

Chapter 1

Dawn and Bloom

01/31/19, PRELIMINARY

“You can have a lord, you can have a king, but the man to fear is the tax collector” (Sumerian proverb).¹



Grotte Chauvet (30,000 years ago)

The oldest testimonies by which we can relate to our ancestors have been left on the walls of the caves in Europe where humans moved during the last glaciation. They have bequeathed us the paintings in [Indonesia](#) (40,000 BC) and the caves of Chauvet (30,000 BC), Altamira, Lascaux, and in many other places. They lived from hunting and gathering the natural products of the earth in a region that must have been like Northern Scandinavia today. Although we know so little about them, they collaborated in hunting and probably other activities. Neuroscience shows that a critical development in the human brain concerns the neocortex and the parts that are involved in communication.²

¹Kramer, N. S.

²A recent study “highlights the role sociality may play in driving the evolution of large brains”. Schultz, S. and Dunbar, R. (2010). “Encephalization is not a universal macroevolutionary phenomenon in mammals but is associated with sociality,” *Proceedings of the National Academy of Sciences of the United States of America*, Vol. 107 no. 50, [21582-86](#). We also know, now..., that solitary confinement is one of the harshest forms of punishment.



Aristotle emphasized in *Politics* that men are different from, say, bees, because they

have speech for interactions. A critical step took place at the end of the last ice age, 12 000 years ago, and the invention of agriculture soon after. The two essential elements for agriculture are water and light. After the last glaciation, two places offered a perfect combination of light and water.

Despite the climate changes since then, these two places appear clearly in a *photograph* from space. The first location is the dark green spot in what is now Irak: in the lower plain of Mesopotamia, a flat area that is exquisitely embraced by the two arms of the Tigris and the Euphrates. (Mesopotamia, in greek, “between rivers”). The second is the valley of the Nile.



The region from lower Mesopotamia through upper Mesopotamia, to the Mediterranean shore and the valley of the Nile has been called the “fertile crescent”.³ Geography determined the cradle of civilization as we know it. For historical analysis, it is helpful to take a more restrictive definition of the arc of land from Jericho to the north of Mesopotamia “that had sufficient rainfall to support dry-farming” (Garfinkel, 2013). Humans had passed through the hinge from Africa to the Euro-Asian continent for tens of thousands or years. At the end of the ice age, the region presented favorable conditions between deserts, mountains and seas, with abundant sun light, for the introduction of the culture of germinated seeds under seasonal rains. Already in the 10th millenary, agriculture could generate a surplus that fed urban activities: remains of settlements in Jericho has been dated as far as the 10th millenary. Our

knowledge about this period is fragmentary but good progress is being made. *Göbekli Tepe*, dated in the 10th millenary, was discovered in the Turkish part of the fertile crescent only in 1963, and most of it is still buried.

³The expression has been introduced by Breasted (1916) of the University of Chicago in high school textbooks.



As so often in our journey through history, geography comes first. Mesopotamia is divided in two regions. The northern part is relatively high while the southern part is flat: the elevation of Bagdad, 400 miles from the sea is only 150 feet. In the North, agriculture is rain fed. The flat plain in the South has the shape of a diamond (or an egg) that is inserted between two rivers. Coming from the mountains of what is now Eastern Turkey, the Tigris (North) and the Euphrates are subject to a strong yearly cycle with a more than seven fold variation between trough (in September) and peak (around April-May), as represented in Figure ??.

Lower Mesopotamia has a high potential but it requires an intricate network of levees for protection from the dangerous rivers in the spring and for irrigation (Figure ??). Such a network demands a good social organization. In Northern Mesopotamia, the land is higher than the river bed and it is rain fed. The area presented good

conditions at the end of the last glaciation. This is where agriculture was developed and where the oldest human constructions have been found. Economic development *had to* first start in the North, and then could continue, in a different form, in the South.

The first task of agriculture is to generate means of subsistence. On rain fed land, there is hardly any increasing returns to scale for agricultural production beyond the level of the village. The archeological evidence indicates that the first social organizations took place in villages. Some villages then evolved, through a slow process, into small cities.

Once the method of social organization had been found and practiced, the next stage of development could take place in the Southern part, possibly with an increase of population. The transition from the Northern to the Southern growth was accompanied by the invention of writing, around 3200, which is an essential requirement for social organization.

A rational sequence in the history of Mesopotamia (6000-1000 BC)

From the geography, one can predict that the first stage of development should be in the North that is rain-fed and has a higher elevation. This stage should generate the first settlements for human interactions (social, economic, cultural). The building of such “human capital” then enabled people to settle the Southern flat lands that required the social organization for a the networks of dikes and canals that have left their traces in the right part of Figure 1.1. The left part of the figure shows that dikes must have also been necessary for protection against the violent flows of water during the seasonal

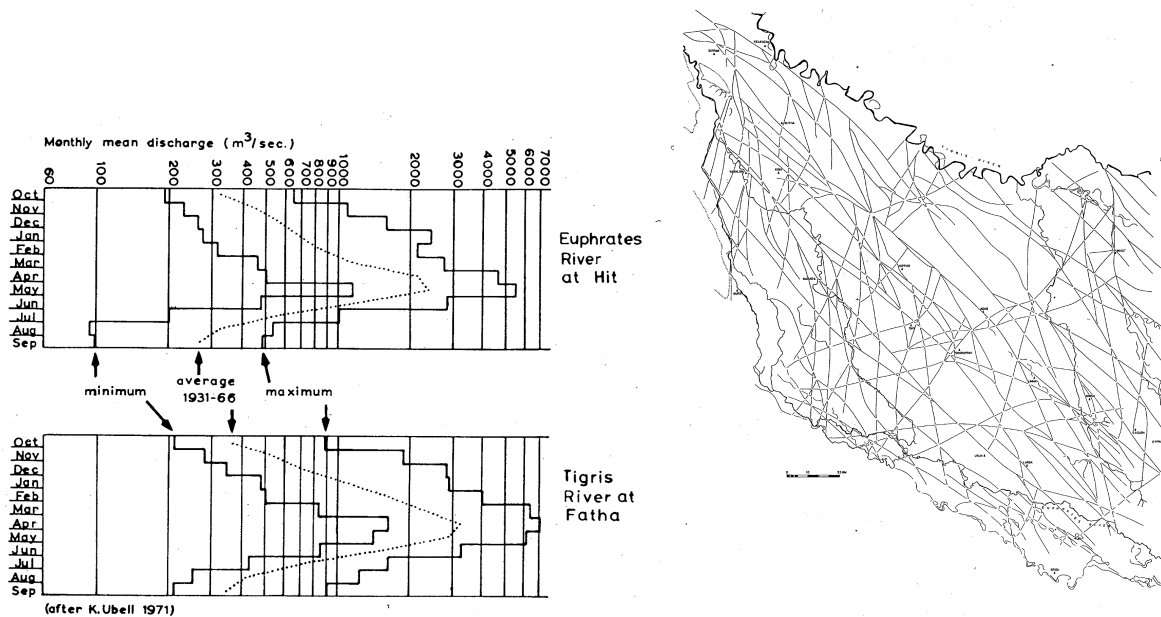


Fig. 1. Variations in Euphrates and Tigris River discharge.

Fig. 6. Major ancient levees identifiable in LANDSAT imagery.

Figure 1.1: Discharge profiles and canals networks

Source: Adams (1981), Fig 1, p. 4, Fig 6, p. 34.

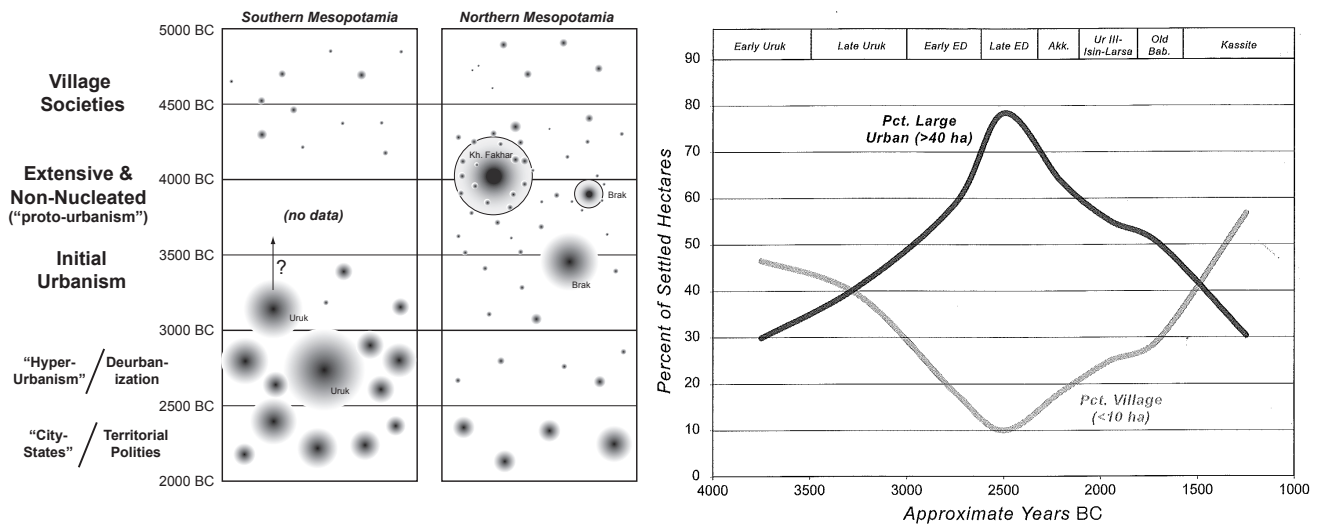
peaks. Irrigation generates yields that are much higher than the North and therefore a surplus that enables the birth and the growth of cities.

Cities must have a minimum size to benefit from the increasing returns that are generated by positive externalities.⁴ The interactions in cities, and the emulation of people living close together, stimulates innovation. The most spectacular has been the invention of writing which started as a necessary accounting tool for the management of the agricultural resources. However, the emulation and rivalries between cities also lead to costly warfare. These, and changes in the water regimes,⁵ eventually weakened the cities that become preys to outsiders attracted by their wealth. They eventually declined in the midst of exploitative empires.

The separate and sequential evolution of cities in Northern and Southern Mesopotamia have been summarized by Jason Ur (2010) in a remarkable diagram that is reproduced here (Figure 1.2). On the right panel, cities are defined by an area of more than 40ha while villages have less than 10ha. Hence, the sum of the two settled areas is less than 100 percent. Note however that the “intermediate size” between 10 and 40ha represents

⁴On the critical role of cities for economic development, see the discussion by [Bob Lucas](#).

⁵MORE on Euphrates’ change of course, salinization, etc...



Source: Ur (2010, 2012).

Figure 1.2: Urban evolutions and cities (3500-1000 BCE)

only 10 to 20 percent of the settled area. Cities, in order to benefit from the economies of scale, need to have a sufficient size.

Cities

Lower Mesopotamia presented after 3000 a hotbed for the first network of cities in the history of mankind. These cities were autonomous and formed independent states. In their contribution to the development of civilization, the city-states of Mesopotamia rival with the city-states of Italy before the Renaissance.

For a city to exist, the land must first generate an agricultural surplus that feeds its inhabitants and a city exists only if there are increasing returns to scale in activities. (Jane Jacobs). They also require a surrounding area to produce an agricultural surplus. That surplus was generated by technological progress, seeder plow, draft animals⁶ and especially, irrigation.

Why does Chicago exist? Going up the waterway of the Great Lakes and aiming for the center of the land mass of Northern American continent, the most natural point to disembark is... Chicago. The location provided a starting point for the building of the city. A city can be defined economically by increasing returns. Many activities generate externalities or require fixed costs that are profitable only when the local market is of a sufficient scale. Specialization (e.g. the pin factory of Adam Smith) increases efficiency. But specialization requires a market larger than the city and therefore trade with other areas. In the cities of Mesopotamia, the standardization of some ceramics improved the efficiency of production. But this standardization requires trade in order to reach

⁶Garfinkel ch 3 p.100

a variety of customers. The specialization of a city creates a demand for goods that are not produced in the city. Cities, increasing returns, specialization and trade are thus closely related, as analyzed by Jane Jacobs and Paul Krugman. As shipping by water was much less expensive than by land, all the great cities were near waterways (Fernandez-Armesto, 2001). The mechanism of emergence of the cities in the lower plain of the Mesopotamy of the fourth millennium BCE is the same as for cities like Chicago or New York (which took off after the Erie canal (1817-1825) provided a connection with the great lakes to Chicago).

“The emergence of early Sumerian civilization in the alluvial lowlands of southern Iraq during the Uruk period—roughly spanning the fourth millennium BC—... was characterized by the creation of a thriving heartland of multiple competing but culturally unified city-states, a form of social organization that was hitherto unparalleled in the human career” (Algrave, 342-343).

The hydraulic civilization of Mesopotamia was remarkable in that it was a civilization of cities. This unique feature was made possible by the unique feature of the two rivers that spanned a relatively wide area. In such a plain, cities could find a suitable space around to sustain them with food with a moderate average transportation cost. The plain was also ideally placed between the Mediterranean world and India with relatively easy routes for trade. (Some of the early towns must have been places for caravans to rest and meet). By contrast in Egypt, the narrow valley of the Nile will be not generate cities with a strong economic activity (see the next chapter).

The invention of writing



It is hardly surprising that one of the most important breakthrough in the history of man-kind, phonetic writing originated in Mesopotamia. In an economy of small groups of families, in villages where everyone has direct relation with everyone, there is no need for writing.

Statements and promises to someone can be transmitted directly and checked directly with the person who makes the statement or the promise. But when information has to be transmitted to a third party cannot enter a direct relation with members of the initial link, then a written document becomes very valuable. In the transmission of information between people who are not directly connected, writing operates like money that enables the transmission of purchasing power in transactions between indi-

viduals who have no direct connection. Writing was not invented to transmit narratives and legends that were common knowledge and which some could recite by memory. Writing was invented to transmit information and agreements along extended links of people who although they had no direct connection, were dependent on a network for their economic activity.

The evidence is mostly of clay tablets (*e.g.*, example next around 3000 BC) “inscribed with Sumerian or Akkadian cuneiform, but also includes inscribed statuary and other objects of stone and metal. From an exclusive concern with economic matters in the late 4th millennium BC, the realm of subject matter was gradually expanded to include legal, epistolary, and literary subjects in the 3rd and 2nd millennia BC.”⁷

Egypt developed another system of writing but it came a few centuries afterwards and it obviously benefited from the neighbor’s example. Once the idea of writing was invented it could be adapted.

TBD more on writing

Rulers and hierarchy

In a city with a self-sustaining economy (together with the surrounding agricultural area and trade), activities of craftsmanship and trade are not routine. They require individual resourcefulness and incentive and generate numerous interactions between people who live in close proximity. Such a community of individuals has to make common decisions that require a delegation of power to a subgroup or a council with some form a representation. This representation does not have be formal and could take the form of a council of wiser or richer individuals. The regime of autocracy with a single ruler who is supported by a hierarchy and a bureaucracy could never in history have a stable hold over a city. More . . .

The Temple and the Palace

In standard setup, a city had a palace and a main temple (see Figure). The worship of the city’s god clearly contributed to the cohesiveness of the city. The temples had domains and played an important economic role, in production and in storage. This “welfare role” which took place with the creation of the cities would continue for millenia.

Rivalries between the Temple and the Palace may also have occurred, again a situation that would arise repeatedly through history.

more

Private and public property

It is possible that the king of a region, or the Pharaoh in Egypt was the owner of all the land. But that this type of ownership is not the same as say, ownership of the state in Soviet Russia. If you “buy” an apartment in London, even at the cost of millions, in most cases, you are technically not the owner. You are the tenant of a long-term **lease** with some aristocrat. A vast domain would be of no use if it could not be managed. Relatively small farms employ workers or sharecroppers. Given the incentives for land exploitation, long-term leases enable investors in land improvement to reap the benefits and long-term lease, sometimes very long-term lease (up to a century) make a lot of sense. Hence, there is no sharp separation between the public and the private property

⁷Jason 2012, p. 535.

of assets. A land tax is also a form of land property by the state.

For Mesopotamia, see Garfinkle, 2005.⁸

More

Contracts

See the example of [financial contracts](#) on a web site of Fordham University.

Money

There were no coins. (Coins is an invention of the 6th century BCE). But money existed as unit of account. See the chapter on money.

A text: the epic of Gilgamesh

The [text](#) is one of the oldest writing that exist. Written in Sumerian language on clay tablet towards the end of the third millennium BC, it contains a narration of the fight between [Gilgamesh](#), king of Uruk, and Aga, king of the rival city of Kish that took place in the first half of the third millenium.

In the prologue,

“In Uruk he built walls, a great rampart, and the temple of blessed Eanna for the god of the firmament Anu, and for Ishtar the goddess of love. Look at it still today: the outer wall where the cornice runs, it shines with the brilliance of copper; and the inner wall, it has no equal. Touch the threshold, it is ancient.”

The walls indicate that cities were in competition. They had to defend themselves and that required an appropriate surplus.

Later Gilgamesh to the god Ea:

“Behold, what you have commanded I will honour and perform, but how shall I answer the people, the city, the elders?”

The text indicates that the ruler of a city cannot just rule by himself. There is some accountability, there is a council of the elders. Later in the epic, Gilgamesh consults the council of the able men about the the decision to war. These are the people who will do the fighting. They support the war while the elders advise against it. These councils can be seen as a form of “primitive democracy”. (Jacobsen, 1943).

Law

TBD . . .

⁸ “There are numerous archives throughout the history of Mesopotamia that document the crown’s reliance on entrepreneurs for the management of its estates.” (Garfinkle, 2005).

Issues in Mesopotamia

For Mesopotamia, one should have in mind the following general issues:

- Why did civilization begin where it did?
- What are the geographic characteristics of Mesopotamia and why do they matter for the evolution of the “state”?
- Where and why did cities arise?
- Where kings of cities autocrats?
- Irrigation and social organization; “Hydraulic civilizations”; “Oriental despotism” (Wittfogel).
- Cities and their mechanisms.
- Patrimonial or bureaucraic organization of the state
- Temples versus Palace
- The social function of the temples (storage, etc...)
- The distinction between “public” and “private” property (which requires definitions that may depend on the historical context).

APPENDIX 1

Standard Periodization of Early Mesopotamia

Name	Years BCE
Ubaid Period	6000–4200
Uruk Period	
Early/Middle Uruk	4200–3300
Late Uruk	3300–3100
Jemdet Nasr	3100–2900
Early Dynastic Period	
Early Dynastic I	2900–2750
Early Dynastic II	2750–2600
Early Dynastic III	2600–2350
Dynasty of Akkad	2350–2150
Ur III Period	2112–2004
Old Babylonian Period	
Isin-Larsa Dynasties	2000–1800
First Dynasty of Babylon	1800–1600

Source: Garfinkel (201**, Table 3.1).

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Abstract: The intensification of fieldwork in northern Mesopotamia, the upper region of the Tigris- Euphrates basin, has revealed two cycles of expansion and reduction in social complexity between 4400-2000 BC. These cycles include developments in social inequality, political centralization, craft production and economic specialization, agropastoral land use, and urbanization. Contrary to earlier assessments, many of these developments proceeded independently from the polities in southern Mesopotamia, although not in isolation. This review considers recent data from excavations and surveys in northern Iraq, northeastern Syria, and southeastern Turkey with particular attention to how they are used to construct models of early urban polities.

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Neighborhood, Ur around 2000 BC



Neighborhood, Ghadames (Lybia) today

On the left, gray areas are public space; buildings identified as neighborhood chapels are marked 'C.' ” The city of Ghadames is at the intersection of Libya, Tunisia and Algeria.

Source: on the left: Ur (2012), Fig. 28.6, p. 547, based on Woolley and Mallowan (1976): Pl. 24).

Figure 1.3: Cities then and now

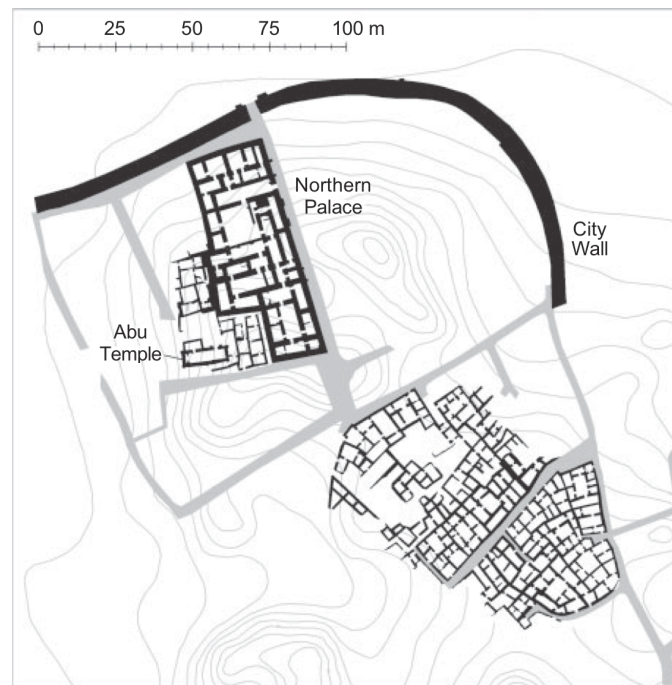


Figure 1.4: Temples, palaces, and domestic houses in Eshnunna, c.2200 BC
Source: Ur (2012, Fig. 28.5, p. 542, (compiled from Delougaz et al. 1967).
