

11. | World System Theory and Alternative Modes of Interaction in the Archaeology of Culture Contact

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Abstract: World system theory is commonly invoked by archaeologists to explain the organization and long-term effects of cultural contact between complex societies and less developed neighboring polities. It is argued here that world system theory has been overused and in many cases inappropriately applied. The assumptions of the world system model are presented and critiqued. An alternative *distance-parity* interaction model is presented to specify the conditions under which long-distance interregional contact will be characterized by an essential equivalence in power relations rather than the hegemonic control by the *core* area as postulated in the world system model. The archaeological correlates of the two models are presented and evaluated, using as a test case the earliest known colonial system, established by the city-states of Uruk Mesopotamia in surrounding regions during the fourth millennium B.C.

World system theory, or some variant of the theory, has become the model most commonly invoked by archaeologists to describe and explain the relations between complex societies and neighboring groups. Although archaeologists have critiqued and modified this construct since its initial formulation, there have been no rigorous tests of the world system model and surprisingly little consideration of alternative analytical frameworks for interregional interaction. In this chapter, I present an archaeological test of the world system model and a proposed alternative formulation, using as a case study the fourth millennium B.C. interregional interaction network that linked Mesopotamia with its highland neighbors. During the Uruk period, circa 3800–3100 B.C., the first urbanized polities of Mesopotamia began a period of

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apparent commercial expansion into the resource-rich areas of Iran, Syria, and Anatolia in what is probably the earliest known colonial network. Recently, a number of researchers have argued that this "Uruk expansion" was in fact a prehistoric world system in which the Mesopotamian core exploited its highland periphery through monopolistic control over an interregional exchange network. The Uruk expansion thus provides an ideal opportunity to evaluate the validity of core-periphery and alternative models of interaction between early complex societies and their neighbors. This presentation has three parts. The first section summarizes the evidence for interregional contact between Mesopotamia and its neighbors in the mid-fourth millennium B.C. In the second part, I outline and critique the basic assumptions of the world system models that have been used to explain the Uruk expansion. As an alternative, I propose a *distance-parity* model of interaction. Finally, I test the archaeological correlates of the two models, using the evidence for Mesopotamian-Anatolian interaction at Hacinebi, a site on the Euphrates River trade route in southeast Turkey.

The Uruk Expansion

State societies developed on the irrigated alluvial plain of southern Mesopotamia during the Early or Middle Uruk period, corresponding to the first half of the fourth millennium B.C. (Adams 1981:71; Johnson 1973, 1987; Pollock 1992; Wright 1978; Wright and Johnson 1975). Very shortly afterwards, the economic sphere of Uruk states expanded to form extensive exchange relations with the less urbanized polities in the neighboring Taurus and Zagros mountains. Several sites in the latter areas have been identified as Uruk colonies, apparently established to control trade/communication routes while extracting metals, lumber, or other commodities from the resource-rich highland zones, in what several researchers consider the world's earliest known colonial system (Figure 11-1). Sites identified as Uruk "colonies" or "enclaves" were established in the key routes through the Iranian Zagros (Weiss and Young 1975), on the Tigris River in northern Mesopotamia (Algaze 1986a), across the Habur headwaters region (Schwartz 1988b:9), and up the Euphrates River into the Taurus highlands (Esin 1982b:108-110; Frangipane and Palmieri 1987:297; Sürenhagen 1986:15). The main phase of the Uruk expansion seems to have been in the Late Uruk period (Sürenhagen 1986:9), although some sites appear to have been established as early as the Middle Uruk (Boese 1987; Oates 1993; Stein et al. 1996).

The Uruk enclaves are quite distinctive as alien settlements, established in the midst of local Iranian, Syrian, and southeast Anatolian cultures. Several different forms of Uruk material culture—notably ceramics, architecture, and administrative technology—occurring in combination, serve to identify the Mesopotamian implanted settlements while distinguishing them from contemporaneous local settlements (Sürenhagen 1986:9-13). Multiple criteria are necessary because ceramics alone are not a reliable indicator of ethnicity (Kramer 1977).

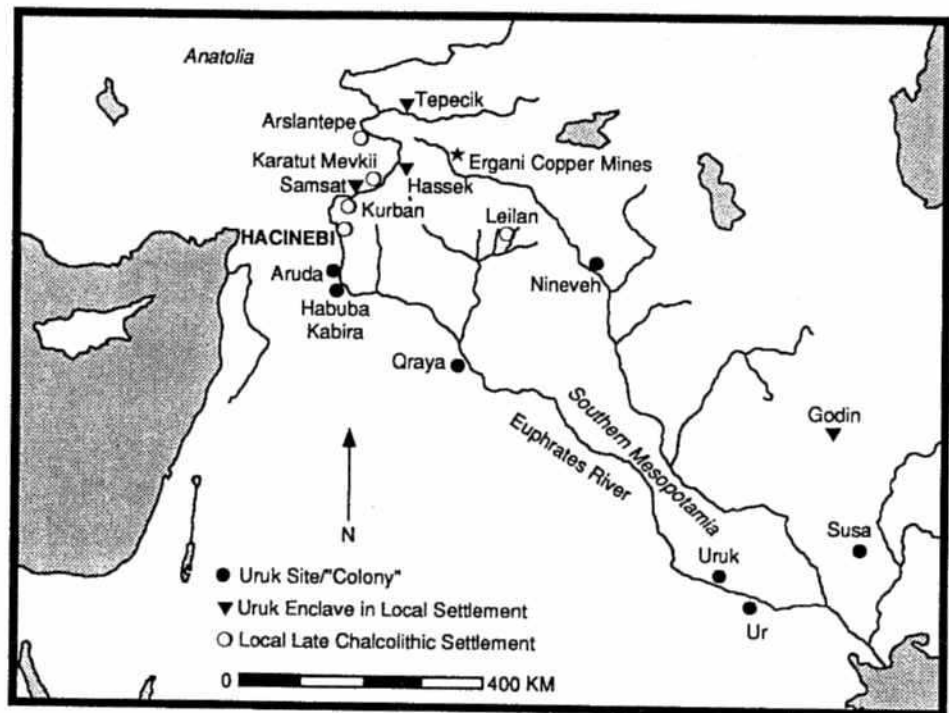


Figure 11-1. Map of the Near East showing Uruk colonies/enclaves and local settlements.

Sites identified as colonies have the full repertoire of Uruk ceramics (Palmieri 1985:192; Sürenhagen 1986:26) while generally lacking local ceramics. By contrast, local sites tend to have only a limited range of Uruk ceramic types (notably beveled rim bowls) occurring alongside the indigenous ceramic assemblage (Algaze 1986a, 1986b, 1989; Algaze et al. 1991; Braidwood and Braidwood 1960; Fielden 1981; Henrickson 1994; Palmieri 1985; Schwartz 1988a; 1988b; Wattenmaker and Stein 1989; Weiss and Young 1975). The sites with the full Uruk ceramic repertoire also have distinctive Uruk architecture such as the tripartite "middle hall" house (Sürenhagen 1986:10), wall cone mosaic decoration (Behm-Blancke 1989; Özten 1984), and niched facade temples (Finet 1977; Van Driel 1977; Van Driel and Van Driel-Murray 1979). A third distinctive feature of the Uruk enclaves is the presence of south Mesopotamian administrative technology such as cylinder seals, bullae, tokens, and clay tablets with numerical inscriptions used to monitor the mobilization, transportation, storage, and disbursement of goods (Nissen 1985; Pittman 1993; Van Driel 1983; Wright et al. 1981).

Based on these criteria, researchers have identified Uruk enclaves at Godin in Iran (Weiss and Young 1975); at Brak and Nineveh in northern Mesopotamia (Algaze 1986b; Schwartz 1988b, Sürenhagen 1986); and on the Syrian

Euphrates at Qrayya, Habuba Kabira-south, and Jebel Aruda (Reimer 1989, Strommenger 1980; Van Driel and Van Driel-Murray 1983). On the Euphrates in Anatolia, excavations have identified Uruk enclaves at Hassek Höyük, Samsat, and Tepecik (Algaze 1986a, 1986b, 1989; Algaze et al. 1991; Behm-Blancke 1981, 1986; Esin 1982a, 1982b). Although distinctively Mesopotamian colonies or way stations have been excavated (Behm-Blancke 1981, 1986; Boese 1987; Strommenger 1980; Van Driel and Van Driel-Murray 1979, 1983; Young 1986), we know little about the organization of the indigenous counterparts of the Mesopotamians or the nature of interaction between these two groups.

The purpose of the Uruk enclaves remains the subject of continued debate. Schwartz proposes that some Uruk settlements (e.g., Hassek) were emporia or trading outposts, while particularly large sites such as Habuba Kabira-south, Hamoukar, and possibly Brak were colonies that combined commercial functions with the settlement of excess Mesopotamian population on easily available agricultural land (1988b). Other researchers have suggested that the Uruk settlements are actually indicators of an Uruk collapse rather than a commercial expansion (Johnson 1988–1989). However, the predominant view sees the Uruk enclaves as trading colonies or way stations whose exclusive purpose was to ensure south Mesopotamian access to Anatolian and Iranian resources such as copper and perhaps lumber as part of a prehistoric “world system” (Algaze 1989, 1993; Allen 1992; Frangipane and Palmieri 1987; Palmieri 1981, 1985; Sørenhagen 1986).

The World System Model

The world system model was initially developed to examine the rise of western capitalist economies within a global frame of reference (Wallerstein 1974, 1980). Wallerstein suggests that the economic growth of European state societies can best be understood by looking at “world systems”—that is, large-scale interregional exchange systems composed of several competing polities. As a world system expands geographically, the regions within it become differentiated according to the functions they perform in the overall exchange of goods and services. In particular, a world system can be divided into two distinct geographic areas—the *core* and the *periphery*—with an intermediate *semiperiphery* between the two poles of the system.

The core is highly developed in both economic and political terms. Centralized authorities directly or indirectly support the system’s exchange relationships while encouraging the accumulation and investment of surplus. The core areas have large-scale diverse economies that specialize in the manufacture of complex, high-value finished products for home consumption and export to the periphery. More recent formulations have broadened the model to include either staples or luxury/prestige goods as major core exports (Blanton and Feinman 1984; Blanton et al. 1992; Schneider 1977). The less-developed periphery at the outer edges of the world system is seen as controlled either by colonial administration or by weak local rulers who are de-

pendent on the core. Peripheries focus on staple monoculture and provide raw materials to the core.

The semiperiphery is geographically and organizationally intermediate between the other two parts of the world system. Its political system is less complex than that of the core but often more centralized and hierarchical than those of peripheral polities. In economic terms, the semiperiphery also falls somewhere between the core and the periphery, especially with regard to the system of labor control, which Wallerstein suggests is characteristically sharecropping, as opposed to free or coerced labor (Wallerstein 1974:102–103). The semiperiphery is said to function as an economic and political buffer zone between the core and periphery, thereby stabilizing and perpetuating the system as a whole.

Beyond the periphery of a given world system lies the *external arena*, although the boundaries between the two are often fluid and difficult to define. This zone can consist of mini-systems that are not involved in regularized exchange with the core, periphery, or semiperiphery. Alternatively, the external arena may comprise other world systems that are connected with a given world economy only through small-scale exchanges of preciousities or luxury goods (Wallerstein 1974:301–302). Thus, for example, Han China would be considered an external arena to the Roman Empire, since the two world systems were only connected by a very limited exchange of preciousities.

One of the central parts of the world system model is the idea of a fundamental asymmetry in power relationships between the core and the periphery. The dominant core in essence *creates* the periphery by pulling it into the international exchange system as an economically and politically dependent area. This relationship initially builds up the power of local elites and can lead to the development of more complex societies in an undeveloped periphery (e.g., Kipp and Schortman 1989). However, at the same time, the periphery, which was once economically autonomous, becomes overspecialized in the production of raw materials to supply the needs of the core. The core, in turn, exploits the periphery through its control over the exchange system and over the manufacture of finished products.

A number of researchers have drawn on a world system perspective to suggest that the Uruk expansion represents a Mesopotamian “informal empire” characterized by economic hegemony rather than military domination over the Syro-Anatolian periphery (e.g., Algaze 1989, 1993; Allen 1992). Mesopotamian demand for Anatolian raw materials is thought to have impelled the establishment of an Uruk-dominated system of trading colonies that exchanged Mesopotamian finished products, such as textiles or other luxury goods, for Anatolian copper and lumber. In this view, the southern Mesopotamian core area economically dominated the highland periphery through an asymmetric exchange system in which they held a colonial monopoly over long-distance trade.

The world system model is appealing to anthropologists because it links politics, economics, geography, and even ideology into a unified construct that addresses the developmental dynamics of complex societies at an inter-regional scale. In fact, despite a few early critiques (e.g., Lane 1976; Schneider

1977; Sella 1977; Wolf 1982), world system theory has become probably the most widely used model to describe and explain interregional interaction, long-distance exchange, and colonial systems in complex societies. Although Wallerstein's (1974) original view limits the model to the rise of European capitalism, a number of researchers have suggested that world systems in one form or another characterized the ancient world as well (Algaze 1989, 1993; Allen 1992; Blanton and Feinman 1984; Champion 1989; Chase-Dunn and Hall 1991; Edens 1992; Edens and Kohl 1993; Frank 1993; Hall and Chase-Dunn 1993; Kohl 1987a; Peregrine 1991, 1992; Whitecotton and Pailles 1986). This perspective certainly has explanatory power for at least some cases, such as the hegemonic or territorial empires of highland Mesoamerica (e.g., Blanton et al. 1992; Santley and Alexander 1992). However, archaeologists have applied the world system concept to an extremely broad range of prehistoric, pre-capitalist, and non-western societies at virtually every conceivable scale and level of complexity (for an overview, see Hall and Chase-Dunn 1993). In some cases, the applications of the concept have reached ridiculous extremes: for example, Randall Collins states that "there is no type of society in any period of human existence in which world systems relationships do not affect its structure and dynamics" (1992:373). In other words, everything is, and always has been, part of a world system. On a more modest scale, André Gunder Frank (1993) argues that there has been a single world system for the last 5,000 years. Although these two examples represent the extreme end of the spectrum, the world system model in various forms is commonly used by archaeologists to describe interregional interaction in complex societies and its effect on developmental trajectories.

Different researchers implicitly or explicitly define *world systems* in very different ways, thereby making it difficult to evaluate the concept critically. When applied so broadly, the world system concept runs the risk of losing any kind of explanatory or heuristic value, except as a shorthand for "interregional interaction system in complex societies." Given the tremendous variation in the use of the world system concept, and the degree to which it has evolved since its original formulation, the most useful way to evaluate the various incarnations of the model is by making explicit its underlying assumptions and examining their degree of applicability to the ancient Near East (or any other system of interregional interaction between complex societies).

Problematic Assumptions of the World System Model

Several researchers have questioned the underlying assumptions and evidence for the applicability of the world system model to Uruk Mesopotamia and its neighbors (Rothman 1993; Stein 1990; Wattenmaker 1990; see also Mathien [1986] and Schortman and Urban [1994] for parallel critiques of the applicability of the world systems model to Mesoamerican interaction with the United States Southwest and the southeast Maya periphery). The world system model rests on three fundamental, but problematic, assump-

tions. First, it assumes a fundamental power asymmetry between the different parts of the system so that the core politically dominated the periphery, either through direct colonial administration or through a combination of economic and cultural hegemony. Second, the model assumes that as a result of these asymmetries the core was able to control the exchange system. Third, the model assumes that long-distance exchange relations structure all other aspects of political economy in peripheral societies.

The world system model implicitly assumes that core areas successfully exercise hegemony over peripheries because of their ability to project their power across large distances through a combination of advanced technology and superior organization. However, that assumption fails to take into account the leveling effects of distance. In an insightful analysis of two unsuccessful European colonial enterprises—the Crusades and the Norse Vinland settlements—Crosby (1986) argues that those efforts failed for two reasons. First, the colonists had no real technological advantage over the local people. Second, in the absence of a clear technological advantage, distance could work as a great equalizer. Simply put, power decays with distance. The distances from the homeland to the colonized area were so great that neither the Norse nor the Crusaders were ever able to bring to bear enough military force to establish themselves among the locals (see also Fitzhugh, ed. 1985:28). In other words, the power asymmetries assumed by world system theory do not always apply.

The underlying assumptions of the world system model do not fit well with the available data for the economics and the politics of the Uruk colonial system in Anatolia. Until recently, in the absence of good archaeological data from local sites in Syria and Anatolia, researchers have simply assumed the existence of tremendous technological, economic, and power asymmetries between Mesopotamia and its neighbors. However, excavation results from the Keban and Karababa salvage projects in southeast Turkey suggest that it does not seem to have been the case in the late fourth millennium. Technologically, Mesopotamia and Anatolia were at comparable levels of development. The evidence from sites in eastern Anatolia suggests that the peoples in this so-called periphery had very advanced copper metallurgy at an early date. They were mining, smelting, and casting copper into ingots and finished products (Esin 1982b:109; Kosay 1976:193; Stein and Mısırlı 1996:116, 127). If anything, the Anatolians were trading highly processed, technologically advanced products to Mesopotamia rather than unfinished raw materials. This is the exact opposite of the kinds of asymmetric resource exchanges that one would expect in a standard dependency theory scenario (Stein 1990:67).

Philip Kohl's analyses of precapitalist complex societies of the Near East and Central Asia indicate that the world system model must be drastically modified before it can be applied to ancient interaction networks (Edens and Kohl 1993; Kohl 1987a, 1987b, 1989). The Wallersteinian notions of core dominance, asymmetric exchange, and trade as a prime mover in social change are seen as often inapplicable to the interregional interaction networks of the ancient world. The presence in Western Asia of multiple competing cores and highly variable power relations between cores and peripheries made it ex-

tremely difficult for a given center to control neighboring less complex societies. Unless actually conquered by a more powerful core polity, ancient peripheries could follow several alternative modes of interaction ranging from withdrawal from the exchange network to substitution of one core partner for another (Kohl 1987a:16).

Kohl cites as an example the copper-rich region of Oman at the entrance to the Persian/Arabian Gulf. Although Oman supplied Mesopotamia with large amounts of copper during the mid-third millennium, there is no evidence that Mesopotamia exercised monopolistic control over Omani raw materials or the exchange system. Instead, the distributions of Mesopotamian and Harappan material culture in this region indicate that Oman was an independent periphery that traded extensively with both Sumer and the Indus valley. At the same time, there is no evidence for the reduction of third millennium Oman into an underdeveloped or dependent status. Political and economic flexibility of this sort belies the notion of the periphery as a passive partner in a core-dominated world system (see also Edens 1992).

The idea of core dominance is also grounded in assumptions of technological superiority over a backward periphery. Kohl argues that unlike Africa and the Americas in the modern world system the peripheral societies of the Bronze Age Near East and Central Asia did not necessarily suffer from a technology gap with respect to their core areas. Technologies such as metallurgy and horse breeding were not core monopolies. If anything, both technologies developed first in peripheral areas such as Anatolia and Central Asia and rapidly spread to the centers. The ease of transfer from one area to another precludes the idea of long-term disparities in technology as a source of core dominance and asymmetric exchange in ancient Western Asia. The existence of multiple cores, easily transferable technologies, and primitive means of transportation and communication led to the emergence of a contingent and rapidly changing social landscape in which core areas could only exercise ephemeral and circumscribed influence over neighboring regions.

Similarly, there is little evidence for core dominance and economic asymmetries between Mesopotamia and Anatolia in either productive systems or exchange. We have no data indicating that the Mesopotamians actually dominated the exchange system—this has simply been assumed. In terms of productive systems, both Anatolia and Mesopotamia had developed specialized systems of craft manufacturing and agriculture. Ceramic and faunal data from the local Anatolian settlement of Arslantepe have shown the existence of specialized copper metallurgy, ceramic mass production, and herding systems in the fourth millennium (Frangipane and Palmieri 1987; Palmieri 1985). These economies were controlled by highly centralized ruling authorities and were monitored by a purely local administrative technology of stamp seals and clay sealings every bit as sophisticated as the system used in Mesopotamia (Ferioli and Fiandra 1983; Frangipane and Palmieri 1989; Palmieri 1989; Pittman 1996).

Nor is there any evidence for Mesopotamian domination of an asymmetric trade system. Unequal exchange must be grounded in some combination of economic advantages (through more efficient production or transport) combined with the military and/or political power to maintain asymmetric terms

of trade. As noted above, the productive economies of Mesopotamia and Anatolia were comparable in technology (although we have no information concerning the scale of production). However, the available evidence suggests that the Mesopotamians lacked the advantages in transportation costs and the ability to impose terms of trade by military force. Interregional exchange relations in the fourth-millennium Near East were almost certainly affected by a distance-decay in power relations. The distance from the city of Uruk to the copper and lumber sources of Anatolia is about 1,500 kilometers—all of it upstream. This would have seriously impeded the Mesopotamians' ability to project any kind of power or coercive force into the peripheral areas. At the same time, the upstream transportation costs for this great a distance would have limited Mesopotamian exports to those items whose values were extremely high relative to their weight and bulk (see also Drennan 1984a and 1984b for a similar situation in Mesoamerica). When one combines the technological parity of the two areas with the leveling effects of distance, it is evident that small groups of Mesopotamian colonists or traders could only have survived physically and economically in the more distant peripheries at the sufferance of the local people. As a result, whatever power asymmetries might have existed would have been the opposite of the kind assumed by world system models. The effect of distance would have been to create an essential parity in economic and political relations between Uruk Mesopotamia and the local Late Chalcolithic polities in the Taurus piedmont zone.

The final problem with the world system model lies in its a priori assumption that long-distance trade or exchange is the prime mover of economic and social change. The key issue here is not whether exchange takes place between the core and periphery but rather the degree to which this trade transforms local political economy. One can only say that this kind of systemic integration has taken place when the volume of trade reaches a sufficiently high level to transform peripheral production into an export-oriented system (Goody 1971: 278; Nash 1981:398). Although it is certainly true in some cases, there is little evidence to support the idea that long-distance exchange is the general explanation for sociopolitical change in the peripheries of either modern or ancient interregional interaction networks (Curtin 1984:9; Lane 1976:529). In assigning to interregional interaction the decisive transformative role, the world systems model ignores the less visible but, in the long run, far more important endogenous changes in domestic production, investment, and consumption (Sella 1977:31).

The Distance-Parity Model of Interregional Interaction

If we discount the world system model's assumptions of core dominance, asymmetric exchange, and trade as a prime mover, it becomes possible to derive an alternative model of exchange relations between Mesopotamia and neighboring areas. In this perspective, the emergence of a dependency relationship is something to be demonstrated and not simply assumed in advance. This *distance-parity* model suggests that the core's ability to

exercise hegemonic power decays with distance, thereby leading to increasing parity or symmetry in economic and political relations with increasingly distant peripheries. Under these conditions, core-periphery interaction is expected to be limited in scale and influence such that the peripheral political economies do not necessarily develop the specialized dependency relations predicted by the world system model. Economic compartmentalization and the lack of fungibility or interchangeability (Adams 1974) between different spheres of economic activity would tend to limit the degree to which small-scale elite exchanges of luxury goods could have transformed entire economic systems in the periphery.

In this formulation, the critical variables that structure variability in the organization of interregional exchange systems are (a) the balance of power between polities (cf. Schortman and Urban 1994); (b) the effects of distance on transport costs for both military force and trade goods (Drennan 1984a, 1984b; Hassig 1985); (c) the degree of difference between regions in access to military, productive, and transport technology (Kohl 1987a, 1987b, 1989); and (d) the demographic/ecological conditions such as population size, differential resource distributions, and the nature of endemic diseases in each region (Crosby 1986; Fitzhugh 1985).

Under preindustrial conditions, transport costs structure the organization of exchange and tribute so that the predominant exchange goods shift from bulk to luxury items once a certain distance threshold is reached. Based on transport costs, Drennan argues that for Mesoamerica, at least, overland transport of staples such as maize was limited to relatively short distances around consuming centers such as Tenochtitlán; long-distance trade and tribute would have been limited to luxury goods such as cacao, turquoise, shell, copper, gold, and especially textiles because of their high ratio of value relative to weight or bulk (Cowgill 1993; Drennan 1984b). Mesoamerica is to some extent an unusual case because the absence of domesticated pack animals required that all transportation be carried out by human muscle power—either as overland bearers or as paddlers in riverine transportation. However, even in Andean South America, where llamas provided efficient animal traction, Inka tributary systems show the same shift from the mobilization of bulk food items (staple finance) in subject areas close to the capital toward the use of luxury or prestige goods (wealth finance) in more distant subject areas (D'Altroy and Earle 1985).

Transportation costs also limit the ability to project military power over large distances, leading to clear distance-related differences in the ways that even highly militarized core areas deal with increasingly distant peripheries. This form of distance-parity effect is especially clear for the Aztec empire. The Aztecs' inability to move and retain large-scale armies outside the Basin of Mexico forced them to rely on a series of marriage alliances with local provincial elites in place of direct military control (Smith 1986).

I suggest that these variables can be combined into the following distance-parity model. Under conditions of technological and demographic parity between two regions at different levels of sociocultural complexity, the power of the more developed ("core") region will decay with distance, leading to

1. a decline in core control over interregional exchange, causing a shift from asymmetric to increasingly symmetric conditions of exchange between the two areas (Figure 11-2);
2. a progressive reduction in the importance of long-distance exchange relative to local exchange and subsistence production in the political economy of the periphery;
3. a progressive reduction in the exchange of bulk goods relative to the proportion of prestige goods due to the latter's high ratio of value to bulk/weight;
4. a progressive reduction in economic pressures/incentives toward the specialized production of surplus craft or subsistence goods for export;
5. a progressive restriction of core influence to peripheral elites, rather than the peripheral population as a whole;
6. increasing restriction of the ability of the core to project military, economic, and political power into the periphery. Schortman and Urban (1994:402) have pointed out that these different forms of power need not have coterminous distributions in space. We can therefore suggest that the core's ideological power will be much less subject to this distance-decay function since it has the highest ratio of "value" to bulk/weight. However, the presence in peripheries of core ideologies and prestige goods will increasingly be subject to appropriation and transformation into the local cultural idiom (see, e.g., Moorey 1987; Thomas 1991); as a result, the presence of core-produced prestige goods in these areas need not imply core dominance over local elites in the periphery; and
7. a progressive decline in the degree to which interregional interaction affects the organization and development of political systems in the periphery.

The degree of core dominance, the extent of core control over the exchange system, and the effect of interregional exchange on the structure of peripheral polities are all highly variable. Under conditions of technological/demographic superiority or ease of access between two areas of differential social complexity, asymmetric core-periphery systems can develop along exactly the lines specified by Wallerstein in the world system model. Thus, empires as generally defined (see, e.g., Sinopoli 1994) often have modes of interregional interaction that correspond closely to Wallerstein's "world empire" type of world system. However, when these conditions do *not* obtain, then we would expect to see increasing parity with distance in core-periphery relations. Distance-parity dynamics apparently affected the interregional exercise of economic and military power in a variety of historic and prehistoric settings, including Postclassic Mesoamerica (Hassig 1985; Smith 1986), the sixteenth- and seventeenth-century trade between Spain and the Americas (Macleod 1984), the Roman Empire (Hedeager 1987), and Late Chalcolithic Mesopotamia.

In short, the distance-parity model sees Mesopotamian-Anatolian interaction during the late fourth millennium B.C. as subject to the constraints of transport costs and technological parity; as a result, this network would have

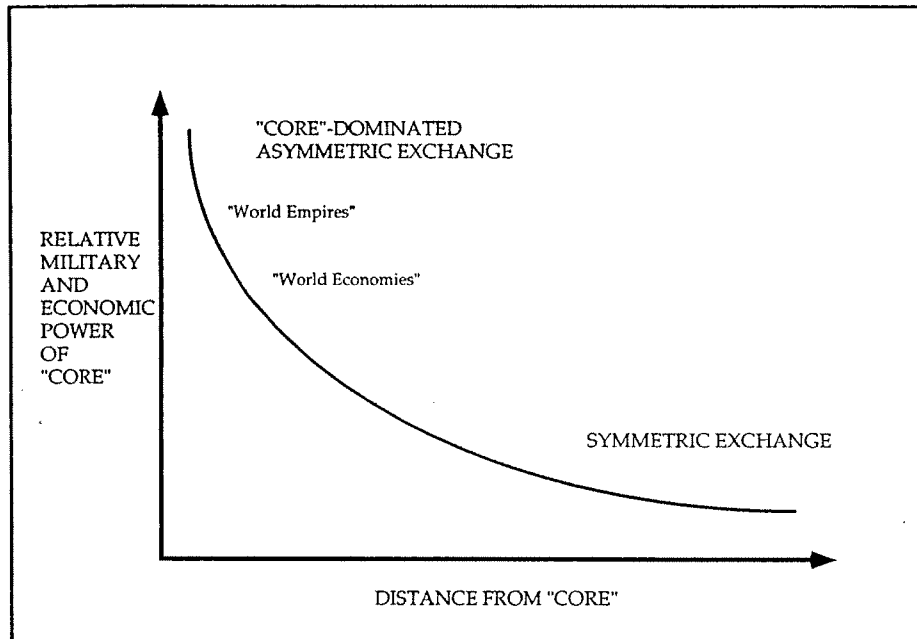


Figure 11-2. *Distance-parity model of interregional interaction.*

had a trend toward symmetric exchange with increasing distance from the Mesopotamian alluvium. The 1,500-km distance between southeast Anatolia and the Sumerian heartland raised upriver (northbound) transport costs to a point that would have limited Uruk Mesopotamian exports to relatively small amounts of luxury items or scarce commodities.

The World System and Distance-Parity Models: Implications for the Archaeology of Culture Contact

The world system and distance-parity models can best be tested through diachronic analyses that compare the economic and social organization of a peripheral polity before and after it was drawn into a system of regional interaction with a developed core state. If the world system model is applicable to the Uruk expansion into Anatolia, Syria, and Iran, then one would expect to see the following archaeological correlates:

1. Agriculture and craft production should shift from an initial state of generalized subsistence production toward the specialized production of surpluses intended for exchange with the core.

2. There should be evidence for a large-scale increase in exchange activities. In particular, one would expect large volumes of Mesopotamian-style prestige goods.
3. There should be evidence for Mesopotamian control over an asymmetric exchange system, as shown by the pattern of circulation of goods, and the predominance of Mesopotamian administrative systems.
4. There should be evidence for increasing local social complexity (specifically, increases in local elite power and wealth) as a result of Mesopotamian contact.
5. There should be evidence for local elite emulation of Mesopotamian ideology and prestige goods.
6. There should be evidence for a net outflow of subsistence and craft goods from the local settlement.
7. If Mesopotamian "colonists" or merchants are present at peripheral sites, they would be supplied by the locals with foodstuffs and craft goods.

By contrast, if the distance-parity model is correct, we expect the following archaeological correlates in indigenous settlements that are distant from Mesopotamia:

1. Agricultural, pastoral, and craft economies should not show any major changes in either intensity of production or in degree of economic specialization.
2. One would expect a low volume of exchange activities. The only Mesopotamian exchange goods should be those with high ratios of value to weight (or bulk).
3. One would expect symmetric exchange relations, with no evidence for exclusive Mesopotamian economic or political control. Administrative artifacts should show evidence for both Mesopotamian and local control over the production, circulation, and consumption of commodities.
4. There should be no evidence for sudden major increases in the degree of local social complexity.
5. Local elites may emulate Mesopotamian ideology or prestige goods, but this need not be the case.
6. The local economy, taken as a whole, should be oriented toward generalized, subsistence-level production and local autonomy, with only minor evidence for exchange.
7. If Mesopotamian "colonists" or merchants are present at the site, they would not extract food surpluses or craft goods from the local population through coercion. Instead, the foreigners would either be largely self-sufficient in food and craft production or would obtain the items through symmetric exchange (i.e., an equal exchange of value).

The Study Area: Hacinebi Tepe, Turkey

Excavations at Hacinebi Tepe, a Local Late Chalcolithic site in the Euphrates River valley of southeast Turkey, provide a rare opportunity to evaluate the world systems and distance-parity models by investigating the

political and economic relationships between the Uruk Mesopotamian settlements and the local inhabitants of southeast Anatolia (Stein and Mısırlı 1994a, 1994b, 1995; Stein et al. 1996). Hacinebi is an ideal site for this purpose because its stratigraphic sequence allows a diachronic study of Anatolian political economy both before and during the Uruk expansion. The site is a 3.3-ha mound on the bluffs overlooking the Euphrates River 5 km north of the modern town of Birecik. Hacinebi occupies a strategic location on what has historically been the major east-west crossing point of the Euphrates (Dilleman 1962:135; Oates 1968:7; Wagner 1976). The site also lies near the head of the main north-south riverine trade route along the Euphrates (G. B. 1916:167, 1942:367; Idrisi 1840:137). The main occupation at Hacinebi dates to the fourth millennium B.C., with a fifth-to-third-century B.C. Achaemenid/Hellenistic occupation as the only later, overlying deposit. This stratigraphic situation provides a rare chance to make the broad horizontal exposures necessary to recover a representative sample from a Late Chalcolithic settlement.

Both precontact and contact phases are present at Hacinebi, allowing for a diachronic analysis of economic changes connected with the Uruk expansion and a rigorous test of the applicability of the world system model to fourth-millennium interaction between Mesopotamia and Anatolia. The precontact phase A at Hacinebi dates to the early fourth millennium and is characterized by local Anatolian chaff-tempered ceramics. In the later contact phase B2 (ca. 3700–3200? B.C.) the Local Late Chalcolithic material culture predominates at the site but coexists with high concentrations of exogenous Mesopotamian Uruk styles of material culture. Excavations have taken place in three main parts of the mound: the northeast (“Uruk area”), the predominantly local south area, and the west slope (Figure 11-3).

Limited soundings in the precontact phase A and B1 occupations of the site have found evidence for a fortification wall, monumental stone platforms, mud-brick public architecture, large storage structures, on-site copper metallurgy, administrative activities (sealings), and long-distance exchange of exotic luxury items such as chlorite ornaments. These finds are consistent with the evidence from other sites such as Arslantepe in hinting at a fairly high level of social complexity in the Local Late Chalcolithic cultures of southeast Anatolia even before contact with Uruk Mesopotamia.

Excavations in the contact phase B2 occupation of Hacinebi have shown a high degree of intrasite variability in architecture, lithic, and ceramic distributions during the period of interaction with Uruk Mesopotamia. Uruk material is highly localized within the northeast area of the phase B2 settlement. Ceramic wall cones provide evidence for the presence of an Uruk-style public building, constructed at the beginning of the contact phase in this part of the site. Uruk pottery is highly concentrated in this area. The northeast area of Hacinebi has also yielded Mesopotamian administrative technology—clay tablets, a bulla, tokens, jar stoppers, and jar sealings whose style, form, and function match those found in Mesopotamia proper and Uruk colonies in Syria and Iran. Clay sickles and a cruciform grooved basalt weight are other classic Uruk Mesopotamian forms of material culture present in the northeast

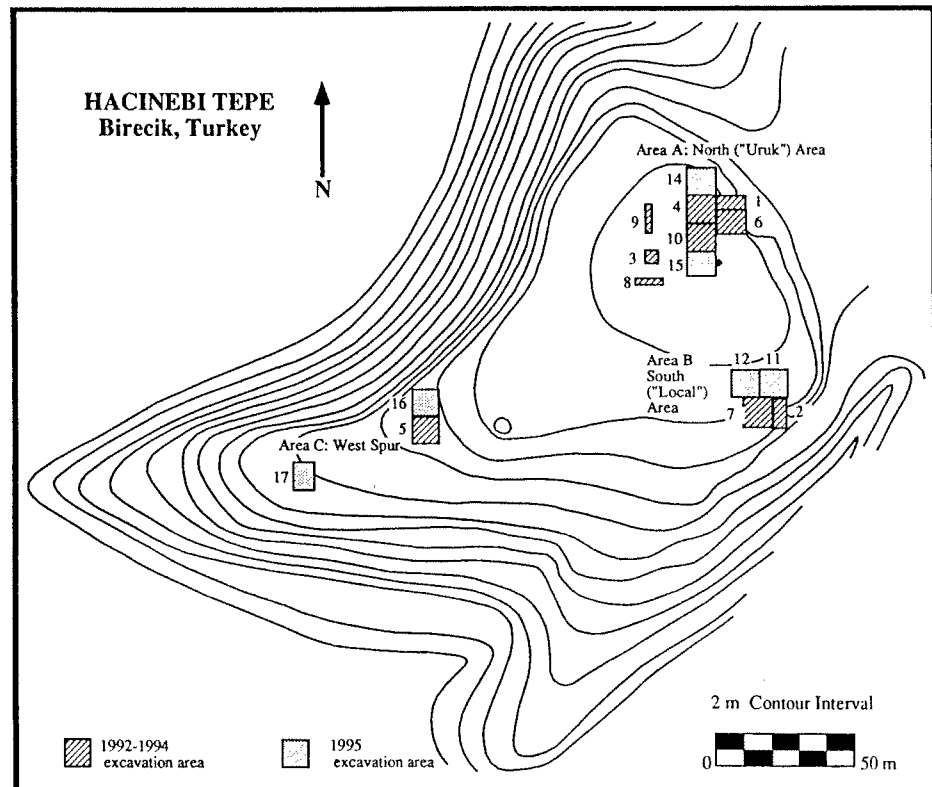


Figure 11-3. *Topographic map of Hacinebi showing main excavation areas.*

corner of Hacinebi. Large amounts of bitumen—a nonlocal raw material—have also been found on top of the terrace platform. They have been identified as chemically identical to bitumens from the Uruk colony at Habuba Kabira; both groups of samples probably derive from the bitumen source at Hit in central Mesopotamia.

In the northeast area, stratigraphically contemporaneous deposits showed clear spatial differences between the distributions of Local Anatolian and those of Mesopotamian Uruk material culture. On the west side of a building wall, ceramics consisted exclusively of Local Late Chalcolithic types, whereas contemporaneous deposits on the east side of the same wall yielded almost exclusively Uruk Mesopotamian ceramics (Stein and Mısırlı 1994b; Figure 11-4). Comparison of faunal remains from the two sides of the wall showed that the percentages of main taxa in the deposits with exclusively local pottery matched food preferences from other Anatolian sites, while the deposits with exclusively Uruk pottery had the 80%–90% representation of sheep and goats char-

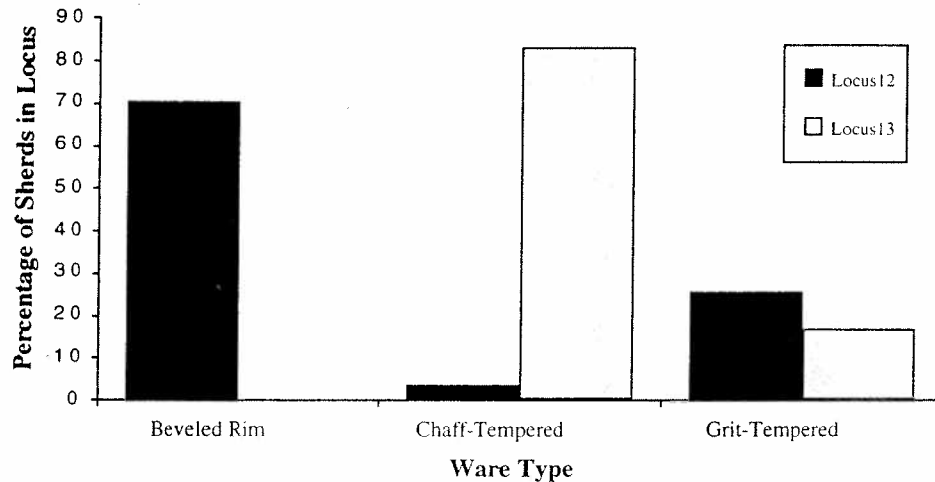


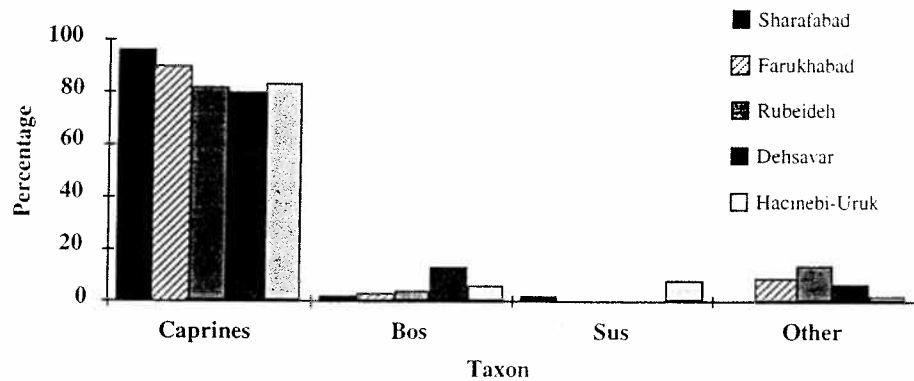
Figure 11-4. Comparison of ceramic ware types between Uruk (Locus 12) and Local Late Chalcolithic (Locus 13) contexts in northeast area.

acteristic of sites in Mesopotamia (Figure 11-5; see also Stein 1994; Stein and Nicola 1996).

In stark contrast to the platform terrace at the northeast end of Hacinebi, the south and west areas of the phase B settlement have predominantly Local Late Chalcolithic material culture. In the south area, finds of a large stone structure, an Anatolian-style stamp seal impression, and a carved limestone "hut symbol" in association with a mostly local chaff-tempered ceramic assemblage suggest some kind of special function for this part of the site. Preliminary analyses of the chipped-stone tools and ceramics both show clear contrasts in the manufacture and use of ceramics and stone tools between the different parts of the phase B settlement.

The presence of the Uruk assemblage at Hacinebi cannot be simply dismissed as reflecting local elite emulation of Mesopotamian styles of material culture. A full range of Mesopotamian artifacts—including ceramics, administrative technology, architectural ornamentation, metric systems, and subsistence technology—appears abruptly and is concentrated in one part of the site alongside, but distinct from, the local assemblage. Both the Mesopotamian and Local ceramic and lithic assemblages show parallel ranges of functions but occur in association with evidence for different food preferences. Taken together, the evidence is consistent with the presence at the site of a small enclave of Mesopotamians, living as a distinct group in one corner of their Anatolian host community (Stein 1994; Stein et al. 1996).

Mesopotamian Uruk Fauna: Comparison with Hacinebi Uruk Contexts



S.E. Anatolia Local Fauna: Comparison with Hacinebi Local Contexts

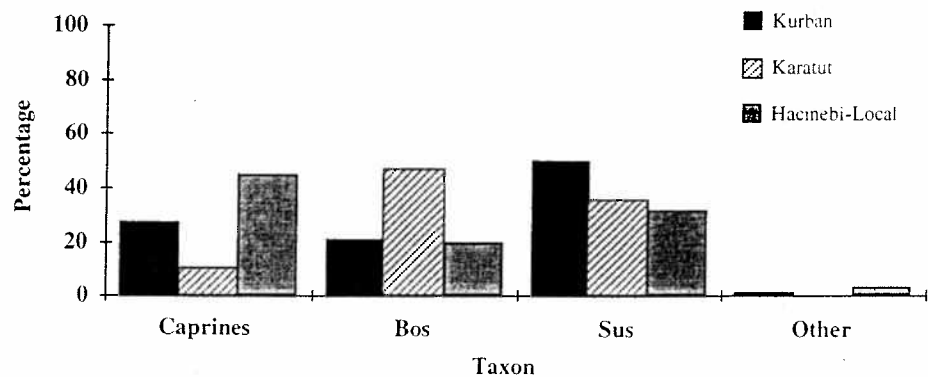


Figure 11-5. Comparison of faunal patterning in Uruk and Local Anatolian contexts at Hacinebi and in contemporaneous sites.

Testing the Two Models: The Organization of Interregional Interaction at Hacinebi

We can now use the Hacinebi data as a test case to evaluate the archaeological correlates of the world system and distance-parity models of interaction. Diachronic comparisons between the precontact and contact phases allow us to monitor the degree to which the indigenous societies of southeast Anatolia were affected by their participation in an interregional

interaction network with Mesopotamia. At the same time, synchronic comparisons between the Anatolian and Uruk Mesopotamian contact phase B2 assemblages allow us to study in detail the political and economic dimensions of relations between these two groups. As discussed above, the archaeological correlates of the world system model should include (a) evidence for a sudden increase in local social complexity as a result of trade interaction with Mesopotamia; (b) reconfiguration of subsistence and craft organization toward the intensified production of surpluses for exchange (mainly export); and (c) indications for asymmetric exchange under Mesopotamian control. By contrast, archaeological evidence supporting the distance-parity model would include (a) continuities in the level of local social complexity; (b) subsistence-level agriculture and craft production for local exchange and consumption; and (c) indications for symmetric exchange between Mesopotamians and Anatolians.

The limited available evidence suggests that the development of complex societies was under way in southeast Anatolia well before the beginnings of the Uruk expansion. Our best data derive from the site of Arslantepe, located in the Euphrates valley to the north of Hacinebi. The highland site of Arslantepe occupied a crucial position in close proximity to the principal copper, lead, and silver deposits of eastern Anatolia (Palmieri 1981, 1985). Evidence for metallurgy and ceramic mass production suggests that local highland communities had already begun to develop a fairly complex, specialized economic organization in period VII, in the early fourth millennium (Frangipane and Palmieri 1987:299; Palmieri 1985:196–202, 1989).

At Hacinebi, limited exposures of the precontact phase A settlement have shown a high degree of internal architectural differentiation and well-developed economic organization. A large stone wall along the vulnerable eastern edge of the site appears to be a defensive installation. In the southern part of the site, excavations uncovered part of a massive mud-brick building with walls 1.7 m thick; the size of the structure and the presence of a niche in one wall suggest a nondomestic, possibly ritual function. On the floor of the niched room, a small carved grey stone pendant was found, apparently made of chlorite. Since the nearest known chlorite sources are in the Diyarbakir region some 300 km away (P. Kohl, personal communication 1994), the Hacinebi pendant apparently provides evidence for regional exchange systems that antedate the Uruk expansion into southeast Anatolia. Precontact phase A deposits on the west side of the site included not only domestic architecture but also long narrow stone structures that appear to be store-rooms. Adjacent to those structures, excavations recovered a copper chisel and a portion of an open casting mold with small copper fragments still adhering to its surface. The nearest known copper sources are at Ergani, over 200 km to the northeast. Contemporaneous deposits in the west area of Hacinebi yielded a partially fired local Anatolian-style stamp seal impression, indicating that some individual or institution was monitoring the circulation of goods in the precontact settlement. In sum, the limited data from phase A at Hacinebi suggest that this site was characterized by internal functional differentiation, monumental architecture, a well-developed administrative technology, long-

distance exchange connections (oriented north toward the Anatolian highlands rather than south toward Mesopotamia), and craft specialization in the most advanced metallurgical techniques known during the fourth millennium B.C. Although we lack direct mortuary evidence for social stratification in this period, the available evidence from both Hacinebi and Arslantepe suggests the presence of relatively complex societies in early fourth-millennium south-east Anatolia, well before the Uruk expansion. Contrary to the expectations of the world system model, there is no indication at Hacinebi of a sudden increase in the degree of sociopolitical complexity during the contact phase B2 period of extensive interregional interaction with Mesopotamia.

Economic strategies in agriculture, pastoralism, and craft production provide a second way to evaluate the applicability of the world system and distance-parity models to Mesopotamian-Anatolian interaction at Hacinebi. Although sample sizes are small, the available archaeobotanical, faunal, and lithic data are consistent in the picture they provide of stability and continuity in economic organization at the site. Analyses of the archaeobotanical remains by Naomi Miller show domesticated barley (*Hordeum vulgare*) and wheat (*Triticum aestivum/durum*, *T. dicoccum*, *T. monococcum*) occurring in roughly equal proportions (based on ubiquity) in both the precontact and the contact phases (Table 11-1; see also Miller 1994, 1996). There is no evidence for sudden increases in the importance of specific crop types, as one might expect with agricultural intensification. Similarly, the temporal distribution of plant parts such as wheat or barley internodes and spikelet forks shows no major changes in the location or intensity of crop-processing activities. Although grapes were apparently first domesticated in the fourth millennium, and are known to have been used for the production of wine as a luxury export good elsewhere in the Near East (Badler et al. 1990), there is no evidence to suggest a shift toward either grape cultivation or wine production at Hacinebi during the contact phase B.

Faunal data can also provide a useful indicator of intensification and specialization in pastoral economy. The optimum age and sex composition of sheep or goat herds varies, depending on the production goal (Payne 1973). As a result, the mortality patterns of sheep and goats from archaeofaunal samples can be used to determine whether ancient herders were focusing on generalized meat production for local consumption or more specialized, surplus-oriented strategies such as dairy production, wool production, or the supply of meat to other settlements (Stein 1987). Given the known importance of textiles in later Near Eastern trading networks (Larsen 1976, 1987), increased participation in an interregional exchange system might be reflected at Hacinebi by a shift toward specialization in wool production with a concomitant increase in the importance of sheep and goat herding.

Did pastoral production at Hacinebi intensify over the course of the fourth millennium? In the phase A faunal assemblage, sheep and goats are the most common taxa (44%), followed by pigs (27.43%) and cattle (26.43%). This distribution suggests a relatively diversified herding economy, consistent with the risk-averse strategies of village-based herders focused on subsistence-level production for local use (Redding 1981; Stein 1989). The contact phase B2

Table 11-1. Frequency of Common Plant Types by Late Chalcolithic Phase

	Phase A	Phase B (Local)	Phase B (Uruk)
Number of samples	11	11	4
Crop and Food Plants			
<i>Hordeum vulgare</i>	10	11	2
<i>Triticum aestivum/durum</i>	3	1	1
<i>Triticum dicoccum</i>	4	6	—
<i>Triticum monococcum</i>	6	2	—
<i>Lathyrus</i>	4	1	—
<i>Lens</i>		3	5
Wild Plants			
<i>Vaccaria</i>	2	2	1
Compositae 1	1	3	—
<i>Aegilops</i>	5	2	—
cf. <i>Echinaria</i>	4	1	—
<i>Hordeum murinum</i> type	4	—	—
<i>Lolium</i> cf. <i>remotum</i>	11	10	—
Gramineae 1	9	7	—
Gramineae 2	4	2	1
Gramineae 4	4	1	—
<i>Teucrium</i>	1	3	—
<i>Astragalus</i>	2	2	—
<i>Coronilla</i>	1	3	—
<i>Trifolium/Melilotus</i>	7	8	1
<i>Trigonella astroites</i> type	6	3	—
<i>Trigonella</i>	6	1	—
<i>Gallium</i>	3	6	—
Plant Parts			
<i>Hordeum internode</i>	3	2	—
<i>T. monococcum/dicoccum</i>			
Spikelet fork	10	9	3
<i>Aegilops</i> glume base	6	1	1

Source: Miller 1996:Table 9.

fauna from local Anatolian contexts at Hacinebi show virtually complete continuity with the diversified phase A pattern; there is no evidence for an increase in sheep/goat production by the Anatolian herders. The age data for the Hacinebi caprines reinforce this interpretation. Zooarchaeologically, specialization in wool production would appear as a shift toward older animals ranging from 3 to 10 years and increased survivorship for males (since castrates are known to produce a particularly fluffy fiber). The limited faunal data from Hacinebi show no major shifts in the ages at death of sheep and goats between phases A and B. In both periods, none of the specimens examined exceeded five years of age, a mortality profile consistent with a generalized, subsistence-oriented herding system directed toward production for local consumption (Nicola 1994; Stein and Nicola 1996).

Chipped-stone assemblages and artifacts associated with metal working allow us to examine the degree of continuity or change in the organization of craft production at Hacinebi. As noted above, finds of a copper chisel and open casting mold indicate that the inhabitants of Hacinebi were importing and processing copper ore from the north during the precontact phase A. The discovery of two additional mold fragments from phase B2 deposits suggest that this practice continued in the contact phase as well. Although we cannot determine whether production intensified during the contact phase, the scarcity of metallurgical equipment recovered to date suggests that this was probably a small-scale activity throughout the Late Chalcolithic occupation of the site. Similarly, analyses of the chipped-stone tool assemblage by Reinhard Bernbeck, Christopher Edens, and Henry Wright showed no evidence for shifts in lithic raw material use, tool types, or degree of specialization in lithic manufacture between phases A and B (Edens 1996; Wright and Bernbeck 1996).

In sum, the zooarchaeological, archaeobotanical, metallurgical, and lithic evidence all show continuity between the precontact and the contact phases rather than shifts toward intensified agro-pastoral or craft production during the period of maximum interaction between Mesopotamia and southeast Anatolia. The results are consistent with the expectations of the distance-parity model.

The final set of archaeological correlates for the world system and distance-parity models concerns the issues of core hegemony and unequal exchange relations. Did Mesopotamians dominate the local population through a monopoly of long-distance trade? It is important to emphasize that the presence of a Mesopotamian enclave at Hacinebi does not necessarily imply that this "colony" controlled the indigenous population. To assume this is to project onto the archaeological record a view of colonies derived from the last four centuries of European colonialism in the Americas, Africa, and Asia. When one examines precapitalist or non-western exchange networks, it becomes apparent that there is a wide range of variation in the organization of cross-cultural traders and trade.

One of the most useful ways to recognize this variation in the social context of interregional exchange is the concept of the *trade diaspora* (Cohen 1971; Curtin 1984). This model was developed by Abner Cohen in an effort to un-

derstand the relations between ethnically distinct enclaves of Hausa traders and their Yoruba host communities in Nigeria and neighboring regions of West Africa. Cohen defines a trade diaspora as "a nation of socially independent but spatially dispersed communities" engaged in exchange (1971:267). Foreigners in a trade diaspora act as intercultural brokers between their host community and the outside world. A trade diaspora need not have formal ties with its homeland; thus, traders are often independent groups whose identity is based on cultural and economic connections rather than political affiliation with their places of origin. Foreign trader groups can stand in a wide range of possible relationships with their hosts; the three most important points along this continuum are (a) marginal, pariah status, (b) social autonomy, (c) domination of the host community, as was the case in the relations of European merchants and their host communities in Africa and Asia in the eighteenth to twentieth century. The third possibility is the form of trade diaspora implicit in world system models.

Given what we know of other Uruk settlements at large fortified sites such as Habuba Kabira-south in Syria, it seems unlikely that the Mesopotamians at Hacinebi were a marginal or socially inferior group. However, there is no evidence to suggest that they dominated the Anatolians. No weapons or fortifications have been found in association with the concentration of Uruk material in the northeast part of the site. Nor is there any evidence for violent destruction or burnt levels at any point during the 300–400-year span of the Uruk presence at Hacinebi. While not entirely conclusive, this evidence is consistent with peaceful coexistence between the two groups.

Economic data from the phase B2 occupation allow us to examine the question of Uruk dominance and unequal exchange more closely. If the Mesopotamian enclave did in fact control the local economy as suggested by the world system model, then we would expect to see that the Anatolians provided the enclave with food and possibly craft goods as tribute or payment for imported prestige goods. However, we would expect a much higher degree of autonomy and self-sufficiency under the distance-parity interaction model.

Comparisons of chipped-stone artifact distributions in Mesopotamian and Anatolian contexts suggests that these two groups practiced surprisingly similar activities. Two separate kinds of blades were produced at Hacinebi: Canaanite blades and simple blades. The tools seem to have been manufactured in different ways and used for different purposes. Many of the Canaanite blades have bitumen hafting and silica gloss, indicating that they were used to harvest cereals. Very few are retouched. By contrast, simple blades frequently have retouch and rarely have silica gloss, suggesting that this tool category tended to be used more for a variety of nonagricultural functions.

Manufacturing debris such as core fragments and cortical flakes from the production of Canaanite and simple blades occurs in both Mesopotamian and Anatolian contexts. Both groups seem to have had access to the same set of lithic raw materials and to have manufactured the same types of tools. Traces of bitumen hafting in the typical locations for sickle blades and silica gloss are present on lithics from both Local and Uruk contexts (Table 11-2).

Table 11-2. *Hacinebi Phase B—Bitumen Residues and Silica Gloss: Uruk vs. Local Contexts (Pooled Blades and Simple Blades)*

	Uruk Count ^a	Percent	Local Count ^b	Percent
Bitumen residue	8	17.0	3	5.3
Silica gloss	3	6.4	2	3.5
Total blades and simple blades	47	100.0	57	100.0

^aN = 587.

^bN = 271.

This is extremely important because it suggests that the people who generated the midden on the Uruk side of the wall were harvesting their own cereals rather than being provided with food by other people at the site.

Examination of body part distributions in the faunal sample allows us to determine whether or not the Mesopotamians were supplied with meat by the local population. Generally, when a sheep or goat is butchered, the head and foot bones are removed and discarded because of their low meat value. If the Mesopotamians were receiving meat from their Anatolian host community, then we would expect to see high proportions of the meat-rich limb bones but very few head or foot bones. Figure 11-6 shows that all of the main body parts are present in both Uruk and Local midden deposits, with no clear predominance of limb bones in either group; this suggests that both Mesopotamians and Anatolians were processing their own animals. There is no evidence to indicate that the Anatolians supplied meat to the Mesopotamian enclave.

The distribution of small finds also suggests a high degree of autonomy and duplication of function between the Mesopotamian and Anatolian parts of Hacinebi. Small lumps of cleaned sealing clay suggest that the storage and circulation of goods were closely monitored in both areas. In addition, the distribution of loom weights, pierced sherds, and hemispheric spindle whorls is strong evidence that both the Mesopotamians and Anatolians were engaged in textile production.

The lithic, faunal, and small find evidence are thus consistent in showing that the Mesopotamians at Hacinebi were not a dominant colonial enclave, supplied by a subordinated local population. Instead, the data best fit a model of two encapsulated, economically autonomous communities. Both groups apparently raised their own crops, slaughtered their own animals, wove their own clothes, and stored their own goods.

The final question concerns the degree to which the Mesopotamians controlled the exchange system. If the world system model's assumptions of economic hegemony and asymmetric exchange are correct, then we would expect to see the predominance of Mesopotamian administrative technology at the

Hacinebi Caprine Body Parts: Uruk vs. Local Contexts

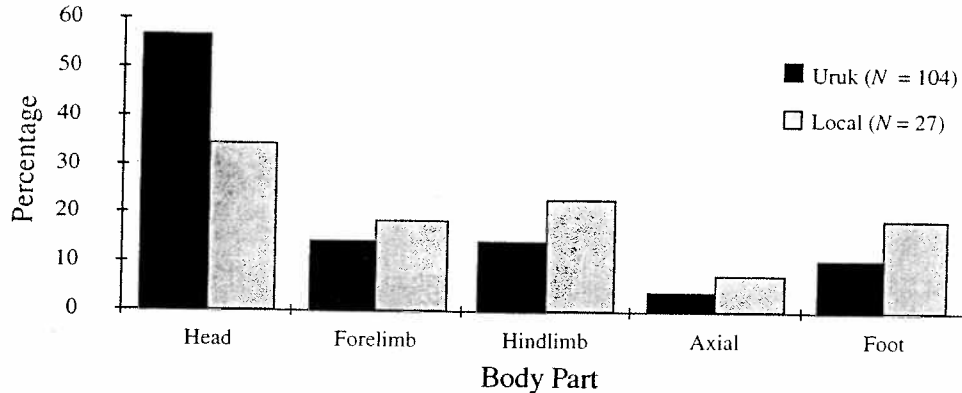


Figure 11-6. Comparison of sheep/goat body part frequencies in Uruk and Local Anatolian contexts at Hacinebi.

site as evidence for that group's control over the mobilization, storage, shipment, and distribution of goods. That is not the case at Hacinebi.

Contact phase B2 deposits at Hacinebi have yielded evidence for the contemporaneous, but separate, use of both Mesopotamian and Anatolian forms of administrative (sealing) technology. In the northeast corner of the site, excavators have recovered an almost complete range of standard Uruk administrative artifacts including jar sealings, jar stoppers, a hollow clay ball/bulla filled with tokens, and a clay tablet—all bearing Uruk cylinder seal impressions (Figure 11-7). However, the northeast area also yielded evidence for Local administrative practices in the form of Local Anatolian-style stamp seals carved from stone and more than 100 stamp seal impressions on unbaked clay artifacts (Figure 11-8), found together in several large concentrations. The two administrative systems can be easily distinguished on both stylistic and technological grounds; the Mesopotamians used cylinder seals, which were rolled over the wet clay surface, whereas the Anatolians used stamp seals, which were pressed into the clay surface.

The reverse sides of the clay sealings often bear the impressions of the objects to which they were attached, thereby giving some indication of the activities or functions that were being administered at Hacinebi. Functional analyses of the sealings by Holly Pittman have shown that the Mesopotamian and Local Anatolian administrative artifacts appear to have been used for a range of distinct activities. The clay sealings impressed with Local Anatolian stamp seals were most frequently used as locks or tamper-evident closures for mobile storage containers of several varieties: coiled baskets, wicker baskets, sacks closed with pegs; containers made of or covered with reed matting, leather, or more rarely fabric (Pittman 1996). In contrast to the Local pattern,

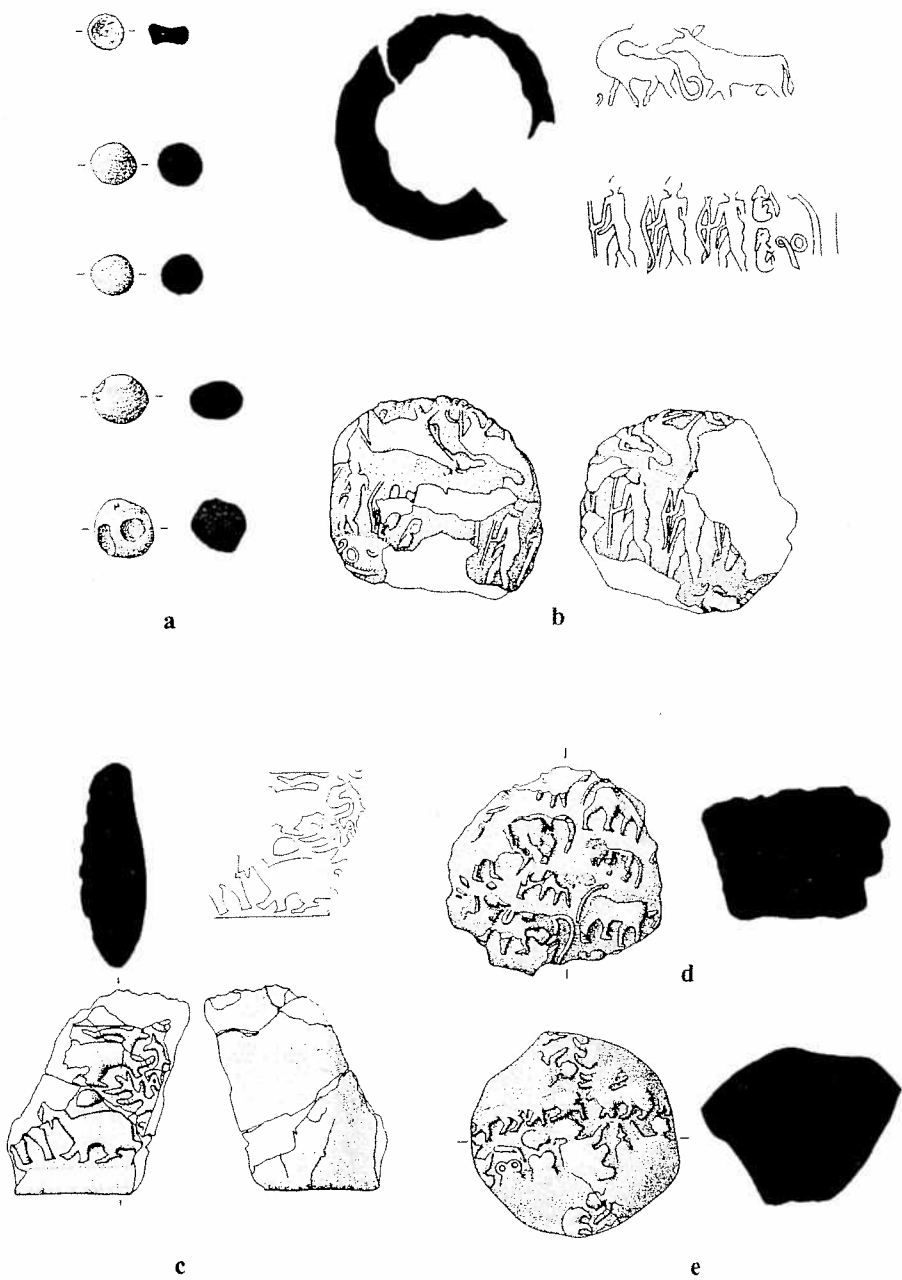


Figure 11-7. Uruk administrative technology at Hacinebi: (a) unbaked clay tokens or counters; (b) hollow clay ball or bulla with two different cylinder seal impressions; (c) cylinder seal impressed unbaked clay tablet; (d-e) cylinder seal impressed jar stoppers.

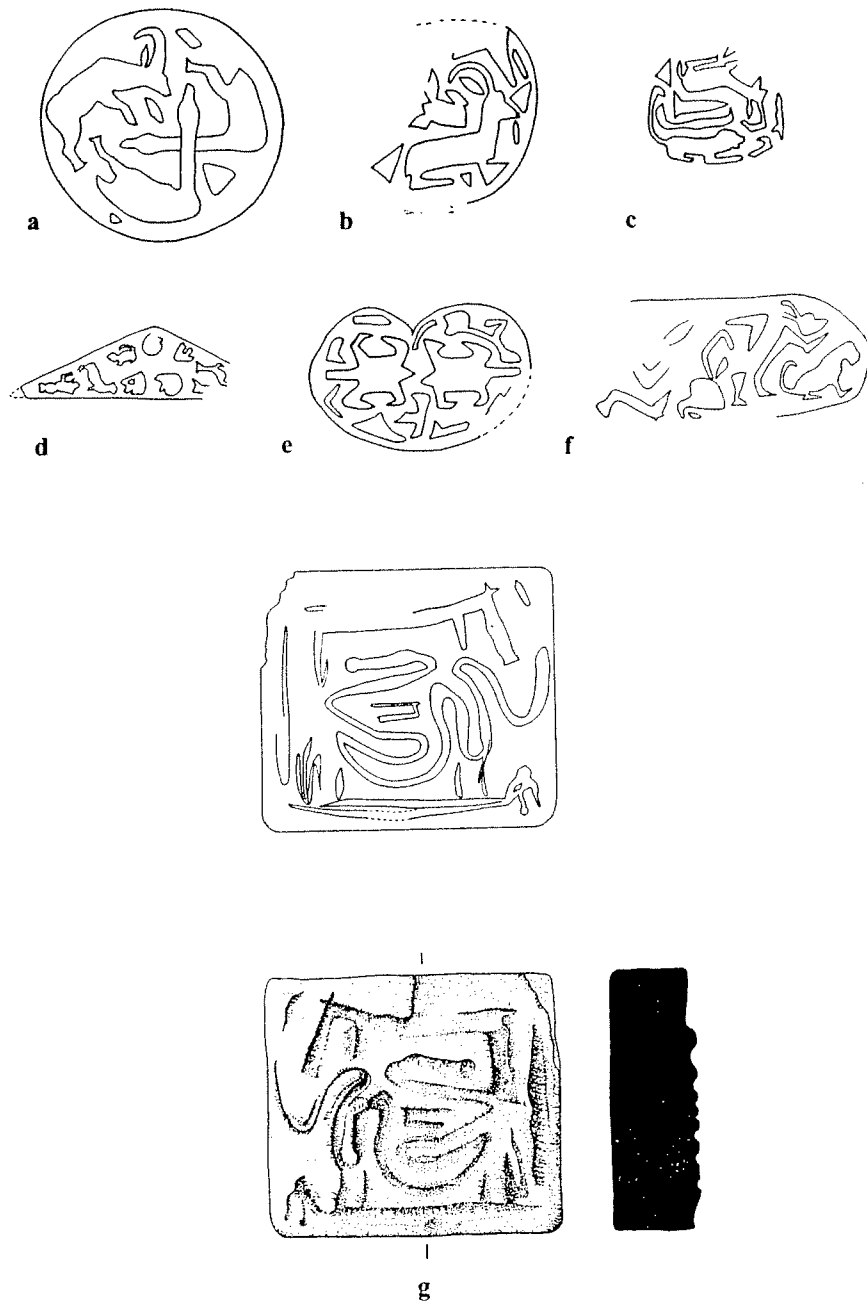


Figure 11-8. Hacinebi Local Anatolian administrative technology employing stamp seals: (a-f) commonly occurring stamp seal motifs; (g) carved limestone stamp seal.

Mesopotamian Uruk-style cylinder sealings are found on a clay tablet, a hollow clay ball/bulla, and predominantly on sealings of ceramic jars.

The Mesopotamian and Anatolian administrative systems are contemporaneous but distinct in seal design style, sealing technique (rolled vs. stamped), sealing functions, and in contexts of use. If Anatolians were delivering supplies as trade goods or tribute to the Mesopotamians, in the kind of asymmetric exchange system postulated by the world system model, then we would expect to see the discarded Local stamp sealings in Uruk Mesopotamian contexts. This is not the case. Instead, Uruk-style, cylinder-sealed, record-keeping artifacts occur exclusively with Uruk style ceramics, while Local-style, stamp-sealed, administrative artifacts are found almost always with Local Anatolian ceramics. Out of more than 100 Local stamp seal impressions, only two have ever been found in deposits with Uruk ceramics and Uruk administrative technology. These few cases of Anatolian sealings in Uruk deposits are important because they confirm the contemporaneity of the two record-keeping systems while emphasizing that they were used to seal different goods that moved in separate economic spheres. The use of both Mesopotamian and Anatolian administrative technologies suggests that both groups had at least some control over the circulation of goods in the system. At the same time, the distribution and functions of the sealings suggest the operation of two autonomous, minimally interacting systems monitoring separate sets of economic transactions rather than the kinds of commodity flows to be expected if the Uruk colony were exercising political or economic dominance over its Anatolian host community. In sum, the weight of the evidence from Hacinebi is consistent with the archaeological correlates of the distance-parity model.

Conclusions

I have argued here that the world system model accounts for only a small subset of the potential modes of interregional interaction. The alternative distance-parity interaction model proposed here eschews the world systems model's a priori assumptions of core dominance, asymmetric exchange, and trade as a prime mover in sociopolitical change while allowing instead for a greater range of variation in political and economic relations among complex societies. Tests of the archaeological correlates of these two models showed that the power of the Mesopotamian core decayed with distance so that it was unable to exercise military, political, or economic control over the terms of trade in distant peripheries 1,500 km or more upstream from the urban centers of the southern alluvium. Instead, at settlements such as Hacinebi, Mesopotamian trade diasporas lived as socially and economically autonomous enclaves, dealing with their host communities as equals in a symmetric exchange system.

The data presented here suggest that the Uruk colonies operated on a very different set of principles from the asymmetric power relationships posited by world system models. Most important, the Hacinebi material highlights the need to look closely at the local cultures in order to understand the workings

of interregional exchange systems. When we do so, it becomes clear that it is probably wrong to view every case of interaction between early complex societies and their neighbors as a core-dominated world system. Instead we must recognize that the leveling effects of distance give rise to a highly variable social landscape in which the smaller, less complex polities of the "periphery" could and did play an active role in structuring networks of interregional interaction.

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