

Metropolis Mapping the City

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By Jeremy Black

Cities are places of hopes and dreams, of vision and order, as well as centers for destruction and conflict. Although cities are not creations of the modern era, for many people they represent the core element of life as we live it today, when most of the world's population lives in an urban hub of commerce, technology, transport, and social interaction between people, and in communities of often quite diverse cultures. Whereas only a century ago perhaps 10 percent of humankind lived in a city, now most people do and the world's economic development is characterized by the relentless, and often unrestrained, expansion of our ever-growing urban metropolises.

Globally, cities have become inextricably identified with this sense of progress, success and advancement, whether individual, social, or economic; cities are believed to be places where things "happen." In fact, historically, this has long been the case, with cities impossible to separate from the evolution of human civilization.

Trade and religion are two of the oldest practices of humankind, and cities originated and grew to facilitate the complex human webs of exchange involved in both, which

have left their marks throughout the millennia on the form and features of our cities—to facilitate the buying and selling of goods and to enable people to gather for matters more transcendent and less material. And just as civilization grew out of humankind's conscious attempt to control, change, and organize our environment, so cartography and mapping arose out of our need for tools to measure, record, understand, navigate, plan, and protect our surroundings. Cities—centers of spiritual, economic, and political power—became leading centers of mapmaking as well as prime subjects for cartographers.

City maps are among the most popular, as well as oldest, forms of cartographic representation. However, the survival rate of early maps is limited and most maps date only from the last 500 years. Early maps are also fragments; sometimes literally in the physical sense, but also because our knowledge of them is incomplete, based upon a partial understanding of the cultural context within which they were made, though it seems quite clear that the world such maps depict was centered upon the culture of origin and that cities loomed large as places that gave meaning and identity to those same cultures.

The First Civilizations

The shift to crop cultivation encouraged the production of regular food surpluses, which made it possible for some workers to specialize in other tasks. Urban

development rested on agrarian systems that were able to support substantial populations, and these were found first in fertile river valleys, such as the Euphrates and, later, Tigris of Mesopotamia (Iraq), the Nile valley of Egypt, and the Indus valley of modern Pakistan. In Aedean America, in what is now Peru, large temple mounds appeared in the central Andes along the Pacific coastal river valleys, in places such as the Supe Valley, from c.2500bce. In East Asia, the Yellow River was the later basis for Erlitou, founded in about 1900bce, China's first city.

In Mesopotamia the city-state of Uruk developed in about 3500bce. The sacred enclosure of a raised mud-brick ziggurat temple complex was an important feature of the early Mesopotamian cities, not only because the priests provided sacral power but also because the temple administered much of the city's land while the priests could record production and store products. By about 3300bce walled towns had begun to be built along the Nile in predynastic Egypt, Nekhen, or Hieraconpolis, and Naqada being the earliest. When the country was unified in about 3100bce by King Narmer, the first pharaoh, he founded Memphis as his capital, which was built on the west bank of the Nile, south of the delta not far from modern Cairo.

In the Indus Valley, walled settlements were followed, in about 2500bce, by major cities, notably Harappa and Mohenjo-Daro. Spread



NOUVEAU PARIS MONUMENTAL

ITINÉRAIRE PRATIQUE DE L'ÉTRANGER DANS PARIS.



over 148 acres (60 hectares), the latter city had a population of maybe 50,000 as well as crucial urban infrastructure in the form of a sophisticated sewage system.

Commerce And Conflict

Because trade was such an important aspect of these early urban civilizations, long-distance commercial networks grew by sea and land. These included ports, such as Byblos (Lebanon), founded

c.3100bce, as well as Dilmun (Bahrain) and Ras al-Junayz (Oman) to link the eastern maritime centers, and trading cities and colonies across the South Asian inland hinterland, such as Shortughai along the Oxus River in northern Afghanistan, c.2500bce.

Competing interests and the need to maintain control and security encouraged the walling of settlements in anticipation of large-scale conflict. The first empire in western Asia was founded in about 2300bce by Sargon, who united the city-states of Sumer (southern Mesopotamia) and conquered neighboring regions. An empire based on the city of Ur followed.

Protected by encircling walls and a fortress, Ur was linked to the Euphrates River by canals, which provided another inter-urban form of transportation network for trade. Later came the Babylonian empire of Hammurabi (reigned 1790-1750bce). With places such as Babylon, cities became further associated with

learning, culture, the law, and man's management and modelling of nature.

A Babylonian clay tablet from about 600bce provides the earliest known evidence of world mapping, though the purpose of the map is unclear. The world map centers on Mesopotamia, with Babylon shown as an elongated rectangle. Parallel lines running to and from it represent the River Euphrates. All these symbols are contained within a circle that represents the ocean. If this map could be interpreted as revealing a sense of cultural self-confidence, perhaps it is no coincidence that cities also became the focus of empires engaging in territorial conquest, helping to expand the influence of urban civilization and offering up a template for successful replication.

The stone reliefs from the palace of Nineveh, the capital of the Assyrian Empire (c.950-612bce), depict sieges of cities. In turn, the Babylonian Empire under Nebuchadnezzar II extended to Palestine, where Jerusalem was destroyed in 587bce, only to be overthrown in turn by the

Persians in 539bce.

Cities - A Global Phenomenon

In ancient China, then as now the world's most populous country, a strong economy, built upon the production of millet and rice, combined with a sophisticated administrative system that meant the state was able to support a large urban population. Under the Shang Dynasty (c.1800-1027bce), there were a number of capital cities, notably Erlitou and Anyang. Its Zhou successor (1027-403bce) again had a number of capitals: it is from the Zhou Dynasty that we have the first documented city planning. The principles of Zhou urban design, which continued to underpin Chinese grid layouts into the modern era, were based upon a holy square system derived from a mixture of cosmology, astrology, geomancy, and numerology.

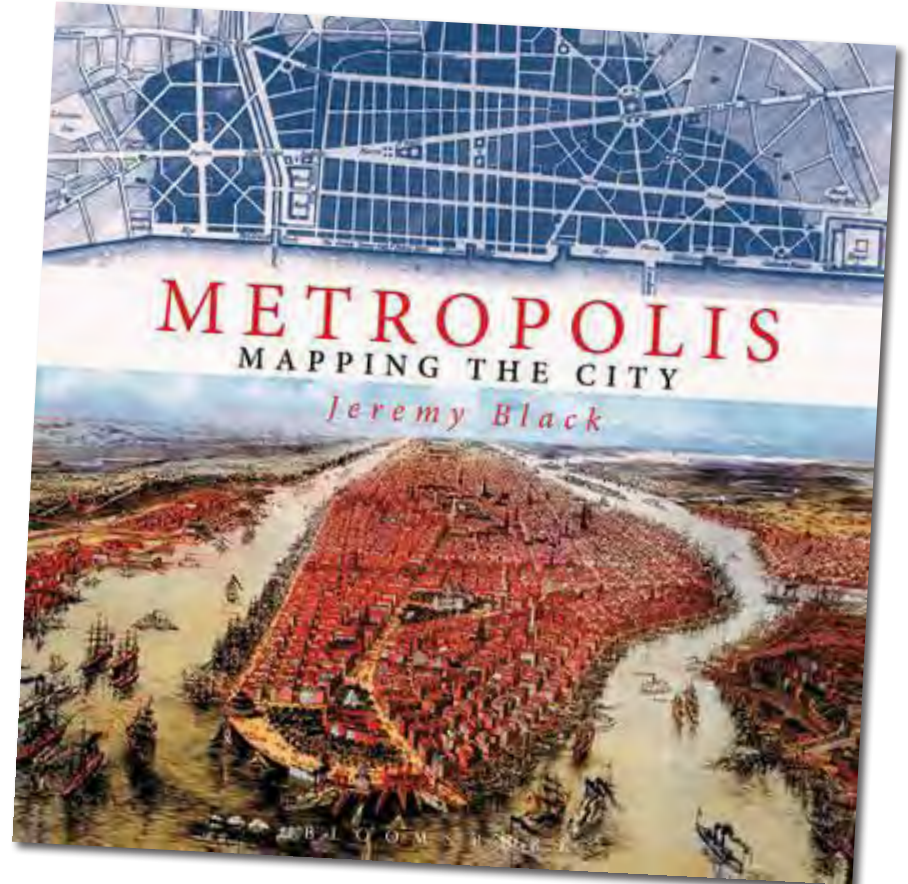
During the Qin Dynasty (221-206bce), there was a series of administrative centers under the imperial capital of Xianyang. This was also the case in the Han era



(206bce-220ce) with its successive capitals of Chang'an and Luoyang, as well as its thriving coastal maritime cities such as Fuzhou. Later, under the Tang (618-970), Chang'an (modern-day Xi'an) was the capital and it had a population (within and outside the walls) of about two million by the eighth century. The city's symmetrical layout was used to organize specialized and orderly functional neighborhoods, the demarcation of which arose out of by then deeply-rooted Chinese ideas about the spiritual efficacy of spatial arrangements and alignments—ideas that were diffused to various degrees throughout East Asia. Ancient China's urbanization was such that in Tang-dynasty China there were more than ten cities with populations of 300,000-plus. During the later Song dynasty (960-1279), the merchant's entrepot and metropolis of Hangzhou had a million residents at a time when London had around 15,000. The commercial wealth of 11th-century Kaifeng, a canalized capital of the Northern Song in north-central China so beautifully depicted in the Qingming scroll by Zhang Zeduan, far outstripped that of any European city at the time.

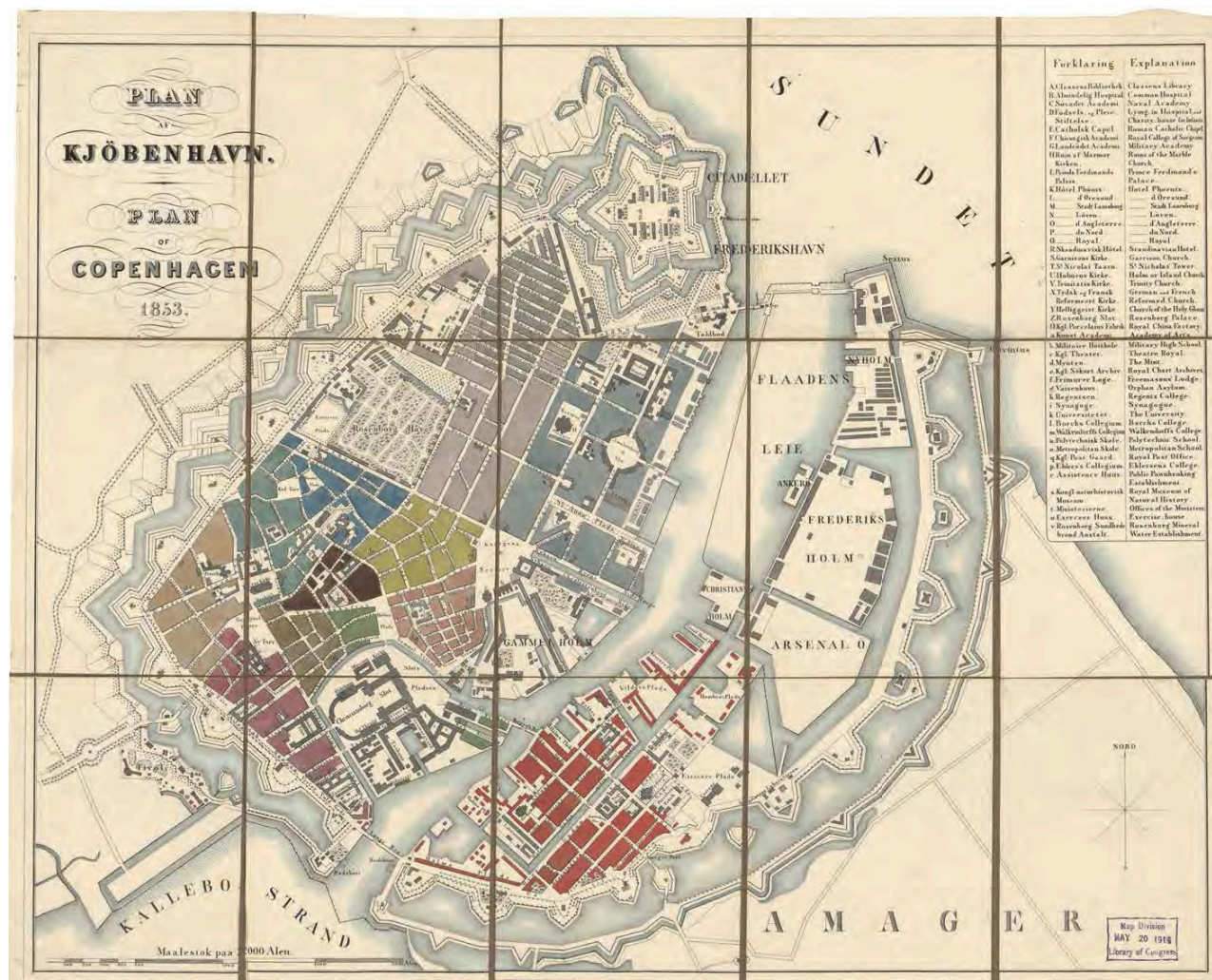
Well before Europeans settled there, cities also had developed in the New World of the Americas, notably the hilltop Zapotec city of Monte Alban in Central Oxaca (southern Mexico) in about 500bce and El Mirador, the largest early Maya city by about 250bce. To the west, in central Mexico, Teotihuacan, a grid city with temple-topped pyramids, had 125,000-200,000 inhabitants by 500bce. In South America, Tiwanaku (Tiahuanaco) on the shore of Lake Titicaca in modern-day Bolivia, a center of religious activity, had up to 40,000 inhabitants.

In the cast of another city-based empire—Rome—the purpose of the city was clear and highly important: the display of power. A large-scale plan of the city, the Forma Urbis Romae, was incised on a wall for public view. The display of maps was used by Julius Caesar and other leaders to demonstrate how Rome was fulfilling its destiny through imperial expansion. The rise of Rome stimulated an interest in the wide world among the polity's leadership, which resulted in the earliest known globe of the earth being produced there in about 150bce by the Greek scholar Crates of Mallos.



A city with a large population had to be sustained through well-organized,

well-maintained infrastructure, and this created a need for maps that could record useful information in graphic form. Rome's population may have reached about a million in the second century ce. The supply of goods to support this population was a major economic, governmental, and logistical achievement, notably for the supply of grain from Sicily, Tunisia, and Egypt, with Alexandria operating as a key entrepot. Major warehouses in the southwest of Rome along the River Tiber testify to the importance of trade. Rome also depended on a network of aqueducts to supply it with water.



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