Ventilla (Frente 3), including funerary masks and adornments, which added up to Margaret Turner’s (1992) excavations at Tecópac, that evidenced a lapidary production setting, and Martha Sempowski’s (1994) studies of lapidary objects as part of the accouterments of high-status burials. Contributing to lapidary studies, Julieta López et al. (2018) analyzed slate objects from different functional sectors, and Ariane Allain (2006) studied the sculptures of the metropolis.

Two women archaeologists have been particularly relevant to the study of Teotihuacan pottery and its production. Florencia Müller (1978) analyzed the ceramic objects from the Teotihuacan Project headed by Ignacio Bernal, and Evelyn C. Rattray (2001) established the ceramic chronology of Teotihuacan, with the analysis of materials obtained in Millon’s Teotihuacan Mapping Project, which most archaeologists use. Evelyn Rattray also concentrated her studies on the production of molded thin-orange wares at Ixcaquixtla, Puebla. Further production sites have been investigated in the terraces of the Patlachique range by Oralia Cabrera (2011), who excavated Site 520, where she found instruments, refuse, and objects that assess the production of Teotihuacan pottery. Women scholars have participated in the investigations of polychrome painted pottery; for example, Cynthia Conides (2018) studied the Teotihuacan painted tripods. Adding to these studies, Linda R. Manzanilla and Emilie Carreón (see Manzanilla 1996, 2009) analyzed a special theater-type censer found in a burial at Oztoyalco 15B:N6W3.

Based on Sigvald Linne's finding, the vast recovery of figurines at Teotihuacan merited Sue Scott (2001) to propose an original typology for Teotihuacan figurines. Enah Fonseca (2018) analyzed gendered representations in the figurines from Teopanazco and concluded that male and female figurines were present in the different functional sectors; thus, there was no evidence for segregation based on gender. However, skeletal remains suggest otherwise, as 85% of the adult burials interred at Teopanazco were males. Further studies on figurines by Kim Goldsmith (2000), derived from the excavations of Plaza 5 sector, located to the west of the Pyramid of the Moon. Teotihuacan figurine studies have inspired Berenice Jiménez (2020, 2021) to document different phases of female pregnancy and investigate the segmentation of figurines at Xalla and Teopanazco, emulating the dismembering of humans and animals as ritual and mortuary practices.

Pottery production included the making of miniatures (Gómez 2016) and musical instruments, the latter extensively studied by Francisca Zalaquett (2018, 2019), who investigated a sample from Teopanazco and the Xalla palatial complex. Musical instruments were also made from bone (Padró-Irizarri 2002).

The scale of production for the making of these objects took place at four levels, according to Manzanilla (2018). Craft production took place at compounds of corporate family groups (Manzanilla 1996), while highly specialized craft production characterized the palatial structures near the Street of the Dead (Manzanilla 2017a) and the neighborhood centers (Manzanilla 2009, 2012).

Early in the twentieth century, women began studying and recording the distinctive mural paintings at Teotihuacan (Fig. 5.6), of which Adela Breton copied the first mural paintings found at Teotihuacan and Teopanazco (McVicker 2005). Esther Pasztory (1988, 1992) is an outstanding scholar who has interpreted some of the most distinctive mural paintings at Teotihuacan, mainly those at Tepantitla and the murals in the Wagner collection (Berrin 1988). Building from the work of Esther Pasztory, Beatriz De la Fuente (1996) became the main expert for mural paintings from Teotihuacan and Mesoamerica in general. Beatriz De la Fuente's seminar on the mural paintings of Mesoamerica has produced many significant volumes with color depictions of the mural paintings.

A recent volume on the murals from Tetitla was published by Staines and Helmke (2017). Claudia García Des-Lauriers (2008) has contributed to identifying particular buildings at Teotihuacan, such as the Tlacoachcalco. Iconographic studies by Anabeth Headrick (2007) and Tatiana Valdez (2018) add to these studies.

Archaeometric Studies

Women scholars have been at the forefront of archaeometric studies to reconstruct the history of Teotihuacan and its inhabitants (Fig. 5.7). Chemical analysis of stucco floors to identify human activities has influenced archaeology worldwide through the work of Alessandra Pecci (Pecci et al. 2010, 2016) at Teopanazco, and Laura Bernal (2019) at Xalla. For Teopanazco, Pecci et al. (2016) designed a technique



Fig. 5.6 Women experts on the mural paintings and iconography of Teotihuacan. Esther Pasztory (<https://sofheyman.org/persons/esther-pasztory>), Beatriz de la Fuente (<https://www.gaceta.unam.mx/en-linea-el-fondo-beatriz-de-la-fuente/>), Annabeth Headrick (<https://udenver.academia.edu/AnnabethHeadrick>)



Fig. 5.7 Women experts on archaeometrical studies at Teotihuacan. Laura Beramendi (https://www.dgcs.unam.mx/boletin/bdboletin/2009_038.html), Ana María Soler (<https://indicepolitico.com/aun-sin-modelos-de-prediccion-de-sismos-ana-maria-soler-arechalde/>), Diana Magaloni (<https://culturaunam.mx/elaleph2021/participantes/diana-magaloni/>), María Luisa Vázquez (<https://ccis.webs.upv.es/team/maria-luisa-vazquez-de-agredos-pascual/>)

to identify the production of stucco floors that scholars adopted to study other compounds in the city.

Diana Magaloni (De la Fuente 1996) is a pioneer in the study of pigments for mural paintings. Cristina Martínez also studied pigments in mural paintings and the decorated pottery of Teopancazco. At Teopancazco, Vázquez de Ágredos et al. (2012, 2018) and Doménech Carbó et al. (2012) individuated pigments and organic materials contained in miniature vessels associated to main burials. East of the Street of the Dead, at 46C:N4E2 site, Ligia Sánchez Morton (2012) studied a workshop where hematite was processed into a red pigment. In addition, cinnabar has been found in various contexts throughout Teotihuacan (Julie Gazzola 2004). Non-invasive analytical techniques have been used by Magali Maruf to characterize the pigments of decorated pottery of Teotihuacan. It is through the work of Ángela Ejarque et al. (2018) that we know more about mortuary practices, as she identified galena and cinnabar as part of a termination ritual of the Late Tlamimilolpa phase at Teopancazco, during which the heads of decapitated individuals were buried in vessels.

With respect to dating techniques, the pioneering work by Evelyn Rattray was followed by Linda R. Manzanilla (2012), who contrasted radiocarbon and archaeomagnetic dates to assess the Teotihuacan chronology (Beramendi-Orosco et al. 2012, 2021) and experimentally addressed archaeo-intensities in pottery fragments from the Classic period (María Rodríguez et al. 2012).

Women scholars have applied archaeometric studies to reconstruct dietary patterns of humans and animals and their migratory status through trace element and isotopic analyses. Christine White (White et al. 2002, 2004a, 2004b, 2007) was a pioneer of stable isotope analysis to individuate migrants in the burials found inside the Feathered Serpent and Moon pyramids as well as the Oaxaca Barrio and Tlajinga 33. Moreover, Rebecca Storey (1992) was the first woman scholar to apply paleodemographic analyses at Teotihuacan, followed later by Blanca Zoila González Sobrino (2017), who studied the health conditions of sacrificial victims found at the Feathered Serpent Pyramid. Earlier Magali Civera (1993) analyzed the recovered burials of the Oztoyahualco 15B:N6W3 apartment compound, assessing a good health condition for its inhabitants. For La Ventilla 92–94 neighborhood, María Arnauld (2014) analyzed the provenance and the diet of a sample of buried individuals. Kristin Nado (2017) has compared burials recovered at various compounds to determine diet, status, and mobility.

Linda R. Manzanilla (2012, 2015a, b, 2017b; Manzanilla and Serrano 1999) has been interested in providing a holistic approach to studying buried individuals at Teotihuacan. For Teopancazco, Manzanilla integrated a group of specialists to determine trace elements in buried individuals and distinguish those who had a marine based-diet from those who had a terrestrial desert or terrestrial non-desert diet (Mejía Appel 2011, 2017). Under her lead, scientists have used stable isotope analysis to individuate migrants and determine their paleo diet (Casar et al. 2017). Mitochondrial DNA was used to assess biological diversity (Álvarez Sandoval et al. 2015). Teopancazco had a very high diversity index of human remains compared to other sites where ancient DNA analyses have been used. Innovative forensic

analysis has helped Manzanilla reconstruct the facial characteristics of five individuals from Teopancazco (Escorcía et al. 2020).

Final Considerations

Many women archaeologists, bio-archaeologists, and art historians have studied Teotihuacan and its society, not all cited in this contribution. Many have excavated in main plazas, palatial structures, neighborhood centers, ethnic neighborhoods, residential compounds, domestic multifamily compounds, and peripheral terraces. Women have analyzed pottery and carried archaeometric studies on pigments and lapidary objects; have used archaeomagnetic and radiocarbon dating; have determined isotope and trace element analyses, including ancient DNA; and have done facial approximation reconstructions. Perhaps, the only area where women have not been so active is in settlement pattern studies, nor have women concentrated their studies on obsidian production. Nonetheless, most of what we know about the environment, including soils and flora, life in the city, even mural paintings and iconography, are studies made by women. Women have produced incommensurable knowledge about Teotihuacan due to their vast interest, in-depth analysis, and holistic investigations.

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