

The Circulation of People and Knowledge in Uruk Mesopotamia

Archaeology has long been concerned with movements of objects, materials, and people, as early 20th century discussions of migration, diffusion, and invention make clear.¹ Despite this long-standing interest there has been little explicit discussion about the transmission of knowledge and ideas, although they form a major undercurrent in these discussions: the migration of people, the adoption as well as the rejection of new technologies, and the movement of similar kinds of objects are all predicated on the circulation – as well as the restriction – of knowledge. Theories of exchange have tended to be object-centered, focusing on the things themselves and how they acquire biographies, values, and histories and the new meanings and values imparted to objects as they move through different social fields; alternatively, they are directed toward the underlying social relations that are created and sustained by exchanges of things.² Still, the knowledge and ideas that are thereby transferred and transformed often remain implicit in these discussions.

Despite the fact that knowledge and knowledge transfers are not directly observable archaeologically, there is much that archaeological evidence can contribute to an understanding of knowledge transmission. In this paper I address the implications of the movements of people and things for understanding the circulation of different forms of knowledge in Uruk-period (c. 4100–3100 cal BCE) Mesopotamia. During this time states and urban societies emerged, a variety of technological innovations appeared, demands for non-local resources, especially varieties of stones and metals, were on the rise, artifacts used in bureaucratized systems of accounting proliferated, and iconographic images show some of the first clear pictorial evidence of the taking of captives and killing of people.³ Based on settlement pattern evidence as well as the distribution of similar styles of material culture over extensive areas, many scholars have taken for granted that not just things – raw materials and finished products – but also people moved across large swathes of the Mesopotamian lowlands and neighboring regions, as colonists and traders or as variously conceived nomadic or semi-sedentary components of the populace.⁴ Apart from some rather vague notions about *Mentalitäten*, there have been few explicit attempts to address questions of knowledge transfers that must have accompanied these movements of things and people. I will draw on settlement pattern evidence and associated inferences about demographic

1 Anthony 1990; Härke 1998; Burmeister 2000; Trigger 2006.

2 Mauss 1967 [1925]; Weiner 1985; Graeber 2001; Myers 2001; Hahn 2005.

3 Adams 1981; Johnson 1987; Nissen 1988; Pollock 1992; Rothman 2001.

4 Adams 1981; Wright 1987; Algaze 1993, 2008; Stein 1999; cf. Butterlin 2003.

movements on the one hand and circulation of materials and objects on the other to consider possible forms of accompanying knowledge transfers and their implications.

Movements and Knowledges

In a recent discussion of the circulation of stone vessels, people, and ideas in the eastern Mediterranean during the Bronze Age, Andrew Bevan distinguishes between the movements of objects and ideas with or without their owners.⁵ Owner is a problematic term, both for objects in societies that did not necessarily share contemporary western notions about property and possession as well as when one speaks of ideas and knowledge; for that reason, I use instead the term ‘bearer’. Movements of objects and knowledge with their bearers can be exemplified by colonization, emigration, immigration, or exogamy. In all of these cases people move for substantial periods of time, often for the rest of their lives, taking with them some portion of their material culture and/or knowledge of how to reproduce and use it. In contrast, movements of things and knowledge without their bearers may take the form of trade, gift exchange, or booty. In each of these instances, there are brief encounters or sometimes only indirect ones between previous bearers and the new contexts to which objects and accompanying knowledge are transferred.

These two kinds of movements – with and without bearers – imply different kinds of knowledge that can be transferred. In movements without the bearer, objects and ideas “leap over a cognitive divide across which there is only a partial transfer of information about the purpose of the thing being traded (e.g. about its value or history)”,⁶ and in their new context they may completely lose their original meaning. For example, objects that are transferred to new contexts through plunder or tribute extraction “expose communities to novel ways of expressing wealth and prestige, introducing new values and transforming old ones”.⁷ In the opposite case, when things move with their bearers, they may retain much more of their cultural meaning, although their new “consumption environments” may render them more or less desirable than before.⁸

In a different approach Keane notes that the mobility as well as the durability of objects that can be exchanged “allow them to extend the agency of their producers and original transactors”, but also permit them to be separated from those origins.⁹ He emphasizes attempts to circumscribe the effects of such separation through ritual and other formal

5 Bevan 2007, 21–23; see also Renfrew 1993.

6 Bevan 2007, 22.

7 Bevan 2007, 23.

8 Bevan 2007, 22. For a related discussion involving debates about the spread of a ‘Neolithic package’ around the Mediterranean, see Zeder 2008.

9 Keane 2001, 79.

practices.¹⁰ More important to the matter at hand is that, as objects circulate, the possibilities for them to acquire new meanings, uses, and values are considerable, most especially when they are accompanied only briefly if at all by their makers and originally intended users.

Another crucial distinction among kinds of knowledge as well as the possibilities for their transmission is that between practical, embodied knowledge on the one hand and discursive knowledge on the other. Embodied knowledge plays a central role in Bourdieu's understandings of practice and habitus.¹¹ For Bourdieu, the habitus consists of "durably installed generative principles of regulated improvisations."¹² We internalize these principles as dispositions that are intimately and inextricably tied to the body: "we learn how to hold ourselves, how to defer to others, how to be a presence for others, all largely through taking on different styles of bodily comportment."¹³ Body hexis, in Bourdieu's terminology, refers to "patterns of postures"¹⁴ that are both individual and collective and imbued with a variety of meanings. These postures – real, physical ways of holding and moving one's body – are taught to others, generally without much verbal instruction, but are in no sense thereby unimportant or to be relegated to the realm of epiphenomena. Rather, they incorporate the "structures of the world"¹⁵ and transform bodies, their movements and gestures into a form of memory that enacts the past.¹⁶

Embodied knowledge is acquired through repetitiveness of practices to a point where one no longer needs – and may no longer be likely – to reflect on why and how one does what one does, the kinds of unreflected daily practices referred to by Mauss as *les techniques du corps*.¹⁷ Giddens terms these kinds of practices and the knowledge that sustains them practical consciousness, the "recall to which the agent has access in the *durée* of action without being able to express what he or she thereby 'knows'."¹⁸ For Bourdieu practical action involves a "feel for the game"¹⁹, a practical knowledge and competence that allows the actor to act appropriately and, in some sense, to anticipate the future. It comes with being 'native' or being slowly socialized into a context in which acquisition and transmission of practical, bodily knowledge occurs at a subconscious level.²⁰ Daily life becomes routinized, allowing people to encounter and interact with one another based on a fundamental security, which in turn rests on predictability of actions of and interaction with others. Some degree of rou-

10 Keane 2001, 80.

11 Bourdieu 1977, 1990; see also Bockrath et al. 2008.

12 Bourdieu 1977, 78.

13 Taylor 1993, 58.

14 Bourdieu 1977, 87.

15 Bourdieu 1977, 89.

16 Bourdieu 1977, 87–94; 1990, 69–73.

17 Mauss 1975.

18 Giddens 1984, 49.

19 Bourdieu 1990, 66.

20 Bourdieu 1990, 66–73.

tine and predictability are necessary for us to act as social creatures. This routinization is not, however, automatic, but rather must be continually reproduced through everyday activity.²¹

Embodied knowledge cannot be transmitted in the absence of the bearer of such knowledge. Transmission requires considerable time; a fleeting encounter is insufficient. Although crucial elements of embodied knowledge are acquired early in life, transmission of such knowledge is not confined to childhood. Rites of passage may include initiation into new life stages that require acquisition of new types of embodied knowledge.²²

Discursive knowledge, in contrast, involves “being able to put things into words”.²³ It is prescriptive knowledge that can be discussed and debated, intentionally accepted, modified, or resisted. Because it can be verbalized, discursive knowledge can be transmitted with or without its bearer. Writing is a prime example of a medium that permits transmission of discursive knowledge in the absence of the bearer of that knowledge.

Discursive in contrast to embodied knowledge involves different temporalities and different modes of transmission. Whereas at least in some instances the transfer of discursive knowledge can take place quite rapidly, embodied knowledge is acquired only through longer encounters between bearers of such knowledge and those who are to acquire it. Of course, this strict division between embodied and discursive knowledge represents an idealized situation. As Caysa notes in the context of sport, “Andererseits vollzieht sich körperliche Erkenntnis auf der Basis empraktischen Körpererinnerns von Virtuosen zunächst wort- und bildlos, und dies einzigartige Können wird erst später verantwortlicht, verbildlicht sowie verschriftlicht und dann verallgemeinerbar erlernbar.”²⁴ Specific knowledges may also consist of both discursive and embodied components, as, for example, the writing of a text such as this one: the content of the argument is clearly within the realm of discursive knowledge, whereas the act of typing is largely an embodied one that I learned many years ago; nonetheless, when I switch from an American keyboard to a German one, I am constantly forced to think about my typing.

I turn now to a consideration of how these different kinds of knowledge and knowledge circulation can be investigated archaeologically in early state and urban societies in Mesopotamia.

21 Giddens 1984, 64–86; see also Goffman 1967. Note that by “daily life” and “everyday activity” the emphasis is on the mundane, the routine, the *Alltag*, rather than “daily” in a literal sense.

22 Or such things as sports training: Caysa 2008.

23 Giddens 1984, 45.

24 Caysa 2008, 79. “On the one hand this embodied understanding first occurs on the basis of practical, embodied remembering by virtuosos without words or pictures, and then later this unparalleled ability is turned into words, pictures and writing and thereby made generally learnable” (my translation).

Uruk-period Mesopotamia

In the last couple of decades, scholars interested in the emergence and consolidation of state and urban societies in Mesopotamia have devoted substantial attention to the so-called 'Uruk expansion'. The burgeoning interest in this topic is in many ways an outcome of dam-related salvage projects together with the growing difficulties of conducting fieldwork in the 'core' area of the alluvial lowlands of Iraq as a long-term product of colonial policies and power politics. The resulting surveys and excavations in Syria and southeastern Turkey as well as reevaluations of older work in northern Iraq and western Iran have pointed to a widespread distribution of artifacts with characteristic southern Mesopotamian Uruk styles well beyond the alluvial lowlands.²⁵ Although originally thought to be a phenomenon limited to the Late Uruk period (c. 3400–3100 BCE), the 'Uruk expansion' is now widely acknowledged to have begun in Middle Uruk/LC 3–4 times and continued through the end of the Uruk period (c. 3700–3100 BCE).²⁶ Interpretations of the phenomenon vary, but most tend to focus on the presumed importance of acquiring raw materials for the resource-poor lowlands and thereby the role of traders and colonists.²⁷ In other words, both the movements of things and people play a central role in interpretations of the archaeological evidence.

It is not only between the alluvial lowlands and regions to the northwest, east, and northeast that movements of people and things have been considered to be central to Uruk-period developments. Based primarily on regional settlement pattern surveys, Adams has argued for major demographic movements within the alluvial lowlands over the course of the 4th millennium.²⁸ Here, too, settlement patterns and distributions of stylistically similar forms of artifacts have provided evidence from which demographic movements and underlying economic and political motivations have been inferred. Transfers of knowledge have barely been discussed, although they are implicit beneath the surface of these other interpretations.

There has been a marked tendency among archaeologists to view the alluvial lowlands as a single 'culture' in Uruk times, on the grounds that styles of artifacts and architecture throughout southern Mesopotamian exhibit striking degrees of resemblance. Doing so, however, excludes questions of 'culture-making'²⁹ that direct attention not just toward the appearance of things (similar or different) but how they are made, used, and incorporated into daily practices, webs of meanings, and knowledge communities.³⁰ Similar practices, values, and meanings are not upheld in a vacuum but rather depend on con-

25 Algaze 1993; 2008.

26 Rothman 2001.

27 See papers in Rothman 2001 for convenient summaries of various positions; also Algaze 1993, 2007, 2008; Stein 1999; cf. Butterlin 2003.

28 Adams 1981, 60–81.

29 Myers 2001.

30 Pollock 2010; 2011.

tinuous (usually unreflected) acts of reproduction: “The continuity of tradition is due not to its passive inertia but to its active regeneration – in the tasks of *carrying on*.”³¹ Crucial as well are the temporalities of movements and encounters that offer the scope for improvisation, resistance, and rejection as well as possibilities for transferring different kinds of knowledge. In the Uruk case scholars have typically assumed traders and colonists as the motors of transmission, or occasionally intermarriage. The implications of these and other possibilities in terms of different kinds of knowledge transmission have not, however, been much considered.

To explore this case in greater detail, I turn to the settlement pattern evidence from the alluvial lowlands as presented by Adams,³² in an effort to consider the implications of the settlement data for movements of people and knowledge during the 4th millennium BCE. I limit my discussion to the alluvial lowlands, which are almost uniformly viewed by scholars as the core or heartland of Uruk developments. This widely shared viewpoint has been recently reemphasized through coining of the phrase “Sumerian takeoff.”³³

Settlement Patterns in Alluvial Mesopotamia

During the 1950s – 1970s Robert McCormick Adams undertook extensive regional surveys in the alluvial lowlands of Iraq.³⁴ The work was conducted in less than ideal conditions and prior to many recent technical and analytical developments in survey methods and remote sensing. As a result, the available data suffer from a variety of problems. In addition to geomorphological processes that obscure ancient settlements through alluviation, dune movement and severe deflation. Adams’ extensive, automobile-based survey coverage privileged the identification of mound sites that were occupied over extensive timespans rather than flat sites resulting from brief occupations.³⁵ Chronological resolution among the surveyed sites is also far from ideal. Adams divided most of his Uruk-period survey material into two phases, earlier Uruk and later Uruk. Since little of the actual ceramic material or other artifacts has been published in detail, there is no option but to adopt this rough chronological division, whereby “Earlier Uruk” corresponds approximately to Early and Middle Uruk/LC 2–4 (4100–3400 BCE) and “Later Uruk” to Late Uruk/LC 5 (3400–3100 BC).

Despite the less-than-ideal data, Adams’ survey evidence allows the identification of a number of important patterns in settlement over the course of the 4th millennium BCE. The first of these is a massive proliferation of new settlements in the earlier Uruk period in marked contrast to the sparse distribution of settlements in Ubaid times. Although the

31 Ingold/Hallam 2007, 6.

32 Adams/Nissen 1972; Adams 1981; see reevaluation of the evidence in Pollock 2001.

33 Algaze 2007; 2008.

34 Adams 1965; 1981; Adams/Nissen 1972.

35 Adams/Nissen 1972, 1–8; Adams 1981, 37–43.

apparent absence of earlier settlement may be related in part to geomorphological processes that have buried or destroyed sites, especially smaller ones from earlier periods, the dramatic growth in numbers of settlements in the early 4th millennium points with a high probability to a substantial increase in settled communities. In a recent evaluation of satellite imagery to assess geomorphological changes, Jennifer Pournelle contends that there was a significant drying out of the southernmost lowlands in the early 4th millennium, making available wide tracts of dry land where there had previously been islands in the midst of extensive marshes.³⁶ This may have been one of the contributing factors to the dramatic rise in settlement in the earlier Uruk period. In addition to major increases in numbers of sites, there was also a striking growth in the sizes of some settlements. Whereas previously the largest sites in the alluvial lowlands had attained a size of approximately 10 ha, in the earlier Uruk three settlements occupied 25–50 ha, with Uruk itself reaching 100 ha. The trend toward increasing site size continues over the course of the 4th millennium. In the most extreme case, the city of Uruk attained a size of 230 ha by the Late Uruk period; the next largest site (I306) did not exceed 50 ha.

In his evaluation of the regional survey data, Adams remarked upon striking differences in settlement patterns in two sub-regions of the alluvial lowlands, separated by a band with little or no settlement.³⁷ He named the two distinct areas the Nippur-Adab and Uruk regions after major settlements in each. The two sub-regions are characterized by distinct settlement trajectories. From the beginning of the 4th millennium, the Uruk region was dominated by the site of Uruk itself. Uruk seems to have prevented the growth of other large settlements: only in the Late Uruk period did another site attain a size of 24 ha, warranting its placement in a category of large settlements.³⁸ In contrast, several settlements of 25–50 ha were established in the Nippur-Adab region in the earlier Uruk period, none of which, however, stands out as paramount on the basis of size. In Late Uruk the number of medium-sized sites in the Nippur-Adab region appears to decline and one of the large settlements disappears.

In addition to the striking difference in numbers of larger settlements in the two sub-regions, Adams argued for a movement of population from north (Nippur-Adab area) to south (Uruk region) from earlier to later Uruk. His argument is based on the total settled area (sum of sizes of all sites) in each subregion during the two periods (Table 1). Based on these figures Adams contended that the settled area – and hence population – of the Uruk region grew by nearly the same amount in Late Uruk as the Nippur-Adab area lost. As a result he interpreted these observations as an indicator of a crucial change in the lowlands: although total population numbers changed relatively little during the 4th millennium,

36 Pournelle 2007.

37 Adams 1981, 60–81.

38 Adams differentiated two size categories: sites 10 ha or larger, which he called towns and cities, and those less than 10 ha, which he referred to as villages. Based on a reexamination of histograms of site sizes, I have proposed a tripartite division: sites less than 8 ha (small), 8–14 ha (medium), and 20 ha or larger (large): Pollock 2001, Fig. 6.2.

Region	Earlier Uruk	Later Uruk	Change
Nippur-Adab	374	194	- 180
Uruk	198	477	+ 279
Total	572	671	+ 99

Table 1 | Total settled area (in hectares) in the Nippur-Adab and Uruk regions, based on the settlement data of Adams (1981).

a major southward migration fueled the growth of Uruk as a city as well as of its rural hinterland population. In this scenario, Uruk exerted a strong magnetic pull, while at the same time effectively preventing the emergence of any large competitor settlements in its vicinity.

Based on a modified nearest neighbor analysis,³⁹ it appears that medium and large sites in the Uruk region were much more isolated than those in the Nippur-Adab area during the *earlier* Uruk period, as indicated by the sum of distances to their five nearest neighbors. In the Late Uruk period the situation is reversed, with medium and large sites in the Nippur-Adab area considerably more isolated than those in the Uruk region. These patterns suggest that over time the city of Uruk was increasingly able to keep (or draw) rural population into its vicinity and to prevent people from moving further away. This appears to fit well with what we otherwise know of Uruk’s precocious development – as the source of the vast majority of the earliest written texts, home to an unparalleled array of non-domestic architecture and a diversity of unusual, and in some cases unique, objects, including monumental depictions of people.

The Contemporaneity Problem and its Consequences

Adams’ contention that the growth in the Uruk region over the course of the 4th millennium is neatly matched by a corresponding decline in the Nippur-Adab area has been widely accepted. It fails, however, to take into consideration the so-called contemporaneity problem, which arises when sites that yield artifacts diagnostic of a particular period are assumed to be occupied throughout that entire period. Unless compensated by means of a correction factor, the contemporaneity problem leads to the appearance of ‘overfilled’ site maps, and thereby inflated estimates of the number of sites occupied contemporaneously as well as overall population.

I have made use of a model proposed by Robert Dewar to correct conventional settlement pattern data in order to account for the contemporaneity problem.⁴⁰ Dewar’s model

39 Pollock 2001, 190–194; see also Adams/Nissen 1972, 26–28.

40 Dewar 1991.

Region	Earlier Uruk	Later Uruk	Change
Nippur-Adab	88	112	+ 24
Uruk	81	210	+ 129
Total	169	322	+ 153

Table 2 | Total settled area (in hectares) in the Nippur-Adab and Uruk regions, based on the use of Dewar’s model to correct for the contemporaneity problem.

estimates site establishment and abandonment rates and uses these estimates to calculate the average number of contemporary occupations. The basis of Dewar’s model is straightforward: a site with diagnostic artifacts indicating occupation during period Q can only be considered to have been occupied for the full duration of period Q if it also contains artifacts diagnostic of occupation during preceding and succeeding phases. Otherwise it must be treated as if it were occupied for only a portion of period Q. Abandonment and founding rates are calculated and used as input data for a simulation that estimates how many sites were occupied at any one time. While the simulation allows us to discern overall patterns of change over time, it is not possible to specify *which* sites were occupied during which phases. Although Dewar’s model contains some oversimplifications, it nonetheless offers a useful corrective for raw data that may approximate a more accurate pattern of settlement activity.

Applying Dewar’s method to the Uruk-period data results in far fewer sites and hence lower total hectares occupied than conventional observations would suggest (Table 2). Of greater interest, however, is that *patterns* of growth and decline differ significantly from those identified using the uncorrected data. The Nippur-Adab area ceases to exhibit a decline in the Late Uruk period and instead appears to have witnessed modest growth. There is a continual increase in total settled area in the Uruk region, regardless of whether conventional or corrected observations are used. However, the comparative figures do not support the observation of a direct reversal from earlier to later Uruk in population and settlement trends in the two regions, although they continue to show a substantial growth in the Uruk region. It seems likely that at least some of that increased settlement in and around Uruk was due to the immigration of people from elsewhere – including at least some from outside the alluvial lowlands, as the Nippur-Adab region no longer appears to have been a major source – into the Uruk region and/or the settling down of previously more mobile elements of the population.

Estimated annual rates of settlement establishment and abandonment as calculated by the Dewar model provide indications of the degree of volatility or stability in settlement. These numbers indicate the level of fluctuation in settlement, with low figures indicating relative stability and higher numbers greater fluctuation. Of particular interest is the relationship between founding and abandonment rates within each region (Table 3). In the earlier Uruk period, both founding and abandonment rates are higher in the Nippur-Adab

	Nippur-Adab region	Uruk region	Deh Luran Plain
Earlier Uruk: Founding	.215	.058	.004-.036*
Earlier Uruk: Abandonment	.177	.047	.004-.020*
Earlier Uruk: Total fluctuation	.392	.105	.008-.056
Later Uruk: Founding	.065	.370	.010
Later Uruk: Abandonment	.115	.255	.030
Later Uruk: Total fluctuation	.180	.625	.040

* Early and Middle Uruk are differentiated in the analysis conducted by Neely and Wright.

Table 3 | Comparisons of rates of settlement founding and abandonment in the Nippur-Adab, Uruk, Ur-Eridu and Deh Luran regions (Neely and Wright 1994: 201, Table VI.3; Pollock 2001: 73, Table 3.2).

than in the Uruk region. In the Late Uruk period, there is a precipitous rise in *both* founding *and* abandonment rates in the Uruk region; conversely, both rates drop sharply in the Nippur-Adab region. These figures suggest that there was far more settlement volatility – characterized by frequent establishment *and* abandonment of settlements – in the Nippur-Adab region in the earlier part of the fourth millennium and in the Uruk region in the later Uruk period.

Tribute, Production, and Settlement Fluctuation

One possible reason for the differential settlement patterns in the Nippur-Adab and Uruk regions is the extent to which tribute exactions fell upon rural populations and what options they saw for escaping unacceptable demands by ‘voting with their feet’.⁴¹ In a previously published analysis,⁴² I used the densities of several types of production indicators (clay sickles, for cutting reeds and perhaps grain; chipped stone implements for use in agricultural tasks; pottery wasters as indicators of firing ceramics) and non-local raw materials (chert and obsidian) on site surfaces to examine differential intensities of production and use and thereby to indicate the extent to which residents depended on materials and products from outside their own settlement. The data enabled me to compare large and small sites, but unfortunately not the Nippur-Adab versus Uruk region. The one major exception is the thorough, systematic survey conducted at Uruk itself.⁴³

Each of the indicators of production shows a similar pattern, with either equivalent densities in larger and smaller settlements or higher densities in larger communities. The

41 Johnson 1987, 126.

42 Pollock 2001.

43 Finkbeiner 1991.

density data suggest that residents of larger settlements engaged in production of tools used in agricultural pursuits, the generation of agricultural products, and the manufacture of ceramics to a similar if not greater degree than rural dwellers; they also tended to have greater access to imported stone. If the amount of work expended on basic productive endeavors is directly related to surplus production geared, at least in part, to meet tribute demands, this evidence implies that demands on town residents were as high if not higher than those on villagers.⁴⁴

As a result I have suggested that it may be more appropriate to envision the larger communities in the Nippur-Adab area as 'agricultural towns' rather than 'centers' in the classical sense of the term. By using the term 'agricultural town' I refer to communities that were involved primarily in local production, whereas 'center' generally implies a significant degree of involvement in managerial functions and a concomitantly reduced proportion of people involved in the production of basic goods to meet residents' subsistence needs. Many agricultural towns may not have depended initially upon a heavy extraction of tribute from rural neighbors; rather, an examination of available land in relation to population size suggests that larger settlements had ample land in their immediate vicinities and sufficient labor with which to work it. In marked contrast, the dependence of the city of Uruk on the extraction of food and labor from rural dwellers in the form of tribute suggests that its internal organization as well as its relationships to other communities may have been quite different.⁴⁵

In summary, adjustment of settlement patterns to take into account contemporaneity problems results in a picture of initial settlement fluctuation in the Nippur-Adab region in the earlier part of the Uruk period, followed by relative stability, especially among larger communities. In contrast, the initial growth rates in the Uruk region were more modest, followed by a much higher degree of volatility in the later Uruk period. The Nippur-Adab region was characterized throughout the fourth millennium by a number of large communities, which were less dependent on tribute exactions to sustain their residents than was Uruk. The extraordinary growth in settled population in the Uruk region between earlier and later Uruk may indeed have drawn some people away from the Nippur-Adab area, but the greater demographic stability in the latter area hints strongly that the situation was far more complex than a simple north-to-south migration would suggest. Rather, it seems more likely that substantial numbers of people came to the city and perhaps also to the hinterlands of Uruk from outside the alluvial lowlands. This conclusion supports an element of Hans Nissen's recent reinterpretation of the Uruk region, in which he contends that the increase in settlement over the course of the 4th millennium points to the

44 Note that densities are quantities per unit area or volume, not absolute amounts. In other words, higher densities in larger settlements are not simply a function of a larger population with greater needs.

45 Pollock 2001, 194–196.

immigration of new groups into the southernmost lowlands around Uruk.⁴⁶ That Uruk's growth was far from conflict-free is clearly visible in the so-called prisoner scenes on Late Uruk seals from Uruk in which a dominant figure (*"Mann im Netzrock"*) – generally thought to be a political leader – is portrayed killing bound individuals or supervising others who were doing so.⁴⁷

Movements and Knowledge in Uruk Mesopotamia

The available evidence leaves little doubt that people, things, and knowledge moved frequently and were transported widely within as well as beyond the alluvial lowlands during the fourth millennium BCE. These movements include immigration into the alluvial lowlands and/or settling down of previously more mobile population elements around the beginning of the Uruk period; movement into the southernmost alluvium and into the Uruk orbit in the course of the fourth millennium; as well as within the Uruk region, as indicated by the high abandonment and founding rates of settlements. That the degree of internal, medium-term mobility – the abandonment of sites and establishment of others, probably within a handful of generations at most – was high can be seen by comparing rates of settlement founding and abandonment in the alluvial lowlands with those for the Deh Luran Plain (Table 3). Although a variety of factors affect these values, the fact that the rates calculated for Mesopotamia are often several times higher than in Deh Luran is a clear indicator of the elevated degrees of movement in Mesopotamia.

From these kinds of movements, we can infer that there was substantial circulation of knowledge both with its bearers as well as separately from them. However, the likelihood of transmission of embodied knowledge – knowledge that accompanies its bearers – may have been greater in the Nippur-Adab region in earlier Uruk, with its higher degree of settlement volatility, but then dramatically lower in later Uruk times, in comparison to the Uruk region. It should be emphasized that a greater stability of settlement need not *necessarily* imply lesser circulation of knowledge with bearers, as people may resettle as individuals, families, or small groups without the establishment or abandonment of whole settlements. Turning the argument around, we can provisionally identify a high degree of such circulation in the Uruk region in the later Uruk period and with it frequent encounters among people with different backgrounds and expectations. In the Uruk region the higher degree of mobility, attested by higher rates of settlement founding and abandonment as well as the enormous growth of Uruk itself, would have led to many more encounters among objects, people, and their ideas that cross-cut cognitive and practical realms. The result is likely to have been uncertainties and misunderstandings, as taken-for-granted commonalities may

46 Lecture in the Institut für Vorderasiatische Archäologie, Freie Universität Berlin, 6 November 2009.

47 Boehmer 1999, 20–24; see also similar scenes from the Susiana Plain: Amiet 1972, Pl. 18.

have been partly or even fully lacking. These uncertainties need not have been only negative, but rather could also have had productive sides; indeed, urban centers are often characterized by this mixture of the unexpected, leading to uncertainty and insecurity but also to improvisation and creativity. In any event, the high degree of medium-term mobility of people in the Uruk region would have produced an elevated potential for transmission of embodied forms of knowledge, from specific ways of forming pots, to the fine points of how to prepare bread, to the spatial arrangement of mundane practices within the house. It is also possible that the proximity and frequent encounters of people with different practices and ways of doing things may have resulted in deliberate attempts to limit their exchange by emphasizing “in-group” belonging and constraining close contacts with those perceived as “other.” The transmission of embodied forms of knowledge may have been less pronounced in the Nippur-Adab region, where longer-term settlement stability may tentatively be interpreted as indicative of a lower – though by no means negligible – degree of movement of people to new places where they stayed for sufficient periods of time to pass on embodied practices and knowledge.

It should be noted that my analysis does not speak directly to the frequency or quantity of circulation of things without their bearers and the accompanying transmission of discursive knowledge. The presently available evidence does not permit an evaluation of the degree of intra-alluvial circulation of materials and objects, as the interests of most scholars who study this period have centered around the relations between the alluvial lowlands as a whole and regions beyond.

If the conclusion holds – that the transmission of practical, embodied knowledge among settled communities was greater in the Uruk than in the Nippur-Adab region in the later fourth millennium BCE – we should find (somewhat) different ways of making and/or using objects in the two regions. These would not necessarily involve differences in the *outward* appearance of objects. Rather, the crucial question is how the sequences of production and the specific gestures and practices involved in making and using objects differed or were similar: these are the places at which we can begin to distinguish access to different kinds of embodied knowledge and separate it from the more discursively based forms of knowledge.

To evaluate these possibilities would require different approaches to the analysis of archaeological remains than are usually conducted in the study of Mesopotamia or the archaeology of Western Asia more generally. Instead of comparing overall appearances of finished products, whether vessel forms and decoration or the layout of buildings, analyses would have to consist of examinations of the small-scale differences in how things were made and/or used as well as the form of objects at the end of the production process. A few examples of such work may serve to illustrate what I am proposing.

Using detailed measurements of specific forms of Late Uruk pottery from Farukhabad (on the Deh Luran Plain in southwestern Iran), Habuba Kabira (in the Tabqa dam region of the Middle Euphrates in Syria), and the site of Uruk, Henry Wright has shown that the

microstylistic attributes of these vessels were extremely similar.⁴⁸ He concludes that the vessels either must have been trade goods or that there were close connections among pottery workshops throughout the region. Alternative possibilities include the existence of itinerant potters or that artisans or whole families emigrated, bringing with them their embodied knowledge of how to make vessels, which they then transmitted to the next generation of potters in their new homes.

A second example comes from Gil Stein's work at Hacinebi Tepe in southeastern Turkey, where he argues for distinct preferences in the kinds of animals used for food but also in the butchery practices used.⁴⁹ He claims that there was a segregation between the local community and a group of immigrants from the alluvial lowlands, based on the distinction in both preferred meats and ways of turning the animal carcasses into specific cuts of meat. In other words, it is not just what one eats but especially how food is prepared that serves to differentiate people, with the latter consisting of series of embodied practices that are argued in this case to have remained segregated despite the long-term encounter of different groups within one settlement.

A quite different kind of knowledge transfer can be inferred from the work of Rainer Michael Boehmer and Holly Pittman, who have compared seals from Uruk and the Susiana Plain.⁵⁰ Over the course of the second half of the fourth millennium, the seal traditions of the two regions exhibit abundant indications of regular contact. Despite numerous similarities in style and composition, best demonstrated in the Late Uruk Level IV at Uruk and contemporary material from the Susiana Plain, the seals of the two regions exhibit distinct iconographies. Unlike the previous two examples, these iconographic differences belong primarily to the realm of discursive knowledge.

Future Expectations

Finally, I would like to take these reflections one step further, to consider their implications for notions about the future and the relations between future and past. The historian Reinhart Koselleck has argued that a perspective in which the future is thought to be markedly different than the past, rather than largely a repetition of what came before, is characteristic of modernity.⁵¹ He contends that this is due to the rapidity of change in modern times and thereby the likelihood that people will experience major changes in the course of their lifetime. In such cases, he argued, it is more probable that people will harbor expectations for the future (*Erwartungshorizont*) that incorporate something not yet experienced rather

48 Wright 1981, Table 51, 187–188.

49 Stein 1999, 145.

50 Boehmer 1999; Pittman 2001.

51 Koselleck 1992.

than envisioning the future as dependent on past personal and collective experiences (*Erfahrungsraum*).

I suggest that Koselleck's argument can be extended beyond modernity to postulate that an open future characterizes other contexts in which people were exposed to rapid change or to widely differing ways of doing things. An obvious example would be situations in which there were frequent and substantial movements and encounters of people, things, and knowledge, whereby people may have been more inclined to envision the future as uncertain (whether in a positive or negative sense) rather than patterned closely on the past. The result would be a spiral, in which more new people, ideas, and things led to a more dynamic notion of the future. This is perhaps another way of responding to Algaze's question of why the southern alluvial lowlands (and more specifically the Uruk region) seems to have been a motor ('the Sumerian takeoff') driving innovations and rapid change in the later 4th millennium.⁵²

This is, however, decidedly *not* an argument for regarding other regions, such as the Nippur-Adab area, as conservative backwaters. Rather, it is a plea to examine archaeological remains with close attention to the practices of daily life. These can tell us about the ways in which people tried, whether consciously or not, to reproduce, resist, and change elements of their daily lives in the face of the continual drama of a world with growing mobility of people, objects, and knowledge.

Conclusions

Although archaeology may seem at first glance to be focused on places and things that are (relatively) fixed – settlements, objects, architecture – it also offers multiple possibilities for examining movements, including the circulation of things, people, and knowledge. Two crucial elements in any discussion of knowledge circulation are temporality and type of interaction. The length or fleetingness of encounters plays a crucial role in opening up or constraining the possibilities for transfer of embodied as well as discursive forms of knowledge. At the same time, the type of encounter – with or without the bearers of objects and knowledge – influences the kinds of knowledge transferred. Short-term movements, whether in the form of visits, trading encounters, or raids, typically allow the transfer of discursive forms of knowledge, by means of chatting, shared meals, negotiations, or violent interactions. Although some short-term movements may recur regularly, for example among trade partners or visits of friends, the encounters tend to remain relatively brief and hence allow little or no transfer of embodied forms of knowledge. When encounters take place in the medium- or long-term, as is the case with intermarriage or migration of indi-

⁵² Algaze 2007; 2008.

viduals, families or whole communities, the possibilities for knowledge transfers in both the discursive and embodied realms are much greater.

The *possibilities* of knowledge circulation must not, however, be confused with *actual* transmission. Specific social relations and *Handlungsräume* (spaces for action) affect the degree to which innovations are welcomed, rejected, or reworked and hence the paths through which knowledge is circulated, transformed, or repudiated. A better understanding of the specifics of these processes requires an attention to the microlevel, the practices of daily life, and to the complex intersections of discursive and embodied forms of knowledge.

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