

Chalcolithic and Early Bronze Age Economies of Mesopotamia 1

Introduction

With the emergence of complex societies, human economies were reformulated in ways that must be understood to study how social, political, and economic developments interrelate. Because Mesopotamia witnessed the earliest developed sociopolitical complexity, understanding how its economy evolved represents a foundational case for understanding the processes responsible. In formative phases of Early State societies (fourth millennium BCE)¹ and their full-fledged developments (first half of the third millennium BCE), these crucial changes transformed the function of the economy from being an instrument to satisfy basic community needs, ensure subsistence security, and prosperity to become a means of producing “wealth” used by privileged categories, although often entailing benefits to supporting social sectors. These processes, of course, varied in form, consistency, steps, and timescales in different regions depending on environmental conditions and organizational forms. But wherever these processes took place, they produced far-reaching changes that resulted in emergent hierarchies, new political institutions, and power systems. Reflecting on these changes highlights crucial phenomena that still affect our societies today.

Observing the dynamics that led to substantial changes in organizing subsistence and wealth economies, the distribution of goods, and the roles played by the political economy of early leaders, we reflect on fundamental concepts and relationships that mistakenly are taken for granted (Feinman, Nicholas 2004). These include the concept of “wealth,” its social perception and use, and ways it changed over time, as well as the relation of wealth with power, the interplay between social and economic inequalities, and the rise of hierarchies. These topics require a reconsideration of “surplus”: which surplus, why was it produced and in what quantities, and, of course, what were its uses (Earle 2015; Cesaratto, Di Buccianico 2021).

A central topic is the role played in Mesopotamia by centralized political economy and how much and to what extent it interfered with domestic economy (Sections 2.1, 2.2, 4.1, and 4.2). We consider organizing labor, developing specialization, increasing professions, growing local exchange and long-distance trade, and circulating goods.

Crucial is the distinction between *staple* and *wealth/luxury* economies and their place in the political economy of ruling elites (Polanyi 1944; D’Altroy, Earle 1985). Indeed, the “economy of the *superfluous*” and how it may have influenced wealth and relationships between wealth and power deserves reflection.

¹ Traditionally in Mesopotamian early historical dates are listed by millennia BCE. In normal calendrical dates, these are seventh millennium, 7000–6001 BCE; sixth 6000–5001 BCE; fifth 5000–4001 BCE; fourth 4000–3001 BCE; and third 3000–2001 BCE.

Special attention is given to changes over time in economic roles of trade and markets in precapitalist and pre-mercantile Early State societies (Section 5). The possible emergence of markets, if they existed then, is taken into account by considering how markets may be recognized (Polanyi et al. 1957; Earle, Ericson 1977; Hirth 1998). This leads us to reflect on definitions of markets and the observed diversity in the forms and modalities of exchange in the early phases of State formation, distinguishing archaic forms from the idea we have of markets based on knowledge of mercantile and capitalist economies (Polanyi 1944; Johnson, Earle 2000: 367–390).

Urbanization affected production relations and economic practices (Section 3). The physical concentration of many people at the same place created conditions for internal exchange of different commodities, especially ceramics and metals involving economies of scale and labor specialization. On the other hand, proximity to the seats of power, where central institutions performed public functions and boosted demand for products and services, likely attracted people to cities, enhanced management by central institutions, and increased their invasiveness in economic life.

To understand economic processes that shaped Mesopotamian societies, one must look to their deep roots in seventh and sixth millennia BCE, when a subsistence economy with agriculture and animal breeding was first established on the plain and led to increasing sedentism and new social relations. In this period, societies organized their subsistence economy distinctively, and diverse social structures developed in natural environments in northern and southern Mesopotamia (Section 1). Different environmental conditions (vast neighboring steppe plains and mountains in the north and large alluvial plains and marshy areas forming varied ecological niches along the Tigris and Euphrates deltas in the south) channeled development of contrasting societies: egalitarian and cooperative communities in northern Mesopotamia and more hierarchical and competitive societies in the south. Such different environmental and historical backgrounds and the varied paths leading to social and economic complexity are analyzed in Section 1, not disregarding the intense relations that always existed between northern and southern Mesopotamian communities. Such relations gave rise to interaction and integration that formed the wide so-called Greater Mesopotamian world, within which a southern hierarchical model based on a highly centralized and redistributive economy ultimately prevailed (Fig. 1a and b).

This Element analyzes fundamental dynamics that gave rise to the first hierarchical and economically unequal societies in Mesopotamia, by comparing processes in different subregions. Crucial are the roots of social hierarchies; their relations with the formation of powerful central institutions with strong

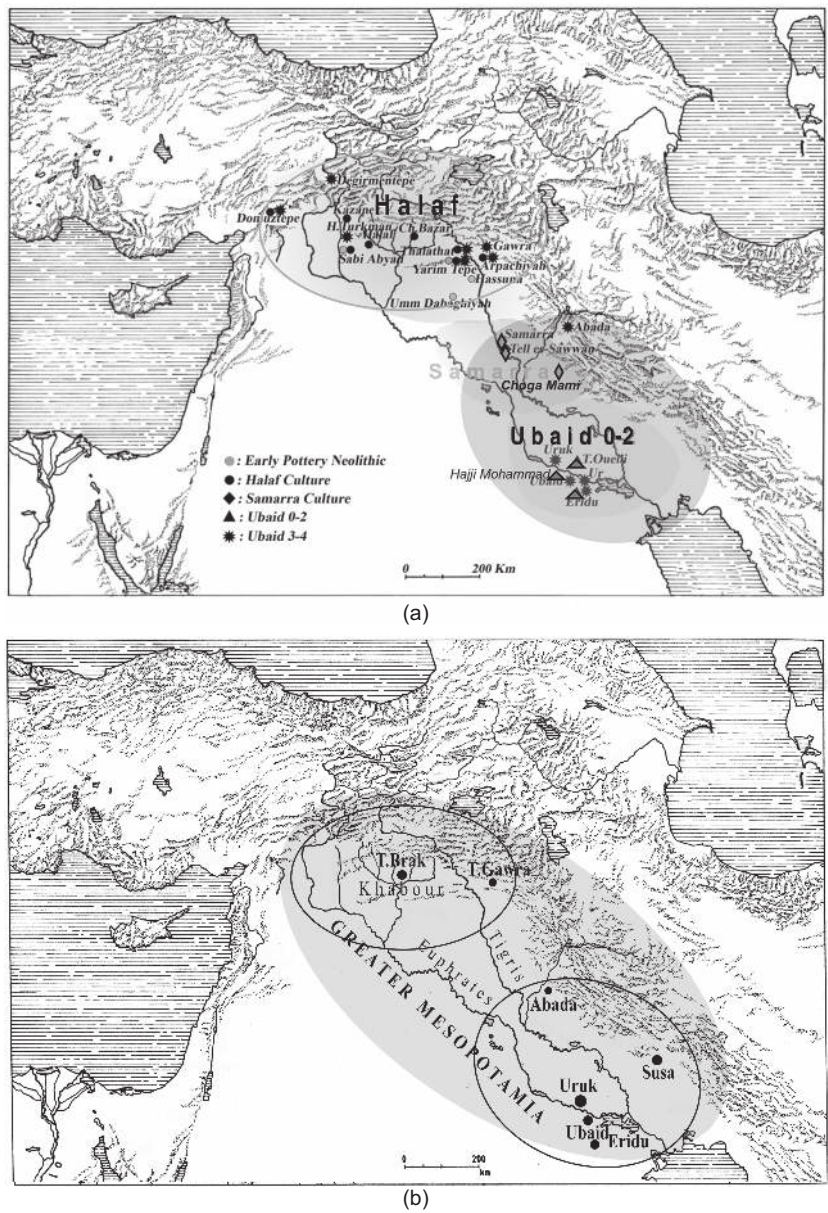


Fig. 1 a. Mesopotamian cultural areas in the sixth millennium BCE; **b.** Greater Mesopotamia and main fifth- and fourth-millennium sites mentioned in the text.

ideological legitimization; the strategies of political economy appropriating surplus and means of production; the main economic goals and degree of intrusiveness of the institutions in the daily life of the population; and alternative paths leading to economic inequality.

1 Historical Background and Environmental Conditions

Looking at contrasts between southern and northern Mesopotamia, different environments and subsistence opportunities affected Neolithic communities settled in the plains and drove different subsistence economies, social systems, and conditions for leaders to control surplus production. A hierarchical socio-political system developed first in the south and was subsequently adopted by northern egalitarian communities in the fifth millennium BCE.

1.1 Environmental Conditions

1.1.1 Southern Mesopotamia

Mesopotamia is defined by the Tigris and Euphrates Rivers, which, after flowing south through Syria and Iraq, approach each other north of Baghdad and form the lower Mesopotamian alluvium plain. Reconstructing environmental conditions in Mesopotamia in the fourth and mid third millennia BCE has sparked discussions on interactions between environment, climate, and human societies. Irrigated agriculture impact on urbanization, as flourished in Southern Mesopotamia, has been much debated. Irrigated crop production fundamentally affected economic and political life of those early settlements. The region, home to the cradle of civilization, overall has a fragile environment. Roughly corresponding to southern Iraq, it is a dry land where semiarid to arid climate (annual rainfall < 200 mm) limits dry-farming agriculture. Wetlands and marshes characterize the southernmost delta region formed by river and marine deposits at the head of the Arab/Persian Gulf. The alluvial plain is bordered by the Zagros Mountains to the east and the Iraq desert to the west, forming a macro zone, in which exploitation of wetlands and piedmont areas were essential to beginning settled life.

The diversified eco-system made of marshes with rich reed resources, building materials, and fish and mollusks was favorable to Ubaid communities of the fifth millennium. At the dawn of urbanization, main settlements of Southern Mesopotamia exploited a wetland environment, since the sea level was approximately 2.5 m above today's level, extending far inland. The major center Uruk was lapped by a marshy landscape, and some of the earliest Sumerian cities were located on drier relict islands in the marshes (Pournelle, Algaze 2014). In Lower Mesopotamia, waterways served as irrigation canals, transport routes, and places to exploit reeds and fish. Already during the Ubaid phases, palaeobotanic remains show irrigated cereals, which, by the end of the fourth millennium BCE, became the primary agricultural production (Wilkinson 2013).

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North of the marshlands, the upper river plain is characterized by shifting river meanders that flattens toward the delta, in which irrigation became the signature adaptation from the fourth millennium BCE. Wittfogel's (1957) hydraulic theory of civilization proposed that the need for water management in dry regions was the main driver stimulating the growth of centralized and hierarchical societies. Without fully accepting his proposition, early irrigation in southern Mesopotamia was certainly a critical factor in social development. Although large irrigation networks are not documented for the late fourth and beginning third millennia BCE, small-scale irrigation was probably important locally (Wilkinson 2013). It would have created the beginnings of an engineered landscape that supported population in the specific risky environment. Documented by early pictographic tablets (late fourth millennium BCE), cereal production in Uruk societies shaped the rural landscape and supported early cities. The roots of a public, rural landscape with large, elongated rectangular fields, which typified the later Neo-Sumerian period, are already identifiable in those early texts, implying central management of water resources (including irrigation) and coordinating work in a scenario of emerging social differences (Liverani 1990; Frangipane 2018a). The archaic tablets from Uruk document centralized sheep husbandry to produce wool, which apparently exploited pastureland close to urban centers, depicting an articulated ancient landscape in which productive pastures and marshland were close to farmland in an economic landscape that exploited an ecosystemic mosaic (Adams 1966, 1981). The piedmont region to the east and the dry steppe to the west were likely homeland to transhumant communities moving sheep and goat from farmlands to dry surroundings.

1.1.2 Northern Mesopotamia

Northern Mesopotamia has a wetter climate in most of the territory with an annual rainfall > 250 mm, considered the minimum for dry farming (De Gruchy et al. 2016). It includes Northern Iraq and North-eastern Syria (the Jezirah plain) and lowland and hilly areas bordered by the southern flanks of the Taurus range in southeastern Turkey. Closer to their sources along the Zagros Mountains, the Tigris and Euphrates valleys form a more stable topographic setting when compared to Southern Mesopotamian alluvial plain's meandering and flooding. Differently from the South, waters flow within relatively narrow valleys, making irrigation challenging and restricted to river terraces. The wide steppe plain of the Jezirah, and the well-watered Khabour river plain in particular offered good potential for dry farming favorable for urbanization, as developed in the Upper Khabour.

Foothills and mountainous areas on the plain's fringes were ideal for caprine grazing, as well as for raw material such as timber and various stone, absent in Mesopotamian lowlands. The region's valleys also open the way to metal-rich mountains of Anatolia and Caucasus.

1.2 Population and Community Organization after the Neolithic Revolution (Seventh to Fifth Millennia BCE).

1.2.1 Northern Mesopotamia (Seventh and Sixth Millennia BCE)

We start with Northern Mesopotamia. Thanks to the rainfall regime that allowed dry-farming, and, proximity to wild cereal grasslands, the steppe plains were occupied by the first Pottery Neolithic (seventh millennium BCE). Settlements soon spread over a vast area to the north-western Zagros foothills in the east, the Taurus piedmont on the north, the Middle Euphrates valley on the west, and the edge of the driest plains of central Mesopotamia on the south (Fig. 1a). These early sedentary or semi-sedentary communities had integrated economic organizations and shared material culture with some local peculiarities. The early *Hassuna culture* (seventh millennium BCE) was followed by the spread of the *Halaf culture* (sixth millennium).

The subsistence economy exploited diverse environments over wide areas, each offering distinct resources and potentials: dry agriculture was successful practiced on steppe plains, perhaps also supplemented by limited irrigation along river banks (especially Khabour and Balikh); specialized gazelle and wild ass (onagers) hunting was carried out in a few ecological niches along the southern edges of the plains; and transhumant pastoralism was practiced in foothills and intermountain valleys. Different activities were conducted by partially or fully specialized groups that were part of the same sedentary community or lived in different settlements. In the first case, groups of shepherds may have moved away from the village seasonally, returning at regular intervals. No central or hierarchical structure is visible and food produced by the different groups in various seasons appears to have circulated horizontally by exchanges between and within communities, sometimes being also stored collectively and redistributed equally.

This hypothetical organization is suggested by important archaeological evidence: The villages were small and had an egalitarian arrangement with dwellings small and similar to one another. They shared outdoor spaces where domestic equipment was scattered without clear association to individual dwellings. No building stood out from others suggesting privileged status.

In the Neolithic villages of Upper Mesopotamia, no clear evidence existed for family-based domestic storage. Rather, in at least three well-excavated villages (Sabi Abyad to the west, Yarim Tepe to the east, and Umm Dhabaghiyah to the

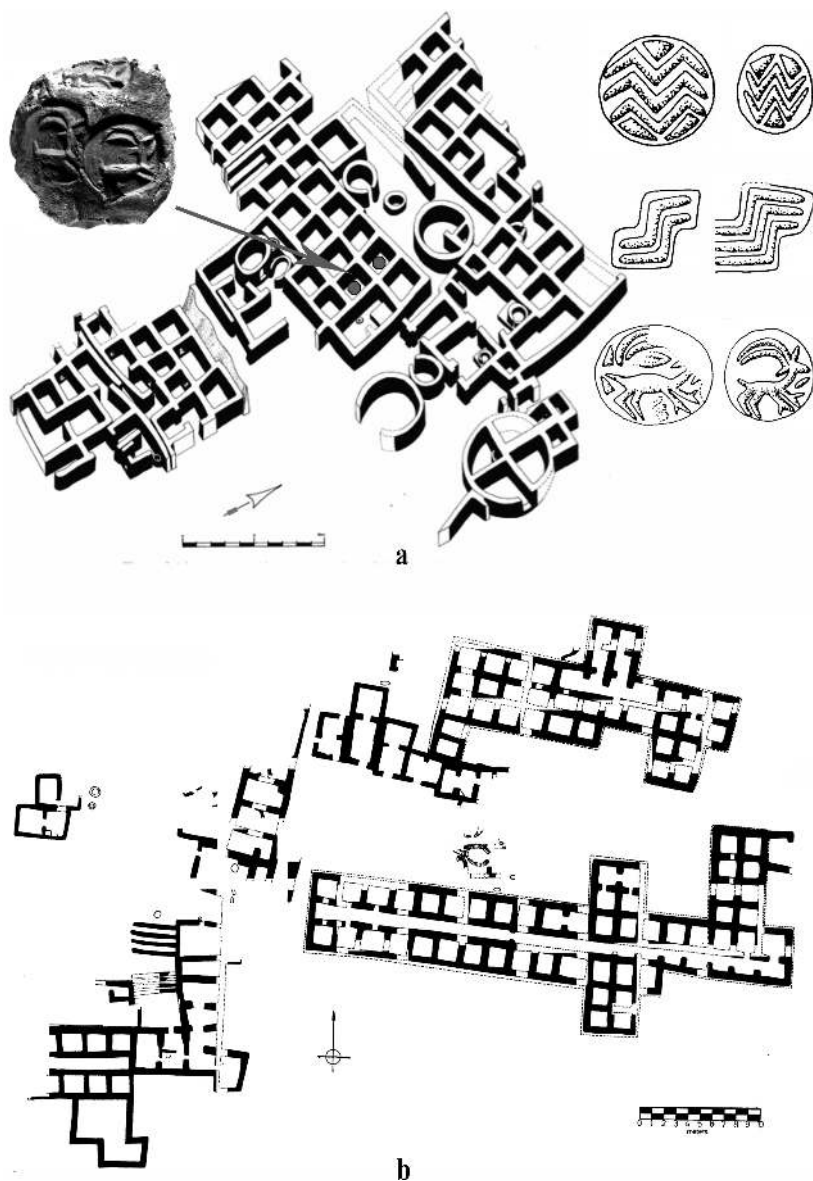


Fig. 2 Neolithic collective storehouses in Northern Mesopotamia. **a.** Sabi Abyad (re-elaborated from Akkermans 1996); **b.** Umm Dabaghiyah (from Kirkbride 1975).

south), large storehouses were found where food and by-products were stored collectively (Fig. 2). Cereal remains were found in the Sabi Abyad storehouses; likely dried meat or skins of wild asses were kept at Umm Dabaghiyah, where small cell-rooms were empty. In that site, faunal remains were nearly 90% wild

animals of which about 70% were onagers (Kirkbride 1975). The emphasis on hunting at Umm Dhabaghiyah is supported by a lithic industry dominated by arrowheads with few blades and agricultural tools; the presence, among limited vegetal remains found at the site, of swelt wheat, lentils, and peas, all species difficult to cultivate in that arid environment suggests they were imported from other villages. Hunting's dominance at Umm Dabaghiyah, together with its small size, indicates that the large quantities of stored products were not intended for its inhabitants, suggesting specialization for food exchange (animal products for plant products).

The extraordinary finding of hundreds of *cretulae* (clay-sealings) with the impressions of over sixty-five seals grouped iconographically in the large common storehouse of Neolithic Sabi Abyad (Akkermans ed. 1996) possibly suggests collective storage of cereals by families or kin groups, who left them in custody to some individuals who guarded and redistributed them on behalf of the community. The need to entrust someone with custody of harvest probably arose when some community members (shepherds?) left seasonally the village and then claimed their goods upon returned (Akkermans, Duistermaat 1996). Judging from the numerous *cretulae* kept aside in a small rooms after being removed from sealed containers, these appointees probably had to account for operations that were documented by the seal impressions (affixed by those who had withdrawn goods) (Frangipane et al. 2007: 415–468, 2016). The use of *cretulae* in this Neolithic context documents the beginning of a system administering stored goods to guarantee equitable distribution in egalitarian, cooperative societies. Only later this system would become a power instrument in the hand of leaders.

The cooperative economy did not change in the sixth millennium BCE, when the *Halaf culture* spread more broadly. Communities seem to have maintained collective organizations, in which the basic unit of production and consumption was the community as a whole. The circular *Halaf* structures (the *tholoi*) were scattered in villages without evident association with individual families, and domestic activities were conducted in outdoor spaces without clear connection to specific houses (Fig. 3). Though one or two rectangular, multi-roomed structures existed in several villages, they appear to have been buildings for community functions, as was a new communal storehouse built at Sabi Abyad. No hierarchical social structure is yet recognizable in the Halaf period from the settlements or the cemeteries.

The egalitarian and communal management of the basic goods may have also concerned the procurement of necessary raw materials, such as flint and obsidian, which appear to have circulated *down-the-line* from one village to the other.

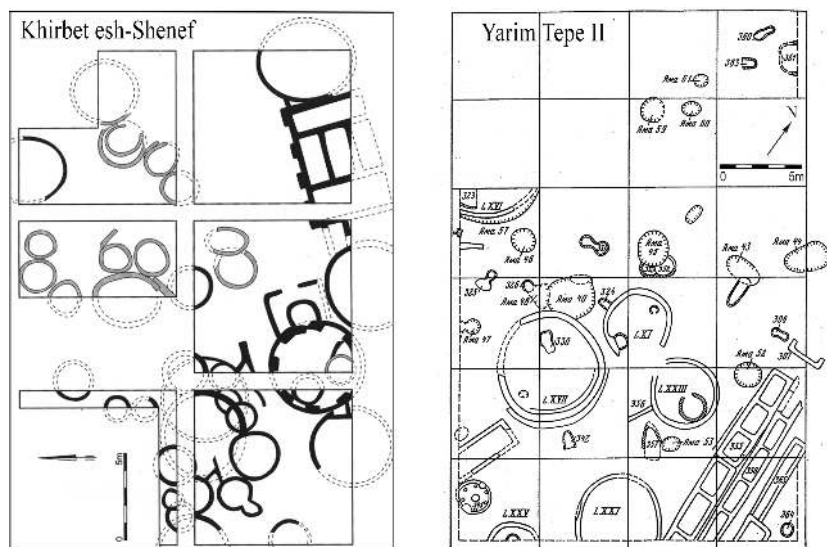
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Fig. 3 Halaf sites from Northern Mesopotamia (from Akkermans PMMG-Wittmann B., Khirbet esh-Shenef 1991, *Mitteilungen der Deutschen Orient-Gesellschaft* 125, 1993; Merpert N.-Munchaev RM., Yarim Tepe II, *Iraq* 49, 1987, fig.10).

1.2.2 Southern Mesopotamia (from the End of the Seventh to Fifth Millennia BCE)

The first settled communities in the alluvial plains of southern and central Mesopotamia appeared later than in Upper Mesopotamia, mainly from the beginning of the sixth millennium BCE. The absence of earlier evidence is probably partly due to meters of alluvial deposits. But conditions of severe aridity, unstable watercourses near estuaries, swamps, and marshes, and frequent flooding made human settlement difficult without adequate water control technology, and geological and geo-morphological studies document that the sea invaded southernmost areas throughout the sixth, fifth and most of fourth millennia BCE. These diversified and challenging conditions could have offered varied resources in a limited area: extensive cereal farming on the alluvial plains, horticulture and cultivation of date palms close to watercourses and marshes, fishing along the coasts, localized cattle and pig breeding in the plain, and goat-sheep rearing both in some pasturelands in the plain and in the nearby foothills. Flax cultivation was also possible with irrigation.

The multiplicity of resources in a fairly limited area with difficult climatic conditions and unstable water supply leading to variable soil fertility and productivity may have also created increased competition for the best locales,