The Indus River Valley Civilization: Unearthed Enigma, Groundbreaking Architecture, and Cultural Legacy

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The Indus River Valley civilization arose as one of the foundational civilizations of the Bronze Age, known for its urbanization, advanced architecture, and extensive city layout. This civilization extended from northeast Afghanistan to northwest India. The Indus River Valley was a place that flourished and held rich history (ca. 3300 B.C.E.–1300 B.C.E.), and the architecture and culture that emerged influenced future societies. The inhabitants utilized the Indus River for its resources and transportation, and the river is still widely used today in South Asia. The Indus people, also known as the Harappans, discovered many technological techniques such as drainage systems, urban planning, measurement systems, and advanced architecture. The Harappans used artifacts, scriptures and records that showed their unique cultural and administrative system. This society's advancements in urban planning and water management aided in their success, and set a pivotal exemplar for future civilizations, demonstrating their long-lasting influence on civil development.

The Indus River Valley's inhabitants focused heavily on their architecture and designed monumental structures and sites that had many purposes. In the city of Mohenjo-daro (located in modern-day Pakistan), the Indus people built sophisticated and complex mud-brick structures on a large scale. An Indus Valley scholar, Professor Matthew Fitzimmons states, "Against the menace of the river the men of this civilization built huge walls of brick surfaced with baked brick. These bricks are about the same size everywhere within the Indus settlements, which

extend over an area of more than 800,000 square miles."[1] A Harappan culture specialist notes, "Baked clay bricks, based on compressive strength, suggests that the bricks of four sites can withstand severe weathering while the bricks of two sites are resistant to moderate weathering."[2] These bricks were a vital part of the civilization's infrastructure and were fundamental to the construction of robust buildings and monuments that have lasted for millennia.

Another example of unique architecture can be found in Indus city outlines. Cities like Mohenjo-daro and Harappa were two of the earliest known instances to use grid-like systems which demonstrated high levels of planning and organization. Figure 1 illustrates the sophisticated and effective grid system. Harappan architectural expert Dan Stanislawski states, "The streets were straight and either parallel or at right angles to one another, as far as the inaccurate instruments of the time permitted."[3] Furthermore, this grid system allowed transportation to be simpler and more efficient because civilians traveled in cardinal directions. Indus Valley expert Fitzsimmons notes, "The major cities are a utilitarian city-

Figure 1. This map demonstrates the grid-like urban planning of cities like Mohenjo-daro and Harappa. "Harappan Architecture," Wikipedia. https://en.wikipedia.org/wiki/Harappan_architecture (accessed February 26, 2025).

[1] Matthew Fitzsimmons, "The Indus Valley Civilization," *The History Teacher,* vol. 4, no. 1 (November 1970): 9–22 at 11.

[2] Nawab Ali Lakho, "Effect of Age and Environment on Strength of Old Baked Clay Bricks of Indus Valley Civilization," *Mehran University Research Journal of Engineering and Technology*, vol. 3 (2016): 431–36.

[3] Dan Stanislawski, "The Origin and Spread of Grid-Pattern Town," *Geographical Review* (1946): 105–20 at 109.

planner's delight. They are laid out in gridiron fashion (streets going straight north and south and east and west) with the main streets as much as 45 feet wide and as much as a mile long."[4] Later civilizations that may have adopted the grid system from the Indus River Valley were the Assyrian Empire, Mauryan Empire, Gupta Empire, and Ganga Civilization. Historian Stanislawski states, "The next record of the grid is found at the eastern Mediterranean in the eighth century before Christ. Sargon of Assyria, tiring of his old capital, decided to perpetuate his glory by the establishment of a new one, Dur-Sarginu. For its site he chose the unimportant and formless little village of Magganuba, where he laid out his new capital precisely in terms of the grid."[5]

Another example of ingenious architecture by the Indus Valley people is the Great Bath at Mohenjo-Daro. According to Fitzsimmons, "In Mohenjo-daro there was an elaborate bathing pool, waterproofed with asphalt and measuring 26 by 39 feet."[6] The structure was made from baked bricks and was lined with a waterproof coating called Bitumen (a naturally occurring tar found locally). Beneath the tar was a layer of asphalt that contributed to the waterproof

Figure 2. This photograph features the Great Bath which used for ceremonial rituals. "Great Bath," Wikipedia https://en.wikipedia.org/wiki/Great_Bath (accessed February 26, 2025).

[4] Fitzsimmons, "The Indus Valley Civilization," 13.

[5] Stanislawski, "The Origin and Spread of Grid-Pattern Town," 110.

[6] Fitzsimmons, "The Indus Valley Civilization," 13.

characteristic. The Indus River Valley people had a geographical advantage because bitumen was an abundant, local, natural resource that allowed them to make waterproof bricks that still exist today. Underneath the bath is a complex, yet effective drainage system which allows old water to flush out and new water to flow in. The Great Bath is considered by many scholars to be a religious bath for ceremonial practices and its goal was believed to have been used for ritual bathing."[7] Fitzsimmons states, "no other building affords unequivocal evidence of its religious character. The pool is believed to be religious because it is most unlikely that a pool would be purely 'secular' in any early culture or civilization."[8] An Indus Valley researcher notes, "We have, then, in this quarter of the city a system of bathing establishments whose proximity to the probable remains of a sacred building certainly suggests that the baths themselves were used for ritual purposes."[9] Figure 2 shows the Great Bath which served as a ceremonial site. After extensive research and archaeological findings, the Great Bath demonstrates its ritualistic and ceremonial significance, serving as a site for purification purposes. The construction of the Great Bath implies strong administrative authority by urban planning, infrastructure development, and the organization and coordination of what must have been a large number of people to execute a large-scale project. The presence of the Great Bath highlights the Indus River Valley people's emphasis on religious and administrative authority.

[7] E. J. H. Mackay, "Further Excavations at Mohenjo-Daro," *Journal of the Royal Society of Arts*, vol. 82, no. 4233 (January 1934): 206–224 at 208.

[8] Fitzsimmons, "The Indus Valley Civilization," 13.

[9] Sidheshwar Prasad Shukla, et al., "Settlement Pattern In Indus Valley Civilization," *Educational Administration: Theory and Practice*, vol. 29, no. 4 (2023): 3358–3371 at 3360.

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Another example of the Indus River civilization architecture is the Citadel. These staggering structures served as religious centers and fortresses, and they symbolized power and social status during the Indus Valley era. In many ancient civilizations, the highest point of land was observed to be closest to Heaven and therefore important to religion. The ancient Egyptians built the famous, colossal pyramids to serve as honorable tombs to the pharaohs in the afterlife. In the fifth century B.C.E., the ancient Greeks built the Acropolis, a fortified political and religious citadel on top of Philopappos Hill in the heart of Athens. During the excavation of the Citadel at Mohenjo-daro, archaeologists found various sculptures that highlight the religious significance of the structure. A Harappan culture specialist, Sir Mortimer Wheeler, states, "it will be observed that four of five [sculptures] represent a stereotyped squatting figure, presumably of a god."[10] Figure 3 shows the large Citadel structure towering over the city of Mohenjo-daro. These citadel structures could have influenced later civilizations like the ancient Greek, Mycenaean Civilization (1600–1100 B.C.E.) that built citadels and the Roman Empire that built public baths; however, there is limited evidence because the Indus Valley language has not yet been deciphered. Later civilizations like the Mauryan, Gupta, and Ganga also built large scale *stupas* (hemispherical Buddhist temples) that

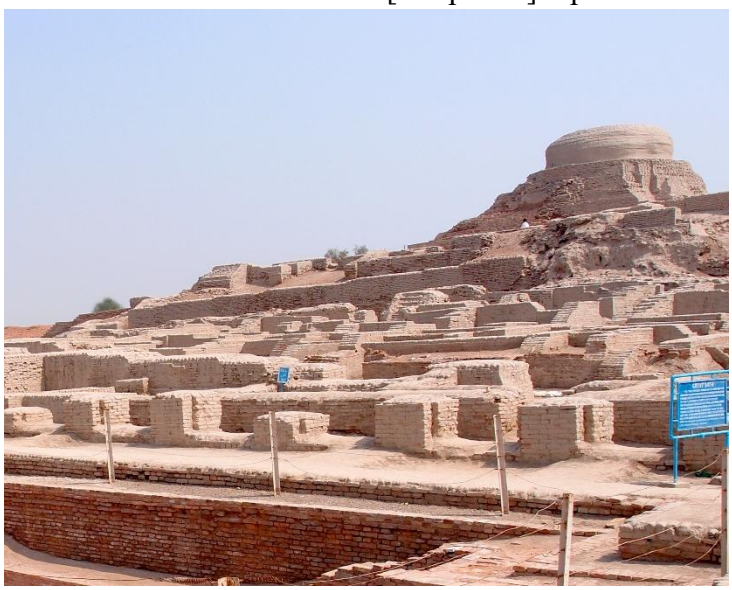

Figure 3. This image depicts the citadel which served as an area for administrative and religious purposes. "Mohenjo-Daro," Wikipedia. https://en.wikipedia.org/wiki/Mohenjo-daro (accessed February 26, 2025).

[10] Mortimer Wheeler, *The Indus Civilization*, 3rd ed. (Cambridge, U.K.: Cambridge University Press), 88.

are in close proximity to the Indus River Valley. The Harappan's ingenious architectural and technological advancements aided in their success and potentially shaped the development of later civilizations.

In 1928, British archaeologist Sir John Marshall discovered an artifact in Mohenjo-daro that dates back 5000 years and might hold incredible significance for the Indus Valley civilization. Indus historian Deryck Lodrick states, "Sir John Marshall has identified, on an Indus Valley seal, a Proto-Shiva in the aspect of Pashupati, Lord of the Beasts, although there is a question if the three-faced fertility god depicted on the seal is specifically associated with the bull, as is the Shiva of later Hinduism."[11]

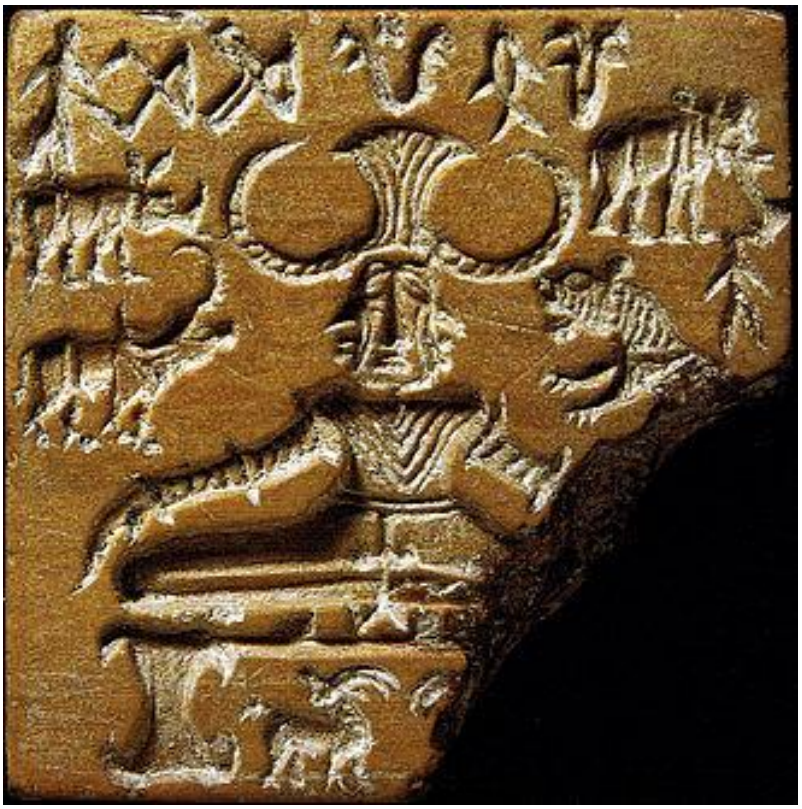

Figure 4. This artifact features the imprint of the Pashupati Seal, depicting various animals surrounding a figure believed to represent Shiva. "Pashupati Seal," Wikipedia. https://en.wikipedia.org/wiki/Pashupati_seal (accessed February 26, 2025).

Archaeologists were able to determine the age of the artifact by stratigraphy and radiocarbon dating. The archaeologists identified this artifact as the Pashupati Seal (Figure 4). This embossed seal was designed to be pressed onto cloth. The seal shows various animals surrounding a figure who appears to be seated in an advanced yoga

[11] Deryck O. Lodrick, "Symbol and Sustenance: Cattle in South Asian Culture," *Dialectical Anthropology*, vol. 29, no.1, (2005): 61–84 at 65.

position called *Mulabandhasana*. Some historians believe the figure positioned in *Mulubandhasana* could be the Hindu deity, Shiva—The Destroyer, who is an important figure in ancient and modern Indian culture. In the modern day, yoga is a widely known physical and spiritual practice that is popular in India and the rest of the world, and yoga plays a vital role in both the Hindu and Buddhist religions. Another researcher, Herbert Sullivan, contradicts Marshall's claim, and notes that the figure is not sitting in a yogic position: "Marshall interpreted as an *asana* seems to us a natural enough one and need not be a yogic posture at all."[12] According to Fitzsimmons, Sullivan also argues that the figure that Marshall claims to be Shiva, is a figure that is not male, but female: "There was an understandable temptation to see any Indian culture as a great phallusship. Sullivan has healthily questioned the Harappan evidence for this. He has also, I think, demolished the evidence for believing that a form of Shiva appears on several seals. The major representation, he argues, is not male but female."[13] Fitzsimmons continues, "The evidence, then, is enough to say that the Harappan religion featured worship of a mother goddess with different manifestations in the realms of vegetable farming and animal-raising and hunting."[14] While both claims refute each other, neither can be adequately supported since the seal has not yet been deciphered. Regardless, the iconography of the Pashupati Seal allows researchers to better understand the values and spiritual culture of the Indus River Valley people. One question left for historians to ask is: How many hundreds or thousands of years before the Indus Valley civilization period was yoga being developed? The Pashupati Seal could

[12] Herbert Sullivan, "A Re-Examination of the Religion of the Indus Civilization," *History of Religions*, vol. 4, no. 1 (1964): 115–25 at 120.

[13] Fitzsimmons, "The Indus Valley Civilization," 19.

[14] Fitzsimmons, "The Indus Valley Civilization," 19.

be one of the earliest known depictions of a spiritual practice dating back thousands of years that is still influential to this day.

The Pashupati Seal sheds light on the Indus people's spiritual and cultural practices and serves as a testament to their advanced craftsmanship; however, architecture and urban planning are what truly distinguished the Harappans from other renowned Bronze Age civilizations like Sumer. When comparing the Indus Valley civilization to the Sumerian civilization, Fitzsimmons states, "It is close to the Sumerian but it is a civilization in its own right, as the writing, the seals, and the city plans attest. Indeed, the Indic valley people were way ahead of the people of Sumer in planning cities and apparently in organizing the cities and settlements of the culture area."[15] Fitzsimmons later notes, "Perhaps we can say the Harappans mastered some of the basic necessities for city-living that almost no one so far has managed."[16] The Indus people excelled in urban planning and infrastructure, whereas the Sumerians were less successful and in ways, primal and unstructured. Wheeler presents the idea that the Indus people, "must have also the genius and the skill to master an exacting and minatory environment and must have it from the outset."[17] The Indus people had to endure the frequent flooding of the Indus River, summer droughts, unpredictable weather, and they relied heavily on monsoon rains to cultivate crops to support a growing population. Wheeler highlights that the Indic people built their civilization with remarkable ingenuity by being able to adapt to the natural challenges posed by the environment. Ironically, Harrapan technological advancements in brick-making and the construction of monumental structures and cities may have led to their eventual demise.

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[15] Fitzsimmons, "The Indus Valley Civilization," 20.

[16] Fitzsimmons, "The Indus Valley Civilization," 21.

[17] Wheeler, *The Indus Civilization*, 108.

Fitzsimmons says the downfall of the Indus Valley civilization could have been caused by the excessive harvesting of trees to feed the fires of the kilns used to produce their ubiquitous bricks. The Indus scholar states, "There is the further evidence of material and organizational decline in the Harappan cities before they had been abandoned . . . the exhaustion of timber resources in the mass production of baked bricks; the salting of arable soil by floods and irrigation; [and] the increase of the Harappan population which had been the impetus for creating an empire in which expansion had reached its utter most economic limit."[18]

While Harappan baked-clay bricks were built to last several centuries, the brick-making process significantly increased the consumption of natural resources and could have contributed to deforestation and soil erosion in the Indus Valley. Since the Indus River flooded frequently, the Harappan brick-making industry may have caused their civilization to become increasingly vulnerable to flash floods, and this could have led to the end of the Harappan people. As a counterpoint, Professors Mortimer Wheeler and Leonard Wooley are among scholars who believe that the Indus Valley civilization was conquered by the Aryans. Wheeler's position "not only changes our conception of the character of the Indus Valley civilization in itself, but it does enable us to link up those towns with the walled cities destroyed by the Aryan invaders of the Vedic hymns."[19] While both perspectives pose plausible arguments, neither can be proven since there is no direct evidence to support either claim.

The Indic people had a sophisticated way of communicating with each other as well as documenting events through their writing system. Alex states, "Several thousand Indus texts

[18] Fitzsimmons, "The Indus Valley Civilization," 16.

[19] R. E. Mortimer Wheeler, "Archeology in India and Pakistan in Since 1944," *The Journal of the Royal Society of Arts*, vol. 99, no. 4837 (1950): 113–32 at 130.

have been discovered, mostly from Harappa and Mohenjo-daro, but also in far-flung lands of trading partners along the Persian Gulf and in Mesopotamia."[20] Each piece of evidence could hold substantial information regarding daily activities of the Indus Valley people and their trading, spiritual beliefs and system of governance. Unfortunately, the Indic language has yet to be deciphered, meaning the language is highly sophisticated and historians cannot completely understand the role of the Harappans in the ancient world. The Indus Valley script has no equivalent Rosetta Stone (a key used to decipher ancient Egyptian hieroglyphics), and it has no cognate language. Since the Indus language is currently undecipherable, it holds back our knowledge of the connections between the Harappans and their neighboring cultures. The inability to read the Indus Valley language leaves a gaping hole in understanding the values of their people and any potential findings or similarities in modern-day Pakistan and India. In the future, if historians were to find a similar Rosetta Stone for the Indic writing, the mysteries surrounding their language and culture might be solved. Until then, this leaves historians at a standstill since there could be substantial information about the past that is yet to be discovered.

In conclusion, the enigmatic Indus River Valley civilization created many advancements and artifacts that aided in their success and possibly influenced later civilizations. First, the utilization of city planning enabled the Indus people to run their society in an organized and structured manner. Second, the special baked bricks allowed the people to construct important buildings in which to practice their rituals, symbolize power and social status, and emphasize religion and administrative authority. Third, artifacts like the Pashupati Seal provide clues that

[20] Bridget Alex, "Why We Still Can't Read the Writing of the Ancient Indus Civilization: C'mon, Archaeologists, what's the hold up?," *The Discover Magazine,* vol. 1, no. 2 (January 2019): 1–4.

important figures and symbols found during the era of the Harappans could possibly have had a lasting effect on later civilizations. The iconography on the seals and structures suggests a rich culture and hints towards deities and gods that might have influenced global religions such as Hinduism and Buddhism. Finally, because the language and writing are undecipherable, there are loose ends for historians to pursue and possibly to unearth groundbreaking future discoveries about the importance of the Indus Valley civilization.

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