

What endures from the ancient civilizations that ruled the Andes?

By Charles C. Mann, Smithsonian Institution on 07.20.17

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Archaeological site in Moray, Peru, where the ancient Incas lived. Photo from Wikimedia.

Huayna Capac had a problem: He didn't like his hometown, Cusco, in the bracing heights of southern Peru. Unfortunately, Cusco was the center of the Inca Empire, and he was the empire's supreme ruler. Running the empire obliged him to spend a lot of time in the chilly capital city. Fortunately for Huayna Capac, he was king. With a word he could command thousands of his subjects to build a second capital. Huayna Capac said the word. His new capital was near the equator, in what is today Quito, Ecuador. The palace was bigger and more luxurious than the first. And the weather was nearly perfect.

The king was pleased with his new digs but now faced a second problem. More than a thousand miles of steep, rugged mountains separate Quito and Cusco. The royal personage required a comfortable passage between them. He ordered hundreds of villages to dispatch all their able-bodied men to build a highway. The finished roadway was lined with guesthouses for travelers and so straight and flat, the chronicler Agustín de Zárate later marveled that you "could roll a cart down it." Pleased with what he had conjured into existence, the king ordered up a second huge thoroughfare, this one along the coast.



The Inca highway network — the two main arteries and the mass of secondary courses that joined them — was arguably the biggest, most complex construction project ever undertaken. Running for 3,700 miles between Chile and Ecuador, about the distance from New York to Paris, the backbone of the system cut through every imaginable landscape, from icy mountain peaks to tropical lowlands, from the world’s driest desert to one of its wettest forests. It astounded the Spaniards who saw it — the conquistador Pedro de Cieza de León said that the road through the Andes should be more famous than Hannibal’s route through the Alps.

“In the memory of people I doubt there is record of another highway comparable to this,” he wrote in the 1540s. It was called the Qhapaq Ñan — which translates from the Quechua as “Road of the Lord.”

Huayna Capac died around 1527, still seeking to incorporate the northernmost parts of the Andes into the empire. His death set off a civil war, fought bloodily along the Qhapaq Ñan. European conquerors arrived in 1532, accompanied by European diseases: smallpox, measles, typhoid, influenza. More than half the population of the Andean realm died. For the next three centuries, Spain tried to wipe out the histories and traditions that remained. But the conquistadors did not succeed. Native peoples tenaciously held on to their beliefs and practices. And archaeologists discovered ever more about the preconquest past.

For decades schoolchildren have learned that civilization has four ancient origin places: Mesopotamia, Egypt, the Indus Valley and China’s Yellow River. In the past 20 years researchers have added a fifth member to this select list: the central Andes, which includes southern Ecuador, northwestern Bolivia and most of Peru. Here, we now know, were pyramids and temples as old as or older than those in Egypt, vast irrigation networks that rivaled those in ancient Sumer, and artworks that would endure for centuries, even millennia. Just as in India and China, rulers built walled fortresses, religions flourished and armies clashed. In this realm, the Inca were Johnny-come-latelies — flashy, ruthless newcomers whose empire barely stretched across two centuries.

Left untended, the asphalt paths of the U.S. interstate highway system would disappear in a few decades. But hundreds of miles of the Qhapaq Ñan — paved with heavy stones, linked by suspension bridges that had no equal in Europe or Asia, engineered with astonishing care — remain despite centuries of neglect. You can hike along them for days. People who walk through these extraordinary landscapes are not merely following in the footsteps of the Inca. The Qhapaq Ñan was built atop roadways created by the Inca’s many predecessors. To journey here is to roam through almost 6,000 years of civilization, to one of the places where the human enterprise began.

Origins Strange And Profound

Push a throw rug with a foot across a slippery floor until it collides with a second throw rug. The leading edge of the first rug will bunch up into folds, then slide over the second. The first throw rug is the South American plate, an immense slab of rock that includes most of the continent. The second is the Nazca plate, on the floor of the Pacific. The folds are the Andes Mountains, lifted up as the South American plate grinds over the Nazca plate, pushing the latter into the Earth’s mantle. The tremendous strain of the eons-long collision cracks the rock, letting hot magma seep through. The Andes are young, geologically speaking, and have more than a hundred active volcanoes.

The region is a cavalcade of superlatives, a congeries of astonishments. On its western flank, the mountains plunge into the Pacific. All along the coast is a deep trench where the Nazca plate is driven down. Wind blows the surface water north, toward the equator. That water,

driven away, is replaced by cold, nutrient-rich water from the bottom of the trench. The upwelling nutrients feed vast clouds of plankton, which feed vast clouds of everything else. The Andes edge onto one of the world's greatest fisheries. So many seabirds have feasted on the fish for so long that islands off the coast have mountains of guano 150 feet tall.

Cold water produces cold air. Moist winds from the Pacific hit the cold air and condense; rain falls into the sea, miles from shore. Blocked by mountains on one side and cold air on the other, the narrow shoreline of Peru and Chile is amazingly dry, a narrow desert that runs for more than a thousand miles. The Atacama Desert, in coastal Chile, is the driest place on Earth — in some places there is no record of rainfall. Scientists and astronauts go there to experience our planet's closest analogue to conditions on Mars.

North of the Atacama is Lima, capital of modern Peru, and north of Lima is a 300-mile stretch of coastline with 30 or more ancient monumental centers, as old as those in the Fertile Crescent but much less well known. Depending on how you define the term "city," these centers could be small cities or remarkable accumulations of rural populations. Urban or rural, they are among the world's oldest architectural complexes — Sechín Bajo, probably the earliest known, dates to about 3500 B.C., about a thousand years before the Great Pyramid of Giza. Researchers have known of the existence of these sand-buried places since at least 1905. But it was not until the 1990s, when Peruvian archaeologist Ruth Shady Solis began to excavate Caral, two hours north of Lima, that anyone grasped their age and scale. And it was not until then that researchers fully understood how unusual this place and time were — how flat-out strange.



Nobody is yet sure what to call this stretch of coastline or even if it housed one culture or several. Whatever the name, the region is a puzzle within a puzzle, as fascinating for what it isn't as for what it is.

In comparison with Mesopotamia, Egypt, China and India (the other cradles of civilization), the Peruvian coast seems absurdly unpromising: chilly, parched, spatially constrained, battered by floods and sandstorms, seismically unstable. The other four arose in the warm, fertile valleys of great rivers (respectively, the Tigris and Euphrates, Nile, Yellow and Indus rivers), where millennia of regular spring floods had left deep layers of fertile soil. The Peruvian shore, by contrast, is a desert with an unsteady climate. The atmospheric pressure over the Pacific fluctuates chaotically, sometimes causing blasts of warm air to hit the coast, which in turn can lead to yearslong bouts of severe rain and floods — the climatic shift now famous as El Niño. Unlike the restoring annual spring floods of the Nile, these unpredictable, violent El Niño floods destroy crops and wash away fields. In what the archaeologist Michael E. Moseley has called “convergent catastrophes,” the flood sediment pours into the small rivers that come down from the Andes, building temporary sandbars at their mouths. Later, when conditions return to normal, ocean winds blow the sand inland; the sandstorms blanket farm fields in new episodes

of ruin. Between floods, the region's frequent earthquakes create expanses of loose debris, setting up conditions for the next round of devastating floods. How could people establish long-lasting societies in such a catastrophe-prone area? It seems to violate common sense.



Living in this unusual place, Peruvians made do for themselves in unusual ways. Cities in Mesopotamia and Egypt were ringed by thick defensive walls or protected by frontier garrisons, indicating that war was a constant menace. By contrast, these early complexes in Peru show no evidence that their residents ever had to worry about defending themselves. Caral, today the most well-known site, has a sprawling central plaza surrounded by grand pyramids, which are in turn surrounded by residential structures, presumably dwellings for the rich; to the south is a spectacular circular amphitheater. Caral's buildings date from around 3000 B.C.; the city (if that's what it was) was inhabited for the next 1,200 years. In all this time, there is no indication of mass violence. Later societies, like the Inca, were violent — but not these. Imagine a millennium of European or Chinese or Mesopotamian history with no war to speak of. That's how peculiar things look to researchers studying the early coastal Andes.

Cities in other civilizations were surrounded by great expanses of cereal crops: rice in China, wheat and barley in Mesopotamia, Egypt and India. Matters were different on the Andean coast, where cities like Caral had access to huge quantities of fish, and one of the main agricultural products, grown by irrigation from the mountain streams, was the cotton used to make nets and lines. Indeed, Moseley has argued that seafood was the foundation of Andean civilization, rather than agriculture — the only early civilization in the world where this was true.

Stranger still, the staple food of the highlands was neither fish nor grain but tubers and tuber-like roots. The most famous of these is the potato, though most people outside South America don't know that the common spud is only one of the seven potato species domesticated by

Andean peoples. Along with the potato are many other local roots and tubers, as delicious as they are unfamiliar, including oca (a tuber that resembles a wrinkled carrot and has a pleasantly sharp taste), ulluco (brightly colored, with skin that does not need to be peeled), yacon (a relative of the sunflower with a sweet, crispy tuber) and achira (a lily-like plant with a mild, starchy “root”). Because tubers and roots grow underground, they can reach almost any size without harming the plant, whereas wheat and rice, growing atop spindly stalks, will topple the plant if the head of grain gets too big. In consequence, roots and tubers are inherently more productive than grains — a lesson initially lost on European farmers, who often had to be ordered by their kings to grow potatoes when they first appeared.

Pottery, the archaeological tracer par excellence, developed later in the central Andes than in other places. From the beginning the region’s peoples seem to have placed greater emphasis on textiles. Not only did they grow cotton to make fishing lines and nets; they literally built their temples from stones stuffed into fiber bags to create, in effect, enormous building blocks. Most important, they used fiber to communicate. In Caral, Shady found what she believes to be an early version of one of the region’s most unusual inventions: the quipu. Consisting of a long horizontal rope with vertical strings dangling from it, the quipu encoded information in the patterns of knots tied into the vertical strings. Quipu scribes “read” the messages by running their hands along the knots, a procedure that so baffled and alarmed Spaniards when they encountered it that in the 1580s they ordered all quipus to be destroyed as “idolatrous objects.” (Only about 750 are known to have survived; although the knots used to indicate numbers have been deciphered, scholars have not yet broken the code for quipu “words.”)

Some aspects of these early societies — the quipu, the architecture of the plazas, perhaps the religious symbols — seem to have survived from the first days of Andean culture right up to the Spanish conquest. Archaeologists have long argued among themselves whether these indicate that some kind of essential Andean culture evolved in these mountains, persevering in different guises for thousands of years. Walking in these places, though, it is clear that the coastal Andes took a path different from any other. Societies here were just as old as but profoundly unlike those that trace their roots to the Middle East or Asia. To be in Peru is to be reminded that the human story, in all its terror and beauty, did not have to turn out the way it has. If we somehow rewind the tape and began again, we too could be running our fingers along knotted strings. And our ancestors too might not have lived fearfully behind defensive walls.

Quiz

- 1 Read the selection from the article.

In the past 20 years researchers have added a fifth member to this select list: the central Andes, which includes southern Ecuador, northwestern Bolivia and most of Peru. Here, we now know, were pyramids and temples as old as or older than those in Egypt, vast irrigation networks that rivaled those in ancient Sumer, and artworks that would endure for centuries, even millennia. Just as in India and China, rulers built walled fortresses, religions flourished and armies clashed. In this realm, the Inca were Johnny-come-latelies — flashy, ruthless newcomers whose empire barely stretched across two centuries.

Which of the following conclusions can be drawn from the selection above?

- (A) The Andean culture was very similar to other great ancient civilizations in its creation of transportation routes and architecture; because its civilization endured the test of time, it should be considered equal to other ancient societies.
- (B) The Andean culture was very similar to other great ancient civilizations in what it accomplished; although the civilization did not endure the way other ancient civilizations did, researchers believe it should be considered in the same company.
- (C) Andean civilization should be considered in the same category as other great ancient civilizations; because of the evidence that it built pyramids earlier than even the Egyptians, it should be considered more advanced than other ancient civilizations.
- (D) Andean civilization developed religion, art and architecture, as well as great construction projects; but because it did not develop into a modern civilization like the other great ancient societies, it should not be considered in the same category.

- 2 Read the sentence from the article.

Walking in these places, though, it is clear that the coastal Andes took a path different from any other.

Which sentence from the article BEST supports this idea?

- (A) Here, we now know, were pyramids and temples as old as or older than those in Egypt, vast irrigation networks that rivaled those in ancient Sumer, and artworks that would endure for centuries, even millennia.
- (B) Depending on how you define the term “city,” these centers could be small cities or remarkable accumulations of rural populations.
- (C) Indeed, Moseley has argued that seafood was the foundation of Andean civilization, rather than agriculture — the only early civilization in the world where this was true.
- (D) Some aspects of these early societies — the quipu, the architecture of the plazas, perhaps the religious symbols — seem to have survived from the first days of Andean culture right up to the Spanish conquest.
- 3 HOW does the map enhance the reader's understanding of the Inca highway beyond what the article offers?
- (A) It adds evidence to the claim that the Incas were reliant on fish for food because of the expanse of highway along the coast.
- (B) It shows that modern cities were built along the highway, demonstrating that the roads were likely used long after the Incas were gone.
- (C) It details some of the most challenging terrain changes that the Inca had to overcome in order to construct the highway.
- (D) It shows the distance that the Inca highway spans and details the countries and terrains that the highway passes through.
- 4 WHO would find the photographs in the article MOST useful and WHY?
- (A) a tourist deciding where to travel to see Inca ruins; because he or she could decide if the locations would be interesting places to visit
- (B) a researcher studying who lived at each location; because he or she could search for specific differences in construction techniques
- (C) a researcher creating a model of Andean architecture; because he or she could use the photographs to find the scale of the real structures
- (D) a scientist looking for evidence of Andean people relying primarily on fish as food; because he or she could study the picture to find evidence of food storage structures

Answer Key

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