



# Uruk, Pastoralism and Secondary Products: Was it a Revolution? A View from the Anatolian Highlands.

Maria Bianca d'Anna, Giulio Palumbi

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APPROPRIATING INNOVATIONS  
ENTANGLED KNOWLEDGE IN EURASIA, 5000–1500 BCE

*Edited by*

PHILIPP W. STOCKHAMMER AND JOSEPH MARAN

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# Contents

Chapter 1.	Introduction <i>Joseph Maran and Philipp W. Stockhammer</i> .....	1
Chapter 2.	Innovation Minus Modernity? Revisiting Some Relations of Technical and Social Change <i>Cornelius Schubert</i> .....	4
Chapter 3.	From Counting to Writing: The Innovative Potential of Bookkeeping in Uruk Period Mesopotamia <i>Kristina Sauer</i> .....	12
Chapter 4.	Uruk, Pastoralism and Secondary Products: Was it a Revolution? A View from the Anatolian Highlands <i>Maria Bianca D'Anna and Giulio Palumbi</i> .....	29
Chapter 5.	The 'Green Revolution' in Prehistory: Late Neolithic Agricultural Innovations as a Technological System <i>Maria Ivanova</i> .....	40
Chapter 6.	The Spread of Productive and Technological Innovations in Europe and the Near East: An Integrated Zooarchaeological Perspective on Secondary Animal Products and Bronze Utilitarian Metallurgy <i>Haskel J. Greenfield</i> .....	50
Chapter 7.	Early Wagons in Eurasia: Disentangling an Enigmatic Innovation <i>Stefan Burmeister</i> .....	69
Chapter 8.	Contextualising Innovation: Cattle Owners and Wagon Drivers in the North Caucasus and Beyond <i>Sabine Reinhold, Julia Gresky, Natalia Berezina, Anatoly R. Kantorovich, Corina Knipper, Vladimir E. Maslov, Vladimira G. Petrenko, Kurt W. Alt and Andrey B. Belinsky</i> .....	78
Chapter 9.	Innovation, Interaction and Society in Europe in the 4th Millennium BCE: The 'Traction Complex' as Innovation and 'Technology Cluster' <i>Maleen Leppék</i> .....	98
Chapter 10.	Wheels of Change: The Polysemous Nature of Early Wheeled Vehicles in 3rd Millennium BCE Central and Northwest European Societies <i>Joseph Maran</i> .....	109

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Chapter 11.	Appropriating Draught Cattle Technology in Southern Scandinavia: Roles, Context and Consequences <i>Niels N. Johannsen</i> .....	122
Chapter 12.	Key Techniques in the Production of Metals in the 6th and 5th Millennium BCE: Prerequisites, Preconditions and Consequences <i>Svend Hansen</i> .....	136
Chapter 13.	The Diffusion of Know-How within Spheres of Interaction: Modelling Prehistoric Innovation Processes between South-West Asia and Central Europe in the 5th and 4th Millennium BC <i>Florian Klimscha</i> .....	149
Chapter 14.	A Comparative View on Metallurgical Innovations in South-Western Asia: What Came First? <i>Barbara Helwing</i> .....	161
Chapter 15.	The Role of Metallurgy in Different Types of Early Hierarchical Society in Mesopotamia and Eastern Anatolia <i>Marcella Frangipane</i> .....	171
Chapter 16.	The Use of Bronze Objects in the 3rd Millennium BC: A Survey between Atlantic and Indus <i>Lorenz Rahmstorf</i> .....	184
Chapter 17.	Appropriation of Tin-Bronze Technology: A Regional Study of the History of Metallurgy in Early Bronze Age Southern Mesopotamia <i>Ulrike Wischniewski</i> .....	211
Chapter 18.	Gonur Depe (Turkmenistan) and its Role in the Middle Asian Interaction Sphere <i>Federica Lume Pereira</i> .....	220
Chapter 19.	The Appropriation of Early Bronze Technology in China <i>Jianjun Mei, Yongbin Yu, Kunlong Chen, Lu Wang</i> .....	231
Chapter 20.	Patterns of Transformation from the Final Neolithic to the Early Bronze Age: A Case Study from the Lech Valley South of Augsburg <i>Ken Massy, Corina Knipper, Alissa Mitnik, Steffen Kraus, Ernst Pernicka, Fabian Wittenborn, Johannes Krause, Philipp W. Stockhammer</i> .....	241
Chapter 21.	Yet Another Revolution? Weapon Technology and Use Wear in Late Neolithic and Early Bronze Age Southern Scandinavia <i>Christian Horn</i> .....	262

## Chapter 4

# Uruk, Pastoralism and Secondary Products: Was it a Revolution? A View from the Anatolian Highlands

*Maria Bianca D'Anna and Giulio Palumbi*

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### Introductory remarks

Innovation is a multidimensional concept since it entails the complex interactions of materiality, techniques, knowledge and culture at both an individual and a collective level. The processes that lead to innovations consist not only of technological novelties. Rather they are shaped by, and themselves shape, social practices. In the relations between humans, animals, objects and places, new things or ideas may also be invented or borrowed. Tradition and change are the main subject of our investigations of past societies, and innovations can readily be correlated to social change in more or less complex concatenations of cause and effect. When the concept of change is enriched by that of technological innovation, we may easily end up constructing evolutionary narratives. Whatever temporal depth is attributed to them, innovations are often conceptualised as events. They are events in the Žižekian sense of something that ‘changes the rules of what is possible’ and ‘retroactively creates its own past’ (Žižek, 2013). While this may reinforce teleological accounts of the past, we believe that innovations do not necessarily imply unidirectional and linear change from the simple to the complex, from egalitarian to hierarchical, from low-tech to high-tech. As Van der Leeuw has put it (1989), innovation is a complex process consisting of a number of components that may also encompass adoption, diffusion and rejection.

In this paper, we aim to investigate changes in socio-cultural traditions and innovations that involved human-animal interaction. Our aim is to stress that these relationships did not always follow cause-effect and evolutionary trajectories. Instead, they reflected non-linear and rhizomatic patterns depending on the diversity of the social, economic and cultural structures inventing, adopting, re-appropriating

or rejecting them. In particular, we would like to identify the different roles of specialised animal husbandry strategies in different social and chronological contexts and understand how and where a secondary product revolution (SPR) did or did not accompany the emergence of political hierarchies. Our site of reference is Arslantepe in eastern Anatolia, which, during the late 4th and early 3rd millennium BC, provides the backdrop to the development of a complex relationship between cultural change and innovation, linked to trans-regional interaction networks in which the communities living on the site were engaged.

The paper takes two thoroughly debated topics as its starting point: the Uruk phenomenon and SPR. What the archaeologists of south-western Asia mean by the Uruk phenomenon is the development of urbanisation and proto-state societies in southern Mesopotamia and Khuzestan and the spread of southern material culture into northern Mesopotamia, Syrian Jezira, western Iran and south-eastern Anatolia. The SPR is a powerful model for problematising the emergence of social and political complexity in connection with specialised forms of subsistence economy and labour organisation in 4th-millennium Mesopotamia. This model, elaborated by Andrew Sherratt in a famous article published in 1981, conceptualised a radical change in terms of human-animal interaction (Sherratt 1981; Greenfield 2005). Alongside the invention of the plough, which implied an intensification of agricultural production and the exploitation of a broader range of soils, there were several other factors operative in 4th-millennium south-western Asia that favoured or represented a ‘revolution’, including the cart, which would have permitted bulk transport and faster movement between distant territories; large-scale use of milk and its transformation into different

kinds of dairy product, which changed human eating habits and involved an intensification of protein intake because produce could be stored for longer; and the development of a large-scale wool industry that boosted long-distance trade with artefacts that were comparatively easy to transport. According to Sherratt, this process of innovation was not only a revolution in economic and productive terms, it also triggered the development of complex societies and the emergence of a centralised economy.

One of the markers of the Uruk economy was certainly the radical change in animal husbandry strategies. In this period, a specialisation in sheep and goat husbandry is recorded for the entire Mesopotamian region and represents an innovative change in comparison to the more balanced animal breeding strategies of the previous Ubaid period in which cattle and pigs featured prominently (Vila 1998; Berthon 2015; Dahl 2015). In Late Uruk southern Mesopotamia, there appear to have been links of a fairly coherent nature between urbanisation, early state societies and a centralised economy on the one hand (in short, a new social and political order and ideology) and technological achievements and innovations on the other.

There is general unanimity that the emergence of complex societies in southern Mesopotamia was accompanied by a shift from village-based flax manufacture to widespread household and 'industrial' wool-textile production (McCorriston 1997). Textual, archaeological and iconographic evidence from the alluvium testify that in the temple-based tributary economy of the earliest cities of southern Mesopotamia (Pollock 1999), not only primary but also secondary products such as wool-textile and cheese were exchanged against labour and constituted the financial basis of the powerful elites. As a consequence, certain types of work performed by some people, such as the activities of women associated with weaving, were progressively marked by repetitiveness, efficiency and segmentation. This increased dependency and reduced the freedom of large sectors of population. The Uruk iconographic repertoire of administrative, ceremonial and luxury material (*i.e.* glyptic and stone vessels) stresses the importance of wool and textile production. In particular, women seem to have been largely engaged in weaving activities. Also, archaic texts from Uruk refer to the new role of sheep in wool production (Green 1980) and tell of textile production and different kinds of dairy produce (see, for instance, Wagensooner 2015). According to Nissen (1986), it is possible to infer that religious and political institutions owned flocks that were entrusted to shepherds responsible for dealing with births, deaths and changes in the composition of the herd.

Archaeozoological, textual and iconographic evidence indicates a widespread adoption of husbandry strategies focused on caprines and an emphasis on wool and textile production during the late 4th millennium BC in southern Mesopotamia (McCorriston 1997). The introduction of these

specialised husbandry strategies may have been associated with a new organisation of the territory surrounding the Mesopotamian cities, with a shift of the flocks from agricultural land to more marginal lands. McCorriston has defined this as a process of extensification of productive land, leaving space for the intensification of cereal cultivation in more productive and easily accessible stretches of arable land. In conjunction with an increasing demand for wool production, this process may have been one of the factors that according to McCorriston triggered off Uruk expansion outside the alluvium, if it was not indeed the main factor involved, as suggested by Porter (2014).

If this new focus on sheep and goats was a sign of the growing importance of these animals and their secondary products in the economies of the Uruk period, we would not expect to find much local differentiation in the archaeozoological data from the sites that were part of the Uruk phenomenon. However, within the overall specialisation in this type of livestock, the available data on the use of sheep and goats show a high degree of variability. Concerning the identification of species, the data militate against a higher ratio of sheep to goats and also against an exclusive relationship between specialised sheep- and goat-raising practices and secondary products such as milk, wool or hair. There is little indication that the production of wool or dairy foods was of central importance for these specialised husbandry strategies. And as Vila (1998, 127–128) contended some years ago, the data seem to suggest that sheep and goats were raised in order to exploit both primary (meat) and secondary products (milk and wool).

### Late 4th-millennium Arslantepe (period VIA)

We now move to the extreme north-west of the Uruk world in eastern Anatolia, where Arslantepe, located 10 km south of the right bank of the Euphrates, is the largest site on the Malatya plain. Here a team from Rome's 'Sapienza' university has unearthed an uninterrupted archaeological sequence spanning from the end of the 5th millennium BC to the Middle Ages. In this paper, we focus on the 4th and early 3rd millennia BC, namely the Late Chalcolithic 3–5 and Early Bronze Age 1a periods in Anatolian chronology (Tab. 4.1).

During the first half of the 4th millennium BC (period VII in the site sequence; 3900–3350 BC), the settled area

Table 4.1: 4th and early 3rd mill. BCE occupation at Arslantepe: absolute and regional chronologies

<i>Arslantepe sequence</i>	<i>Anatolian upper Euphrates periods</i>	<i>Absolute dates BC</i>	<i>Southern Mesopotamia periodisation</i>
VI B2	Early Bronze Age Ib	2900–2750	Early Dynastic I
VI B1	Early Bronze Age Ia	3100–2900	Jemdet Nasr
VI A	Late Chalcolithic 5	3400–3100	Late Uruk
VII	Late Chalcolithic 4	3800–3400	Middle Uruk

at Arslantepe expanded and was organised differently in terms of its functions (Frangipane 2012a, 20–27). Several layers of small dwellings have been excavated on the north-eastern periphery of the mound, while a substantial building (possibly an elite residence) has also been uncovered, extending across the western slope of the mound. At the very end of phase VII, the construction of a monumental tripartite ceremonial building, the so-called Temple C, clearly represents a further sign of social differentiation. The central hall of Temple C is larger than 120 square meters and could accommodate a large number of people assembled around a platform with an open fireplace. The discovery of more than 1000 mass-produced bowls inside this building provides strong evidence of meal distribution and consumption on the spot as a ritualised and communal practice (D’Anna and Guarino 2012). The presence of a hundred clay sealings (*cretulae*) found in one of its side rooms indicates bureaucratised control over the distribution of foodstuffs, confirming the emergence of elites whose power was probably based on some form of control over primary resources.

Throughout period VII animal husbandry was balanced, with a significant presence of cattle and pigs too, but at the end of the period, for the first time, we have a prevalence of sheep and goats in Temple C. This hints at the new economic role played by caprines in food distribution practices, a role presumably bound up with the emergence of a new kind of political organisation. As is commonly agreed, this change is consistent with what was happening in the Late Chalcolithic world of northern Mesopotamia, for example at Tell Brak, before there was any ‘direct contact’ with the Uruk world (Vila 1998).

At the end of the 4th millennium BC, during phase VIA, the size of the settlement shrinks and occupation at Arslantepe consists of what has been defined as a proto-palatial complex (Frangipane 2012a, 29) and a few outstanding elite residences. Recent excavations have proved that these two areas are closely interrelated. The public area was a multi-functional complex consisting of a series of buildings, each of them with a specific function: representative, bureaucratic, economic, ceremonial (Fig. 4.1).

Though the social and political complexity of this period at Arslantepe and the food provisioning activities undertaken there do echo structural features of the coeval Uruk world, Arslantepe VIA never became a real city, neither in dimensional nor in qualitative terms. Moreover, the local material culture only partially recalls the southern models.

In this very singular context, is there in fact any clear evidence for an SPR encouraging the centralisation of resources and ultimately the formation of political and social complexity similar to that recorded in the Mesopotamian alluvium? Data on phase VIA fauna clearly confirms the existence of new, specialised and heavily caprine-oriented

animal herding, which is in line with the trend recorded in the final stages of phase VII in Temple C. The kill-off patterns identified on the basis of the dental remains of sheep and goat prove that animals were exploited for meat consumption rather than for wool or milk (Siracusano and Bartosiewicz 2012). Different kinds of meat were however preferred in different commensal contexts and on different occasions (Bartosiewicz 2010). For example, more than 1,500 animal bones, mainly caprine from medium- and low-quality cuts, were found in redistribution unit A340, where meals were probably disbursed as provisions in exchange for labour. Conversely in Temple B, a relatively small structure difficult to get at, where restricted events including the preparation and consumption of lavish amounts of food were performed, the incidence of caprine bones is less pronounced (D’Anna 2012).

A functional analysis of the period VIA pottery assemblage based on the formal characteristics of the vessels, their capacity and surface alterations (D’Anna 2010) complicates the picture. There are certainly no strainers, filters or lids that would have been useful for processing milk into soft dairy products or cheeses. Because of their restricted opening, the so-called semi-fine necked jars of various dimensions (Fig. 4.2, left), a class of pots in which the influence of Uruk models is strong and which occur in all period VIA contexts, seem to be more suitable for keeping liquids or semi-liquid foods rather than dry goods. Residue analyses have not been carried out yet and it would be foolhardy to speculate on any likely scenarios. However, the few spouted or unspouted bottles (Fig. 4.2, right) found concentrated in specific areas (a stocking area and Temple B) in period VIA contexts could have been used for beer and wine, while the jars could have been used to store semi-liquid products such as yoghurt, soft cheese, porridge or animal fats.

The more frequent occurrence of the necked jars in comparison to the few, and generally small, bottles would suggest that storing semi-liquid foodstuffs was of greater economic importance. In the ‘ration-meal’ redistribution circuits, different kinds of food preparation may have played a major role in comparison to cooked foodstuffs, along with meat that could be roasted or smoked elsewhere and then brought to redistribution unit A340. By contrast, the preparation and consumption of cooked food (including ‘special’ *i.e.* non-caprine meat) may have been a feature of religious/ceremonial events with greater restriction of access (D’Anna and Jauss 2015).

With regard to the production and use of wool and goat hair as opposed to other fibres, we only have indirect evidence to go on, for instance, the imprints of cloth and ropes from the back of *cretulae*. Analyses carried out by Romina Laurito (2007) on more than 300 clay sealings have revealed that flax was more widely employed than goat hair. Laurito also identified a large variety of different cloths and possibly weaving techniques impressed on the reverse of



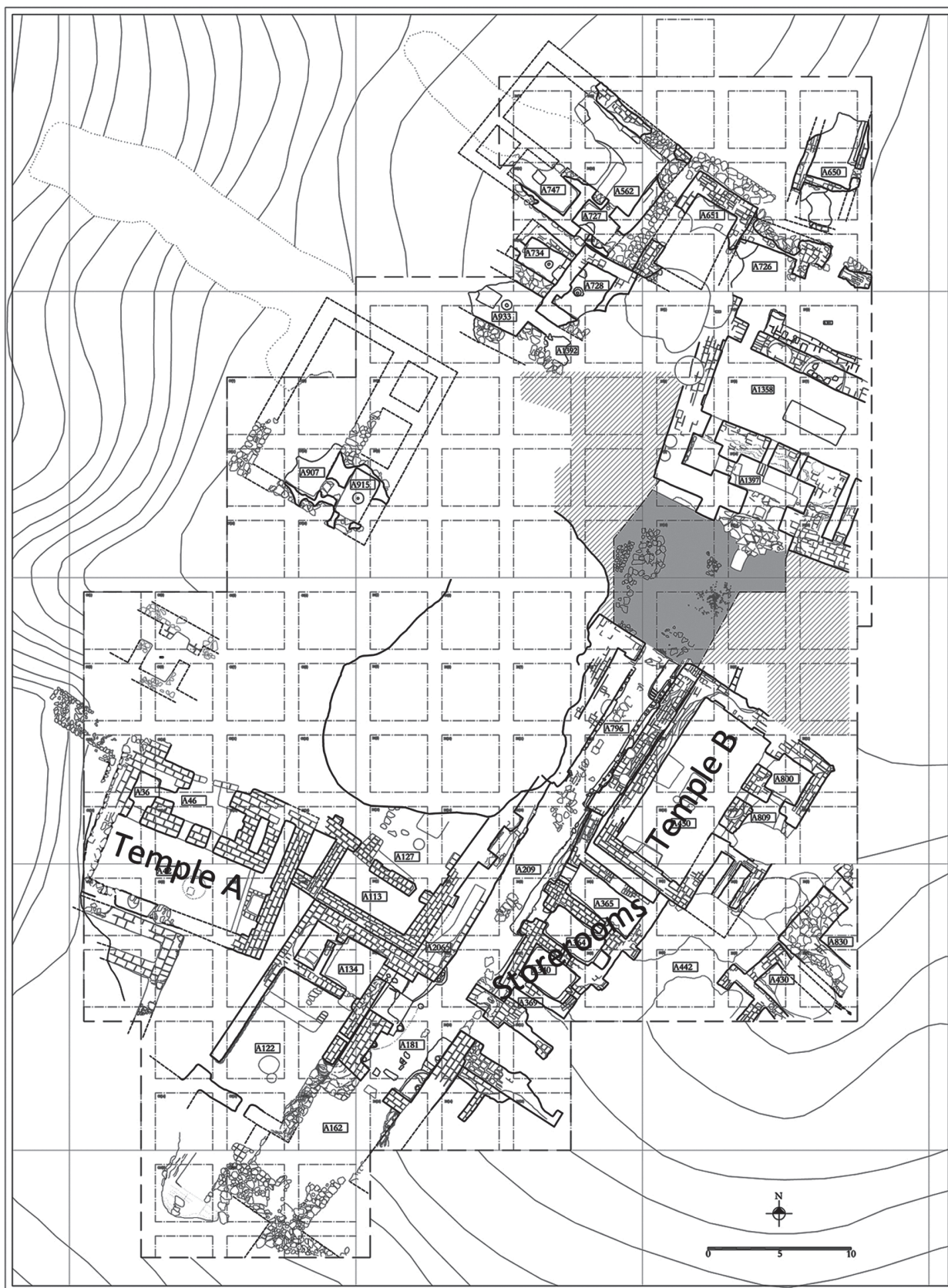


Figure 4.1: The period VIA buildings (courtesy Missione Archeologica Italiana nell'Anataolia Orientale).

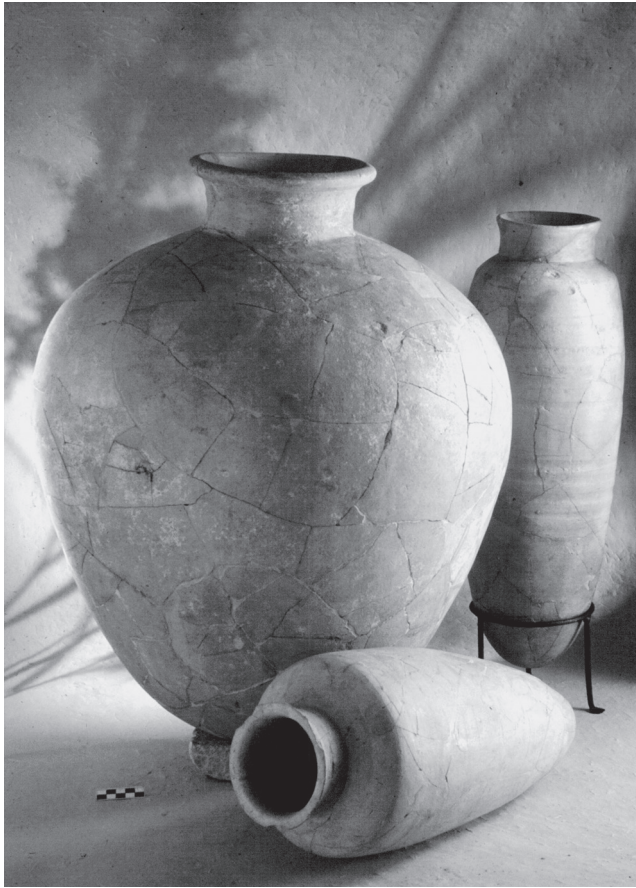


Figure 4.2: Arslantepe VI A. One Light-coloured Necked jar and two bottles found in Temple B (courtesy MAIAO).

more than 160 *cretulae*, but unfortunately no conclusive statements can be made on the kinds of fibre used. Only a few spindle whorls and loom weights have been found in period VIA public contexts, and the majority of weaving tools were found in the residential sector.

In the period VIA palatial complex we have no evidence of large-scale transformation activities on milk and wool. These activities were probably independent of the direct economic interests of the Arslantepe elites. In particular, textile production could still have been in the hands of local households in the rural villages of the plain, carried out on a non-industrial scale and less mercantile in scope than in the southern Mesopotamian cities. It is possible that dairy products were also prepared outside the Arslantepe public building and then brought to the political centre to be distributed to different economic circuits, notably the circuit connected with food provisioning. However, in the public *milieu* of period VIA, in spite of a general overwhelming presence of sheep and goat bones, and in particular those of sheep, the mortality curves dovetail perfectly with the kill-off patterns of meat consumption. Caprine bones are even more heavily present in contexts connected with food redistribution practices, thus suggesting that meat was



Figure 4.3: Arslantepe VI A. The corridor's wall painting (courtesy MAIAO).

basically exploited to finance the centralised system and subsidise the mobilisation of labour.

As for the organisation of pastoral activities, we do not know who owned the animals consumed inside the public buildings. Was it the centralising political elites, who directly managed these activities in accordance with strategies serving their own economic interests? Or did the households living in small villages around the settlement not only produce textiles but also manage livestock? As a matter of fact, the existence of specialised pastoralist communities in the Malatya region during the 4th millennium BC is still hypothetical. The absence of settlements contemporary to the VIA phase is puzzling. The convenient answer would be to take this as negative evidence of a pastoral mobile community, but this is not without its problems. At all events, while pastoral groups and secondary products have remained invisible in the archaeological record of Arslantepe in phase VIA so far, the ideological apparatus of the local elites foregrounded agricultural activities in the glyptic and wall paintings. Both testify to the use of cattle for traction, for threshing with the *tribulum* (on a clay sealing) and possibly for ploughing (*cf.* corridor wall painting: Fig. 4.3).

Moreover, at the very end of period VII we find a few pieces of ceramics that was totally new. This is the so-called Red-Black Burnished Ware that makes up 10% of the ceramic assemblage during period VIA. Period VIA RBBW comprises a small number of vessel types and invariably features a strictly alternating chromatic pattern: the black surface is outside in the closed vessels (jugs and small- to medium-sized jars) and inside in the open ones (bowls, mugs, and high-stemmed bowls). These ceramics could be the expression of an identity that linked this hand-made bichrome ceramic tradition developing in the Anatolian highlands during the 4th millennium BC with the new specialised husbandry practices, as epitomised by this red-black jar bearing the representation of a caprid (Fig. 4.4).





Figure 4.4: Arslantepe VI A. The capride applied on a Red-Black Burnished jar, particular during the excavation (courtesy MAIAO).

### Early third-millennium Arslantepe (Phase VIB1)

A devastating fire completely destroyed the period VIA buildings and the way of life associated with it. It has been suggested that the destruction of the public buildings could have been the result of a systemic crisis befalling the centralised institution as the Anatolian highland environment may not have been conducive to the large-scale surplus production of needed to fuel the redistributive system controlled by the local elites (Frangipane 2012b).

After this destruction, a number of radical and long-term cultural changes characterised the history of Arslantepe in the early stages of the 3rd millennium. To understand these changes, we need to shift the focus of our attention to another phenomenon that was radically different in nature from Uruk: the so-called Kura-Araxes (KA) or Early Transcaucasian culture. As of the second half of the 4th millennium BC, the KA culture started developing among the communities of the southern Caucasus, north-western Iran and the eastern Anatolian highlands as a well-codified package of material and symbolic traditions (Sagona 1984; 2014; Greenberg and Palumbi 2014).

Among these traditions, ceramics seem to have functioned as an identity marker for the Kura-Araxes communities. Kura-Araxes ceramics are often characterised by a special attention to technical and aesthetic features, ranging from the burnishing of surfaces to a recurring set of decorative motifs, and finally a standard red-and-black chromatic effect between the black exterior and red interior surfaces of the same vessel. A rather standardised morphological repertoire is also characteristic of Kura-Araxes ceramics: truncated-conical necked jars, large S-shaped bowls and circular lids invariably fitted with handles represent clearly recognisable traits of the Kura-Araxes ceramic tradition.

As for metallurgical traditions, some typical body ornaments are also associated with this culture: double spiral

headed pins, hair spirals, and diadems, the latter often found in funerary contexts. The Kura-Araxes funerary customs display a large variety burial practices, with stone-lined cists among the most distinctive funerary structures.

Kura-Araxes communities seem to have lived in small villages composed of mono- or bi-cellular residential units. Here, three-leaved fireplaces or horseshoe-shaped andirons decorated with anthropomorphic or zoomorphic motifs were central features of what appears to have been a pronounced ritualisation of the everyday life (Sagona 1998; Smogorzewska 2004).

As for the primary economy, archaeozoological and paleobotanical data indicate that Kura-Araxes communities maintained a mixed agro-pastoral economy based on cereal agriculture and on non-specialised husbandry strategies mainly focusing both on cattle and caprines (Sagona and Zimansky 2009).

At some point in its history, the Kura-Araxes culture, from being a specific tradition of the South Caucasian highlands, became one the most geographically extended cultural horizons in western Asia (Smith 2005). This so-called 'Kura-Araxes expansion' took the form of a large-scale circulation of people that spread traits derived from their cultural model across a vast area extending from the Zagros Mountains in Iran to the Anatolian Upper Euphrates and from this latter region to the Amuq plain as far as southern Levant (Greenberg and Palumbi 2014). What is striking is that the first regions to be caught up in this development at the beginning of the 3rd millennium BC – the Upper Euphrates Valley in Anatolia and the Kangavar Valley in Iran – were the very same highland regions that had been previously involved in the so-called Uruk 'expansion', albeit in a very special and unique way. We believe that in the Upper Euphrates region the Late Chalcolithic innovations pertaining to animal production may have played a major role in the expansion of the Kura-Araxes culture taking place in this region at the very beginning of the 3rd millennium BC.

This is clearly exemplified by Arslantepe phase VIB1, following the destruction of the public building from the Uruk period.

With the exception of an enigmatic mud-brick construction (Palmieri 1981; Frangipane and Palmieri 1983), most of the architectural evidence from period VIB1 that was excavated at Arslantepe during the 1970s–1990s consisted of a series of levels of wattle-and-daub huts and large open areas (Frangipane 2012b, 239). However, the excavations carried out during the last few years have revealed that this phase was actually a more complex and substantial matter than has been assumed so far (Fig. 4.5).

In terms of the early VIB1 phase, the finds were exclusively light architecture in the form of wooden or wattle-and-daub huts, suggesting short-lived periods of temporary occupation (Frangipane 2014). Subsequent levels

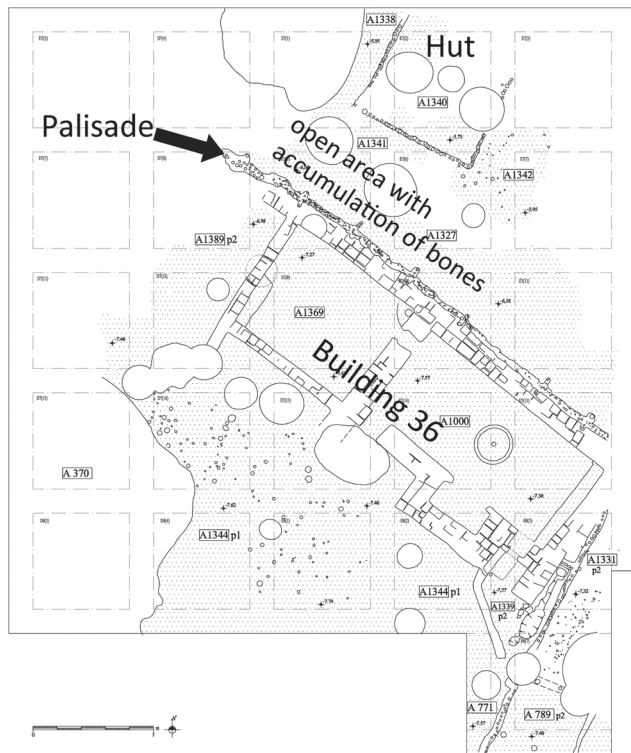


Figure 4.5: Arslantepe VI B1. Plan of the architectures in the Northern part of the settlement (courtesy MAIAO).

testify to a progressive re-occupation of the higher part of the ancient mound, with more substantial structures built inside and outside a massive rectangular palisade.

Without going into the finer details of the various architectural phases recorded in phase VIB1, a large mud-brick building (Building 36) on the southern side of the palisade repays closer attention. It consisted of a long rectangular room with a large circular fireplace and a smaller adjoining storage room with a large number of *pithoi* (Frangipane 2014). The large dimensions of this building, the presence of a monumental fireplace and the adjoining store-room, where two metal spear-heads were also found, indicate that Building 36 was not an ordinary dwelling but a structure with special functions, possibly ceremonial and commensal. The main room was large enough for an assembly of people to sit on a bench and around the big hearth, which was more than 1m in diameter (Fig. 4.6).

As Frangipane (2014) has pointed out, the Arslantepe settlement maintained its central political and symbolic significance in the region even after the collapse of the monumental building from the Uruk period. This significance is a plausible assumption given the presence of the so-called Royal Tomb probably dating back to the final years of phase VIB1, an elite burial featuring an amazing number of metal grave goods (Frangipane *et al.* 2001; Palumbi 2008) (Fig. 4.7).



Figure 4.6: Arslantepe VI B1. The hearth in the main room (A1000) of Building 36 (courtesy MAIAO).



Figure 4.7: Arslantepe VI B1. The nine spearheads found in the 'Royal Tomb'.

Thus the beginning of the 3rd millennium BC saw the emergence of new forms of power based on strength, warfare and the accumulation of prestige goods. This species of power was radically different from the bureaucratic power



of the Uruk period and also from that of the coeval Jemdet Nasr period in southern Mesopotamia. Available evidence suggests that at the very beginning of the 3rd millennium in southern Mesopotamia institutions of power were still founded on the administered distribution of staple products. These continued to be disbursed in exchange for labour in the form of food rations given out in wheel-thrown conical bowls, the ceramic 'type fossil' of the Jemdet Nasr period and the equivalent of the bevelled-rim bowls from the Uruk period (Pollock 1990; 1992).

At Arslantepe, the lasting central symbolic significance of the site despite ongoing changes in the nature, structure and representation of power is testified to by ceremonial events that were however different in nature from those of the Uruk period. They include large-scale feasting taking place outside a large wattle-and-daub hut, where about 6000 animal bone fragments, mostly stemming from the best meat cuts, were found (Siracusano and Bartosiewicz 2012, 119–120). According to Giovanni Siracusano, both the quantitative and qualitative data point to the extraordinary nature of this dump. The bones are probably leftovers from large-scale commensal events involving large numbers of people and taking place periodically on the highest part of the mound (Siracusano and Palumbi 2014). The animal species identified on this site show a marked prevalence of caprines, representing as much as 93% of all the finds. This preference for caprines is further confirmed by data from the rest of the VIB1 settlement (Siracusano and Bartosiewicz 2012, fig. 3).

The comparison of faunal data from phase VIB1 at Arslantepe with those of the earlier phase VIA indicate a strong continuity in specialised husbandry strategies focusing on sheep and goats, suggesting a long-term impact of the 4th-millennium husbandry strategies rooted in the entrenchment of a centralised economy and exploited in the framework of an elite redistributive economy.

Despite this basic continuity, some changes in animal strategies between the 4th and the 3rd millennium BC can however be noted, such as the decrease in the sheep-goat ratio from 3:1 in phase VIA to 1.7:1 in phase VIB1 (Siracusano and Bartosiewicz 2012, fig. 1) and a slight change towards greater exploitation of milk highlighted by the mortality profiles (Siracusano and Bartosiewicz 2012, 119).<sup>1</sup> However, as in period VIA, neither strainers nor specific ceramic shapes clearly associated with milk-processing or the production of dairy products have yet been found in the ceramic repertoire from phase VIB1.

Though sheep meat was used in the 4th millennium BC as the foodstuff of choice for redistributive activities, the model of husbandry practised in the 3rd millennium BC did not specialise in one single product, either primary or secondary.

For wool, the data available for period VIB1 is inconclusive. On the one hand, mortality profiles show no

clear evidence in favour of wool exploitation, and textile or weaving tools are very rarely found in phase VIB1 (Laurito *et al.* 2014, 159). On the other hand, the analyses carried out on some textile fragments preserved in the Royal Tomb have shown that they were made of goat hair and characterised by extremely fine, high-quality fabrics, indicating the use of thin yarns, an increasing variety of wool fibres produced during this period, and highly skilled weaving technologies (Frangipane *et al.* 2009, 16–20; Laurito *et al.* 2014, 160).

On the whole, specialised herding strategies focusing on caprines and the widespread use of light architecture are strongly characteristic of VIB1 occupation of Arslantepe by a pastoral society. However, the economic activities of these pastoral groups do not seem to have focused on the production of secondary products, while the consumption of mutton was a feature of both everyday meals and exceptional commensal events.

The basic continuity of husbandry strategies between phases VIA and VIB1 contrasts with the fact that pastoral occupation in phase VIB1 at Arslantepe marks a radical cultural change over and against the previous phase. This change has to be seen in the framework of an active process of cultural innovation resulting from new interactions with the Kura-Araxes world that were integrated into a continuity framework featuring some characteristics preserved from past local traditions. The majority of phase VIB1 ceramics was hand-made, mostly red and black (Fig. 4.8). In formal terms, however, the VIB1 ceramic repertoire combines typical Kura-Araxes phenomena, such as cylindrical necked jars, circular lids and the widespread use of handles with a firing technique that replicates the same shifting chromatic pattern as we find in the 4th millennium Red-Black Burnished Ware and that differs from the fixed alternation between red and black surfaces in the KA vessels.

There are also clear signs of coexistence between new (Kura-Araxes) and past traditions recorded in the Royal Tomb. The construction of a stone lined cist, the morphologies of the red-and-black jars and the presence of body ornaments such as diadems, hair spirals and double



Figure 4.8: Arslantepe VI B1. Ceramics found in situ in Building 36 (courtesy of MAIAO).

headed spiral-pins all clearly recall the Kura-Araxes world, whereas the metal spearheads with their silver inlaid decorations and the wheel-made light-coloured jars appear to stand for the heritage deriving from the metallurgical and potting traditions of the Uruk period (Frangipane *et al.* 2001; Palumbi 2008). At the same time, continuities with 4th millennium domestic traditions are also visible in the persistent use of the omphalos-shaped circular fireplaces found not only in Building 36 but also in other huts (Balossi Restelli 2015). Finally, the specialised husbandry strategy focusing on sheep and goat represents the last and by no means unimportant element of structural continuity between the late 4th and early 3rd millennium BC at Arslantepe.

Putting all this data together, the mixture of old (Uruk and Anatolia-related) and new (Kura-Araxes-related) elements strongly suggests that the communities living at Arslantepe at the beginning of the 3rd millennium BC were local shepherds, possibly the direct descendants, in both social and productive terms, of those specialised pastoral communities that had been generated and integrated (or, in less euphemistic terms, exploited) by the centralising elites emerging in the Upper Euphrates during the 4th millennium BC.

Data from phase VIB1 at Arslantepe highlight the fact that these pastoral communities did not simply survive the collapse of the centralised economic institutions that generated and possibly exploited them. In the early 3rd millennium BC they did become the protagonists of a long-term process of cultural innovation.

## Conclusion

The data on the SPR at our disposal does not indicate a unitary and linear process of innovation throughout the entire 4th millennium BC in Mesopotamia, but rather processes of adoption and selection according to different economic, social and cultural contexts.

In southern Mesopotamia, the SPR has to be seen in the context of an urban way of life and a temple-based tributary economy. The intensification of the production of wool, textiles, milk and cheese was probably designed both to satisfy the staple needs of larger concentrations of people and to create economic surplus. In this socio-economic context, specialised pastoralism was a primary activity creating secondary structural products to feed a complex economic and social system based on productive specialisation and interdependence between producers and consumers.

As Greenfield (2005) has pointed out in his work on the SPR, one of the problems with Sherratt's model is that the appearance of the secondary products may have varied in time from region to region and that not all products may have arrived or been adopted as a unitary package.

Arslantepe seems to bear this out. The specialisation and possibly the intensification of husbandry strategies recorded

at the site from the mid-4th millennium BC onwards were not directly or exclusively connected to the exploitation of milk and wool, but rather to meat consumption and the accumulation of animal capital for exchange, storage and eventual consumption. Furthermore, this trend does not seem to have been adopted or emulated in a straightforward way from Uruk communities, since it preceded the Uruk influence at the site. In the non-urbanised context of Arslantepe, the exploitation of meat was a way of financing the economy of a centralised institution and building up wealth in the framework of relations of inequality. And this was ultimately the innovative side of the phenomenon. The central role of meat seems to have continued to figure in the dietary habits of the early 3rd millennium specialist pastoralists just as extensively as in the feasting activities performed by those same shepherds on the site.

However, Andrew Sherratt was not wrong in hypothesising that the development of different subsistence specialisations, such as those of agriculturalists and mobile pastoralists, may have led to the existence of polyethnic social systems (Frangipane 2015). With respect to Arslantepe, matters seem to have developed in this direction, and this may in fact be one of the keys to understanding the dynamics of long-term cultural change in this region.

This long-term cultural change started in the early 3rd millennium BC<sup>2</sup> as a result of a process of cultural appropriation headed by pastoral groups selecting and re-adapting Kura-Araxes cultural elements for the construction of their new cultural identity. This new identity was built on a strong pastoral infrastructure requiring mobility practices that may have strengthened a sense of collective identity different from that of the contemporary agricultural communities of the region. At Arslantepe this pastoral infrastructure was already very strong at the end of the Late Chalcolithic and was integrated into the centralised economic system as a 'structuring' component, however submitted or exploited to some degree. With the collapse of this system at the beginning of the Bronze Age, specialised pastoralism acted as a vector of cultural and eventually political innovation. The adoption of new traits linked to the Kura-Araxes model – traits that were the expression of small-scale communities, household production and kinship-based social organisation – may have been an attempt to reconstruct a new social order and collective social identity as an alternative, possibly even subversive, model to the centralised systems of the Chalcolithic.

We began our remarks by questioning the assumption of linear correlations between innovations and cultural change and more generally of unidirectional changes from simple to complex, from egalitarian to hierarchical, from low-tech to high-tech. The case of Arslantepe shows that similar innovations can occur in different social and political settings and can accordingly pervade, shape and be shaped differently by diverse *milieus*. More generally

speaking, innovations can be the results of non-linear re-combinations of existing elements in which situational and relational dimensions become crucial factors in processes of appropriation.

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## Notes

- 1 Haskel Greenfield notes that, as published at present, the mortality profiles of both phase VIA and VIB1 animals lump together kill-off patterns for both sheep and goats, thus representing a levelling form of 'average' information that may not reflect the specific use made of the products of each of these species.
- 2 The complexity of the Mesopotamian case, and especially the interdependences between socio-political complexity and SPR, is also attested to by what happened in other regions of the Uruk world. This is a complex topic that goes beyond the scope of the present article. However, it is worth briefly recalling that the end of the Uruk period marks important changes not only in Anatolia but also in northern Mesopotamia, though the adoption of the Uruk lifestyle was here much more pervasive and 'global' than north of the Taurus range. Though in northern Mesopotamia continuity in material culture between the Late Uruk and the 'early' Early Bronze Age is strong, some regions underwent a process of profound ruralisation, for example the Charchemish-Birecik sector along the mid Euphrates River valley (Ricci 2013). Along the whole 'fragile crescent' it was during the 'late' Early Bronze Age that large-scale wool production and the emergence of specialised herders boosted urbanisation. This also accounts for the occupation of more marginal landscapes during a period that was marked by the consolidation of strong city-based elites (Lawrence 2012; Lawrence and Wilkinson 2015, 337).

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