

THE EXPANSION OF THE AZTEC EMPIRE: A CASE STUDY IN THE CORRELATION OF DIACHRONIC ARCHAEOLOGICAL AND ETHNOHISTORICAL DATA

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I examine the problems and potentials of correlating diachronic archaeological and ethnohistorical data through the case of the Aztec (Triple Alliance) conquest of western Morelos, Mexico. To date, nearly all of our knowledge of the Triple Alliance empire is derived from ethnohistorical sources with little contribution from archaeological data. Two methodological problems account for this disparity. First, current archaeological chronologies for Postclassic central Mexico are not precise enough to document the structure and growth of this relatively short-lived empire. Second, the issue of diachronic correlation of archaeological data with the native historical record has not been approached with a consistent methodology. I address these problems, demonstrating that Postclassic chronologies can be refined when the appropriate methods (in this case, nontypological ceramic analysis and quantitative seriation) are applied. The resulting chronological sequence for western Morelos is correlated with the diachronic native historical record for the area. Because of these procedures, the archaeological record can for the first time make a significant contribution to the study of the Triple Alliance empire.

One of the most important research areas of the Late Postclassic period in Mesoamerica concerns the origin and expansion of the Triple Alliance or Aztec empire. Most of our knowledge of the structure and operation of this extensive political and economic system derives from ethnohistorical sources that present a synchronic view of the Triple Alliance at the time of the Spanish conquest in 1519. While native historical traditions provide some time depth for the sixteenth-century picture, most of this information is limited to a narrow range of political phenomena (e.g., which king conquered what towns in what year). Therefore, the primary source of economic, demographic, and social information on the origin and growth of the Triple Alliance empire should be the archaeological record. Up to the present time, however, archaeologists have contributed very little of interest to the study of the Triple Alliance empire and its development through time. There appear to be two reasons for this state of affairs. First, many scholars have failed to apply a rigorous or explicit methodology to the issue of correlation of diachronic archaeological and ethnohistorical data. Second, the archaeological chronologies of the Postclassic epoch in Mesoamerica have not been sufficiently refined to shed much light on the origin and growth of the relatively short-lived Triple Alliance empire. Archaeologists have simply not devoted enough attention to chronological refinement, and as a result our understanding of processes of social, economic, and political change in Postclassic central Mexico remains severely limited.

This article contributes to the task of building an archaeology of the Triple Alliance empire by addressing these two problems. In contrast to past studies that have used native historical dates to improve the precision of archaeological chronologies, I argue that the two kinds of data must be kept separate and allowed to yield their own independent conclusions before correlation is attempted. The problem of insufficiently refined archaeological sequences is addressed by application of nontypological analysis and quantitative seriation to excavated ceramics from Postclassic contexts in western Morelos. The success of the seriation (the resulting chronology now stands as the most fine-grained sequence for the Postclassic epoch in Mesoamerica) shows that it is possible to refine

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Postclassic chronologies in central Mexico, and that as a result archaeologists can make a contribution to the study of the Triple Alliance empire.

METHODOLOGICAL PROBLEMS IN CORRELATING ARCHAEOLOGY AND ETHNOHISTORY FOR LATE POSTCLASSIC CENTRAL MEXICO

Most studies correlating archaeological and ethnohistorical data in the New World are synchronic in orientation. They generally start with a particular event or epoch for which European written descriptions are available (usually the contact or conquest period), and then attempt to relate those descriptions to the archaeological assemblage(s) covering that time interval (see Carmack and Weeks 1981; Charlton 1981). Examples of such synchronic correlations for central Mexico include work by Brumfiel (1980), Evans (1980), Sanders et al. (1979), and Spores (1983). In areas of Mesoamerica where calendrical systems and native history are reasonably well documented (see Nicholson 1955, 1971), the additional possibility arises for diachronic correlation of archaeology and the ethnohistorical or native historical record. That is, native perceptions and documentation of processes of social, economic, or political change can be compared to the archaeological record for a fuller understanding of the diachronic changes involved (see Smith 1984 for an example).

There are two serious weaknesses in past attempts at diachronic archaeological/historical correlation for Late Postclassic central Mexico. First, the separate integrity of the two kinds of data is not maintained; and second, the archaeological constructs used for correlation are too gross to enable adequate comparison with the ethnohistoric record. Recent treatments of the general issue of correlating archaeological and historical or ethnohistorical chronologies have strongly emphasized the distinctive nature of the two kinds of data. The archaeological and ethnohistorical records should be analyzed independently to yield their own separate conclusions before correlation is attempted. When the two records are compared, one should not confuse any resulting composite models with the independent primary data sets (see Charlton 1981; Evans 1974; Smith 1983). These guidelines, although recognized for Postclassic central Mexico over four decades ago (Vaillant 1938:535), have generally not been followed. As a result a number of spurious archaeological/ethnohistorical correlations have been proposed. The most widespread example of this problem concerns the conquest of provincial areas by the Triple Alliance. When the date of conquest is known from native historical sources, and conquest is assumed to correlate with the introduction of Basin of Mexico pottery types into an area (usually Aztec III Black-on-Orange), then the *archaeological* phase containing these types is assigned the *historical* date as its temporal starting point (e.g., Angulo 1976:197f; Byland 1980:163–167; Vargas 1975:223f, 231ff; see also Nicholson 1955:597). This procedure clearly violates the integrity of the archaeological record, and when such a hybrid chronology is subsequently compared with the historical sequence, there does indeed appear to be a close correlation. Quite apart from the methodological weakness of this kind of crude hybrid chronology, some of the major assumptions made in such correlations lack empirical support. For example, it is shown below that the supposed artifactual markers of Triple Alliance conquest are actually found in some provincial areas prior to their incorporation into the empire.

Other examples of comparable hybrid “archaeological” sequences are Vargas’s use of the historical date for a migration in the Chalco area to signal a change of ceramic phase in the Toluca Valley, 80 km distant (1975:231–233), and Muller’s use of an incorrect date for the founding of Tenochtitlan (1325—see Davies 1973:37) to signal the start of archaeological phases at both Teotihuacan, 40 km distant (1978a:146), and Cholula, nearly 100 km away (1978b:109). This practice is not limited to central Mexico. There are at least two examples from Peru of the use of (controversial) historical dates from Inca oral tradition to date ceramic phase transitions: Rowe (1944:57–61) originally applied this practice to the Cuzco sequence, and Julien (1983:244–249) more recently followed Rowe’s lead in her work at Hatunqolla. In like fashion, Chang (1977:268–271) derives dates from Chinese historical accounts to date Shang period archaeological phases. Tempting as it may be to use historical dates this way to improve the precision of an archaeological sequence, such practice serves “only to lay up trouble for the future” (Evans 1974:18).

The second methodological problem in diachronic archaeological/ethnohistorical correlation—the crudeness of the archaeological constructs employed—is more serious than the first. The for-

mation of the Triple Alliance of Tenochtitlan, Texcoco, and Tlacopan soon after the Azcapotzalco war or 1428 is generally recognized as a major turning point in the political and economic history of central Mexico (e.g., Brumfiel 1983; Davies 1973:71ff). Imperial expansion outside the Basin began not long after, and many features of the economic and political system of 1519 described by the Spanish had their inception at approximately this date. However, the temporal construct used by archaeologists in studying this epoch—the Late Postclassic period (Late Aztec phase in the Basin of Mexico; sometimes called the “Late Horizon”)—is presently dated to ca. A.D. 1350–1520 (Parsons et al. 1982:Table 1; Sanders et al. 1979:457–474; Smith 1983:497–508). This archaeological unit thus includes nearly equal intervals of time before and after the formation of the Triple Alliance. There is currently no way to determine whether a given Late Postclassic archaeological assemblage pertains to the heavily documented period after 1428, to the relatively poorly known (from written sources) period prior to 1428, or to a combination of both intervals. Until the Late Postclassic period can be subdivided into at least two temporal phases in various regions of interest, archaeological models of political and economic development in the Basin of Mexico (e.g., Brumfiel 1980; Sanders et al. 1979) or of the impact of Triple Alliance expansion outside of the Basin (e.g., Flannery 1983; Marcus and Flannery 1983; Mason 1980) must be regarded as quite tentative.

Given that the Postclassic epoch was a time of rapid cultural change in central Mexico (Davies 1980; Sanders et al. 1979), and that elaborate painted pottery with a significant stylistic component was widespread (Noguera 1975), the roughness of Postclassic chronologies can only be attributed to a lack of interest in chronological refinement. For areas outside of the Basin of Mexico, a paucity of work on the Postclassic epoch may be to blame for the length of Postclassic archaeological phases. For example, the Tlaxcala phase in northern Puebla and Tlaxcala lasts for 420 years (García Cook 1976), the Late Natividad phase in the Mixteca Alta lasts for 520 years (Spores 1983) as does the Late Venta Salada phase at Tehuacan (Marcus and Flannery 1983), while the Monte Alban V phase in the Valley of Oaxaca is nearly 600 years long (Blanton et al. 1981; Marcus and Flannery 1983). For the Toluca Valley, there is simply no Postclassic chronology at all, Vargas’s assertions (1975) notwithstanding (see Smith [1983:508–511] for comment). Fortunately, work currently in progress by Yoko Sugiura of the Universidad Nacional Autónoma de México should soon rectify this problem.

Within the Basin of Mexico, the rough chronology stems from an emphasis upon surface archaeology in the absence of excavation of Postclassic contexts (see Sanders et al. 1979). With the exception of Parsons’s detailed analysis of ceramics excavated during Sanders’s Teotihuacan Valley Project (1966) and Charlton’s studies of the Late Postclassic–Early Colonial transition (1972, 1979), there has been very little effort directed at the refinement of Postclassic temporal sequences in the Basin of Mexico (work now in progress by Parsons et al. [1982] includes Postclassic chronological refinement as a stated goal). One additional factor that may contribute to the lack of chronological refinement in the Postclassic Basin of Mexico is the adoption by some archaeologists of an awkward new system of phase nomenclature using numbered “horizons” and “intermediate phases” (Sanders et al. 1979:Table 5.1). The very act of numbering an archaeological sequence provides a false sense of finality, and a numbered chronology is more likely to become fossilized, thereby inhibiting further attempts at refinement (see Hole et al. [1969:5] for discussion of this issue). A more useful approach is to assign names rather than numbers to archaeological phases in recognition of the fact that there is never a “best” or “final” chronology, and that there is always room for improvement in any archaeological sequence. Similarly, the formal labelling of a period as a “horizon” implies that the interval is an integral temporal unit and inhibits attempts to subdivide it chronologically.

THE ETHNOHISTORICAL RECORD

Formation and Expansion of the Triple Alliance Empire

The period between the fall of the Toltec empire in the late twelfth century A.D. and the formation of the Triple Alliance in 1428 was one of political and economic instability in central Mexico. A combination of ecological, demographic, and social structural changes led to population growth and competition over land and labor (Armillas 1969; Brumfiel 1983; Calnek 1978; Sanders et al. 1979: 183–186). As documented by Davies (1973, 1980), this period witnessed frequent battles and

constantly shifting alliances among the small city-states of central Mexico. Although no single polity was able to gain control over the entire Basin of Mexico, much less all of the central highlands, several conquest-states did manage to attain positions of preeminence: Tenayuca and Culhuacan in the thirteenth century, and Coatlichan, Huexotzingo, and Azcapotzalco in the fourteenth century (Davies 1980). These and other Postclassic conquest-states were formed when one city-state gained a decisive military victory over another. The term "decisive" is important, because many inconclusive battles were fought and one side or the other (and sometimes both sides) claimed victory for propagandistic purposes. The criterion of a successful decisive conquest was the inception of tribute payments from the loser to the victor. Although territory was occasionally expropriated by the victorious state (e.g., Durán 1967:II:97, 113), tribute payments were the primary goal of political expansion. Local rulers generally were left in power and the victorious polity did not interfere unduly in the operation of the subject state as long as tribute payments were forthcoming (Calnek 1978).

The Triple Alliance was formed in the course of a major war against the Tepanec empire based in Azcapotzalco. Increased tribute demands and growing political/economic exploitation by the ruler of Azcapotzalco precipitated a revolt in 1428 by the subject Mexica of Tenochtitlan. The Mexica had been growing in numbers and military strength as vassals of the Tepanecs. Together with the armies of Texcoco, Huexotzinco, and Tlacopan, the Mexica under their tlatoani Itzcoatl decisively conquered Azcapotzalco. The Huexotzinca withdrew to their home beyond the Basin of Mexico and the rulers of Tenochtitlan, Texcoco, and Tlacopan soon joined together in what has traditionally been referred to as the Triple Alliance. Through both separate and joint campaigns, the armies of these three polities conquered and instituted tributary relations over the populations of the Basin of Mexico and beyond until eventually a large part of northern and central Mesoamerica was subject to the Triple Alliance empire (the formation of the Triple Alliance is described by Davies [1973, 1980]).

In terms of structure and process of expansion, it appears that the Triple Alliance was little different from prior conquest-states of central Mexico. The object of expansion was tribute, and local rulers were left in power if they kept the tribute flowing regularly (Davies 1973:110ff). However, the development of the Triple Alliance represented a significant change in the *scale* of Postclassic political and economic organization. The population and geographical extent of the Triple Alliance empire quickly surpassed those of any prior post-Toltec polity by an order of magnitude or more. In addition the Triple Alliance itself, as a unit of coordination between three conquest-states, constituted a new higher level of political organization above the level of the conquest-state. Such an increase in scale or level has important implications in terms of cultural evolution (Adams 1975:199ff; Blanton et al. 1981:17–20), and for purposes of historical periodification the Tepanec war of 1428 marks a major transition (this point has previously been argued by Davies 1973:71ff; see Brumfiel 1983 for an excellent analysis of the political changes in the Basin of Mexico after 1428).

After the defeat of Azcapotzalco, the rulers of the Triple Alliance spent the better part of a decade consolidating their power and conquering the neighboring city-states of the southern and central Basin of Mexico. When the decision was reached to expand the empire beyond the physiographic Basin, the first area to be conquered was to the south, the modern state of Morelos. Initial expansion in this direction was logical, given prior social and economic ties (see below) and the high fertility and agricultural productivity of Morelos. An additional reason for beginning extra-Basin expansion in this area relates to the level of political organization found in early fifteenth-century western Morelos. The city of Cuauhnahuac was the center of a relatively large conquest-state of considerable wealth and resource diversity. As pointed out by Blanton et al. (1981:19–20) and others, conquest and empire-building are more easily accomplished at the expense of centralized hierarchial states than against small non-hierarchical groups. Before turning to the actual conquest of Morelos, therefore, it is relevant to consider the nature and growth of the Cuauhnahuac polity.

Expansion of the Cuauhnahuac Conquest-State

At the time of the Spanish conquest, the term Cuauhnahuac had several referents. First, the *city* of Cuauhnahuac was an urban center that had been founded several centuries earlier (Smith 1986b). The Spanish changed the name of the city to "Cuernavaca," and the modern city is built over the

remains of the Prehispanic settlement (see Angulo 1976). The city of Cuauhnahuac served as the capital of a large *conquest-state* of the same name. The expansion of this polity through time is outlined below; more extended discussions may be found in Smith (1983:Chapter 3, 1986a). In 1519, the territory of the conquest state coincided with the *Triple Alliance tributary province* of the same name. This unit covered the western 40% of the modern Mexican state of Morelos; the tributary province of Huaxtepec covered most of the remainder of the modern state.

From the earliest dated reference to Cuauhnahuac in the Nahuatl native histories—2 Acatl = 1319—until its conquest by the Triple Alliance in 1438, historical sources paint a picture of an increasingly large and powerful polity, one of the major conquest-states of the central Mexican highlands. Although Mexica sources state that Cuauhnahuac was conquered by Acamapichtli, the first Mexica tlatoani (r. 1372–1391), this represents either an inconclusive battle or a propagandistic fabrication, since independent sources confirm that Cuauhnahuac paid no tribute into the Basin of Mexico until 1438 (e.g., Torquemada 1969:I:150; see Smith [1986a] for discussion).

Conquests attributed to the first three Mexica rulers by later Mexica historians are more realistically interpreted as Tepanec conquests in which the Mexica participated as military vassals (Davies 1980:220). Thus, several authors have argued for the inclusion of Cuauhnahuac and Morelos in the Tepanec empire, based on the presence of Cuauhnahuac in Mexica lists of Acamapichtli's conquests (Carrasco 1950:268–272; Davies 1980:241f; for early “Mexica” conquests see *Anales de Cuauhtitlan* [1975:66], *Código Mendoza* [1980:2v], *Leyenda de los Soles* [1975:128], and Nazareo et al. [1940:118f]). However, other sources, in discussing Acamapichtli's conquests, do not include Cuauhnahuac in their lists (e.g., *Código Azcatitlan* 1949:Plate 14; *Código Mexicanus* 1952:Plates 53–56; *Historia de los Mexicanos* 1941:229). A more satisfactory guide to the extent of the Tepanec empire is found in a list of towns (*Memorial de los Pueblos* 1940:119) analyzed by Carrasco (1950:269–271). This list includes several towns in western Morelos (Cohuintepéc, Miacatlan, Xoxotlan, Xoxocatlan, Molotlan, Amacoztitlan; and Anenecuilco in central Morelos), but *not* Cuauhnahuac. Acolhua histories include two northern Morelos towns among the conquests of Quinatzin II (r. 1330?–1377—Davies 1980:59), so this area may have formed part of the Acolhua conquest-state (Ixtlilxochitl 1975:I:319, 430). Thus while parts of Morelos appear to have been controlled by the Tepanec and Acolhua states in the late fourteenth century, Cuauhnahuac itself remained independent.

Several lines of evidence indicate the increasing strength and size of the Cuauhnahuac state during the late fourteenth and early fifteenth centuries. *First*, the *Relación de la Genealogía* (1941:250) reports that after the fall of Culhuacan (in 1377), central Mexico was ruled by an alliance of five states: Azcapotzalco, Coatlichan, Amecameca, Huexotzinco, and Cuauhnahuac. Although the Tepanec ruler Tezozomoc is said to have been more important or reknowned than the other four rulers, it is explicitly said that the five ruled together, and no mention is made of tribute payment from the four polities to Azcapotzalco. *Second*, the Tenochtitlan and Cuauhnahuac dynasties entered into a marriage alliance (ca. 1396) when Huitzilihuitl, the second Mexica tlatoani, married Miahuaxihuitl, daughter of the Cuauhnahuac tlatoani (e.g., Chimalpahin 1965:183; Durán 1967:II:65f; *Historia de los Mexicanos* 1941:229). The two sources that describe this marriage in greatest detail (Tezozomoc 1975b:90f; Torquemada 1969:I:104) both make it clear that the alliance request was initiated by Huitzilihuitl, who was in an economically and politically subordinate position relative to Tezcacohuatzin, the Cuauhnahuac ruler. After prolonged negotiations, Tezcacohuatzin finally condescended (“condescendió”—Torquemada 1969:I:104) to give his daughter to Huitzilihuitl. When the bride, who was to give birth to Moctezuma Ilhuicamina a few years later (Chimalpahin 1965:183), was brought back to Tenochtitlan, she was received with great celebration.

A *third* line of evidence indicating the strength of the Cuauhnahuac polity at this time is its inclusion, together with six other Morelos towns, in a list of 46 important central Mexican city-states allied with Techotlalatzin of Texcoco (r. 1377–1409—see Ixtlilxochitl 1975:I:324). The *fourth* category of evidence for Cuauhnahuac's power concerns military excursions undertaken against various central Mexican polities (e.g., *Anales de Tlatelolco* 1948:51). The most important of these is the conquest of the Coahuixca area of Guerrero by Cuauhnahuac in 1423 (2 Acatl in the Culhua calendar). We know of this campaign only because the rulers of Tenochtitlan and Tlatelolco also participated, but the source is quite explicit in attributing the conquest to the Cuauhnahuac ruler, who only “permitted” the Mexica and Tlatelolca to share in the spoils: “Estos couisca no fuera una

conquista del mexicatl. Los señores de Cuauhnahuac solo les permitieron participar en la ganancia" (Anales de Tlatelolco 1948:57). This campaign may have been the occasion when Cuauhnahuac wrested control over western Morelos away from the Tepanecs. Western Morelos lies between Cuauhnahuac and Coahuixco, and there are indications that this area was part of the Cuauhnahuac conquest-state when it was conquered by the Triple Alliance (Smith 1983:103–110).

The Battle of Cuauhnahuac, 1438

Mexica sources attribute the conquest of Cuauhnahuac to the third Mexica tlatoani Itzcoatl alone (e.g., Anales de Cuauhtitlan 1975:66; Códice Mendoza 1980:6r), while Acolhua sources state that Nezahualcoyotl, the Acolhua tlatoani, conquered the polity on his own (Ixtililxochitl 1975:I:446, II:107); however, less partisan sources attribute the victory to the combined armies of the Triple Alliance (Torquemada 1969:I:149f). The dating of this conquest to the year 1438 represents a compromise among the available dates, which are listed in Table 1. With the exception of the Anales de Tlatelolco, the sources agree in placing this event near the end of Itzcoatl's reign, a decade after the formation of the Triple Alliance and nearly a decade after a dated incident involving an established trade relationship between the Mexica and the Tlahuica of Cuauhnahuac (labelled "cotton trade" in Table 1). The most complete description of the battle of Cuauhnahuac is that of Torquemada (1969:I:149f), who states that the well-defended city fell only after a long assault by a large force. Chimalpahin concurs, writing that defeat came after a year of near-constant warfare (1965:96).

The difficulty in subduing Cuauhnahuac derives partly from its natural defensive setting between deep barrancas or ravines (Torquemada 1969:I:149f), but a more important factor was Cuauhnahuac's strength as capital of an extensive conquest-state. Ixtililxochitl states that nine major towns were subject to Cuauhnahuac at the time of its conquest in 1438 (1975:II:106f), and Chimalpahin indicates that a few years later, Cuauhnahuac had many subject towns (1978:38). Using a method of territorial reconstruction based upon conquest lists (see Smith [1983:78–81] for a discussion of the methodology), it has been estimated that in 1438, the Cuauhnahuac conquest state included an area of approximately 1,500 km², covering most of western Morelos with the exception of Coatlan in the west and Huitzillapan and Ixtepec and Xiuhtepec in the north (Smith 1983:103–110).

A number of sources concur that Cuauhnahuac's defeat in 1438 signalled the inception of tribute payments to the Triple Alliance. Torquemada (1969:I:150) indicates that this was the first time Cuauhnahuac had sent tribute to any polity of the Basin of Mexico. Chimalpahin (1965:96) and the Códice Aubin (1963:64) state that tribute was sent to Tenochtitlan, while Ixtililxochitl (1975:II:106f) lists Texcoco as its destination. Wherever the tribute was actually sent, the sources agree that cotton, both unspun and woven, was the major item involved (Ixtililxochitl 1975:II:106; Torquemada 1969:I:150). This is hardly surprising, given the interest that the Mexica had expressed in Morelos cotton as early as 1396 (Tezozomoc 1975b:90f) and again in 1429 when a regular trade in cotton from Cuauhnahuac to Tenochtitlan is described (Durán 1967:II:108; Tezozomoc 1975a:273f; see Table 1). At the time of the Spanish conquest, cotton was still the principal item of tribute from Cuauhnahuac to the Triple Alliance (Códice Mendoza 1980:23r).

After 1438, Cuauhnahuac's relations with the polities of the Basin of Mexico underwent a subtle but important transformation. As discussed in a separate article (Smith 1986a), the Triple Alliance empire relied upon indirect methods of economic and political control. Unlike most preindustrial empires (see Eisenstadt 1969), the Triple Alliance maintained virtually no political infrastructure in its external provinces. Local governments were left in place and in many cases their rule was even strengthened by the Triple Alliance. Adherence to the empire, measured by tribute payments, was maintained not so much by military force or threat as by the imperial co-option of provincial rulers and noble lineages who found it to their advantage to work with the Mexica, and to increase economic exploitation of their own local commoners. Thus the Cuauhnahuac conquest state maintained its local political autonomy after 1438 (and even succeeded in adding to its territory—Smith 1983:120–134, 1986a), although large amounts of tribute were delivered to the Triple Alliance states each year. The major effects of Triple Alliance conquest and incorporation into the empire followed from these tribute exactions (see Códice Mendoza 1980) and should therefore be sought more in the realm of economics than in the area of politics or governmental organization.

Table 1. Dates for the Conquest of Cuauhnahuac by Itzcoatl.

Conquests and Other Events	Relative Dates (Chapters) ^a			Absolute Dates (Years)					
	Durán 1967:II	Tezozomoc 1975a	Torquemada 1969:I: Book 2	Chimalpahin 1965:93-96, 191-196	Anales de Tlatelolco 1948:53-56	Ixtlilxochitl (O'Gorman 1975:108f)	Códice Aubin 1963:62-64	Tezozomoc 1975b:108f	Códice Mexicanus 1952:61-64
Azcapotzalco	9	14	37	1428	1428	1428	—	1428	1429
Coyoacan	10-11	15	40	1429	1429	—	—	—	—
Cotton Trade	12	16	—	—	—	—	1429 ^b	—	—
Xochimilco	12-13	17	42A	1430	—	1429	—	—	—
Mizquic	—	—	—	1432	—	—	—	—	—
Cuitlahuac	14	18	42B	1433	—	1430	—	—	—
CUAUHNAHUAC	—	—	42C	1439	1433	—	1437 ^b	1438 ^c	—
Death of Itzcoatl	15	18-19	42D	1440	1439	1440	1440	1440	1441

^a Durán, Tezozomoc, and Torquemada give few specific dates for historical events; they do present historical information sequentially, however. This yields a relative chronology of events by chapter. The four events described in chapter 42 of Torquemada are presented in the order listed (A through D).
^b These two dates in the Códice Aubin have been advanced one year from their correlation in the Tenochca count (i.e., 1 tecpatl = 1428 + 1 = 1429; etc.) because this source is one year behind the consensus chronology followed here (see Davies 1973:305). Thus the Cuauhnahuac conquest, described as 3 years prior to Itzcoatl's death, makes more sense in 1437, given that Itzcoatl died in 1440, than in 1436 as is given in the Códice.
^c This date is based on the statement that Cuauhnahuac was conquered 40 years after the birth of Moctezuma Ilhuicamina (Tezozomoc 1975b:95), which occurred in 1398 (Chimalpahin 1965:183).

Implications

The preceding brief outline of Late Postclassic history in western Morelos suggests that 1438—the date of the battle of Cuauhnahuac—signals a transformation in economic relations between Cuauhnahuac and the Basin of Mexico. Although there is little documentation regarding the internal political or economic organization of the Cuauhnahuac conquest-state either before or after 1438, it may be hypothesized that the change in Basin of Mexico-Morelos interaction patterns had a significant impact upon local economics and politics in the latter area. Among the changes that incorporation into the Triple Alliance empire may be expected to have brought about in a provincial area are: (1) *intensified agricultural and craft production* to meet Triple Alliance tribute requirements; (2) *a lowering of the standard of living* due to this intensification (presumably local Cuauhnahuac tribute requirements remained in effect while Triple Alliance assessments were added on [Calnek 1978; Smith 1986a]), thus increasing the economic exploitation of provincial commoners; and, (3) *increased long-distance trade*, both with the Basin of Mexico and with other areas to obtain tribute goods not produced locally (see Berdan 1975:116f). These hypothesized changes, which are only superficially addressed (if at all) in the ethnohistoric record, are amenable to testing with archaeological data, but only if the pre- and post-Triple Alliance periods can be separated.

THE ARCHAEOLOGICAL RECORD

Seriation of Postclassic Ceramics from Xochicalco, Morelos

During 1980 and 1981, laboratory analysis was carried out on collections of Postclassic ceramics from a number of archaeological sites in the state of Morelos. One goal of these studies was to evaluate archaeological evidence for the impact of Triple Alliance conquest upon the cultures of Morelos. After initial study of ceramics from a number of sites (including Xochicalco, Coatetelco, Teopanzolco, Tepozteco, and the Palacio de Cortes), I developed a series of regional chronologies. Ceramic complexes in several parts of Morelos could easily be fitted into one of the Early, Middle, or Late Postclassic periods (A.D. 950–1150, 1150–1350, 1350–1520, respectively) used by archaeologists working in the Basin of Mexico (Sanders et al. 1979). While establishment of these ceramic sequences through stratigraphy and cross-ties was relatively simple and straightforward, none of them was sufficiently refined to address the problem of Triple Alliance conquest. In order to pursue this question, I singled out the ceramics of the site with the most extensive and best-documented stratigraphic record—Xochicalco—for further chronological analysis.

Following procedures described in detail elsewhere (Smith 1983: Chapters 4, 5), quantitative seriation techniques were applied to ceramic sherds from Postclassic secondary refuse deposits at Xochicalco (this material was excavated by the Xochicalco Mapping Project, directed by Kenneth G. Hirth—see Hirth 1983). Thirty-two non-typological ceramic variables were calculated for each of twenty stratigraphic samples from six test excavations. Standardized scores for the variables were employed to construct a dissimilarity matrix (using Euclidean distance) for the ceramic collections, and the matrix was analyzed using metric multidimensional scaling. The two-dimensional solution yielded a clear horseshoe-shaped curve that preserved all stratigraphic orderings (with one minor exception) among deposits; this curve could thus be considered as a seriated time-curve (the procedures followed were similar to those discussed by Drennan 1976).

Periodification of the seriated sequence was carried out on the basis of key or diagnostic ceramic classes in conjunction with stratigraphic considerations; results are shown in Table 2. For present purposes, the most important portion of the sequence is the Late Postclassic period, divided here into the Early and Late Cuauhnahuac phases. As shown in Table 2, Late Cuauhnahuac deposits at Xochicalco (all in Excavation B), are not related stratigraphically to those of the earlier phases. In order to test the Early/Late Cuauhnahuac division, the seriation was extended to the nearby site of Coatetelco (excavated by Raúl Arana of the Instituto Nacional de Antropología e Historia—see Arana 1976) through use of discriminant analysis. Results of this procedure confirm the distinctions between the ceramics of the two phases and provide stratigraphic support for the phase transition. The date for this phase change was derived by simply halving the interval from 1350 to 1520 (1435)

Table 2. Seriated Order of Deposits: Stratigraphy and Periodification.

Coll. No.	Stratigraphy				Counts		Western Imports			"Tlahuica" Ceramics					Late Aztec Imports					Phase	Date A.D.
	Exc.	Exc.	Exc.	Exc.	Total Sherds	Total Dec.	1 ^a	2	3	4	5	6	7	8	9	10					
	D1	D3	E	A																	
2							139	8	1		1	—	—	5		4	Late Cuauhnahuac Phase	1520			
4							216	9			1	—	1	18		2					
3							329	21			2	2	—	21		2					
1							114	15			6	—	—	7		3					
5							220	15			1	8	—	—	8	1	Early Cuauhnahuac Phase	1440			
18							435	33			—	4	—	6	11	1					
6	I						466	15		3	11	1	2	13	—	2					
15			IA				430	36		—	8	—	4	22	1	—					
7	IIA						625	58		1	5	2	8	17	—	1	6	1350			
10		I					251	42		2	6	5	4	9							
19							270	36		—	2	—	1	6							
14							299	41		1	3	1	—	5							
8	IIIB						1,031	117		9	17	3	4	5	—		Temazcalli Phase	1200			
20							238	25		2	2	—	2	—							
16							334	34		3	1	3	1	—	4						
12		IIA2					107	12		1	2										
11		IIA1					214	23		5	4						Tilancingo Phase	1100			
13		IV					102	8		2	1										
9	III						344	39		7	14										
17			II				43	5											Phase H		

^a See Smith (1983:249–251) for list and discussion of numbered ceramic types.

and rounding to the nearest decade (1440). This dating receives support from comparisons with the ceramic chronology of the Cuernavaca area (Smith 1986c), and it is expected that radiocarbon and obsidian hydration dates will help evaluate its validity in future work.

Sites with Early and Late Cuauhnahuac Phase Occupations

The distinctions between ceramics of the Early and Late Cuauhnahuac phases are quantitative rather than qualitative; in other words, although the two ceramic complexes are clearly distinguishable by computer (using either MDS or discriminant analysis), clear phase "markers" have yet to be isolated. Because of this situation, only quantified collections of ceramics from Late Postclassic refuse deposits may be assigned to one of the two phases; ceramics from burial lots or non-intensive surface collections cannot yet be phased any finer than "general Cuauhnahuac" or "Late Postclassic" (current work on this problem is expected to produce criteria for a less ambiguous separation of these two ceramic complexes). Nevertheless, Late Postclassic ceramics from two sites *have* been phased into the Early and Late Cuauhnahuac complexes, and an examination of changes between these two phases will allow a preliminary evaluation of the archaeological impact of Triple Alliance conquest of Morelos. Both sites fall within the territory of the Cuauhnahuac conquest-state in the Late Cuauhnahuac phase.

The first collections to be examined are those from *El Puerto*, Xochicalco; this is the material forming the basis of the seriation described above. Although it is difficult to make functional interpretations of the site from the limited excavation base, El Puerto was probably a small hamlet during both phases. The mound architecture at the site appears to date to prior phases, and Late Postclassic ceramics have a relatively limited spatial distribution on the surface (Hirth 1983:342). The Early Cuauhnahuac occupation was more extensive than the Late Cuauhnahuac occupation, however. Of the seven excavations at El Puerto and the adjacent Terrace 85, five have evidence of the former ceramics, while the latter are present in only one excavation. There is no evidence for status differentiation or other social heterogeneity during either phase.

The site of *Coatetelco* is a small Late Postclassic site located approximately 5 km from Xochicalco in the modern town of the same name. A total of 13 unmixed excavated refuse collections from Raúl Arana's test excavations were fully quantified and phased by the discriminant analysis program. Ceramics from the lower levels of Excavation 1 and the single quantified level of Excavation 3 were classified into the Early Cuauhnahuac phase, while those of the upper levels of Excavation 1 and three quantified levels of Excavation 9 were assigned to the Late Cuauhnahuac phase. The elaborate burial assemblages of whole vessels and other goods at Coatetelco (Arana 1976) cannot yet be phased beyond "Late Postclassic," nor can the public architecture at the site be phased. Coatetelco was probably a minor administrative/ceremonial center with a moderate resident population during the two phases.

For comparative purposes, ceramic data from sites within the city of *Cuernavaca* are also presented, although the chronology is rougher and the periods are not strictly comparable to the Early and Late Cuauhnahuac phases in western Morelos. As discussed in Smith (1983:525–527, 1986c), the Teopanzolco phase dates from A.D. 1200 to ca. 1400, while the Tecpan phase follows for the remainder of the Prehispanic epoch. Deposits dating to the former phase have been studied from the sites of Teopanzolco (construction fill and plaza refuse) and the Palacio de Cortes (elite residential contexts), while quantified Tecpan phase deposits have been studied only from the Palacio de Cortes site (see Angulo [1976] and Smith [1986c] on these sites). These data are potentially quite interesting, for they allow the effects of Triple Alliance conquest to be evaluated for the urban capital for comparison with the rural sites described above. Although the chronology is rougher, the Teopanzolco phase does pre-date the Triple Alliance conquest, and it is likely that the analyzed Tecpan phase contexts pertain to the late portion of that phase (i.e., after Triple Alliance conquest); all Tecpan deposits in the Palacio de Cortes site lie directly under the earliest Colonial levels, and most are sealed under plaster floors (only unmixed deposits were quantified). This site was the location of the Cuauhnahuac *tlatoani's* palace when Cortes arrived in 1521 (see Riley 1973:124f, note 29).

CORRELATION OF ARCHAEOLOGY AND ETHNOHISTORY

The archaeological transition from the Early to Late Cuauhnahuac phase can be correlated with the Triple Alliance conquest of Morelos in 1438. Although the inferred archaeological date of the phase change (1435–1440) matches the historical date rather nicely, the former is only an approximation derived by splitting the Late Postclassic period (1350–1520) in half; it could be off by a decade or more. Nevertheless, the pattern of deposition in the Coatetelco excavations—considerable debris accumulation in both phases—suggests that the equal partition of time between the phases is not too inaccurate. Even if the 1435/1440 date *were* to be displaced by a decade or so, the bulk of the Early and Late Cuauhnahuac phases would still correspond to the periods prior to and after the conquest of Cuauhnahuac. Similarly, it should be kept in mind that the Teopanzolco/Tecpan transition in Cuernavaca is probably not as closely correlated with the date of Triple Alliance conquest as is the Early/Late Cuauhnahuac transition in western Morelos.

Given this correlation of the archaeological and historical records, artifactual changes between the Early and Late Cuauhnahuac phases may now be examined as they relate to expected economic changes produced by Triple Alliance conquest of a provincial area. The following discussion must be regarded as preliminary for several reasons. First, with the exception of obsidian analysis (Smith et al. 1984), studies of non-ceramic artifacts from these sites are not yet available. A fuller picture of the archaeological changes under discussion will have to await the results of such work. Second, most of the deposits discussed in the previous section represent limited test excavations. Data are needed from a larger number of sites and from more informative contexts such as residential structures. Nevertheless, the available material does allow a preliminary evaluation of the previously listed ethnohistorical hypotheses concerning agricultural and craft production, standard of living, and long-distance trade. Artifactual data on these issues are presented in Table 3.

(1) *Production.* The only available archaeological evidence for economic production activities during the Late Postclassic period pertains to cotton spinning and obsidian tool manufacture. Evidence for cotton spinning takes the form of small mold-made ceramic spindle whorls and two specialized forms of small ceramic bowls used for spinning (functional interpretation of these artifacts is based upon ethnohistorical documentation, ethnographic analogy, and use-wear studies presented in Smith [1985]). Although the frequencies of these artifacts in the quantified deposits are too low to draw firm conclusions, the observed pattern is consistent with the interpretation that cotton thread (and probably cloth) production may have shifted from rural to more urban settings throughout the Late Postclassic period (Table 3). Thus whorl frequencies decline slightly at El Puerto while increasing at Coatetelco and Cuernavaca. A pattern of urban replacement of imported manufactured goods (cotton cloth) with locally made goods (manufactured with imported raw cotton) is common in growing urban economies like that of Late Postclassic Morelos (Jacobs 1969:145–179). As previously stated, Cuauhnahuac's tribute to the Triple Alliance included both raw cotton and finished cloth. Unfortunately, the archaeological data say nothing of the intensity of bulk cotton production, which probably increased due to Triple Alliance tribute requirements (Smith 1986b).

Although several Late Postclassic obsidian workshops in western Morelos have been studied, it is not yet possible to relate obsidian production data to changes *within* the Late Postclassic period. All three workshops—located at El Ciruelo, Cuexcomate (Smith et al. 1984), and RCT-27 (Lewarch 1980; Kenneth Hirth, unpublished settlement pattern data)—are located in small rural village settings. Each exhibits evidence of specialized manufacture of prismatic blades using green obsidian from the Pachuca source area, and at least some of the cores were manufactured at the workshops from imported cobbles (see Smith et al. [1984] for discussion). However, until more sites can be accurately assigned to the Early and Late Cuauhnahuac phases, the impact of Triple Alliance conquest on obsidian tool production and use cannot be evaluated.

(2) *Standard of Living.* Because Triple Alliance tribute was imposed on top of prior local tribute requirements, it is hypothesized that this would lead to greater economic hardship and a lowered standard of living in provincial areas. This lowered standard of living should be more pronounced among the lower classes, who were providing and not receiving tribute goods and services, than among the provincial nobility (Smith 1986a). Furthermore, based partly on class composition,

Table 3. Changes in Selected Ceramic Variables, Early to Late Cuauhnahuac Phases.

Ceramic Categories	Sites					
	El Puerto		Coatetelco		Cuernavaca ^a	
	Early	Late	Early	Late	Early	Late
Total sherds	2,193	813	1,351	869	2,945	725
No. of provenience units	5	4	7	6	4	4
Serving bowls						
Counts: Plain (local)	549	190	171	153	514	156
Local painted	94	20	102	50	413	96
Imported painted	37	11	31	1	46	33
Ratios: Painted : plain	.239	.163	.778	.333	.893	.827
Imported : local	.058	.052	.114	.005	.050	.131
Imported ceramics						
Counts: Aztec III Bl./Or.	12	—	7	1	—	9
Other B. of Mexico ^b	12	12	27	11	35	25
Other areas ^c	25	—	23	—	39	1
Percent: Total imported ^d (%) of total)	2.2	1.5	4.2	1.4	2.5	4.8
Basin of Mexico (%) of imports)	49.0	100.0	59.6	100.0	47.3	97.1
Decorated ceramics (% of total)	7.9	5.9	14.2	11.3	18.0	19.0
Spinning artifacts						
Counts: ^e	15	4	6	5	—	3
Percent: (of total)	.68	.49	.44	.58	—	.41
Obsidian						
Counts:	292	65	(no data)		107	36
Percent Green:	71.2	32.3	—	—	90.2	100.0
Obsidian : Ceramic Ratio	.133	.080	—	—	.036	.050

^a The Cuernavaca data are not strictly comparable to those of the other sites in terms of chronology. See discussion in the text.

^b For all but Cuernavaca Early, imported Basin of Mexico types include Texcoco Fabric Marked, Texcoco Molded/Filleted, and Xochimilco Polychrome. For Cuernavaca Early, imported Basin of Mexico types include Aztec II Black-on-Orange, Texcoco Fabric Marked, and Tenayuca Incised Guinda. See Smith (1986c) for discussion.

^c Toluca Valley, Malinalco, Eastern Morelos/Puebla, Cuernavaca area.

^d "Total imported" counts exceed imported serving bowls due to inclusion of classes like Texcoco Fabric Marked and painted ollas.

^e This category includes spinning bowls and spindle whorls for cotton thread. Larger maguey-spinning whorls are present (though rare) in Morelos.

lowered standards of living should be more evident at rural compared to urban settlements, and in peripheral areas (like the hinterland of the Cuauhnahuac conquest-state) compared to the core area in and near a major capital like Cuauhnahuac (Smith 1986a). Changes in the standard of living should be reflected in several ceramic variables. Serving bowls represent a good indicator. Every household used these vessels, and three categories of increasing value (measured by labor input) may be distinguished: local plain bowls (slipped and unslipped), local painted bowls (primarily Tlahaica Polychrome and Guinda or redware), and imported painted bowls (from various nearby highland valleys). As shown in Table 3, two ratios of more costly to less costly bowls (Painted : Plain and Imported : Local) decline from Early to Late Cuauhnahuac times at the two hinterland sites in western Morelos, while one ratio declines slightly and the other increases significantly in Cuernavaca. Similarly, the percentages of imported and decorated ceramics decline at all sites except for Cuernavaca. Two obsidian measures parallel the ceramic data: percent green and the obsidian :

ceramic ratio both decrease at El Puerto and increase at Cuernavaca (obsidian data are not yet available from Coatetelco). These measures monitor standard of living because obsidian as an imported material probably had a high value, and the green obsidian from the Pachuca source area was apparently more valuable than the various gray varieties available (Smith et al. 1984). In summary, the data in Table 3 support the hypothesized decline in standard of living at rural hinterland sites but not at the capital city of Cuauhnahuac.

(3) *Long-Distance Trade.* Long-distance trade was expected to increase with Triple Alliance conquest, for two main reasons. First, a number of Triple Alliance tribute items were not available in Morelos and had to be obtained by trade (Berdan 1975:116f); and second, increased social interaction with the Basin of Mexico (Smith 1986a) should be reflected in greater trade with that area. However, external trade in ceramics decreased at the two hinterland sites, with the percentage of imported ceramics declining by 32% and 67%. In Cuernavaca, on the other hand, imported ceramics increased almost twofold (Table 3). These changes in foreign ceramics show an interesting pattern: Basin of Mexico imports increased significantly at all sites while imports from other areas dropped to zero or near zero. While we know from documentary sources that after 1438 Cuauhnahuac was engaged in long-distance trade to areas apart from the Basin of Mexico to obtain goods for tribute (Smith 1986b), this exchange was evidently not accompanied by importation of foreign ceramics.

Obsidian data in Table 3 show a decline in the percentage of green (Pachuca) artifacts relative to gray at El Puerto (a reversal of prior Early through Late Postclassic trends), with an increase for Cuernavaca (although the counts are low for the latter area). Although source analyses were performed on gray obsidian from Early Cuauhnahuac contexts at El Puerto and Teopanzolco phase contexts in Cuernavaca, no samples were analyzed from Late Cuauhnahuac or Tecpan contexts (Smith et al. 1984), making it difficult to trace changes in obsidian trade within the Late Postclassic period. The sourced gray obsidian derives from Otumba in the Basin of Mexico, Zinapecuaro in Michoacan, and at least one unknown source. Thus, changes in the percentage of green obsidian do not necessarily reflect changes in the intensity of trade with the Basin of Mexico, because the alternative gray material cannot be visually sourced and comes from sources both within and outside of the Basin.

Returning to the ceramic data, it appears that the Basin of Mexico was monopolizing much of the external trade of western Morelos in the Late Cuauhnahuac phase, although the cause or mechanism is not yet clear. On the one hand, the reorientation of trade may be due to Triple Alliance policy and enforcement. However, this is unlikely given that Morelos merchants traded together with Mexica pochteca on the Tehuantepec trade route (Durán 1967:II:357). Furthermore, it has been shown that much of the Late Postclassic obsidian exchange in central Mexico was not under the direct control of the Triple Alliance states (Spence 1981) and this observation probably holds for other commodities as well (Smith 1986b). It is more probable that simple cost-distance factors account for the change: with a declining standard of living and increased social interaction between Cuauhnahuac and the Basin of Mexico, foreign ceramics from other areas became too expensive relative to Basin of Mexico imports. Similarly, the technologically superior green obsidian from Pachuca may have become too expensive relative to easily obtainable gray obsidian from a number of central Mexican sources.

As a final note, it may be observed of the data in Table 3 that Late Aztec phase ceramics from the Basin of Mexico were present in Morelos long before the area was conquered by the Triple Alliance. This is to be expected because the goal of Triple Alliance expansion was not to find export markets for Basin of Mexico products but rather to replace former trade relations with tributary relations. This finding has implications for the archaeological study of conquest and imperialism: simple changes in artifactual types or classes may not monitor this kind of sociopolitical change (Adams 1979). Indeed, Charlton has demonstrated that the single most important sociopolitical event in the Mesoamerican past—the Spanish conquest of 1519–1521—is not clearly signalled in rural ceramic assemblages until well over a century after its occurrence (1976, 1979). However, even in the sixteenth-century Aztec ceramics there are changes (reductions in ratios of decorated to undecorated wares, reduction in attention to surface finishes [Charlton 1979:28]) analogous to those

that occurred in the rural Morelos sites discussed here. Although archaeologists may have to use other categories of data (settlement patterns, household inventories, etc.) to *document* conquests and other political events, this article shows that ceramic data from refuse collections are certainly sensitive to the socioeconomic *results* of such events.

These findings, although suggestive, should not be seen as firm or complete conclusions because much of the non-ceramic artifactual data from the sites discussed here is not yet available, and the difficulty in distinguishing the Early and Late Cuauhnahuac phases severely limits the number of sites that can be considered. Nevertheless, the changes seen at the phased sites conform to a consistent interpretable pattern that is probably closely linked to the Triple Alliance conquest of Cuauhnahuac as described in the historical sources. It is expected that present and future work will expand the archaeological data base so that the issue of archaeological/historical correlation can be addressed with increased confidence.

CONCLUSIONS

Although the results presented above must be regarded as preliminary and incomplete, they do demonstrate that it is methodologically feasible to build an archaeology of the Triple Alliance empire. The approach taken here is to use the archaeological record to test and evaluate ethnohistorical models of economic and social organizational change. Although this may be the most productive method to follow, it is not the only valid approach. Additional independent analyses of the archaeological and ethnohistorical records need to be carried out, and in some cases the ethnohistorical evaluation of archaeological models is called for (see Brumfiel 1983). Whatever method is followed, however, it is generally agreed that the archaeology and ethnohistory of Late Postclassic central Mexico must both be considered in order to further our understanding of the cultural processes involved (e.g., Charlton 1981; Evans 1980; Nicholson 1955; Vaillant 1938).

As stressed above, the first step in combining diachronic archaeological and ethnohistorical data is chronological refinement and periodification of the two independent temporal records. Then a correspondence between the archaeological and historical constructs must be established before effective comparisons and correlations can be made. Past failures to refine Postclassic archaeological sequences beyond 200-year phases (or 500-year phases in some cases) have prevented successful archaeological/historical correlations. As a result it has not been possible to speak of an archaeology of the Triple Alliance empire. As shown by the analysis above, there is nothing intrinsic about the archaeological record for Postclassic Mesoamerica that prevents chronological refinement. Failure to develop more sensitive chronologies is due primarily to a lack of interest and the avoidance of appropriate archaeological methods. When such methods are applied, as in the present study, chronologies can be refined and the task of building an archaeology of the Triple Alliance empire can begin. Although the results for Cuauhnahuac and western Morelos do not yet constitute firm conclusions, they do suggest the kind of advances possible when fuller use is made of the archaeological record for Postclassic central Mexico.

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