

Making our mark: the evolution of pen and paper through time

A video script

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Welcome. My name is Sandra Tice and I am a UBC Master of Educational Technology student. And the title of this video is, “Making our mark: the evolution of pen and paper through time...” The history of ancient writing technologies reveals a desire by humans to express themselves; to leave a mark or legacy about the past and to communicate vital information as needed. “Every culture and unique period of time has had its own complex economy of writing, a dynamic relationship among materials, techniques, genres and cultural attitudes and uses.” (Bolter, 2001)

The first writing implement was likely a human finger dipped in plant juice or blood (Lambrou, 1989). Or perhaps it was a stick drawn through mud or sand. Humans were drawing pictures long before true writing developed. It is impossible to know for certain which ancient civilization, approximately 5,000-8,000 years ago, Mesopotamia, China, or Egypt (H. Martin, 1988) began to realize that permanent records could be etched, stamped, or painted onto existing materials. In ancient Mesopotamia’s fertile crescent of the Tigris and Euphrates Rivers, the abundance of clay and the development of a refined stylus with a wedge-shaped tip that made somewhat uniform triangular impressions led to cuneiform’s development (Lanbrou, 1989; Fang, 1997) Although simple, this crude technology was significant as it was the original stylus for that allowed for a form of standardized communication and record keeping. (Gabrial, 2007) The first script, or true writing, that we know, was developed among the Sumerians in Mesopotamia only around the year 3500 BC (Diringer 1953; Gelb 1963). (Ong, 2002) Their complex language had 600 symbols, and was recorded by scribes—highly respected writing specialists, the record keepers of their time. Nearly 4,000 years ago, that scribes were already recording stories on clay.

As early as 3000 BC, the use of a reed plant, known as papyrus, developed along the Nile River. It was a lighter and more portable writing medium than clay. Fashioned from these river plants, split, hammered and layered together, papyrus was so popular, that Egyptians soon began producing papyrus scrolls for the Greeks and Romans as an easily transportable document medium. Papyrus, sadly, was not a durable substrate, and its source plant, the papyrus reed was limited to growing primarily within Egypt. These two disadvantages likely spurred the Greeks and Romans to make greater use of another readily available material made from sheepskin. This was known as parchment.

Parchment became the preferred medium of both ancient and the medieval worlds (Coulmas, 1996). Another advantage of parchment was that not only was it more durable than papyrus, but both sides of it could be used, and it could also be re-used. By cutting parchment into sheets, and binding them between wooden covers (Petroski, 1990), they had created an early form of the book, known as a codex.

Meanwhile, in Ancient China, early origins of paper had already appeared, typically made from bamboo, and from such other diverse materials including bamboo, silk and ivory. Equally important to paper was the ink used for mark making on the paper. Permanent inks were manufactured from soot, lamp oil, musk, and gelatin of donkey skin, or from berries or other plants (Bellis, 1997/2006; Carter, 1955/1995).

The first papers in China were made from hemp, bark, and used fishnets. Recent archaeological finds reveal the papermaking process was invented in the first century BC, by an anonymous Chinese peasant who produced paper from plant fibre and rags. A story persists that in 105 CE, or 2nd century BC, Ts-ai Lun, a high-ranking eunuch in the Han imperial court recorded a significant note about paper. He recorded that for the first time

in history, plant and animal fibres, mulberry or bamboo, could be separated to produce the newest writing medium – paper (Carter, 1955/1995). Paper had, in fact, been made in China for at least two hundred years before this date. As legend tells, women used to clean their clothes on stones in the river, as fibres released downriver from the friction of clothing upon rocks, a surface sheet would form downriver, and as it was lifted and dried, it produced a surface suitable as a substitute for silk fabric and bamboo strips used at the time as a base for pictures. (Goedvriend, 1988)

Paper had a number of distinct advantages over other materials, as it was lighter, thinner, portable, durable, and relatively easy to produce. The Chinese wanted to keep their paper manufacturing processes secret, and they were successful in doing so for centuries. Eventually, this new papermaking technology spread to Korea and Japan, and by the 6th century Arabs had obtained paper through the capture of Chinese papermakers, when Moors transported it to the Syria, Egypt and Morocco. Arab traders brought paper to Europe, where manufacturing production began in Spain by the 12th century. (Carter, 1955/1995; Martin, 2003). Arabs had mechanized the preparation of pulp (beating and milling of fibrous materials) by using water mills. When they conquered parts of Europe (Spain) they brought this process with them as a cheaper replacement for parchment. (Bolter, 1991).

Paper at that time was typically made from rags, usually linen. (Clement, 1997. In 1268 a paper mill was established at Fabriano, Italy. (Browning, 1970) Since it was difficult to procure rags, which were the main component of papermaking, other materials that were cheaper and more readily available were sought. From the 1500s to nearly the 1800s people tried using many other composition materials including, agave,

straw, grass, asbestos, seaweed, aloe, plantain, waste paper, tree bark and more.

(Goedvried, 1988)

The origin of the pen paralleled the developmental path of papermaking. The early versions of the stylus used in Mesopotamia, Greeks and Romans in Ancient times was modified to become a device that could hold ink for writing on papyrus or parchment. Reeds could easily be trimmed to make varying lines widths, combined with plant based inks or soot. But reeds tended to wear out quickly. Scribes began using other materials to fashion early “pens”, using animal horns, and sometimes even metal implements. A copper nib was found in the ruins of Pompeii showing that metal nibs were used as early as the year 79. Evidence has been also been found which links the use of bird feathers, or quills, which hold ink, from approximately 500 BC. The quill, was primarily made from geese feathers, and was used as the pen of choice for nearly 1,000 years.

Pens might be made of cane, reed, bird quill, or metal. A section of reed or cane was easy to work into a pen: first the pith would be removed, next, the end would be carved to a point or an angle, and finally a slit would be cut into the tip. The hollow created by removing the pith held the ink, which flowed through the slit to the tip of the pen. A quill pen was made in the same way simply using a feather from a crow, a peacock, an eagle or other bird, instead of the reed. Often the feathers were removed from the quill, leaving just the hollow, stick-like portion to serve as the pen. A quill pen was lighter and more flexible than a reed or cane pen.

The earliest fragments of a metal pen date to the 13th century BC. Both Egyptians and Romans are known to have used metal pens, some of which were shaped

to imitate bird feathers. Medieval monks used fine pointed metal pens to trace the lines on parchment. In the later middle ages, monks dragged metal pens with multiple points across a sheet of vellum to create the musical staff on which they inked the square-shaped notes.

The metal pen was durable and precise, especially for creating thin lines. However, the quill and reed could be easily re-cut to suit the individual monk's preference. A penknife was an essential tool for the fussy scribe. These tools all served to make marks and contribute to meaning making by the various artisans who used them.

Conclusion:

Papyrus, parchment, paper... reed, quill, and pen – all of these items represent of technologies of writing before mechanization.

“More than any other single invention, writing has transformed human consciousness. (Ong, 2002) “Writing with pen and paper is no more natural, no less technological, than writing on a computer screen.” (Bolter, 2001) Each of these technological innovations has helped humankind communicate their ideas and has led to an increased form of literacy throughout the ages.

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