The Thin Tweed Line

by Steve n. Jackson

The Rise of Literacy

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Understanding Higher Education

- Higher education rises from the desire of humans to communicate with each other. Thus to understand education, one must start out by understandings the history of human communication before higher education arrives on the scene.

- The Education and communication process is dynamic and has four steps*. These are the acquisition of new knowledge, the manipulation of that knowledge to discover new truths, the distribution of those new truths to others, and the archiving of those truths in a manner that future thinkers can easily access them.

* Jackson, S. (2000 and 2002). Studying Power and Technology Using Oral History. Thesis: University of South Carolina. OCLC# 51765598.

Evolution of the Human Species

- Humans, Lesser Apes, and great apes are descended from a common ancestor such as Dryopithecus, which lived between 9 and 12 million years BP.
- There is no evidence of language use at this stage.
- By 2 million years BP the Homo species had developed in the plains of Africa (Out of Africa Theory). Early hominids use tools, but no evidence yet of language.
- Homo Sapiens become the dominate hominid species by 250,000 BP.
- Homo Sapiens makes increasingly sophisticated tools and begin to migrate through old world, not reaching the Americas until 20,000 years BP and the Pacific Islands until 2,000 years BP.

Lascaux Cave Paintings

Dated at around 36,000 BP, cave paintings like these are the first proof of exo-genetic communication of information. While Homo Sapiens were likely communicating for at least 200,000 years before then, they did not leave a record of that communication that has been found.

Lascaux Cave Paintings

Evidence shows cave painters were painting real, observed animals, not fantasy images*.

*Melanie Pruvost et al., "Genotypes of pre-domestic horses match phenotypes painted in Paleolithic works of cave art," PNAS, 2011.

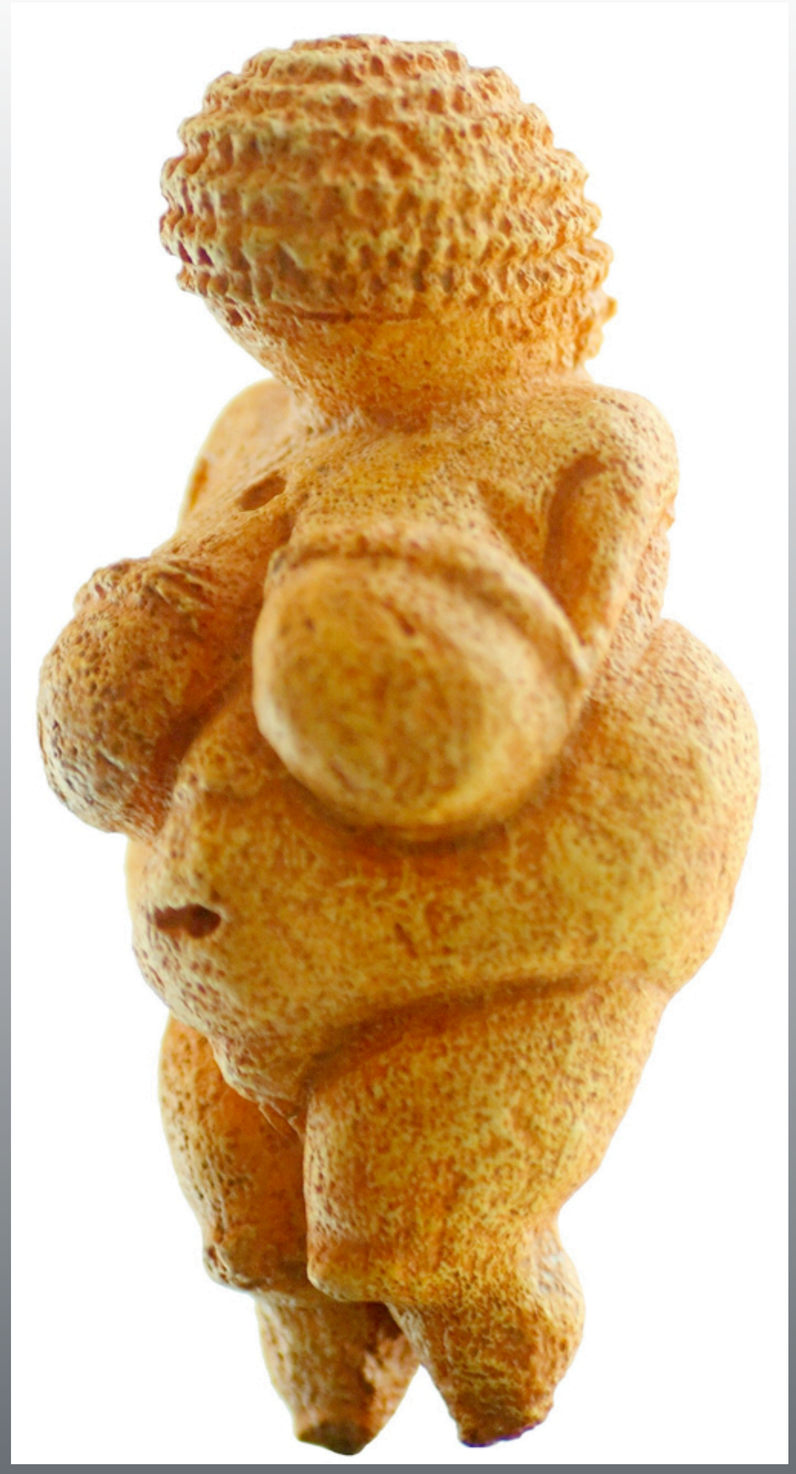
Lascaux Cave Paintings

Children participating in some forms of cave painting along side adults*. This makes it more likely that cave art could have served as some form of primary education.

*Jessica Cooney and Leslie Van Gelder

The Venus of Willendorf

The Venus woman is a figure made approximately 22,000 years BP. Venus figures represent one of the earliest forms of extant portable human communication. The venus shown on the left was carried through the landscape, evidence that where it was found is not where it was made (Willendorf lacks Oolitic Limestone).



Cradles of Civilization

The Sitting Bull (Right)
from Uruk in the Jemdet Nasr
period (3,000 BCE)
RIGHT

The Palermo Stone (fragment
of the 5th Dynasty Royal Annals)
around 2,500 BCE)
LEFT

The Cradles of civilization where writing first appeared. These are Archaic period Egypt (Dynasties 1 and 2) and the Jemdet Nasr period of Sumer, both occurring earlier than 3000 BCE.

Earliest Writing: Cuneiform (left) and Hieroglyphics (right)

The rise of Written Language

According to Dr. Denise Schmandt-Besserat* writing was a development of accounting systems. Small markers representing crops, products, or labor, would be baked into clay envelopes, and a marking made by the markers would be impressed into the side of the envelope. Eventually, the markers were discarded for a stylus, and baking was used to fix the words, which gained complexity as time went on.

Cuneiform was merely a math system that gained grammar and a vocabulary.

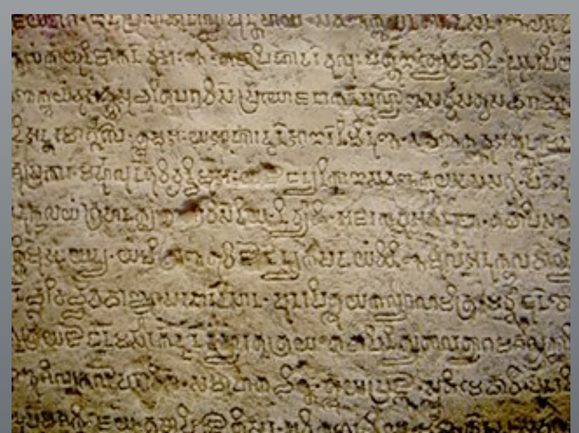
**How Writing Came About*, University of Texas Press 1996

Far East

Oracle bone script predates the rise of classical chinese writing, appearing around 1400 BCE.

India

Ancient sanskrit, used to produce the vedas, may date to as early as 1500 BCE.



Americas

Olmecs develop a writing system around 650 - 500 BCE, that would lead to the classical Mayan writings.

The importance of Writing

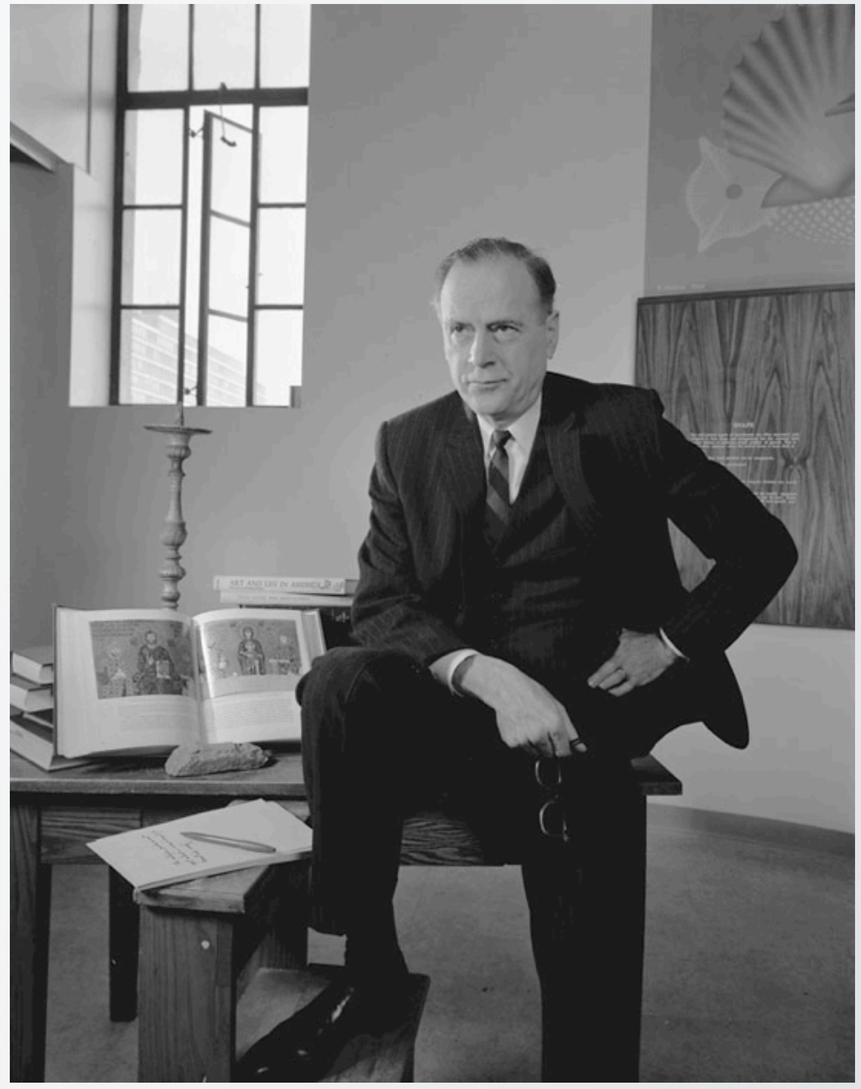
Writing represents an accurate method of recording information with less loss of context, and a higher information density, when compared to cave art. Writing, in the form of carvings, is able to transmit information easily across time while protecting the original meaning of the message. Writing, in the form of text on paper or hides, is easily carried through the landscape, and increases the geographic reach of information.

One other key advantage of writing is that it can be accurately copied, allowing many access to the same information.

The Portability of Knowledge

Dr. Harold Innis, at the University of Toronto, developed the theory of Time Binding and Space Binding media. Time Binding media is designed to survive over time, like clay tablets, and can be used to communicate information from generation to generation. Space Binding media is designed to move through space, and can be used to send instructions through an empire, allowing empires to grow larger. Papyrus scrolls are space binding media.

Innis's theory is known as a theory of technological determinism, or a theory which predicts technology will lead social and political change.



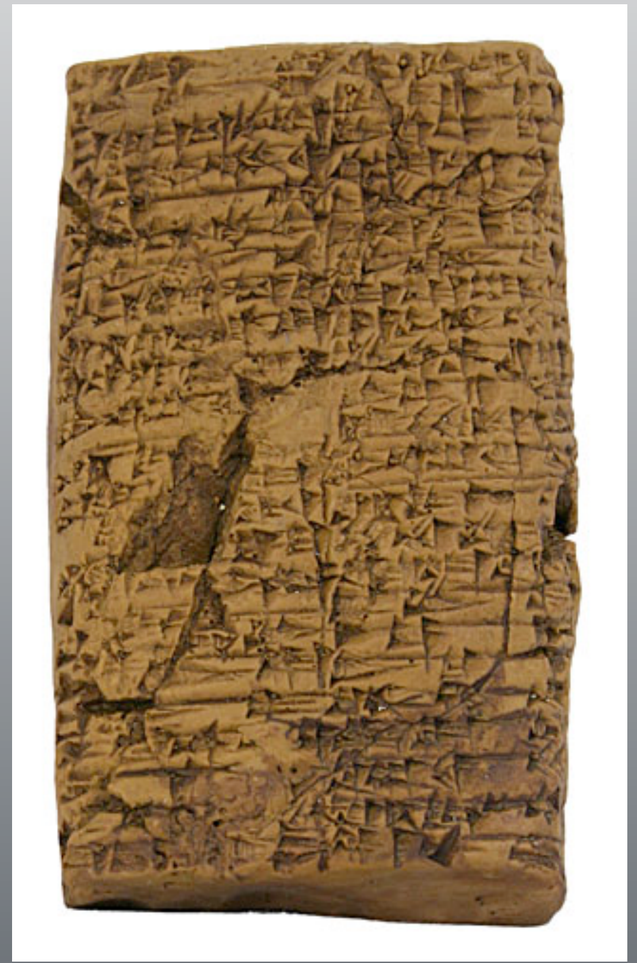
Dr. Harold Innis

"A successful empire... required adequate appreciation of the problems of space which were in part military and political, and of problems of time which were in part dynastic and biological and in part religious." ~Harold Innis

Education systems of any sort are not readily evident prior to the invention of writing. Pre-literate cultures do transmit information through poems, stories, and art, but until they are written they are easily lost.

Codified Law

- Through-out human experience there will be a connection between law, religion, government, and education.
- The study of law is often connected to the rise of a literate class and the development of educational systems to educate individuals in legal jurisprudence.
- Religion is also a significant catalyst of education.

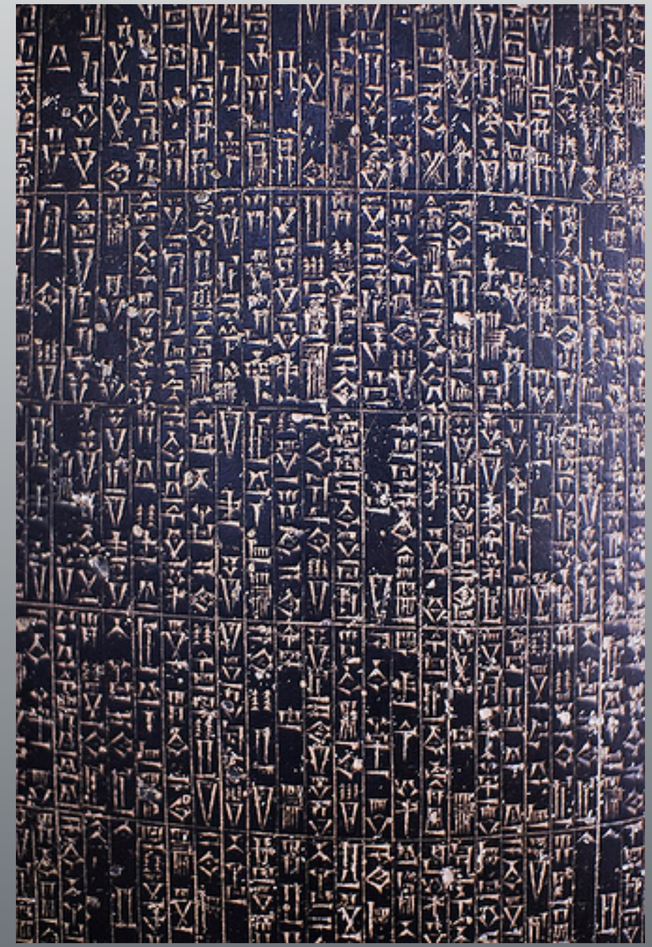


Codified Law

- The creation of legal documents on permanent carved structures such as steles demonstrates an attempt to create an education system. Depending on who had access and who was literate enough to read and understand the text, steles are an example of public education paid for by the state seeking an set educational outcome (dissemination of legal information to a mass audience).

Codified Law

- Legal stele also represent a flaw in ancient educational thinking. The creation of a carved object recounting law assumes an unchanging world view with regard to legal truth. When legal truth cannot change to account for improved practices or changing conditions (like new technology) then legal scholarship becomes scholastic rather than dynamic.



Ancient Flute dated to BP 35,000.

Other areas of human experience could have lead to organized human education, and would become important to human scientific advancement.

* Music in the ancient world is attested to by instruments nearly 35,000 years old. Music would lead to attempts to understand sound through the process of mathematics.

* Navigation would lead to attempts to understand stars and the night's sky. This would form the foundation for studies in astronomy.

* Agriculture had a significant affect on understandings of mechanical engineering and life sciences.