

## Diachronic Representation of the Evolution of Communication and Thought

**100,000 BP - Homo Sapiens** - First humans to speak and draw. Brain growth of "one extra pound of neural tissue in the neocortex" allows a split into right/left hemispheres enabling humans to speak ("Homo Sapiens"). All humans, whether literate or not, have speech. "Wherever Human beings exist they have a language (Ong 7).

**100 AD - AD: invention of paper** - attributed to Tsai Lun of China ("Invention").

**104 AD: First movable type system** - invented in China by Bi Sheng out of ceramic blocks representing pictographs.

**1439 AD: Printing Press** - Invented by Johannes Gutenberg of Germany. Alphabet in which each letter is printed on a separate piece of metal or type marked a psychological breakthrough of the first order" (Ong 116).

**1489: Leonardo da Vinci's** Anatomical notebooks rely heavily on multiple diagrams depicting the human body. These drawings pose "serious problems for the printing press of the day". Many of these were not published until the early 20th C. (Veltman).

**1550: Peter Ramus** - Creates a whole series of logic textbooks on logic and rhetoric, mathematics, astronomy, and optics ("Ramus").

**1780: Industrial Revolution** - The same assembly-line style "replaceable-part technique" of printers is applied to other manufacturing (Ong 116). Science and industry are able to progress quickly after print allows for "technical verbalization" and "exactly repeatable visual statements", which can be applied by scientists and engineers to their own new developments (122).

**1832: First telegraph** (approx. date)  
**1844: First telephone**  
**1896: First radio** (approx.  
**1930: First television** (approx. date)

**1946: First electronic computer** - designed and built for the U.S. Army's Ballistic Research Laboratory (ENIAC).

**1975: First personal computers** - Made possible by the introduction of the microprocessor (PC).

**1989: World Wide Web** - Created by Sir Tim Berners-Lee of European Organization for Nuclear Research (CERN) in Geneva Switzerland (WWW).

**1989: First text message** - Sent on a Motorola beeper using upside-down numbers that could be read as words ("Text").

**1991: Digital Camera** - Kodak DCS-100, used 1/3 megapixels and was priced at \$15,000.

**2001: i-pod** portable media player released by Apple Inc.  
**2002: BlackBerry** handheld e-mail, phone, and wireless internet device produced by Research In Motion (RIM) Inc.  
**2005 Garmin** releases StreetPilot i-series personal navigation and information system.  
**2007: Kindle** wireless e-book reader released by Amazon.

**100,000 BP** - Primary Orality: Cultures worldwide maintain their history, genealogy, mythology, and religion through a system of sharing narrated information. Oral art forms include **epic poems**, such as the Iliad, the Odyssey, and Beowulf; **folklore**, which is sometimes divided into marches (fairy tales) and sagas (legends); **tales**, stories that illustrate moral lessons; and **proverbs**, which are moral or religious sayings but use human characters rather than animals and **mythology**, which often uses "the supernatural to interpret natural events and to explain the nature of the universe and humanity" ("Storytelling").

**3,500 BC: Cuneiform pictograph writing** - Created by the Sumerians of Mesopotamia.

**1,500 BC: Semitic alphabet** - Becomes the first true alphabet (but contains no vowels) and is the original source of every alphabet in the world (Ong 88).

**1,200 BC: Trojan war setting** - Era in which Trojan war was thought to be set, as well as era in which some believe Homer to have lived ("Homer").

**800 BC: Homer** - Possibly thought to have lived during this era, according to "Homer".

**700 BC: The Iliad and The Odyssey** - Set down in the new Greek Alphabet (Ong 23).

**400 BC: The Era of Plato** - Who, "together with his mentor, Socrates, and his student, Aristotle, helped to lay down the foundations of Western Philosophy" ("Plato").

**104 AD: Chirographic/ Manuscript culture** - Words are now isolated from the "fuller (essential) context in which spoken words come into being... (providing) the reader with conspicuous help for situating himself imaginatively" (Ong 101). Vocabulary and rhetoric expand as "written words sharpen analysis for the reader work in solitude. Written narratives develop tighter plot structure (Freitag's Pyramid), protagonists grow from flat characters to round" (148).

**400 BC: Writing restructures consciousness** - "Writing was diffused through the Greek population and interiorized enough to affect thought processes generally" (Ong 93).

**800 BC: Greeks odd vowels** - The "first alphabet complete with vowels... (transformed) the word from sound to sight (and) gave ancient Greek culture its intellectual ascendancy over other ancient cultures" (89). The Greek alphabet was "democratizing" and "internationalizing" (89).

**1,500 BC: Chinese writing** - Can be traced back to this date during the Shang Dynasty, while the process of creating characters "probably began some centuries earlier. ("Written"). Not alphabetic. Early Chinese used mostly **pictographs** and **ideographs** (but has evolved since).

**3,500 BC: Egyptian hieroglyphics** - Created around the same time as cuneiform (Ong 84). Hieroglyphics was a hybrid system containing **pictographs**, "picture writing," whereby "the meaning of a concept... is established by a code" or sequence of pictures; and **rebus**, which use symbols to represent sounds. (Ong 84).

**1,500 BC: Chinese** - Written narratives develop tighter plot structure (Freitag's Pyramid), protagonists grow from flat characters to round (148).

**1790: Romantic Movement** - Scholars begin to study folklore and works of oral tradition (Ong 16). Romantic Poets emphasize on originally shuns the formulaic and redundant style of primary oral poetry (22). "Poetry is fully interiorized by now. Fictional characters grow more round exact in both prose and poetry" (128).

**Print Culture** - Made "the Italian Renaissance a permanent European Renaissance... implemented the Protestant Reformation and reoriented Catholic religious practice... affected the development of modern capitalism, implemented western European exploration of the globe, changed family life and politics, diffused knowledge as never before, made universal literacy a serious objective, made possible the rise of modern sciences, and otherwise altered social and intellectual life" (Ong 115). Books and printed materials become commodities (124). Copyright laws exemplify a "new sense of the private ownership of words" (128).

**Secondary Orality** - Electronic culture creates a participatory atmosphere, like primary orality, except that the "audience" or participants are not physically face-to-face. These audiences are much larger, as electronic communication connects people from all over the world. This is made possible through the "electronic media" (radio, television, and the Internet), which enables people to interact and live on a global scale ("Global"). The increased number of information sources swells print and electronic information output. The "virtually instantaneous" access to information intensifies the human tendency to process (Ong 133), leading some to believe that brain functions are changing (Carf).

**Christmas 1975: Atari's Pong** - Atari's first home videogame console released through Sears.

**1978: First GPS satellite** - launched into space as a development of U.S. Navy's Transit navigational system.

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