8. WRITING

Introduction

For thousands of years, artists have used words and pictures to communicate meaning. This development is connected to the evolutionary leap that set *Homo erectus* apart from other primates. Although they could not speak, their brain size was greater than that of their ancestral species, allowing them to develop a society in which coordinated and cooperative actions ensured survival.[1] Over a million years ago, *Homo erectus* was able to represent thoughts and communicate ideas through gestures and mime, which made it possible to pass on knowledge, such as simple tool-making or the coordination of hunting efforts, while also establishing social norms for the group and the individuals within it.[2] The development of language, and the transition from what has been called mimetic culture to that of mythic culture, allowed humans to better communicate their ideas and access collective memory in the form of stories, songs, dance, rituals, and art.

However, symbolic images, such as those on the walls of prehistoric caves found in Europe, did not appear until long after the development of speech.[3] It was only within the past 8,000 years that humans evolved to a point at which they could synthesize symbolic language and symbolic art. The key feature of this linguistic stage was the development of writing. Beginning with the earliest writing systems, people could go beyond the limitations of human memory to systematically record and retrieve words. According to noted cognitive neuroscientist Mervin Donald, this adaptation to a written "storage system" led to deeper investigations into the nature of the world and the rise of "theoretical culture." In purely cognitive terms, Donald argues, we are still passing through this stage, "defined by the proliferation of external symbols, the growth of the communications media, and the introduction of 'cognitive artifacts' such as computers."[4]

For tens of thousands of years, simple messages were conveyed by drawings or pictures. But it was not until the development of writing that signs and symbols were combined in ways that allowed humans to communicate more fully which, in turn, led to the exploration and understanding of more complex ideas.

The Origins of Writing

More than 22,000 years ago, humans painted marks and animal figures on the walls of caves, such as those found at Lascaux in southwestern France and Altamira in northern Spain. However, it would be another 17 millennia before true writing appeared.[5]

Before writing, humans used different forms of logographic (word + picture) systems to communicate, called pre-writing or proto-writing. These included pictographs in universal forms such as flora, fauna, the sun, stars, human-like figures, body parts, and geometric designs. Pictographs, basically illustrated symbols that represented an object, an animal, a person, or an activity, could also be ordered to show the sequence of an event, such as a hunt. Ideographs were symbols that represented ideas, such as an eye with a tear that could convey sadness, or two sticks that might represent walking. Another type of pre-writing took the form of markings on mnemonic devices (memory tools), such as knot records and notched implements. Examples include the Ishango Bone (ca. 9000 BCE) from Zaire, which is thought to have recorded lunar rotations, and is considered the earliest writing implement,[6] and markings on tortoise shells and other artifacts, called *Jiahu* script (ca. 6600 BCE), found in Henan, China. These early symbolic systems conveyed messages and meaning, much like modern map symbols, graphic road signs, or musical notations, but they did not encode spoken language.

Among the most notable achievements began around 3000 BCE in the sprawling Harappan civilization that occupied the Indus Valley in India and Pakistan. Evidence indicates that the capital cities of Harappa and Mohenjo-Daro were highly organized. These settlements shared a unified government, and citizens led peaceful, orderly lives that revolved around agriculture and trade. Harappan artisans were the first to create small stamp seals, or tokens, which combined writing and images. As most of the designs on these seals portray domestic animals, it is believed they were a form of identification related to trading activities. The seals were made out of a soft mineral called steatite, a type of soapstone, which allowed images to be replicated by pressing the seals into wet clay or wax. Many seals had holes on the back, probably used for attaching string, which could then be tied around bundles as a means of identifying goods or owners. Over 4,200 Harrapan seals have been recovered from archaeological excavations.[7]

True writing systems are different from other symbolic communication systems, such as pre-writing. True writing systems have rules that assign meaning to symbols or characters (called script) and/or a clear arrangement of these characters, which are defined, shared, and understood by a community. The beginnings of writing systems also required some sort of permanent or semi-permanent physical means of representing the symbols so that they might be read and interpreted by others. What distinguishes

writing from other symbolic communication systems is that it represents language.[8]

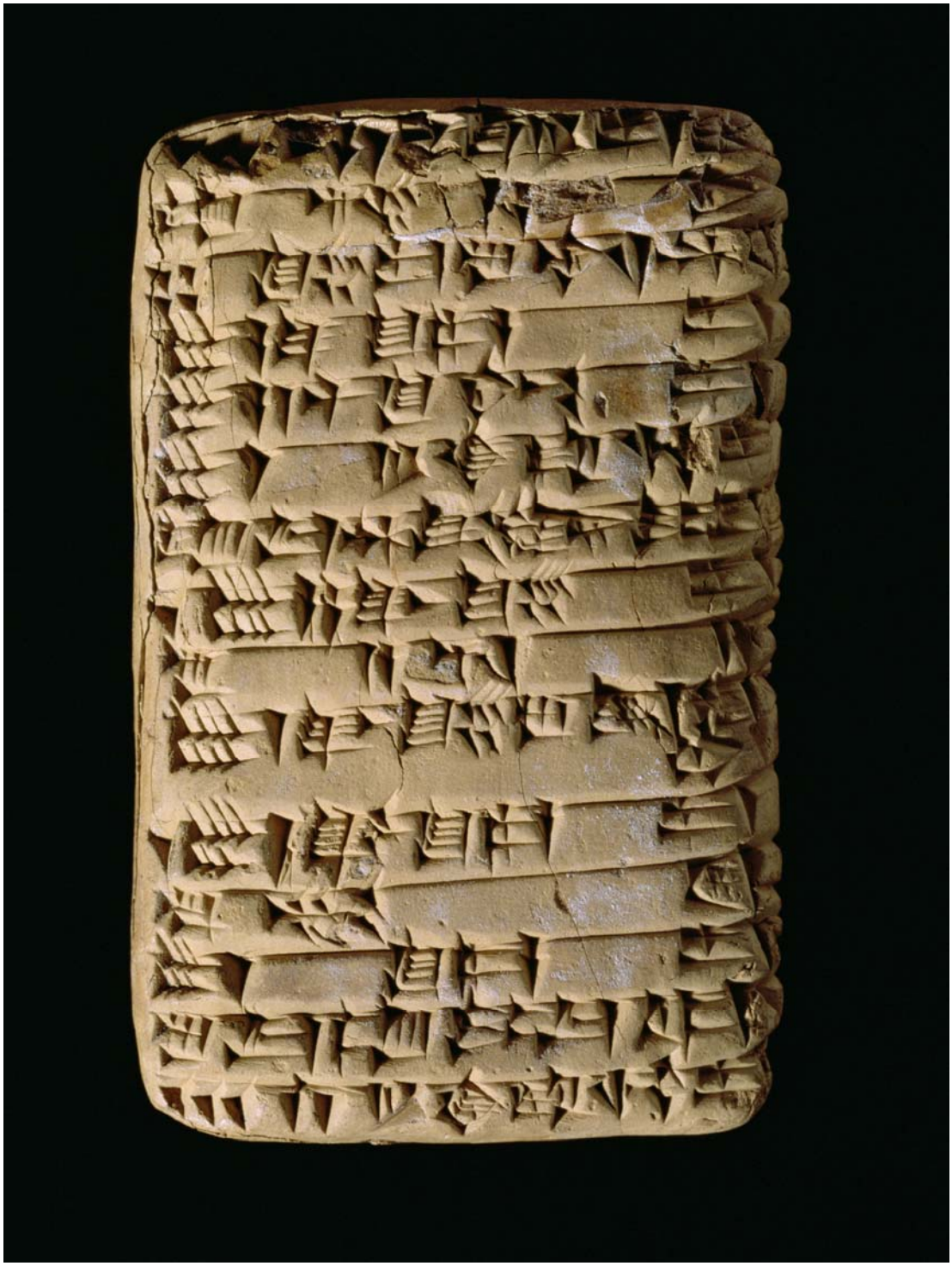

Figure 1. *Cuneiform tablet*; clay; Mesopotamia; ca.2300 BCE; Chester Beatty Library, Dublin, Ireland. Photograph © The Trustees of the Chester Beatty Library, Dublin / the Bridgeman Art Library.

Four different prehistoric societies in different geographic regions are credited with making the intellectual leap of developing completely different sets of signs or symbols for recording speech so it could be read: Sumer (Sumeria) in the Middle East, Egypt in North Africa, the Maya in Mesoamerica, and China in Asia. In each of these societies, however, writing developed to fulfill different needs or was used for different purposes. The Sumerians used early writing primarily for accounting, in which they recorded lists and numbers, while the Egyptians first used it to identify and record the ownership of goods. The Chinese initially used writing to record the forecasts that were made by interpreting cracks on oracle bones. In Mesoamerica, the Maya recorded numbers, astronomical information, and dates of significant religious, political, and social events. However, recent discoveries indicate that Mayan script may have developed from the writing systems of other Mesoamerican cultures, such as the Olmecs, Zapotecs, and Epi-Olmecs.

The origins of writing began around 3300 BCE in Mesopotamia. The area between the Tigris and Euphrates rivers in present-day Iraq was divided into Sumer in the south and Akkad in the north: two highly civilized societies, each with its own political and social organization. as well as language. The Sumerians and Akkadians lived harmoniously in fixed settlements comprised of small farming communities scattered around larger cities, such as Babylon. Thus, the earliest inscriptions were simple agricultural records, such as those from the temple complex at Uruk--pictographic lists pressed into clay that represented commodities such as sacks of grains and heads of cattle. Around 2900 BCE, the curves in the pictographs evolved into signs formed by straight lines. Sumerian scribes shaped the ends of reeds into styluses--implements with triangular tips--that were used for pressing wedge-shaped impressions at different angles into small pillow-shaped clay tablets, shown in Figure 1 (pg. 228). This writing came to be known as cuneiform from the Latin term, *cuneus*, meaning wedge, and over subsequent centuries, the pictographs vanished completely.[9]

The key factor in the development of writing was the relatively rapid transition to phonetization, in which pictorial icons became rebus symbols for phonetic sounds. In other words, the sentence, “I saw Bill,” could be represented by three sequential symbols: a human eye, a saw, and a bird beak or duck bill.[10]

Sumerian cuneiform script is generally considered to be the earliest writing system because it came to express every syllable and sound of the Sumerian language. After Sumerian was no longer used as a spoken language, cuneiform was adapted as the writing system for other languages, including those spoken in the Assyrian and Babylonian kingdoms. Cuneiform allowed greater communication and expression that, in addition to improved accounting records, was used for the preservation of divination texts, hymns, and literature, such as the Sumerian epic cycle of poems recounting the legend of the god-hero Gilgamesh.[11] However, of the 150,000 cuneiform

inscriptions that have been excavated, over 75 percent of them are bookkeeping and administrative records.[12]

While cuneiform spread throughout Mesopotamia, other early writing systems were being developed in Egypt (ca. 3200 BCE), China (ca. 3000 BCE), the Indus Valley (ca. 2500 BCE), Crete (ca. 2000-1600 BCE), and, later, Mesoamerica (ca. 500 BCE).[13] The ancient Egyptians borrowed the rebus principle from the Sumerians, but adapted it to suit the different nature of their language, as seen in Figures 2 and 3 (pg. 231). The Egyptians are credited with developing the first true form of writing, a system with several hundred hieroglyphs that stood for both spoken sounds in the language as well as for ideas. Words were made of combinations of phonograms, either alphabetic or syllabic phonetic symbols that represented single sounds in the language, plus logograms, pictographic elements that represented objects or beings. The third element was the determinatives—glyphs at the end of a word to clarify its meaning.[14]

Figure 2. *Hieroglyphics on Tomb in Valley of the Kings;* Egypt; n.d; Luxor, Egypt. Photograph © Bojan Brecelj/CORBIS.

Figure 3. Egyptian artist (Abydos possibly, Northern Upper Egypt); *Stela of Mentuwoser;* painted limestone; Middle Kingdom, 12th Dynasty, ca. 1954 BCE; H: 41 1/16 in. (104.3 cm.), W: 19 9/16 in. (49.7 cm.); Metropolitan Museum of Art, New York, NY. Photograph courtesy of the Metropolitan Museum of Art, Gift of Edward S. Harkness/Photo by Max Yawney.

Egyptian hieroglyphics covered the walls of temples, monuments, and tombs, glorifying and immortalizing the names and activities of the pharaohs, high-ranking officials, and numerous deities. An example of this can be seen in the *Stela of Mentuwoswer* (ca. 1961-1917 BCE) in figure 3. The carved stone panel or *stela* depicts an official called Mentuwoser, whose good deeds and prayers are inscribed in the hieroglyphics above the picture. Erected in the temple precinct of Osiris at Abydos, the *stela* was meant to ensure Mentuwoser's immortality and aid him in the afterlife.[15]

In addition to using hieroglyphics on architecture, Egyptian scribes wrote with ink on papyrus, a paper-like material made by pounding the leaves of plants into flattened sheets. Papyrus was light, thin, flexible, and easily stored, an advantage over the bulky clay tablets used in Mesopotamia. Hieratic script, the cursive form for everyday purposes, and more formal hieroglyphics on papyrus were used to record chronological histories, such as lists of kings, royal marriages, and wars; to draw up legal codes, marriage contracts, bills of sale; and for numerous texts dealing with science, cooking, astronomy, pharmacology, and calendars that recorded time. They were also used for literature, such as historical sagas, love poems, adventure stories, and Books of the Dead. The earliest discovered papyrus comes from a First Dynasty tomb at Saqqara (ca. 3000 BCE), but its use continued in Egypt for another 3,700 years. Papyrus also was exported as a source of revenue.[16]

Another important aspect related to Egyptian writing was something new in history—the development of an influential social class of scribes, headed by those who were considered priestly scribes. Ancient Egyptians valued literacy and education. Being able to read and write was a mark of privilege and could be a source of immense power. This was significant because although pharaohs had deified status, they rarely learned how to read or write. Boys began scribal school when they were about 10 years old, but only those who were gifted were allowed to continue their studies as adults. The art of writing was taught through dictation, copying, written exercises, and chanting in unison. With over 700 signs to remember, the process of first learning hieratic script and then hieroglyphics took several years of intense study. Each scribe had his own writing kit that included a flat palette with two shallow cups for holding red and black inks, a narrow wooden brush case and a small water jug.[17] An artist was called *sesh-ked*, or "outline scribe," indicating that most artists were required to be literate as well.[18]

It is generally believed that the written Chinese language developed independently from other systems, as the basic principles of Chinese writing have remained the same since the Neolithic period (ca. 7000-2000 BCE). Unlike other written languages that use alphabets, written Chinese is a language of symbols that reflects ideas or things, having evolved from ancient pictograms and ideograms to the characters that are used today. Early characters resembled stylized images of whatever they represented. For

example, the Chinese characters for “sun” or “moon” look like images of the sun or moon. Characters were combined to convey other meanings. The character for the word “good,” for example, looks like a stylized image of a mother and child, and the character for the word “peace,” looks like a stylized picture of a woman standing beneath a roof. Later, Chinese characters became even more stylized and bore little resemblance to what they represented.[19]

Figure 4. *Inscribed Oracle Bone*; China; Shang dynasty 14th-13th century BCE; Royal Ontario Museum. Photograph courtesy of © Royal Ontario Museum/Corbis.

Script developed around 1600 BCE, with the earliest form of true writing dating from the Shang dynasty (ca.1500-1050 BCE). This script, called *jiaguwen*, was used to inscribe pictographic characters on ox bones called "oracle bones," like the one shown in Figure 4 (pg. 231), which were used in the royal court for divination. A slightly different style, called *dazhuan* or "large seal" script, was used primarily on cast bronze vessels between 1100 BCE and 700 BCE. *Xiaozhuan*, or "small seal," was a more linear script style, while *lishu*, or clerical script, was a more efficient script that was used mainly by bureaucrats during the Qin (221-207 BCE) and Han (206 BCE-220 CE) dynasties. The *lishu* script requires fewer strokes and is more free-flowing, thus, it was easily adapted to pen and brush. During the Han dynasty, the entire system was codified with 10,000 characters, yet the system remains essentially unchanged today, with *lishu* characters being identical to modern characters.[20]

Great works of literature, such as the Confucian classics, were written in the language known as classical Chinese. Learning how to write this was extremely difficult and time-consuming, as it involved memorizing 50,000 characters. Scribes were trained in grammar, calligraphy, and the traditional rules of literary Chinese, although literacy was usually limited to members of the upper classes who could afford the training.[21] The spoken Chinese language is different in the north and south of the country, so the written language has been a unifying element in the development of the Chinese cultural identity.

Of the four original writing systems, writing appeared last in the Americas (1st millennium BCE), where it was used by the ruling elite as propaganda. It was meant to be seen by both rival rulers and the local community, with inscriptions on monuments glorifying victorious leaders and their conquests. Writing was widespread in Mesoamerica before European colonization, but each separate society had its own script. The major writing systems were Zapotec, Epi-Olmec and Maya but, by the Classic (300-900 CE) and Post-Classic (900-1500) periods, similar writing systems spread to other societies, such as the Teotihuacano, Xochicalco, Mixtec, Mixteca-Puebla, and Aztec. The types of writing systems in Mesoamerica ranged from simple "picture-writing" to complex logo-phonetic systems that could record speech and literature. Mesoamerican scripts are often called glyphs. Like Egyptian hieroglyphics, they are pictorial, often resembling stylized objects, animals, and people. Human body parts, such as arms and legs, often denote action.

The inception of hieroglyphic writing by the Maya began in the 1st century CE, but was fully developed in the Late Classical period (600-900) at ceremonial centers such as Tikal in Guatemala (Figure 5, pg. 235). Writing was used exclusively by the Mayan priestly ruling class to record events of royal and religious significance, numbers, and dates, such as the "Long Count" calendar, as well as information about important events and astronomical

data. The script has been notoriously difficult to decipher because of the large number of logographs (word signs) and the fact that their meaning changed over various periods. In addition, Mayan script lacks a narrative structure, with no clear beginning, middle, or end.[22] Mayan glyphs were a syllabic system, with the script using one to five glyphs within a block, as pictured in figure 5.

Figure 5. *Detail of Mayan Hieroglyphs on Stela at Tikal*; ca. 600-900; Tikal, Guatamala. Photograph © Robert Harding World Imagery/Corbis.

Writing used by the Epi-Olmec and Mayan civilizations achieved the greatest phoneticism, with later scripts, such as those used by the Aztecs and Mixtecs, becoming more pictorial. By 900 CE, inscriptions on monuments practically vanished, replaced by colored codices painted on lime-whitened bark paper. These represented mostly histories, genealogies, ritual data, and astronomical tables. An example of this form can be seen in Figure 6 (pg. 237), a leaf of the Dresden Codex (ca.1300-1542) showing the Venus table, the phases of the planets, and various Mayan deities. Only four codices survived the Spanish conquest.[23]

Writing held such a special and important role in ancient societies that myths and deities were created to explain its divine origins. Ancient Egyptians attributed the invention of writing to the god Thoth (also known as Dhwty or Djeheuty), who was thought to be the scribe and historian of the gods, keeper of the calendar, inventor of art and science, and the creator of speech. In Mesopotamia, the Sumerian god Enlil was believed to have created writing, while the god Nabu served a similar function during the later Assyrian and Babylonian periods.

The Maya believed that the supreme deity, Itzamna, was the timekeeper and the inventor of writing. Itzamna did not write himself, but enlisted the aid of a pair of monkey gods to perform scribal duties. In China, the invention of writing has several mythological beginnings. One legend says that writing was given to Fu Xi (ca. mid-2800s BCE), one of the mythological Three Sovereigns, by Huang Long, the Yellow Dragon that emerged from the River Luo. According to another, written characters were invented by the ancient sage Ts'ang Chieh (ca. 2650 BCE), who was a minister in the court of the Yellow Emperor Huang Di (r. ca. 2697-ca.2597 BCE).[24] A third attributes the discovery to Huang Di himself, who was inspired by the footprints of birds and animals. Most of these notions allude to the divine nature of writing and communication between the gods in heaven and humans on earth.[25]

Except for Mayan hieroglyphics and Rongorongo script from Easter Island, almost all known writing systems of the world today are descended from the systems developed either in Sumeria or China. Although ancient Sumerian, Egyptian, and Maya writing systems are no longer in use, the Chinese system is still used today.

In the second millennium BCE, ancient Greeks already had a writing system, but it was abandoned around 1100 BCE, at the time of the Dorian invasions. A few centuries later, Phoenician sailors and traders spread their alphabet to Greece and other people of the eastern Mediterranean, and new alphabets such as Aramaic, Hebrew, and Arabic emerged. However, the spoken Greek language was impossible to transcribe into any of these alphabetic systems. Around 800 BCE, the Greeks borrowed signs from Aramaic to transcribe the sounds of their vowels, and by the 5th century BCE, the 24 letters of Greek alphabet (17consonants and 7 vowels) came into existence. The Greek alphabet, in turn, influenced the development of others, such as the Coptic, Armenian, Georgian, and the Latin alphabets.[26]

The use of Arabic script was more widespread than any spoken language because of Islamic conquests in regions as geographically diverse as North Africa, Asia Minor, India, and part of China.[27] The invention of these alphabets led to the reduction of the number of signs or characters one needed to learn to be literate, making writing available to ordinary people. In contrast, today a standard Chinese dictionary would list approximately 50,000 characters. According to scholars, there are over 3,000 languages in use today, but only a hundred or so are written.[28]

The Evolution of Writing Surfaces

From antiquity until the age of printing, manuscript books supplanted papyrus scrolls as a means of storing and disseminating information. This came about largely due to the introduction of a new medium--parchment. Early scribes

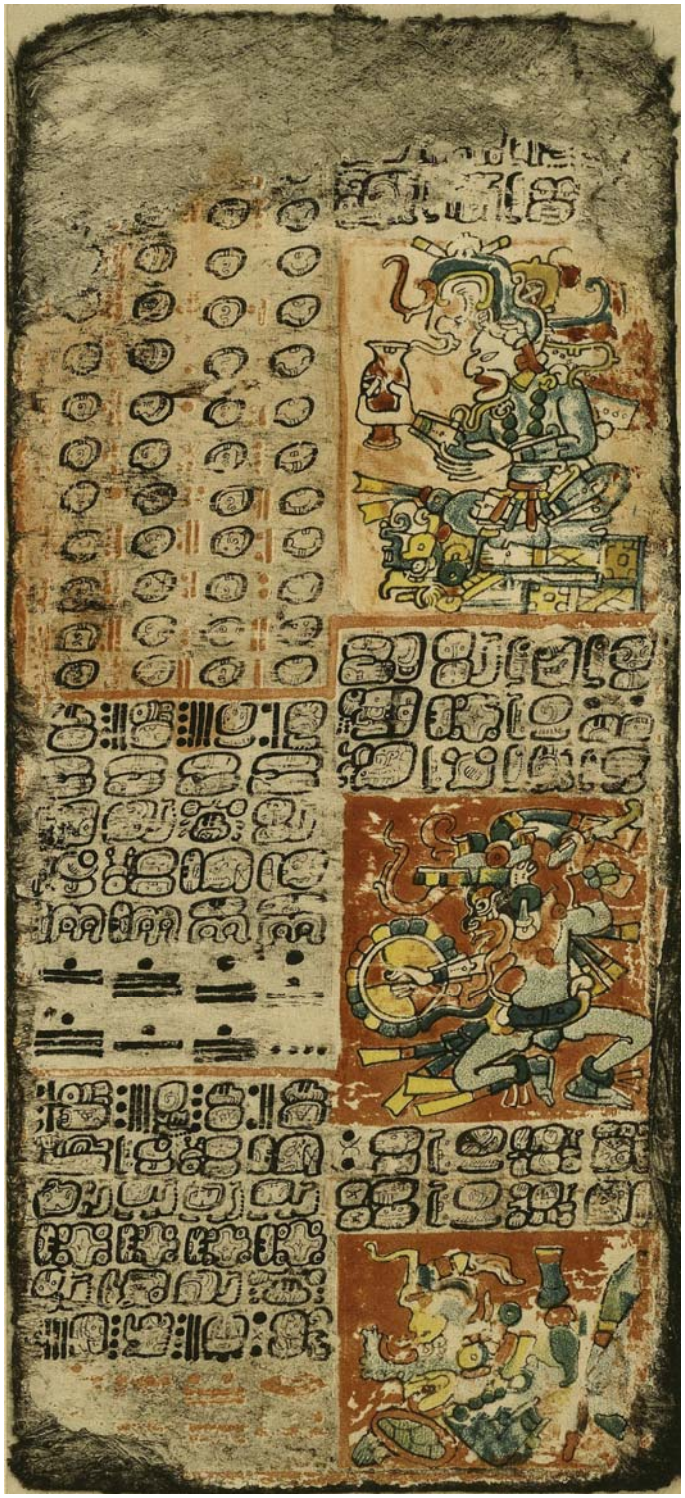

Figure 6. Maya artist (Yucatan Peninsula probably, Mesoamerica); *Venus table showing the phases of the planet alongside depictions of gods from the Dresden Codex (1892 facsimile edition)*; paint and lime plaster on *Amate* (ficus) fiber paper; Pre-Columbian, ca. 13th-14th century; H: 12 ¼ in. (31.5 cm.), W: 9 in. (23 cm.); Ethnologisches Museum, Staatliche Museen zu Berlin, Berlin, Germany. Photograph courtesy of Bildarchiv Preussicher Kulturbesitz/Art Resource, NY.

wrote on rolls of papyrus, which was costly, fragile, and cumbersome to use. Later, they used parchment for manuscripts, or sheets of parchment bound together to make books.

Parchment was supposedly developed during the 2nd century in the ancient Greek city of Pergamon (in present-day Turkey), mainly because Egypt refused to sell papyrus to its rival in Asia Minor. Scribes in Pergamon resorted to using the hides of animals, such as sheep or goats, which could accommodate writing on both sides. Vellum, high-quality parchment, was made from the skin of very young or stillborn calves and had the advantage of not absorbing ink or paint and better preserving colors. The process of making parchment began by soaking hides in a lime bath, scrubbing them to remove hair and grease, and then stretching them on a grid to dry in the sun. Then they were dusted with plaster to absorb any remaining grease and then scraped again. The process was repeated several times until the sheets were completely clean, thin, and flexible. Parchment was an expensive material, and making a book like a complete Bible would require the skins of several hundred animals, not to mention years of a scribe's work. Manuscripts, which were less expensive to produce and became a good source of income for monasteries, were preferable.[29]

Papermaking was first developed by the Chinese, who may have discovered the process as early as the 2nd century. Chinese paper was made by mixing fibers derived from plants or rags in water, which were then soaked and beaten into pulp with a wooden mallet. Cloth stretched on a bamboo frame was used as a dipping sieve for collecting the pulp slurry from the vat and holding it for drying. Although it was a closely guarded secret, papermaking spread from China to Korea, Vietnam, and Tibet in the 3rd and 4th centuries, and then to Japan in the 6th century.

In 751 CE, when China was at war with the Islamic world, legend has it that Islamic warriors captured several Chinese papermaking artisans in a battle, held them as prisoners, and forced them to make paper for their captors. Thus, the secret process spread to Persia, India, and Samarkand. From there, papermaking spread throughout the Muslim world. Paper was first exported from the Middle East to Byzantium and parts of Europe in the 10th and 11th centuries, but it did not take hold in Europe until the 12th century, when the Moors invaded Spain and Portugal and brought their papermaking techniques with them. At first, paper was not favored by the Christian world because it was viewed as something from Islamic culture. In fact, in 1221, a decree from Holy Roman Emperor Frederick II declared all official documents written on paper to be invalid. With the invention of the printing press in the mid-15th century, however, European attitudes toward paper changed.[30]

Illuminating the Word

Charlemagne (742-814) set about reviving the knowledge and culture of the Roman civilization that had almost disappeared in Europe as a result of the Barbarian subjugation. Appalled by the widespread illiteracy of his time, inaccuracy in texts, and the ignorance or negligence of the clergy, he called in foreign scholars to restore the schools of France, obtained books and teachers from England, established a palace school, and planned educational reforms that included the study of Latin texts. Charlemagne also ordered the creation of new copies of these Latin texts, which were to be accurately transcribed from the originals. The majority of books and manuscripts were written by scribes who, unlike their predecessors in Egypt and Mesopotamia, did not compose, but copied. Until the late Middle Ages, the majority of Western manuscripts and books were written by monks, working as scribes in small cubicles or in larger scriptoria that were set up in the cloisters of monasteries. The monks, as well as some nuns, copied mostly religious texts, traditionally speaking the sacred words aloud as they copied, which was considered an act of prayer and meditation.[31]

Illuminated manuscripts are works in which the written text is embellished with painted decoration that might take several forms. Initials of chapters or paragraphs might be ornamented simply, or with highly decorative foliage, flowers, zoomorphic figures, or many interlaces that might extend over the whole page in what is called a carpet design. Other manuscripts depict miniature scenes painted in vibrant colors. Sometimes the borders around the text were decorated, or paintings would be made on the margins with a scene carrying across several pages. Traditionally, paints for illuminations were derived from substances such as stones, metal deposits or ores, or plants, which were ground into a powder and fixed with glair, a substance made from beaten egg whites. In Europe, gold leaf was made by pounding sheets of gold until they were very thin. These were affixed to the parchment or vellum with glair, honey, size (animal gelatin), or liquefied sugar. Sometimes the gold leaf was burnished and then tooled with designs.[32] These painted decorations are called *enluminures*, or illuminations. Formerly, the term “illuminated manuscript” only referred to those works decorated with gold or silver. However, the term is now used in reference to any decorated or illustrated manuscript from the Western, Hebraic, or Islamic traditions. Often Asian and Mesoamerican works are described as painted.

During the 7th through 9th centuries in England and Ireland, the centers for manuscript illumination were monasteries. Some of the ornate forms on these works are thought to have been based on codices from Italy and Coptic Egypt, with ornate carpet motifs resembling Islamic Qur’ans and Hebrew Bibles. However, the interlacing forms were based on pre-Christian Celtic metalwork.[33] Such influences can be seen in the leaf from the *Lindisfarne Gospels* (ca. 680-720 CE), shown in Figure 7(pg. 240), attributed to Bishop Eadfrith of Lindisfarne (698-721 CE). Thought to have been produced at the

Figure 7. Attr. to Bishop Eadfrith of Lindisfarne (Northumbria (England), 698-721); *Lindisfarne Gospels,* fol. 29 (Cotton MS, Nero D.IV); ink, pigments and gold on vellum; ca. 680-720; H: 13 ½ in. (34.2 cm.), W: 9 ¾ in. (24.8 cm.); The British Library, London, UK. Photograph courtesy of HIP/Art Resource, NY.

Lindisfarne Priory off the coast of Northumbria in northeast England, the leaf's two largest letters are made of precious materials and have complicated interlaced designs, representing an exultation of Christ through a passage from the story of Christ's birth recounted by Saint Matthew. The ornate letters are the first two of Christ's name in Greek—*chi* (X) and *rho* (P). The shape of the *rho* suggests a shepherd's crook, a reference to Christ's role as shepherd and lamb of God.

Pictured in Figure 8 (pg. 242) is a leaf from another type of illuminated manuscript, the *Prato Haggadah* (ca.1300), a Jewish book of prayers and stories that is read during the Passover holiday dinner, the *seder*. Typically, the form and designs of illuminated Hebrew manuscripts from the late 9th century to the present reflect the region where they were created. The example shown in Figure 8 is one of the oldest surviving illuminated Spanish Haggadot. The text is written in Sephardic script, which is characteristic of Jewish documents from the Iberian Peninsula.[34] Although Jewish law prohibits the decoration of Torah scrolls, medieval religious and secular works were embellished. Featuring vine-like flora, birds, and animal hybrids, this leaf also includes a small, stylized illustration of the land of Goshen, which is referenced in the text. Two barely visible, squatting Atlantis figures support a large, embellished text block at the bottom of the page.[35]

Detailed ornamentation such as this required the work of specialists–gifted artists who were illuminators and miniaturists. Motifs were first outlined with a stylus, after which details were added with a goose-quill pen and ink. Areas to be filled with gold or silver leaf were first painted with gesso to cushion the leaf and provide a surface to which it would adhere. The last phases involved the leafing, outlining of characters, and painting of pigments with a very fine brush.[36] Illumination was a complex and costly process, usually reserved for special books, such as an altar Bible. Wealthy patrons often commissioned richly illuminated "books of hours," which set down prayers appropriate for various times in the liturgical day or calendar year, or other types of prayer books such as the Haggadah in Figure 8 (pg. 242).

Toward the end of the 12th century, Europeans were beginning to produce manuscripts other than religious works. Secular scribes who had trained or worked with monks began organizing themselves into guilds and workshops, drafting documents for an emerging merchant class and, by the 13th century, copying texts for a growing student clientele. Manuscript culture in cities created new jobs built around the making, copying, and trading of manuscripts, which typically was regulated by universities. Soon, the copyists formed fraternities with closely guarded technical secrets, strict rules for membership, and carefully controlled apprenticeships of no less than seven years. The last year of the apprenticeship was devoted to creating a "masterpiece" which, if so judged by other guild members, awarded the apprentice the right to open his own shop. By the 16th century, after

Figure 8. Unknown artist (Spanish); *Prato Haggadah, Folio 11r*; ink, gesso, paint, and gold leaf on parchment; ca. 1300; H: 8 ¼ in. (21 cm.), W: 5 7/8 in. (14.9 cm.); Library of the Jewish Theological Seminary, New York, NY. Photograph courtesy of the Library of the Jewish Theological Seminary.

mechanized printing was introduced, ornate manuscripts were mostly illuminated by artists retained in the service of nobles or royals. Their work was usually created only for special occasions, such as noble or royal births, weddings, or other noteworthy events.[37]

The Qur'an, the Muslim Holy Book, is considered to be the Word of God, conveyed by the angel Gabriel to the Prophet Muhammed. Copying the Qur'an is regarded as a pious act. Since the birth of Islam, calligraphy was considered a sacred art form. Early Qur'ans were written with *hijazi* script. A more formal style known as *kufic* developed later on.[38]

Arabic is written and read from right to left. Because vowels are not necessarily transcribed, the flow of the cursive letters (which are joined

Figure 9. Unknown artist, attr. to Spain; *Leaf from a Qur'an manuscript*; ink, colors, and gold on vellum; 13th-14th century; H: 21 1/16 in. (53.5 cm.), W: 22 in. (55.9 cm.); Metropolitan Museum of Art, New York, NY. Photograph courtesy of the Metropolitan Museum of Art, Rogers Fund.

together) allows for creative forms. The Arabic alphabet consists of 18 letters which, when differentiated with various marks and accents used to indicate vowels, total 28. Geometric principles are employed in the proportions of the alphabet, with rules based upon the size of the first letter, *alif*, which is a straight, vertical stroke. A particularly beautiful quality of Arabic script lies in its rhythms of the vertical, horizontal, and curved letters and its ability to take infinite forms.[39]

The leaf from a Qur'an manuscript (13th-14th century) shown in Figure 9 (pg. 243) is written in a calligraphic style of Arabic script called *maghribi*, which is found in Qur'ans from Northern Africa and Islamic Spain. In this style, the horizontal elements of letters are extended, and diacritical marks appear in blue or green. The placement of the three illuminated medallions marking the breaks between verses forms a diagonal complement to the horizontal lines of script. The large medallion, set off by itself at the top left, is filled with an intricate curvilinear pattern inspired by plants, while the other two medallions are filled with geometric interlace.

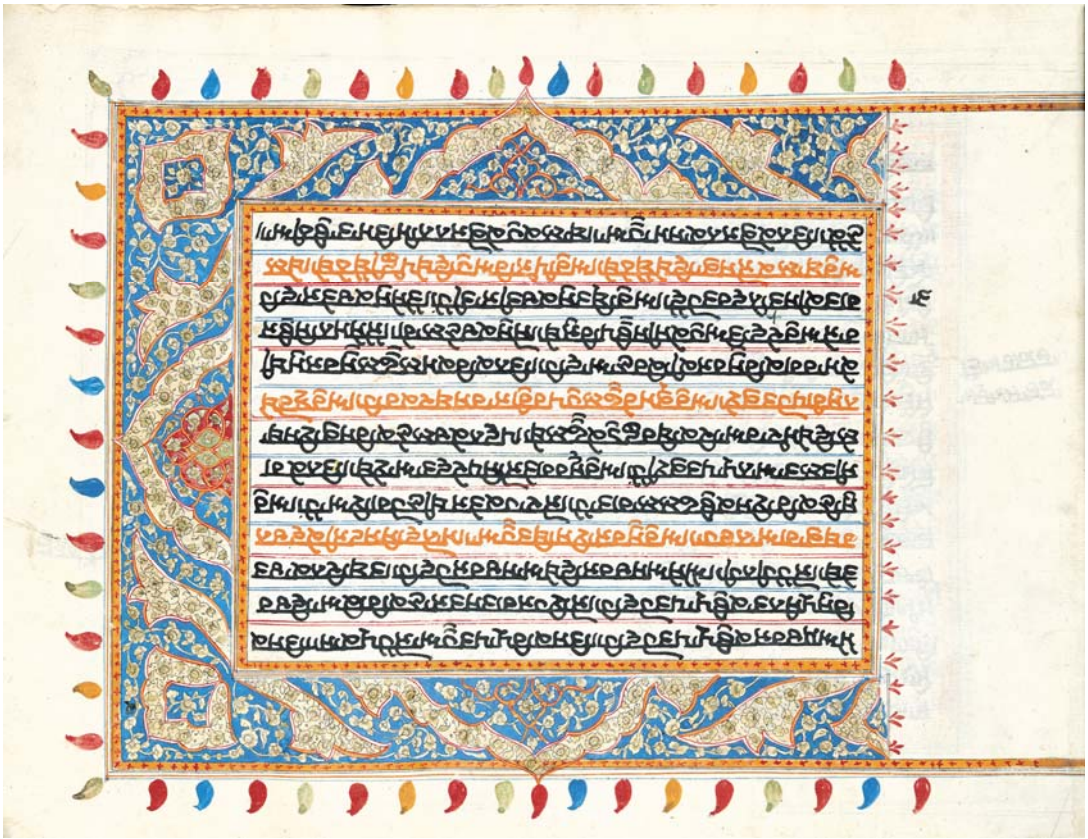

Figure 10. Indian School, *Manuscript 205/1203 folio 49*; vellum; n.d; Musee Conde, Chantilly, France. Photograph courtesy of Giraudon /the Bridgeman Art Library.

Manuscript illumination in western India first began with the tradition of palm leaf books (ca.1100-1350), which were later supplanted by paper books.

Indian scripts are basically alphabetic with a highly structured phonetic system, and words are typically arranged around a "power," a type of horizontal bar that connects all the letters to each other.[40] The example in Figure 10 (pg. 244) has no narrative illustration, although the 13 lines of script are enlivened with three rows written in bright orange. The rich borders on three sides resemble carpet designs with interlaces of floral patterns and paisleys on a rich, turquoise background. The carpet effect is heightened by the small paisley shapes around the three borders, painted in alternating festive colors to resemble tassels.

An Austrian master scribe and calligrapher named Aaron Wolf Herlingen (ca. 1700-1757) used a uniquely Jewish art form called migrography to produce patterns with script so small it is generally illegible. He belonged to a group of Jewish artists that flourished in Central Europe in the eighteenth century. In *The Five Scrolls* (1748), shown in Figure 11 (pg. 246), the positioning of text creates outlines of images and decorative patterns. Passed down from scribe to scribe, micrography dates back to the 9th century when it spread from Egypt to Yemen and then to Europe.[41]

The Five Scrolls contains text written in Hebrew, Latin, German, and French from five books of the Hebrew Bible—Ecclesiastes, Esther, Song of Songs, Ruth, and Lamentations. Micrography is part of a tradition in Judaism that focuses on the artistic presentation of the word in religious text, rather than using figurative representation.[42]

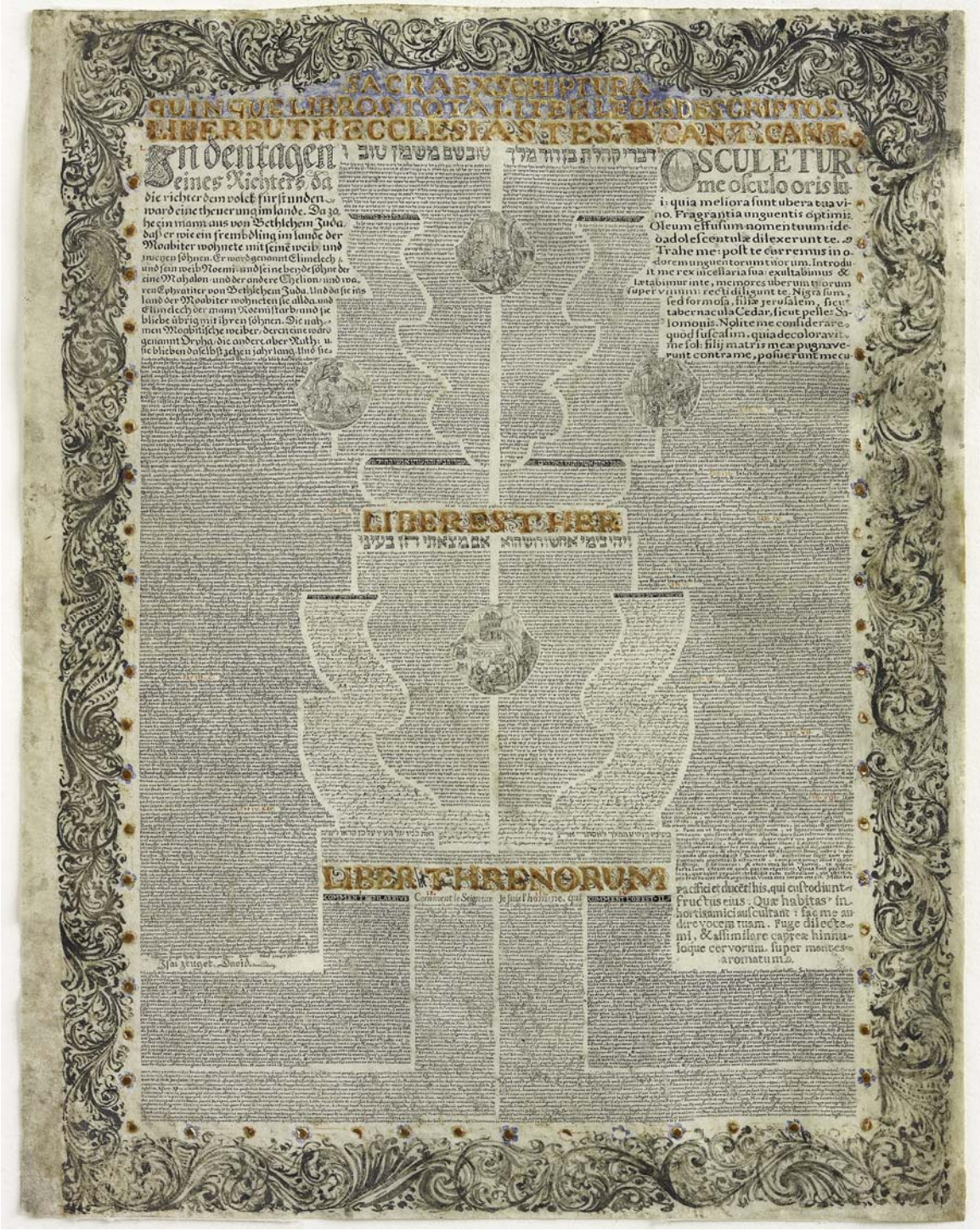

Figure 11. Aaron Wolf Herlingen (Austrian, ca. 1700-ca.1757); T*he Five Scrolls written in micrography in four languages*; ink and gold leaf on paper; 1748; H: 7 ½ in. (19.1 cm.), W: 6 in. (15 cm.); Israel Museum, Jerusalem, Israel. Photograph courtesy of the Bridgeman Art Library.

Asian Calligraphy

Chinese calligraphy is an ancient art form still widely practiced throughout China today. Regarded as one of the highest art forms, calligraphy is a distinctive writing style that in the past had been considered a distinguishing characteristic of a Chinese scholar.[43] Painters began using calligraphy to incorporate poetry and other text into their work.

As evident in Figure 12, many Chinese characters are quite complex and are produced with up to 26 strokes. Each character is contained within a square, and strokes are applied in a particular order. In the best examples of calligraphy, the brush and ink lines seem to "dance" across the page. In Chinese culture, calligraphy is thought to communicate the spirit of the artist.[44]

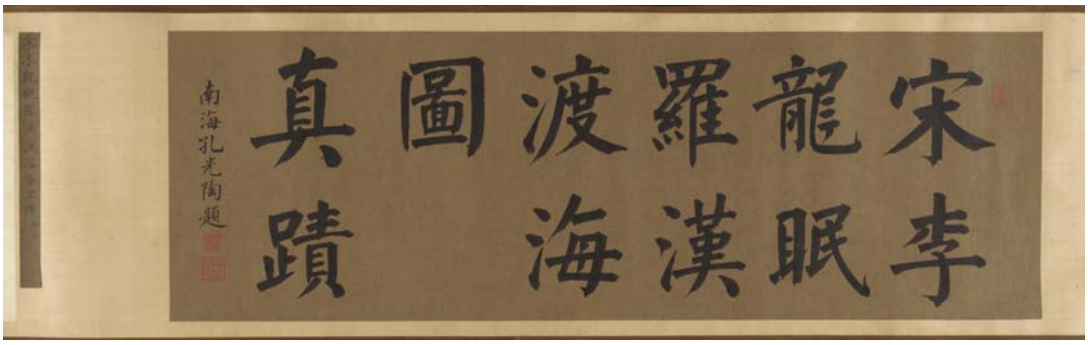

Figure 12. Unknown artist, attr. to China; *Luohans Crossing the Sea*; Ink on silk; China; Qing dynasty 1644-1911; H: 11.6 ft. (356.0 cm), W: 9.5 in. (24.3 cm); Freer Gallery of Art, Smithsonian Institution, Washington, DC. Photograph courtesy of Freer Gallery of Art and Arthur M. Sackler Gallery, Smithsonian Institution.

In *Bamboo in the Wind* (1350) shown in Figure 13 on page 248, Wu Zhen creates a complex relationship between text and image, with skillful use of calligraphic brushwork to depict bamboo leaves. Bamboo, a meaningful subject for Chinese painting, is a symbol of strength, courage, and integrity, because it bends without breaking. The writing on the work describes the image and acknowledges the influence of the 11th-century artist, Su Shi, a celebrated painter of bamboo.

Figure 13. Wu Zhen (Chinese,1280-1354); *Bamboo in the Wind*; ink on paper; Yuan Dynasty, 1350; H: 8 ft. 2 2/5 in. (250.4 cm.), W: 21 1/3 in. (54.1 cm.); Freer Gallery of Art, Smithsonian Institution, Washington, DC. Photograph courtesy of the Freer Gallery of Art and the Arthur M. Sackler Gallery, Smithsonian Institution.

Japanese calligraphy looks thinner than Chinese calligraphy. A “trembling style” appears in *Poems with Floral Decoration* (1652), shown in Figure 14, by Kojima Soshin. Kojima was a student of the revered calligraphy master Hon’ami Koetsu (1538-1637), who had developed a style of scroll calligraphy and decoration known as *Rinpa*.[45] The horizontality of the scroll and gold fields are balanced by the vertical lines of poems conveyed through elongated brushstrokes and woven rhythmically throughout the composition. Bands of gold at the top and bottom suggest a horizon and landscape that set off clusters of flowers.

Figure 14. Kojima Soshin (Japanese, 1580-ca.1656); *Poems with Floral Decoration*; handscroll, ink and color on gold-decorated paper; Edo period, 1652; H: 12 ½ in. (31.7 cm.), W: 25 ft. (765.6 cm.); Freer Gallery of Art, Smithsonian Institution, Washington, DC. Photograph courtesy of the Freer Gallery of Art and Arthur M. Sackler Gallery, Smithsonian Institution.

At first glance, the work in Figure 15 (pg. 250) appears to be traditional Chinese calligraphy. Closer inspection reveals that the artist has adapted the brushstrokes of traditional Chinese calligraphy to write words in English in a compact square form so that Westerners can understand the writing. The work is from the long-term Square Word Calligraphy project begun in 1994 by Xu Bing, who moved from China to New York after the 1989 massacre in Tiananmen Square.

The project is multifaceted, incorporating primers, classes, instructional videos, and computer software and fonts to generate these characters digitally. Xu Bing’s work investigates how words create or fill gaps between different cultures.[46]

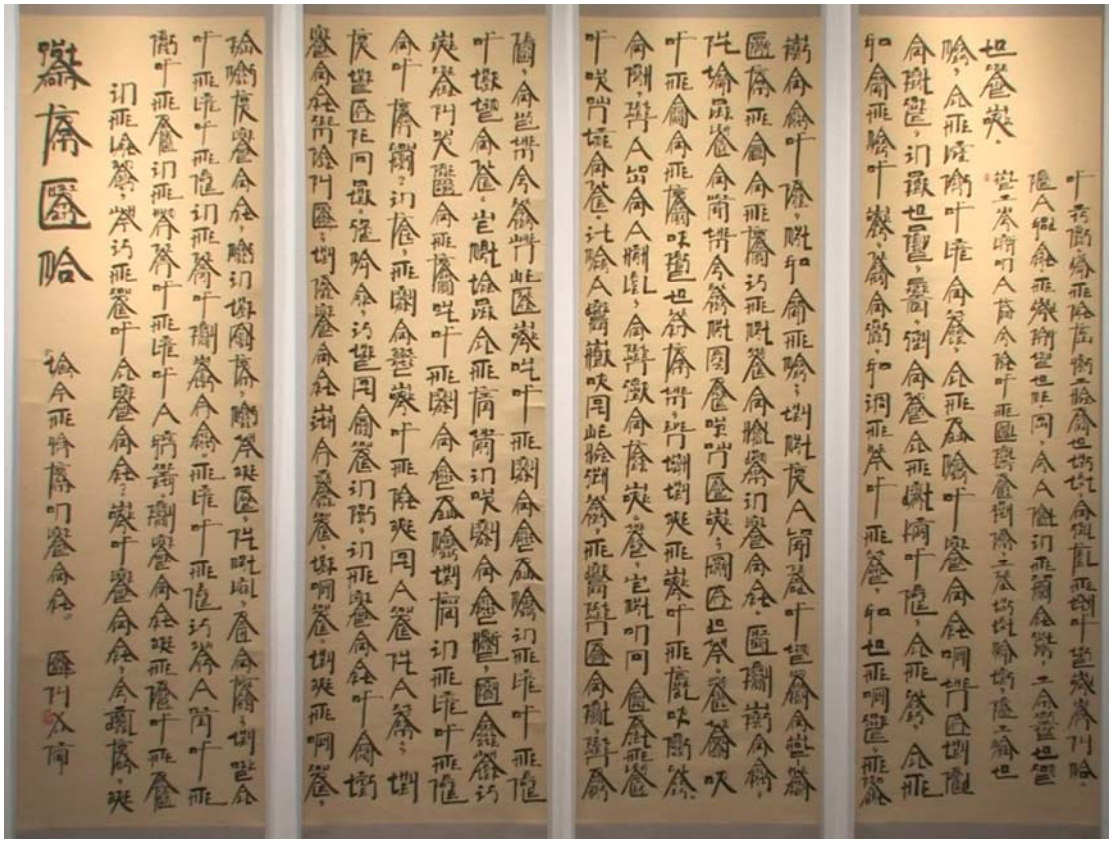

Figure 15. Xu Bing (Chinese, b.1955); *Quotations from Chairman Mao*; ink on paper, Japanese silk backing; 2001; Four scrolls, each 116 x 27.2 in. (294.6 x 69.1 cm.); Photograph courtesy of Xu Bing Studio.

The Printing Press

The invention of the printing press had a profound impact on the art of writing. Before 1440, although the technology for printing books was already in use in the Far East, in Europe books were still laboriously copied and illustrated by hand. That changed when German Johann Gutenberg (1398-1468) mechanized printing using movable type. Initially, the printed page looked like a form of handwriting, with large areas of the page left blank so that it could be decorated later by an illuminator.

The Gutenberg Bible, printed in 1450 and shown in Figure 16 (pg. 251), was the first book to be printed using movable type.[47] Now less expensive, copies of the Bible could reach a much broader public; previously access to costly, handwritten Bibles was limited to priests and Church officials. This ushered in an age of reform, which promoted direct access to God and questioned the role of the clergy.

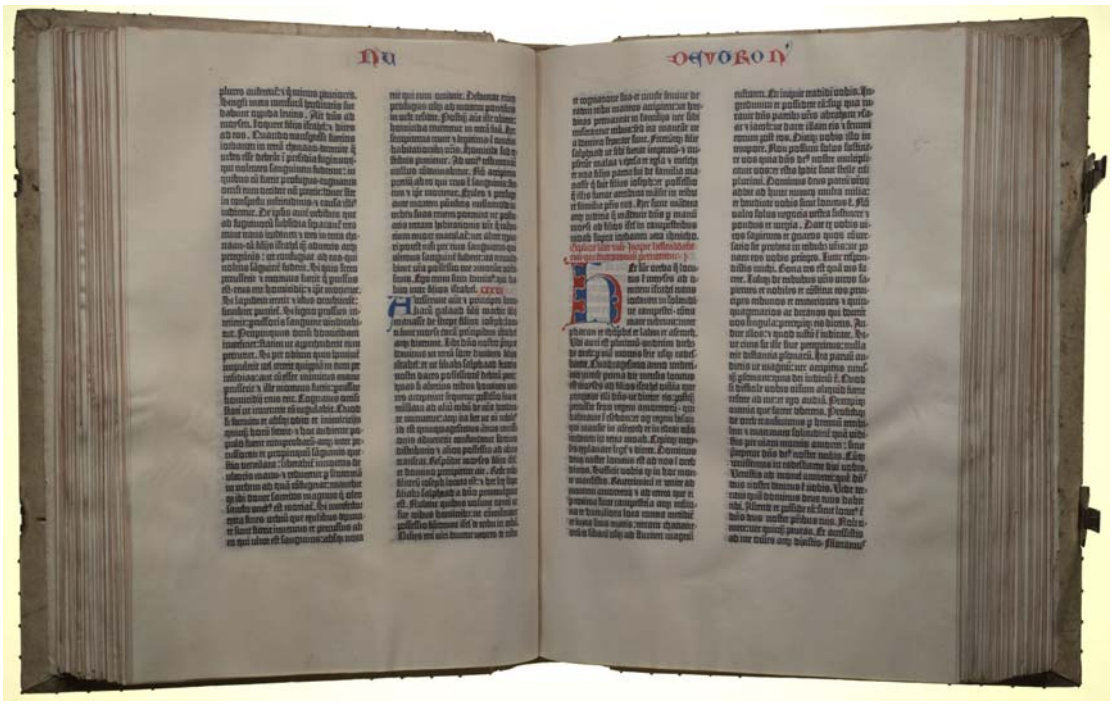

Figure 16. Johann Gutenberg (German, ca.1400-1468) (publisher); *Biblia Latina (Latin Bible)*; type on vellum; ca. 1455; H: 16 in. (40 cm.), W: 12 in. (30 cm.); Otto Vollbehr Collection, Rare Book and Special Collections Division, Library of Congress, Washington, DC. Photograph courtesy of the Library of Congress/Photo by Octavo.

Within a generation, the printing press revolutionized book production. The unprecedented dissemination of books during the Renaissance ushered in a new era of knowledge acquisition and exchange of ideas

Giving Words New Meaning

After 1462, the use of the printing press spread throughout Europe. Over time, typecasters and typographers sought to create beautiful, classic, or innovative alphabets that could be cast in metal and arranged on a printed page.[48]

In 1909, Filippo Tommaso Marinetti (1876-1944), Italian poet and political activist, published his first Futurist Manifesto, which celebrated technology and progress. Marinetti translated Futurist ideals into aesthetics in his book *Zang Tumb Tumb*, which was about his reporting experiences during the Balkan War of 1912. He did so by incorporating experimental typography in a new format called *parole in libertà* ("words in freedom"). Although the author's name and the publishing information appear in a conventional way on the cover, seen in Figure 17 (pg. 252), other text is organized into arcs and receding lines. Words in all different directions suggest the chaos of bullets flying, reinforced by repeated use of onomatopoeia. However, the book's content –which conveyed Marinetti's enthusiasm for war--and his later

association with the Fascist leader Benito Mussolini generated criticism from historians.

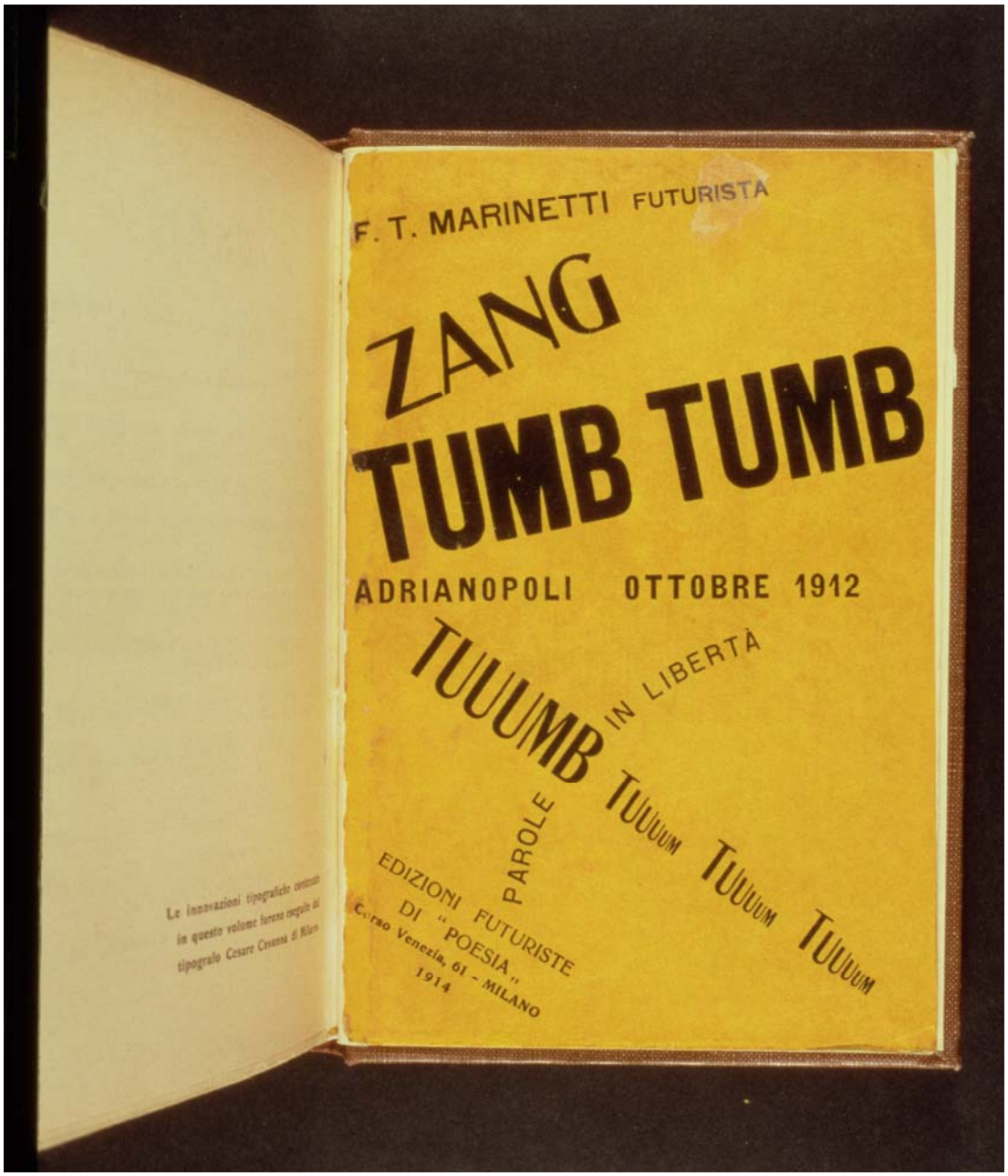

Figure 17. Filippo Tommaso Marinetti (Italian,1876-1944); Book cover for *Zang Tumb Tumb*; type on colored paper; 1914; H: 8 1/16 in. (20.4 cm.), W: 5 5/16 in. (13.5 cm.); private collection. Photograph courtesy of the Bridgeman Art Library.

Some surrealists, like the Belgian painter René Magritte (1898-1967), began to juxtapose words and images in their work. Painted in 1929, *La Trahison des images (Ceci n'est pas une pipe)*, or *The Treachery of Images (This is not*

a pipe), shown in Figure 18, challenges notions about the nature of representation and how images are perceived. Magritte is exploring the common habit of using the same word to describe both an object and an image of the object.

Although a viewer would identify the image as a pipe, since it can't be smoked, Magritte asserts, "This is not a pipe."[49]

Figure 18. René Magritte (Belgian,1898-1967); *La Trahison des images (Ceci n'est pas une pipe)*; oil on canvas; 1929; H: 23 3/5 in. (60 cm.), W: 31 4/5 in. (81 cm.); Los Angeles County Museum of Art, Los Angeles, CA. Photograph courtesy of Banque d'Images, ADAGP/Art Resource, NY © Artists Rights Society (ARS), NY.

Like Magritte, conceptualists, including American artist Joseph Kosuth (b. 1945), have incorporated writing into their work as a way to explore and question the nature of art. Kosuth believes that the idea behind an art work is more important than actually creating a painting or sculpture. In his 1969 essay, "Art after Philosophy," Kosuth claims to have been hampered by art's physical embodiment.[50]

Kosuth's work *One and Three Chairs* (1965), shown in Figure 19 (pg. 254), includes an actual three-dimensional wooden chair, a black and white photograph of the same chair, and text providing the dictionary definition of chair. By presenting these three ways of representing a chair, he challenges viewers to think about how each communicates information.

Figure 19. Joseph Kosuth (American, b. 1945); *One and Three Chairs*; wood chair, black and white photograph, and text; 1965; Musee National d'Art Moderne, Centre Georges Pompidou, Paris, France. Photograph courtesy of CNAC/MNAM/ Dist. Reunion des Musees Nationaux/Art Resource, NY/Photo by Philippe Migeat © Artists Rights Society (ARS), NY.

Words are also central to the work of American Pop artist Ed Ruscha (b. 1937), who has created paintings that both exploit and subvert advertising techniques. During the 1970s, Ruscha made a series of works with words or phrases from the American vernacular or Hollywood culture, such as *Mad Scientist* (1975) or *Tulsa Slut* (2002). These were intended to evoke whatever image came into the head of the viewer based on personal associations or Hollywood stereotypes.

Figure 20. Ed Ruscha (American, b. 1937); *OOF*; oil on canvas; 1962, reworked 1963; H: 71 ½ in. (181.6 cm.), W: 67 in. (170.1 cm.); Museum of Modern Art, New York, NY. © Ed Ruscha. Courtesy Gagosian Gallery. Photograph courtesy of the Museum of Modern Art/Licensed by SCALA/Art Resource, NY.

His 1962 work, *OOF,* shown in Figure 20, is an expression that might appear in a comic strip speech bubble, above a character who is lifting a heavy object or has received a punch. Ironically, though, the primary colors and plain font do not convey physicality. Rather, the letters on the six-foot-tall painting appear like a logo for a product that doesn't exist.

A form of writing contemporary artist J.B. Murry calls "spirit-script" appears in paintings inspired by what he describes as personal communications with God. In 1977, he started having trance-like visions. The Holy Spirit directed Murry to spread the word of God through this special script, which can only be read if viewed through a glass of divine well water. The self-taught artist never learned to read or write, but he did belong to an evangelical Baptist church in Texas that practiced speaking in tongues. The experience may have influenced his works, including the one in Figure 21.[51]

Figure 21. John J.B. Murry (Murray) (American,1908–1988); *Abstract Figures on Paper*; tempera and felt-tip pen on paper; 1984; H: 28 in. (71.1 cm.), W: 22 in. (55.9 cm.); Collection of the American Folk Art Museum, New York, NY. Photograph courtesy of the American Folk Art Museum/Photo by John Parnell.

Lawrence Weiner (b. 1942), an American conceptualist, creates "textworks" printed in plain letters on various surfaces, including manhole covers, sidewalks, gallery walls, and matchbook covers. Sometimes the statements are instructions,"[52] such as *Two Minutes of Spray Paint Directly upon the Floor from a Standard Aerosol Spray Can*. Weiner's works often prompt interaction by the viewer.[53] The work in Figure 22, *As Far As the Eye Can See* (2008), prompts the viewer to stand within the circular ring of text and take a look around.

Figure 22. Lawrence Weiner (German, b. 1942); *As Far As The Eye Can See*, Retrospective in Düsseldorf; 2008; Düsseldorf, Germany. Photograph © Federico Gambarini/epa/Corbis.

American Jenny Holzer (b.1950) also uses the written word as her medium. From 1978 to 1983, she developed a series of *Truisms,* phrases that were written on white paper in black italics, which she posted around lower Manhattan. They included *Abuse of Power Comes as No Surprise*, *Some Wounds Never Heal*, *Money Creates Taste*, and *There's a Fine Line between Information and Propaganda*. Others added their own comments or messages.

Later, she created a series called *Inflammatory Essays,* which expressed her concerns about contemporary society. In the early 1980s, Holzer began to convey her ideas using the tools of advertising—lighted signs and scrolling LED displays in places like Times Square, Las Vegas, and baseball stadiums. She began projecting her statements onto buildings in 1996. The work in

Figure 23, *For the Guggenheim* (2008), on page 258, was commissioned when the museum designed by Frank Lloyd Wright was restored. Rather than her own words, Holzer projected poems by the Polish Nobel Prize winner Wislawa Szymborska. On view every Friday evening from September through December during 2008, the result was a compelling public display that engaged the community outside the museum.

Figure 23. Jenny Holzer (American, b. 1950); *For the Guggenheim*; (photograph of) light projection; September 26–December 31, 2008; Solomon R. Guggenheim Museum, 1071 Fifth Avenue, New York, NY. © 2009 Jenny Holzer, member Artists Rights Society (ARS), New York. Photograph courtesy of the Solomon R. Guggenheim Museum, NY.

Innovative use of technology and materials has played a key role in the evolution of writing and its use in art. Before Holzer used technology associated with advertising to get the word out, the printing press inspired the development of graphic artwork for reaching a mass audience. Prior to that, calligraphers and scribes used colored ink and gold leaf to create elaborately embellished works designed to convey reverence for the word of God. Before the invention of parchment and paper, early writing was inscribed on clay tablets, papyrus, and bone. Throughout history, the work of scribes, calligraphers, and artists has had an impact even on those who could not read it. Often the way text and image are used in combination can convey ideas or feelings that are universally understandable, even when the viewer doesn't understand the words themselves.

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