Civilization and Its Discontents

Why did the world's first civilization cut a swath across the Near East?

By BRUCE BOWER

Investigators from the German Archaeological Institute in Cairo, Egypt, make an annual slog through the Nile Delta to the waterlogged site of Buto, the legendary ancient capital of Lower Egypt. Strategically located near the Mediterranean Sea, Buto was a major port during the 4th millennium B.C. — a poorly understood period of Egyptian history preceding the emergence of the pharaohs around 3100 B.C.

During four field seasons that began in 1983, the German researchers repeatedly drilled through the mud, sand and water-saturated soil covering Buto until they reached pottery fragments and other ancient debris. Since 1987, the investigators have siphoned off groundwater at the spot with diesel-driven pumps and then carefully dug into Buto's muddy remains. Their dirty work is yielding important evidence not only about Lower Egypt's early days but also about the world's first civilization, which began developing in Mesopotamia around 5,400 years ago.

"We've found the first archaeological evidence of cultural unification in Egypt at the end of the 4th millennium B.C., before the first dynasty of pharaohs appeared," says project director Thomas von der Way. Excavations show that during the final stages of the predynastic era at Buto, local methods of pottery and stone-blade production were replaced by more advanced techniques that originated in Upper Egypt, which lay farther to the south. Apparently, Upper Egyptian invaders had conquered this prominent city and port, von der Way says.

Some of the Upper-Egyptian-style pottery is poorly made and probably represents the handiwork of Buto residents who were allowed to stay on and adapt to the new regime, he maintains. Those individuals were most likely commoners, von der Way says, adding, "Buto's ruling class and its followers might in fact have been wiped out."

Even more intriguing is evidence of close contact between Buto's Egyptian residents and the Sumerians of southern Mesopotamia (now southern Iraq), who fashioned the world's first full-fledged civilization and state institutions during the last half of the 4th millennium B.C. Not only does pottery at Buto display Mesopotamian features, but clay nails uncovered at the delta site are nearly identical to those used to decorate temples at sites such as Uruk — the largest Sumerian settlement and the world's first city. In Mesopotamia, workers inserted the nails into temple walls and painted their heads to form mosaics. The researchers also found a clay cone at Buto that closely resembles clay decorations placed in wall niches inside Mesopotamian temples.

Limestone cylinder seal from southern Mesopotamia (top), circa 3500 to 3100 B.C., and a modern clay impression taken from the ancient seal.

Courtesy, Metropolitan Museum of Art, Gift of Martin & Sarah Cherkasky, 1983

Scientists have long argued over ancient Egypt's relationship to early Mesopotamia. Much of the debate centers on Mesopotamian-style artifacts, such as cylinder seals and flint knife handles, found in 4th-millennium-B.C. graves situated on slopes above the Nile Valley near Buto. Traders who regularly traveled through Mesopotamia and Syria may have brought those artifacts to Egypt, says David O'Connor of the University of Pennsylvania in Philadelphia.

At Buto, however, Egyptians may have copied temple decorations shown to them by Sumerians more than 5,000 years ago, suggesting "direct and complex influences at work" between the two societies, O'Connor observes.

"It's not possible to trade architecture," von der Way asserts. "Direct personal contact between people from Lower Egypt and Mesopotamia led to the adoption of foreign architecture at Buto."

Buto fuels the growing recognition among archaeologists that early Mesopotamian civilization experienced an unprecedented expansion between 3400 and 3100 B.C. The expansion occurred during the latter part of a phase called the Uruk period (named after the major city of the time), which began around 3600 B.C. Excavations conducted over the past 15 years indicate that southern Mesopotamian city-states, each consisting of one or two cities serving as political hubs and providing goods and services to thousands of people living in nearby farming villages, established outposts in neighboring territories lying within modern-day Iraq, Iran, Syria and Turkey. Even artifacts recovered at sites in the Transcaucasus of the Soviet Union show signs of Sumerian influence.

Such discoveries leave investigators pondering what made the Sumerians such hard-chargers in a world largely made up of subsistence farmers.

Many subscribe to the view of Robert McCormick Adams of the Smithsonian Institution in Washington, D.C., who calls the Uruk expansion "the first urban revo-

lution." Adams says the economic demands of burgeoning Mesopotamian cities led to a great transregional civilization in the Near East.

Others, such as Henry T. Wright of the University of Michigan in Ann Arbor, contend the term "urban revolution" masks the fundamental significance of the Uruk expansion – the introduction, for the first time anywhere, of political states with a hierarchy of social classes and bureaucratic institutions that served powerful kings.

"Whatever the case, it was a revolutionary time, a moment of extraordinary innovations in art, technology and social systems," Adams says. For instance, in the late 4th millennium B.C., Mesopotamia witnessed the emergence of mass-produced pottery, sculpture as an art form and the harnessing of skilled craftsmen and pools of laborers by an administrative class to produce monumental buildings. The world's earliest clay tablets, portraying simple labels and lists of goods with pictographic symbols, also appeared, foreshadowing the birth of fully expressive writing around 3000 B.C.

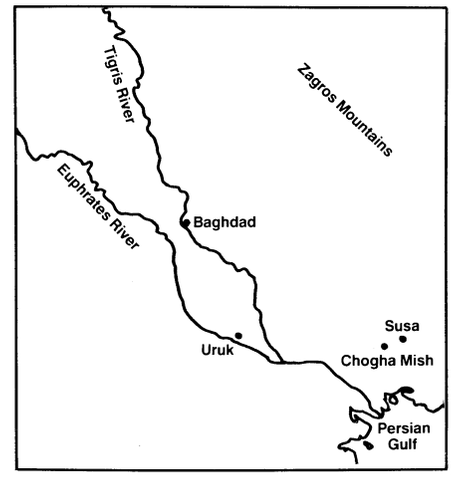
The Mesopotamian revolution paved the way for modern societies and political states, Wright observes. "A number of competing formulations of what was driving the Uruk expansion have been proposed and must be tested with new archaeological studies," he says.

Perhaps the most controversial of these theories, proposed by Guillermo Algaze of the University of Chicago's Oriental Institute, holds that advanced societies in southern Mesopotamia were forced to expand northward, beginning around 5,400 years ago, to obtain scarce resources desired by powerful administrators and social elites.

These northern regions held items crucial to the growth of the incipient civilization, including slaves, timber, silver, gold, copper, limestone, lead and bitumen (an asphalt used as a cement and mortar), Algaze argues in the December 1989 CURRENT ANTHROPOLOGY. To guarantee a reliable flow of imports, Sumerian settlers colonized the plains of southwestern Iran and established outposts at key points along trade routes traversing northern Mesopotamia, he suggests.

Excavations at a number of ancient villages in southwestern Iran indicate the area was "part and parcel of the Mesopotamian world" by the end of the Uruk period, Algaze notes. Cultural remains, such as ceramic pottery, record-keeping tablets, engraved depictions of religious offerings and architectural styles, are strikingly similar at sites in the Iranian plains and southern Mesopotamia, he says. Apparently, Sumerians colonized "a fertile and productive area that was only lightly settled and could surely mount only minimal resistance."

Map shows modern-day Baghdad and several 4th-millennium B.C. Uruk sites in Mesopotamia and nearby regions.



Uruk-period cities and smaller settlements also popped up farther to the north, especially where east-west trade routes intersected with the Tigris and Euphrates rivers, Algaze argues. A good example is the Uruk city of Habuba Kabira, which lies along the upper Euphrates in what is now Syria. Habuba Kabira once encompassed at least 450 acres, according to estimates based on Algaze's assessment of the site. Cultural remains in its metropolitan core and in clusters of sites outside its huge defensive wall are identical to those found in southern Mesopotamia. With its neatly planned residential, industrial and administrative quarters, Habuba Kabira was well situated to control the flow of trade goods through the region, Algaze says.

Although Sumerians produced surplus grain, leather products, dried fish, dates and textiles for export, they most likely took more from colonized areas and northern traders than they gave in return, Algaze maintains. The influx of imports, he says, added new layers of complexity to Mesopotamia's urban centers as fresh legions of administrators scurried to coordinate distribution of the bounty.

Sumerian city-states, of which there were at least five, almost certainly engaged in fierce competition and warfare for imported goods, Algaze says. Cylinder seals from various southern Mesopotamian sites, depicting military scenes and the taking of prisoners, reflect these rivalries.

Cylinder seals are engraved stone cylinders that were used to roll an impression onto clay seals for documents and bales of commodities. A variety of scenes, often including domestic animals, grain, deities and temples, are found on the seals.

Algaze's assertion that the Uruk expansion was primarily fueled by an urgent need for resources available only in foreign lands is receiving much attention, and a good deal of criticism, in the archaeological community.

Piotr Steinkeller of Harvard University contends that, contrary to Algaze's argument, southern Mesopotamians did not need to establish such a far-flung network of settlements to obtain such resources, which were available in the foothills of the nearby Zagros mountains. The Uruk expansion was purely a commercial venture aimed at making a profit, Steinkeller asserted at December's annual meeting of the American Institute of Archaeology in Boston.

"The Sumerians wanted to become middlemen in international trade networks and reap big profits," he says. "They weren't forced to expand because of internal growth."

In Steinkeller's scenario, Uruk migrants did not colonize new territories. Instead, they forged intricate trade agreements with foreign communities to divvy up local and imported goods.

Both colonization and commerce are difficult to pin down through archaeological research, observes Adams of the Smithsonian Institution. "There's no evidence for goods moving in a private-enterprise sense during the Late Uruk period," Adams asserts. At most, he says, valuable items may have been exchanged between distant royal palaces or religious temples.

"Today we tend to treat economics as a separate domain," he says. "But in Uruk times, the economy probably wasn't separated from politics and religion."

Indeed, says Carl C. Lamberg-Karlovsky of Harvard University, religious beliefs may have exerted an important influence on the Uruk expansion. Southern Mesopotamians believed their temple gods owned the land and humans were its stewards. Thus, Uruk city-states may have pursued a type of "manifest destiny," he suggests, claiming nearby lands in the name of their deities.

Harvey Weiss of Yale University downplays religious factors. He contends that the emergence of social classes – particularly elite groups seeking exotic items to signify their elevated status – may lie at the heart of the Uruk expansion.

Weiss says archaeologists lack substantial evidence for extensive imports during the Uruk period, with the exception of copper and the semiprecious stone lapis lazuli.

"It's a good bet the Sumerians were acquiring foreign materials that weren't necessary for their survival," he says. "Newly emerging social elites defined what types of exotica were imported."

However, he adds, it is far from clear

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"creaking" – due to meteorite impacts and to temperature changes caused by the sun and whatever lunar interior heat remains – the instruments could help map the moon's interior structure. One of the seismic array's major objectives, says Nishimura, would be to determine the size and shape of the moon's core.

• **Sampling the tail of a comet.** In 1986, two Japanese craft worked in distant orbits to study ultraviolet sunlight reflected from Comet Halley when it passed close to Earth. But the new plan would send a spacecraft through a comet's tail, capturing traces of dust and gas that could be analyzed aboard the craft to determine their composition.

• **Japan's first mission to Venus.** This craft would neither land on Venus nor sample its atmosphere, but instead would study the structure of the planet's ionosphere from orbit.

While many Japanese talk of expanding their space program to include studies of other planets, the moon still retains that nation's special affection. In one of those ambiguities so common in the Japanese language, Hiten – which translates roughly as "sky flight" or "flying in heaven" – is also the name of a Buddhist deity of music. The double meaning, Uesugi observes, evokes "something like playing music in heaven." □

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what types of social classes characterized Sumerian civilization and why they emerged at that time.

Knowledge about Sumerian settlements built before 3400 B.C. is similarly scant, observes Wright of the University of Michigan. "The Uruk expansion must have started earlier and been more complex than Algaze assumes," he argues.

While Algaze proposes that long-distance trade resulted in the explosive growth of Sumerian city-states, Wright argues just the opposite. As he sees it, competitive city-states attempted to control ever-larger territories, and trade was an outgrowth of their political jousting.

In a fundamental challenge to this already-diverse collection of views, Gregory A. Johnson of the City University of New York, Hunter College, questions the whole notion of a strong, expanding Sumerian civilization in Uruk times. Instead, he contends, the period was one of political collapse and fragmentation.

Johnson says the Sumerian colonists described by Algaze were most likely a group of refugees, initially consisting of administrative elites who had been defeated in the political power struggles that flared up in budding city-states.

"Why were Uruk outposts established in distant areas fully equipped with household utensils, administrative paraphernalia, husbands, wives, children, sundry relatives, animals, architects, artisans – all the comforts of home? Perhaps things at home were not that comfortable," he suggests.

If, as Algaze argues, traders founded communities such as Habuba Kabira, they could easily have adapted to local ways of life without taking with them everything but the kitchen hearth, Johnson points out. Refugees, however, are more likely to recreate the lives they were forced to leave behind.

And masses of Mesopotamians indeed left their lives behind. Populations declined sharply in many southern Mesopotamian cities and their surrounding villages at the end of the 4th millennium B.C. Surveys conducted by Johnson and others indicate the abandonment of nearly 450 acres of occupied areas representing as many as 60,000 people.

The populations of inhabited areas of seven major Sumerian cities dropped by an average of 51 percent in the last few centuries of the Uruk period, Johnson notes. Only at the city of Uruk have archaeologists documented significant expansion during that time.

Moreover, widespread abandonment of settlements on Iran's Susiana plain created an uninhabited, 9-mile-wide "buffer zone" between two large Late Uruk communities known as Susa and Chogha Mish. What once had been a single state in its formative stages was thus sliced in half, Johnson says. The buffer zone probably became the site of intense warfare between administrative elites from the two sides, who wrestled for control of rural labor and agriculture on the plain. Some Sumerian cylinder seals portray political conflicts of this type rather than economic rivalries, he asserts. Susa gained the upper hand and remained an urban center into the 3rd millennium B.C., while Chogha Mish became a ghost town.

Johnson says competing political factions undoubtedly plagued other nascent states, creating a reservoir of disgruntled Sumerians with plenty of incentive to haul their belongings to distant greener pastures.

Further archaeological work, particularly in areas remote from the intensively surveyed river sites, may clarify some of the controversy surrounding the rise and rapid fall of the world's first civilization. But a consensus will be difficult to dig out of the ground.

"Quite frankly, no one has come up with a good explanation for the Uruk expansion," concedes Weiss. "It remains a great mystery." □