ARTÍCULOS

Revista Española de **Antropología Americana**
ISSN: 0556-6533

EDICIONES COMPLUTENSE

https://doi.org/10.5209/REAA.61981

From Teotihuacan to Tenochtitlan. Two Trajectories of Social Change

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Recibido: 10 de marzo de 2017 / Aceptado: 4 de mayo de 2017

Abstract. I review quantitative data for several major social and economic changes in central Mexico from the Classic Period through the Late Postclassic Period. Two kinds of trajectories through time can be identified. First, population and urbanization exhibited U-shaped curves of change: High values for Teotihuacan in the Classic, then lower values during the Epiclassic and Early Postclassic periods, followed by high values again in the Late Postclassic (Aztec) Period. On the other hand, economic measures (trade and commercialization) increased over this interval, while measures of well-being or standard of living declined. This is a preliminary study that points to the importance of quantitative archaeological data for research on the changes that took place in ancient Mesoamerica.

Keywords: Teotihuacan, Tula, Mexicas, Ancient states, Inequality.

[es] De Teotihuacan a Tenochtitlan. Dos trayectorias de cambio social

Resumen. En este artículo revisaremos datos cuantitativos de varios grandes cambios sociales en el México central desde el periodo Clásico hasta el Posclásico Tardío. Identificaremos dos tipos de procesos a través del tiempo. En primer lugar, la población y la urbanización muestran curvas de cambio en forma de U, con valores altos para Teotihuacan en el Clásico, y valores decrecientes durante el Epiclásico y el Posclásico Temprano, seguidos nuevamente de valores altos en el periodo Posclásico Tardío o Azteca. Por otro lado, las medidas económicas, relacionadas con el intercambio y el comercio, se incrementaron durante este periodo, mientras declinaban las medidas indicadoras de bienestar o calidad de vida. Este es un estudio preliminar que incide en la importancia de los datos arqueológicos cuantitativos para la investigación de los cambios que tuvieron lugar en la antigua Mesoamérica.

Palabras clave: Teotihuacan, Tula, mexicas, estados antiguos, desigualdad.

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1. Introduction

The eight centuries between the fall of Teotihuacan and the founding of Tenochtitlan witnessed profound social changes throughout central Mexico. Some authors have focused on a small number of features to describe these changes, such as settlement patterns (Sanders *et al*. 1979) or cultural elements (Carrasco *et al*. 2000). But in fact

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there were many diverse types of changes in society and culture at this time. In this paper, I describe the major types of social change, and I organize them under two divergent kinds of trajectory or path. First, some processes followed a U-shaped path, declining after the fall of Teotihuacan and then rising again with the growth of Tenochtitlan. Population levels, polity size, and urbanization all followed this «fall and rise» trend. Second, other processes witnessed a more continuous process growth over these same centuries. Notably this path was followed by social inequality, commercial exchange and the intensity of international interaction. I review the evidence for social changes in central Mexico, starting with the Classic-period city of Teotihuacan and ending with the Spanish conquest

2. Outline of Historical Changes

During the Classic period (AD 100-600), Teotihuacan was the largest city in Mesoamerica. Teotihuacan dominated central Mexico economically and politically. Teotihuacan's civic architecture was burned and destroyed in the sixth century in an event that is often referred to as the «collapse» of the city. Nevertheless, a significant population –30-40,000 people– continued to reside in the city in the following Epiclassic period (700-900), and Teotihuacan remained the largest city in central Mexico (Diehl 1989). Unfortunately we know very little about the post-collapse city or its residents, although it is almost certain that Teotihuacan had ceased to be an influential polity at this time.

The Epiclassic period saw the rapid growth of a series of large, fortified, hilltop cities throughout central Mexico. The regions of these new cities had all previously been part of the large zone of influence of Teotihuacan, whether part of that city's empire or not. Xochicalco is the most extensively studied Epiclassic fortified city (Hirth 2000). The city was founded with a small population during the Classic period, but reached is largest size in Epiclassic times. Monumental architecture was concentrated on top of a small mountain, whose slopes were terraced for residential occupation. A series of walls and ditches protected the city. Archaeologists have located many public relief sculptures that adorned temples and other civic buildings. These images stress dynastic and military themes, with several elements of Classic Maya style and content.

The basic features of Xochicalco's setting and external connections were duplicated at other Epiclassic central Mexican cities such as Cacaxtla and Teotenango. Cacaxtla is best known for an elaborate series of mural paintings showing battles and rituals, executed in Maya style. These were located in excavations at a palace compound located on a hilltop, surrounded by a large fortification ditch (Serra y Lazcano 1997). Archaeological research at these and other sites suggest that Epiclassic central Mexico was a period of political decentralization and warfare. Long-distance social interaction with the Maya cities, involving imagery and art styles, increased dramatically from Teotihuacan's day. The Epiclassic cities also traded with one another and shared a series of artistic and intellectual traits.

The Epiclassic cities collapsed after two centuries, leaving their hinterlands in a highly decentralized situation, with ruralized populations. At Xochicalco, the collapse involved the burning and destruction of much of the city, including defacement of much of the public art (de la Fuente *et al*. 1995). Only a few small pockets of the city continued to be occupied by small communities. These different Epiclassic

capitals were replaced in the Early Postclassic period by a single large urban center, Tula. Away from the Tula region, most parts of central Mexico had small, dispersed populations in Early Postclassic times.

Tula was the home and capital of the historically-documented Toltec peoples. This is the earliest city and people to receive unequivocal treatment in the Aztec native historical sources, but scholars cannot agree on the level of accuracy or relevance of those sources with respect to Toltec society. The Aztec kings traced their origin and legitimacy to their descent from the Toltec kings, and the descriptions of Tula and the Toltecs contain many obviously mythological elements (e.g., buildings constructed of gold or fantastic god-kings who lived hundreds of years). Earlier credulous interpretations of the Toltecs have given way recently to more skeptical accounts, and many scholars now doubt that Aztec native history contains any reliable historical information about the Early Postclassic period (Smith 2007).

Although the later native historical accounts are not useful for historical analysis, archaeology provides considerable information about political and economic phenomena in the Early Postclassic period. With a population of 50,000, Tula was the largest city since Classic-period Teotihuacan (Healan 2012; Mastache *et al*. 2002). The urban plan of Teotihuacan had been highly aberrant in Mesoamerica, including numerous unusual traits such as strict orthogonal planning, the lack of a large central civic plaza, and an axial layout around a central avenue. These planning traits were abandoned by the Epiclassic cities, and then the designers of Tula returned to ancient Mesoamerican planning canons in an extreme form. Tula is the most formally planned urban center in all of Mesoamerica, with a highly symmetrical and monumental layout of buildings around a formal plaza.

Although some scholars argue that Tula was the capital of an empire, this judgment owes more to a loose interpretation of Aztec native history than to empirical evidence (Smith y Montiel 2001). Nevertheless, Tula did engage in some kind of intensive interaction with the distant Maya city of Chichen Itza in Yucatan. One portion of the Maya city is laid out in a similar fashion to the civic center at Tula, and the two cities share a number of architectural forms and styles that are otherwise rare in Mesoamerica (such as buildings employing numerous stone columns). The nature of this relationship has been debated for over a century, and although there is now a consensus view backed by archaeological evidence, many details remain obscure. The architectural and urban commonalities between Tula and Chichen Itza developed at approximately the same time, and it is impossible to assign temporal priority to either city. The current model stresses dual processes of commercial exchange and movements of elites, who generated the stylistic similarities between the cities (Kowalski y Kristan-Graham 2011).

The collapse and abandonment of Tula around 1100 are not well understood. At approximately this time, a series of migrating groups moved into central Mexico from the north. The native histories from many of the Aztec city-states assert that their ancestors came from Aztlan, a perhaps mythological homeland to the north (Beekman y Christensen 2003; Smith 1984). Linguists have reconstructed a northern homeland for Nahuatl, the Aztec language. Because the timing of their arrival is not well established, it is not known whether the Nahuatl peoples played a role in the collapse of Tula. Archaeologically, however, it is clear that new cities were founded throughout central Mexico in the twelfth century with new types of artifacts and architecture. These new cities, of the Middle Postclassic period, developed into

the Aztec cities that flourished at the time of the Spanish conquest. The most likely explanation is that the Nahuatl migrants arrived in central Mexico in the eleventh or twelfth century to found cities and states, whether or not they contributed to the end of Tula and the Toltecs.

The Middle Postclassic period was a time of population growth and the expansion of cities and settlement across the landscape of central Mexico. Numerous city-states (*altepetl* in Nahuatl) were founded. These consisted of small urban centers with modest monumental architecture (a royal palace and one or more temple-pyramids, arranged around a central plaza), small resident populations, and surrounding farmland settled with villages and towns (Smith 2008). Kings and nobles pursued marriage alliances across city-state lines, and soon an interlocking nobility covered all of central Mexico. City-states also traded with one another, and a dynamic system of periodic marketplaces soon developed. Alongside these friendly relations, city-states also engaged in antagonistic activities. Kings waged wars with their neighbors to extract tribute, and some managed to create conquest-states or small empires. Tenayuca was one of the largest and most powerful Middle Postclassic cities in the Basin of Mexico, and it may have been the capital of a small empire. The entire political situation in central Mexico was highly dynamic, however, and no polity lasted very long.

As populations grew and settlement expanded, a variety of intensive agricultural methods were employed. Rivers were dammed and canals built, leading to large and productive irrigation systems in some areas. Hillsides were terraced, and the swampy lakes in the Basin of Mexico were converted to highly productive raised fields. Population growth and agricultural intensification continued into the Late Postclassic period, and by 1500 irrigation and terracing covered much of the central Mexican landscape (Smith 2012). Tenochtitlan grew into the largest city in the New World (Rojas 2001, 2012).

For the Late Postclassic period, scholars can rely on an abundance of written documentation assembled in the early decades of Spanish rule (Batalla 2010). This material permits a detailed reconstruction of social, political, economic, and cultural patterns in central Mexico, although the sources are heavily biased toward Tenochtitlan and the Basin of Mexico. Society was divided into two estates (legally defined classes), nobles and commoners. Nobles monopolized the positions of power in city-state government, and they owned most of the land. Although this was not «private property» in the modern sense, much of the land could be sold, but only to other nobles. Commoners gained access to farmland through a variety of arrangements, including rental and share cropping. Many commoners belonged to a corporate group called the *calpolli*, which consisted of a group of households residing in the same community, subject to the same noble overlord, and usually sharing economic occupations or activities. *Calpolli* councils allocated land to individual households, and organized collective activities. Commoners who did not belong to a *calpolli* had to work directly for a lord or king, and they were less well-off economically and had less control over their own destiny (Lockhart 1999).

In the first part of the Late Postclassic period two small empires formed in the Basin of Mexico, based in the cities of Azcapotzalco and Texcoco (Santamarina 2006). By this time the native historical accounts provide relatively good information on political dynamics. Then in 1428, war broke out leading to a major political realignment. Azcatpotzalco, the more powerful capital, was defeated and three cities

–Tenochtitlan, Texcoco and Tlacopan– formed an alliance to conquer other city-states and generate taxes. This «triple alliance» soon became a powerful empire of conquest. Although the alliance remained intact officially until the Spanish conquest, Tenochtitlan grew in power and wealth at the expense of its allies until it could be regarded as the sole capital of the empire. This polity was organized around principles of indirect rule, and most of the rulers and governments of the conquered city-states were left in power (Berdan *et al*. 1996; Carrasco 1996).

3. Decline and rise: the u-shaped trajectory of population, states and cities

Early generations of scholars believed that the ancient city of Teotihuacan was the location of the legendary «Tollan» of the Aztec chronicles. Two advances changed this view. First, Wigberto Jiménez Moreno (1941) succeeded in identifying Tula, and not Teotihuacan, as the location of the city of Tollan in the written sources. Second, George Vaillant (1937) refined the archaeological chronology to recognize a general sequence of Teotihuacan–Tula–Tenochtitlan. Once these advances were made, archaeologists identified a general U-shaped trend in central Mexican social development. The large city of Teotihuacan (80-100,000 inhabitants) was followed by smaller regional capitals of the Epiclassic period, then a larger city at Tula (still much smaller than Teotihuacan), and finally the expansion of the imperial capital Tenochtitlan (more than 200,000 inhabitants). The size and importance of polities followed a parallel trend: dropping after Teotihuacan, to grow again until the Aztec empire (Smith y Montiel 2001). When the first regional demographic data were published for central Mexico (Sanders *et al*. 1979), it was seen that the size of populations in the Basin of Mexico followed this same trajectory.

In this section I explore four social processes whose trajectories of change from Teotihuacan to Tenochtitlan exhibited a U-shaped pattern: demography, agriculture, political administration, and urbanization. The fact that these four processes had parallel paths suggests that they are linked together, although the precise causal conditions are not clear. For each time period, I focus on the largest city: Teotihuacan (Classic period); Xochicalco (Epiclassic); Tula (Early Postclassic), and Tenochtitlan (Late Postclassic).

Two major Mesoamerican demographic peaks were identified by the Basin of Mexico Archaeological Survey Project in the ancient history of the region: the Classic period, and the Late Postclassic period. The regional population declined after the fall of Teotihuacan, although not dramatically (Figure 1A), before increasing again very rapidly in the Aztec period. The hyper-urbanization of Teotihuacan in the Classic period had resulted from simultaneous processes of population growth throughout the Basin of Mexico and rural depopulation in as people moved into the city from areas buried under ash from the Popocatepetl volcano (Plunket y Uruñuela 2006). The decline of Teotihuacan led to both ruralization and demographic decline at the regional level. Populations dropped rapidly in most areas in Epiclassic times, only to begin an exponential growth surge in the Middle Postclassic period (Sanders *et al*. 1979). This pattern of two population peaks has been identified in subsequent survey and excavation projects in most parts of central Mexico, although the specific contours of change in each region were different.

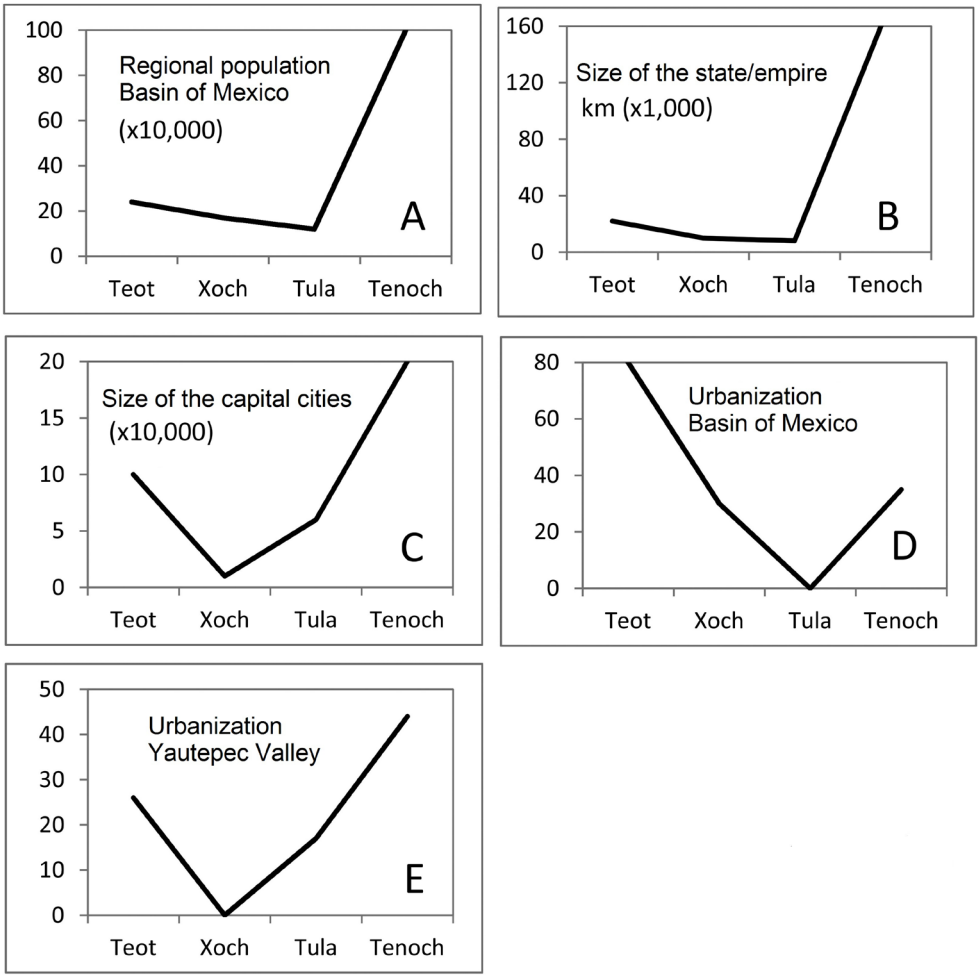

Figure 1. Graphs of four processes of change. A: Regional population trends in the Basin of Mexico (Sanders *et al*. 1979: 186). B: Size of states and empires (Chase *et al*. 2009; Smith y Montiel 2001); C: Size of the largest city (Cowgill 2015; Hirth 2000; Mastache *et al*. 2002; Smith 2008). D: Urbanization rate in the Basin of Mexico (Sanders *et al*. 1979: 186). E: Urbanization rate in the Yautepec Valley, sites over 40 ha (Smith 2006).

Paleoclimatologists working in central Mexico have used lake sediments to identify a period of lower rainfall between approximately 600 and 1200, and recent research on tree rings suggests a series of shorter droughts in this period (Rodríguez-Ramírez *et al*. 2015; Stahle *et al*. 2011). Although we do not yet have sufficient evidence to link these data firmly to the changes identified by archaeologists, climate changes must have impacted the demography and historical trajectories of the region. Without proposing causal models, I will simply point out that the start of the period of lower rainfall coincides with the fall of Teotihuacan, and its end coincides with the major demographic surge of the Aztec period.

Agricultural systems followed patterns of climate and demography in central Mexico. Intensive agricultural systems, in the form of irrigation canals, were present in Classic-period Teotihuacan (Nichols 2016). We have little information on field systems or the intensity of cultivation during the Epiclassic and Early Postclassic periods. It is likely that lowered populations had less intensive agricultural systems, but firm evidence is scarce. But once population picked up in the Middle Postclassic period, the entire landscape of central Mexico was transformed by massive programs of intensified production. Terraces, irrigation, and raised fields expanded (Donkin 1979; Doolittle 1990; Morehart y Frederick 2014), giving the Aztecs the most intensive agricultural system of any Mesoamerican society.

The size of the states or empires ruled by these four cities follows a path similar to the Basin of Mexico regional population (Figure 1B). Teotihuacan ruled a small empire that covered approximately 20,000 to 25,000 km^2 in central Mexico (Smith y Montiel 2001). Although epigraphy reveals that individuals who claimed an affiliation with Teotihuacan played important roles in some of the major Classic Maya dynasties (Braswell 2003; Stuart 2000), the likelihood that Teotihuacan had conquered or ruled the Maya cities is extremely small. The demography and military power of Teotihuacan would not support an empire on the scale of the later Aztec empire. Xochicalco and Tula probably ruled small regional states (Hirth 2000; Smith y Montiel 2001). We know little of the size of the Tepanec Empire (Santamarina 2006), but the Empire of the Triple Alliance that followed covered a far larger area, probably more than 160,000 km^2.

The great increase in the size of empires shown in Figure 1B, should not obscure a contrasting trend in the size of polities. On a local level, the city-state, or altepetl, was the dominant form of polity in Late Postclassic central Mexico. In fact, small polities became the primary form of state throughout Mesoamerica at this time (Smith y Berdan 2003). Regional groups of city-state correspond to what Mogens Hansen (2000) calls «city-state cultures,» and this is one of the most striking Postclassic trends in Mesoamerica.

Although the documentation of patterns of political dynamics such as despotic vs. participatory rule are difficult for archaeologists, new methods and data reveal some general trends during the Postclassic period (Blanton y Fargher 2008; Fargher *et al*. 2011). As revealed by spatial patterns of civic architecture, the content of public art, and other measures, the decline in polity size was accompanied by a reduction in what Michael Mann calls «despotic power», or the ability of rulers to carry out their will without consultation with other groups (Mann 1984). The two late empires (Aztec and Tarascan) developed in opposite direction to this trend. As documented by historical records, the Aztec emperors of Tenochtitlan were engaged in a systematic effort to exclude from power not only their allied kings but the nobles and other civic groups within Tenochtitlan. The decline of despotic power was in many cases accompanied by increases in Mann's «infrastructural power», referring to the ability of the state to penetrate civil society to implement its actions throughout its territory. Although this is difficult to monitor with archaeological data, historical documents reveal elaborate systems of taxation and state monitoring in the conquest-period city-states (Smith 2014, 2015).

Nearly all Mesoamerican cities were capitals of polities, and city size was correlated with the territorial extent and power of states. The two largest Mesoamerican cities –Teotihuacan and Tenochtitlan– were capitals of empires. The Epiclassic and

Early Postclassic cities were smaller than Teotihuacan and ruled smaller domains, while the city-states of Late Postclassic Mesoamerica were ruled by small cities. Figure 1C shows the size of the four capital cities under consideration here. The median size of Late Postclassic cities was 11,000 residents in an area of 2.5 km^2 (Smith 2005). Most Mesoamerican cities had relatively low population densities, leaving considerable open space available for urban agricultural production. Although farming within Postclassic cities has been established conclusively for only a few cases, it is likely that the practice was quite common.

Another trend that followed the U-shaped trajectory is the urbanization rate. This is defined as the percent of population living in cities and towns. Figure 1D shows the urbanization rates for the Basin of Mexico, as reported by Sanders *et al*. (1979). Classic-period Teotihuacan stands out as different from other Mesoamerican cities as the most urbanized society in ancient Mesoamerica. Fully 80 per cent of the population in the Basin of Mexico resided in the city at its height. After the collapse of Teotihuacan, conditions in central Mexico quickly returned to a more regular condition of low urbanization. Thirty per cent of the population of the Basin of Mexico lived in cities in Epiclassic times, zero per cent in the Early Postclassic period, and 35 per cent in the Late Postclassic. Of the Late Postclassic urban population, 70 per cent lived in the capital Tenochtitlan and 30 per cent in city-state capitals (Sanders *et al*. 1979). For comparison, Figure 1E shows the urbanization rates in a second region of central Mexico, the Yautepec Valley. These figures, which range from 0% (for the Xochicalco period) to 44%, are based on a definition of «urban» sites as those larger than 40 ha. These data follow the same U-shaped trajectory.

The two best-known Mesoamerican cities –Teotihuacan and Tenochtitlan– were not only the largest urban centers, but also the most aberrant in terms of their planning and layout. These imperial capitals showed strict orthogonal planning of the entire city, including residential neighborhoods. In contrast, most Mesoamerican cities (Postclassic and earlier) had carefully planned civic centers surrounded by unplanned residential zones. Mesoamerican urban planning followed a set of principles that differed from cities in other parts of the world. The formal civic plaza was the nucleus of urban design. Plazas were usually framed by the royal palace, temple-pyramids, and other monumental civic buildings. These central buildings were often aligned orthogonally and linked together with platforms and subsidiary plazas. Many of the Aztec city-state capitals explicitly copied the ancient urban plan of Tula, which included a large square plaza with the largest temple-pyramid on the east side, opposite a ballcourt. The conjunction of archaeological and historical data show how the kings of Aztec city-states employed urban planning to legitimize and extend their rule (Smith 2008).

4. The continuous growth trajectory of commerce and social inequality

I now turn to a series of social processes whose trajectory from Teotihuacan to Tenochtitlan was different from the U-shaped paths discussed above. In these cases, social trends show a major continuous increase or decrease through time. I discuss three such trends: the level of social inequality, the level of commercialization of the economy, and the extent of international elements in art.

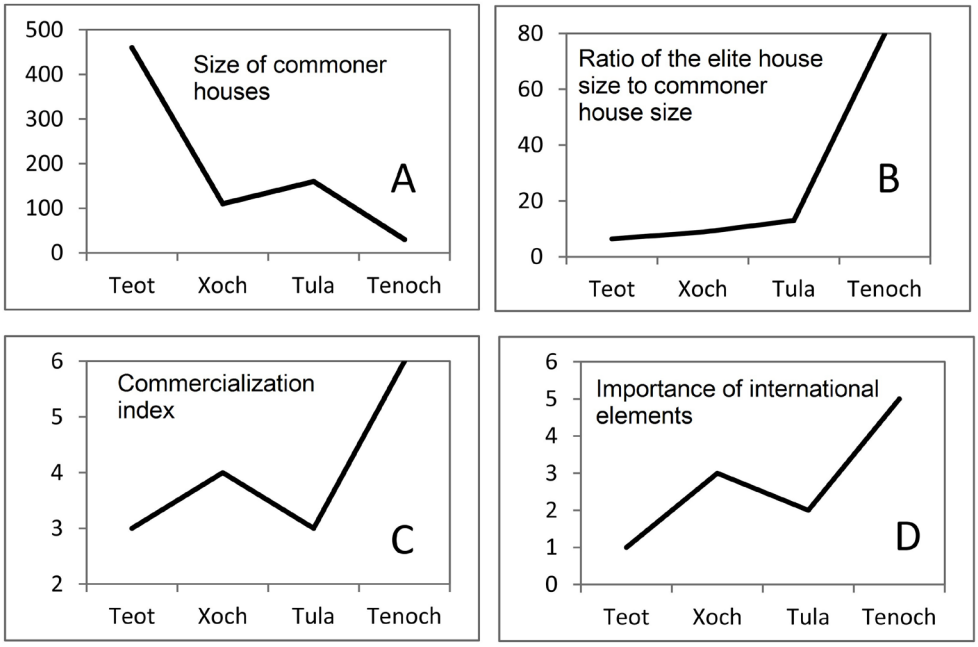

Figure 2. Graphs of three processes of change. A: Size of commoner houses (Hirth 2000; Mastache *et al*. 2002; Smith *et al*. 2014); the Tenochtitlan data are from maps in unpublished documents provided by Edward Calnek. B: Ratio of the size of elite houses to the size of commoner houses (same sources as A). C: Commercialization index (from the project, Service Access in Premodern Cities). D: Importance of international elements in art (subjective scale by the author).

Figure 2 shows trends in two measures of social inequality. The first is the size of commoner houses (Figure 2A). The apartment compounds of Teotihuacan are remarkable for the amount of living space per household. In a study of housing and inequality at central Mexican sites, my co-authors and I measured the average interior space per household at 460 square meters, a remarkably high level for Mesoamerican commoner houses (Smith *et al*. 2014). The size declined greatly with Xochicalco and Tula, and even further in Tenochtitlan. While the size of houses is not a direct measure of social inequality, it is a measure of wealth or standard of living (Olson y Smith 2016). The drop in commoner wealth between Teotihuacan and Tenochtitlan is striking.

The opposite trend is shown by the ratio of elite house size to commoner house size (Figure 2B). This measure increased steadily from Teotihuacan to Tenochtitlan. Taken together, the data in Figure 1 (A and B) points to a major increase in social inequality during this time period. These are rough measures, however, and we need additional data before broad conclusions can be drawn. In some regions, such as Morelos, the Aztec period was a time of economic prosperity for many households (Smith 2016).

An expansion of commerce was one of the most significant social trends in Postclassic Mesoamerica. Historical sources describe a flourishing commercial economy

in all parts of Mesoamerica at the time of Spanish conquest. The very first group of Mesoamerican people encountered by Christopher Columbus were Maya merchants traveling along the coast in 1502 in a large canoe (with 25 people) full of trade goods and money, and when Cortés entered Tenochtitlan eighteen years later the central marketplace was the feature that most impressed the conqueror and his soldiers (Rojas 2012).

Documentation of commercial institutions is strongest for Aztec central Mexico (Smith 2012: 108-126). Cortés wrote that 60,000 people attended the central marketplace of Tenochtitlan every day, and there are several lengthy first-hand descriptions of this facility. Hundreds of goods were offered for sale, by both petty vendors and professional merchants. Stalls were arranged in an orderly fashion, and a panel of judges heard complaints. Most or all cities in central Mexico had marketplaces that met once a week (the Aztec week was five days in length). Several types of merchants traveled among marketplaces buying and selling. A number of forms of money were used, of which the most common were cacao beans (for small purchases) and cotton textiles of a standard length. The Aztec economy was a commercial economy but it was not a capitalist one. Wage labor was rare, as were sales of land. Commercial practices such as account books, partnerships, and loans existed in only rudimentary fashion.

Although historical documentation is much sparser in other regions, existing accounts do indicate the presence of similar commercial practices and institutions in all parts of Mesoamerica at the time of Spanish conquest. Furthermore, archaeologists have identified increasing exchange during the course of the Postclassic period (Smith y Berdan 2003). Although it is difficult to determine the full extent of commercial institutions during the Classic Period, recent methodological innovations now aid the identification of markets and commercial exchange using archaeological data (Feinman y Garraty 2010; Garraty y Stark 2010). These methods suggest that commercial exchange was less widespread in the Classic Period.

In order to address this question objectively, I created a measure of the importance of commercial exchange by counting the number of commercial institutions within a city (Figure 3). I adapt a scale of commercialization devised for the research project «Service Access in Premodern Cities» (Smith *et al*. 2016; Stanley *et al*. 2016). This scale is a list of sixteen commercial institutions, twelve of which are shown in the figure. The number of such institutions found in a city is a measure of the level of commercialization in the city. No Mesoamerican cities have more than 6 institutions, but premodern cities in some regions much scores above 12. To put this in perspective, cities in the Inca empire, which had a non-commercial exchange system, had two commercial institutions, whereas late medieval towns in Europe had all 12 of these institutions.

Teotihuacan and Xochicalco are cities in the sample of our project, and their values are taken from project records. I then coded Tula and Tenochtitlan, following the methods used in coding the cities in our sample. These data show a growth in commercialization from Teotihuacan to Tenochtitlan (Figure 2C), a finding that agrees with past research on this topic.

As a final social trajectory, I examine the importance of international elements in the art of these cities. The scores shown in Figure 2D, are not objective counts or measures, but are instead my own subjective evaluations of the situation for each city. While there are Maya elements in the mural art of Teotihuacan (Helmke y Niel-

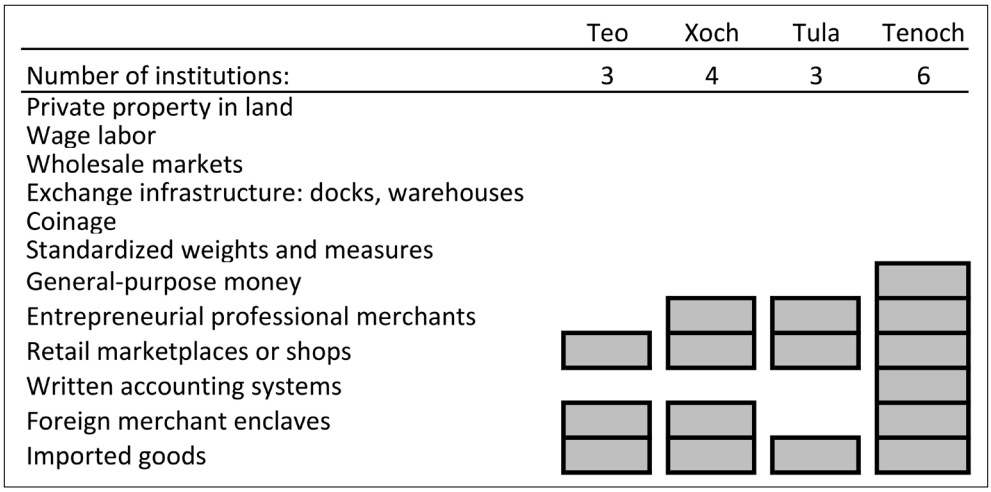

Figure 3. Scale of commercialization.

sen 2013; Taube 2003), the vast majority of the images are executed in a local style with few if any foreign elements of influence. The art of Xochicalco is known for its eclecticism and foreign influence (Smith y Hirth 2000), and many examples of reliefs and paintings show influence and elements from the Maya and other foreign areas. The level of foreign elements in the art of Tula (de la Fuente *et al*. 1988) seems lower than at Xochicalco.

In contrast to the art of these earlier cities, Aztec art shares numerous specific elements and styles with a large part of Mesoamerica. These results make sense in terms of changes in the nature of writing and literacy that accompanied the political and economic trends of Postclassic Mesoamerica. One of the major cultural developments during the Postclassic period was the creation of a distinctive art style and a set of common symbols that were used all over Mesoamerica. This style and symbol set are often called «international» because they spanned many diverse polities, cultures and languages (Boone y Smith 2003; Smith 2003). The scripts of the Mixtecs and Aztecs are components of the Postclassic International Style and the Postclasisc Symbol Set, as are painted murals, polychrome ceramics, and painted manuscripts from many regions. These media were not restricted to a particular language or group of languages, and thus they did not comprise a complete phonetic writing system. Their independence from a particular language, however, facilitated communication between speakers of different languages, and contributed to long-distance communication. In the Late Postclassic Period, Mesoamerica reached its highest level ever of aesthetic and religious interaction and similarity (Smith y Berdan 2003).

The numerical scale showed in Figure 2D expresses this situation. If one were to count the number of foreign elements, or perhaps the number of works that contain foreign elements, the totals for Tenochtitlan would be much higher than the three earlier cities. This «internationalization» of art and communication was closely linked to the expansion of commerce in the Postclassic period.

5. Conclusions

The path from Teotihuacan to Tenochtitlan was not a simple transition in society or culture. Many diverse social processes operated, causing changes in many aspects of society. I have identified two distinct types of trajectory during this period. First, a U-shaped pathway was a sequence of «fall and rise». Teotihuacan represented the highest attainment of its time in central Mexico in population size, urbanization, and political power. But all of these features declined dramatically after the fall of Teotihuacan. This was perhaps a case of cyclical development, called a «secular cycle» by Turchin and Nefedov (2009). In this paper I have ignored the first part of the Teotihuacan cycle in order to concentrate on the period between that city and Aztec society.

The other type of social trajectory is a more continuous process of change from Teotihuacan to Tenochtitlan. In these realms –social inequality, commercial development, and international interaction– the low point came not during the periods of Xochicalco or Tula, but rather at Teotihuacan. For these processes, Tenochtitlan represents a period of peak development, but Teotihuacan does not. It may be significant that at least two of these processes –commercialization and internationalization– operated at the scale of Mesoamerica. These changes took place in all parts of Mesoamerica (Smith y Berdan 2003); for social inequality, however, we lack information from other regions to evaluate trends. In comparison, the processes following the U-shaped pattern of development were localized in central Mexico and did not characterize other regions of Mesoamerica.

I have tried to show that a number of important social processes –from urbanization to social inequality– can be reconstructed with archaeologic al data. Furthermore, we can analyze trajectories of change in these processes and discuss their expression and significance.

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