

# Invention of paper in china



The Invention of Paper in China Introduction Have you ever thought what life would be like without paper? Have you ever considered how many uses there are for paper? What about who came up with the idea for paper and where paper came from? Paper is one of those objects that we just take for granted. For our lifetimes it has always been around. We have never known what it would be like to have to document something on anything but paper. Prior to the invention of paper, what was used to record information? If you have ever asked yourselves those questions, we have the answers.

Fortunately, for us, we know that the Chinese invented the method of creating paper back around 105 A. D. Since then paper has been utilized for many purposes, some of which we would not consider to be traditional uses, like the use of paper as clothing. The purpose of this paper is to explore the origin of the technology of paper and how it has impacted the nation of China. We will examine the culture of China. We will also look at the history of paper itself. We will then determine the impact that paper has had on the culture of China. Lastly, we will look at the moral and ethical impacts that paper has had upon the Chinese.

We will begin with an overview of the culture of China. China's culture The Chinese Civil War took place in the 1940s. It was a struggle of power between the Kuomintang-led Nationalists and the Mao-led Communists. The United States provided extensive financial support to the Nationalists but did not offer any military support. The United States had previously sent General George Catlett Marshall to China in hopes he could encourage a cease fire but he was recalled after it became obvious unarmed intervention by the U. S. would have no impact.

Battles over territories and the allegiance of different segments of the Chinese population were widespread. In October 1949, the Communists defeated Kuomintang's Nationalists and the People's Republic of China was formed. (Chinese Civil War, 2011). The State Council and the National People's Congress, also known as the NPC, are the two instruments of government in China. Both of these are led by the Communist Party of China, or the CPC. As established by China's Constitution, the highest authority goes to the National People's Congress which is responsible for making final decisions on legislation born in the State

Council. (China Government, 2011). China's government consists of three branches, including the Executive, Legislative, and Judicial Branch. The Executive Branch consists of the President and the Vice President of the People's Republic of China. The National People's Congress is responsible for electing both of these. The Legislative Branch is made up of the NPC. The NPC has 2,977 elected members who are chosen by secret ballot. The Judicial Branch is responsible for enforcing legal codes that became effective in 1980 (China Government, 2011). China's economy experienced significant transformations beginning around 1978.

During this time, the focus was to become a more open economy. The result has been noticeable around the globe. China's economy is now second only to that of the United States and it continues to see growth. One contributing factor is the cheaper labor and low production costs which give China an advantage over other countries. Evidence of this tremendous growth can be seen in the low unemployment rate and the increasing volume of exports. (The Chinese Economy, 2011). Contrary to popular belief, education in China

is not free. Children are required to attend both primary and junior middle school for a total of nine years.

Tuition is free during these required years, but there costs of materials and supplies are the responsibility of the students. If a student passes examinations to gain admittance to senior middle schools or beyond, some financial assistance may be available to those experiencing financial difficulties. While this assistance is available, only one child per family is eligible under China's one-child per family policy. (The Education System, 2011). Religion in China has many forms. Taoism, Confucianism, Buddhism, Christianity, and Islam can all be found in China.

Traditionally, Communists consider religious practices anti-socialist and due to this many centers of worship were forced to close and religious leaders were persecuted before and during the Cultural Revolution which occurred between 1966 and 1977. Today, people have more religious freedom but in general, the Chinese government keeps a close watch on their activities. (Chinese Cultural Studies, 2011). Today, China is considered a newer player in the high-tech industry. China has transitioned from being a labor-intensive country to being an emerging leader in innovation.

Much of this can be attributed to the support of the Chinese Government which has provided incentives to encourage companies to innovate while discouraging low-end manufacturers from operating in many parts of the country. Due to the shift in focus from low-cost manufacturing to innovation, it is expected that the need to find alternate sources to produce products traditionally produced in China could cause the prices of such items to rise

across the globe. (Barboza, 2008). History of paper When paper was first created, it was used to record important events and data.

However, paper has not been around forever so before paper the turtle shell, animal bone, golden stone, bamboo slips, wood and cloth were used for recording data and events. When paper came along it was a good innovation because earlier writing materials had problems. When using animal bones the bones were hard to find and when writing on stone the stone was too heavy to move. Therefore, they started using cloth but cloth was much too expensive to use for writing. So then, they used bamboo and wooden boards but they took up too much space. They were stuck because none of their tools were working out.

After experimenting with many different elements paper was finally invented using twine, broken cloth and net. Some researchers say that the invention of paper dates back to 105 A. D. during the Han dynasty. The invention of paper was a great innovation in the Chinese civilization because since paper was cheap more people could use it to write things down and ideas could be passed more quickly and to a wider variety of people. Some say that it has quickened the development of human civilization (History of China). Ts'ai Lun was the first person to produce paper; he made his paper from hemp, tree bark, textile rags, and fishing nets.

Paper was much cheaper to make than using silk cloth. With the invention of paper, also came the invention of other products made from paper. Paper money started becoming a more common currency because it is lighter than metal coins. Toilet paper made restroom visits a lot easier and printing

papers made it easy to copy and distribute things much quicker. Since paper was such an innovation in its time, that in China it was forbidden to step on a piece of paper with something written on it. China held on to their paper like it was sacred and kept the production process a secret from everyone until the Mongol raids.

Some Chinese that were captured and held prisoner during the raids gave up the process to make paper. Once the Mongols found out about this it did not take long for it to spread to Persia around 750 A. D. Then on from there it spread to the Arabs and the through the Middle East. It did not take long for paper to spread around the world (Anitei). Impacts of Paper upon China's Culture Positive Impacts on Government An unexpected impact of paper for China was when it helped free prisoners of war. The Arabs learned papermaking as one of the spoils of war.

The city of Samarkand was fighting against the Chinese and they captured a number of prisoners. Two of the prisoners were papermakers who were released in exchange for teaching the Arabs how to make paper. So you could say that papermaking did help China in the fight against the Arabs. Papermaking made a lot of things possible for governments not only in China but later across the globe. Being able to write things on paper made it possible for us to record history. We were able to create important documents that helped our government and keep a consistent outline of what role our government was to play.

Without paper it would not be possible to form such strong governments. Paper also allowed countries to reunite and come together as allies or even

sign a paper that would stop the fighting of two countries. Paper changed every government/country across the globe and without it the world would not be the same. Positive Impacts on Economy The invention of paper in China solved a major problem of that time because, back then, scrolls of silk were being used as books. The development of calligraphy and the animal hair brush created the need for a writing material that was cheaper and more practical than pure silk.

The lower cost of printing books on paper and their availability stimulated the foundation of new schools and universities. Because books were now more available educational opportunities were now available to other classes in society instead of being restricted to the nobility and upper classes. This change in the economy had dramatic increases in levels of education and literacy. China's invention of paper made what used to be mainly an oral culture transition to one where everything is communicated in stories and the spoken word. With literature development people started getting their information by reading.

Reading even changed the fundamentals such as the process of thinking. Paper made the art of memorization a lot less needed because now you can write things down on paper and no longer need to develop elaborate ways of memorizing. Being able to think things out on paper did change the thinking process and culture of not only China but the world. The art world was also transformed by papermaking. When paper became available as a cheap type of " canvas," artists could go wild practicing their sketching and now these sketches could be saved. For the first time, drawing became an important art form in itself.

With the invention of paper people could write down trades and traded paper for goods or money, keeping records of his/her business. This increased China's economy dramatically. They also used paper for advertisements for their stores to bring in more customers and money and there were more buying and selling of books because of the better paper quality. The means of communication were cheaper through printed materials and easier to produce. Positive Impacts on Educational Systems " Written communication has been the center of civilization for centuries" (the Invention of Paper, 2011).

Before paper was invented, people first started to write on walls of caves. Walls of caves were a great tool to record information but it was not portable. Therefore, people started writing on wood, stone, ceramics, cloth, bark, metal, silk, bamboo and tree leaves. These new materials were portable but not easily transported. The invention of paper was thin, smooth, flat, light and great for people to easily record important information and is easily portable. Oral communication once was the only way people communicated to do business or handle political and legal matters in the past.

When papermaking reached Europe in 1448, Johan Gutenberg invented the printing press. Reproduction of written material was done by hand before printed press. Knowledge and education was slow because all written material was done by hand. Written communication on paper and literature was becoming more popular therefore printed press allowed recorded information to be mass produced. Mass production eventually led to a great growth in literacy. Later, China and every country around the world



required their citizens to attend at least elementary and middle school. As literacy grew, expansion of education increased with books.

The invention of paper and printed press made creating books cheap and easy to mass produce which increased education from elementary to higher education. Printed books allowed all kinds of information to be taught and preserved. If we did not preserve information on paper we would not be able to advance in science or technology today. Positive Impacts on Religious System China is a communist country. During the 1960s and 1970s, China tried to ban all organized religions and forced communist beliefs in place of religion. The Chinese Communist's strict regulations did not achieve its goal of reducing religion and containing it at a low level.

Instead, it has resulted in triple markets in which many religious activities operate in the underground or legally ambiguous areas (Yang, 2010). With the efforts of the people of China not giving up their religion during the communist reform-era, the invention of paper allowed China to preserve the written words of the religions on paper. It was said that the first printed book in the world was a religious book "The Gutenberg Bible". The invention of paper and printed press not only preserved the religion but it widely spread religion fast.

It was said that the first printed book in the world was a religious book "The Gutenberg Bible". Different religions would not survive or be spread all around the world if it wasn't for the invention of paper and written material. Negative Impacts on Government There really is not much that papermaking did to harm the government. The only thing that is a problem is that now it is

being put on the government to find other sources rather than using trees. For some reason it has become their responsibility to take the lead and really enforce the recycling movement, which I think they have in several ways.

Schools now always have a recycling station in the lunch rooms and we all get recycling bins with our trash cans so we can recycle from our home. I think the government is doing a good job promoting recycling but again it is a long process that will never end. Negative Impacts on Economy Although it's hard to believe, paper does have some bad impacts on the economy around the world. Perhaps the use of natural resources made sense at the dawn of the 20th century, when developing the nation was a national goal. Maybe it made sense in the mid-1800s to see trees as an unlimited fiber source.

When the population was much smaller, there were fewer businesses, and paper was relatively limited in use. But those conditions clearly do not apply now. The elimination of trees to make paper has had a negative impact on our economy by taking away natural habitats from animals. Trees do a lot for the economy and are a natural resource that we are trying to save through recycling. There were early records of people trying to use rags and such to produce paper and actually it got so bad that demand stretched the supply of rags to the limit until the shortage became so acute that there were actually "rag wars" during the mid-1700s.

Nations passed laws forbidding rags to be taken out of the country - so, of course, rag smuggling became a lucrative profession. Negative Impacts on Educational Systems Paper allowed literacy and knowledge to increase and

spread but that is not the only thing that spread. The production of paper emits fumes that are toxic to the workers and the toxic inks are harmful when inhaled (Negative Effects of the Printing Press, 2011). These inks are harmful to people who were reading books or newspapers in the past.

Books and newspapers increased education but it could also increase people to have chronic respiratory allergy symptoms that can lead to more severe respiratory issues later in life. Preserving information and knowledge on paper for our future is a great invention from our ancestors but the ink used for printing press is very harmful to our environment. We mentioned earlier that education increased because books spread knowledge and information to a mass audience and very fast. Paper was invented for people to share information in a written format.

But people will tend to believe what they read so books, newspapers, and magazines, can mold public opinion positively or negatively. Newspapers and books provide us with a lot of information and knowledge but it will definitely persuade us to think differently about a subject because of the way the author wrote the article or book.

#### Negative Impacts on Religious Systems

China had a struggle during the reform-era to keep their religion but paper allowed them to preserve and spread their religion. Another struggle churches and religious leaders everywhere had to face was the control and censorship of what was being written. The spread of information were no longer hand-written on paper, but printed on paper. Since books were produced through printing press, it took book copying out of the hands of the churches and religious leaders. With paper, we are not only sharing knowledge but information about anything a person wants to share. We can

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share information by writing letters to each other, writing a book, writing an article in the newspaper or magazines. This is why scientific findings that are circulated in writing threaten some church leadership because it might affect some popular religious views.

Religious or political leaders do not have control of what could potentially be written on paper. Moral issues of paper on society There are several areas in Chinese society that were impacted significantly by the invention of paper. The invention of paper led to many advances in Chinese society that were instrumental to advances in China and improvements for its people. The moral and societal implications of the invention of paper in China can be established in the areas of education, culture, religion, economy and government. Education in China was improved considerably with the invention of paper and the printed word.

Elementary texts were created for schools which standardized parts of the curriculum and allowed for the expansions of schools in China. “ The major function of the Directorate of Education was not to produce huge quantities of those books, but to produce and distribute standardized classic texts to local government institutions and government schools” (Mun, 2010). The evolution of books as the dominant medium for the printed word allowed books to have a positive influence on the expansion of schools in China in urban as well as rural communities. The spread of books had a marked influence on the education of the general public. Likewise, the change in the shape of books — to accordion style from the scroll — helped the handling of books and their storage. Many schools were established, even in small localities” (Goodrich, 1963). The ability to easily transport and store books

was beneficial making them a necessary technological advancement from the invention of paper to the printed word in a form that benefits society through enhancement of education. The invention of paper helped bring knowledge to the population and build a more educated society.

These advancements in culture and education in society were evident during the Song (Sung) Dynasty. “ The Sung was a period in the history of China noted for many things: advances in material culture, in political development, in science, in the fine arts, in literature, in music, and in thought. These advances may well have been due in large measure to the accessibility of the printed word” (Goodrich, 1963). During this period, many books were created on a variety of subjects that directly contributed to the enhancement of knowledge and the further development of the Chinese society. During the Song period, the government played an important role not only as a huge printing house, but also as a massive publishing agent actively involved in collecting, compiling, editing, and producing a broad range of literary works encompassing classics, explanations and commentaries to the classics, historiography, philosophy, encyclopedias, law codes and statutes, civil service examination questions and records, official forms, calendars, belles-lettres, and so on” (Mun, 2010).

The production of these vast publications useful to many parts of society helped establish moral guidelines for the Chinese society through making the information accessible with the invention of paper to facilitate the printed word. Religion was impacted through the invention of paper by helping people understand the documented histories of religion and its teachings by making them more accessible through the printed word and books. During

the Song Dynasty, the Directorate of Education printed many texts including various books on religions. It also printed voluminous reference books such as calendars, dictionaries, encyclopedias, and books on medical science and religions” (Mun, 2010). The moral teachings associated with religions further established the culture and society in China through better understanding facilitated with books, made possible through the invention of paper. The Chinese economy is enhanced through the commerce of printing books on various topics. The philosophy of the Confucians required a large number of texts to be produced to support their teaching and educating others. The Confucians, again coming into their own with the re-introduction of the system of civil service examinations, needed hundreds of thousands of text books for students, and copies of the Confucian canon for the scholar class” (Goodrich, 1963). The moral implications of the invention of paper come into play because the monetary benefits of producing books becomes an important motivator for those who wish to make a profit, but do not consider to the social impact of the content being distributed. Private industry was enhanced significantly with a new area of commerce through book selling and private book stores. A considerable number of books in this period were published privately. This was done for various reasons: as gifts to friends and relatives; by relatives for a scholar-author; for philosophic reasons; possibly even for sale and to make a profit” (Goodrich, 1963). The profits surrounding the producing and selling of books was and is important to the Chinese economy and also escalates the transfer of the written word to people that could not have been possible without the invention of paper. The morality of the Chinese society increased with the development of government and publishing of many texts in the Song Dynasty. Although various government

institutions were involved in publishing, the Directorate of Education (Guozijian), the nation's chief educational unit, remained the most important printing agency of official publishing in the Song dynasty" (Mun, 2010). The requirement for civil service examinations was a large part of Chinese society and demanded large numbers of printed exams to be produced by the government. " Regarding the dominance of official publishing, the civil service examination was the most important institution for Chinese print culture.

The strengthening of the examination system in the Song dynasty naturally increased the importance of official publishing and the demand for examination-related texts" (Mun, 2010). The invention of paper is again involved in the progress of government in shaping the moral and societal values in China. Ethical Issues To begin the analysis of the ethical use of paper, we need to first understand how the ancient Chinese viewed ethics. Once we understand how the Chinese of looked at ethics, we will take a look at how the ancient Chinese viewed the use of copyright usage.

After that we will look at how the current Chinese culture views both ethics and copyright laws. We will begin with the ancient Chinese view of ethics. The view of ethics by the ancient Chinese was tied directly to their religion. There were numerous religions of the time that carried different views of ethics. The different views are the Confucian views, the Mohist views, the Daoist views, and the Buddhist views. We will focus on the Confucian view. The Confucian view of ethics was based on a few central character concepts. The most frequently discussed concept is the concept of junzi (Wong, 2008). The world is translated " prince's son".

In English, it is translated to mean “ gentlemen”. It is meant to mean that the ancient Chinese were supposed to have the ability to judge what is the right thing to do in every situation. Another central view to the Confucian views of ethics is the view of the dao. The dao is the way a human being is supposed to live their lives (Wong, 2008). These concepts would indicate that the use of paper in ancient China would not have had a negative ethical impact. In fact, it is more than likely that the invention of paper, and its subsequent uses, would have been used to spread the Confucian views on ethics.

The ancient views of copyright, of intellectual property as it can be known, cannot be found in any legal codes (Lehman, 2006). But, based on the traditional ethical views, it could be believed that the ancient Chinese would have honored the work of someone else and not tried to copy it as their own. The view of modern day ethics in China is derived from the ancient Confucian and Buddhist views. Over the past 30 years China, much like the rest of the world, has undergone deep modernization. Some in the Chinese culture would like to hold to the old ways of the Confucian beliefs.

Some are trying to blend those beliefs to bridge the gap between the old time and modern times (Pengcheng, 2003). The thought process is to apply the old thoughts of life, and how to live it, to current life in China. The modern copyright law in China came into effect in 1980 (Zhang, 2002). Prior to this, there was no protection for intellectual property. Since that time, there have been numerous big name corporations who have brought lawsuits in the courts of China and won. The Chinese take the copyright law



seriously because it will reflect badly upon them, and their 5000-year history of being civilized people if they do not.

Conclusion (Andrew) Our journey into the world of paper is complete. By no means was this an exhaustive history on the technology of paper, or of China. We did take a look at the culture of China and how the Chinese had a civil war back in the 1940s. We also saw how the Chinese government is organized. Then we saw how religion plays a part in the country of China. Next, we were introduced to the history of the invention of paper. We saw that before paper, other items were used to record information. We also learned that the Chinese did not initially share their information about papermaking.

Then we looked at the impacts, both positive and negative, that paper had on the government, economy, religious system, and educational system. A noted positive impact on the government was the release of prisoners of war. A positive impact on the economy was that now we had an efficient way to record information. Prior to the invention of paper it was difficult to document information. It is easy to see that a positive impact of the education system would be the use of books for education. The same could be said about a positive impact on the religious systems. With paper, now there is a way to mass-produce holy books.

The negative impact on both the government and economy is what to do with the waste that paper generates. Not only with the waste from the production of paper, but also the paper itself. A negative impact of the educational and religious system is people tend to believe what they read,

even if it is wrong. If the wrong information is presented on purpose it could have devastating impact on education and religious beliefs. We finished the paper on looking at the moral and ethical impacts on paper. Paper improved the moral values of the Chinese people because now they could be easily educated on those values.

We saw that the ethical values of the Chinese did not really change with the invention of paper. Paper has been used for many purposes since it has been invented. Hopefully this journey has not only educated you on the invention of paper but also the culture of the Chinese. Maybe now we can look at paper a little differently and possibly not take paper for granted.

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