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Emergent Landscapes of Movement in Early Bronze Age Northern Mesopotamia

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Introduction

As the material manifestations of landscapes of movement, surviving traces of roads and tracks have much to tell us about economic, political and social elements of ancient societies, provided that we approach them with full understanding of the limits placed on interpretation by chronological and taphonomic issues. In this regard, an important distinction to make from the start is between *roads*, which are planned and constructed features, and *tracks*, which are non-constructed paths created by surface disturbance (Hyslop 1991:29, Trombold 1991:3). The former tell us more about where movement was intended to go instead of where it went, and these intentions may be linked to a small subset of society (i.e., the planners and labor mobilizers). The latter, on the other hand, owe their existence to continued use; indeed, their width and depth are indicators of their span of use and the intensity of movement along them. Roads speak of intentions, tracks of actions.

The case study presented here will focus on a landscape of tracks which emerged alongside an urbanized settlement pattern in the northern part of the Fertile Crescent (Fig. 1) in the mid- to late third millennium BC.² This was not the initial appearance of urbanism in this region; the first large settlements had appeared a millennium earlier, in the context of the “Uruk Expansion” phenomenon, wherein settlers from southern Mesopotamia colonized a broad expanse of the Near East for some 500 years (Algaze 1993, Rothman 2001, Stein 1999). But

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² The long history of research in this area has produced competing and confusing variations in geographical and chronological terminology which will be mostly passed over in this paper. Geographically, this region falls into northeastern Syria, northern Iraq, and southeastern Turkey today, and is often referred to as Northern (or Upper) Mesopotamia or the Jazira (Arabic for “Island”). In absolute dates, the urban settlement phase began around 2600 BC and lasted until around 2000 BC (although these dates, particularly the end, are fiercely debated). In the most general Near Eastern chronology, this time spans the later Early Bronze Age (EBA). In the southern Mesopotamian historical chronology it is the Early Dynastic III through Akkadian periods, and in the new “Early Jazira” chronology, it is EJ III-IV (and possibly into EJ V).

Uruk urbanism was, with the possible exception of Tell Brak, a shortlived and intrusive phenomenon which vanished with the Uruk colonists at the end of the fourth millennium BC. Early Bronze Age urbanism appears to have been a qualitatively different phenomenon, in both scale and pervasiveness.

At the top of the settlement hierarchy were a series of mudbrick settlements of 65-120 hectares. Most were composed of a high mounded area of 10-15 ha, where settlement had existed for millennia, surrounded by a more extensive lower town, which resulted from the abrupt demographic growth around 2600-2500 BC. By the end of the 20th century AD, nearly all of these sites have been the focus of excavation, allowing us to make some generalizations about society at the time (see recent reviews in Akkermans and Schwartz 2003, Stein 2004). Research has concentrated on the elite high mound areas, which have revealed monumental temple and palace constructions. Specialized craft products included metalwork in bronze, gold and silver, and mass-produced ceramics. Artistic styles and administrative technologies (clay sealing and cuneiform writing) were regionally distinct but clearly based on those of the elites in the cities of southern Mesopotamia. In the infrequent times when excavations have treated the non-elite lower town areas, they have revealed dense but variable residential housing, packed tightly along narrow debris-strewn alleys (Pfälzner 2001). Non-urban settlements have been neglected by excavation, but surveys have shown them to be generally in the range of 1-5 ha, with a few intermediate towns in the 10-25 ha range. The nature of settlement on these smaller sites is poorly understood, but is assumed to have been primarily agricultural with some pastoral component.

These settlements emerged simultaneously with an elaborate network of thousands of kilometers of tracks. In this presentation, I will describe this archaeological landscape and then move to what the reconstructed pattern of tracks can tell us about economic and political aspects of EBA society. First, however, I will first review the sociopolitical frameworks that have been employed in synthesizing the archaeological data. My own understanding of the composition of society places a much greater emphasis on emergent, or bottom-up, aspects than does the most common ecosystemic model, and the network of tracks is an important component of this alternative model.

The Organization of Early Bronze Age Society

Publications on EBA northern Mesopotamia have often been limited to culture-historical description, but a few syntheses have appeared, especially in the research of Harvey Weiss at Tell Leilan and its region (1997, 2000, Weiss and Courty 1993, Weiss et al. 1993). Weiss has employed an ecosystemic approach, based around a highly centralized and hierarchical state which has incredible power over the lives of the rest of society. According to this model, elites maintained their status by controlling most aspects of the staple economy, in particular through the redistribution of cereals in standardized ration vessels. Cereal and animal production was intensified to sustain this political economy. Aspects of craft production, including elements as mundane as ceramic production, were also under the direct control of the state. The state could and did occasionally redistribute the rural population for purposes of economic efficiency and political control. Despite these conditions, this model includes no internal conflict, and in classic ecosystemic fashion, remained in a stable equilibrium until forced to change by external factors (in this case, collapse at the hands of an abrupt aridification event).

In contrast, the sociopolitical model employed here attempts to address the critiques of hierarchical ecosystemic models such as this one. Instead of a rational managerial bureaucratic

elite, it incorporates an emic social model which uses the household as a metaphor for social and political relationships at multiple levels of society. Such “house societies” have been the objects of recent study (Carsten and Hugh-Jones 1995, Joyce and Gillespie 2000), but with some exceptions (e.g., Gillespie 2000) these have all been small-scale societies. Several recent studies have analyzed Sumerian, Akkadian, and Egyptian terminology used in political contexts to suggest that the household has been a pervasive organizing principle throughout the Near East and Egypt since at least the third millennium BC (Schloen 2001, Lehner 2000). The resulting Patrimonial Household Model (PHM; Schloen 2001) depicts a society of nested households of various scales, ranging from the individual domestic unit to the extended lineage to temple households and up to the entire kingdom.

The PHM recognizes the limitations of political power and economic control in early complex societies and reintroduces agency, history and contingency. At first glance this arrangement of nested households might seem rigidly hierarchical. In fact, being based on continuously renegotiated personal relationships rather than an inflexible bureaucratic structure, the vertical and horizontal connections between various households were highly dynamic, and are better characterized as heterarchical (Crumley 1987, 1995). To the extent that these relationships had a material basis, it is more likely that it centered on commensalism (Dietler and Hayden 2001, Pollock 2003) or exchange in high value items, rather than control over the staple economy (e.g., D'Altroy and Earle 1985). To a considerable extent, however, these interpersonal relationships were probably based on non-material factors such as personal charisma and learned political skills (Schloen 2001). They are therefore based to a far greater extent on consensus-building between rulers and local elites and lineage heads than has been appreciated. Michael Dietler has stated succinctly how it is often assumed that

... once symbols of political power and status have been 'materialized' and authority has become institutionalized, that somehow stability and permanence have been achieved and the work of relational micro-politics is made redundant and unnecessary. This is, of course, the dream and the ideological projection of every state apparatus: a kind of institutional fetishism that displaces contingent relations between people into stable relationships between people and permanently reified 'objects.' But nothing could be farther from the truth. The nasty little secret of history is that states and empires are very fragile, volatile, and transitory—far more so than their buildings and monuments. They are a fluid *process* rather than a durable thing, and they depend on constant hard work in the micro-political struggles of negotiation and legitimation to survive and operate (Dietler 2003:271-272; emphasis in original).

Thus not only are conflict and competition to be found within society (e.g., Brumfiel 1992, Brumfiel and Fox 1994, Stein 2001, Yoffee 1997), society is to a large extent emergent from these processes of social and political renegotiation (van der Leeuw and McGlade 1997).

The necessity of continually reproducing the social hierarchy shifts emphasis from reified social units to the individual actors involved, a focus on agency that is increasingly common in archaeology (Brumfiel 1992, Dobres and Robb 2000, Dornan 2002). While the activities of specific individuals may be difficult or impossible to recover from the archaeological record, the dynamic structure of the PHM offers a set of goals and motivations that would have been widely shared across society, in particular the expansion of one's household (in both the literal and metaphorical senses) and the acquisition or intensified production of any material resources which would aid in such an expansion. In this sense, the PHM employs the “generic” individual (Bell 1992), perhaps at the expense of the possibility of resistance and individual creativity (Dornan 2002:315). If we can envision these widely-held motivations as the local rules which ultimately produce the global order of early urban society, the PHM fits in nicely with the new

directions in research on complexity, which developed in the physical and natural sciences and is now increasingly being applied in the social sciences (e.g., Kohler and Gumerman 2000, Adams 2001, Lansing 2003). The totality of these social actions is the society itself, but since its structure is continuously being renegotiated by the heads of households of various scales, it is constantly in a state of change of endogenous origin.

Although not discussed to this point, the landscape has an important role to play in ancient society, both in its operational dynamics and with regard to taphonomic issues. The potentialities and limitations of the environment are significant in all agricultural societies, and fluctuations in environmental variables can have substantial social impact (Wilkinson 1994, 1997, 2000b). Phenomenological approaches often downplay or disregard climate, focusing entirely on the interactions between humans and the cultural landscape (McGlade 1999). Natural and cultural transformations of the archaeological record leave us with a complex palimpsest of surviving traces which must be understood in order to make proper interpretations (Wilkinson 2003:7-9).

It is from within such a framework that I approach the study of settlement and movement in northern Mesopotamia of the Early Bronze Age. Contrary to the expectations of the centralized and hierarchical ecosystemic approach which has long been the dominant interpretation, I see the elaborate landscapes of movement as largely emergent from the activities of individuals.

The Archaeological Landscape

The offsite record of the Early Bronze Age in northern Mesopotamia is spectacularly preserved for its age, and given the potential agricultural productivity of the environment.³ Both factors encourage the erasure of landscape elements: great age means that cultural and natural taphonomic processes have had more opportunities to remove archaeological traces, and agricultural potential inevitably attracts destructive resettlement. The primary reason for this surprising preservation is that areas of northern Mesopotamia have periodically cycled between sedentary agriculture and pastoral nomadism. For example, northeastern Syria has been mostly given over to low-density sheep and goat nomads for the last millennium (Lewis 1987). The result of this settlement history is a preserved landscape of over 1,700 km of ancient tracks, most to be dated to the Early Bronze Age (Fig. 2). This paper will concentrate primarily on the Upper Khabur basin of northeastern Syria and adjacent areas of northern Iraq. The basin today is entirely under winter cereal cultivation, with small but growing pockets of irrigated summer crops, mostly cotton for the international market.

The tracks themselves, variously called hollow ways (Ur 2003) or linear hollows (Wilkinson 1993), are broad and shallow linear depressions across the landscape, very much like the paths of the Arenal region in Costa Rica (Sheets and Sever 1991, Sheets et al. 1991) but on a larger scale. The majority are between 60-100 m wide and up to 1 m deep, although a small subset are half that width (Fig. 3). Precise measurements are difficult, however, since what survives are not the tracks themselves but the transformed remains on the surface. In some cases the depressed track has been infilled with locally eroded sediments, and in other cases, it has channelled surface runoff which has deepened it. In the former situation, the lack of topographic

³ I use the present tense here, but this situation applies up to the mid-1960's, the time of acquisition of the satellite photography used as the basis for landscape reconstruction (Ur 2003). Subsequently, intensified agriculture and irrigated cotton cultivation has exacted a heavy toll on archaeological landscape features.

expression can be offset by denser vegetation growth (i.e., crop marks; Wilson 1982). In the latter, the depressed topography collects moisture, which translates into darker soil in the fall and again, more abundant crops in the spring.

Although not impossible, ground recognition is often difficult, so historically these features have been studied from the air. Hollow ways were photographed opportunistically by the pioneer of aerial archaeology Antoine Poidebard, although he was primarily interested in Roman military installations (1934). In the 1950's, the nationalist government of Syria conducted an aerial survey in the process of developing the northern plains for agriculture; a Dutch soil scientist involved in this survey, Willem Van Liere, teamed up with the archaeologist Jean Lauffray to map systematically the linear road features which were so apparent on the imagery (van Liere 1963, Van Liere and Lauffray 1954-55). In the 1980's, Van Liere's somewhat speculative dating of the linear features was confirmed through high intensity systematic surface survey by Tony Wilkinson in adjacent areas of northern Iraq (Wilkinson 1993, Wilkinson and Tucker 1995). Most recently, I have used declassified intelligence satellite photographs from the US CORONA program to map hollow ways across northeastern Syria (Ur 2003, on the use of CORONA in archaeology, see Fowler 2004).

Roads and tracks are notoriously difficult to date; indeed, the great landscape historian and expert on Roman roads Christopher Taylor was also one of the most pessimistic about the chances of success in this endeavor (Taylor 1972). There is little about hollow ways themselves which can be dated, but the most typical broad ones have particularly strong associations with high mounded sites of the Early Bronze Age (ca. 2600-2000 BC). The narrower variety are closely associated with settlements of the Sasanian/Byzantine through Early Islamic periods (ca. 500-1000 AD). This dichotomy was initially recognized by Van Liere and Lauffray and later confirmed by intensive survey in northern Iraq (Wilkinson 1993, Wilkinson and Tucker 1995) and in the Upper Khabur basin (Wilkinson 2000a, Ur 2002a, 2003). The use of these hollow ways in other periods cannot be excluded, but in almost all cases, sites of other periods with associated hollow ways feature EBA settlement as well.

Their survival is a patterned product of closely related cultural and natural factors. Within the Upper Khabur basin, they are disproportionately preserved in the central and western areas, and this is likely due to the basin's settlement history and its climate. Rainfall is high in the northern and eastern parts, where the foothills of the Turkish Taurus Mountains trap moisture. The reliable rainfall results in local movement of sediments which obscures tracks. Another consequence of higher rainfall is reliable agriculture, so settlement has been nearly continuous, leading to greater attrition of landscape features. In the southern basin, lower rainfall encourages pastoralism, rather than agriculture, as the dominant economic mode, with corresponding lack of hollow way formation. Elsewhere, taphonomic processes have had localized effects. For example, few hollow ways survive in the narrow floodplains of the major north-south wadis (if they ever existed there), probably because these are areas of long-term sediment aggradation. Subsequent premodern land use has taken a toll as well, especially around the Roman-Byzantine city of Nisibin (modern Qamishli), where an elaborate irrigation system has created a large void in the pattern of surviving hollow ways (see Fig. 2).

Within the zones of hollow way preservation, the tracks themselves are patterned and can be roughly subdivided into inter-site routes and radial systems. The intersite routes run between sites of the EBA (in the case of broad hollow ways) and Sasanian-Early Islamic period (in the case of narrow hollow ways). They tend to be straight but not rigidly so, and often they will go around major topographic impediments. Intersite routes probably carried a range of human and

animal traffic between sites for a variety of purposes. The majority of hollow ways simply radiate outward from EBA sites in a spokelike pattern. Unlike the intersite routes, these simply fade out without reaching an identifiable satellite site, generally at 3-5 km from the central site. These routes were closely related to the staple economy. They led farmers and draft animals to and from the agricultural fields, and were the pathways through the fields for herders and their flocks to reach the pasture areas beyond (Wilkinson 1993).

Tracks and the Economic Landscape

To date, the patterns of hollow ways have been used exclusively to reconstruct the economic landscape, particularly with regard to the production of staples (cereals and animals) in the context of EBA urbanism. Already in the 1950's Van Liere and Lauffray interpreted the radial patterning as an indicator of a society of autonomous and self-sufficient agricultural towns and villages:

Cette répartition des agglomérations suffirait à prouver que les populations primitives de ces régions étaient purement agricoles à l'origine. La naissance des grands tells, aussi bien que de leurs satellites, fut fonction d'une économie rurale et jamais de contingences commerciales ou militaires, même si, dans la suite des temps, ils sont devenus place-forte ou lieu d'échange. La distribution des routes rayonnantes montre que les transports d'un district à l'autre existaient à peine (Van Liere and Lauffray 1954-55:136).

In fact, the patterning in hollow ways is remarkably similar to what would be predicted by geographic studies of traditional agriculture in Europe (e.g., Chisholm 1962). The radial patterns represent efficient movement of labor to agricultural fields, and of agricultural products back into the settlement after the harvest. Indeed, it would seem likely that such patterned economic movements would be typical of all phases of agricultural settlement in northern Mesopotamia, yet radial tracks only appear in association with sites of the EBA, and to a lesser extent with sites of the late 1st millennium AD. Understanding why this is the case is the key to understanding the nature of the EBA staple economy.

In placing the tracks of the EBA in their economic context, it is important to recognize that these features were not created because of transportation efficiency. Hollow ways formed as human, animal and wheeled traffic alternately compressed the fine-textured soils in the wet season and then disturbed them in the dry season, which allowed for aeolian erosion (Hindle 1993:11, Sheets and Sever 1991:58-63, Tsoar and Yekutieli 1992, Wilkinson 1993:556-59). At certain times of the year, they would have provided a more compact surface for foot, animal and possibly wheel transportation, but during the rainy season, their depressed morphology would have collected runoff. In the winter in the Upper Khabur basin today, tracks will hold standing water and are avoided; movement shifts to parallel tracks across fallow fields.

If hollow ways were often muddy and inefficient for movement, why were they continuously used? In the Arenal Region, continuous movement along ridges was meaningful, as people traveled from settlement to cemetery; movement was constrained onto paths by their ideological significance (Sheets and Sever 1991). In the case of northern Mesopotamia, movement was constrained by the presence of cultivated fields bounding the tracks. Such agricultural constraints explain the fading radial routes: at a certain distance, these tracks had moved beyond the zone of cultivation. Movement was no longer restricted by the presence of fields and could disperse. Dispersed movement meant dispersed compaction and disturbance, and therefore hollow ways did not form (Fig. 4; Wilkinson 1994:492-93).

Leaving aside taphonomic issues, if we assume that the terminal ends of hollow ways represent the boundary between the zone of cultivation and the zone of pasture or non-agricultural land beyond it, it is possible to estimate ancient agricultural sustaining areas by connecting these terminal ends. These archaeologically documented agricultural catchments can be compared to hypothetical sustaining areas derived from population estimates (Fig. 5). Settlements whose agricultural catchments are larger than their hypothetical sustaining areas were surplus producers, whereas those with catchments smaller than sustaining areas would have been surplus consumers. In the region around Tell Beydar, a small center of 17 ha, almost all settlements would have produced a surplus, with the exception of Beydar itself (Fig. 6; Wilkinson et al. in press-a). Using the same methods, major centers like Tell Hamoukar (105 ha) would have needed to import up to half of the cereal production necessary to sustain them (Ur 2002b, 2004:222-231).

These calculations assume biennial fallow, a practice that serves to ameliorate the loss of soil moisture and nutrients as a result of cultivation. The evidence from landscape archaeology in the basin suggests, however, that cultivation was intensified by violating fallow at the height of the EBA urban phase. If fewer (or no) fields were left fallow, movement would be constrained onto the tracks between fields to an even greater degree; the intensified disturbance would cause the tracks to sink deeper and more quickly than if a fallowing regime were followed.

Supporting evidence for this conclusion comes from another off-site feature: a continuous but variable carpet of abraded ceramic material which covers the areas between sites, with greater density around EBA settlements. These “field scatters” have been documented in the Old World from England to Oman (Bintliff and Snodgrass 1988, Wilkinson 1982) and now are recognized in the New World as well (Killion 1992). Although such off-site scatters can result from a number of processes, when displaying such continuous distribution they are best interpreted as the remains of ancient manuring practices. Settlement-derived wastes were collected and deposited onto the fields as fertilizers; the organic component has long since decayed but the incidental inorganic component (mostly sherds but also lithics) remains in the topsoil. Dense scatters surround EBA sites in northern Iraq and northeastern Syria (Wilkinson and Tucker 1995, Ur 2002a). Like hollow ways, they are difficult to date with precision, but they are closely associated with sites of the Early Bronze Age in northern Mesopotamia. Such practices would have ameliorated the ill effects of continuous cropping.

The combined evidence of urban settlement patterns, deeply incised radiating hollow ways, and dense field scatters suggests that the agro-pastoral economy was running under great intensity. How are we to place such evidence within our model of EBA urban society? In early presentations of his land use model, Tony Wilkinson does not suggest an economic motivation behind agricultural intensification; he (perhaps wisely) limits himself to reconstructing the demographic possibilities, given limitations of climate, geography and labor (Wilkinson 1994, 1997).⁴ Proponents of hierarchical ecosystemic models might be tempted to interpret this intensification as the result of increased coercion and extraction from a growing elite based on a staple political economy.⁵

⁴ Wilkinson’s early ecosystemic models have now been superceded by new agent-based modeling as part of the Modeling Ancient Settlement Systems (MASS) project (Wilkinson et al. in press-a, Wilkinson et al. in press-b).

⁵ Ironically, the proponents of the Northern Mesopotamian version of this model dispute the antiquity and interpretation of hollow ways and field scatters (Courty 1994, Weiss 1994) despite the fact that these features provide empirical evidence for the agricultural intensification that they infer from state coercion.

Neither the landscape evidence nor excavation data support such an interpretation, however (Ur and Colantoni in press). Monumental palace and temple households, which have been the primary focus of excavations since its inception in northern Mesopotamia, show no facilities for large-scale cereal storage. The so-called “ration vessels” (Senior and Weiss 1992) are actually serving vessels, and their supposed standardization results from their mass production (Stein and Blackman 1993). Their findspots suggest that they are closely related to the practice of commensalism (see below).

The landscape evidence is similarly equivocal. Hollow ways were not constructed by a central authority but rather emerged from the uncoordinated actions of individuals as they maintained their fields and took their animals to pasture. Similarly, field scatters marking manured zones are an agglomeration of individual actions by farmers fertilizing their fields. Not surprisingly, there is no evidence for state-controlled collection and redistribution of manure for intensification. On the other hand, waste disposal within urban residential areas was highly localized: household debris was thrown into the streets immediately outside of the house, and animal wastes were collected in sumps within courtyards (Ur and Colantoni in press). The raw materials of manuring were readily available to all urban residents without the help of central authorities.

If the great temple and palace households were not controlling the staple economy, what accounts for the clear evidence for intensified production? If, as within the Patrimonial Household Model, one understands the urban social fabric to have been composed of a dynamic arrangement of competing households of various scales, intensification can be understood as one component of the continual renegotiation of the social hierarchy. Although I would maintain that status was not based primarily on staples, agricultural products had a role to play in the construction of sociopolitical relationships, especially in commensal events involving alcohol and meat consumption. Archaeological studies of commensalism have focused on large-scale feasting events (see especially papers in Dietler and Hayden 2001), but if communal eating and drinking events were the arena in which these processes played out, then every household had the motivation to produce more. Indeed, it is possible that the dramatic expansion of barley production in the EBA was for fodder, rather than human consumption (Charles and Bogaard 2001).

My focus thus far has been on the emergent aspects of the EBA economy and the possible motivations of politically ambitious actors within it, at the expense of top-down elements of control by elite households. My argument is not that these households did not extract surplus agricultural and animal products from dependents or sub-households; certainly this did occur, but to a much lesser extent than supposed by traditional centralized ecosystemic models. The nature of land tenure throughout Mesopotamian history (Renger 1995, Grégoire and Renger 1988) suggests that such surplus transfers (which could be variously called rents, tribute, tithes, etc.) fit well within the PHM: land was rarely “sold” but rather usufruct rights were granted, generally in exchange for either service or a portion of the yield. These usufruct rights could be re-granted down the hierarchy of households in a very fractal pattern. Ideally with “ownership” retained by the largest household, but in practice lower ranking households maintained control of land and it could even be “inherited” (Renger 1995).

Ultimately, top-down economic control was probably limited to small-scale transfers of cereal and animal surpluses from small households to the larger ones which controlled agricultural land, and these surpluses were probably consumed by the members of these larger households, rather than redistributed. The tracks of northern Mesopotamia, however, formed

primarily as the result of the self-motivated and uncoordinated movements of individual farmers and herders, acting primarily in the interests of their own households.

The Political Landscape of the Kingdom of Nagar

As noted by Bell (1992), it is far easier (although still not unproblematic) to impute economic motives to individuals in the past than it is other motivations, in the absence of explicit textual records. Fortunately, by the EBA, elite households in the urban centers of northern Mesopotamia had adopted the cuneiform writing system long in use in southern Mesopotamia. Although tablet finds have been rather meager to date, we now have enough records from Tell Mardikh (ancient Ebla), Tell Beydar (ancient Nabada) and Tell Brak (ancient Nagar) to sketch the bare outlines of political structure (Eidem, Finkel, and Bonechi 2001, Ismail et al. 1996, Sallaberger and Ur 2004). These outlines allow us to place the tracks within the context of political action at the time.

Within the Upper Khabur basin, the most important city was Nagar, which was considered to be the political equal of the kingdoms of Ebla and Mari (see Fig. 1). The ruler of Nagar married the daughter of the king of Ebla, and the two royal households exchanged high-value luxuries such as silver, textiles, and rare equids (Archi 1998). Nagar's control over the central and western parts of the basin seems assured: the ruler of Nagar is mentioned in the tablets found at Nabada, and Nabada is listed as a dependent town of Nagar in the administrative tablets of Ebla. However, neither Tell Mozan (ancient Urkesh) or Tell Leilan (ancient Shekhna) appear as dependents of Nagar; therefore the eastern basin might have comprised one or more independent kingdoms at the end of the third millennium BC (Sallaberger and Ur 2004).

Our best image of the internal operation of the Nagar polity comes from the more than 200 economic tablets from Tell Beydar/Nabada, which primarily record lists of men (labor rolls?), allocations of draft animals, and quantities of sheep and cereals (see Sallaberger 1996, Van Lerberghe 1996). Envisioned as a hierarchical staple-financed state, one might expect these tablets to record the movement of cereals and animals from the "province" of Nabada to the central authority at Nagar. In fact, no transfers of any kind between Nabada and Nagar are mentioned. Quantities of people, sheep and draft animals are small and are probably limited to the holdings of the major ruling household of Nabada itself, which appears to have operated quite independently of the nominal ruler of Nagar, at least in economic terms (Sallaberger and Ur 2004). The basis of the political relationship between Nagar and Nabada appears not to have been exchange in staple products.

The relative ranking of the ruler of Nagar and the elites in the major household of Nabada does emerge from these tablets, however, and in a way that involves the network of tracks. The tablets record the allocation of cereals as feed for the donkeys of the ruler of Nagar for the number of days of his stay at Nabada, and they often mention his visits to other towns and shrines in the immediate area (Sallaberger 1996). The quantities of cereals involved make it clear that these were not only donkey fodder but must have also been provisions for the ruler and his retinue (Widell 2004).

We can now imagine the ruler of Nagar moving along the tracks of his kingdom with a large contingent of donkey-driven carts and retainers. Reading between the lines of these terse administrative tablets, we can perceive the relatively decentralized nature of the kingdom, and the ruler's somewhat tenuous hold on power. Just as I have proposed for the dynamic web of social relationships comprising the fabric of urban settlements, the ruler of Nagar had to make the rounds of the polity, cementing his political ties with face-to-face interactions. Rather than

being institutionalized, these relationships required continuous renegotiations: according to the tablets, the ruler was a frequent visitor.

In his movement across the plains of northern Mesopotamia, the ruler and his retinue must have passed by the farmers and herders as they took the same tracks to and from fields and pasture. Regional travel of the sort that the ruler would have made between the capital at Nagar and the provincial center at Nabada was certainly possible, if the reconstructed distribution of tracks in Fig. 2 is any indication. Such movement would have gone from settlement to settlement, as no direct tracks or roads existed between Nagar and Nabada, or between Nagar and any of the other major sites of the EBA. In moving through the landscape, the ruler of Nagar had to respect the local track networks as well as the local sociopolitical hierarchies which produced them (Sallaberger and Ur 2004:69-70).

Landscape Taphonomy and the Interpretation of Ancient Tracks and Roads

It is worth briefly mentioning the role of cultural and natural processes in transforming the landscape record. A failure to recognize the “structured destruction” of archaeological landscape features will result in incorrect interpretations (Williamson 1998, Alizadeh and Ur in press). As described above, preservation of hollow ways is not uniform across the Upper Khabur basin. The most striking example is the set of broad areas devoid of tracks in the central basin, especially the area southeast of the modern town of Qamishli (see Fig. 2). If taken at face value, these areas might be interpreted as long-term pastoral zones, or as having been given over to some other non-agricultural purpose. With a close examination of historical satellite imagery, however, these areas reveal extensive irrigation networks emanating from the Jaghjagh River near Qamishli. This town has a long history, starting as a provincial capital of the Assyrian empire (Nasibina) in the early first millennium BC and continuing as the most important border city (classical Nisibis) between the Roman and Byzantine empires to the west and the Parthian and Sasanian empires to the east (Pigulevskaja 1963). The extent of this system (see Fig. 2 and Dillemann 1962:53-54) had a serious impact on the earlier tracks, in some cases adopting them as watercourses and in other cases erasing them entirely.

Hollow ways continued to structure settlement in the basin, but not in the typical way, wherein roads focus settlement, which recursively reinforces the use of the roads. Long after the abandonment of the EBA cities, their associated trackways continued to collect moisture due to their depressed morphology (Fig. 7). In this semi-arid region, these locally moist areas proved to be excellent sources of mudbrick for subsequent settlement (particularly the Late Bronze Age and the Hellenistic period). An understanding of this cultural taphonomic process allows us to avoid the incorrect attribution of these tracks to these later periods.

Conclusions

The extensive EBA network of tracks in northern Mesopotamia survive as a durable but unintended consequence of a unique phase of social complexity and demographic growth. Within the towns and cities, households (or more accurately, their heads) jostled for political advantage and worked to maintain their existing relationships. The personal interaction that this required often occurred in the context of commensal events, some large and elaborated but probably mostly small-scale and routine, as when a patriarch plays host to his extended family, or when the head of a neighborhood lineage entertains the heads of other locally important families. Cumulatively, these events placed a demand on the agro-pastoral system for the staples

that greased the social gears: cereals for bread and beer, and livestock for meat consumption. Ultimately these social and corresponding agricultural demands resulted in the linear features that remain etched into the landscape of northern Mesopotamia.

Elsewhere, the unintended depressed morphology of tracks gained a significance through its association with important places and was deliberately reproduced (as in Costa Rica; Payson Sheets, personal communication). In northern Mesopotamia, the culturally familiar patterning of interconnected radial networks has prevented Western researchers from venturing very far beyond economic interpretations. In some places, tracks or roads can be interpreted as delimiting paths of movement through liminal or transitional zones, inspiring relief at homecoming in some and trepidation in others (Snead 2002). I cannot confidently offer any such emic meanings or associations for the depressed tracks of the Early Bronze Age. Did the farmers feel a sense of comfort as they left open fields and entered the dense urban matrix? Did they understand that the sunken path was the product of generations of their ancestors tending the same fields? Did shepherds notice that the boundary between their pastures and the constricting zone of cultivation was also marked by the transition to a path of movement below the level of the surrounding terrain, and if so, how did they regard this transition? None of the laconic cuneiform texts available to us touch upon such non-economic matters.

Perhaps we might draw some conclusions on these aspects from the ultimate fate of this society. At the end of the third millennium, all of the urban settlements were either abandoned or dramatically reduced in size. Although individual cities did reappear, urbanism on the scale of the Early Bronze Age experiment was never to return to the plains. When agricultural intensification returned, the emergent form, as manifested by hollow ways and field scatters, had been replaced by imposed varieties, road and irrigation systems stamped onto the landscape by the planners of the Neo-Assyrian, Seleucid, and Roman-Byzantine empires. Perhaps the dynamic social environment, from which the EBA landscapes of movement emerged, was ultimately found not to be worth its costs, and only with these later territorial empires were new landscapes of intensification again created.

List of Figures:

- Fig. 1. Urban settlements of the Early Bronze Age (mid- to late third millennium BC) in northern Mesopotamia.
- Fig. 2. Urban settlements and track networks of the EBA in the central Upper Khabur basin. Large triangles are major urban sites; smaller triangles are other mounds. Blue lines below Qamishli/Nisibis represent a later irrigation system.
- Fig. 3. Hollow ways viewed from the ground, with vertically exaggerated profiles. Top: Oblique view of a hollow way near Hamoukar in the dry season (October 2000); Middle: Oblique view of a hollow way near Chagar Bazar in the early Spring (April 1999); Bottom: Vertically exaggerated profiles across broad (1) and narrow (2) hollow ways (see Ur 2003).
- Fig. 4. Schematic plan of EBA settlement and land use zones.
- Fig. 5. Top: Population-derived sustaining areas (a, assuming 100, 150, and 200 persons per hectare) and hollow way catchments (b) in the Tell Beydar Survey area. Bottom: Comparison of population-based required sustaining areas and hollow way-derived catchments. X-axis error bars show sustaining area range assuming 100 to 200 persons/ha settlement density; diamonds mark 150 person/ha sustaining area.
- Fig. 6. Comparison of hollow way catchments and population-derived sustaining areas around selected EBA sites in the TBS area.
- Fig. 7. Hollow ways reused as borrow pits for mudbrick material. Lighter areas marked (a) are low mounds of eroded mudbrick (from the Late Bronze Age and the Hellenistic Periods); dark areas marked (b) are borrow pits where the troughs of hollow ways have been widened and deepened. CORONA 1108-1025DA005, December 1969.

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