The Uruk Expansion

Cross-cultural Exchange in Early Mesopotamian Civilization

by Guillermo Algaze

By the Uruk period in the second half of the 4th millennium B.C., highly integrated societies of the southern Mesopotamian alluvium had succeeded in establishing a system of interaction tying their resource-deficient homeland with the resource-rich but less-developed highland periphery. This was accomplished by the colonization of the plains of southwestern Iran neighboring the alluvium and the establishment of a number of urban-sized enclaves at focal nodes of the lines of communication across the plains of northern Mesopotamia, of much smaller stations along the principal routes from the alluvium to the enclaves, and of small outposts deep in the surrounding highlands. Although short-lived, this foray was to have important repercussions on the development of the indigenous societies with which it came into contact, and this in turn contributed to the abandonment of the intrusive settlements shortly before the end of the Uruk period.

The expansion of Uruk societies bears some resemblance to the colonial expansion of European societies into less developed areas of the Third World. The Uruk phenomenon may be characterized as an early instance of an "informal empire" or "world system" based on asymmetrical exchange and a hierarchically organized international division of labor that differs from modern examples only in degree.

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1. This paper is condensed from an unpublished monograph entitled "The Uruk Expansion: 'Momentum towards Empire' in Early Mesopotamian Society," a revision of my doctoral dissertation, presented to the Department of Near Eastern Languages and Civilizations of the University of Chicago in December 1986. That dissertation and various drafts since its completion benefited greatly from the editorial advice and substantive criticism of a number of scholars, most prominently Elise Auerbach, H. J. Kantor, and McGuire Gibson of the University of Chicago, H. Wright of the University of Michigan, and E. Carter of the University of California, Los Angeles. Their various contributions are gratefully acknowledged.

Early Mesopotamian civilization arose in the alluvial lowlands of what is now southern Iraq during the Uruk period, sometime in the second half of the 4th millennium B.C. Recent attempts to understand its origins have explored the role of sources of disequilibrium in the social texture of local communities as a factor in the evolutionary processes that culminated in the rise of city and state as the preeminent forms of spatial and political organization. Studies have focused on the growth of urban polities [Adams 1966, 1981; Adams and Nissen 1972], the emergence of complex hierarchical administrative structures [Johnson 1973, 1987; Wright and Johnson 1975] and class stratification [Zagarell 1986], the transition from reciprocal to redistributive economies [Polanyi 1957], and, finally, the impact of specific "prime movers," such as agricultural intensification and population growth [Adams 1972, Smith and Young 1972], warfare [Wright et al. 1975], and the development of intraregional trade [Johnson 1973, Wright 1972, Wright and Johnson 1975].

Important as each of these various factors must have been, the complex modifications and innovations in internal social, political, and economic organization resulting in the elaboration of a "great tradition" [Redfield 1956] that was both enduring and distinctively Mesopotamian surely did not occur in a vacuum. The marked geographic, environmental, economic, and cultural contrasts between the lowlands and the surrounding plains and highlands imposed a number of enduring constraints on the development of societies in each of these areas. A crucial one is that in the alluvium, a land devoid of resources other than the most basic ones provided by agriculture and animal husbandry, a substantial proportion of the material requirements needed to sustain highly stratified social systems had to be imported [Oppenheimer 1976]. The necessary resources were largely to be found in distant highland areas inhabited by communities which, if we may judge from existing historical and archaeological evidence, were characterized—at least prior to the 3rd millennium B.C.—by a significantly lower level of sociopolitical and economic integration.

Thus the origins of Mesopotamian civilization can only be understood within a framework in which cross-cultural exchange occupies a prominent position. This is underscored by later historical documentation from Mesopotamia itself. From at least the 3rd millennium on, a variety of evidence allows us to trace the changing roles of exchange and coercion and of both public institutions and private entrepreneurs in the procurement of the required resources. Even though the relative importance of each of these elements varied considerably from period to period and considerable differences in the types of goods exchanged and in the strategies employed to obtain them may be documented through time, one factor remained constant: over the long run the maintenance of complex political organizations in the alluvium invariably occurred within the framework of a wider system of economic and, on occasion, political relationships with areas with complementary resources and societies at significantly different levels of socioeconomic
integration. In a sense, then, the processes generated by the internal variables on which recent research has focused may be seen as a precondition—a sort of "head start" (Wallerstein 1974)—that allowed successive societies in the south to respond actively and creatively to the immutable conditions of disequilibrium imposed by the physiographic and cultural context in which they were embedded.

In the Mesopotamian case, one such response seems to have been a recurrent cycle of centralization, expansion, and eventual collapse (Gibson 1976, Larsen 1979). Periods of internal coherence were invariably preceded by an increase in the level of resource procurement activities and followed by more or less successful processes of expansion in an attempt to control the critical lines of communication through which flowed needed resources. This expansion took a variety of forms ranging from the more informal (sporadic trade contacts, institutionalized trade networks, and occasional military expeditions and raids) to the more formal (territorial annexation, provincial systems). The specifics varied widely by period and area and had as much to do with conditions in the periphery as they did with developments in the Mesopotamian core (see Gallagher and Robinson 1953). A particularly clear and well-documented example is that of the Akkadian period in the second half of the 3d millennium B.C., when the sporadic raids and trade expeditions of late Early Dynastic kings were regularized and institutionalized. This was accomplished by [1] the extension of political control into the neighboring Susiana plain of Khuzestan (Susa) and possibly the Upper Tigris area (Nineveh and its environs, Assur); [2] the establishment of a network of enclaves at focal nodes along the lines of communication crisscrossing the northern Mesopotamian plains (Brak, Mari, and possibly Nuzi); [3] the intensification and regularization of exchange with an ever-widening circle of peripheral communities along an arc spanning the Persian Gulf coast and beyond (Magan, Meluhha, Dilmun), the Taurus/ Anti-Taurus highlands (Silver Mountain, Purushanda), and the coastal upland ranges of Lebanon and Syria (Cedar Forest); and [4] periodic military expeditions and raids directed against local polities not amenable to trade (e.g., Ebla, Armanum, Subartu, Lullubu, and Simurrum) (Bottero 1967, Hirsch 1963, Larsen 1979, Maeda 1984).

The close correlation between political centralization and expansion has been noted by Larsen (1979:97), who suggests that we may see the recurrence of imperial phases in Mesopotamian history simply as episodes of especially intense activity aimed at securing a reliable flow of resources. The reasons a flow of resources had to be maintained at all times and in specific periods had to be ensured by force, if necessary, lie in contrasts in the natural resources available in the alluvium and those obtainable in the surrounding periphery and in differences in the sociopolitical and economic structures of societies at either end of the geographical spectrum. Documentary sources dated to the 3d and 2d millennia B.C. suggest that, on the whole, contacts between communities in the northern periphery and the alluvial lowlands were based on the flow from highland sources of essential (e.g., base metals, timber, common stones, oils) and exotic (e.g., rare metals, precious and semiprecious stones) raw materials and, occasionally, dependent labor (slaves and prisoners of war), either under duress in the form of tribute or plunder or, more commonly, in return for labor-intensive processed and semiprocessed goods (Foster 1977, Larsen 1987, Pettinato 1972, Yoffee 1981).

If modern sociological and historical studies on development and underdevelopment (e.g., Emmanuel 1972, Frank 1970, Galtung 1971) may be used as a guide, asymmetrical exchange such as that just described would have resulted in two parallel and closely related long-term processes. In the alluvium, contacts would have strengthened the economic, social, and political bases of the communities involved. In the periphery, the contrary, after an initial period of vigorous growth there would eventually have been a significant weakening of the socioeconomic systems of indigenous communities. The differing impact of cross-cultural contacts on core and peripheral societies is explained by the "spinoff" effects of those contacts on the polities involved.

In the periphery, no positive spinoffs could come from having to pay tribute, having a portion of the able-bodied population deported as prisoners of war, or being plundered. Economic contacts are, however, another matter. Historical and ethnographic studies indicate that when societies at different levels of sociopolitical and economic integration come into close contact, a certain amount of institutional restructuring in the social texture of each is inevitable. Invariably, however, the impact of contacts is far greater on the less complex society—particularly if it was already on the verge of a social evolutionary process fueled by internal pressures (Adams 1974, Terray 1974). In such a society, cross-cultural exchange will be a powerful stimulus to the evolution of more complex sociopolitical configurations as local elites controlling either the resources being exploited, access to those resources, or the labor involved in their extraction take advantage of their natural role as organizers of the means of production and (at times) mediators of the exchange to consolidate and extend their power, both in the context of their own societies and vis-à-vis their local rivals (Paynter 1981).

An instructive example of short-term changes in peripheral communities brought about by economic contacts with more highly integrated polities is the transformation of Southeast Asian communities in the early centuries of the 1st millennium A.D. as a result of their incorporation into the trading sphere of merchants from the Indian subcontinent whose ultimate goal was trade with China. By combining a variety of historical evidence from Chinese sources, indigenous literary traditions, and archaeological data, studies of this transformation have traced the adoption by local communities not long after the establishment of contacts of explicitly Indian conceptions of the social order—evinced by the growth of complex political systems centered upon the figure of a king where simpler, more egalitarian social
relationships had prevailed and by the emergence of increasingly sophisticated economic structures based on centralized mobilization and redistribution of resources where simpler reciprocative economic mechanisms had been the rule. These changes were part of a wider process of acculturation which also saw the introduction of Sanskrit as the written (but presumably not the spoken) language of many local courts and the adoption of Buddhist rituals and associated styles of religious architecture in an otherwise local context (Hall 1985, Wheatley 1975).

In the long run, however, the initial phase of vigorous sociopolitical growth and economic reorganization just described cannot be maintained, since the protracted economic spinoffs of the exchange will be negligible. The trade itself involves not the creation of any significant means of production within peripheral communities but only the extraction of preexisting (and finite) unprocessed resources. And while the exploitation of these resources may require varying and potentially significant manpower expenditures, its end result is not further down-the-line processing employment and administrative complexity but a hole in the ground or a hillside barren of trees. The final consequence of this exploitation will be a loss of flexibility for the economies of peripheral communities as they become increasingly overspecialized in the procurement of a limited number of specific goods for export and dependent on a single market (Galtung 1971). Thus sociopolitical structures already in place in the periphery will be consolidated and strengthened at the same time that the economic base needed to sustain them is being weakened and made more susceptible to eventual collapse.

In contrast, in the alluvium all of the sociopolitical and economic spinoffs will be positive. The benefits to societies at the receiving end of tribute and plunder are immediately obvious, since those resources strengthen the power base of military elites in direct proportion to the weakening of the forces arrayed against them. Benefits from economic contacts, however, although similar to those already discussed for peripheral societies, will, if anything, be more far-reaching and pervasive. This is explained by the prevailing pattern of trade. The resources exported in the Mesopotamian case, principally surplus grain, leather products, dried fish, dates, and textiles, are all labor-intensive. The production of an exportable agricultural surplus, for example, presupposes the employment of armies of laborers and contingents of supervisors in order to create, maintain, and operate the necessary irrigation networks and to harvest the grain, winnow it, store it, and, finally, bale it for shipment. Similarly, the production of dried fish, dates, and leather products requires considerable manpower: fish have to be caught, processed, and packaged; date palms have to be pollinated and dates gathered and packaged; sheep and goats must be fed, herded, sheared, and killed, and their skins have to be cut, tanned, and otherwise processed. Moreover, the production of other processed goods for export, such as textiles, demands an even more sizable investment in manpower—judging from late 3rd-millennium economic texts, principally dependent labor, mostly female slaves (Jacobsen 1970 [1953], Maekawa 1980, Waetzoldt 1972). Another factor of considerable importance is that these various productive activities require legions of bureaucrats to record, store, and redistribute production and to house, feed, and otherwise maintain the dependent laborers. Once in place, the pressures for such a bureaucratic apparatus to become self-perpetuating will be overwhelming, since exclusive access to the imported resources and luxury goods will surely be invested with significant social, political, and religious meaning and used as a tool for the maintenance and strengthening of the hegemony of the bureaucratic and administrative classes (Adams 1981:81; Terray 1974:317). A reliable flow of resources must be ensured at all costs, since interruptions will result in politically unacceptable socioeconomic dislocations: the survival of the social order is predicated on the production of the exportable surpluses that, short of war, ensure access to resources otherwise unavailable. All this explains why expansion occurred only at particular junctures in Mesopotamian history—when a growing economy required the taking of active and expensive steps for its maintenance.

The Uruk Expansion: Testable Hypotheses

When exactly did an interaction system based on the ability of highly integrated societies in the Mesopotamian alluvium to mobilize and accumulate resources drawn from a far-flung periphery first develop, and, moreover, how far back into Mesopotamian history can we trace the closely associated phenomenon of recurrent phases of imperial expansion?

These questions can now be addressed by means of a growing corpus of new and reinterpreted data for the archaeological history of several areas surrounding the Mesopotamian alluvium. In the last two decades or so, archaeological research has begun to be focused systematically on both the fertile alluvial plains of southwestern Iran and the high plains of northern Mesopotamia, northern Syria, and southeastern Anatolia. Although many excavations and surveys (in the north) are still in progress and much of the relevant material is still only incompletely published, a considerably clearer picture of the archaeological development of areas at the periphery...
of southern Mesopotamia is beginning to emerge. This evidence has contributed to a more precise understanding of the nature, intensity, variety, and direction of contacts between communities in the alluvium and surrounding areas in the Uruk period. It strongly suggests that Uruk societies were in the midst of a process of expansion of impressive proportions, one that took a variety of forms and affected a number of areas differently. This process, I would argue, implies the existence of asymmetrical exchange mechanisms of previously unsuspected complexity and geographical differentiation that provided the economic basis for both the growth of Uruk city-states and the origins of Mesopotamian civilization. Similar in magnitude to that described above for the Akkadian period, this supraregional interaction system represented the earliest well-attested example of the already noted cycle of centralization, expansion, and inevitable collapse undergone by successive civilizations in the alluvial lowlands of southern Mesopotamia.

If this is so, we should be able to find archaeologically recognizable evidence attesting to both the expansion itself and its immediate impact on peripheral communities. From the perspective of the alluvium, some clues as to what evidence to expect are provided by the historically documented Akkadian case alluded to above: [1] expansion into neighboring territories, [2] the placing of intrusive settlements of southern origin in the northern and northwestern periphery, preferably at locations dominating lines of communication, and [3] increases in the variety and amount of imported goods in the archaeological record of Uruk sites resulting from intensified trade with peripheral communities and increase in Uruk-type artifacts within otherwise indigenous sites and assemblages. The powerful pressures unleashed in peripheral societies by contacts with the more advanced Uruk polities in their midst would likewise have left archaeologically recognizable clues. On the basis of modern studies of the consequences of unequal terms of trade between societies at markedly different stages of socioeconomic evolution, the following transformations and their archaeological correlates in indigenous societies can be expected: [4] the emergence of exponentially more complex administrative structures, possibly modeled explicitly on Mesopotamian institutions; [5] increased elite control over local labor supplies [required for the extraction of resources for exchange and for providing the minimal security that is a precondition for it] and its companion phenomenon, the standardization of local production; and [6] the eventual collapse of the political order as an inevitable long-term result of asymmetrical exchange.

THE Colonization of the Susiana Plain

From at least the 6th millennium B.C. on a trend can be observed towards increasing regional divergence in the cultural assemblages of the Mesopotamian alluvium and the neighboring plains of Khuzestan in southwestern Iran. This millennia-old trend was sharply reversed sometime in the Uruk period of the 4th millennium, when communities in each of the two areas began to develop in increasingly analogous ways. This is clearest in the case of the Susiana plain, the largest, most productive, historically most important, and archaeologically best understood of the various plains of southwestern Iran.

By the later part of the Uruk sequence [Middle/Late Uruk in local terminology], the Susiana plain had become part and parcel of the Mesopotamian world, an eastward extension of the culture and institutions prevalent in southern Iraq. Excavations at a number of sites show that the material culture of Uruk settlements throughout the plain was homogeneous across the site-size spectrum. Moreover, the artifactual assemblages of these occupations exhibit a remarkable number of exact parallels with pertinent material from neighboring settlements in the Mesopotamian alluvium. These include ceramic assemblages that are largely comparable [e.g., fig. 1A-H], save for a few types in southwestern Iran that betray contacts with the highlands, and a variety of other telling evidence. Sealing and accounting practices [tokens, balls, bullae, and tablets] that are identical in the two regions [e.g., fig. 1S-X] suggest the existence of uniform record-keeping and administrative procedures [Schmandt-Besserat 1986], and this, in turn, may indicate largely analogous institutions [Dittmann 1986a, Nissen 1977]. Comparable modes of social organization are also revealed by iconographical similarities in the glyptic repertoires of the two areas: in each case it is the same larger-than-life figure who appears at the top of the administrative and religious hierarchy [fig. 1M, P]. Other iconographic parallels evince a shared mythology implying the existence of common religious rituals [Amiet 1972, 1986]. This is illustrated most vividly by representations of apparently identical offerings brought into temples [e.g., fig. 1O, R]. Finally, traditions of

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monumental and religious architecture also appear to have been uniform across the two areas—at least if we may extrapolate from representations on contemporary glyptic in Susiana (fig. 1Y–BB).

This cultural convergence is too pervasive to be explainable as a process of acculturation. Rather, it is indicative, I would argue, of the colonization of the Khuzestan plains by settlers from the alluvium and represents an early phase of the expansion of Mesopotamian societies in the Uruk period (Amiet 1986, Lamberg-Karlovsky 1985, Nissen 1983; but see Johnson 1987 for objections). The end result of this process was the creation of at least two rival states, centered respectively at Susa and Chogha Mish. These appear to have been independent of each other, since by the end of the period each site was surrounded by numerous subsidiary centers and villages tightly clustered in a defensive arrangement that left a largely uninhabited band of terrain between them [Johnson 1973, 1987]. Almost certainly, these rival city-states were also independent of contemporary polities in the alluvium.

This hypothesis explains the remarkable and broad-based identity of elements of Mesopotamian culture throughout the alluvium and the Susiana plain in the later part of the Uruk period. It also explains the apparently longer evolution of the Uruk tradition in Iraq as opposed to Khuzestan. Le Breton’s [1957:94] original suggestion that the Late Susiana sequence of southwestern Iran overlaps with the beginnings of the Uruk period in the alluvium is now supported by a comparison of available clusters of radiocarbon dates from Late Susiana levels in Khuzestan and Uabid 4 levels at Tell el ‘Ouelli in southern Iraq. Recalibrated under a single standard, the Iranian dates are consistently later by a few centuries than those from the alluvium [Oates J. 1983:fig. 9].

Further, the colonization hypothesis explains the archaeological breaks in the Susiana sequence preceding and following the Uruk period. These breaks are discernible in significant changes in the settlement pattern of the Susiana plain at the onset of the Uruk tradition that would otherwise be difficult to account for and that contrast dramatically with the situation in the Mesopotamian alluvium [Adams 1981:59]. At Susa, the largest site on the western portion of the plain, the massive stepped platform in the center of the acropolis was abandoned, never to be rebuilt. And, while occupation at the site continued, it appears to have consisted of much more ephemeral structures of domestic character [Canal 1978], which extended only over a greatly diminished area [Johnson 1973]. Also abandoned were a number of smaller dependent settlements in its environs [G. Dollfus, quoted in Weiss 1983:42]. A parallel abandonment can be observed at Chogha Mish, traditionally the most important site on the opposite side of the plain [H. J. Kantor, personal communication]. The dislocation of settlement in these sites reflects a pattern of regional significance. The onset of the Uruk tradition in the Susiana was marked by a substantial jump in the number of settlements, and total occupied area trebled in the earliest Uruk phase—an exponential growth in population which sharply reversed demographic trends of the preceding half a millennium in the area [Wright and Johnson 1975:274–76, table 3]. The end of the Uruk tradition was equally disjunctive. Chogha Mish was once again abandoned, the size of Susa diminished significantly for a second time, and, in at least some portions of the site, there is a clear break in the archaeological (Acropolis I, 17 and 161 and artificial sequence [Le Brun 1971; see also Dittmann 1986b]). Regionally, these changes were accompanied by a precipitous decline in total occupied area: settlement in the Susiana declined by a factor of three in comparison with the end of the Uruk period and by a factor of six in comparison with the peak of Uruk settlement [Alden 1987]. Finally, the colonization hypothesis explains the full spectrum of Uruk site sizes and concomitant functions across the plain and the homogeneity of Uruk material culture throughout the region. Mesopotamian materials are found at all sites, from major administrative centers to hamlets whose location and size leave no doubt as to their rural orientation. If the Uruk presence in the Susiana represented not a process of colonization but rather a functionally specialized intrusion, then we would expect to find archaeologically identifiable traces of an alternative but contemporary tradition in the area. Such a divergent tradition has not been recognized.

Although the evidence for a colonization of the Susiana plain by settlers from the Mesopotamian alluvium in the Uruk period is compelling, we know little about the mechanics and exact chronology of the process and less still about its original impetus. A tantalizing hypothesis, which unfortunately cannot yet be properly assessed because of difficulties in correlating the earlier part of the Uruk sequences of the alluvium and the Susiana, is that the colonization of the Susiana was somehow related to the significant population shifts from the northern [Nippur-Adab region] to the southern and western sectors of the alluvium that surveys show to have taken place sometime late in the Early Uruk period as a result of the natural drying up of a major channel of either the ancient Tigris or the Euphrates [Adams 1981:60–63; Gibson 1973, 1976]. Whatever its roots, the Mesopotamian intrusion did not cause the collapse of the indigenous prehistoric cultures of the area. Rather, it merely took advantage of an internal process of disintegration that was at the time well advanced. The various surveys of the Susiana plain indicate that ever since the end of the Middle Susiana period [late 5th millennium B.C.] regional population and settlement had been in decline, even as the level of sociopolitical integration of remaining polities such as Susa increased [Wright 1984, Wright and Johnson 1975; for an opposing view, see Weiss 1977]. This endogenous process is as yet poorly understood but mirrors developments in the various highland plains surrounding the Susiana [Wright 1987] and in the Kur River basin [Sumner 1977]. By the very end of the Late Susiana period (Transitional Susa A), no single site appears preeminent in the Susiana [Johnson 1973:fig. 15], and in terms of its economic and political potential, the plain was largely undeveloped.
Uruk settlers were thus drawn into a fertile and productive area that was only lightly settled and could surely mount only minimal resistance.

The southern Mesopotamian expansion into the Susiana plain was by no means an isolated phenomenon. Rather, it is to be understood within a framework that takes into account other varying processes of expansion it may have helped to spur. These varying processes will now be explored.

**Uruk Enclaves, Stations, and Outposts**

Recognizable elements of Uruk material culture have long been reported from excavations across the high plains of northern Mesopotamia, northern Syria, and southeastern Anatolia (referred to here simply as Syro-Mesopotamia). Only recently, however, as evidence from new excavations and surveys in areas to be flooded by dams along the Euphrates, Khabur, and Tigris Rivers has been made available, has it become possible to define with some precision the context of these finds and their implications. To simplify a complex situation, it can be said that typical Uruk artifacts are found in two distinct types of sites across the northern plains: (1) sites in which isolated Uruk objects appear in the context of an otherwise local Late Chalcolithic assemblage and (2) sites characterized by a cultural assemblage that is overwhelmingly southern Mesopotamian in origin and Uruk in type. The former can be understood as indigenous occupations in contact with Uruk settlements elsewhere. Examples are numerous and range from the Amuq plain in northwestern Syria (Braidwood and Braidwood 1960) to Nuzi in the Kirkuk area of northeastern Iraq (Starr 1939). The latter, however, may be considered to represent intrusive settlements. Three types may be distinguished: enclaves, stations, and outposts.

**Enclaves.** Uruk enclaves are found in selected locations in the Syro-Mesopotamian plains, usually at the junctures of the principal east-west overland routes and the main north-south waterways. Typically, they are composed of a central settlement of urban proportions surrounded by a varying number of smaller satellite villages, and they appear to be significantly larger and presumably more complex than indigenous Late Chalcolithic sites in their vicinity. Three such settlements have been identified along the great bend of the Euphrates: Samsat and Carchemish in southeastern Turkey and Habuba Kabira-süd/Tell Qannas in the Tabqa Dam area of northeastern Syria (Fig. 2). The Anatolian sites are only poorly understood, as exposures of pertinent levels have been limited (Özgüç 1988, Woolley 1952), and, in the case of Carchemish, associated surveys are still largely lacking (but see Algaze 1989). The Tabqa Dam enclave, however, provides us with a precise idea of the nature and magnitude of Uruk enclaves along the Upper Euphrates.

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**FIG. 2. The Syro-Mesopotamian plains, showing sites and routes discussed in the text.**
Perched on a low terrace directly above the Euphrates floodplain some 17 km north of the modern town of Meskene is the large flat site of Habuba Kabira-sud and its acropolis, Tell Qannas. Excavations there have revealed that an earlier settlement, relatively modest in size and apparently short-lived as well, was replaced by a well-planned city with carefully laid-out streets, well-differentiated residential, industrial, and administrative quarters, and a sturdily-built fortification wall with at least two gates, all apparently constructed as part of a single coherent master plan [Finet 1979, Strommenger 1980a]. Directly to the southwest of the acropolis was an extended low mound that has been shown by surveys and small probes to be contemporaneous with the settlement nearby but that does not appear to have been encompassed within the city walls [Heinrich et al. 1973:9]. The scale of this settlement is impressive. The area within the city wall as preserved is about 10 ha, but when the contemporary settled area southwest of Tell Qannas is added to this, the minimum size of the site comes to about 18 ha [Strommenger 1980a]. Moreover, surface traces of Uruk pottery found across a 200-m-wide by 1-km-long band bordering the river north of the city suggest that it could have been significantly larger, as much as 40 ha [Sürenhagen 1974:75:44-45].

This settlement was not isolated, it was surrounded by a cluster of smaller sites in which Uruk material culture also prevailed. At least nine of these sites have been identified [Boese 1986-87, Dornemann 1988, Strommenger 1980a, van Loon 1967]. Of these, the best-understood is Jebel Aruda, situated on a natural hill some 8 km due north. Here, on an easily defended spur some 60 m above the nearby floodplain, were cleared two monumental niched and buttressed buildings of tripartite type and associated residential quarters that closely match corresponding structures uncovered in the Habuba/Qannas settlement [van Driel and van Driel-Murray 1979, 1983].

It appears certain that the planners and probably a substantial proportion of the inhabitants of the Habuba/Qannas city and its dependencies were of southern Mesopotamian origin. As I have suggested with regard to the Middle/Late Uruk sites in the Susiana plain, the remarkable congruities between the cultural assemblage of Uruk sites in the Tābaqa enclave and the assemblage characteristic of contemporary polities in southern Mesopotamia cannot be explained as a process of acculturation, not only are the buildings and the artifacts themselves identical but, more important, the underlying ideology and economy also appear identical. The close parallels in the monumental architecture of Tell Qannas and Jebel Aruda and that of sites in the southern al-luvium [Ludwig 1979], for example, are indicative of shared administrative practices. No less significant are the shared iconography revealed by the glyptic, which evinces a common mythology and religious beliefs [Strommenger 1980a, Töpperwein 1973, van Driel 1983], and the parallels in ceramic technology and production, which suggest identical manufacturing techniques and mechanisms for the organization of labor [Sürenhagen 1974-75]. Finally, the similarities in record-keeping procedures (i.e., the use of numerical notation tablets, impressed balls, and complex tokens) point to the essential correspondence of the economic activities being conducted and of the administrative apparatus in control [Strommenger 1980a, Töpperwein 1973, van Driel 1982].

Remarkable as the scale of the Uruk clusters on the Upper Euphrates may appear, it is by no means exceptional. Another Uruk enclave has been identified at Tell Brak, a large multiperiod mound on the Jaghjagh River not far from the modern town of Hassaka. The remains uncovered by British excavations at the site more than 50 years ago leave little doubt as to a southern Mesopotamian presence here, although the site had been an important regional center prior to the Uruk intrusion. The so-called Eye Temple, for example, with its tripartite plan, buttressed exterior façade, and bent-axis approach, is of unmistakable southern derivation in spite of its unique eastern wing [Mallowan 1947:pl. 57; for a varying view see Weiss 1985:36-39]. Also southern in style are the associated objects, particularly the striking frieze of gold, silver, and semiprecious stones found over the podium, the wall cones, rossettes, and related wall decoration, many of the amulets, and some of the glyptic [Mallowan 1947]. Also recovered at the site, albeit not in situ, were further examples of typical seals and sealings [Buchanan 1966], a numerical notation tablet [Jasim and Oates 1986], and a full repertoire of characteristic Uruk pottery [Oates J. 1985, 1986]. The size of the Uruk settlement at Brak has been clarified by new investigations which show the presence of Uruk levels over the whole of the site’s 40-odd ha [Oates D. 1982:14]. Moreover, Brak is surrounded by a ring of smaller settlements in which Uruk materials have also been identified. These may represent either an extensive lower city or a number of satellites. In either case the Uruk enclave at Brak must have been significantly larger than the site itself. And again, the enclave was not isolated; Uruk pottery was found in at least 11 sites in its vicinity along the Lower Jaghjagh [Fielden 1981:263].

A third Mesopotamian enclave is found at Nineveh, opposite Mosul on the Upper Tigris. This settlement too was established in a preexisting regional center. Kuyunjik, the larger mound of Nineveh, has yielded a full repertoire of Uruk material culture: pottery production, glyptic practices, iconography, and accounting procedures at the site were typically southern Mesopotamian in style [Campbell Thompson and Hutchinson 1931, Campbell Thompson and Hamilton 1932, Campbell Thompson and Mallowan 1933, Collon and Reade 1983]. Moreover, a recent reconsideration of the early excavations suggests that the extensive deposits of the Uruk period uncovered by Mallowan in his deep sounding near the center of the mound were not unusual for the site as a whole, making it likely that the southern Mesopotamian occupation of Nineveh may have closely approximated in size the 40-odd-ha extent of Kuyunjik itself [Algaze 1986b].

Although the riverine locations of the enclaves would seem to suggest that a crucial factor determining their
place of control of the north-south waterways, a
detailed analysis reveals that they are also oriented along
east-west overland routes of communication across
Syro-Mesopotamia known from classical times (see Dil-
lemann 1962, Miller 1962). Each, it seems, commands a
historical juncture where the principal overland routes intersect
the rivers. Along the Euphrates, Samsat, for
example, controls the main ford on the route from the
Kurdish Anti-Taurus (Commagene) into northern Mes-
opotamia via Urfa, Harran, and the northern reaches of
the Upper Khabur (Amuda, Nisibin). Carchemish, an-
other of the historical Euphrates fords, connects the
northern Syrian steppe and the environs of the fertile
Aleppo plain with the northern Mesopotamian plains
east of the river and ultimately the Tigris via the middle
reaches of the Balikh (Ain el ‘Arus) and the Upper
Khabur (Ra’s el ‘Ain). And finally, the Tabqa Dam area
in the lower corner of the great bend of the Euphrates
represents the last major ford before the onset of the
Syrian desert—the traditional terminus of overland cara-
vans alongside the Euphrates before cutting across di-
rectly west in the direction of Hamah on the Orontes or,
alternatively, northwest across the Syrian steppe in the
direction of Aleppo, the Amusan, and ultimately Cilicia
The location of Mesopotamian enclaves along the
Upper Khabur and Upper Tigris basins is also best un-
derstood in terms of a strategy for ensuring control of over-
land routes. Tell Brak, for example, is well situated to
control overland north-south traffic from the Euphrates
alongside the Khabur. Of equal importance, however, it
lies at the juncture of the Jaggahj and an important
classical route that crosses the Euphrates at either
Zeugma or Carchemish and cuts across Ra’s el ‘Ain be-
fore heading towards the Tigris via the Jebel Sinjar. The
Nineveh/Mosul area was historically the most impor-
tant of the Upper Tigris fords, and Nineveh is situated at
the intersection of the river and several of the main over-
land routes from the Euphrates. Moreover, traditionally
the Tigris was also an important thoroughfare for down-
stream navigation, and the convergence of complemen-
tary overland and waterborne routes at Nineveh makes
the site an ideal transshipment point where the over-
land traffic from the west could be easily and cheaply

There is no need to presume that all the enclaves thus
far identified were established as part of a single coher-
ent effort. On the contrary, the remarkably long se-
quence of Uruk deposits recently uncovered at the small
site of Tell Sheikh Hassan in the Tabqa region [Boese
1986–87] and the relatively long sequences of sites such as
Brak, Nineveh, and, possibly, Carchemish contrast
starkly with the more explosive growth of the Habuba/
Qannas/Aruda enclave, which thus represents the cul-
mation of a long organic process of expansion. That
climax may be dated with some precision to the later
part of the Uruk period [Warka, Eanna VI–IVa; Susa,
Acropolis L 19(?–18–17] on the basis of glyptic and
epigraphic parallels [Nissen 1986b:328; Strommenger
1980b:486; but see Surenhagen 1986a:32 for a different
view]. The absence of pictograms in numerical notation
tables discovered in the north indicates that the en-
claves were abandoned in an advanced but not final
phase of the Late Uruk period [Eanna IVa].

Stations. Away from the larger enclaves just described
are found much smaller isolated Uruk settlements serv-
ing as links or “stations” alongside overland routes be-
tween the enclaves and the alluvium and also along im-
portant routes into the northern plains. Although such
stations may have existed on the Balikh [Akermans
1984] and Lower Khabur [Monchambert 1984, Röllig and
Kühne 1977–78] and possibly even deep in the Syrian
desert [Cauvin and Stordeur 1985], their pattern of set-
tlement is clearest on the Euphrates. Strung along the
river on the route from the alluvium to the Tabqa en-
clave, to Carchemish and Samsat [via the Balikh], and to
Brak [via the Lower Khabur] are at least seven small sites
characterized by overwhelmingly Uruk ceramic assem-
blages. Four of these sites have been identified in a re-
cent survey of the stretch of the river between Raqqa and
Lake Assad [Kohmeyer 1985], and three others have
been recognized below the confluence with the Khabur
[Geyer and Monchambert 1987; M. van Loon, personal
communication]. Soundings in one of these sites, Tell
Qraya, just north of Ashara [Terga], have revealed at
least 3 m of Uruk deposits and a wide repertoire of typi-
cal Uruk ceramics, small objects, glyptic, and account-
ning devices within what appears to be an isolated out-
post on a ledge overlooking the river, about 1.8 ha in
maximum extent [Reimer 1989, Simpson 1988]. Best
understood is the Uruk station uncovered by German
excavators at Hassak Höyük, a small site [ca. 1 ha] on the
Euphrates some 50 km north of the Samsat enclaves.
Here, at an important ford allowing passage from the
Anti-Taurus piedmont west of the Euphrates into the
northern Mesopotamian plains, was exposed a small,
roughly oval fortified settlement centered upon a large
building of tripartite arrangement similar in plan to
some of the Uruk buildings of Habuba Kabira-süd
[Behm-Blanke 1986:fig. 1; cf. Surenhagen 1974–75:map
4]. This building was surrounded by a number of mono-
cellular residential structures, work areas, and grain
storage facilities and appears to have been built as part of
a single coherent effort, although some minor modifi-
cations and subphases could be traced. The associated as-
semblage is largely Uruk in type, although an indigenous
Late Chalcolithic ceramic component is also present

Outposts. Outside of the geographical horizon of the
Syro-Mesopotamian plains, large Uruk enclaves with
their associated clusters are no longer found. What are found, occasionally, are small isolated outposts more similar in size to the stations just described. These are located deep in the highlands astride some of the most important overland routes. Two such outposts have been recognized to date, both in the Iranian Zagros: Godin Tepe, in the Kangavar Valley, and Tepe Sialk, near the modern town of Khashan. The former sits astride the Khorasan Road, historically the most important of the east-west routes across the Zagros, following the course of the Diyala River into the mountains [Weiss and Young 1975:14–15], while the latter is situated along the principal north-south route connecting Khuzestan and the other plains of southwestern Iran with the plain of Rayy, near Tehran, and ultimately Afghanistan [Majidzadeh 1982:59–61, fig. 2].

The evidence from Godin is clearest. The site is strategically situated in the southeastern corner of the Kangavar Valley near a natural entrance cut by the Gamas Ab River and thus in a position to control overland traffic across the valley. On the highest point of the mound was uncovered a small fort [Godin V] surrounded by a larger and apparently otherwise indigenous settlement [Godin VI]. The fort appears to have been inhabited by settlers from the Uruk world, since the associated assemblage included a variety of ceramic types and, more important, glyptic and numerical notation tablets in styles characteristic of the end of the Uruk period [Weiss and Young 1975]. Surveys of the valley have failed to identify further such occupations [Young 1986]. Farther into the plateau, between the inner folds of the Zagros and the edge of the great salt desert [Dasht-i Kavir], at the top of the southern mound of Tepe Sialk, is another Uruk outpost. Established at a position that mirrors that of the Godin fort, this outpost may be recognized in the earlier of two phases assigned to Period IV at the mound [IV.1] and is represented by a well-built structure that was only partially exposed. Various characteristic elements of Uruk material culture were found in association [Amiet 1985, Ghirshman 1938].

Intriguingly, while some of the enclaves in the Syro-Mesopotamian plains evolved over a possibly significant span of time, these highland outposts appear to have a much more restricted chronological development that coincides only with the very end of the period in which the enclaves flourished and could possibly be later. Particularly important from a chronological standpoint are the convex, cushion-shaped numerical notation tablets, some with isolated pictograms, found at both sites (e.g., Weiss and Young 1975:fig. 42; Ghirshman 1938:pls. 92 and 93. These tablets are unlike those recovered in the enclaves and have parallels only in the latest phase of Uruk-period sequences at Warka [Eanna IVB] and Susa [Acropolis I, 17] [Dittmann 1986b:171; Le Brun and Vallat 1978].

CROSS-CULTURAL EXCHANGE IN THE URUK PERIOD

The location of Uruk enclaves at focal nodes of the lines of communication across the Syro-Mesopotamian plains is indicative of their function: their settlement pattern seems efficiently suited only to control the flow of resources. Although some, such as Brak and Nineveh, could have and most probably did tap into the considerable agricultural potential of their surroundings, the scattered distribution of the enclaves as a whole is an indication that neither the control of broad expanses of territory nor the efficient large-scale exploitation of local agricultural resources was a primary consideration (for a different view, see Schwartz 1988). Either of these goals would be reflected by a broader range of site sizes dispersed over a wider landscape—a settlement pattern similar, in fact, to that documented for Uruk sites in the Susiana plain. The occurrence of intrusive enclaves at the head of regional hierarchies in alien hinterlands is a feature commonly encountered in situations of initial colonial contact between societies at markedly different levels of sociopolitical evolution when long-distance exchange represents a consideration of primary economic importance. Often described by geographers as “dendritic central places” or “gateway communities,” such centers are characteristic of vertical distribution systems that cut across political, ecological, and cultural boundaries and allow highly integrated polities maximum access to less complex social systems at the periphery at minimal expense [Burghardt 1971, Smith 1976]. But if, indeed, the presence of Uruk enclaves across the Syro-Mesopotamian plains and of outposts deep in the highlands represents a telling indication that peripheral resources were being exploited for the alluvial market, what exactly were those resources, and how (and where) were they acquired?

Peripheral resources in Uruk contexts. A variety of archaeological and epigraphical evidence allows us to discern the range of peripheral resources imported by Uruk societies. While some of these commodities had been imported before, their variety—and presumably quantity—in Uruk times appear to represent an exponential increase over previous conditions, although, admittedly, fully representative samples are not yet available for the earlier periods. The imported commodities may be divided into two types: (1) essential unprocessed resources necessary for the day-to-day operation of complex social organizations in the resource-poor alluvium and (2) nonutilitarian, prestige commodities necessary for the consolidation and maintenance of social and political relationships within elite groups.

Of all the essential resources brought in by Uruk societies, the most difficult to discern in the archaeological record is wood. There can be no doubt, however, that timber must have been imported in substantial quantities to satisfy the architectural requirements of rapidly growing Uruk urban centers. Although studies of carbonized timber from Uruk contexts are still lacking, it is likely that the eastern Taurus region of the Anatolian highlands was the source. Trunks cut in the Malatya and Keban areas could have been easily and cheaply floated downstream on the Euphrates [Rowton 1967], and this may well have been a factor influencing the location of Uruk enclaves along its banks. Moreover, a recent study

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of carbonized materials from archaeological contexts in the Kebar/Altinova region has indicated gradual de-forestation there in antiquity, its onset corresponding with the establishment of Urk enclaves in the northern plains [Willcox 1974]. Another import into the alluvium during the Urk period that is difficult to detect but must have had considerable economic impact is dependent labor, slaves acquired either in exchange for other goods or as prisoners of war. The signs for slaves that are specifically stated to be of foreign origin [i.e., from the mountains] can be recognized already in the Archaic Texts from the Enna Precinct at Warka [Enna IV/III], which are partly contemporaneous with the final phase of the Urk expansion [Gelb 1982, Vaiman 1976].

More easily traced in the archaeological record are other essential imports, such as bitumen, common stones, and base metals—in particular copper, which figures prominently in the Archaic Texts [Nissen 1985]. Copper objects, vessels, and tools are amply documented in Urk contexts both in the Mesopotamian alluvium and in Khuzestan [e.g., Warka [Heinrich 1938, Lenzen 1958, 1959], Teito [de Genouillac 1934], Susa [Le Brun 1971, 1978a]], and numerous unworked copper lumps and metallurgical installations were recognized at Warka [Heinrich 1938, Nissen 1970]. Copper was obtainable either from sources in or near the Dasht-i Kavir desert in central Iran [Berthoud et al. 1982, Caldwell 1967] or in the Ergani Maden area of the eastern Taurus [de Jesús 1980]. The former were accessible to Urk city-states in Khuzestan via the Urk outpost at Tepe Sialk, while the latter were within easy reach of Urk enclaves in the Syro-Mesopotamian plains, notably Tell Brak, only 100 km due south of the Ergani area on the natural north-south route across the Karacadag/Tur Abdin highlands. Another imported resource was bitumen, which could be procured from natural seepages at various locations in southwestern Iran at the foot of the Zagros, in the Middle Euphrates region in the vicinity of Hit, or in the Upper Tigris region near Mosul [Marschner and Wright 1978]. It was made into asphalt by mixing it with a variety of mineral and vegetable matter and used as mortar and for general waterproofing in architectural contexts. Extensive amounts of asphalt were noticed in connection with elite Urk buildings at Warka and Tell Uqair [Heinrich 1937, Lloyd and Safar 1943].

Substantial quantities of limestone boulders were imported into the alluvium in the Urk period for building purposes, and limestone plaster was commonly used to coat the walls of public buildings. Moreover, limestone plaster was even made into bricks and employed as mortar, practices that are seldom attested after Urk times [Huot and Maréchal 1985]. Limestone is available near Warka in the western desert that separates modern Iraq from Saudi Arabia [Boehmer 1985] but may also have been quarried in outcrops across the Syro-Mesopotamian plains and shipped down the Tigris or the Euphrates. Another common stone import was flint, available as nodules in the western desert, the Zagros piedmont, and the northern plains. It must have been imported from a variety of sources as raw material for the local produc-

tion of tools and implements in Urk sites [Eichmann 1987], but tabular flint scrapers of Levantine origin [Rosen 1983] and Canaanite blades of northern Syrian manufacture [Strümer 1986:19–20; Hanbury Tenison 1983] are also common. Other nonexotic stone imports include basalt, of northern Mesopotamian or northern Syrian origin, used in the manufacture of practical artifacts [e.g., grinding stones] and reliefs [e.g., the Warka lion-hunt stela [Moortgat 1969:pl. 14]], and variously veined marbles and limestones, common in the Zagros range and the central plateau of Iran [Beale 1973] and used for utilitarian and ritual vessels [Lenzen 1958, 1959] and, occasionally, sculpture [e.g., the Warka head [Moortgat 1969:pl. 25–27]].

No less important than the above in their social impact [Schneider 1977] but acquired in smaller quantities during the Urk period were various nonutilitarian commodities, such as rare metals and semiprecious and precious stones. Such exotic imports are recovered at a number of Urk sites in the alluvium and Khuzestan but most strikingly in the Enna Precinct area at Warka [Heinrich 1936; Lenzen 1958, 1959]. Rare metals and alloys, in fact, are frequently mentioned in the Archaic Texts [Nissen 1985]. Silver, lead, and gold were obtainable from sources in highland Iran [Caldwell 1967], and silver was mined in the Keban region of highland Anatolia at the time of the Urk expansion [Yener 1983]. Many of the exotic stones found in Urk levels, such as colored and bituminous limestones, aragonite, quartz, serpentine, chalcedony, amethyst, jasper, and rock crystal, are of uncertain provenance [Heinrich 1936]. Obsidian tools [Lenzen 1959] and vessels [Heinrich 1937, Jordan 1932], however, are surely of eastern Anatolian origin and both finished products [cf. Tobler 1950] and raw materials may have been imported. Similarly, the lapis lazuli from which numerous recovered fragments of jewelry and inlays were made [Lenzen 1958, 1959] could only have originated in Badakhshan in northern Afghanistan [Hermann 1968:22]. Steatite/chlorite and, more commonly at this time, high-quality alabaster (calcite) used for the manufacture of elaborate vessels [e.g., the Warka vase [Moortgat 1969:pls. 17–19]], cylinder and stamp seals [Asher-Greve and Stern 1983], amulets, weights, and various other high-prestige artifacts must have come from sources in southeastern Iran [Beale 1973, Kohn 1978], while beads made from other precious stones such as carnelian and agate must have originated still farther away, in India and south-central Afghanistan [Lambert-Karlovsky and Tosi 1973].

Uruk material culture in indigenous highland sites. If the distribution of peripheral resources in Urk sites furnishes us with important evidence as to one possible rationale underlying the Urk expansion, the distribution of Urk-type objects in otherwise indigenous highland sites, in turn, points to the geographic orientation of highland-lowland interaction and to the mechanisms whereby commodities were acquired. Highland sites in which Urk materials have been recognized are typically located either along important highland routes or at positions commanding access to coveted resources.
This distribution indicates that while Uruk enclaves in Syro-Mesopotamia and Uruk city-states in Khuzestan controlled the flow of resources and goods in and out of the alluvium, by and large control of the sources of raw materials themselves and of the routes that fed into the lowlands was held by indigenous communities that were willing to trade.

The distribution of Uruk materials in indigenous settlements astride important highland routes is particularly clear in the case of sites in the principal intermontane valleys traversed by east-west routes across the Zagros. In the northern Zagros piedmont area in Iraqi Kurdistan, for example, a limited variety of Uruk pottery occurred in at least seven sites in the Rania and Shahruzur plains, which control routes following the course of the Lesser Zab and Adheim Rivers (Abu al-Soof 1970, 1985; Hijara 1976). Deeper still in the mountains, a number of indigenous sites with traces of Uruk materials has been
identified in the Mahidasht, Shahdad, and Kangavar Valleys traversed by the Khorasan Road [Levine and Young 1986] [fig. 3]. As noted above, at least one Uruk outpost (Godin Tepe) was located on this route. The situation in the south-central and southern Zagros is less clear, as explorations to date have been less intensive, but a survey of the Shahri Kord plain in the Bahit-yari region northeast of Khuzestan revealed at least two indigenous sites [possibly successive occupations] with substantial evidence of Uruk ceramics on their surfaces (Zagarell 1982). Both are strategically located along an important route from the Susiana plain via the Izeh plain into the central plateau, the same route that leads eventually to the Sialk outpost. Routes across the southern Zagros towards Fars and eventually Kerman and Sistan provinces must have been important, too, since Uruk pottery types are found in surveyed Early Banesh sites in the western portion of the Kur River basin at the head of routes from Khuzestan via the Ram Hormuz and Behbahan plains [Alden 1979] [fig. 4].

A similar pattern is evident in southeastern Anatolia and the eastern Taurus. Whereas beveled-rim bowls have been recognized at a few sites along the Tigris just south of Cizre and along the Batman Su and the Bohtan Su (Algaze 1989), it is at Arslan Tepe, near the Euphrates on the Malatya plain, that we find the most convincing illustration of the correlation between Uruk materials and sites commanding access to highland routes. Recent Italian excavations at the site have revealed a number of characteristic Uruk artifacts in the context of massive
indigenous structures and largely local artifactual assemblages (Period VIA). Particularly important are a number of spouted jars and bottles of unmistakable Uruk ware and type recovered in situ inside storerooms, as well as a number of cylinder-seal impressions in typical southern Mesopotamian styles (Palmieri 1981, Francipane and Palmieri 1988). Surveys indicate that the site is the largest by far in the Malatya plain and the nearby Tohma Su basin. Moreover, the Malatya area commands one of the very few year-round passes across the Taurus Range and has historically been the meeting point of routes from the Kayseri plain and central Anatolia via Elbistan or the Tohma Su and routes from eastern Anatolia and northern Mesopotamia (Yakar and Gürsan-Salzmann 1979).

In addition to sites in intermontane valleys traversed by highland routes, Uruk pottery is also often recognized in indigenous sites exploiting known deposits of highland resources. This pattern is clearest in the case of metals, particularly copper. In the Taurus highlands, for example, a small variety of Uruk ceramics has been reported in an isolated structure at Tepecik, an important site on the Keboan plain [Esin 1982]. Substantial traces of copper smelting uncovered in Late Chalcolithic levels at Tepecik itself [Esin 1975] and at a nearby site of Norsuntepe [Hauptmann 1975] indicate the existence of a flourishing native copperworking industry exploiting mines in the nearby Ergani area at the time of the Uruk enclaves in the northern plains (fig. 5).

On the Iranian plateau, too, a few types of Uruk pottery have been recovered in otherwise indigenous sites that can be shown to have been metallurgical centers already in prehistoric times and that commanded access to some of the most important copper deposits in the area. Tepe Ghabrestan, for example, where numerous beveled-rim bowls and occasional conical cups of Uruk type have been found (Ghabrestan IV,1–3), is located in the vicinity of a number of important copper deposits on the Qasvin plain and appears to have exploited those sources since the 5th millennium B.C. (Majidzadeh 1976, 1979). Copper from the Qazvin area was accessible to Uruk societies by way of the Khorasan Road or an east-west road of lesser importance into northern Mesopotamia via the Solduz Valley and the Lesser Zab. At Tepe Sialk, various isolated Uruk materials are found in indigenous levels predating the Period IV.1 Uruk outpost (Amiet 1985). Sialk too had been an important early metallurgical center, and the site is in the vicinity of some of the most important deposits of copper-bearing ores in Iran—the Anarak mines, 100 km due east in the Dasht-i Kavir [Berthoud et al. 1982], and the smaller Veshnoveh source near Kashan (Holzer and Momenzadeh 1971). Copper processed at Sialk was within reach of Uruk communities in Khuzestan via north-south
routes across the central plateau and the south-central Zagros. Finally, important copper sources are also found in the Kerman region [Berthoud et al. 1982], and once again, a limited variety of Uruk materials is found at indigenous sites near those sources. One of these sites is Tal-i Iblis [Iblis IV] in the Bardarsir Valley, an important indigenous metallurgical center since the 5th millennium [Caldwell 1967]. Another case in point is Tepe Yahya, where a handful of beveled-rim bowl sherds was found in late-4th-millennium levels [Yahya VA] [Beale 1978]. The Kerman area resources were obtainable by Uruk societies in Khuzestan via routes across the south-central Zagros and the Kur River basin.

THE IMPACT ON INDIGENOUS SOCIETIES

It seems clear that what the expansion of Uruk societies into areas on their northern periphery entailed was not a process of colonization such as took place in Khuzestan but the appropriation of a few selected locations that allowed them to tap into preexisting lowland-highland trade networks controlled by indigenous communities. In so doing, they were able to funnel some of that trade into a more extensive and better-organized long-distance exchange network oriented towards supplying the needs of emerging Uruk centers.

By and large the hinterlands away from the intrusive Uruk settlements were left untouched (though not unaffected). They were characterized by indigenous communities at a lower level of social, political, and economic integration. This is clear when one compares the sizes of the Uruk enclaves with those of Late Chalcolithic sites in their surroundings. Most preexisting sites were not much larger than villages [see Braidwood 1937, Matthers 1981, Özdoğan 1977, Whallon 1979, Meijer 1986, Wattenmaker and Stein 1989, Benedict 1980, Algaze 1989, and Henrickson 1989], and the few more sizable contemporary Late Chalcolithic communities in the north (e.g., Tell Hammam et-Turkman, Tell Leilan, and Arslan Tepe) pale by comparison with the enclaves. The level of urban planning evidenced in a site such as Habuba/Qannas and the degree of social control over labor supplies that may be inferred from its apparently rapid development contrast sharply with conditions in the surrounding indigenous communities, and the locations of the intrusive sites imply an exponentially more complex economic system. These various strands of evidence suggest that the Uruk enclaves were appendages of communities at a state level of organization and were themselves similarly organized. In contrast, the contemporary Late Chalcolithic communities are likely to have represented examples of that intermediate stage in the evolution of sociopolitical complexity traditionally referred to by sociologists as patrimonial societies [Doyle 1986] and by anthropologists as complex chiefdoms [Wright 1984]. If this is so, we should expect to find evidence in local societies of institutional changes caused by the onset of contacts with the more complex southern polities in their midst.

The ideological impact. Recent excavations at Tell Hammam et-Turkman have uncovered portions of an elaborately niched monumental building in an unmistakable southern Mesopotamian style [van Loon 1983: fig. 4] that has close parallels in tripartite structures in contemporary levels of Uruk sites in the Mesopotamian alluvium [e.g., Heinrich 1982: figs. 82, 115, 117] and in the nearby Uruk enclave in the Tabqa area [e.g., Finet 1979: fig. 15]. Significantly, the Hammam building marks an important departure in the use of the area excavated: it caps a long uninterrupted sequence of continually rebuilt, much smaller domestic buildings of the Late Chalcolithic period [van Loon 1983]. The associated ceramics [Hammam VB] are predominantly of the Amuq F chaff-tempered type and are matched at numerous Late Chalcolithic sites elsewhere in the Syro-Mesopotamian plains and the southeastern Anatolian highlands. Typical Uruk pottery is not recorded, nor has it been found elsewhere at the site [Akkiernans 1988].

The apparent discrepancy between the indigenous nature of the artifactual assemblage and the Mesopotamian connections evinced by the building itself is easily reconciled if the evidence is interpreted to signify the adoption by a local group not only of an architectural style that is typically southern Mesopotamian in origin but, far more important, of parts of the ideology associated with that distinctive structure type. The sharp alteration in the function of the excavated area at Hammam can then be seen as the result of changes in a group that has suddenly come into intense contact with a more advanced social system. Other than the tripartite building itself, evidence of this contact is provided by a jar-neck sealing impressed with a seal cut in a provincial version of the Uruk style found nearby on the surface of the site [van Loon 1983: fig. 5]. More specifically, I see the Hammam structure as marking the adoption by local elites of the ideas of rulership, modes of social integration, and, possibly, concomitant ritual displays introduced into the north by the larger and more highly stratified Mesopotamian enclaves. In the context of local Late Chalcolithic society, this adoption was expressed concretely by the use of precisely that architectural form which in Mesopotamian society constituted the focus of the administrative and religious activities being emulated. This makes sense only if the increased power of local elites in their own society derived from their role as mediators of contacts with those southern enclaves and mobilizers of local and imported resources, presumably for trade but conceivably for tribute as well.

The economic impact. The Hammam case and its implications represent one facet of a range of interactions between indigenous polities and the Mesopotamian enclaves in their midst. Another complementary facet of that interaction, the economic, may be discerned in data from two other Late Chalcolithic settlements.

Kurban Höyük, a small mound [6 ha maximum] situated in the Karababa Dam area of southeastern Turkey, has produced a stratified sequence documenting economic changes brought about by the onset of contact with the nearby Uruk enclave of Samsat [see Algaze 1986a]. The main Late Chalcolithic sequence [Area A]
consists of five superimposed phases compressed within 1.9 m of deposits cleared over an area of 30 m². The lowest of these phases is characterized by an indigenous chaff-tempered [Amuq F] assemblage which predates the Uruk intrusion. The succeeding four phases, however, contain varying amounts of Uruk ceramics, and the proportion of grit-tempered pottery, including many typical Uruk types, increases in each [fig. 6]. Thus it is possible to observe at Kurban a gradual change from a local ceramic industry to one of exogenous origin, the former producing chaff-tempered vessels by hand or on a slow wheel and the latter producing mass-manufactured, grit-tempered vessels of Uruk type on a fast wheel. The significance of these changes lies in that they betray broader transformations precipitated by the intrusion of the Uruk enclaves. Presumably, the shift towards mass-produced ceramics observed at Kurban is symptomatic of the development of full-scale craft specialization as an important factor in the economies of indigenous societies and points to the growing ability of local elites to control existing labor supplies.

At Arslan Tepe, substantially larger exposures of Late Chalcolithic levels provide a greater range of evidence for the impact of contacts with Uruk societies—surely mediated through Uruk enclaves across the northern plains—on local communities in the northern periphery, even those deep in the highlands. Particularly important is the evidence from the Period VIA architectural complex. The associated ceramics, for example, are characterized by two juxtaposed traditions: a hand-made red/black burned ware that is at home in the eastern Anatolian highlands and a very different fast-wheel-made, plain simple ware that has no predecessors in the area even though it is locally made [Frangipane and Palmieri 1988]. The latter represents the local version of the mass-manufactured pottery of Uruk sites and enclaves and constitutes an important shift in the technology and underlying social organization of pottery manufacture in the highlands. A similar dichotomy may be observed in the contemporary glyptic assemblage at the site, consisting of thousands of discarded sealings, most in a single cache within a small room by the entrance to the Period VIA complex. The majority of these sealings bear the impression of square or circular stamp seals with schematized animal figures, often arranged antithetically, in a style common to Late Chalcolithic sites elsewhere [Amiet 1973, Frangipane and Palmieri 1988; cf. Buchanan 1967]. A few, however, are impressed by means of cylinder rather than stamp seals, and these not only reveal the influence of Mesopotamian sealing practices and iconography but hint at important economic changes within local communities. The numerous bullae discarded at the main access point to the Period VIA complex indicate without a doubt that the site was functioning as a redistributive center for the surrounding region—a role which is seen by the excavators as reflecting the adoption of modes of social organization that are ultimately of Mesopotamian origin [Frangipane and Palmieri 1988].

**INDIGENOUS SOCIOPOLITICAL DEVELOPMENT AND THE COLLAPSE OF THE Uruk EXPANSION**

The broad geographical distribution of the affected local communities from the northern plains to the highlands is indicative of the degree to which the strategically located Mesopotamian outposts across the northern periphery had achieved effective control of the long-distance trade economy of the region, a control not based to any great extent on actual territorial dominion but no less effective for being indirect. Such control, I have argued, could only have meant an exchange system based on the flow of raw materials from highland sources to a resource-starved core in return for labor-intensive processed and semiprocessed goods. Under these conditions, one would have expected that initially vigorous social, political, and economic growth in the peripheral regions would inevitably have given way to stagnation and regression as local economies grew increasingly overspecialized and dependent on a market they could not control. The expected regression appears, however,
not to have materialized. It was aborted by the collapse of the Uruk expansion. This collapse was inevitable, as it resulted from the conjunction of two independent and diametrically opposed processes that could not coexist for long.

In the alluvium, the very success of selected Uruk polities in founding faraway colonies and thereby establishing some control over the lines of communication critical to centralized urban life ensured the eventual decline of the resulting supraregional interaction system. Surely important in this regression, given the prevailing pattern of trade, was that an adequate flow of local resources for exchange would have had to be marshaled at all costs. Thus the larger centers through which the imported resources would have been funneled (i.e., those capable of the considerable expenditures required for the establishment of enclaves in the first place) would naturally have attracted the agricultural and pastoral production of nearby rural communities by whatever means were necessary [Adams 1981:80–81], thereby strengthening preexisting trends favoring the growth of settlement hierarchies and buttressing their position vis-à-vis regional rivals. Some archaeological correlates of this process are discernible: surveys show that while the transition from the earlier to the later part of the Uruk period was marked by a substantial population shift from the northern to the southern reaches of the Mesopotamian alluvium, total settled area did not change markedly. Other than the location of settlements, what did change was the proportion of the population that lived in urban-sized agglomerations and the size of those agglomerations. Whereas in the earlier part of the Uruk period more than half of the estimated population lived in centers deemed urban, in the later part the proportion of the population living in smaller dependent settlements increased. While the overall number of urban centers decreased, however, the average size of the remaining centers increased considerably [Adams 1981:68–76, tables 3 and 4, figs. 15 and 16]. The city of Warka in the Late Uruk period, for example, is estimated by Adams to have been in the 100-ha size range, and new more intensive surveys now show this estimate to have been far too conservative [Finkbeiner 1987:142]. These enlarged centers appear to have been capable of inhibiting the growth of similar (rival) agglomerations in their vicinity and were surrounded instead by a dense scatter of satellite settlements engaged, no doubt, in dependent agricultural production [Adams 1981:75].

In the chronically unstable alluvial environment of southern Iraq, the resulting acceleration of trends towards centralization discernible in the survey data would have represented a powerful destabilizing force that must ultimately have resulted in the partial breakdown of the socio-environmental system. This point has been argued persuasively by Gibson [1974], who has shown a close correlation between political centralization in the alluvium and the intensification and regularization of economic demands on that inherently fragile environment. In southern Mesopotamia, this can only have meant progressively shorter fallow periods and increased use of irrigation as ever more marginal lands were brought into intensive cultivation [Boserup 1965:23–40]. The consequences of such a shift are predictable: a natural and inevitable decline in agricultural productivity as a consequence of salinization. Effective agricultural intensification in the environment of southern Iraq, then, cannot be maintained over the long run (Adams 1978, Jacobsen and Adams 1958, but see Powell 1985).

The absence of pictograms on the numerical notation tablets found in the northern enclaves suggests that the hypothesized weakening of the socio-environmental system in the alluvium must have started in an advanced but not final phase of the Late Uruk period (Eanna IVa), although the retreatment from Khuzestan appears to have taken place slightly later, just prior to the transition to the so-called Jemdet Nasr period. A recent reappraisal of tablets relating to agriculture among the Archaic Texts appears to show relative proportions of barley to wheat on the order of three to one, suggesting the onset of salinization in the environs of large urban centers already at this transition [Powell 1985:14–15]. In addition, there are various indications of important settlement discontinuities at this time, both at a regional level [Postgate 1986] and within some of the principal centers of the alluvium. At Warka, for example, none of the principal Late Uruk public structures survived the transition to the Jemdet Nasr period, and the relatively meager remains assignable to the Eanna III phase contrast strikingly with the much more coherent architectural complexes that had characterized the preceding phase [Finkbeiner 1986; Strommenger 1980b: 486–87].

Meanwhile, in the north a diametrically opposed process was taking place. At the same time that the economic viability of alluvial communities was being undermined by the degradation of the subsistence base, peripheral societies were becoming stronger as a result of the internal development stimulated by contacts with the Mesopotamian enclaves in their midst, and it is conceivable that some began to expand in their turn. Such communities could have threatened southern domination of the critical trade routes at precisely the same time that internal rivalries and unavoidable environmental pressures had weakened the capabilities of selected city-states in the alluvium to respond effectively and before the realities of long-term unequal exchange could assert themselves. This scenario, admittedly somewhat hypothetical, helps to explain the apparently sudden abandonment of Uruk outposts throughout the northern periphery and the retreatment from Khuzestan.

By removing the eventually suffocating effects of asymmetrical exchange, the collapse of the Uruk expansion may have allowed the growth of increasingly com-

6. There are, however, significant uncertainties inherent in our understanding of these difficult-to-translate tablets, and they may not constitute a representative sample.
plex and independent peripheral communities to continue unchecked. Archaeologically, this is reflected in the appearance of a number of distinct Early Bronze Age assemblages with very specific geographic distributions—which presumably betray some sort of cultural (and political?) boundaries. Sociopolitically, we witness the emergence of a number of strong local kingdoms [glimpsed in Mesopotamian documents of the Early Dynastic period] that controlled parts of the lines of communication previously held by Uruk city-states. This is best documented in the case of the Proto-Elamite state centered at both Susa and Anshan (Tal-i Malyan). It not only inherited and expanded the trans-Iranian routes towards the east of the preceding period (Alden 1982, Lamberg-Karlovsky 1985) but even appears to have taken control of trade routes in and out of the Mesopotamian alluvium via the Diyala basin (Collon 1987:20). The rise of these various indigenous powers astride portions of the international trade routes explains why, in spite of the Uruk collapse, contacts between the now shrunken Mesopotamian core and its periphery continued unabated (Zagarell 1986:420), although we have to presume that the terms of the trade would not have been as favorable to the alluvium as before.

Conclusions

THE VIEW FROM THE PERIPHERY

By the second half of the 4th millennium B.C., highly integrated societies of the Mesopotamian alluvium had succeeded in establishing a system of interaction tying their resource-deficient lowlands with the resource-rich but less-developed highland periphery. This was accomplished by the colonization of the neighboring plains of southwestern Iran and by the founding of enclaves, stations, and outposts at selected locations across the northern periphery. This intrusion was in many ways comparable to the historically documented expansion of the Akkadian empire into some of the same areas some 600–700 years after the Uruk period and was equally short-lived. Nevertheless, it was to have important and immediate repercussions on the development of indigenous cultures with which it came into contact, and this partially explains the eventual collapse of the resulting supraregional interaction system.

One important question that remains is why the Uruk intrusion into the Syro-Mesopotamian plains involved only the taking over of selected localities so as to ensure control of long-distance trade rather than the more pervasive process of colonization that took place on the Susiana plain. An important factor must have been that the Susiana was about a week to ten days away from southern Iraq, either on foot or by donkey caravan (Wright 1981:264), while the northern enclaves could be reached only after one or more months of travel (Hallo 1964). The logistical constraints imposed by distance and transportation technologies meant that the enclaves must have been expensive to establish and then to support and defend. The northern resources were much more easily and cheaply obtained by allowing the indigenous communities already exploiting them to continue, provided they could be persuaded or coerced into trade at terms favorable to the communities of the alluvium. Another factor that surely accounts for some of the observed differences in the outcomes of Uruk penetration of their eastern and northern peripheries is that in advancing into the Susiana plain Uruk settlers were drawn by a relative settlement vacuum into which they could step unmolested or with only minimal resistance. In moving northward into Syro-Mesopotamia, however, Uruk settlers intruded into an area where indigenous cultures flourished and where well-developed trade networks already existed.

A profitable way to tackle the question of how the strategies of contact between Mesopotamian societies and peripheral communities were shaped by preexisting conditions in the periphery is to use comparative material on presumably similar or related phenomena for which adequate historical documentation is available. A useful and provocative study is that of Curtin (1984), who explores the forms that cross-cultural exchange has taken through history, the ways in which it has been organized, and its impact on the societies exposed to it. His premise is that after a certain point in social evolution the general outlines of the institutions of cross-cultural trade become remarkably similar across otherwise very different civilizations and historical circumstances, even though the specifics of the institutions and of the trade itself vary considerably. According to Curtin, the most common institutional form of cross-cultural exchange after the coming of the city is the "trade diaspora," defined broadly as the setting up of communities for the specific purpose of mediating contacts between areas with different but complementary resource endowments. Curtin finds that in areas of considerable economic potential but relatively undeveloped or underdeveloped intraregional trade networks, trading settlements tend to be spread widely in the local hinterland and to be directly involved in the exploitation of resources—a settlement pattern at variance with that observed for Uruk settlements in the north and northwest. In areas where more or less powerful local polities already control a developed trade network, however, trading settlements are more likely to be established only at selected locations, usually at the juncture of interregional and intraregional transportation networks.

A particularly instructive parallel for the sort of relationship envisioned here between societies of the Mesopotamian periphery in the 4th millennium B.C. and the Uruk outposts in their midst is the Portuguese intrusion into Senegambia (West Africa) in the 16th and 17th centuries A.D. When Portuguese colonists first arrived on the Senegambian coast in search of slaves, gold, ivory, and spices, the area was occupied by a number of independent chiefdoms engaged in lively intraregional trade in salt, iron, textiles, agricultural products, and fish. Moreover, for several centuries prior to their arrival there had been long-distance trade (overland via the Sahara) between the coast and the Muslim states of the
Mediterranean basin. Given these conditions, the Portuguese were content with establishing only a limited number of settlements at strategic locations. In the Senegambian case this did not involve the taking over of important preexisting settlements, since those were aligned with the trans-Saharan routes and were located far inland in agriculturally self-supporting savannah areas. Rather, the Portuguese established settlements—in almost all cases, it seems, with the consent of the populations involved—only along the coast and at the delta of the Gambia River. These settlements had easy access to both the maritime routes to western Europe that the Portuguese navy controlled and the waterborne and overland routes leading inland. Thus the Portuguese were able to bypass preexisting routes and establish themselves as an important mediator of long-distance trade. Control of inland routes, now partially rerouted to feed into the Portuguese coastal enclaves, was, however, left in the hands of local chieftains willing to trade—the same chieftains who had had control of the bulk of long-distance and intraregional trade prior to the arrival of the Europeans [Curtin 1975, Daaku 1970].

The Uruk intrusion, too, is unintelligible unless we presume the existence of local communities that, initially at least, were willing to participate in the wider exchange network opened by the Uruk outposts. Otherwise, the position of the intrusive settlements in the midst of alien hinterlands would have been untenable in the face of active local opposition. Although the Uruk enclaves themselves and their immediate environs are likely to have been dependent on specific Uruk city-states, there is no evidence of southern Mesopotamian political control of the areas away from the enclaves. Rather, the links between the Syro-Mesopotamian plains and the surrounding highlands and the Uruk world were primarily economic in nature.

From a peripheral perspective, then, the Uruk expansion appears as a phenomenon not unlike that of the informal (“trading post”) empires of Portugal and Britain in Africa and Asia in modern times [Gallagher and Robinson 1953] or even that of Carthage in the western Mediterranean prior to the 3d century B.C. [Whittaker 1978]. Common to these empires was the ability of a more highly integrated polity possessing little in the way of territory to influence the economic life of vast regions by means of strategically located enclaves and a network of alliances with otherwise independent local rulers.

THE VIEW FROM THE CORE

Though instructive from the point of view of the periphery, the informal-empire metaphor fails us in that it presumes the existence of a single political center. This may have been the case in the Akkadian and later periods but surely was not the case in Uruk times. The survey evidence from southern Iraq and Khuzestan indicates that we must visualize the Uruk world as characterized by a small number of cores, almost certainly in fierce competition. This is reflected in contemporary pictorial representation: cylinder-seal impressions of the time commonly depict a variety of military scenes and the taking of prisoners [e.g., Amiet 1972: nos. 682, 683, 688, 689, 691, 695; Brandes 1979: pls. 1–13]. Much of the impetus for this competition must have been provided by the need to secure access to required resources, although population pressure [Schwartz 1988] and the political and religious ideology of self-conscious elites [R. McC. Adams, personal communication] could have represented important contributing factors, particularly at a later stage. The primacy of an economic explanation for the expansion of Uruk societies is shown by the selective location of their enclaves, by the apparent increase in the amount and variety of imports in Uruk sites at this time, and, finally, by the very specific distribution of indigenous highland sites in which isolated Uruk artifacts are found—invariably along important highland routes or near known sources of coveted commodities.

Within a framework of conflict in the Mesopotamian core, the establishment of individual Uruk settlements in the periphery is best conceived as part of an organic process of action and counteraction, with individual Uruk city-states founding specific enclaves or outposts in an attempt to position themselves on (and exclude their rivals from) the critical lines of communication through which resources were obtainable. These politics would have been oriented towards particular portions of the periphery by virtue of their locations and past histories of contacts. The colonization of the Susiana plain and the subsequent emergence there of two rival states would have acted as a powerful stimulus to further competition within the now enlarged Mesopotamian core and, conceivably, to expansion northward by rival polities in an attempt to offset the advantages enjoyed by Uruk centers in southwestern Iran that were ideally situated to tap into trade routes across the Iranian plateau. A later historical parallel from Mesopotamia for the hypothetical situation envisioned here is in fact available. Documents indicate that late in the Isin-Larsa period [first quarter of the 2d millennium B.C.], after the collapse of the empire of the Third Dynasty of Ur and before the unification of the alluvium under Hammurabi of Babylon, specific states controlled particular segments of the trade routes—whether overland along the Tigris or the Euphrates or maritime towards the Gulf. The city of Ur on the southern edge of the alluvium, for example, seems to have been intimately connected with Persian Gulf trade, whereas Larsa, its neighbor to the northeast, was more closely associated with land routes eastward into southwestern Iran via the Diyala region. Similarly, Sippar, on the northeastern edge of the alluvium, appears to have been more closely tied with trade routes along the Tigris towards Assur and the north, while Babylon, on one of the main branches of the Euphrates in the central alluvium, was oriented mainly towards routes along that river in the direction of northern Syria and the northwest [Larsen 1987, Leemans 1990:134–35].

From the perspective of the Mesopotamian core in the
Uruk period, then, a more illuminating metaphor than that of informal empire is that of a "world system"—a suprastructure of cross-cultural interdependency based on systematic processes of asymmetrical exchange and a hierarchically organized international division of labor—such as is posited by Wallerstein [1974] to have resulted from the growth of capital imperialism in modern Europe and the closely related phenomenon of Western colonial expansion. What makes Wallerstein's model pertinent to the study of the expansion of early Mesopotamian civilization is that, while presuming, as does the informal-empire model, that the primary linkages between complementary regions and societies are economic, it also takes into account the dynamics of competing polities at the center [Ekholm and Friedman 1979, Schneider 1977; but see Kohl 1987]. Initially at least, the supraregional interaction system of the modern world described by Wallerstein emerges from the independent efforts of a few fiercely competitive cores that, more often than not, were simply reacting to earlier moves and perceived threats from regional rivals. Such was surely also the case in the Uruk world.

**THE CONTEXT OF EXPANSION**

The new data on the Uruk presence in the Syro-Mesopotamian plains and the surrounding highlands bear not only on our comprehension of the developmental history of those peripheral areas but also on our understanding of developments in the Uruk core itself for which otherwise we lack pertinent evidence. What peripheral evidence exists concerning the organization of exchange in the Uruk period provides a variety of clues to the social structure of early Mesopotamian communities of the late 4th millennium B.C., for which the only pertinent evidence is that furnished by not always clearly understood glyptic and epigraphic materials [Dittmann 1986a; Nissen 1983, 1986a]. At one end of the spectrum stands the hilltop fort at Godin Tepe, where it is clear that we are dealing with a group of commercial specialists settled as aliens with their hosts' approval in a foreign community. The pattern observed brings to mind the well-documented case of Old Assyrian merchants in Anatolia [Larsen 1976], although we do not know whether the few occupants of the Godin fort were acting in the interest of their kin group or on behalf of an Uruk state in the Iraqi alluvium or in Khuzistan. A diagnostically opposed pattern is revealed in the Habuba/Qannas complex, where the settlements can only be explained as a case of urban implantation, a specialized appendage of an Uruk city-state that itself must have been similarly organized. The Tabga cluster, and possibly those at Carchemish, Samsat, Brak, and Nineveh, represented a conscious and expensive act of policy that simply cannot be ascribed to any kin-based family firm on the Old Assyrian trade model. Rather, the founding of such enclaves would have required levels of planning and resources, access to labor supplies, and expenditures well beyond those we traditionally associate with kin-related organizations such as we know to have existed throughout Mesopotamian history [Diakonoff 1975, Gelb 1979].

In short, if control over exchange networks was the primary rationale for the establishment of Uruk enclaves and outposts across the periphery, then we have to conclude that in the Uruk period the state [here equated with the public sector, including both palace and temple] took an especially active role in ensuring the procurement of resources [Zagarell 1986]. This role seems supported by available textual and representational evidence from the Mesopotamian core, namely, the still little-understood Archaic Texts from Warka and cylinder-seal impressions of Uruk style from various sites. A case in point appears to be the production of textiles, traditionally a crucial state-controlled, export-oriented industry. Although we do not yet have unequivocal evidence for the manufacture of textiles specifically for export in Uruk times as we do for the 3d millennium, all the preconditions for such an activity were in place by the apogee of the Uruk enclaves network [Nissen 1985]. The existence of the required technology is demonstrated by a cylinder-seal impression from Susa clearly depicting a horizontal loom and weavers [Amiet 1972:no. 673]. State control over the necessary raw materials [wool] seems assured in light of recently published Archaic Texts on animal husbandry from Warka that attest to the existence of state-managed flocks [Green 1980]. Similarly, control over the required labor [principally dependent women] is implicit in the presence of slaves. The specific term used for female slaves in the Archaic Texts [SAL + KUR] means not only "slave of foreign origin" but also "dependent woman" or "serf" [Gelb 1982:91–93], and it is these last [GEME] who figure prominently in the later documentation as the principal source of labor in the production of textiles for export. Significantly, the weaving scene just mentioned shows the attendant personnel as wearing long pigtails, an indication that the labor was performed by women [Amiet 1972:105]. A final precondition is a state role in the storage and redistribution of raw materials and finished products. This, too, seems to be indicated in the Archaic Texts [Nissen 1985, 1986a].

**THE ROOTS OF EXPANSION**

Societies in the Mesopotamian alluvium during the Uruk period were expanding rapidly, both internally and externally. Internally, this expansion took a variety of forms: [1] new forms of spatial distribution: the growth of cities and their dependencies, [2] new forms of socio-political organization: the explosive growth of social differentiation, the emergence of encumbered labor, and the crystallization of the state, [3] new forms of economic arrangements and of record keeping: state control of a substantial portion of the means of production and of its surplus, craft and occupational specialization on an industrial scale; and, finally, [4] the new forms of symbolic representation needed to validate the changes taking place in the realm of social and political relationships—leading to the creation of an artistic tradition and
iconographical repertoire that were to set the framework for pictorial representation in Mesopotamia for millennia to come. Externally, this expansion manifested itself in migration—the establishment of specialized settlements at locations of strategic importance—and in the formalization and maintenance of long-distance trade networks to supply the requirements of increasingly urban and stratified societies. These various phenomena of internal and external expansion were interdependent. A crucial and as yet not fully answerable question is that of the causal relationship between them—whether [as I am inclined to believe] strong centralized states crystallized at locations through which long-distance exchange was being funneled in prehistoric times [Rathje 1971] or that exchange originated in settlements that had evolved into strong centralized states for endogenous reasons not necessarily related to cross-cultural interaction [see Brumfiel and Earle 1987 and Wright 1977 for summaries of the various positions].

An early attempt to address exactly this issue with archaeological data from the Mesopotamian world is that of Wright [1972, 1981], who analyzed evidence for imports and exports from Uruk and Jemdet Nasr levels at Farukhabad, a small regional center in the Deh Luran plain of southwestern Iran. He concluded that while some evidence for interregional exchange could be found throughout, large-scale movements of commodities occurred only after the establishment of the state. In the more central Mesopotamian alluvium, however, the issue of the relationship between state formation and long-distance exchange is still clouded by the rather disjointed and nonquantifiable data available for the most important urban centers of the Uruk period. Adequate (although not necessarily representative) exposures exist only for a single site, Warka itself. Making matters more complicated is the fact that we have yet to come to grips with the nature of developments in the surprisingly urbanized Early Uruk period [Adams 1981], dating roughly to the first half of the 4th millennium B.C.

Nevertheless, a variety of evidence pertaining to the immediately preceding Late Ubaid period points the way to an eventual solution. Unless we are prepared to project the origins of city-states in Mesopotamia back into Ubaid times, it is more likely that long-distance exchange preceded state formation. Increasingly, as more data are made available for Ubaid sites, it becomes clear that cross-cultural contacts between societies in the alluvium and communities across its northern periphery were already commonplace in late prehistory [Marfoe 1987:28; Surenhagen 1986a:7–8]. Of the pertinent data thus far available from the periphery, most instructive are still those from the Ubaid levels of Tepe Gawra, a small [1-ha] site on the plains east of the Tigris not far from Nineveh. Particularly relevant in this context is the impressive complex of tripartite buildings uncovered more than 50 years ago in Level XIII at the site [Tobler 1950:30–37, pls. 11 and 12]. Built in a typical southern Mesopotamian style, these structures show the adoption in a northern context of a number of cultural traits of southern Mesopotamian origin—a process of acculturation similar to that described above for Tell Hammam et-Turkman—and intense economic contacts between the Upper Tigris basin and the southern alluvium that preceded by centuries the Uruk intrusion.

While it may be safely inferred, however, that the expansion of Mesopotamian societies of the Uruk period has its roots in earlier developments, the details still elude us. We do not know whether the expansion climax discernible in the Late Uruk period evolved gradually and without interruption from patterns of interaction established earlier or represented a quantum leap. In this connection, an interesting question that deserves further research is that of the role of the possible domestication of pack animals by the second half of the 4th millennium in enabling broad-scale expansion.7 Obviously, pertinent data could be gained from a detailed examination of the earliest Uruk levels of intrusive sites in areas of the northern periphery where the possibility of long-term interaction appears stronger, namely, the Upper Khabur and Upper Tigris. Similarly needed are representative exposures and quantitative analyses of interregional exchange data from Early Uruk and Ubaid levels of sites in the Mesopotamian alluvium itself.

Comments

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Algaze's title is very promising, but the content of his paper is disappointing. It is difficult to find anything new about it except perhaps the attempt to systematize. The main thesis has been presented many times before. The expansion of the Uruk culture into the Susiana and the link between its northward expansion and the need to import raw materials cannot be doubted, but the title promises much more.

7. An important problem in ascertaining when domestic pack animals were introduced in the ancient Near East is the difficulty in differentiating domesticated asses (E. asinus) from wild ones (E. africanus) on the basis of purely osteological evidence. This problem is further complicated by the difficulty in distinguishing asses from hybrid ass/oneragers [E. asinus × hemionus], which also served as pack animals [P. Wattenmaker, personal communication]. The consensus of faunal analysts relying on evidence from early Mesopotamian [Clutton-Brock 1986:210–13] and Iranian [Zeder 1986: 437] sites is that domestic asses and ass/oneragers are already present in the first quarter of the 3d millennium B.C. It seems certain, however, that domestic pack animals must have existed well before the time they can be recognized in the osteological record. Significantly, the Sumerian sign ANSE [i.e., the basic domestic ass or ass/onerager] is already found in the Archaic Texts from Warka and in tablets from the site of Jemdet Nasr, both datable to the very end of the 4th millennium B.C. [Zarins 1978:3]. The existence of pack animals by the later part of the Uruk period is thus highly probable [Wright 1981:264].
Algaze limits himself to the well-known stations on the Euphrates, in northern Mesopotamia, and in western Iran and avoids discussion of the problems arising from the "Asian" elements in predynastic Egypt—the Jemdet Nasr seals, the niched facades, the Jebel el-Aram knives, the fettered snake-necked lions of the Narmer palette, the "Uruk" boats in eastern Egyptian rock engravings, and other motifs of Asiatic provenance. Had he analyzed these he might have come to question whether we are justified in speaking of a single Uruk civilization, especially given that the glyphic found at Habuba Kabira, like the majority of the Asiatic elements in early Egypt, seems much more similar to the art of Susa (or some third, unknown center) than to that of Uruk itself. We may ask whether Uruk civilization was the product of a single unified state (an ancient "great power") or of a region containing several states or centers more or less equal in development. There does seem to be homogeneity in the ceramics of the expansion, but not much more. The series of Uruk settlements on the Euphrates leading to the copper (and timber?) regions does indeed point to the objective of access to raw materials, but this is an inference unconfirmed by any material evidence. Moreover, Algaze does not reflect on the reason for the expansion. In my opinion it was the shift to state organization based on the permanent surplus produced by irrigation agriculture, which he briefly mentions.

Of the social system organizing this network of settlements and trading posts we know almost nothing. Were these settlements dependent in some way upon a center, or were they similar to the Greek colonies or a variation on the Carthaginian *supremacie*?

The distinction between colonization (in the sense of the European expansion to America) of the Susiana and the establishment of bases in the north seems too simple. Should the Susiana be considered a unit open to a general "colonization"? A complete change of ethnics—a total replacement by Uruk Sumerians (?)—is improbable in the light of the Elamite character of the following three millennia ("pots are not people"). Also doubtful is the equivalence of stations such as Godin Tepe and fortified river ports (?) ("emporia") such as Habuba Kabira with extensive settlement centers such as Tell Brak. What we have here is probably a very complicated plurality of forms and relations as distinctive as the much better-known ancient Assyrian trading system in Asia Minor.

It would also have been worth mentioning the forerunners of the Uruk expansion—the formation of the Ubaid *koine* and the expansion of the Tell Halaf culture as far as Mersin and Tilke Tepe.

Algaze's paper is interesting as an indication that the "New Archaeology," with its neo-Marxist recognition of the importance of social history, is still at work. Either it should be reworked with a larger corpus of material, however, or its title should be changed, since it explains neither the Uruk expansion nor any cross-cultural exchange (northern influences on southern Mesopotamia not being mentioned).

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Algaze's superb synthesis cites "cross-cultural exchange" [Curtin 1984] as a major factor in urban expansion and emergent social complexity during the late 4th millennium B.C. in Mesopotamia. Although extensive material indicators of Uruk presence have been known for some time in "Syro-Mesopotamia" (northwest of the Mesopotamian alluvial plain), particularly at Habuba Kabira/Qannas, and in Khuzistan (southeast of the alluvium), particularly at Susa, Algaze has now convincingly linked the Late Uruk economic expansion in the northwest to politico-ideological developments (coloniization) in the southeast. In the process, he has provided important new insight into the sociopolitical and economic processes at work in western Asia at that time.

The "informal imperial model" utilized by Algaze is a highly refined version of world-systems theory, with primary emphasis on the economic aspects of exploitation and interaction in the periphery but full account taken of competitive political dynamics in the core. Thus the asymmetrical nature of exchange which brought critically important raw materials to the resource-poor alluvium is balanced in Algaze's equation by the hierarchical organization of production beyond subsistence within the alluvium. This asymmetrical exchange between the alluvial centers and peripheral regions (in northwestern Mesopotamia and the Iranian highlands) was conducted—it is argued—within a hierarchical interaction sphere that consisted of urban enclaves staffed by intrusive Mesopotamians, locally populated village stations, and isolated outposts. Such tripartite systems occupy an important and well-established place in the development of settlement theory (e.g., the primary nodes, regional centers, and local centers of the Middle Woodland exchange network [see Flannery 1972:132]), they also accord well with the principle underlying gravity [distance-decay] models of exchange (e.g., Hodder 1974:173).

I am not convinced, however, that the data Algaze marshals demonstrate such a pattern for ancient western Asia. Whereas the evidence for urban *enclaves* is undeniable, that for *stations* is less secure or as yet less well-published [seven known, one discussed], while that for *outposts* seems very insecure: the two examples cited are in the Iranian Zagros, while the remainder of the cases discussed for the proposed interaction sphere are located in distant northwestern Mesopotamia. Algaze also acknowledges a potential problem with their [apparently later] chronological position. Is it perhaps more likely that such outposts were typical of the *final* stages of an Uruk exchange system, which suddenly contracted with the collapse of Late Uruk politics in the Mesopotamian heartland?

Whereas a more complete discussion of the development of sociopolitical complexity in early Mesopotamia
would have to emphasize centralization, expansion, and collapse, Algaze's focus on expansion provides important new insights and facilitates discussion of issues of long standing. Citing a 16th–17th-century A.D. case study from West Africa, for example, Algaze maintains that the Uruk "intrusion" is inexplicable without a periphery characterized by well-developed local exchange systems primed to participate in more extensive, influential and profitable networks of trade.

The Uruk enclaves controlled not only north-south riverine routes but also east-west overland tracks. If, as Algaze suggests, the establishment of these enclaves would only have been possible with state-level [not kin-based] organizations, then [as Algaze carefully notes] Henry Wright's position that large-scale exchange of goods postdated state formation must be reconsidered in the Mesopotamian context. Another recent study which postulates that long-distance trade in material and non-material commodities was well developed in the eastern Mediterranean and western Asia at least by the Neolithic period [Runnels and van Andel 1988] must also be taken into account in this context.

Long-term trends of expansion and contraction can now be seen to form part of the geopolitical makeup of Mesopotamian politics as early as the 4th millennium B.C. Because Mesopotamia's periphery has become so well documented archaeologically and has now been competently and comprehensively evaluated by Algaze, inferences about politico-economic developments in the core may be postulated and tested.

One minor quibble: archaeologists working in western Asia often adopt a narrowly "Mesopotamio-centric" view of cultural pattern and process. Whereas Algaze's study is in no way so restricted, it still favors "historically documented" as opposed to ethnographic or [world] archaeological case studies as comparanda. For example, his brief discussion of collapse [ascribed chiefly to socio-environmental factors—overexploitation of land and city-state rivalry] would have benefitted from reference to case studies in Yoffee and Cowgill [1988], particularly those of Yoffee on Mesopotamia and Culbert on Mesoamerica. Although the work of Brumfiel and Earle [1987] is cited in passing, no consideration is given to some of its key chapters, which discuss the association amongst interregional exchange, specialized production, and the development of social complexity. The models of imperial and political organization that increasingly form an important part of the archaeological literature [e.g., D'Altroy 1987, Dyson 1985, Eisenstadt 1986, Schreiber 1987, Trigger 1974] find little consideration in this study. Finally, Bietti Sestieri [1988] has proposed a dynamic, sophisticated socio-structural model to account for the development of social complexity and politico-economic change in the central Mediterranean [mid-to-late Bronze Age] as it affected and was affected by long-term contact and exchange with eastern Mediterranean [Aegean and Cypriot] polities [see also Knapp 1989]; certain problematic aspects of Algaze's proposed settlement hierarchy might be reconsidered in light of Bietti Sestieri's study. Since some of these studies may not have been available to Algaze, these comments should in no way detract from his extremely valuable contribution to Mesopotamian prehistory and to the literature on state formation and emergent social complexity. "The Uruk Expansion" demonstrates well the key role that politico-economic approaches play in the advancement of archaeological method and theory.

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I congratulate Algaze for bringing together and interpreting important new data on the development of complex society in the greater Near East during the second half of the 4th millennium B.C. This article not only synthesizes archaeological reports from a variety of sources—some more accessible than others—but also raises, implicitly or explicitly, fundamental questions affecting our understanding of the emergence of state-structured society in western Asia. Furthermore, since it can be argued that this Mesopotamian case may represent the only undisputed example of "pristine" state formation in the Old World, the specifics of this process as outlined in this article are of fundamental significance. While it occasionally lapses into cumbersome, fatalistic terminology ["immutable conditions of disequilibrium," "natural and inevitable decline in agricultural productivity," "unavoidable regression," etc.], the article is reasonably well-written, copiously documented, and, at least for me, generally persuasive.

Particularly important is the thesis that in order to understand cultural evolution at this time one must look beyond the "center" of the southern Mesopotamian alluvial plain to the "peripheries" of Iranian Khuzestan, northern Mesopotamia and Syria, extending into eastern Anatolia, and the Iranian plateau, the proper unit of analysis is not a single ecological zone or region but a broad territory of western Asia. Indeed, the relevant peripheries actually encompass even more regions than Algaze mentions: the Nile Delta and Valley, the Persian/Arabian Gulf and the Arabian peninsula, and Transcaucasia, to name the most obvious.

Parenthetically, I wish to add that I. G. Narimanov of the Soviet Academy of Sciences in Baku has discovered a series of small Late Chalcolithic sites in the Agdam region of southern Soviet Azerbaijan [Karabakh steppe] that, on the basis of his previous work at Yarim Tepe III in northern Iraq, he has identified as Late Ubaid colonies [Narimanov 1985]. D. Sürenhagen [personal communication] examined some of the ceramics first recovered at the principal site, Leila-depe, and noted definite parallels with the Uruk ceramics from Habuba Kabira; later excavations at this site revealed evidence for copper production, the earliest definitely attested copperworking in Transcaucasia [Narimanov, personal communication]. Whether these sites are more properly identified as late
Ubaid or as Uruk, their material culture is definitely intrusive and foreign. There seems little doubt of a recognizable “Mesopotamian” presence in Transcaucasia in Late Chalcolithic times [4th millennium B.C.]. Although I accept Algaze’s general thesis and am glad that he has articulated it in such a stimulating fashion, some methodological/epistemological difficulties immediately present themselves. The differentiation of colonization from the establishment of enclaves, stations, and outposts seems at first glance relatively straightforward and useful; certainly the evidence for an “Uruk” [i.e., southern Mesopotamian] presence varies from region to region, and it is important to distinguish processes of expansion on the basis of this evidence. The distinction between station and outpost seems, however, to be purely geographical: if the site is on the Iranian plateau or far removed from the southern Mesopotamian core, then it is an outpost, otherwise a station. But what constitutes sufficient evidence for an Uruk presence? Surely, the case is stronger when one can point to a range of ceramics, sealing/accounting devices, and, perhaps most convincing, exact architectural parallels. If present, however, these data, generally speaking, are only compiled through fairly extensive excavations; many of the data cited to document Uruk expansionism come from regional surveys in which the Uruk presence is postulated on the basis of Uruk ceramics, particularly, though not exclusively, bevelled-rim bowls. If southern Mesopotamians present at a site [as traders, missionaries, or whatever], and when are local inhabitants just adopting patterns or styles ultimately [perhaps] of southern Mesopotamian origin?

The case for Uruk enclaves in northern Mesopotamia/Syria seems more substantial in that it is based on the interpretation of extensively excavated sites the entire material cultures of which almost uniformly recall those of southern Mesopotamia. While Algaze’s model explicitly demands an almost incredible level of organizational sophistication, he tempers it somewhat by admitting that “there is no need to presume that [such enclaves] were established as part of a single coherent effort”; some sites seem to have formed all at once, others developed more gradually. His model, however, does make the additional demand that such enclaves exist primarily to promote long-distance trade, and here the evidence cited is largely locational: the enclaves are always situated on some major east-west/north-south communication route. Cynically, one might ask whether archaeologists ever bother to investigate sites that are not situated on some major crossroad leading from one important area to another. The point is not to deny the possible significance of the location of the identified Uruk enclaves but rather to query how one confirms archaeologically the thesis that the enclaves functioned primarily to control access to and facilitate the movement of critically needed resources, most of which, unfortunately, remain invisible because they do not survive the passage of time. Similarly, it seems to me that one cannot gloss over the problem of how such enclaves of foreigners supported themselves, how they were integrated into the countryside in which they were situated. Such a question can only be approached by comparing relevant excavated data, including floral and faunal remains, not only from the enclaves themselves but also from sites in their immediate hinterland. My understanding is that such data are not yet in hand.

Finally, it would have been useful to distinguish more concretely the different peripheries into which southern Mesopotamians may have expanded. The productive and resource potential of eastern Anatolia differs from that of the Iranian plateau, which in turn contrasts with that of the Gulf, etc. The prior cultural history of each region, as it can be reconstructed archaeologically, is also relevant, particularly—as Algaze seems to imply in his conclusion—since the nature and level of the development of the indigenous communities necessarily affected the terms of the trade that the Mesopotamians were able to obtain [or demand]. Perhaps a case can be made for the collapse of the Uruk expansion dominantly to the north and a later 3d-millennium redirection of long-distance trade to the southeast and the copper sources, among others, of Oman precisely for this reason. The societies of northern Mesopotamia/Syria, eastern Anatolia, and Transcaucasia were or became strong enough to resist Mesopotamian exploitation, and newer, more pliable and dependent colonies were created in agriculturally less productive regions, where the inability to produce grain in sufficient quantities made societies vulnerable.

Indisputable proof of the success of a research project or synthetic article such as Algaze’s is that it stimulates further speculation and work. We are all indebted to him for this stimulating and important contribution.

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With the publication of this paper, any lingering doubts concerning the place of the Uruk period in the history of Mesopotamian civilization should be eliminated. Algaze persuasively interprets the Uruk phenomenon as the earliest example of the cyclical pattern of growth, expansion, and collapse so evident in the history of early complex social formations in the southern Mesopotamian alluvium.

Only a few minor questions arise: In his discussion of the location of Uruk enclaves and outposts in the Syro-Mesopotamian plains and surrounding highlands, Algaze places great emphasis on their association with important trade routes. It seems that we face the danger of circular reasoning in such arguments. When a site is located, it is commonplace to look for possible communication routes associated with it. Once such routes are discovered, it may be suggested that sites were established at certain locations because of their proximity to these routes. A careful reading of Algaze’s argument indicates that this potential problem has been avoided, although it is not always clear how the importance of the routes described was established.
Another concern arises from his discussion of Uruk material culture in indigenous highland sites. This discussion focuses almost exclusively on the presence of Uruk pottery. Yet pottery is not among the commodities suggested as the primary resources exported from the alluvium. What is the connection between Uruk pottery and the export of these other items? It seems that a more systematic analysis of the processes responsible for the presence of Uruk pottery at sites outside the alluvium is in order. Obviously, the presence of Uruk pottery does not necessarily mean the presence of Uruk people. Neither does it automatically indicate the presence of other exports from the Uruk heartland.

Algaze is certainly correct in contrasting the processes of expansion in the Susiana plain with those in the northern periphery. Obviously, distance plays a major role in explaining this contrast, as does the apparent “settlement vacuum” in Khuzestan at this time. Also important may be the fact that the Susiana plain offers a similar pattern of resource potential to the Iraqi alluvium. It may have been attractive for permanent, large-scale colonization because it provided additional land for growing of cereals and stock raising, thus increasing the resource base of heartland Uruk states competing for advantage in trade with more distant regions. As Algaze hints at one point, the expansion into Khuzestan may have been an attempt to expand the core rather than to solidify connections with the periphery.

Algaze is to be especially commended for his critical use of such ideas as “trade diaspora” and “world system.” Too often archaeologists are overanxious to jump on the bandwagon and attempt to force our data to fit models borrowed from sociohistorical analyses of more recent social formations. Rather than inflexible molds into which our data must be fitted, such models provide alternative ways of looking at our data in order to generate additional questions and focus future research. The questions raised in the concluding paragraphs of this article provide a most promising framework for continuing refinement of our understanding of the Uruk social formation and our picture of early complex society in Mesopotamia and beyond.

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Algaze has made available a rich tapestry of archaeological data within an important conceptual framework. Focusing upon a significant phenomenon, the Uruk expansion, he summarizes results principally derived from salvage programs in Turkey, Syria, and Iraq that are often difficult of access and incompletely published. He produces what he believes to be a testable hypothesis involving what is, in the final analysis, a complex “prime mover”: “A reliable flow of resources must be insured at all costs, since interruptions will result in politically unacceptable socioeconomic dislocations: the survival of the social order is predicated on the production of the exportable surpluses that, short of war, ensure access to resources otherwise unavailable.” Thus, he adopts a materialist approach whereby the need to procure resources drives both agricultural surplus production in southern Mesopotamia and colonization of distant areas. Even his typology of intrusive Uruk settlements signifies the existence of a coordinated centralized authority dictating their geographic positioning for the control of trade routes and/or resources: “enclaves,” “stations,” and “outposts.”

Algaze’s persuasive argument is given further authority by southern Mesopotamia’s later history of recurring phases of imperial expansion during times of political centralization. Perhaps the first such phase relates to the earlier Ubaid period in both southern and northern Mesopotamia. Although he makes a good case for his control-of-resources hypothesis, there are other factors that may have been involved. I mention but two. The emigration out of southern Mesopotamia may have been driven by demographic factors. Much of the western expansion in colonial America was motivated by “overpopulation” of farmlands in the East; there simply was not enough farmland to sustain the population as inheritance split farms into increasingly smaller units. In mid-3d-millennium Mesopotamia, inheritance laws similarly favored the allocation of equal shares of land to all sons. This would have led in time to reduction in farm size and demand for new lands. That the inhabitants of Habuba Khabira appear to have been dependent upon foods produced by the local inhabitants does not rule out a land-driven southern Mesopotamian emigration. Furthermore, it is entirely possible that the political centralization that characterized Uruk Mesopotamia, manifest in managerial devices of social control such as writing, cylinder seals, and beveled-rim bowls, was associated with coercion and oppression by the rulers and flight of the ruled. Again, historical analogies are numerous.

Algaze would have us believe that over the course of two to three centuries many thousands of individuals left southern Mesopotamia for the sole purpose of controlling trade routes and exploiting distant resources. Are we to believe that southern Mesopotamia had the social infrastructure to organize this mass exodus and the subsequent resource-procurement strategies? Or that this was an individually motivated movement of people with the “frontier spirit” seeking their private fortunes? Hardly. Neither camel nor horse was available as a beast of burden, and one is left to imagine that primitive carts pulled by equids provided the transport for this exodus. One must ask whether the control of trade routes and the exploitation of resources were the initial conditions that fueled it or a by-product of other conditions. Under the circumstances, I find Algaze’s economic determinant, though appropriate to the archaeological evidence, not wholly convincing. On the basis of a few beveled-rim bowls, without context, from Tal-i Illib and from Yahya VA, he judges farthest eastern Iran within the reach of the Uruk expansion. At Yahya VA the five beveled-rim bowl fragments are better con-
sidered as belonging to the succeeding Proto-Elamite settlement (Period IVC), when such bowls are far more frequent. That the exploitation of resources need not be the sole phenomenon involved is perhaps suggested by the excavations at Hassek Hüyük (Behm-Blancke 1988), where metallurgical analyses do not support the idea of exploitation of a local native copper source 30 km away. Similarly, it would be difficult to argue that the search for resources alone carried the Uruk expansion to the western Delta of the Nile, where excavations at Tell el Fara‘in (ancient Buto) have revealed diagnostic Uruk material remains [von der Way 1987].

Algaze has clearly provided a most useful framework for conceptualizing the Uruk expansion. That it may not be the only framework should be self-evident in so remarkably complex a picture as is represented by the Uruk expansion. The archaeological evidence does not allow me even to suggest anything like Turner’s [1977 [1891]] “frontier hypothesis,” wherein a particular “spirit” or “mentality” is considered one of the driving forces in the opening of the American frontier, but some such concepts may have been part of the framework adumbrated in Algaze’s important contribution. Though this suggestion may prove wanting as a “testable hypothesis,” the presence of what appears to be a portable shrine at Hassek Hüyük and characteristic mosaic cones for temple decorations at Tell el Fara‘in are but two indications that the Uruk expansion was being legitimated in terms of typically southern Mesopotamian religious ideology. If, as in southern Mesopotamia, the land belonged to the temple gods and humans were merely its stewards, then one may even ask whether the Uruk expansion was simply expressing its “manifest destiny” and claiming those lands in the name of their divinity.

Lastly, Algaze does not consider the result of the Uruk expansion. Did the Mesopotamian people voluntarily return to their southern city-states? Did the exploitation of local resources result in open conflict forcing their return? Were they simply assimilated? If Weiss [1986] is correct, urbanization was not to occur in northern Mesopotamia until the very end of the Ninevite V period, 500 years after the Uruk expansion. Of equal significance is the unknown relationship between the Uruk expansion and the demographic shifts noted by Adams [1981] and Wright [1987] within southern Mesopotamia and Khuzistan during the Uruk period. To reduce the complexity of this picture to an understanding of resource control seems far too restrictive.

Perhaps with the loss of access to the northern Mesopotamian resources following the “collapse” of the Uruk expansion, southern Mesopotamia turned to Dilmun, Magan, and Meluhha for its resources. From the texts we know that southern Mesopotamia did indeed derive important resources from these places, but one searches in vain there for Early Dynastic or Akkadian “colonies” of the Habuba Khabira type. Thus, at the time of clear political centralization and imperial expansion [the Akkadian period], there is no archaeological evidence for “colonies” exploiting resources in foreign areas. That Mesopotamia went from direct exploitation of northern Mesopotamia to indirect procurement of Gulf resources also strikes me as simplistic in the light of inscriptive evidence referring to “Naram-Sin, king of the four quarters, a vase of booty from the land of Magan.”

Clearly, Algaze has confronted an issue of remarkable complexity and focused upon an important theme, the control of trade routes and the need for resource procurement. It can only be hoped that future essays addressing this topic, from different vantage points, will be as lucid and as stimulating as his.

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Algaze’s paper is a very handy presentation of the evidence in favor of long-distance exchange as the “prime mover” in the expansion far afield of Uruk material culture. He provides an impressive synthesis of a complex set of data from both the northwestern and eastern peripheries of southern Mesopotamia and engages in a thought-provoking discussion of problems in data interpretation for each region.

I suspect, however, that an emphasis on trade will cause us to overlook other possible explanatory variables. The well-known scarcity of natural resources in southern Mesopotamia is too easily invoked to explain any southern activity outside the heartland—wherever they went, the southern Mesopotamians were bound to find an area richer in natural resources than their homeland. But “trade diasporas” can involve much more than trade, as, for example, the 8th-century B.C. archaic Greek colonization of the Mediterranean demonstrates [Schwartz 1988].

What needs to be stressed here is the unique nature of the Uruk expansion. No subsequent case of Mesopotamian activity in the periphery, be it Akkadian, Ur III, Hammurapi, neo-Assyrian, or neo-Babylonian, involved large-scale production movement from core to periphery such as that evinced by the Habuba/Jebel Aruda complex and, if the evidence is to be so interpreted, the colonization of the Susiana. The question that Algaze never addresses is why colonization was necessary to ensure long-distance trade. If the resources of the northwestern periphery were “much more easily and cheaply obtained by allowing the indigenous communities already exploiting them to continue, provided they could be persuaded or coerced into trade at terms favorable to communities of the alluvium,” why did the southern Mesopotamians find it necessary to establish a set of urban enclaves along the Euphrates?

The interaction of the southern Mesopotamian state with its periphery in the Akkadian period, which Algaze cites as a better- [i.e., historically] documented episode of expansion, differs quite significantly from that of the Uruk period if one examines the archaeological record. The Akkadian-period evidence from the periphery includes the massive Naram-Sin “palace” at Tell Brak and
epigraphic evidence for an Akkadian administrative presence at Nuzi, Nineveh, Assur, and perhaps Mari, but there are no Sargonic "colonies" and no large-scale distribution of Sargonic material culture across the peripheral landscape in northern Mesopotamia or Syria [Reade 1968, Speiser 1935]. The ceramics and other small finds from Akkadian levels at Tell Brak itself have very few parallels in southern Mesopotamia: the pottery from the levels contemporary with the Naram-Sin palace retrieved in the recent excavations by David and Joan Oates is almost completely of local origin and varies only slightly from the assemblage of the preceding "Late Early Dynastic III" phase [J. Oates 1982]. We need to ask, therefore, why the Uruk case differed from succeeding expansions and what this difference signifies.

I would like to add a few more matters of detail. In order to explain the demise of the Uruk expansion, Algaze cites southern collapse and the growth of peripheral polities. But the northern Mesopotamian periphery shows no sign of state or urban development until the mid-3rd millennium, long after the Uruk collapse [Schwartz 1987]. Also, I feel it is too soon to pronounce Brak or Nineveh to have been southern enclaves or colonies along the lines of Habuba Kabira; Brak has yielded a good deal of local Uruk material culture as well as southern, and the presence or absence of local material culture at Nineveh, whose Uruk remains were only sampled in a small sounding, remains to be established.

Despite the aforementioned reservations, I am grateful to Algaze for his synthesis of the material from so broad an area and for the many stimulating points raised in the course of his essay. The ideas that are expressed in this paper will no doubt inspire much further discussion of the striking association of urban/state development in southern Mesopotamia and peripheral colonization and expansion. Now that data retrieval has been halted—one hopes only temporarily—in the eastern periphery, we must turn with particular interest to the results of continuing fieldwork in the west—northern Iraq, Syria, Turkey, and even the Nile Delta [von der Way 1987].

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Algaze extends the discussion of trade/urbanism/primary-state formation linkages to incorporate an explanation for the late Uruk-period colonies retrieved in the past 15 years along the traditional trade routes of "peripheral" Mesopotamia. The colonies are commonly understood as a function of the needs of the nascent southern Mesopotamian polities for exotic commodities, perhaps base metals and decorative stone [Weiss and Young 1975]. Little evidence for the commodities acquired or traded has, however, been adduced. Algaze hypothesizes that the colonies procured a range of materials, both "essential" and "nonessential," for the late Uruk-period states of southern Mesopotamia and that the acquisition of these materials was an activity without which those states could have been neither generated nor sustained. While some of these materials had been imported in earlier periods, Algaze maintains that "the variety and quantity of imports increased exponentially during the Uruk period." A quick review of the secondary literature that treats this evidence, however, fails to confirm these hypotheses.

1. Wood columns and beams were neither necessary nor absent in 3d-millennium southern Mesopotamia: circular pillars of brick were used in large public buildings [e.g., Palace A at Kish, Ishtar Temple at Mari ['Early Dynastic III period], the Pillared Hall and Cone-Mosaic Court at Warka ['late Uruk period]], and local palm trunks and poplar beams commonly served to support and span roofs [Collon 1969; Steinkeller 1987:91-92]. Ships bearing wood from Elam and Dilmun are noted in Early Dynastic Lagash documents [Leemans 1972:73,278], but Sargonic-period wood shipments occur in "small quantities and seem to be private enterprise on a modest scale" [Foster 1977:37]. Margueron's statement that "while clay served as a substitute for stone, nothing served as a substitute for wood" [1982:529, translation mine] considers exceptional 2d-millennium Syro-Lebanese timber imports. Small quantities of cedar and cypress oils were imported during the Early Dynastic period [Leemans 1972:73].

2. Slaves and prisoners of war were a negligible component of southern Mesopotamian productive labor from the Early Dynastic through at least the Old Babylonian period [Gelb 1976; Maekawa 1987]. Most Sargonic-period slaves were local [Foster 1977:37].

3. Bitumen in southern Mesopotamia was derived not from northern outposts but from central Mesopotamian pools formed by the sulfurous springs near Hit and Ramadi [Forbes 1964:16-37] or adjacent Khuzistani sources.

4. The exceptional gypsum at Warka, Ur, and Eridu was extracted from the nearby formations at Eridu [Huet and Maréchal 1985:273-74]; gypsum is also worked at Falluja [Great Britain 1944:475]. Flint nodules are collectable in the western desert, Levantine flint scrapers and North Syrian Canaanite blades were indeed "common" but not at Warka: they were retrieved at Habuba Kabira and are "unknown in Babylonia and Khuzistan" [Sürenhagen 1986:20]. Vesicular basalt and useful conglomerate substitutes with similar properties as grinding tools and for sculpture were available in outcrops along the desert margins, the western flanks of the Zagros, and the Jebel Sinjar [Great Britain 1918, Stol 1979].

5. Because copper, when available through long-distance trade, perhaps with Anatolia and Iran, was apparently very costly, baked-clay sickles and even axes were often used in place of copper tools. Tin-bronze, introduced to southern Mesopotamia only in the Early Dynastic III period, "is likely to have remained a 'luxury' product until the second millennium b.c." [Moorey 1985:23,28]. The recently discovered Taurus tin mine at

1. "Si l'argile a remplacé la pierre, rien n'a remplacé le bois."
Kestel was exploited during the middle 3d and the early 2d millennium, there is no evidence for its Uruk-period exploitation (Yener et al. 1989).

6. The trade in lapis (and copper) may be related to the establishment of late Uruk colonies in the Zagros, but the southern Mesopotamian finished-steatite-vessel trade was an Early Dynastic III phenomenon (Kohl 1975), while the carnelian [chalcedony] trade was, apparently, mostly post-Uruk (Tosi 1980) as well. Marble, diorite, gabbro, and other stones for sculpture were available in the western Zagros and Oman (Heimpel 1987).

With the exception of lapis (Hermann 1968) and possibly copper (Barrelet 1974, Muhly 1983), there is no evidence for an increase in southern Mesopotamian imports during the Uruk period. Similarly, evidence for 3d-millennium and certainly Uruk-period long-distance export of southern Mesopotamian products remains elusive. There are few data on long-distance trade in grain between southern Mesopotamia and other regions, although water-borne shipments of grain passed from Ebla to Mari and perhaps along the Jagiajg (Loretz 1969:68), while clothing and stones passed from Gasir and Mari to Ebla (Archi 1988:25). From Early Dynastic III Lagash, 3 of the 41 texts treated by Lambert (1953) mention large shipments of grain/flour, 1 to Dilmun and 2 to Elam. Prior to the Third Dynasty of Ur, large-scale southern Mesopotamian export of grain, leather goods, dried fish, dates, and textiles remains essentially invisible archaeologically and undocumented epigraphically.

Algaze also hypothesizes accelerated development and ultimate collapse of the societies of “peripheral” Mesopotamia as a function of southern contact and manipulation. The trajectory of Ninevite 5 societies in dry-farming Mesopotamia does not, however, conform to this hypothesis. The late-Uruk collapse in northern Mesopotamia was followed by abandonment of large late-Uruk centers, limited sedentary occupation, and possibly “devolution” or “tribalization” (Price 1978:173, 180; Weiss 1988:9). At the termination of the Ninevite 5 period the intrusion of southern Early Dynastic III interests transformed mid-3d-millennium chiefdoms into the powerful, if short-lived, urbanized states of the dry-farming zone [Weiss and Calderone n.d.]. Lastly, the Uruk expansion is illuminated, it seems to me, more by its differences from the Akkadian expansion [spatial extent, types of economies and settlements, presence/absence of southern material culture] than by their faint similarities.

Ultimately, Algaze returns us to the question of which came first, long-distance trade or cities. This question posits “trade” as a variable independent of regional social development: the generation of classes, the contending interests of political elites and agricultural producers, the need for effective state control through the powerful representation of ideologies and the architectural symbols of administrative hierarchies and militias. To support the hypothesis that long-distance trade preceded state formation, Algaze reiterates the unprecedented appearance of temples with southern Mesopotamian plans in Late Ubaid Tepe Gawra XIII. These temples have always been considered “imports” (Tobler 1950:45). Now, however, the northern introduction of this southern institution has been shown coincident with the first northern advances towards exclusive property rights within patrilineages (Forest 1983:109). The adoption of the southern temple, therefore, is an example not of context-free “trade” but of the northern assimilation of a southern institutional form already proven capable of consolidating restricted access to the means of production.

Rejection of Algaze’s hypotheses does not require retreat to mechanical formulations insisting upon a southern Mesopotamian civilization exclusively “based on” the surpluses of high-yield irrigation agriculture (Ekelund and Friedman 1979:43). But replacing the behavioral paradigms that currently dominate anthropological archaeology and refining the postmodern geography (Soja 1989) that affects much of the core-periphery debate will require reinsertion of social analysis into what once was the ultimate historical science.

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Algaze’s review is a useful summary of recent research, and aspects of his analysis are both novel and persuasive. Given sampling difficulties and preservation biases, his main thesis—that asymmetrical exchange relationships between core and peripheral societies were primary factors in both tempo and mode of initial southwestern Asian cultural evolution—will probably always remain arguable, but he effectively brings the available evidence to bear on this issue. In general, the importance of interregional exchange in the evolution of early cultural complexity is not clear, certainly there is no evidence that complex societies failed to evolve in otherwise appropriate ecological and demographic conditions simply because they did not develop effective interregional exchange systems. Also, interregional exchange appears to have been much less important in some other early civilizations, such as Egypt, than in southwestern Asia. But Algaze has illustrated how the specific resource distributions of southwestern Asia may have resulted in exchange systems that greatly influenced the unique character and history of southwestern Asian cultures.

A key element is his conclusion that the Susiana plain was colonized by Uruk settlers from the Mesopotamian heartland. He explains this unusual development primarily in terms of the relatively short travel distance between the Susiana and central Mesopotamia. He also infers the existence at times of two competing Uruk states on the Susiana. His analysis is plausible, but I think that the weight of the evidence [reviewed in Johnson 1987] is more consistent with indigenous development than with colonization. My own [Wenke 1987] surveys of later occupations of the Susiana have revealed patterns of regional and interregional artifact similarity and settlement-pattern changes that—while in some...
ways not directly comparable to those of the Uruk period—might also be interpreted according to Algaze's criteria as evidence of colonization and competing Susiana polities in periods when there is no other evidence of these.

I do not fault Algaze for his relatively narrow focus on southwestern Asia, but in some ways his analysis of exchange systems is most interesting when one compares Mesopotamia with other early civilizations and looks at international—not just interregional—exchange patterns. For example, Buto, the legendary capital of Predynastic Lower Egypt, has been shown [von der Way 1987] to contain late 4th-millennium B.C. occupations in which there are clay cones, pottery, and other artifacts that indisputably reflect contacts with southwestern Asian states, specifically the Amuq F period settlements in northern Syria and probably, by way of trade connections through that area, settlements in the Tigris, Balikh, Khabur, and Upper Euphrates region. The clay cones—though of local manufacture (R. Stadelmann, personal communication)—are virtually identical to those used at Uruk-Warka and other Mesopotamian sites to decorate temple buildings. One clay nail [Grubenkopfnagel] closely resembles those found at Susa. The Egyptian site of Maadi has long been thought to have been an important trading partner with mid-4th-millennium B.C. southwestern Asian communities. Algaze emphasizes the importance of the domestication of pack animals, such as the ass, in the evolution of exchange systems, and he considers it "highly probable" that some varieties of this animal were domesticated by the late Uruk period. Thus it will be of interest to him that Bökönyi [1985] has recently identified remains of numerous asses in mid-4th-millennium B.C. levels of Maadi and suggested that most or all were domesticated. Von der Way [1987:257, my translation] concludes that "the reason that it is Buto and not Maadi that shows these contacts with Amuq F and the Uruk culture is surely clear from its location: Maadi was an inland site, connected by land routes mainly with southern Palestine; Buto, on the other hand, was a—if not the—port in the western delta, connected by water not only with Palestine but obviously also with Amuq F and beyond there with the Uruk culture."

There is little evidence, however, that trade between Egypt and the southwestern Asian states was markedly asymmetrical.

In a more general context, it would be interesting to apply Algaze's ideas to the Harappan civilization, where the extreme urbanization and great artifact similarity over large areas in an apparent context of only minor social stratification would seem to require explanation in terms other than those he proposes.

In general, however, Algaze has provided a very current and comprehensive review of an important aspect of early Mesopotamian civilization.

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Algaze's analysis makes a persuasive argument for expansion as an integral part of statecraft even in these first strides toward civilization. According to Algaze, the motivation for expansion during the Uruk period was the acquisition of important resources; he mentions copper, bitumen, limestone, and semiprecious and precious stones. I would argue that textiles were the critical resource in this and later periods and that the evidence points to a complex relationship between agriculture and husbandry as an additional motivating force in territorial expansion.

Gelb [1986] has recently outlined a fundamental contrast between the cities of Ebla and Lagash in the Ur III period. In a stimulating revision of our understanding of state development, he argues that the ability to generate a surplus of animal products in dry-farming areas was a significant factor in state development in northern Syria. Mesopotamia, in contrast, was primarily agricultural, and the absence of references to pasture and large holdings of sheep and goats at Lagash underscores a mutual dependence between the north and the south for grain and wool/sheep respectively. Adams [1981] also emphasizes animal products but takes a somewhat different view, pointing out that "the ratio of sheep and goats to the human population was about four times greater there... than it is today" [p. 149] and suggesting that specialized herdsmen lived in communities beyond the limits of cultivation but managed by the state. The two points of view are not mutually exclusive; responses to the demand for animal products may have varied with local conditions.

For the Uruk period, there are numerous references to cattle, sheep, and goat in documentary sources [Tynmenv 1969:72]; Algaze refers to animal products in the context of textiles, which he describes as "traditionally a crucial state-controlled, export-oriented industry" the preconditions for which were present in Uruk times. A related factor, referred to by Algaze in a different context, is a barley-to-wheat ratio of three to one during the period, which he interprets as a response to salinization [thus invoking a scenario for the collapse of the Uruk expansionist phase similar to the one that has been developed for Ur III].

Since humans and grazing animals essentially compete for land (grain yields and pasturage), it seems likely that in the south tensions occurred between practices beneficial to agricultural productivity and those beneficial to animal husbandry as both industries expanded. Such conflicts may be inferred from the decline in the

1. "Der Grund, dass Buto und nicht Maadi diese Kontakte zu 'Amuq-F wie der Uruk-Kultur aufwist is sicherlich ganz einfach durch die Lage der Fundstätten erklärt: Maadi war eine Binnensta-
tion, über Land hauptsächlich mit dem südlichen Palästina verbun-
den. Buto hingegen war ein—wenn nicht der—Hafen im west-
lichen Delta, von dem aus Schiffsvorbindungen nicht nur nach
Palästina, sondern offenbar auch in Richtung 'Amuq-F und dort
weiter zur Uruk-Kultur verliefen."
ratio of wheat to barley and from Gelb's and Adams's discussions of highland trade and herdsmen in the Ur III period. One way of striking a balance between needs for grain and for animal products would have been to expand into territories suitable for husbandry; another would have been to develop specialized communities of herdsmen and yet another to practice both agriculture and husbandry within the limits of cultivation. Sedentary populations attempting to raise livestock in an agricultural context would have been dependent upon grazing their herds on fallow land or supplementary grain feedings. A reasonable solution would have been to shift to a more vigorous crop, barley, and allow animals to graze for specified periods in fields of barley, later harvested. This type of grazing on barley can be arranged in a variety of ways, although all result in lower yields (Poyck 1962:52). A shift from wheat to barley may represent an effort to accommodate the demand for animal products while maintaining grain production. In fact, animal husbandry and crop farming appear to be interrelated aspects of the agricultural system in some periods; for example, Jones and Snyder (1961:221) mention animals maintained in corrals and pens in areas referred to as "fields." The principal disadvantage of expansion or specialization would have been the difficulty of centralized administration of herds. As Adams (1981:149) puts it, "the formation of these impressive royal herds carried within it the seeds of a far-reaching dissolution of the web of political and economic interrelationships." Only the combination of farming and herding would have insured centralized control, but it would have entailed problems of allocation of resources. It seems to me reasonable to include the tension between agriculture and husbandry and the importance of textiles to the economy as an additional factor, along with the products discussed by Algaze, in territorial expansion.

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In general I am in agreement with Algaze. The argument that Uruk-expansion settlements sit along the major trade routes, that they tend to dominate critical exchange nodes, and that this expansion is more economic than political largely parallels my conclusions in 1986 (Zagnarell 1986), although Algaze goes into considerably more detail. There are, however, several major areas where I have some problems with his suggestions.

Throughout much of the article he describes the Uruk expansion as the consequence of relations between a more complex society and less complex, peripheral communities. In the last third of the article, he (correctly, I believe) notes that lower Mesopotamia consisted of a series of competing centers and argues that each center dominated its own section of the exchange system. Although it is certainly probable that certain Mesopotamian centers "controlled" some sections of the exchange route, is there any evidence that any Mesopotamian site had administrative control over any Uruk enclave site? Can one really imagine a site like Habuba Kabira/Qannas, with its urban character, as being under the administrative control of a lower Mesopotamian community? Since such direct long-term administrative control (as opposed to hegemonic domination) of other centers is evident only towards the end of the Early Dynastic and the early Akkadian period, it seems improbable that it was already functioning during the late Uruk. A more likely comparison than the Portuguese expansion (Portugal being a unitary/centralized state) would be the expansion of the early Classical Greek city-states, often in conflict with one another. New colonies were planned, encouraged, and organized by city-states. These new communities were frequently directed towards critical exchange nodes, becoming involved in exchange with non-Greek communities and often sending trade goods to the founding community, but they rarely remained under its administrative control. Rather, they began as or quickly became independent city-states, although maintaining sentimental and trade ties to the founding community. Even this Greek comparison is difficult, however, because the underlying production systems differed radically. I have argued that it was the centralized/public/state sector that produced much of the trade goods and that this production system encouraged exchange, which in turn funded the state centralization of power. One has to look at the real historical, economic, and political relationships to understand the changing incentives for social transformation.

I fully agree with Algaze that Mesopotamian communities did not directly control the surrounding countryside but often worked in conjunction with local, regional elites. In fact, in surveys of a considerable number of valleys in the Bakhtiari mountain region (Gandoman, Chighakhor, Shahr-e Kord, Lurdagan, Khana Mirza, and many others) I found "Mesopotamian" sites only in the extreme northeast, although very small amounts of Uruk ware (beveled-rim bowls, for example) can be found on sites with local pottery suggesting local control of the highlands (Zagnarell 1987, 1989). But the Bakhtiari material suggests a more complicated scenario than Algaze's. The key "Mesopotamian" Shahr-e Kord site, Sharak, also contains large amounts of late Sialk III ware, just as foreign to the Bakhtiari region and to the Shahr-e Kord plain. This suggests either an earlier domination of the northern route by central-plateau communities or a port of trade where north and south exchanged goods. Clearly, the central Bakhtiari highlands were not under the direct control of Mesopotamian communities, and cooperation by local elites represented the necessary precondition for such foreign enclaves. It should be noted that the Bakhtiari highlands do not seem to have taken up the same centralized production system that characterized many lowland regions.

Finally, Algaze suggests that the lowlands exploited the highlands, exchanging manufactured products for raw materials. Except by modern analogy (the industrial world exploiting the Third World), what evidence is there for exploitation? What criteria could one use for it?
The question, in my view, is whether relatively equal amounts of labor input were exchanged (i.e., as opposed to tribute or grossly unequal conditions of exchange). The exchange of raw materials for manufactured goods is not in itself exploitative. Local elites may have wanted Mesopotamian goods, which were difficult for commoners to obtain, as symbols of their elite status. Similar aims certainly explain some of the goods sought by Mesopotamian elites, as many of these were not necessities in the ordinary sense. For example, although timber was in short supply in Mesopotamia, the woods sought were not for huts but for palaces, symbols of massive state power.

The analysis of the recently discovered system of "foreign" Uruk sites requires much work and discussion. This article is certainly an important contribution to that discussion.

Reply

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Because I am writing from the field and have no access to a library, I can address only the major issues, and even these only at a general level. I am grateful for and intrigued by the references to pertinent work in the Mediterranean and the New World [Knapp] and, most interestingly, the Caucasus. Moreover, I am gratified by the general tone of the comments and by the number of suggestions offered for further research, which generally show a keen comprehension of the data and of the problems inherent in attempting even a preliminary synthesis of a corpus of material varying in reliability, far from complete, and, in some cases, not fully published. Under the circumstances, I have attempted to present what amounts to a testable hypothesis, namely, that asymmetrical cross-cultural exchange was a critical factor in [1] the initial crystallization of Mesopotamian civilization during the 4th millennium B.C., [2] the closely connected processes of expansion of the rapidly growing Uruk city-states of the time, and [3] the delineation of increasingly complex polities in the Mesopotamian periphery throughout the 3rd millennium. The last of these points appears to be most controversial and should be made clearer.

The sociopolitical impact of the Uruk expansion in the Mesopotamian periphery predicted by my model is rapid initial growth followed in the long run by regression and stagnation. The emergence of a vigorous Proto-Elamite state in southwestern Iran following the Uruk retreatment from Susiana conforms closely to the predicted short-term effects of the model. Schwartz and Weiss are correct in pointing out that Ninevite 5 settlement patterns in northern Mesopotamia present a sharply varying picture. However, we still know little about pertinent developments in the northern Syrian plains west of the Euphrates and about the endogenous reasons for differences in developmental trajectories between Proto-Elamite Iran and the northern Mesopotamian plains during the early 3rd millennium. Thus, the Ninevite 5 regression could well represent the other side of the coin: indigenous devolution within the core area of intrusive Uruk settlements resulting from the long-term effects of the asymmetrical exchange of the preceding period.

The question of the impact of the Uruk intrusion on neighboring peripheral communities brings me to the comments of Lamberg-Karlovsky and Schwartz regarding the "uniqueness" of the Uruk expansion—particularly as contrasted with the Akkadian penetration of virtually the same area more than half a millennium later. In arguing that the two episodes represent recurrent instances of a single cyclical phenomenon I do not gloss over the considerable differences of detail that may be observed between the two. Schwartz is correct, for example, in suggesting that the massive emigration from the alluvium of the earlier period is absent in the Akkadian case. These differences may be explained in part by the fact that sociopolitically the periphery that the Akkadians attempted to penetrate was no longer a tabula rasa. Rather, largely as a consequence of Mesopotamian intrusion in the Uruk and late Early Dynastic periods, the Akkadians had to deal with a variety of more or less powerful local polities [e.g., Tell Mardikh/Ebla, Tell Chuera, Tell Taya], each centered on a city-state of considerable size [Weiss 1983].

Perhaps the most significant issue raised is that not enough consideration has been given to the possibility that factors other than long-distance exchange may have had a bearing on the Uruk expansion. One such factor is suggested by Wright, who considers the possibility that the requirements of textile production for export may have helped spur territorial expansion into areas suitable for animal husbandry. Another is put forward by Lamberg-Karlovsky and Schwartz, who see demographic shifts within the Mesopotamian core as potentially important. (I did not, it should be noted, completely disregard demography, arguing that the Uruk penetration of Susiana must be understood in the context of significant population dislocations within the Iraqi alluvium.) But the most important factor not accounted for in my synthesis is that addressed here by Lamberg-Karlovsky and privately by R. McC. Adams [personal communication, 1987]: the potential role of political and religious ideologies. These scholars are correct, of course, that my presentation has an excessively narrow focus on [undeniably important] economic factors. As Lamberg-Karlovsky insightfully notes, however, this emphasis is suited to the nature of the available archaeological data, which simply do not lend themselves easily to the evaluation of noneconomic variables.

Another important concern, raised most emphatically by Weiss, is the fragile nature of the evidence for the flow of imported resources into the Mesopotamian core during the Uruk period. As I have acknowledged, "fully representative samples are not yet available," and it remains impossible to quantify the presumed increase in
Uruk-period imports. Yet this need not mean that we cannot extrapolate from evidence that, though circumstantial, is persuasive. Later historical documentation clearly indicates that large urban agglomerations such as developed in Mesopotamia during Uruk times [Late Uruk Warka is now estimated at ca. 200 ha [Finkbeiner 1987]] imported a significant proportion of their nonagricultural material requirements. It would seem to me that the succession of impressive Uruk public buildings at Warka simply could not have been built without access to roofing timbers of a type not locally available. Thus Weiss's citation of Margueron's assertion that nothing substitutes for wood is appropriate but in a sense entirely contrary to that in which he employs it. Moreover, Foster's conclusion that Sargonic-period wood shipments appear to have represented "a private enterprise on a modest scale" reflects nothing more than the narrow focus of the archives from Umma available to him. Royal inscriptions of late Early Dynastic, Akkadian, and Ur III kings do in fact attest to both the importance of securing access to timber supplies throughout the 3rd millennium and the state's role in that enterprise. Further, the variety of precious and common metals, exotic and utilitarian stones, and various other imported resources present in Uruk levels of Mesopotamian sites is significantly greater than that attested in earlier contexts at the same sites. At the very least, this is indicative of the much wider geographical range of external contacts and exchange characteristic of Uruk times.

The absence of reference in my paper to contacts between the Uruk world and Egypt in the late 4th millennium B.C. is not accidental. The complexity of the Egyptian state in the early dynastic period can hardly be compared with that which must be presumed for the much smaller polities of the Syro-Mesopotamian plains and the Zagros/Taurus highlands at the time. Indeed, recent evidence for a significant Egyptian "Dynasty 0" expansion into the Sinai, the Negev, and southern Palestine [Kantor n.d., Stager n.d.] parallels in startling ways the expansion of Mesopotamian societies of the Uruk period [Marfoe 1987]. This evidence indicates that early contacts between the nascent civilizations of Mesopotamia and Egypt must have been of a fundamentally different nature from those hypothesized to have existed between Uruk states and communities in their immediate periphery—that is, that they were not asymmetrical. It is gratifying to see that Wenke reaches the very same conclusion after reviewing the evidence from an Egyptian perspective.

Brentjes appears to believe that I argue for a "single Uruk civilization...the product of a single unified Uruk state." In contrast, I stated that "we must visualize the Uruk world as characterized by a small number of cores, almost certainly in fierce competition." Each of these cores, I contend, dominated a specific portion of the long-distance exchange network. Thus, Schwartz and Zagarell are correct in suggesting that the well-documented competing-Greek-city-states model could potentially shed considerable light on available archaeological evidence for the Uruk period.

Brentjes's suggestion that colonization of Susiana is unlikely in view of the Elamite character of the following three millennia there is based on a radical definition of "colonization" as total replacement of the indigenous population. I make no such claim. While his warning that pots are not people is usually well taken, the fact remains that the cultural similarities between Susiana and the alluvium in the second half of the Uruk period go well beyond artifactual assemblages, encompassing uniform record-keeping and administrative procedures, comparable modes of social organization, and common mythology and religious rituals. Those who argue for indigenous development in the Susiana throughout the Uruk period [Wenke, following Johnson 1987] will have to come up with a model that accounts for the overwhelmingly Sumerian character of elite activities in southwestern Iran by the second half of the 4th millennium.

I agree with Kohl and Kotter regarding the obvious geographical gaps in our understanding of the northern and northwestern Mesopotamian periphery—particularly away from the more intensively surveyed rivers. I am quite aware of the biases in any analysis of the data. Partly to correct some of these biases, I am currently engaged in surveys of southeastern Anatolian areas to be flooded by the construction of new dams along the Tigris and the Euphrates. The areas involved include more than 400 m² from the vicinity of Birecik to Carchemish on the Euphrates and from the Batman area to the environs of Cize on the Tigris. Added to what information we already possess from previous ongoing research in southeastern Anatolia, northern Syria, and northern Iraq, these surveys should provide a more representative cross section of areas near the principal waterways of northern Mesopotamia in which further Uruk settlements could be located, thus confirming or undermining some of my hypotheses as to the strategic rationale for the location of Uruk sites in the north. Preliminary indications appear positive. Another intrusive site has been located along the Euphrates [Sa'di Tepe, located on top of a natural ridge some 8 km upstream of Carchemish [Algaze 1989]]. Field research now in progress should help clarify the matter further.

References Cited


Erratum

In Kennedy and Deraniyagala’s report on fossil remains from Sri Lanka in the June issue, the works listed under “Deraniyagala” [p. 398] should, from 1980 on, have been attributed to S. U. Deraniyagala.

Prizes

The Society for Applied Anthropology invites nominations for the 1989 Malinowski Award, presented to an outstanding social scientist in recognition of efforts to understand and serve the needs of the world’s societies through social science. Nominees should be of senior status and, whether within or outside the academy, strongly identified with the social sciences. Their contributions should have implications beyond the immediate, the narrowly administrative, or the political. The recipient of the award should be willing and able to address the annual meeting of the Society. Nominations should include a detailed letter outlining the candidate’s accomplishments, a curriculum vitae, and selected publications and other substantiating material and should be sent by January 26, 1990, to Carole E. Hill, Malinowski Award Committee, Department of Anthropology, Georgia State University, University Plaza, Atlanta, Ga. 30303, U.S.A.