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What the Heck is Cuneiform, Anyway?

The writing system is 6,000 years old, but its influence is still felt today

A museum worker wearing gloves holds up a cuneiform clay tablet, one of a collection of over 100, on display at a museum in Jerusalem. (EPA/Jim Hollander)

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Cuneiform made headlines recently with the discovery of 22 new lines from the Epic of Gilgamesh, found on tablet fragments in Iraq. As remarkable as is the discovery of new bits of millennia-old literature is the story of cuneiform itself, a now obscure but once exceedingly influential writing system, the world's first examples of handwriting.

Cuneiform, was invented some 6,000 years ago in what is now southern Iraq, and it was most often written on iPhone-sized clay tablets a few inches square and an inch high. Deciding to use clay for a writing surface was ingenious: vellum, parchment, papyrus and paper—other writing surfaces people have used in the past—deteriorate easily. But not clay, which has proven to be the most durable, and perhaps most sustainable, writing surface humanity has used.

Cuneiform means "wedge-shaped," a term the Greeks used to describe the look of the signs. It was used to write at least a dozen languages, just as the alphabet that you are reading now is also (for the most part) used in Spanish, German and many other languages. It looks like a series of lines and triangles, as each sign is comprised of marks—triangular, vertical, diagonal, and horizontal—impressed onto wet clay with a stylus, a long thin instrument similar to a pen. Sometimes cuneiform was formed into prisms, larger tablets and cylinders, but mainly it was written on palm-sized pieces of clay. The script is often tiny—almost too small to see with the naked eye, as small the smallest letters on a dime. Why so tiny? That remains one of cuneiform's biggest mysteries.

Most agree that cuneiform began as proto-writing--like African drumming and Incan *quipa* – and evolved into the first full-fledged writing system, with signs corresponding to speech. The root of cuneiform lies in tokens, or chits, used by Sumerians to convey information. For example, they would take a stone and declare it a representation for something else. A sheep, say. A bunch of stones might mean a bunch of sheep. These stone tokens would sometimes be placed in a container, and given to someone else as a form of receipt—not that different from what we do today when we hand currency with numbers on it to buy a quart of milk, and the clerk gives us back a piece of paper with numbers on it to confirm the transaction.

By the 4th century B.C., the Sumerians had taken this system to another level of abstraction and efficiency, moving it from proto-writing to writing. They began using clay containers instead of cloth ones, and instead of putting stones inside of them, they stamped the outside of the envelopes that indicated the number and type of tokens inside. One could then "read" the envelope to know what information was being conveyed.

Gradually, Sumerians developed symbols for words. At first these phonemes (one symbol for one thing, instead of letters to make a word) symbolized concrete things; for example, an image of a sheep meant a literal sheep. Then another leap of abstraction was introduced when symbols were developed for intangible ideas, such as God, or women. Cuneiform, in other words, evolved from a way to track and store information into a way to explain the world symbolically.

The marks became more abstract over the centuries . They likely began as pictographic-- sheep symbol for a sheep--but they evolved into signs that look nothing like what they refer to, just as the letters "s-h-e-e-p" have no visual connection to a woolly, four-legged animal. These marks and signs took the form of triangular wedge shapes.

Cuneiform marks became more abstract because it made the system more efficient: they were fewer marks to learn. And for the most part, cuneiform needed to become more complex because society was becoming so as well. The origins of writing lie in the need to keep better records, not, as many might assume or wish, to express oneself, create art, or pray. Most agree cuneiform developed primarily for accounting purposes: while we can't know about tablets that have been lost, about 75 percent of the cuneiform that has been excavated and translated contains administrative information.

Mundane as this story is concerning why writing was invented—to record sheep sales—the story of how it was later decoded is spectacular. It is somewhat miraculous that we can translate these wedges. For hundreds of years, no one could. Even though cuneiform was used for millennia—and much of it, incised on rocks in Persia, was in plain view for centuries after it ceased to be used--the language was unintelligible for almost 2,000 years. Not until 1837, two years after British army officer Henry Rawlinson copied down inscriptions from the steep cliffs of Behistun could anyone know what the marks said.

Rawlinson's feat was incredible. He had to climb up cliffs on a very narrow ledge in the middle of an enormous mountain in order to copy down what he saw. And how those marks were made continues to defy logic or explanation: the angle and height of the incisions seem to preclude the possibility of a chiseler on a ladder. Rawlinson at least figured out how to copy the marks, by making paper impressions as he stood, perilously, on the ledge.

Then he took them home, and studied them for years to determine what each line stood for, what each group of symbols meant. Eventually, he decoded the markets that had sat in the open for some 5,000 years, thereby cracking the cuneiform code. (The inscriptions describe the life of Darius the Great, king of the Persian Empire in the 5th century B.C. , as well as descriptions of his victories over rebels during his reign.) As with the Rosetta Stone, on which the same text is written in hieroglyphics, demotic, and Greek, Rawlinson discovered the cliffs of Behistun also contained the same words written three times in three different languages: Old Persian, Elamite, and Babylonian. Since the other languages had been translated, he could thus translate cuneiform.

Fifteen other languages developed from cuneiform, including Old Persian, Akkadian and Elamite. It was taught as a classical or dead language for generations after it ceased to be a living language. It was taught to those who spoke Aramaic and Assyrian, but who read, copied and recopied Sumerian literary works. By 1600 BC, no Sumerian speakers were alive, but cuneiform was still used for another thousand years. Today, it strikes us a somehow hauntingly familiar: cool, hard, palm-sized tablets onto which receipts, notes, messages and even great works of literature are written and read.