

Re-modeling Political Economy in Early 3rd Millennium BC Mesopotamia: Patterns of Socio-Economic Organization in Archaic Ur (Tell al-Muqayyar, Iraq)

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Abstract

Political economies of early Mesopotamia are traditionally modeled upon text-oriented research and unilinear schemes. These approaches are flawed in many ways and often over-emphasize the agency of elite groups. An integrated strategy combining archaeology, textual sources and anthropological theories is used here to draw a more nuanced picture of social arrangements in early 3rd millennium BC Ur. The aim of this paper is to shed light on the changes of political organization and on the manifold economic strategies put in place by political powers in an early urban system in southern Mesopotamia.

§1. Introduction¹

§1.1. The formation of “primary states” during the 4th millennium BC (or Uruk period) is a key time for organizational change in southern Mesopotamia. The onset of the 3rd millennium BC offers evidence of different socio-economic dynamics that, however, remain largely unknown (cf. Marchetti in Marchesi & Marchetti 2011: 211-214). Empirical evidence for these events is impressive, while theoretical and comparative works lag behind due to the dearth of social and cultural analysis. Although more heterogeneous trajectories for ancient societies have been recently brought to the fore (Adams 2001; Feinman & Marcus 1998; van der Leeuw & McGlade 1997; Padgham 2014; Stein 1994, 1998, 2001; Warburton 2009; Wilkinson, Gibson & Widell 2013; Yoffee 2005; Zettler 2003), 3rd millennium Mesopotamia remains *de facto* under-conceptualized.²

§1.2. The site of Tell al-Muqayyar, ancient Ur, in southern Iraq (Di Giacomo & Scardozzi 2012: fig. 2), is best known for its late Early Dynastic Royal Cemetery (ca. 2500-2350 B.C.; Woolley 1934) but it was already a political center at the onset of the 3rd millennium (Early Dynastic I period, ca. 2900-2700 BC). Due to the rich archaeological evidence at our disposal, Ur is an ideal test case for an intra-site analysis of urban organization for this specific time period (cf. Wright 1969). This article addresses the internal political organization of archaic Ur and how it changed over time, based on a fresh analysis of the data excavated by C. L. Woolley. In this paper, emphasis is placed upon the interplay between economic and socio-cultural actions, analyzed on the basis of three main lines of evidence: archaeology, written sources and anthropological frameworks (cf. Smith 2004: 77-78).³

§1.3. Practical knowledge about the lives of inhabitants of ancient Ur can be gained from excavated data. Most of the archaeological information dating from the early

¹ Work on this paper began while conducting doctoral research on Early Dynastic Ur at the University of Turin (Italy). Some of the results of this work have already appeared in print (Benati 2013, 2014, 2015), and a monograph is currently being prepared by the author at the University of Bologna.

² On early Mesopotamian political history, see Richardson 2014; G. Marchesi in Marchetti & Marchesi 2011: 97-128; Marchesi 2015.

³ A fresh examination of the cuneiform texts from the early 3rd millennium BC has been carried out by C. Lecompte (2013), with whom I am currently collaborating on the embedded nature of texts in archaeological contexts (Benati & Lecompte forthcoming a, b).

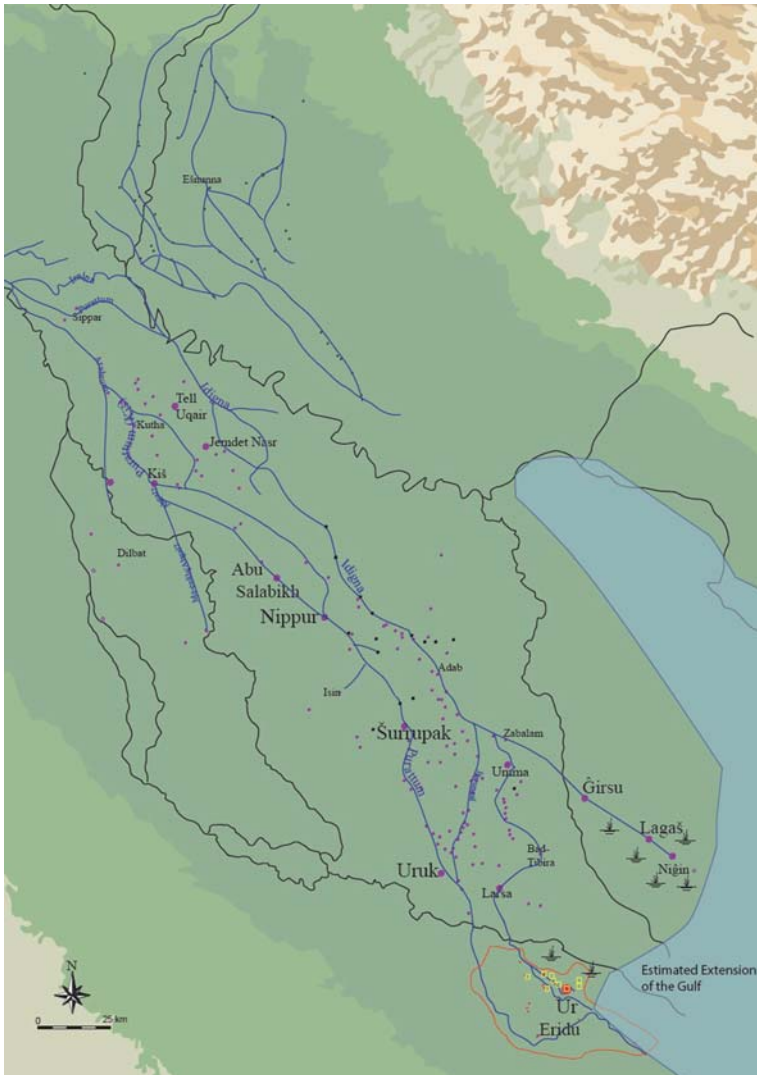


Figure 1
Map showing main watercourses and settlements in 3rd millennium BC Mesopotamia. The red line encompasses the area surveyed by H. Wright (1981; based on Lecompte 2013: pl. 2, and Sallaberger & Schrakamp 2015: Map 2).

3rd millennium BC, comes from outdoor middens.⁴ Although frequently overlooked in scholarship, refuse is socially meaningful and can be used to reconstruct household consumption and discard patterns (Gifford-Gonzalez 2014; Beck & Hill Jr. 2004). Among the discards, clay

⁴ For a general discussion of the Mesopotamian 3rd millennium absolute chronology, see Wright 1980. The dataset from the Inanna temple in Nippur allows us to place the Early Dynastic I period roughly between 2900 and 2600 BC. Recent samples from Konar Sandal South, southeastern Iran, afford additional evidence for this period. Charred materials from Trench XI produced a range comprised between 2880 and 2580 BC (Pittman 2012: 80, Table 1). On the basis of associated glyptic (a “City Seal” impression, cf. *ibid.*, fig. 1), this phase is equated to the Mesopotamian ED I period by the excavators.

sealings bearing seal-impressions, and cuneiform tablets are the most telltale items and can provide first-hand information about the economic decision-making of a bureaucratic core (Dittmann 1986; Foster 1986; Frangipane 2007, 2010; Pittman 1994; Wright 1969).

§1.4. The goals of this study are two-fold. The first is to propose a new narrative of formation processes for early 3rd millennium BC layers excavated at Ur. The second is that of sketching a bottom-up model of organizational dynamics in an early Mesopotamian urban system. A “middle-range” theoretical framework (or empirical theory) is tailored in this essay to bridge the gap between archaeological data and social and cultural processes in order to better understand ancient urban dynamics (cf. Smith 2011: 167-173).

§1.5. The article is divided into two main parts: the first three sections (§§2-4) deal with site formation processes and administrative decision-making; the following three (§§5-7) explore urban dynamics and political economy.

§2. Background to Analysis: The Archaeological Landscape of Early 3rd Millennium Ur in a New Light

§2.1. At Ur, the excavators encountered contexts dating from the onset of the 3rd millennium BC in the southeastern corner of the area encompassed by the wall of the neo-Babylonian temenos, in the so-called Royal Cemetery Area (cf. figure 2). Here, horizontal and vertical digging exposed structural remains, productive areas and refuse heaps.

§2.2. Building remains were identified in three excavation areas: Pit F, Pit G, and in the strip comprised between Pit G and the southeastern limit of the RC Area. In Pit F—located to the back of the Royal Cemetery (in the following RC) area—a pottery production area with kilns, in use during the late 4th millennium, was converted into a dwelling area at the turn of the 3rd millennium (cf. Woolley 1956: pl. 73). The floor assemblages indicate that Levels I and K in Pit F consisted of mud-brick compounds engaged in storage and transformation of food. Administrative activities involving the use of glyptic ma-

Date B.C. Uncalibrated	Historical Period		Excavation Areas			
			Pit F	Pit G	RC Area	Ziqqurat Terrace
2700 ca.	ED I	Late	E F G H	↑ 5-9 (?)	-Pit X rubbish tip (?) -Administrative quarter -F.1011 -SIS 5/4	Archaic II (?)
2900 ca.		Middle			SIS 7/6	
		Early			SIS 8	
3100 ca.	Jemdet Nasr	Late	I K	↑ 1-4	↑ "JN Cemetery" (Pits W, X, Y -Z)	↑ Archaic III -IV
		Middle				
	Early	↑				
	Uruk	Late	Kilns			

Table 1
Chrono-stratigraphic synopsis of the late 4th-early 3rd millennia BC layers excavated at Ur and discussed in the paper.

materials are also documented here (Woolley 1956: 64-68).

§2.3. Further evidence of domestic activities comes from the refuse dump excavated in Pit G. Here layers of waste yielded pottery sherds, tools and administrative devices (Woolley 1956: 69-70, pls. 1, 72; Charvát 2014). The chronological horizon gleaned from these materials matches the one from Level I-K of Pit F. In Pit G, the debris layers were covered by mud-brick structures. Large mud-brick compounds lying at about 10m above sea level (in the following asl) in both Pit F and Pit G, suggest that this part of the mound was an urban area with courtyard houses, alleyways and a thick boundary wall during the first quarter of the 3rd millennium (cf. Benati 2014).

§2.4. Evidence from these soundings indicates that houses were often refurbished, and at intervals rebuilt following similar layouts. The structures of Pit G were equipped with fixed installations, perhaps hearths (cf. Woolley 1956: pl. 72). Although the levels of Pit F produced little associated material culture, the domestic function of these contexts seems assured.⁵

§2.5. Additional information on the urban planning of this area comes from the structures uncovered in the

⁵ The multi-room compounds investigated in Pit F offer evidence of domestic storage, with some rooms packed with jars suitable for storage (Levels H and E: cf. Woolley 1956: pl. 75; Benati 2014: fig. 2). Activity areas are seldom recognizable and little evidence of crafts comes from these loci. These trends probably reflect depletion activities that hinder our reconstruction of household assemblages (cf. LaMotta & Schiffer 1999). The same applies for the building remains covering the debris in Pit G, devoid of artifacts. The sampling program carried out in the domestic compounds at Abu Salabikh demonstrated that rooms within households were thoroughly swept clean (Matthews & Postgate 1994: 172-176).

strip located to the south of Pit G (cf. figure 3). Here the excavators found structural remains that, at least in two spots, could be interpreted as multi-room mud-bricks compounds.

§2.6. The extensive clearance of this area produced evidence of structures arranged over a surface gently sloping downwards. To the side of the "Death Pit" PG1237, a small trench intercepted the remains of a room (named here Compound 3 or "Ancient Room"), with a large group of tablets lying on a clay pavement with ash and degraded mud-brick materials, in turn sealed by an ashy fill and a later pavement (Benati & Lecompte forthcoming a). Similar information was gathered below PG1050, where four rooms (Compound 1) produced *in situ* tablets, sealings, pottery and installations (Woolley 1934: 96-97, fig. 14). The same stratigraphic features were observed near PG789 and beneath PG580, where empty rooms pertaining to a large compound (Compound 2) were cleared (cf. Woolley 1956: 70-71, fig. 12). In the area of Pit D and PG1332, brickwork was detected above a layer of charred remains used as in-fill, suggesting new housing construction also here (cf. Woolley 1956: pl. 83, column D).

§2.7. This spatial analysis indicates a major landscaping episode consisting of the expansion of the built-up area of the town through the construction of new house lots in an open area seemingly located at the brink of the settlement. Conversely, the strip comprised between Pits Z-Y and W—occupied by steeply sloping rubbish heaps—remained in use as a midden for a long period. As indicated by the stratigraphy of the houses, the first building phase was destroyed by a fire and rebuilt shortly afterwards. It is possible that at this point the dump area was further expanded to the South, as indicated by the rubbish tip detected in Pit X (cf. Woolley 1956: 79, pl. 78).

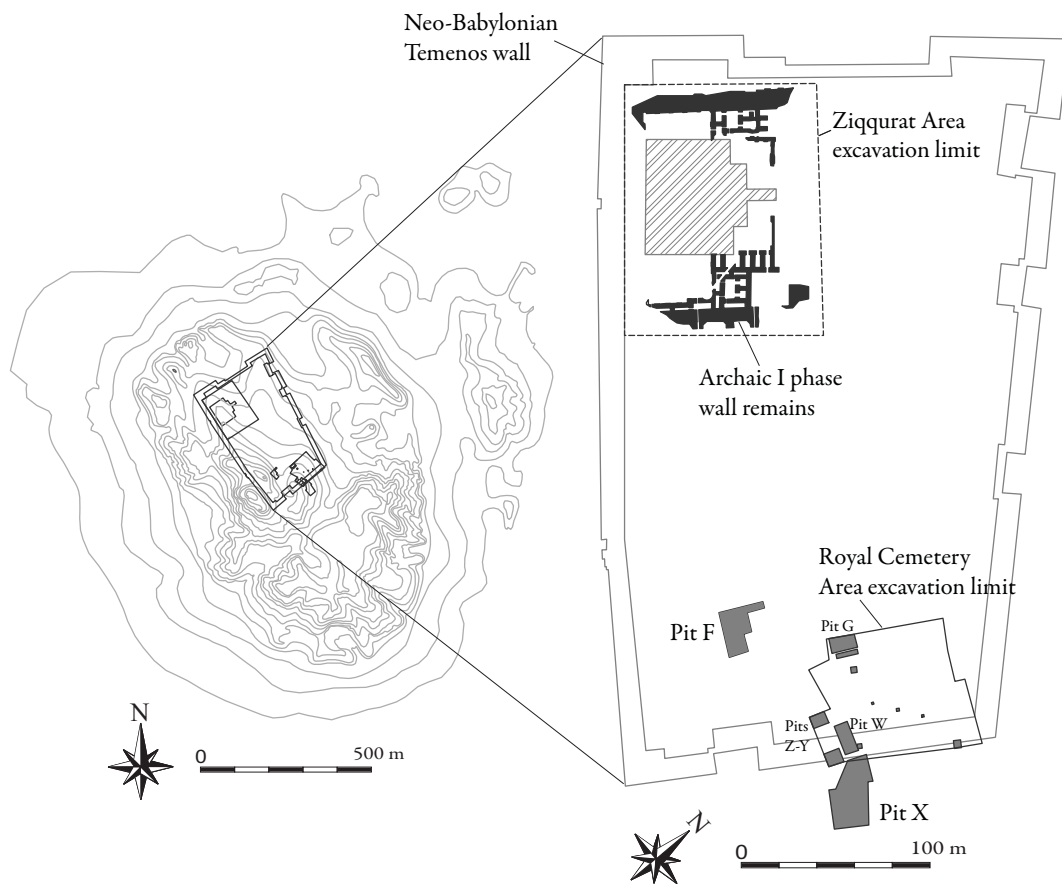


Figure 2
Map showing the location of the excavation areas that yielded 4th and 3rd millennia material culture at Ur (based on Woolley 1932: pl. 63; Woolley 1956: pl. 1).

§2.8. This short-lived quarter was then abandoned (the upper building phase was depleted all over), as was the whole slope. During the second half of the 3rd millennium, the area was turned into a burial ground (i.e. Royal Cemetery or RC), with the graves cut into the thick layers of waste. Overall, household remains denote thorough depletion patterns, and floor assemblages are sporadic. Critical information on household consumption can be extracted from the layers of solid waste intercepted in the RC Area.

§3. Archaeology of Garbage Disposal and Non-Architectural Spaces in Early Ur

§3.1. Good samples of domestic and above-domestic consumption come from outdoor garbage deposits at Ur. The focus of this section is therefore the undeveloped space between buildings (cf. Hayden & Cannon 1983; Hutson et al., 2007). In particular, the majority of the administrative artifacts at Ur have been recovered in waste layers

⁶ The SIS layers can be considered as extramural heaps on the basis of these pieces of evidence: 1) The low lying area at the foot of the rubbish tips was occupied by a large

at the outskirts of the settlement (i.e. Seal-Impression Strata or SIS).⁶ If studied with a sound methodology, material culture from trash areas represents a major source of information on behavioral patterns (Gifford-Gonzalez 2014; Rathje & Murphy 2001).

§3.2. In order to proceed from site formation to consumption patterns, it is necessary, in the first place, to reconstruct the formation processes of each assemblage (LeeDecker 1994; Schiffer 1972, 1985). Here follows a brief description of the

SIS as a sequence of discrete discard activities.

§3.3. The debris excavated in the Royal Cemetery Area were seemingly cast out from an upper terrace lying at ca. 10m asl, into a low-lying area used as burial ground since the late 4th millennium (the so-called “Jemdet Nasr Cemetery”). The debris of SIS 8-4 formed a slope following a northwest/southeast direction, suggesting that the throws originated from the area lying immediately to the back of Pit Z (cf. figure 3).⁷ The repeated episodes of gar-

burial ground, in use between the end of the 4th and the early 3rd millennium; 2) The area later on occupied by the “administrative quarter” was tested with deep pits that did not produce evidence of architecture pre-dating the quarter.

⁷ Studies of discard practices in agrarian communities demonstrate that least-cost principles are generally applied in selecting the location for discards (cf. Beck & Hill Jr. 2004: 308-309, 327-328; Hayden & Cannon 1983). People tend to use the middens located closest to their household, and in general, they tend not to carry their garbage too far from the area of production.

bage deposition gradually filled the gap between the terrace and the lower ground and formed a rubbish heap in the area comprised between Pits Z-Y, W and X (cf. Zettler 1989: 370-372).

§3.4. Refuse layers were also excavated in Pit G, farther north along the slope. These layers yielded pottery shards, miniature ware, complete vessels, flints, tools, ca. 20 sealings broken off jars and door pegs, some cuneiform documents, and a cylinder seal, all predating the SIS horizon (see §5.2 below).

§3.5. The lowest Seal-Impression Stratum (SIS 8), was excavated in Pit Z.⁸ SIS 8 was formed by three discrete dumping events: a black deposit of ash and charcoal with pottery shards, tools and stone artifacts, sandwiched between two brickly layers with seal impressions and one tablet fragment. According to the inter-annual variation patterns of domestic activities observed by H. Wright (Wright, Miller & Redding 1980; Wright, Redding & Pollock 1986), one may suggest that the SIS 8 deposit accumulated over a short time-span. The two brick-earth fills can be interpreted as by-products of construction/demolition activities carried out during the hot season, and the ash layer as a by-product of domestic tasks performed during the winter, when heating is required.⁹ Bowls, millstones

⁸ The cemetery has been identified between the areas of Pits Z, Y, W and X for a total excavated surface of ca. 700m², producing ca. 400 burials (cf. Woolley 1956: 103-157). Although gradually covered by debris, the area remained in use as burial ground and the graves were dug into the rubbish tips. Therefore, some of the graves are to be considered contemporary to the SIS artifacts (cf. Forest 1983; Kolbus 1983; Moorey 1994: 43-44).

⁹ Ethno-archaeological research on mud architecture informs us that houses made of mud (pisé) can last between 10 and 15 years, with semi-annual re-plastering of the house (Wright 1969: 18). Mud-brick compounds can

and solid-footed goblets discarded alongside clay figurines and charred remains point to everyday domestic consumption. The sealings from SIS 8 were mostly broken off closed-shape pottery specimens, and to a lesser extent door pegs and reed-matting containers. The ca. 30 sealings from SIS 8 were impressed with 20 individual

last 30 to 40 years (Kamp 2000: 91). Roofing and fittings are made of palm logs and reeds. In addition, cane and reed mats are traditionally used to build huts (mudhif). The lifespan of these structures will not exceed 10 years. Plant remains excavated at Sakheri (Wright 1969: 89) demonstrate that tamarisk and poplar wood was used for architectural elements. The burned remains, degraded mud-brick material and lime forming the SIS layers are to be considered the discarded by-products of similar construction works (cf. also Ochsenschlager 2004: 95-110; Friesem, et al., 2014a, 2014b).

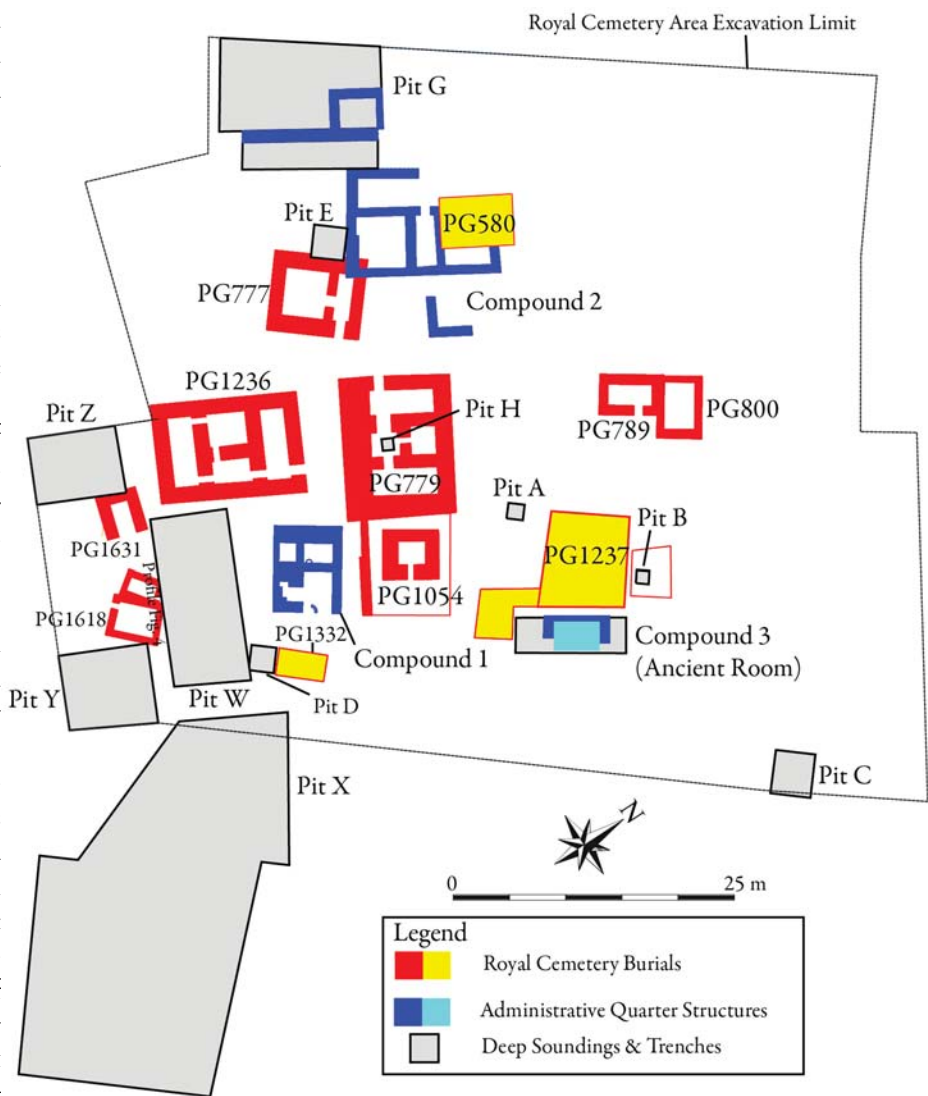


Figure 3
Plan showing some of the archaeological features excavated within the Royal Cemetery Area (based on Karstens 1987: fig. 2; Nissen 1966: pl. 41; Zimmerman 1998: fig. 53).

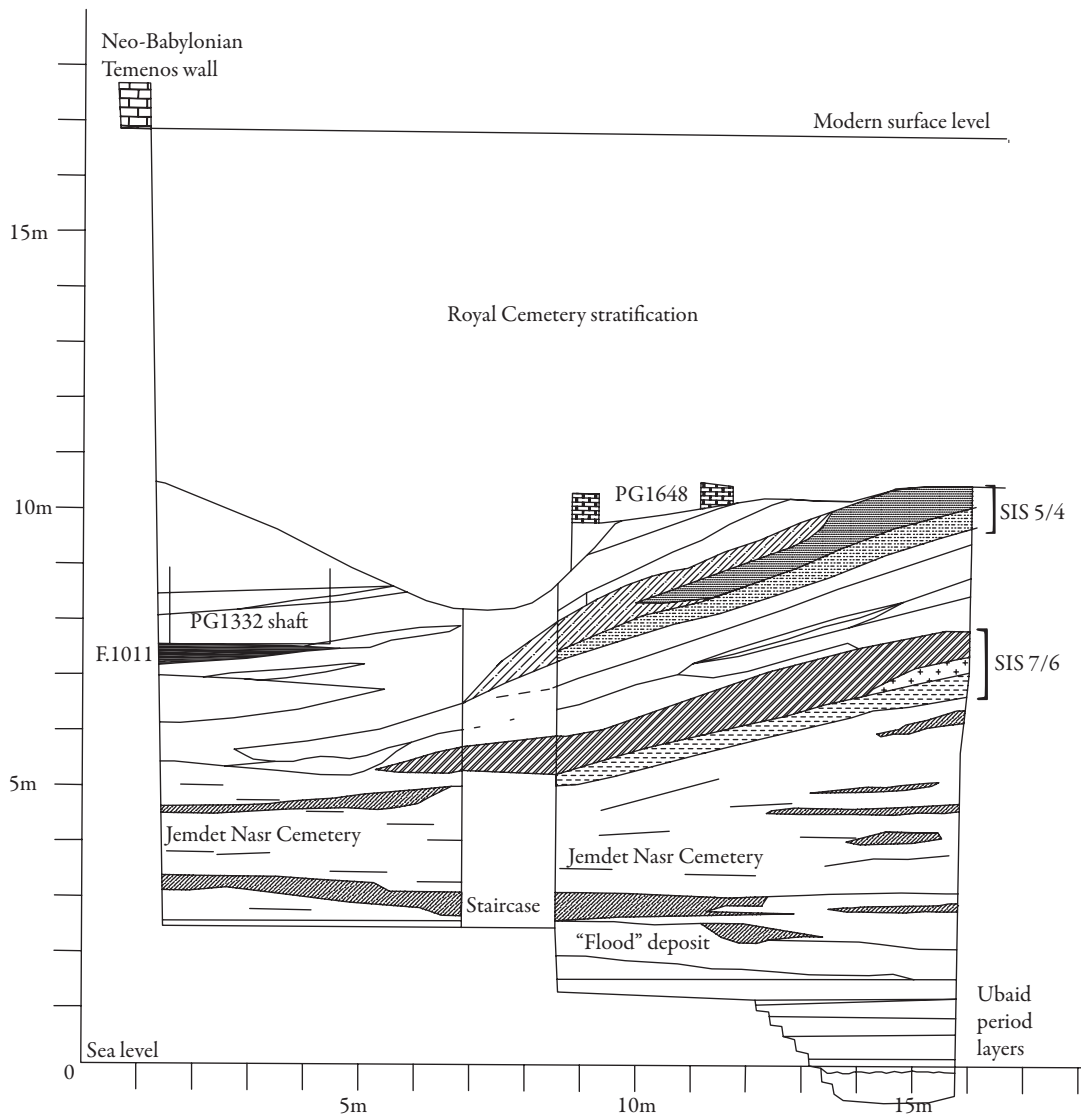


Figure 4
Profile drawing of Pit W (modified from Woolley 1956: pl. 77).

seals, mostly bearing abstract and geometric imagery.

§3.6. SIS 8 was then covered by other sloping layers of trash, labeled SIS 7. This feature was distinguished in Pit Z and Pit W. SIS 7 had a black matrix and was composed of mixed charred remains, seal impressions, and few cuneiform tablet fragments, perhaps still the discards of productive activities. Directly above SIS 7, a belt of whitish color, seemingly composed of lime, pottery shards and seal impressions, was distinguished (SIS 6). SIS 6 could be the by-product of building activities, such as lime/gypsum burning for wall plastering and floor coating (cf. Blackman 1982), or perhaps the result of a fierce fire (P. Butterlin, personal communication). The tips of the two layers were encountered in Pit W but the finds were not collected separately (cf. figure 4). The SIS 7/6 glyptic horizon is composed of some 37 sealings, half of

which were broken-off door pegs, and half used on jars and containers. By analogy with SIS 8, most of the seals reconstructed from seal impressions (25 individual seals) bear geometric and abstract designs. In particular, door pegs were almost exclusively sealed with abstract seals. Alongside sealings, in Pit W, SIS 7/6 produced copper items (pins, fish-hooks), implements (beads, lids, clay tools), and pottery shards (Woolley 1956: 76).

§3.7. SIS 7/6 were then covered by a stratification consisting of reddish sediments with seal impressions and pottery (not collected), a layer of dark matter (probably charcoal and ash) sandwiched between two layers of light earth, then a gray belt with lime, dark soil and a band of light infill (figure 4).

§3.8. SIS 5/4 layers, composed of burned construction

materials, degraded mud-brick, and a huge quantity of administrative devices, were excavated in Pits Z-Y and W. §3.9. According to this reconstruction, it seems that SIS 8 and SIS 7/6 accumulated over a short time-frame, while SIS 5/4—another snapshot—were separated from them by a sizable time-frame. SIS 5/4 were characterized by an exceptional artifact density, yielding more than 200 sealings, ca. 20 fragments of cuneiform tablets, pottery shards, clay artifacts, and tools, most of which were recovered from Pit W. SIS 5/4 can be defined as the by-product of construction/demolition, crafts, and large-scale packaging of containers and official bookkeeping.

§3.10. The southeastern foot of this rubbish tip, located along the limit of Pit W, was covered by a thin patch of soot, charred materials, basket-loads of pottery shards and discarded administrative artifacts, running fairly flat over a surface of ca. 100m² (here called Locus F.1011; cf. figure 4 and Woolley 1956: 55). Here, the dig of Pit D and the clearance of the area around grave PG1332 produced ca. 40 cuneiform tablets fragments and almost 50 sealings (Benati & Lecompte forthcoming b). These incinerated remains were thrown into an area marked by a slight depression, with the aim of leveling the surface for construction. In this case, waste was reused as fill material, indicating practical site management. This is confirmed by the fact that superimposed layers of brickwork covered the charred remains, attesting that buildings were erected here on top of the waste in-fill (cf. Woolley 1956: pl. 83).

§4. Micro-Economic Patterns and Information Technologies

§4.1. Hierarchies of Information Processing

§4.1.1. The study of administrative technologies can provide the baseline to discuss the hierarchy of information processing used to mobilize goods and labor within the Ur social body (Wright & Johnson 1975: 271; and cf. the extensive Frangipane 2007). Household and supra-household organization is examined here as flows of activities and patterns of consumption (cf. Earle 2002: 13; Wilk & Netting 1984).

§4.1.2. At Ur, sealing practices and cuneiform records were part of a bureaucratic apparatus developed to keep track of economic transfers (cf. Dittman 1986). Writing, sealing and weighing were the main control mechanisms within this framework (cf. Rahmstorf 2012). P. Steinkeller (2004) hypothesized a two-tiered operational chain in the administration process: 1) first order tasks: sealing/unsealing of storage areas and packages (and accounting/sorting out inventories); 2) second order task: bookkeeping through written records.

§4.1.3. Having established a finer-grained sequence of discard operations, the patterning of clay sealings is combined with a fresh survey of the written records in order to retrieve new qualitative and quantitative information.¹⁰ This analysis provides the backdrop for reconstructing the chains of transformation related to packaging, marking, bookkeeping, exchange and consumption of valuables.

§4.1.4. Patterns of consumption follow social patterns of access and ideology that reflect the political nature of the society under study (Earle 2002: 13). A back-to-back analysis of these bodies of evidence can afford information on both basic and non-basic needs of the Ur population (cf. Padgham 2014: 2-3, fig. 1.1). The goal of this operation is therefore that of understanding the economic, social and political use of valuables and subsistence goods in archaic Ur (Earle 2002: 23).

§4.2. Branding and Commodification Strategies

§4.2.1. According to I. Kopytoff (1986: 69), sealable and exchangeable products can be defined as commodities. Earle (2002: 42) added that commodities are alienable goods that tend to be standardized in form and execution in order to be easily recognizable. Commodity branding practices are used to mark products in relation to storage, distribution and consumption of perishables (id.; Winter 2008). Since sealing practices are used to secure and monitor the movement of commodities, they can be defined as commodity branding practices (cf. Rothman 2000).

§4.2.2. The concept of “commodity branding” has been used in recent analyses by D. Wengrow (2008, 2010) with the aim of highlighting the social aspects of packaging

¹⁰ Approximately 390 sealings from stratified contexts have been examined by the author. Of them, 232 offer clear traces of use on the reverses and bases. Some 200 sealings are assigned by the excavators to the SIS 5/4 layers, although no information on the exact find-spots is provided. 160 sealings allegedly retrieved near “Post A,” and 54 from Pit X, are also assigned to the SIS 5/4 horizon in the reports, but they probably belong to later discards. Given that further study is required to shed more light on the stratigraphy of Pit X, the finds from this sounding are not analyzed here. If we accept that also these problematic sealings are somehow connected to the bureaucratic structure that produced the SIS 5/4 artifacts, we have to conclude that more than 700 sealings were discarded in the same dump area over a short time-frame. The sample of ca. 290 sealings from secure contexts linked to SIS 5/4 is a slice of this horizon and can reflect the general functioning of the bureaucratic apparatus that issued the documents.

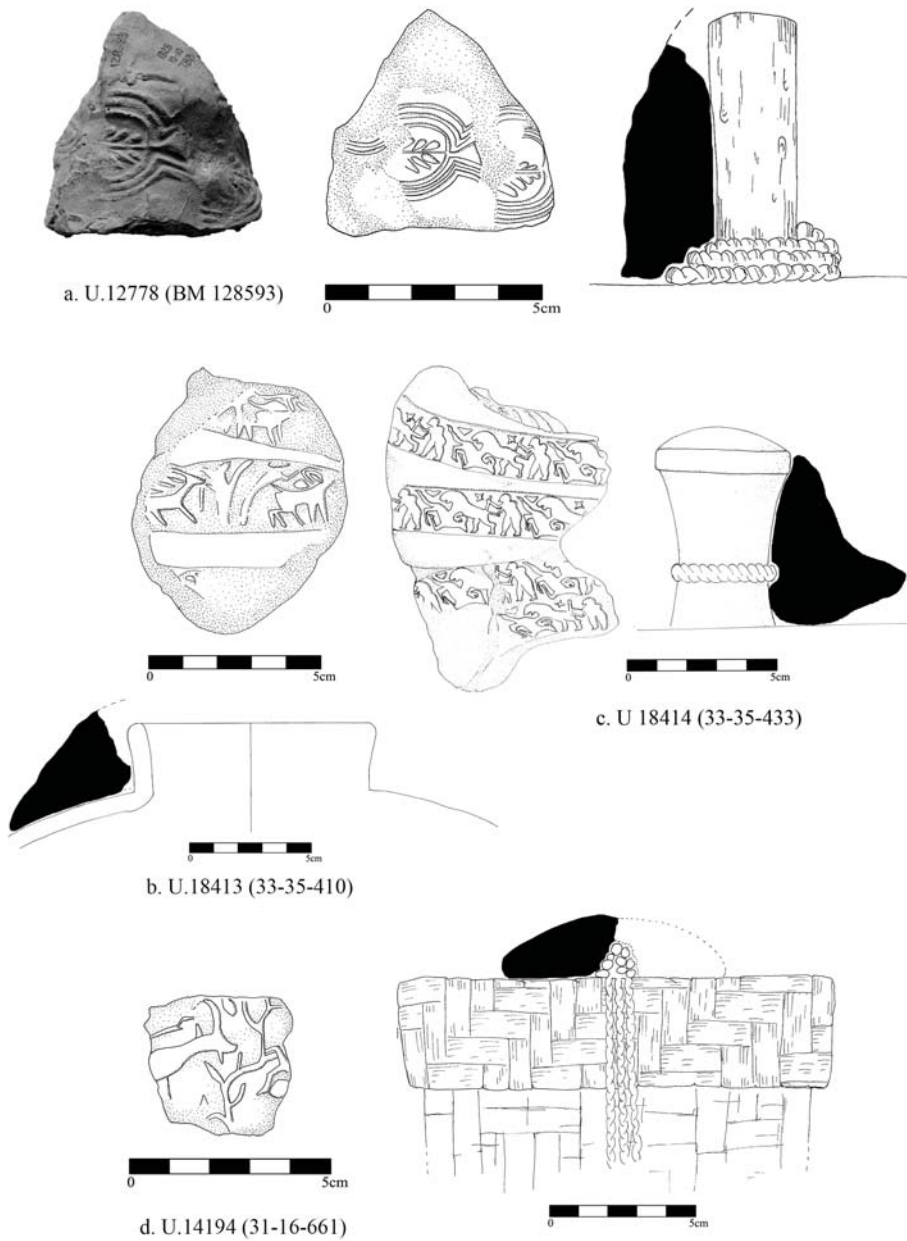


Figure 5
 Sample of seal impressions from debris layers excavated within the Royal Cemetery Area at Ur with reconstructions of the sealed artifacts (a. comes from Pit G—Phase I; b. and c. from Pit W—SIS 5/4; d. from Pit Z—SIS 7; drawings by the author, photo of a. reproduced by courtesy of the Trustees of the British Museum).

and marking practices in the ancient Near East. According to Wengrow, the standardization of packaging marks the transformation of subsistence goods into commodities characterized by homogeneous content, measurement and quality checks. This process was instrumental to the creation of a tightly regulated flows of resources.

§4.2.3. Within this framework, seal impressions—an image-based system of distinction—functioned as proxies

for identifying the source of commodities traded and consumed far from the point of production (cf. Wengrow 2010: 18; Fiandra 1981). This suggests long chains of production, distribution and consumption, with goods removed from their initial social context and made available for circulation (Sherratt 2004: 102), as also indicated by the fact that the clay sealings have been removed from the closures once completely dry (therefore after at least a few days of storage/circulation). This description fits with the definition of atomized economic transactions, i.e., transfers of goods outside kin-based social networks (Granovetter 1985).

§4.2.4. Following A. Sherratt, systems of marking and notations were used not only to monitor the quality of manufactured goods but also to enhance the value of the product through specialized procedures of packaging (Sherratt 2004: 96). Sealing practices, therefore, may have functioned not only as trackers for mobilized goods, but also as quality stamps for the packaged goods (cf. also Stein 1999: 88-89). These considerations seem to be supported by textual evidence and patterns of exchange.

§4.2.5. As to the information technologies, the visual-based signaling system of the seal-impressions guaranteed a symmetrical spread of information between actors. Two categories of marking systems stand out of this visual circuit: sealings characterized by incised symbols (script?), and the so-called “City-Seals” impressions. Both types of artifacts carry complex visual-language meaning rather than image signaling, and convey specific textual information that is still ill-defined (but see Matthews 1993). A language-based code suggests that literate operators were at both ends of the transfer process and therefore the goods sealed through these de-

VICES were exchanged in a hyper-bureaucratic framework, i.e., the same environment that was capable of producing written records.

§4.2.6. The patterning of the traces of function preserved on the reverses of the broken off clay sealings makes it possible to reconstruct the types of sealed commodities and to shed light on the pathways of economic circulation of perishables in early Ur (cf. figure 5).¹¹ The functional dataset from the sealings demonstrates that medium-sized jars and door closures are the most recurrently sealed commodities within the sample. Reed containers, wickerwork baskets, and wooden boxes are also attested, although in smaller quantities. In case of duplicate seal-impressions, the same seal was often used to mark both doors and container sealings. This may suggest that the seal-bearer had control over goods stocked into a storage area and sealed in bulk (cf. Fiandra 1981: 174). As a whole, one may assume that ceramic containers dominated the short-term storage and transport of comestibles.

§4.2.7. The creation of managerial systems dealing with standardized goods kept in controlled warehouses, and large-scale exchange of commodified comestibles, point to institutionalized exchange patterns, and perhaps to a scale economy.

§4.3. *Record-Keeping*

§4.3.1. The archaic texts from Ur provide a wealth of data on the management of economics (cf. Chambon 2003; Sallaberger & Schrakamp 2015: 56-60). Sixty-five heretofore unpublished texts have been recently edited by C. Lecompte (2013) in *Nisaba* 25. This not only added to the available documentation on this important piece of evidence, but also offers us the means to check and update the body of work published by E. Burrows in *UET* 2.

§4.3.2. A fresh look at these documents can provide information on both the atomized decision-making of the actors mentioned in the texts, and the broader social context in which they operated. Nevertheless, one must keep in mind that only the transactions of a subset of Ur society are represented in the records. Some sectors of the population—commoners, independent craft specialists, nomads, villagers, etc.—are under-represented in the texts, if mentioned at all (cf. Stein 2005).

¹¹ My own approach in studying the original seal-impressions on clay kept in museum collections has been structured on methodologies advocated by R. Matthews (1991, 1993), R. Zettler (1989), and in particular by M. Frangipane (2007), as appropriate for understanding sealing technologies.

§4.3.3. The record keeping mostly concerns the coordination of basic agricultural tasks (cf. also Wright 1969: 22). According to the fresh analysis of the texts carried out by C. Lecompte (personal communication) the economics dealt with in the tablets concern:

- a) Exchange and distribution of staple products (120 tablets)
- b) Administration and allotments of cultivated land (80 tablets)
- c) Organization of labor: lists of workers (35 tablets)
- d) Animal husbandry (15-20 tablets)

This summary makes it clear that the most registered economics are exchanges of packaged foodstuffs, mirroring the situation sketched on the basis of the analysis of commodification strategies. In this light, one may suggest that staples and cultivated land were the main commodities mobilized by the institutional spheres in archaic Ur.

§4.3.4. As to accounting, the numerical and metrological systems used in the texts share common traits with Late Uruk bookkeeping practices (cf. Lecompte 2013: 15-20; Chambon 2003). The land measure system in particular is similar to that of the Uruk period, though issues arise from the reconstruction of the capacity system (Lecompte 2013: 19 n. 59). In addition, J. Cale Johnson (2015: 37-38 n. 73) has suggested that a distributive system attested in some archaic tablets (*UET* 2, 10, 40, 65, 108, 112, 364+368) derives from a proposed Late Uruk elite salary system (his $\dot{S}ITA_{a1}/UKKIN_a$ system), again pointing to institutional frameworks of distribution.

§4.4. *Bureaucratic and Political Frameworks*

§4.4.1. Given the elliptical nature of the written records and the lack of political information, the institutional structure of archaic Ur remains largely unknown (cf. Sallaberger & Schrakamp 2015: 59). The evidence at hand indicates a large bureaucratic machinery with well-defined roles and cadres of managers engaged in performing economic tasks. Context attestations can provide elements for inferring administrative responsibilities of some of the actors recorded in the texts.

§4.4.2. Titles such as $ensi_{2/x}$ and *lugal*, and the mention of an e_2 -gal, have led scholars to speculate about the existence of kingship in archaic Ur (cf. Marchetti in Marchesi & Marchetti 2011: 212; Sallaberger & Schrakamp 2015: 59). The meaning of the title $ensi_2$ —here written PA.SI (or in the shortened form PA)—has been much debated by scholars (cf. Bauer 1987; Lecompte 2014b; Marchesi & Marchetti 2011: 109, 212 n. 6; Marchesi 2015: 139 n. 7). According to Marchesi (in Marchesi & Marchetti

2011: 109, n. 118), the title $ensi_2$ —traditionally interpreted as ‘ruler’ or ‘governor’—“seems to have originally denoted an official who was responsible for superintending agricultural work.” This function is also probably suggested by another title, $ensi_2$ -gal “chief steward” (*UET* 2, 35), an official of lower rank than the $ensi_2$ who is attested in connection with maintenance works of canals and other water facilities. In the context of the archaic texts, Lecompte (2013: 22 n. 72) noted that the $ensi_2$ of Ur ($ensi_x[PA.SI] uri_x$) has no hierarchic prominence since he is rarely attested in the final clauses of the tablets (cf. *UET* 2, 86, 88, 177, 222). As remarked by Wright (1969: 107, 112-113), however, *sanga/umbisag* and $ensi_2$ are mentioned in tablets regarding the allotment of large quantities of grain, which may be connected to the harvest or the storing of the harvested grain (cf. also Burrows 1935: 17).

§4.4.3. Bauer (1987: 5-6) and Lecompte (2014b) noted that five places are mentioned in connection with the title $ensi_x$: [*UET* 2, sign list =] S. 161_b+KI, Dugin₂, BUMA (cf. also Sallaberger & Schrakamp 2015: 59 n. 72), Larsa and Ur itself, all seemingly corresponding to places located near Ur. In this regard, one tablet (*Nisaba* 25, 63) mentions some of these $ensi_x$ officials within the framework of agricultural works (plowed field, distributed seed grain) or perhaps the payment of taxes (Lecompte 2013: 157). From these data, it seems that the $ensi_2$ was indeed involved in important agricultural tasks (cf. Lecompte 2013: 21-22 n. 72), but since the title is used in connection with toponyms, it may well indicate political agency over one territory/community (G. Marchesi, personal communication).

§4.4.4. The title *lugal*, on the other hand, is attested almost uniquely as part of personal names and in this case it has theophoric meaning. The function of the e_2 -gal mentioned in the texts is also unclear and therefore the presence of palace administration remains speculative (Lecompte 2013: 20). One *lugal* of Lagash is, however, mentioned in a fragmentary tablet (*UET* 2, 205b), indicating that other cities in southern Mesopotamia may have been ruled by kingly figures already at this time (cf. Marchesi in Marchesi & Marchetti 2011: 100 n. 27; Sallaberger & Schrakamp 2015: 58).

§4.4.5. High-level officials and foremen such as *kingal*, *sanga/umbisag*, *nu-banda₃*, and *namešda*, are also attested in the texts. Although no clear agency can be attributed to the *namešda*¹², the title seems to be that of

a high-ranking official (Johnson 2015: 37-38 n. 71; Selz 2010: 8; cf. also Glassner 2000: 45). *nu-banda₃* is a designation of overseers of agricultural activities (Wright 1969: 107), and notably of an overseer of the e_2 -gal (*UET* 2, 112). The *kingal* is mentioned in the clause of a tablet in connection with food (cuts of meat) and land allotments, and therefore he was seemingly a high-ranking administrator (*UET* 2, 68b, 108+153, 112, 340; *Nisaba* 25, 64).¹³ Other officials mentioned are *ugula*, “overseer”—a task-oriented role—, *sagi*, “cupbearer” (*Nisaba* 25, 52), and *kindagal*, “chief barber/inspector” (*Nisaba* 25, 50).

§4.4.6. On the other hand, there are clear hints at the role of a sacred household, probably the Nanna sanctuary ($eš_3$), that administered large-scale economic activities, a sizable field estate (GAN₂ *nanna_x*; cf. *UET* 2, 73, 127, 227, 358), personnel, and seemingly slaves or servants (cf. *UET* 2, 50 ii; Burrows 1935: 13 §L; Steinkeller 2015: 6-9). The titles related to the temple administrative sphere indicate an articulate internal structure, with at least two layers: a bureaucratic body and a series of roles involved in the cultic activities. The highest administrative office of this institution was perhaps the *sanga*, probably to be read *umbisag* in this period (Burrows 1935: 13 §L; 17 §66; Lecompte 2013: 20-23).¹⁴ According to Visicato (2000: 16-18) the title *dub-sar* “scribe” is also attested (*UET* 2, 93, 297) and performs tasks similar to that of the *sanga*, although the precise relationship between the two titles is hard to grasp.

§4.4.7. Cultic personnel, perhaps attached to this institution, are also mentioned: *nunnuzi*-priestesses, *gal-nar* “chief singer,” *gal-balag* “chief musician,” *abgal* “sage/priest,” etc. (cf. *Nisaba* 25, 16, 56, 64; Lecompte 2013:

title *namešda* on a sealing from SIS 5/4—Pit W (Selz 2010: 8 n. 11; Charvát 2012). A fresh analysis of the original sealing kept in the Penn Museum (U 18397; 33-35-293), however, raises issues on this reading (G. Marchesi, personal communication).

¹³ According to Johnson (2015), the allotments of meat and land in two texts mentioning the *kingal* (*UET* 2, 108, 364+368), may resemble the prebend system attested in later periods. As stressed by Steinkeller (2015: 26-27), high-ranking officials were in fact remunerated with land allotments. The professional title *kingal* (GAL.UKKIN), is generally interpreted as “leader of the assembly” (Visicato & Westenholz 2005: 64; Glassner 2000: 43), but as noted by G. Marchesi (in Marchesi & Marchetti 2011: 103 n. 53), GAL.UKKIN in late ED records may designate a military official.

¹⁴ As underscored by Visicato (2000: 18 n. 17), five *sanga/umbisag* and a *sanga-GAR* are mentioned in *UET* 2 tablets.

¹² Both G. Selz and P. Charvát report the presence of the

Date	Phase	Layer	No. sealings	Sealed items	No. tablets
JN	1	Pit F – K	5	2 reed matting container	-
		Pit G	21	5 door pegs, 5 jars	3
ED I (first half)	2	Pit Z – SIS 8	30	3 door pegs, 7 jars, 1 reed matting container	1
		Pit Z – SIS 7/6	22	4 door pegs, 3 jars, 1 reed container	2
		Pit W – SIS 7/6	15	8 door pegs, 5 jars, 1 reed container	-
		Pit F – Level H	2	2 jars	-
ED I (second half)	3	Pits Z-Y – SIS (6-)5-4	22	5 door pegs, 4 jars, 1 sack, 1 package	3
		Pit W – SIS 5/4	207	88 door pegs, 48 jars, 11 containers (wood or reed), 9 tags	19
		Pit D+PG1332	49	5 door pegs, 8 jars, 1 reed container	41
		Ancient Room + Houses	4	1 wooden container	213
		Pit F – Level E	2	1 pot	-
	3b	Pit X	48	33 door pegs, 8 jars	33

Table 2

Synopsis of the contextual and functional data available for the sealings and tablets from secure stratified deposits from archaic Ur.

10-11, 173-174; Steinkeller 1999: 121, n. 60). Hints at festivities—perhaps temple-sponsored—are also present in the texts (Burrows 1935: 18 §N; *Nisaba* 25, 50, 52, 54).

§4.4.8. Notably, since some fields are labeled as EN GAN₂ “field of the EN” in the tablets (*UET* 2, 143, 147bis, 160, 184, 227; cf. Friberg 1997-1998: 20 n. 37, and Steinkeller 1999: 108, n. 15), one may assume there were other landholding institutions in archaic Ur. This designation in fact surely points to a domain different from the GAN₂ nanna_x administered by the main city temple, but the institution (perhaps secular) in charge of these fields cannot be identified with certainty (see the hypotheses offered by Englund 1998: 209; Pettinato 1999: 106).

§4.4.9. The system portrayed in the tablets is mostly local and there seem to be no clues for reconstructing the settlement pattern or the hydrology around Ur (Burrows 1935: 13 §K; Lecompte 2013: 20). Some documents, however, can be used to broaden our understanding of extra-site contacts that Ur may have entertained in this

phase (cf. Bauer 1987; Burrows 1935: 21 §P; Lecompte 2013: 12-15; Lecompte 2014b).

§4.4.10. Two recently published tablets shed light on activities connected to travels or envoys of conscripted workers. *Nisaba* 25, 61, lists quantities of beer entrusted to officials (one kas₄ “messenger” or “courier”) for travel or delivery, and may be considered a forerunner of the Ur III “messenger texts.” In this light, Selz (2013, 2014) recently argued that such texts can be connected to long-distance travel of a commercial, military or religious nature. The latter tablet (*Nisaba* 25, 62) lists individuals (certainly more than 200 and possibly up to 400 men) sent from Ur to an institution (e₂-nun-gal) located at Uruk, affording evidence of strong integration between these two cities. The individuals mentioned in the tablet are interpreted by Lecompte (2013: 150-153) as a task-oriented group of workers, perhaps conscripted, sent to Uruk.¹⁵ One may

¹⁵ G. Marchesi, however, informs me that the e₂-nun-gal may have been a detention facility. On prisons and detention structures in the cuneiform sources cf. Civil 1993.

therefore speculate whether these people were recruited for corvée labor by a powerful institution in the city of Uruk (cf. Steinkeller 2015: 17).

§4.4.11. This brief overview makes clear that an articulate political structure with high offices and political titles was firmly established by this time, but the presence of monarchic institutions in archaic Ur cannot be ascertained. Ur certainly had economic, political and cultural ties with towns located in southern Mesopotamia. With some of them, there may have been cooperation and coordination of activities; while some others, probably those such as Lagash and Uruk that were ruled by kings, may have been paramount in the region and may have had the power to conscript laborers from other towns (N. Marchetti and G. Marchesi, personal communication; cf. n. 22 here). Further evidence of inter-city cooperation is afforded by the City Seals impressions (see §6.6 below).

§5. Pathways to Complexity: Urban Dynamics and Social Geometries

§5.1. *Towards a New Narrative of Archaic Ur Settlement Patterns*

§5.1.1. Excavated data provide the baseline to infer the change of socio-economic organizations in early Ur. Change in practice—in this case household and supra-household organizational patterns—is analyzed here with the aim of highlighting systemic change. Field evidence from the region is also used to discover relationships between settlement patterns and land use. Archaeological data allows us to identify three organizational phases for this settlement:

- Phase 1: the debris of Pit G (1-5), Pit F household remains (Levels K-I), and part of the Jemdet Nasr cemetery burials.
- Phase 2: SIS 8-6 debris, Pit F household remains (Levels H-G), part of the JN cemetery burials.
- Phase 3a: the assemblages from SIS 5/4 and connected waste layers, the “administrative quarter” and Pit F household remains in Levels F-E (cf. figure 4).

§5.2. *Phase 1 (Jemdet Nasr Period)*

§5.2.1. Settlement patterns are hard to read for this phase, due to the fact that sites are deeply buried by silt in the alluvial plain and also because Adams and Wright were not able to establish reliable ceramic markers for the JN period (Wright 1981: 327). Nevertheless, a trend to fewer and larger settlements, seemingly concentrated in the Ur area, has been noted for the inception of the 3rd millennium (Wright 1981: figs. 18-19; cf. also Wilkinson, Ur & Hritz 2013: 44-48; Pournelle 2013: 24-26). A canal branching off the Euphrates and running from Uruk to-

ward Eridu, dug, according to Wright (1981: 327), during the late 4th millennium, was probably the main source of water for the area. Some sites located along this channel produced late 4th-early 3rd millennia surface material culture (Ishan Khaiber, Sakheri Kabir, Rejibah).

§5.2.2. Wright (1981: 327) suggested that Ur underwent urban growth in this period, visible in the transformation of an open craft area—i.e., the pottery kilns in Pit F (Woolley 1956: 65-68, pls. 3c-d, 4a, 75)—into a dwelling area and therefore expanding the built-up surface of the town to ca 15ha. At the same time, a low-lying area located downslope from the area of Pit F was used as a burial ground, the so-called “Jemdet Nasr Cemetery” (Woolley 1956: 104-126, pls. 54-55; Forest 1983; Kolbus 1983; Korbel & Youzan 1979).

§5.2.3. The domestic remains in Pit F, and the debris excavated in Pit G, yielded a remarkably homogeneous range of finds. Consequently, the area of refuse-producing activity (i.e., midden catchment; see Boone 1987: 337) for the trash of Pit G can be associated with house lots similar to those identified in Pit F (K/I levels). These loci provided evidence of: a) small-scale specialized productions: pottery making, stone chipping, and perhaps mat-making, basketry, rope-making; b) finished products discarded after use: pottery, stone vessels, beads, sickle blades, spindle-whorls, pegs, nails; c) tools used in agricultural activities, stone working, and spinning; d) storage of comestibles; e) food procurement.¹⁶ Pottery from these loci is mostly painted (polychrome/monochrome; Frankfort in Woolley 1929: 342-348, pl. XL), matching the ceramic horizon of the Jemdet Nasr period (cf. Matthews 2002: 20-21).

§5.2.4. As to information technologies, Pits F and G yielded some 25 sealings, 3 seals (two cylinders, one stamp), two cuneiform documents and what is described as a numerical tablet (*UET 2*, 232-233; U 12776h).¹⁷ One of these (*UET 2*, 232) seems to be a tag bearing an official title, gal-nesag, perhaps a school exercise, while the tablet *UET 2*, 233, characterized by archaic ductus, bears the impression of a cylinder seal on the back and can be compared to the tablets retrieved at Jemdet Nasr

¹⁶ Since house-floor assemblages from Pit F (K-I) and waste layers from Pit G (1-4) display a similar composition, it is safe to assume that the house remains in Pit F, Levels K-I, did not suffer much depletion activity, and therefore the mentioned assemblage may reflect normal use patterns.

¹⁷ For the numerical tablet (U 12776; 31-17-351H), see the photo posted at <<http://cdli.ucla.edu/P270363>>.

(Englund & Gregoire 1991; Matthews 1993). The presence of seals and sealings within domestic contexts indicates localized sealing operations. The seal-bearers can therefore be associated with the householders.

§5.2.5. This dataset demonstrates that Ur had already developed full-fledged administrative templates for processing information related with storage and allocation of resources through sealing, accounting and writing technologies at the onset of the 3rd millennium (contra Matthews 1997: 113). Overall, administrative bureaucracies, formalized systems of (re)distribution, socio-economic differentiation, and craft economy combining household production and small-scale specialization are attested for this phase. The imagery from glyptics in particular indicates contacts with the lower Diyala basin, the Trans-Tigridian corridor and lowland Khuzistan (cf. Pittman 1992, 1994; Marchetti 1996).

§5.3. *Phase 2 (First Half of the ED I Period)*

§5.3.1. In this phase, population seemingly nucleated around Ur. Although Wright argued that the branch channel passing by Eridu was probably abandoned (1969: 37, fig. 4), a sounding dug in the North Mound revealed ED I materials (Safar, Mustafa & Lloyd 1981: fig 158: levels IV-V) indicating that at least this mound was occupied in this phase. Furthermore, J. Pournelle (2013: 24) identified a site (ES 156) in the Eridu basin characterized by JN-ED I surface material culture (to this site ES 142 can perhaps be added; cf. Wright 1981: 327). Notably, satellite images seem to suggest an environment dominated by marshlands, dendritic channels and levee cultivation, with sparse small settlements for this area (Pournelle 2013: fig. 1.6).

§5.3.2. A branch canal of the Euphrates coming from northeast and curving around the southwest side of the Ur mound (cf. Di Giacomo & Scardozi 2012: figs. 12-13) was perhaps the main source of water for the area during the early 3rd millennium (Wright 1981: fig. 19). Up the Euphrates channel, the site of Sakheri Kabir covered 8ha and in between Ur and Sakheri other small villages (<2ha) were located. Test excavations conducted at Sakheri Sughir indicate that it was a single-phase small village of 1.5ha formed by tripartite houses with large courtyards arranged along the bank of a canal and surrounded by a town wall (Wright 1969: 34-35, 48, figs. 7, 10-12).¹⁸ Tell al-'Ubaid yielded evidence of a burial

¹⁸ The ceramic repertoire from Sakheri Sughir (Wright 1969: 61-74, figs. 16-21) is consistent with the horizon of SIS 8-4 as reconstructed by Zettler (1989), and firm-

ly dated to the ED I period. Consequently, the evidence from Sakheri overlaps Phases 2 and 3. It is also important to stress that neither Sakheri nor Tell al-'Ubaid yielded evidence of administrative complexity for the early 3rd millennium.

§5.3.3. At this point, Ur seems to be the chief town of the enclave, but its size hardly exceeded 20ha (Wright 1969: 117). Substantial information on mobilization of resources comes from the administrative assemblages from the debris of SIS 8, SIS 7/6 and Pit F-Level H. Within this sample, twenty to thirty seal-bearers were engaged in exchanging commodities and managing storage areas. Most of the containers reconstructed are medium-sized jars. Door pegs are straight cylindrical wooden objects. SIS 7/6 has a higher percentage of door sealings compared to SIS 8. Wooden and reed containers are almost absent. When comparing the SIS 8 and SIS 7/6 assemblages, an increase in warehousing activities can be noted in the latter. Overall, this phase yielded three fragmentary cuneiform documents dealing with delivery of foodstuffs and land allotments (*UET* 2, 305-307). In contrast with the tablet from Pit G (*UET* 2, 233), these examples show no seal impressions, indicating a shift in bureaucratic practices (cf. Matthews 1997: 113).

§5.3.4. Given the low ratio of sealings retrieved in the excavated soil matrices, and the balance between door closures and packages, we can assume a household level influx of sealed commodities, probably organic consumables such as beer and grain (according to the prominence of jars). It is possible that the midden catchment for these assemblages was a cluster of households equipped with storage-rooms. The broken-off sealings were kept for some time (as is the case of those from Pit F-Level H), and later on discarded in outdoor dumping areas alongside trash. Given the lack of information on residence patterns across site, it is difficult to evaluate whether this sample represents site-wide activities or just those of a cluster of productive units (cf. Beck & Hill Jr. 2004; Benati 2014; Boone 1987).

§5.3.5. On the other hand, the huge amounts of solid-footed goblet fragments retrieved in house remains (Levels H-G of Pit F, cf. Benati 2014: fig. 6: 11; and Sakheri Sughir, cf. Wright 1969: fig. 16), trash (SIS 8),

ly dated to the ED I period. Consequently, the evidence from Sakheri overlaps Phases 2 and 3. It is also important to stress that neither Sakheri nor Tell al-'Ubaid yielded evidence of administrative complexity for the early 3rd millennium.

and burials (“Jemdet Nasr Cemetery,” Tell al-‘Ubaid cemetery), indicate large-scale distribution of mass-produced serving ceramics. This in turn suggests a high-level demand for beverages, pointing to intense feasting. In addition, the ceramic repertoire of this phase marks a shift from painted to undecorated assemblages (cf. Costin 1991: 37-38). Taken together, these data suggest a change in production and technological patterns and a central role for commensal politics in this phase (cf. Jennings et al., 2005; Pollock 2002).¹⁹

§5.3.6. Communal drinking practices had probably both ceremonial and practical functions, possibly embodying the scheme of “festive labor,” a voluntary short-term labor-mobilization strategy via the distribution of food and drink, as well as an economic conversion mechanism (Dietler & Herbich 2001). During work bottlenecks (seeding, harvesting, storage, etc.), group labor may have been organized following the beer farming scheme, with alcoholic beverages as the key element to mobilize labor (cf. Stone, Netting & Stone 1990: 9-15, 18-19). In this light, beer can be considered an exchange valuable (Earle 2002: 20) and it was seemingly distributed using carefully packaged and branded jars.²⁰

§5.3.7. Turning now to the mortuary record, the graves from this phase (mostly pre-dating the SIS 5/4 phase) display kinship patterns but little investment in symbolism or inequality (cf. Forest 1983).²¹ On the other hand,

¹⁹ Solid-footed goblets—a kind of chalice suitable for drinking—are found in large quantities in central and southern Mesopotamian sites and are considered the ceramic hallmark of the ED I period (e.g. Delougaz & Lloyd 1942: 166, fig. 125).

²⁰ Dietler & Herbich (2001: 246) stressed that collective work events and work feasts—a common feature of agrarian societies—act as an exchange mechanism and can be used to convert symbolic and economic capital (i.e. low-value grain into prestige items such as alcoholic beverages and food). By instituting work feasts, the hosts are able to use symbolic capital to harness the labor of others to acquire further capital and at the same time augment their own prestige (247-248). Ritualized communal working events revolve around the need for short-term supra-household labor that, according to Martín & Herrera (2014: 69), is more often detected where households are largely self-sufficient.

²¹ Similar indications come from the bulk of graves dated to the first part of the 3rd millennium at Tell al-‘Ubaid, roughly contemporaneous with the JN cemetery at Ur (Martín 1982). Although internal variations in grave furnishings are noticeable, no evidence of social differentiation has been detected (Wright 1969: 87). It must be noted here that the development of hereditary rank-

the presence of both sealed commodities and cuneiform documents indicates the existence of managing institutions with high-level officials (titles such as gal-sukkal “chief secretary,” are attested, cf. UET 2, 306 iii).

§5.3.8. These data strands may show two decision-making levels: an *official* level where institutional powers administered (and perhaps centralized?) land and resources; and a *household* level characterized by domestic storage of staples and multiform authority patterns over storing and packaging of commodities. A broad network of feasts patronage, horizontal labor mobilization strategies, and, judging from the funerary record, no marked elite system, can also be inferred from the evidence at our disposal. These patterns may suggest flexible power relations in social and power organization (Crumley 1995, 2001), and an overall incipient political economy (Hirth 1996: 222).

§5.4. Phase 3 (Second Half of the ED I Period)

§5.4.1. Variations in the regional settlement pattern for this phase are not discernible in the coarse-grained datasets at our disposal, and therefore the situation depicted for Phase 2 must be considered valid also for Phase 3.

§5.4.2. The archaeological evidence from the RC Area at Ur demonstrates that the phase during which the SIS 5/4 dump formed and the “administrative quarter” was built, represents a period of ongoing urban remodeling and economic takeoff. According to H. Wright (1981: 327), Ur may have covered about 21ha at this point.²²

§5.4.3. These efforts were seemingly coordinated by political powers (emergent elites) who left traces in the written and archaeological record. A centralized management of resources, labor and land is strongly suggested by the proliferation of bureaucratic control mechanisms and by records dealing with field estates, collected and stored in one architectural context (i.e., the “Ancient Room;” Benati & Lecompte, forthcoming a) perhaps pertaining to a religious household. Hundreds of sealings (possibly as many as 700) and more than 300 fragments of cuneiform tablets were in fact retrieved from trash areas and

ing has not been properly confronted by Mesopotamian archaeologists (see the overview by Brereton 2013).

²² An estimated surface of ca. 21ha would point to an assumed population of between 2,000 and 4,000 inhabitants for Ur at the end of the ED I period, which, according to Adams’ three-tier hierarchy, would identify Ur as a second-tier settlement (cf. Wilkinson, Ur & Hritz 2013: 46 n. 6).

building remains located within the RC Area. Given the relationship observed between residence patterns and midden use (Beck & Hill Jr. 2004: 320, 325), the change in discard behaviors, and a probable increase of settlement density, apparently reflect changes in site structure and social organization. The evidence from SIS 5/4 dumps points to clusters of compounds involved in large-scale bureaucratic activities (and specialized production?) as sources of the refuse, rather than daily domestic production (as for the earlier SIS). This interpretation is supported by the spatial analysis of structural remains pertaining to the “administrative quarter,” and in particular by the finds of the “Ancient Room.”

§5.4.4. The combined study of texts and sealings demonstrates that a group of officials administered a system of commodity production, storage and distribution. Within this landscape, the temple of Nanna was probably one of the major power nodes, with a capacity to control a large field estate and attached personnel.

§5.4.5. The study of the sealings from SIS 5/4 indicates a large-scale flow of containers and intense warehousing. The reconstruction of the container profiles demonstrates that utilitarian vessels—middle-size jars with a flat base—were used to store and move staple products. Textual evidence suggests that containers, grain, beer and bread were the main mobilized commodities (cf. Lecompte 2013: 10), probably used as exchange valuables.

§5.4.6. Sealing techniques display a marked improvement with respect to the earlier specimens. Clay sealings are not only placed at the base of the vessels necks, but large clay stoppers are also used to make the jars airtight and better preserve their contents, and therefore for making the jars suitable for the transport of goods (Brereton 2013: 241; Jennings et al., 2005: 277). The predominance of door sealings (ca. 60% of the sample from the SIS 5/4 horizon) points to substantial warehousing of goods, and, given the ratio of duplicate impressions, to a large number of officials in charge of warehouses.

§5.4.7. Compound sealing practices were also developed (cf. Zettler 2007: 351-358). Not only were cylinder seals rolled on the surface of the sealings, but stamp seals and the butt of cylinder seals were also used to counter-mark the sealings. In most cases, the sealings bear multiple impressions. In addition, a broad series of jar stoppers and door sealings display incised patterns, probably cuneiform symbols, instead of seal impressions (Zettler 2007: fig. 5). Compound practices may point to the involvement of more than one seal-bearer (or a seal-bearer

equipped with multiple seals) for each sealing operation, and perhaps to the direct involvement of literate operators in sealing commodities. Among the administrative tools, the so-called “City Seals” impressions—glyptics bearing a complex set of proto-cuneiform symbols, in many cases representing toponyms—can be singled-out (Matthews 1993, 2013). Although no consensus has been reached on the exact meaning of this imagery (cf. Steinkeller 2002a, 2002b), it seems clear that the circulation of these devices attests to some kind of regional co-operation (see §6.6 below).

§5.4.8. The quantity and frequency of sealing operations, as well as the number of people involved, may point to an increased distribution of foodstuffs from central places. It is possible that the stimulus for specialized packaging came from the need to mobilize consumables valued as exchange media, and to sustain an increasing number of salaried workers (Bevan 2014: 405; Earle 2002: 22). The disappearance of mass-produced serving vessels (solid-footed goblets), ubiquitous in the former phase, may point to changes in consumption patterns that may be related to changes in labor mobilization strategies.

§5.4.9. The growth of commodity exchange boosted the production of standardized items such as containers (ceramics, basketry, skins, textiles, matting, wooden boxes), leather and cloth for covers, cords (i.e. “lengthened chains of transformation;” Sherratt 2004), and seals.²³ These craft productions were probably harvested by managing institutions although not completely controlled.

§5.4.10. The handling of large field estates and the re-distribution of food allotments by managing institutions such as the Nanna temple point to a large-scale economic integration (cf. Earle 2002: 82-84). This in turn suggests increased centralization and a reorganization of labor, depriving a percentage of the population of direct access to resources and land (cf. McCorrison 1997: 532). A general reorganization of land tenure patterns, with the creation of estate economies holding large portions of cultivated land, can be hypothesized from these lines

²³ Little direct information on the seals is available. The only seals retrieved in primary deposition come from the late 4th millennium domestic layers of Pit F (Level I), where cylinders and stamp seals have been found alongside seal impressions on clay. A steatite cylinder seal was also found in the debris layer of Pit G. One baked clay cylinder seal carved with abstract patterns comes from the SIS 5/4 horizon. This evidence allows us to assume that at least a portion of the seals in use at Ur may have been made of clay.

of evidence. The loss of productive autonomy is, according to Stanish (2004: 18), one of the social “costs” of organized labor. Altogether, changes in storage and consumption patterns may indicate a shift in the definition of prestige systems, and perhaps a tendency of town elites toward manipulating power networks by controlling highly desired products, such as beer and agricultural produce, critical to sustain the non-basic network and to organize feasts (cf. Costin & Earle 1989).

§5.4.11. Unequal access to land and resources also triggers changes in the societal structure, overcoming kinship relations (cf. McCorriston 1997: 532). The evidence from this phase indicates permanent agencies for coordination: a class of bureaucrats with different levels of responsibility, possibly attached to centralized institutions (cf. Frangipane 2000: 228), and most likely removed from subsistence activities (Earle 2002: 83, 94). Furthermore, the presence of school texts among the tablets, and the use of the official title *dub-sar* (*UET* 2, 93), leave little doubt as to the existence of formal scribal training (Visicato 2000: 4-5, 17-18; Taylor 2013: 298).²⁴ Writing and literacy are key tools for information control, and probably evolved alongside economic integration. Authority over scribal systems probably now assumed a central place in the institutional framework, as postulated by Visicato (2000: 18). In this light, labor organization, commoditization phenomena, landholding patterns, commensality manipulation, and control over information processing, may be regarded as pivotal sources of power in the archaic Ur political economy.

§6. Remodeling the Political Economy of Archaic Ur

§6.1. Finance and Sources of Power in Archaic Ur

§6.1.1. Drawing on the foregoing analysis, I now sketch some of the economic strategies put in place by political actors to maintain polities and socio-cultural institutions at Ur, as seen archaeologically (Feinmain & Nicholas 2004; Rothman and Peasnell 1999: 103). Phase 3 of the process described above indicates a landscape populated by households and large institutions functioning as social and economic “hubs” in the site of Ur. Finance systems were developed in order to enhance the farming output necessary to sustain the non-basic workforce, and perhaps to create marketable commodities.

§6.1.2. Since all economies are embedded in their social context (cf. Granovetter 1985), economic behaviors and

social relations are mutually structuring. The economic boost had in fact also socio-cultural implications contributing to shape social structures (and vice-versa). New levels of decision-making, dynamics of competition, management and control can be considered as by-products of this cycle of growth (cf. Earle 2002: 43-45). Institutional powers developed strategies to meet the needs of production, and to service, exchange, and control resource-accumulation (Hirth 1996: 224). An overview of production, distribution and consumption dynamics is proposed here with the aim of understanding the type of finance, and the sources of power in archaic Ur (cf. Costin 1991; Earle 2002: 15-17).

§6.2. Production-Oriented Strategies

§6.2.1. The Archaic Ur economy seems to reflect the “staple finance” scheme (cf. D’Altroy & Earle 1985). A large number of individuals engaged in basic production and agriculture surely constituted most of the workforce (cf. Padgham 2014: 101). It is impossible at the moment to estimate the scale of production at Ur, but substantial information into the decision-making on allocating resources can be obtained.

§6.2.2. The manufacture of organic consumables is a fundamental underpinning of early urban societies and underscores production intensification, investments in specialized production, secondary processing and related techniques (Sherratt 2004: 97, 101). In early complex societies, political economies are built upon subsistence economies and therefore resource control equals political control (Earle 2002; Frangipane 2010). Within this framework, staples are not accumulated, but mobilized to create prestige and power. In this case, there is no stark distinction between the valuables used in political and commercial transactions (Frangipane 2010).

§6.2.3. Staples are often invisible in the archaeological record, but from the study of sealing practices we can glean that a process of commodification, seemingly orchestrated by managing institutions, modified both production and exchange patterns of organic consumables in archaic Ur (cf. Wengrow 2010: 23). Further, investment in standardized systems of product packaging and labeling aimed to rationalize the exchange and maximize the output of trade (Bevan 2010: 39; and cf. Fanselow 1990). Since agricultural products are substitutable goods, trade in foodstuffs involves heterogeneous commodities and uncertainties for the buyer/receiver. Standardization can balance this asymmetry between buyer and seller. Standardized packaging eliminates the process of weighing and measuring the product from the transaction. This

²⁴ Small tablets with few cuneiform signs are traditionally interpreted as school exercises; cf. *Nisaba* 25, 66; *UET* 2, 43, 275.

also has the advantage of preventing adulteration or manipulation of the quantity of the product.

§6.2.4. Branding, on the other hand, is used to provide information on the provenience and characteristics of the goods. Standardized goods are sold by number, not by weight or volume.²⁵ This reduces the skill required to verify quantity (Fanselow 1990: 252-254). The establishment of a complex system of weights and measures can therefore be considered part of the process (Sherratt 2004: 101; cf. also Chambon 2003; Lecompte 2013: 15-20).

§6.2.5. As stated earlier, grain, bread and beer seem to be the most frequently packaged and branded goods in this case study. Vegetable remains from Ur were not analyzed, but plant remains from Sakheri Sughir indicate that in the early 3rd millennium, barley (še) was probably the main crop of the area (Wright 1969: 89-91; cf. also Helbaek 1960: 195 and Powell 1984), alongside emmer (ziz₂ gaz₂; Lecompte 2013: 10). Given the dietary importance of beer in Mesopotamia (Damerow 2012b; Katz & Voigt 1986), a considerable labor input was required for both daily consumption and sponsored feasts (Jennings et al., 2005). In particular, feasting events require surplus production and labor during the weeks immediately before the event, considering the short shelf-life of beer. Packaging of jars may also have been instrumental to prevent the spoilage of such beverages. Beer was seemingly produced in two types: kaš sag “high quality beer” and kaš še “barley beer” (Lecompte 2013: 10). The delivery of ingredients and products (e.g. *Nisaba* 25, 25, 50), setting up of facilities, and assembling of the workforce were perhaps coordinated by sponsoring institutions, whereas household-level production is not documented.

§6.2.6. In addition, specialized herding strategies aiming at maximizing fiber, milk and meat production (exportable secondary products) may have been put in place by centralized institutions (cf. Stein 2005). Empirical evidence is regrettably meager for early 3rd millennium southern Mesopotamia (McCormiston 1997: 526-527). For Ur, some information on animal husbandry can be gathered from the texts (*UET* 2, 3, 16, 24, 47, 186, 231, 237, 255; Lecompte 2014a) and the visual media (i.e., glyptics; cf. Legrain 1936). According to H. Wright (1969) animals were kept in large herds, of which 30-35% was eaten every year. Hints at sheep plucking are also present (*UET* 2, 80; on meat consumption, cf. Widell et

al., 2013: 94-96). It is, however, hard to tell whether this production was maximization-oriented or not. In the same vein, the demand for textiles was surely high, but they are little attested in the sources (e.g. *UET* 2, 373) and no substantial archaeological evidence about weaving (flax/wool) is available (cf. R. Wright 2013).²⁶

§6.2.7. Faunal and plant remains from Sakheri Sughir indicate fish as a major source of food, followed by sheep, goat and cattle, with sheep and goats outnumbering cattle by 5 to 1 (Wright 1969: 89-92, tables 12, 14).²⁷ The repertoire is completed by wild and domestic animals (onagers, pigs, ducks, doves, water mussels, gazelles, dogs, mongoose, and bandicoot rats). Wild plants such as reeds (club rush), tamarisk, and poplar were used for mat making and architectural elements, respectively. Poplar in particular is often mentioned in the archaic texts (e.g. *UET* 2, 241). Knotweed could have been used for fodder. Other cultivations attested in the sources are grapes and palm (*UET* 2, 209; *Nisaba* 25, 33; Burrows 1935: 9-11 §D; Postgate 1987: 117).

§6.2.8. From these elements one may argue that three main ecological niches were exploited by these communities: 1) levee irrigation systems for cereal cultivation (levee slopes), and fruit (palms) cultivation (levee crests); 2) wetlands and flood basins for reeds, fish, waterfowl and grazing (cattle); 3) steppe-like areas for sheep and goat husbandry (cf. Wilkinson, Rayne & Jotheri 2015).

§6.3. Labor Mobilization

§6.3.1. A staple economy requires investment in landscape. As estimated by H. Wright (1969: 95-97), plowing and seeding were probably the most labor-intensive activities, especially during the months of the harvest (April-August), when 5,000 to 10,000ha of cultivated land may have required attention.²⁸ To this, the workload required

²⁵ Cf. for instance *UET* 2, 22, where bread loaves are accounted for by discrete units, not by weight.

²⁶ A few spindle-whorls have been retrieved in domestic contexts and refuse layers (Benati 2014: fig. 6: no. 9).

²⁷ Fish are mentioned in the tablet *UET* 2, 19, alongside ducks, and in *Nisaba* 25, 55. On the importance of fish for early Mesopotamian economy see Englund 1998: 128-143.

²⁸ Wright (1969: 13-17, fig. 4), calculated 3,000ha as the agricultural catchment of Ur in this phase. However, if we estimate that 2.5ha of land would be required to feed one person for one year (Miller 1982), and if we assume that Ur was populated by 2,000-4,000 people, then the agricultural catchment would be between 5,000 and 10,000 ha (50-100 sq km). Recent paleo-climatological studies on the Tigris-Euphrates hydrological cycles indicate that crop cultivation took place during the winter

for water control (cf. Hunt 1988; Wilkinson & Hritz 2013: 23, 27-28; Wilkinson, Rayne & Jotheri 2015), preparing land for cultivation (cf. Padgham 2014: 36-38), tending horticulture, and construction works should be added (Widell et al., 2013b: 85-89).²⁹ The decision-making of some of these activities can be reconstructed as follows.

§6.3.2. The construction activity related to the “administrative quarter” and the debris of the SIS layers make it clear that large-scale building programs were ongoing at the time. This suggests that institutions and households were able to mobilize sizable workforces and raw materials. Mud-brick architecture requires low skill levels, but brick making is a labor-intensive activity (cf. Ochsen-schlager 2004: 95-98; Padgham 2014: 75-76). The professional titles *šidim*, “builder,” *šidim-gal*, “chief builder,” and *nagar*, “carpenter,” are attested in the corpus (*UET* 2, 65, 152, 180, 186, 243, 366), indicating hierarchy and well-established roles also in this field.³⁰ According to ethnographic studies, bottlenecks for mud-brick based construction works occur during the hot season.

§6.3.3. As to the coordination of agricultural activities, two peaks of workload mark agricultural activity: plowing/seeding, and harvesting/crop-processing (Padgham

2014: 12; Wright 1969: 88). For the harvest, Wright (1969: 115) proposes a three-tier decision-making process, with the farmers at the bottom, the *ugula* as coordinators of the workforce, and the *umbisag/ensi₂* at the top. Three or four levels seem to be attested also for the organization of cultivation with *engar*, *ugula*, and *nu-banda₃*, coordinating tasks and workforce.³¹

§6.3.4. Allocation of fields also required a high level of coordination (Wright 1969: 88). Land in the texts seems to be labeled according to use (type of crop, economic purpose, cultivation mode), tenure, location, and perhaps soil characteristics (Burrows 1935: 12-23 §J.). Land held by the temple household of Nanna, and by other institutions and households, was allotted to cultivators for sharing crops, in exchange for services or as prebend (attached personnel, officials, etc.; see Friberg 1997-1998: 50-53). Independent farmers and agro-pastoralist groups probably co-existed with centralized institutions, though little is attested in the records. The small-scale excavations conducted in contemporaneous rural centers do not allow us to assess the level of integration between the urban center and the rural areas in relation to land use; it seems, however, that some sort of coordination between towns in the Ur enclave was organized and probably overseen by officials bearing the title *ensi₂* (cf. §4.4 and figure 6). Although tentative, Wright (1969: 115) hypothesized three-tier decision making for the land allotments, with minor cultivators (*engar*) receiving 10-15 iku, *ugula*-rank administrators receiving 30-180 iku, and *nu-banda₃*-rank officials holding 300-1100 iku of land.³²

§6.3.5. A nodal point within this system was certainly represented by storing practices (cf. in general Paulette 2015). Direct evidence of storage is not available, but in-

(Adams 2004: 42; Widell et al., 2013b: 85-97, table 2). On land-use and water management, cf. also Hunt 1988: chart 1; Wilkinson & Hritz 2013; Widell et al., 2013: 66-75. On food sources, cultivation and herding practices in early Mesopotamia, cf. Algaze 2005: 10-12; Paulette 2013a, 2013b; Widell 2013. Algaze (2005) and Pournelle (2013) stress the importance of the interaction between urban settlements and marshlands, with the former harvesting wetland resources throughout the 3rd millennium.

²⁹ Cuneiform and field evidence for water management and canal construction is elusive for early Mesopotamia (Widell et al., 2013: 68-70). Recent studies (Wilkinson 2013: 43, figs. 2.4a-b; Wilkinson, Rayne & Jotheri 2015) stress that short and steep canals driven down to levee slopes correspond to traditional southern Mesopotamian agricultural systems, at least from the 3rd millennium. These would have been manageable by small-scale communities and kin groups pointing to heterogeneous patterns of agricultural activity, encompassing centrally sponsored enterprises (main channels) and independent infrastructures. Notably, a less centralized picture also emerges from the reevaluation of late 3rd millennium written sources (cf. Rost 2011). Note the possible hints at water management items in some archaic tablets (Burrows 1935: 11 §E).

³⁰ According to Wright (1969: 104), reed products, wooden poles, logs, and building materials are accounted for in some tablets (*UET* 2, 23-25, 48, 138, 209, 230, 235).

³¹ Of course, hierarchic relationships between these actors are not well understood. According to the review carried out by Wright (1969: 108-112), cultivated land is surveyed, divided, allotted and sub-allotted in varying sizes. Notably, the reconstruction of the “ancient room” inventory indicates an internally coherent archive mainly composed of records dealing with cultivated fields. This evidence points to the role of the Nanna temple as a major landholding institution (Benati & Lecompte forthcoming a).

³² Note however that this hypothesis seems to be shaped upon later evidence (i.e. Ur III period organization, cf. Widell 2013: 61, fig. 3.4). In general, only two levels of decision-making are clearly discernible in the records dealing with field allocation: 1) the administrative framework allocating resources; 2) the individuals receiving the allotments (often mentioned by name, not by title; C. Lecompte personal communication).

formation on the handling of large quantities of cereal by high-level officials is given by the textual sources (see §4.3; cf. Paulette 2013a: 106-108). Also, the clay sealings from the Phase 3 layer indicate intense warehousing of staples. Successful stockpiling of resources can buffer food stress and create economic differentiation. Surplus accumulation provides the substances for food allotments to waged personnel, non-food producers, and for distribution of seeds to direct cultivators (Wright 1969: 112).

§6.3.6. In contrast with these tightly regulated operations, sheep/goat husbandry and plowing/seeding are little attested in the records (note the mention of the title *musub_x* “shepherd/herdsman” of donkeys, *Nisaba* 25, 52). Wright (1969: 116) suggested that these activities required only two decision-making levels.

§6.3.7. Unskilled or basic labor was perhaps mobilized through communal work events, rotational drafts (Hirth 1996: 211), and in part through waged and *corvée* systems. Low numbers of servants were also probably used for domestic activities by large households or institutions (Steinkeller 2015: 6-7).

§6.3.8. In farming communities, a common way for pooling labor is via organizing festive-labor parties, where a group of men or women works for the benefit of a host who in exchange provides food and drinks (Dietler & Herbich 2001; Kennedy 2012; Şaul 1983). Communal work events are fundamental for mobilizing inter-household labor flows during work shortages and for large-scale public undertakings. According to Dietler & Herbich (2001), two types of working feasts can be distinguished: the voluntary form in which participants (usually of equal socio-economic status) are drawn by the host’s reputation; and obligatory feasts, or *corvée* labor, where there is institutionalized authority. Notably, *corvée* labor also reflects the work feast scheme.

§6.3.9. Waged labor may represent a third way beside work feasts and *corvée*. In this case, workers are paid through fixed allotments of goods, mainly foodstuffs, plus daily meals, for several months of the year (cf. Steinkeller 2015). People that do not possess the means to work their land, or that do not hold land, usually make themselves available for waged labor. Ethnographic research demonstrates that both systems are often attested simultaneously (Şaul 1983). Although most households were able to engage in some sort of feasting, large-scale feasts require planning, manpower and a surplus of agricultural produce (Dietler 2001: 80). Hospitality is therefore often exploited by the wealthy as a strategy to

build prestige and social inequality. Within centralized institutional frameworks, work may have been mobilized as waged/*corvée* labor, while at a household level work feasts may have been the main system to mobilize short-term labor.

§6.3.10. As demonstrated by Şaul (1983) cooperative labor in fact tends to be inefficient and expensive, both in terms of immediate costs for provisioning food, and in terms of future engagement in other work-party networks (there is an obligation to reciprocate work). Wage labor is generally cheaper and more efficient, but it depends on the availability of paid workers. Although both modes accrue return of value for sponsors, waged labor is more affordable for large land-holders, and provides the means to extract large surpluses.

§6.4. *Utilitarian and Luxury Goods Production*

§6.4.1. Information on production of non-perishable goods is scarce at Ur. Almost no specialized production loci or debris have been identified for the layers examined at Ur, and no specific studies on the products have been carried out.³³ Craftsmen (*simug*, “smith,” *bahar₄* “potter;” cf. *UET* 2, 44, 62, 358, etc.), and attached personnel (non-basic workforce), are identified in the texts, but there is no clear indication of the type of control eventually exerted by the institutions over their production.

§6.4.2. It is possible that, as advocated by G. Stein (1994), a dual circuit was in place, with independent workshops for the production of utilitarian commodities and craft production institutionally controlled and financed through the agricultural surplus (on pottery production cf. Adams 2004: 56; Steinkeller 1996). It is in fact likely that centralized institutions had no involvement in the large-scale provisioning of daily items, while wealth products and celebratory food and drink were perhaps centrally sponsored (Stark and Garraty 2010: 44).

§6.4.3. Given the scarcity of *in situ* domestic assemblages, it is not possible to investigate the size and organization of craft or household production patterns (cf. Smith 2004: 82-83). The only possible activity area documented by Woolley is in a domestic compound (House 1) partially exposed in Pit F-Level H, where fragments of a potter’s wheel were detected alongside potsherds and stone fragments (Benati 2014: 4 n. 8, 13, fig. 2: L.41, table 1). This may point to the presence of a household pottery atelier (cf. Tosi 1984: 24).

³³ According to Woolley (1956: 75-76) spindle-whorls, bored roundels, cones, stone drill-heads and stone bowls

§6.4.4. Metals and textiles are sporadically cited in the texts.³⁴ Very little evidence of metalwork production or stone carving comes from the analyzed contexts, although the present research does not take the mortuary record into close examination. Burials are in fact rich in finished products, such as stone and metal vessels (cf. Moorey 1994: 43-45, 257-258), as well as in personal fittings of shell and soft-stone.³⁵ Similar burial assemblages are documented at Khafajah and Susa at the onset of the 3rd millennium (Potts 1994: 160 n. 132), indicating that such items, seemingly not socially restricted, accrued value in funerary display.

§6.4.5. Notably, four bull hooves—part of a composite small-scale animal statue in tin sheet copper hammered over a bitumen core—were retrieved in a layer of debris accumulated slightly later than SIS 5/4 (Woolley 1956: pl. 29: U.14462; Moorey 1994: 259; Marchetti in Marchesi & Marchetti 2011: 54 n. 153). Chemical analyses conducted on these specimens revealed that one hoof (BM 122731) is made of rather pure copper, while another one (IM 8528) is tin-bronze (cf. Hauptmann & Pernicka 2004: 71, 136, 1707-1707A). Notably, between the 4th and the 3rd millennium, arsenical copper seems to be the metal of choice in Mesopotamia. Pure copper and tin-bronze appear to be extremely rare (D. T. Potts 1997: 168-170).³⁶ Consequently, one can conclude that this statue was a very high-status production, implying external procurement of rare raw materials, skilled craftsmen, and complex casting activities in this phase at Ur (cf. Moorey 1994: 271, 275).

§6.4.6. The archaeological evidence is backed by the men-

fragments were retrieved within SIS 5/4 in Pit W, perhaps indicating textile processing and stone carving for the midden catchment of SIS 5/4.

³⁴ As noted by Wright (1969: 109-110), *UET* 2, 127, is a particularly important record enlisting metal containers and quantities of copper alongside animals and land pertaining to the Nanna shrine. Wright proposed to interpret the tablet as a payment for land rented out by the temple, but we cannot rule out the possibility that the tablet is a sale document since fields are usually paid in metal in ED Mesopotamia (cf. Gelb, Steinkeller & Whiting 1991).

³⁵ The analysis of a metal tool from a grave of the JN cemetery dug in Pit X (JNG 177) revealed arsenical copper (cf. Hauptmann & Pernicka 2004: 70, 135, no. 1658).

³⁶ Analyses on some fish-hooks from the household assemblage of Pit F (K-I; Hauptmann & Pernicka 2004: nos. 1615, 1618, 1620), revealed copper and arsenical copper, in line with the general trend for utilitarian items in Bronze Age Mesopotamia (Moorey 1994: 252-253, 258; D. T. Potts 1997: 167-168).

tion of both copper and bronze objects in one of the archaic texts coming from the Ancient Room (*UET* 2, 373; [kindly recollated by G. Marchesi]; cf. Burrows 1935: 11; Moorey 1994: 252, 258). Most notably, *UET* 2, 127, demonstrates that metals (in this case, copper) were exchanged both as finished objects and by weight (ma-na), perhaps in the form of ingots (cf. also Wright 1969: 109-111). If the information on these prestige items provides glimpses into the ceremonial consumption of high-end commodities by the Ur social bodies, the context and scale of this production remain rather obscure.

§6.5. *Intra-site Spheres of Exchange*

§6.5.1. Although this type of economy was heavily production-based, one may suggest that economic up-scaling ushered in increased interaction and diversified modes of exchange (cf. Adams 1992; Algaze 2005; Lie 1992; Wilkinson, Gibson & Widell 2013). Recent headway in understanding ancient economies allows us to tailor strategies specifically to investigate pre-industrial exchange modes (Feinman & Garraty 2010; Garraty & Stark 2010). Information on the modes of commodity exchange is quite rich for early Ur. The circulation of foodstuff, raw materials, and craft goods at an intra-site level is the primary focus of this section (cf. in general Matthiae & Marchetti 2013).

§6.5.2. Valuables were mobilized through a series of strategies cross-cutting production, service, and distribution. Food, land, raw materials, and utilitarian goods were in part distributed internally (top-down) by managing institutions, and perhaps in part conveyed into multiple exchange networks. In addition, taxes were collected and unequal exchange (rental of land) was also apparently practiced.

§6.5.3. Sociological instances can be gleaned from archaeological evidence. The lines of evidence related to the flow of comestibles, warehousing, weighing/accounting, and rationing suggest tight control over resource allocation and dissemination of goods from central locations. In this case, packaged staple products were the main mobilized commodities and were likely used to sustain the non-basic sector of the population and as payments for workers (wages/salaries/allotments, delivery of ingredients). The change in storage patterns in fact suggests supra-domestic coordination for warehousing and mobilization of agricultural resources for financing elite activities.

§6.5.4. As stressed by Stark and Garraty (2010: 35), goods that can be reproduced incrementally, such as foodstuffs,

of such commodities was wide and not socially restricted. As to City Seals, the evidence from Jemdet Nasr and Tell Uqair indicates that several urban enclaves within the alluvium enjoyed economic, political or cultic integration at the end of the 4th millennium BC (Englund 1998: 92-94; Matthews 1993: 34-36; Marchetti in Marchesi & Marchetti 2011: 211, n. 2).³⁷ G. Selz (2014: 264) suggested that the Jemdet Nasr tablets bearing the City Seal impression may have been intended as receipts of envoys of products controlled by scribes and officials bearing cylinder seals. The author hypothesized that the transportation mechanism involved may have been an institutionalized network of travel stations. Within this framework, bulk commodities may have been easily moved via barge trafficking through the dendritic network of branch canals connecting the major urban sites of the area and the settlements dispersed in the wetlands.³⁸ This assumption fits with the widely recognized prominence of water-based transportation for southern Mesopotamia (cf. Branting et al., 2013: 144-147; Wright 1969: 31).

§6.6.3. A substantial number of City Seal impressions were retrieved in the debris excavated in the RC Area at Ur (Matthews 1993). Being composed of symbols with cuneiform significance, the City Seals imagery can be defined as a kind of visual language. From this, one may conclude that the code was meant to convey information different from the visual-signaling of the seals carved with figurative imagery, pointing to the presence of literate actors at both ends of the chain of operations.

§6.6.4. A detailed functional study of these devices can be used to sketch some organizational factors for the exchange system in which the sealed commodities were mobilized. R. Matthews' (1993: 44-45) study makes it clear that 69% of the sealings from Ur impressed with City Seals were door closures, while the rest were used to seal vessels and containers. This dataset suggests that

select bulk commodities, packaged and branded using a specific information technology, were extracted from Ur warehouses, channeled into a network of communities and consumed off-site. The level of bureaucratic complexity related to the control of storerooms indicates that supra-household collectives were in charge of these operations, supporting Selz's analysis. Simply put, cooperation at an inter-regional level was organized by institutions to mobilize packaged commodities, marked by a specific visual-signaling system. Apart from Ur, other specimens of City Seals impressions on clay sealings dating from the early 3rd millennium BC have been retrieved at al-Hiba (ancient Lagash), Fara (Šuruppak) and Uruk in the alluvium, and at Susa and Konar Sandal South in Iran (Matthews 2013: fig. 21.2, tab. 1), attesting that the network may have stretched from central Mesopotamia to southeastern Iran (cf. also Crawford 2013).³⁹

§6.6.5. In sum, the resulting mosaic of economic exchange networks may have represented a powerful channel for interaction. Multi-faceted spheres of exchange (Stark & Garraty 2010: 34) corresponded to different economic transfer patterns (exchange/provisioning), levels of integration (bottom-up/top-down), information technologies, and different cultural bounds (cf. Kopytoff 1986: 71-72).

§7. Conclusions

§7.1. *The Socio-Political Landscape of Early 3rd Millennium BC Ur*

§7.1.1. The archaeological and textual record from Ur suggests a process of emergence of estate economies during the first half of the 3rd millennium (i.e., the Early Dynastic I period). Surveys and landscape studies indicate that this period witnessed an overall growth of urban entities in the southern part of the alluvium, clustered in linear enclaves, and a general decrease of rural settlements (Adams & Nissen 1972: 17-18, 27, 87-89, figs. 4-5; Ur

³⁷ It is worth noting the pottery jar shard from Jemdet Nasr bearing cuneiform signs for jar and beer (Matthews 2002: fig. 33: 16, pl. 32). Given that emmer and barley beer spoil in a week (Jennings et al., 2005: 281, 286-287, table 1), beer jars were either stored for a short period, or exchanged within a limited circuit. On the Mesopotamian exchange of perishables according to written sources, cf. also H. Crawford 1973.

³⁸ Both written sources (Steinkeller 2001), and paleo-environmental studies (Wilkinson & Hritz 2013: 18-20) demonstrate that the Tigris and Euphrates rivers were connected by a network of anastomotic branch channels providing irrigation water as well as an economic means of transportation (cf. also Pournelle 2013: 28-29).

³⁹ According to T. F. Potts (1994: 37-38), Susa, being located on an ancient course of the Kerkeh, was easily accessible by boat from the Mesopotamian alluvium (through the Karun), while trade with the Kerman region where Konar Sandal lies would have been easier through Gulf shipping. Since the City Seal's impression from Konar Sandal South is a door sealing, one may conclude that it had been used locally to fasten the door of a warehouse (Madjidzadeh & Pittman 2008: 100). Furthermore, economic interaction between southern Mesopotamia and Oman has been documented for the JN-ED I period through archaeometric analyses performed on a series of pottery vessels of Mesopotamian manufacture retrieved in settlements and graves of the Hafit period (Méry & Schneider 1996; cf. also D. T. Potts 1986: figs. 1-6).

2013: 140-141).⁴⁰ Increased density, nucleation of settlements, and the availability of low-friction transportation, generated a positive feedback loop that may have paved the way for the emergence of political powers in this area (cf. Kohler et al., 2012; Roscoe 1993).

§7.1.2. It appears that at Ur, towards the second quarter of the 3rd millennium, centralized non-kinship institutions managed to organize labor beyond the household-level and engaged strategies aiming at controlling the mobilization of resources (cf. Yoffee 1995: 303). This was probably achieved through service-oriented strategies set up to organize and facilitate cooperative specialized production. The most important tasks within this framework were workforce coordination, management of cultivated land, allocation of resources, and competitive feasting. These activities were supervised by a sector of corporate administrators keeping clay records of inputs and outputs. Field evidence also demonstrates that bureaucratic facilities were organized in order to concentrate some of the economic processing.

§7.1.3. The societal framework of Ur at the onset of the 3rd millennium seems that of a corporately organized hierarchy (cf. Blanton et al. 1996; Feinman 2000). The political landscape was perhaps that of a dynamic town populated by chiefly families and institutions competing to engage commoners in their spheres of interaction. It is, however, hard to evaluate the level of integration of political institutions, or to know how far-reaching their networks may have been.⁴¹ One thing that must be stressed is that no vertical governance is detectable in the evidence at our disposal: there is a lack of representation of specific leaders in visual media and written sources (but see Marchetti in Marchesi & Marchetti 2011: 194 n 40, 196, 212-213), and graves do not seem to display stark differ-

⁴⁰ Adams and Nissen (1972: 89) suggested that the Ur-Eridu enclave followed different urban trajectories with respect to Uruk, reaching urban carrying capacity only later on during the Early Dynastic period (cf. Ur 2013: fig. 7.3).

⁴¹ Marchesi (in Marchesi & Marchetti 2011: 103, nn. 52-55) noted that the presence of “consultative bodies,” such as assemblies or councils, has been variously postulated for 4th and 3rd millennia Mesopotamia (cf. Glassner 2000: 43-47). Although no agreement on the nature of such assemblies has been reached in scholarship, the presence of officials attached to these political bodies has been used to suggest more heterarchical pathways in the political landscape of early Mesopotamia, in contrast to the hyper-hierarchical framework of the second half of the 3rd millennium (ibid.; cf. also Marchetti in Marchesi & Marchetti 2011: 214-218).

ences in status.

§7.1.4. The model favored here for explaining the rise of centralized organization is endogenous and voluntaristic, with elite groups engaged in intra-site competition through labor-organization and the provision of assets not otherwise available to individuals (cf. Stanish 2004: 22-23; Kohler et al., 2012: 17). The abundant evidence of feasting habits in visual media, the archaeological and textual records related to beer consumption, and the attestation of food and beverage distribution ceremonies point to large-scale alcohol production and strong political connotations for ritual and work feasts. This rapidly changing political landscape may very well have provided an arena to shape beliefs through the creation of new ideologies aiming at legitimizing hierarchy and eliteness.

§7.1.5. The improved use of writing technologies also had cultural and social implications (cf. Larsen 1985). The Ur textual corpus shows a significant leap forward in information processing and accounting that can be defined as systematized knowledge procedures (cf. Visicato 2000: 4-5; Lecompte 2013: 15-20; Damerow 2012a: 166-168). The control of goods, labor, services and knowledge through an administrative apparatus can also be considered a political-economic strategy aiming at constraining social power via establishing social practices (Baines & Yoffee 1998; Blanton 1998). It is possible that at this point dominant groups attempted to institutionalize their power through social, cultural and political actions.

§7.1.6. The analysis of peer-polity interaction exceeds the scope of this paper, but it is worth asking if and how exogenous phenomena may have affected these trajectories (cf. Renfrew & Cherry 1986). Ur in fact did not exist in isolation; the archaeological and textual records indicate close ties with other Mesopotamian and extra-Mesopotamian polities (figure 6), but the forms of interaction linking such polities are poorly understood. Decision-making groups may have been connected with (and influenced by) other polities through exchange, warfare, emulation, etc., leading to social, economic and cultural transformations.

§7.2. *Stress Points and Cyclical Dynamics in Archaeological Perspective*

§7.2.1. Archaic polities are best described as dynamic entities affected by cycles of buildups and breakdowns (cf. Earle 2002: 45; Marcus 1998; Wright 2006: 306-307; Yoffee 2005). Adams (2001: 352) argued that early complex societies—adaptive systems in nature—can suddenly re-organize themselves after long periods of slowly

accumulating changes, generating systems composed of old and new elements.

§7.2.2. At Ur, the political economy described above triggered self-reinforcing processes that may have rapidly spurred productive capacity resulting in new forms of social complexity and economic interaction comprising accumulation of large surpluses by managing institutions, and the use of prestige markers (cf. Earle 2002: 94). This pattern resembles in part the hyperbole of the Ur III institutional management that, according to Adams (1978: 331), in the short run produced massive networks of commodity production and distribution, population and urban growth, and bureaucratic hypertrophy, but ultimately tended to be unstable.⁴² Maximizing strategies in fact tend to be short-lived, and vulnerable to collapse (Stein 1994: 13).

§7.2.3. It is possible that after a growth cycle, a setback to more sustainable economic patterns was experienced at Ur.⁴³ The “administrative quarter” and the southern slope were abandoned in the aftermath and buried by debris, suggesting a decrease in settlement size. This interpretation may be at least in part due to archaeological bias, but it is possible that a reduction in site size was due to economic and social vulnerability.

§7.2.4. Stanish (2004: 16) stressed that the key task of the elite is that of maintaining corporative means of production in order to keep benefits high. Failure of this benchmark results in the collapse of the specialized labor organization and a setback to risk-minimization production. Although over-simplified, these dynamics may explain some of the changes observed in the archaeological record at Ur.

§7.2.5. Be that as it may, during the second half of the 3rd millennium (Early Dynastic III), a sweeping change at the economic and political level occurred, and a hyperhierarchical landscape dominated by monarchic insti-

tutions and wealth finance emerged at Ur. These major sociocultural transformation are certainly connected to changes in economic strategies and political behaviors that, as a matter of fact, are still ill-defined. Bringing into clearer perspectives these dynamics could be significant for how we conceptualize ancient Mesopotamia societies.

§7.2.6. To conclude, the present paper attempted to design a new strategy for the analysis of early Mesopotamian socioeconomic blueprint. Although new patterns of self-organization have been pointed out, how change came into being and other key questions remain unanswered. This paper targeted endogenous change and considered only lightly dynamics operating outside Ur, such as interaction with neighboring polities (cf. Renfrew 1986: 5-6). Further research is certainly required to bring into clear focus the variables related to political, social and economic transformations at work in 3rd millennium Mesopotamia. It is to be hoped that this multi-scalar approach can be used to challenge old schemes and inspire new research on Mesopotamian social arrangements, economics and statecraft.

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⁴² Agent based simulated demonstrates that even within short timespans (60-100 years), marked social differentiation can be achieved at intra-site level, paving the way to social inequality (Wilkinson, Gibson & Widell 2013: 258-259).

⁴³ In this case environmental factors, epidemics, food stress or other exogenous phenomena—at present hardly detectable in the archaeological record—may have played a role in the economic instability (cf. Paulette 2012; Wilkinson & Hritz 2013: 28; Wilkinson et al., 2013). Note also the skeptical position of S. Richardson (2014: 87-88) as to ecological vulnerability in ancient Mesopotamia.

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