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A History of the Book: Disrupting Society from Tablet to Tablet

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Disrupting Society

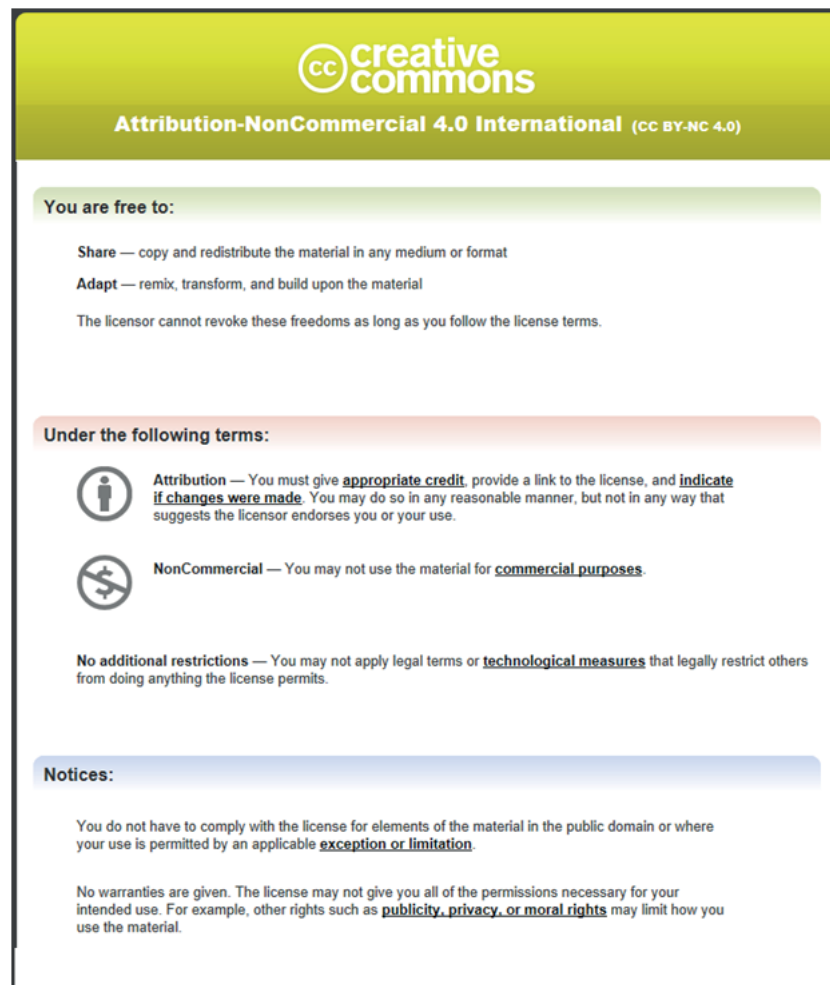


From Tablet to Tablet

Disrupting Society From Tablet to Tablet



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Introduction

This is not just a history book. It is a book that traces the history of its own ancestors with a very specific purpose. It focuses on the book throughout history as a constantly evolving tool for social change and the efficient accomplishment of tasks: as a form of technology. Indeed, at many points in its development, the book has fulfilled the definition of a particular type of technology known as “disruptive technology.”

A disruptive technology is a new technology that transforms, or disrupts, existing technology and unexpectedly becomes the standard¹. This transitional phase is often slow and complex. The new technology generally emerges unobtrusively and gradually overtakes a related technology. In the meantime, it often encounters resistance from those who are hesitant to accept it as a replacement for the established technology. Ultimately, however, the disruptive technology displaces its precursor and also often increases its accessibility. The term “disruptive innovation” is similar, and applies to an innovation or discovery that changes the market for a particular technology.

When studying the history of the book, we discovered countless examples of both disruptive technology and disruptive innovation, which we have outlined here to be considered. The book’s history is a fascinating subject, and examining it in terms of disruptive technology adds a new dimension to explore. Our goal in writing this book has been to present the history of the book in a new light, providing accurate yet interesting facts and deepening the reader’s understanding of this unassuming object that plays such an important role in societies all around the world.

¹ Milan Zeleny, “High Technology and Barriers to Innovation: From Globalization to Relocalization,” *International Journal of Information Technology and Decision Making*, 1 (2) 441-456. (2012). In his article, Zeleny uses the term “high technology” to refer to this type of technology.

The History of Early Materials

-Alyssa Adams-

From the time that man discovered how to draw on cave walls, human interest in recording information and events flourished. Cities were built, societies and civilizations were born, and the world as we know it was forever changed. While writing began as symbols and drawings, it soon blossomed into multiple languages with a variety of mediums such as clay tablets, papyrus, silk and paper on which to record information.

Clay Tablets

In Mesopotamia circa 3500 B.C. an ancient tribe known as the Sumerians found a source of wonder. Clay was found in the nearby rivers which could be molded into pots, urns, and also into writing tablets. While still wet, these tablets were drawn on in the first form of writing called cuneiform¹. Cuneiform was quite similar to cave drawings at the beginning; both forms of inscribing used pictorial representations of items, weather, and even emotions. The difference was that people began recording their information with a writing implement on things besides walls, such as indenting designs into wet clay. When the clay was baked in the sun, it became somewhat hardened; however, by soaking the tablet in water and smoothing it out, the tablet could be reused. By using this technique, the clay tablet became a multiple use tool, which replaced most cave writings. Only when fired in a kiln or left in a burning house did these tablets become hardened and their information permanently etched into the tablet's face.

Such writings as *The Epic of Gilgamesh* were written on clay tablets in cuneiform.

Major civilizations including the Akkadians, Babylonians, and Sumerians used clay tablets and cuneiform in their daily life in Mesopotamia, now known as the Middle East¹. Scribes often used these tablets to keep inventory of historic events such as droughts, a bountiful harvest, or a new leader. Although cuneiform was used by officials, common folk also used

pictures on clay tablets as a means to tell stories and keep record of items they had². Literacy in these ancient societies was rare³. Those that had the knowledge to distinguish the meaning of the cuneiform belonged to the elite few and held most of the power in these groups. Because of this, anyone who had the advantage of literacy could control the general public.

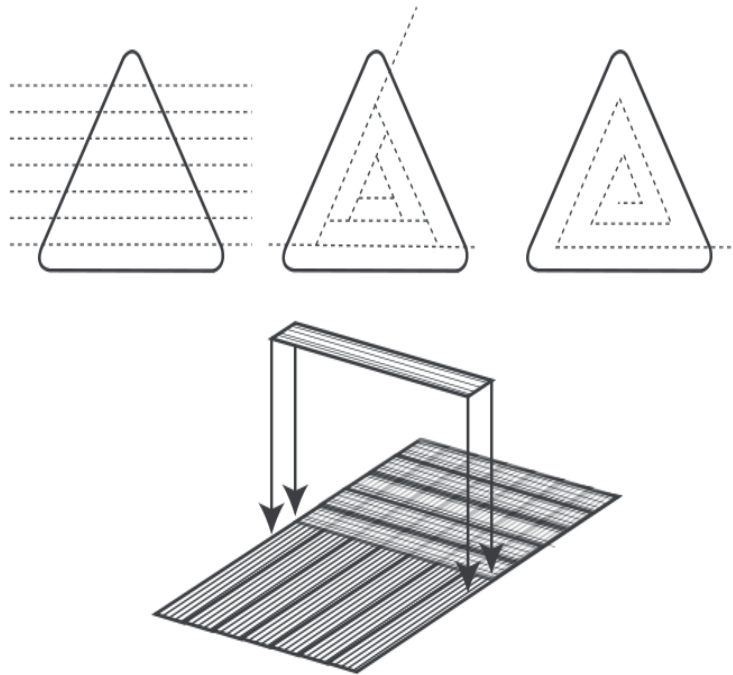
While not known as a disruptive innovation, since there was no material it displaced, clay tablets paved the way for written technology. When clay was found to be a useful medium for writing and drawing, civilizations were able to flourish and expand. Government systems had the means to record information and even civilians could identify items with just a simple design in clay as a tag². In some areas, valuable items would be placed in clay jars and a design was inscribed in the hardening clay. This was used to identify the contents. Stories that were once told by mouth could now be inscribed on clay tablets, while religious writings spoke of gods and their need for sacrifices or offerings³. Priests were able to collect taxes and because they could “read” what the gods were inscribing to them, most people just followed their rules. These religious leaders were able to keep a better record of the taxes owed and who was loyal⁴. Being able to permanently record information led to more advanced cultures and a more refined system of governing.

Although clay tablets were the break-through for systems of recording, there were problems that arose. Clay tablets were often heavy and fragile if dropped, even though they were some of the most durable mediums. Transporting these tablets could be cumbersome and while they were used in the form of letters, they were not as convenient as what was yet to come.

Papyrus to Bamboo/Silk

Papyrus, most common in Egypt, was used in 2500 B.C. as the first paper-like medium to write upon. Strips of the reed were laid out in two layers at right angles from each other and pressed together to create sheets. Because of

how it was made, one side of the sheet had horizontal lines while the other had vertical lines⁵.



Different ways of cutting papyrus stem and the making of a papyrus sheet¹

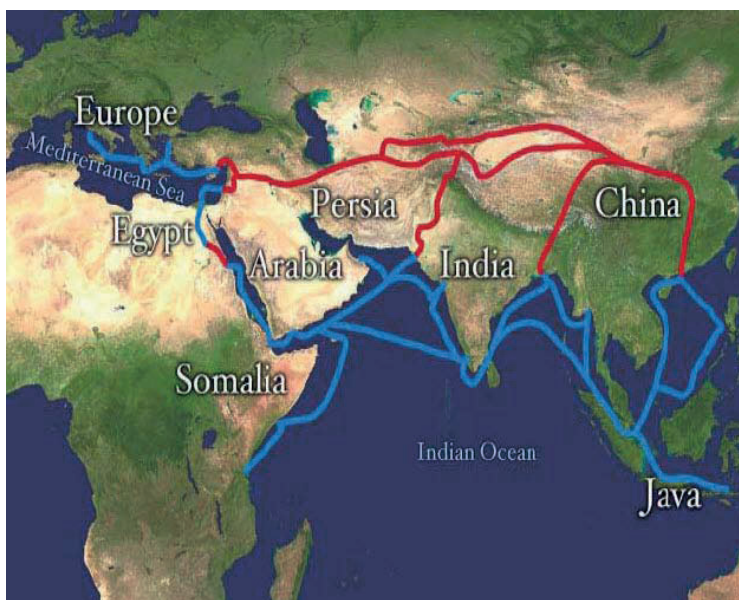
This material while quite rot-resistant, because it was made of cellulose, was susceptible to mold when introduced to wetter climates. Many centuries passed before other civilizations around Egypt began to use different materials for their writings.

Around 600 B.C. in the far east of China, bamboo stalks that were cut in half and woven together with string began to be used for written record keeping. According to some sources, bamboo slips were used as early as 1250 B.C. in the Shang period⁶, although no artifacts have survived. By 400 B.C., China began transitioning from bamboo slips to silk sheets as their main medium for writing. Silk was much more expensive than bamboo and more important documents were first written upon bamboo and then rewritten onto

the silk. Both of these mediums were in great demand in the western countries, and so began the Silk Route connecting the East to the West.

Papyrus did not have as many trade routes throughout the east because it was used mostly in Egypt and surrounding countries. Their dry, warm climate was perfect for the moisture-susceptible medium⁷. Greece and Rome were among the nearby countries that had papyrus imported from Egypt. These countries used papyrus for official documents, book keeping, stories, and other writings. Although papyrus was a main source of income for Egypt, not many people had access to the material. This was due to the lack of literacy and resources available in many civilizations. Once again, people of high rank in office or of religious background were trained in the art of reading and writing. It was not common for people in Greek or Roman society to own papyrus for their own personal use unless they were extremely rich.

As a result of the Silk Route, many countries now had access to the prized possessions from China. Silk and bamboo items became a main desire for those who could afford the prices, and spread from India and Egypt all the way to Europe!



“Silk Route”

Here are major countries that were affected by the trading route².

Cities like Baghdad, Calcutta, and Xian were major hotspots for the boom in trading. Xian itself was one of the world's largest cosmopolitan (multicultural) cities⁸. These cities thrived because of the desire for many products, including bamboo and silk.

Papyrus made carrying writing materials much easier. Instead of carrying tablets that were large and bulky, people could carry papyrus rolled up in bundles allowing more information to be transported⁹. The papyrus was also able to be used with ink or charcoal instead of being carved into like the clay tablets. Multiple sheets could be made and stored at one time, before being written on, whereas clay tablets were made at the time that writing occurred. These sheets were also pasted together and made into a scroll form⁷. The beginnings of colleges and libraries occurred in the time when papyrus was gaining popularity. The library of Alexandria was known to have over 500,000 scrolls alone; imagine trying to store that many clay tablets!

Bamboo and silk also played key roles in creating a larger market throughout the eastern world. It is not known whether Chinese merchants actually travelled all the way to Europe to sell their goods. Many of these early salesmen would sell to other merchants and the goods would then be distributed around the known world. Along with the distribution of goods, societies along the trade routes flourished with the variety of people and possessions that passed through¹⁰. Disease was commonly carried along these routes, as was religion. Buddhism was propelled into popularity during this time period. Scrolls were of large importance to the Buddhist nature, as were wooden and clay tablets. Writing out scripture was known to be an art form, and monks practiced religiously to produce beautiful handwritten texts. Although most of the works were memorized, variations appeared in writings because of the backlash on religion. Some of the variations had false ideas for the Buddhist religion that were written by people of different faith. Christian colonizers and communist revolutionaries both destroyed many of the Buddhist texts over the

Ancient writing often went right-to-left and then left-to-right, like plows on a field.

years³. Because of this, the texts were continuously revived with multiple recopies.

Papyrus was the first paper-like material created and it had similar problems surrounding the use of paper in today's society. Moist climates wreaked havoc on papyrus and if not made properly, the sheets could fall apart or tear easily⁵. There was not a high demand for the newly created material in Egypt and because of this; it took a while for the popularity of papyrus to skyrocket. Although flexible and lightweight, bamboo was not as durable in wetter climates, whereas silk was more resilient³. Both of these mediums along with papyrus were much more portable and efficient than the clay tablet; however, they were prone to tearing, catching fire, and mildew damage.

Paper and Scrolls

Near 100 B.C. the future of writing was forever changed by the invention of paper-making in southeastern China. Fibers of cellulose were mashed in water until a mush formed and then it was collected on screens and dried before being used¹¹. These fibers were usually hemp waste that was unusable elsewhere. While paper technology spread across Asia, it would not reach Europe until after the 11th century. Once paper was introduced to Europe, a dramatic change arose that still exists today.

Many societies used paper in their official government duties. China originally started it and even societies in Egypt used paper; although they created it using different fibers. Europe also used paper; however, they used old rags to create their version¹². Sheets of paper were pasted together and hooked to wood pieces to create scrolls that were similar to papyrus scrolls, just more durable⁹. As with all new technologies, paper was quite expensive for many years. Literacy was also a problem when it came to who could use or want the paper. Men of color and all women were mostly illiterate in Europe. Men of power, high social standing, religious company, or wealth were the only ones

who owned paper. This group also made up most of the population who were considered literate, both in writing and reading.

Paper was originally used for wrapping items before people realized that the material was more durable than bamboo slips or silk sheets³.



“Chinese hemp paper” circa 100 B.C.³

Like bamboo, silk, and papyrus, paper was easier to transport than clay tablets, and was able to hold up better in moist climates. Because it was more durable, many sheets would be stitched or glued together and hooked onto a handle of wood, creating a scroll. A standard scroll was roughly 20 pages or about 5 meters long. Whether paper or papyrus was used as the medium, scrolls became the main information source before the invention of the codex⁹. When paper was finally introduced to Europe in the 11th century, its use grew exponentially. Information could now be written on this less expensive material than on parchment which was made of animal skins³. Paper was quite expensive early on, but advances were made to make it less costly, which caused a positive

disruption in these societies; eventually it resulted in what we know as paper today.

Although durable, paper was easy to tear and flammable. It was originally difficult to make, but as years progressed, better methods of paper making were invented. Rags in Europe were popular ingredients for paper; however, that did not cut the price of paper down until wood was found to be an adequate part of the paper-making process³. Scrolls were often a bit clumsy when being carried and difficult to read; one would have to unroll the whole piece to read a single line. This was difficult with lack of space; the invention of the codex helped fix problems that arose in the beginning of the paper era.

The Foundation of the Codex

From the use of cuneiform, to engraved symbols onto tablets, to the invention of paper used in scrolls, the various mediums used to write on have shaped the history of writing and recording as we know it. From this base point, the world continued to change with the invention of the codex, which would eventually replace the scroll.

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From Scroll to Codex: New Technology and New Opportunities

-Anna O. Funk-

One of the most important disruptions in the history of the book was the invention of the book itself, which was originally called the “codex.” Of course, the definition of “book” is broader than the object we are familiar with today, because clay tablets, bamboo, and papyrus scrolls were essentially books, too, just in unfamiliar forms. When the codex came along, it was a novel form for recording knowledge and information—a disruptive technology. As we discussed in the introduction, a disruptive technology opens a new market and gradually overtakes an existing one, which is just what happened with the codex in the first centuries A.D. In this chapter, we will see that the book materialized primarily as a way for the early Christians to record their scriptures, and it gradually became the accepted form for preserving texts throughout Europe. Book illustration also changed dramatically because of the opportunities brought by the new technology, and monastic libraries sprang up as centers where books were copied, studied, and preserved during the Middle Ages.

The Scroll versus the Codex

The word “codex” is Latin and means “the stem of a tree,” and also refers to a board that was used for keeping accounts. It describes any written work in the form of books, which originally were pages made of papyrus or parchment sewn together at one side and bound in wood or leather covers^{1,2}. Before this, texts were usually contained in long scrolls that were rolled up when not being read. Scrolls, although more compact and manageable than bulky clay tablets, were quite cumbersome to handle. In order to reread a passage, a scholar had to rewind the scroll until he found the place he wanted. This would be nearly impossible, since there were no paragraph breaks or capital letters—let alone

Parchment pages, which were made from dried and scraped animal hides, were more durable and sturdy than papyrus. The most prized parchment was vellum, made from high-quality calfskin³.

page numbers—to help guide the reader. Also, a scroll could not contain a lengthy text, so to collect manuscripts one needed a lot of storage space. Usually, scrolls were kept in shelves divided into little compartments, like cubby holes.

The codex solved some of these problems. One could much more easily flip back and forth in the text, and pages saved space since they could have writing on both sides, unlike a scroll. This way, a manuscript could be contained in one volume instead of several scrolls, and one needed less storage space. The codex may also have evolved from notebooks used in the first centuries A.D., which were easier to carry around than unwieldy scrolls. People were very familiar with these notebooks. They used them for jotting things down, keeping accounts, and making first drafts of manuscripts, much like we use spiral-bound notebooks today⁴.

However, not all evidence suggests that the invention of the codex was due to all the problems associated with earlier technologies. Although codices were probably slightly cheaper to produce than scrolls, they were not much easier to read, because they still contained no paragraph breaks or punctuation. Besides this, the codex could not originally accommodate extremely lengthy texts like books can today. In fact, early examples of these books do not generally show a desire to economize space as we might expect⁵. So, why did the codex gain such popularity? It turns out that the development of the codex had less to do with practicality and more to do with the people who began using it: the early Christians.

At the time that early Christians were compiling their scriptures, Jewish writings included the Old Testament of the Bible. Around 200 A.D., Jewish rabbis collected traditional oral laws and sayings into a text called “Mishnah.” It quickly became an important part of Jewish theology and

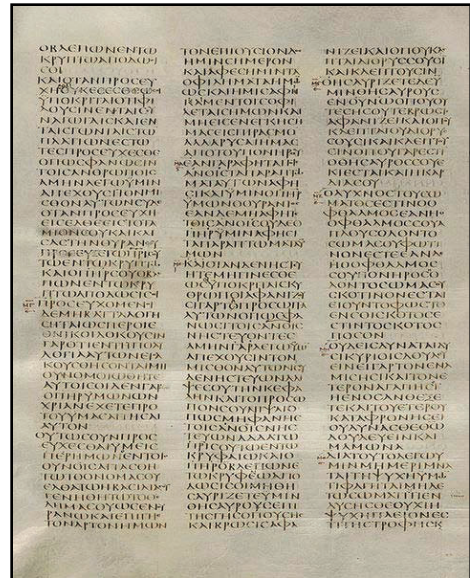
The Codex and the Early Christians

The early Christians were among the first to adopt the codex for their religious texts, and they played a pivotal role in perfecting its technology. We can see from surviving manuscripts that they deliberately chose to record the Gospels and other writings in book form. This may have been partly to differentiate them from first century Jewish texts, which were always recorded

in scrolls⁴. Christianity represents the fulfillment of Judaic tradition, proclaiming the arrival of the Savior and promising eternal life to all who believe in Him. Thus, early Christians would certainly have wanted to set the teachings of Christ and the apostles apart from Judaism. Using the new technology of the codex enabled Christians—and potential converts—to experience both a material and a spiritual transformation in the writings of their faith.

Early Christianity also involved a great deal of correspondence. In the first century A.D., Paul and several other apostles, who were the first evangelists, wrote many letters to various churches all around the Mediterranean. It is quite possible that these letters were copied and eventually bound into notebooks. The techniques they used were similar to those used to make codices, and the method easily transferred to more formal writings⁸. Christians had very good reasons for using the codex, and it quickly became the accepted technology for their texts, before Jewish and secular writers fully embraced it. Although a few codices with subjects like astronomy and medicine exist from the first century, the vast majority are Christian texts⁵.

One of these early codices is called the *Codex Sinaiticus*. This manuscript is one of the first codices to contain the entire Bible, which shows us that Christians had been perfecting the process of book-making and were able to make quite large books by the mid fourth century. Scholars debate where and exactly when the *Codex Sinaiticus* was written, but some think it was commissioned by Constantine the Great⁹. He was the first Christian emperor of Rome, and we know he ordered fifty Bibles to be copied in about 330 A.D.⁴. The Bible is written in Greek on parchment, and scholars have judged by the different handwriting that four scribes helped copy it. These scribes, as well as

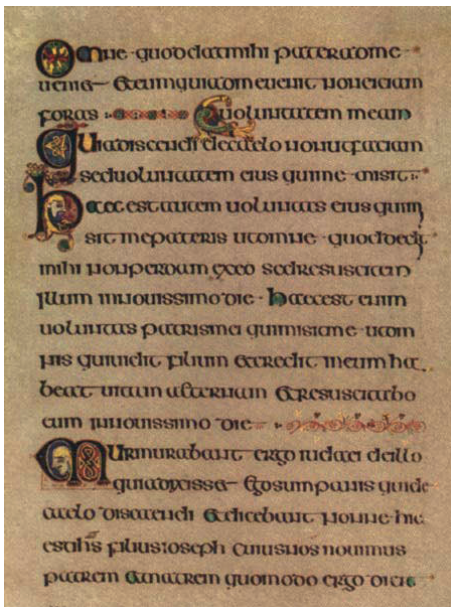


The Lord's Prayer in the *Codex Sinaiticus*¹

others up until the twelfth century, extensively corrected errors; books were not unchangeable in those early days^{10,11}.

Slightly later, Constantius II, who reigned from 337 to 361, appointed a philosopher named Themistius to undertake the rather daunting task of transferring writings from ancient scrolls to modern codices⁹. These texts were not Christian; he unearthed and preserved the works of philosophers and the literature of the ancient poets and playwrights. Clearly, the codex had become accepted as the preferred technology for recording information of all kinds. Eventual acceptance is one of the aspects necessary for technology to be considered disruptive, and the history of the book demonstrates this during the first centuries A.D.

Illumination



A page from the *Book of Kells*, an illuminated Bible from the ninth century²

Besides giving Christians a way to set their scriptures apart from Judaic texts and providing greater economy of space, the codex offered new opportunities for the illustration of manuscripts. In the scroll, illustrations had taken a subordinate role in the manuscript, usually in the form of simple drawings^{12,13}. Now, people began to see the opportunity to enlarge illustrations and separate them from the text. Early books like the *Codex Sinaiticus* were not extensively illustrated, but soon, art came to define the texts of the Middle Ages. We call this art of book illustration “illumination,” because the designs include opulent gold leaf and bright

“Gold leaf” is really made of extremely thin flakes of gold that are adhered to the page with glue or gesso. The latter is a type of paint that allows the gold leaf to be raised off the page, creating a brilliant three-dimensional effect¹⁴.

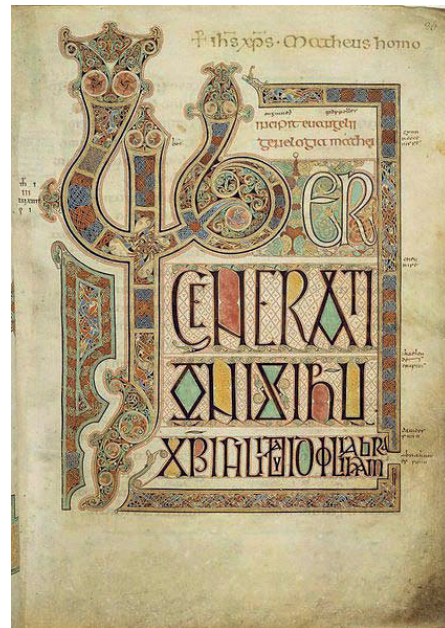
colors that “light up” the page. Sometimes illumination is confined to borders that surround the text, or embellished letters at the beginning of important passages (previous page), but sometimes a design fills a whole page. Some images are abstract, while others depict scenes from the Bible. In others,

dragons and birds weave among intricate patterns. Most noticeable, however, is the gold and silver leaf that embellishes the brightly painted designs. The effect is a dazzling display that complements the manuscript and attests to the artistic talent of the monks, scribes, and illuminators who undertook the work of making these books. Thus, we can see that the disruptive invention of the codex greatly affected illustration as well as manuscript format.

The *Lindisfarne Gospels* are a good example of how elaborate illuminations had become by the eighth century. The book contains four books from the Bible: the gospels according to Matthew, Mark, Luke, and John. They are the first books of the New Testament, and each one tells the story of Christ's life, death, and resurrection. The *Lindisfarne Gospels* were probably written and illuminated by Eadfrith, who was bishop of the monastery at Lindisfarne in northeastern England in the early to mid 700s. Many scholars consider the codex to be "one of the world's most famous and beautiful books¹⁵." The bishop used fine vellum, gold leaf, and an unusually large range of pigments, and the book's cover is decorated with precious stones. Full-page designs of crosses and each of the four gospel writers enhance the text. The artist-scribe wove intricate designs together and used lines of red dots to accentuate curves and letters. But the book's illuminations were never finished. Some pages only have unfinished sketches, so we must assume that Eadfrith became ill or died before he could complete his great mission¹⁵.

Monks and Scribes

The people responsible for creating the magnificent books of the Middle Ages were, like Eadfrith, usually monks, who were also called scribes. There



Folio 27r from the *Lindisfarne Gospels*³

The *Lindisfarne Gospels* also play another role in the book's disruptive history. In the mid tenth century, at a time when most books were in Latin, the manuscript was translated into Old English between the lines of Latin text¹⁵. This foreshadowed the surge of Bible translations to the vernacular six hundred years later which made the Bible more accessible to common people.

were secular copyists at the time as well, but most of these scribes were religious men¹⁶. They lived in remote monasteries, far from the temptations of the world, and spent their time in prayer, work, and study. The *Rule of Saint Benedict*, written by a famous abbot, encouraged monks to read for three hours each day. Because of this, books—and therefore the creation of more books—were an important part of life. Reading the scriptures and other texts by the church fathers helped the monks learn God's Word so they could become more righteous and prayerful¹⁷.

These monks usually copied manuscripts in a special room in the monastery set aside for the purpose: the scriptorium. Often, each monk sat at his desk in silence with a manuscript before him, painstakingly copying the words onto parchment or vellum, but sometimes, one monk read aloud while several others copied the text at the same time. This way, they produced several copies of the same book. The process in either case was laborious and prone to error, although scribes were warned to be very careful not to alter a word or the meaning of a passage. Even with proof-reading, though, mistakes were sometimes overlooked. Copying manuscripts was quite time-intensive, and the complex illuminations certainly added to the labor; a Bible could take one monk fifty years to complete¹⁶. However, these beautiful books demonstrate how the disruptive technology of the codex provided new opportunities for artistic creativity as well as a novel format for the text.

Monastic Libraries

The creation of monastic libraries was another disruptive innovation in the history of the book. Although they were dwarfed in comparison to the great libraries of antiquity like the Ancient Library of Alexandria in Egypt, these libraries became important centers of learning in Medieval Europe¹⁸. By the fourth century, the public libraries of the classical past were in decline, because early Christians were generally very wary of classical philosophy, and they sometimes even burned pagan books¹⁹. Ironically, the monastic library came to fill the void of learning left from the neglect and avoidance of classic literature

when Christianity first took root. This made books more accessible to scholars and the clergy, and provided opportunities to learn about the scriptures and classic writings of the ancient past.

These libraries could be found within monasteries throughout Europe beginning in the 400s, and they contained books on a wide variety of subjects. Of course, the most important and numerous writings were the scriptures—either portions or the entirety of the Bible—but libraries also preserved the writings of the church fathers, rhetoric, medicine, the classics, and even poetry^{18,20}. Some clergy still vehemently rejected the pagan writings of the past, but others studied and borrowed from the classics and encouraged their collection. Actually, monks are to be thanked for preserving the classical texts of antiquity, because they may otherwise have been lost¹⁷. Thus, the Medieval Period, far from being “the Dark Ages,” was a time when knowledge and learning was greatly valued, especially by Christians within the context of monasteries.

After the advent of the monastic library, as their collections became larger, monks began cataloging the books. These catalogs were usually just inventories listing the works in the library, and they were not very helpful by modern standards. Although sometimes catalogs were organized by subject or author, many had no organization at all, and provided only the name of the first or most important work in a particular book. We always think of a book as containing one work by one author, but in medieval times, writings—even by different authors—were sometimes put together into one codex¹⁸. Of course, listing only one work in a volume created incomplete records¹⁷. Besides this, a library catalog did not give information about where a scholar could find a certain book; it only showed him that the monastery owned it, and then he had to find it himself. However, these catalogs were still an important step in the disruptive innovation of the library.

Monks were not the only people to benefit from the renewed interest in learning. During the Carolingian era, education became increasingly available

to the laity because of Charlemagne's desire to revive the learning and knowledge of ancient Rome among his subjects. Libraries contributed to this immensely, since they held the information that was becoming so important¹⁹. Scholars travelled from monastery to monastery seeking books on every imaginable subject, and books travelled, too. Manuscripts were often copied and taken to other libraries, and pilgrims who visited Rome brought books back to western libraries, which quickly spread both religious and secular writings. The library had become an institution that was an integral part of medieval culture^{3,19}. Of course, all this learning took place in a Christian atmosphere; the Church essentially possessed and controlled all knowledge in Europe during the Middle Ages, but libraries allowed access to it, fostered education, and protected the valuable works of the past¹⁹.

The Disruptive Codex

Now we can see how disruptive the invention of the codex was, and what an amazing impact it had on the books and the culture of the early Middle Ages. It transformed the way we record information, using a new format and allowing larger and more elaborate decoration of the text. Its popularity first rose among Christians desiring to differentiate their scriptures from Judaic texts and looking for a way to transfer letters to a more permanent and convenient form. The technology, which was completely different from the scroll, didn't become fully accepted by others until Christians had already begun using it.

As for illustration, the codex gave monks the opportunity to begin creating beautiful and extremely elaborate designs that covered entire pages and illuminated manuscripts like the *Lindisfarne Gospels*. The monasteries where these monks lived soon began to collect books in monastic libraries, which preserved ancient classics, encouraged education, and provided literature to an increasing number of people. These disruptive innovations have become a significant part of our lives today, even though they have continued to change. We still read books in the form of the codex, many volumes are lavishly illustrated, and the library remains a central part of our culture. The invention of

the codex was a momentous step in the book's disruptive history that reminds us of how the present is always shaped by the past.

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The Spread of Knowledge via Print

-Richelle McDaniel-

While printing had already existed for several centuries, Johannes Gutenberg turned the printing world upside down and brought on a new era of print with his revolutionary innovation of movable type in 1445¹. Movable type printing used metal stamps of single letters that could be arranged into different words, sentences and pages of text. Using a large manually operated machine, the stamps would be arranged to read a page of text so that when covered with ink, it would print out a page of text. Before Gutenberg, all texts had been printed with woodblocks or fixed text stamps, both of which were complex and time-consuming processes². Movable type kept the metal stamp letters separate, which allowed printers to reuse the letters quickly on succeeding pages. As a result, more pages could be efficiently printed in a shorter amount of time with much less effort¹. From here, the opportunity to share ideas and knowledge brought on a new era of change and enlightenment never seen before. The movable type printing press, however, didn't affect all areas equally.



Movable type sorted in a letter case and loaded in a composing stick on top¹.

Print and the Power of Religious Knowledge

The first book printed with movable type was Gutenberg's Bible¹. Gutenberg started off printing forty lines per page but began printing forty-two lines per page instead³. Scribes, on the other hand, only wrote thirty-six lines per page in earlier bibles⁴. By fitting more lines per page, the Gutenberg Bible limited the amount of paper and parchment needed to produce a bible. The movable type also allowed for fast production of the bibles. While scribes took

three years to produce a single product, Gutenberg produced a total of 180 copies; 150 bibles on paper and 30 on vellum³. Fast production and fewer materials decreased the price and increased availability of the bible, thus providing more opportunities for anyone of any economic status to own and read a private family bible. As long as they were literate, many citizens no longer needed to rely on religious authorities for knowledge, interpretation, and analysis of religious literature. They could form their own intellectual opinions concerning the bible and their faith through reading. This shift in power from the religious authority to the people was a common effect of more accessible and inexpensive print, particularly in the religious sector of European culture during the fifteenth and sixteenth centuries.

Vellum, or calf skin, was a common printing material. 170 calves would have to be skinned to produce a single copy of the Bible.

Interestingly, the Catholic Church was one of the biggest early customers of printing press⁴. The Catholic Church utilized the press for printing ordinances, indulgences and anti-Islamic Crusade propaganda during the late 1400s and early 1500s⁵. Thus, it wasn't surprising that numerous monasteries hailed the printing press as a gift from God⁶.

The anti-Islamic Crusade of the Catholic Church was the first religious movement to utilize print.

Similarly, by the end of the fifteenth century, the majority of Western Europe cities had a printing press. Nearly eight million books, most of which were religious, were printed using the printing press by 1500. This is about 180 times the amount of books which could be produced by a scribe within the same time⁵. The decrease in cost of book materials due to technological production changes (namely paper and ink), as well as mechanization of the printing process allowed for mass production of less expensive books. This overall decrease in price led to an increase in literacy in Europe during the fifteenth century⁵. At the same time, the lower and middle classes began to develop an interest in reading since they could afford personal religious texts. Since reading spurs the formation of intellectual opinions, a large part of the population now began to read their own personal bibles and form their own opinions, which didn't always align with that of the religious authority figures. Disagreements between the two parties on biblical interpretation played a role

in sparking social upheaval and eventually the Protestant Reformation. With an increase in literacy, the more opportunities to own personal religious texts and growth of individual reading, the printing press ultimately undermined the Catholic Church and disrupted the European religious culture by spreading religious knowledge and shifting the power to the people.

Martin Luther was the vehicle responsible for spreading knowledge of the Bible to a large population during the sixteenth century, ultimately sparking the Protestant Reformation. For centuries, Catholicism was the religion of Europe. Although Luther loved the Church, he had his reservations concerning the corrupted sale of indulgences by certain religious authority figures, including but not limited to Frair John Tetzel of Germany. Under Catholic teaching, every sin must be absolved either here on earth or after death in a state called purgatory before one could go to heaven¹. A purchase of an indulgence

Selling indulgences by religious authority figures was simply a way to raise money for the Church.



Martin Luther nailing his Ninety-Five Theses on his Church's door in 1517².

in Catholicism absolved and relieved punishment from sins either partially or fully. Normally one would go through Confession to have their sins absolved. This would in turn, shorten the amount of time in purgatory since their sins would be partially or fully absolved when alive before entering purgatory¹. Luther disagreed with the Church, he believed that purchasing indulgences wouldn't shorten time in purgatory. To address his beliefs and concerns, Luther pinned his Ninety-Five Theses to the church door on October 31, 1517. These short statements challenged what he thought were inconsistencies with the religion and practice of the Church, mainly the sale of indulgences. Luther only intended to address issues of the Church conventionally, through scholarly debate with other professors of theology. However, the theses were swiftly printed and distributed by Hans Lufft of Wittenberg¹. At least 300,000 copies were printed and distributed in total between 1517 and 1520 in all of Europe, including those translated into other

vernacular, or native languages, aside from the original German.⁶ Within a month, all of Germany was aware of the theses. Within three months, all of Europe quickly learned of them¹.

Not only did Luther address abuses of the Church and theological errors through his Ninety-Five Theses, he also translated the Bible from its original scholarly Latin language to the German language of the common people¹. While there were eighteen other German versions of the bible before, Luther's translation appealed to speakers of many local German dialects, which had never been done before⁴. The printing press allowed for Luther to print over 200,000 copies of his German Bible, which allowed for the accessibility and affordability of personal religious



Title woodcut of Martin Luther's 1541 German Bible³.

texts. Since most household bibles were translated into the common spoken language, this allowed for more people to individually read and analyze the text

in the comfort of their own language. Thus, individual thoughts and opinions of the text and the faith could be formed instead of being influenced by the Church. More people could question the practices of the Church if they didn't line up with the theology of the Bible. However, most common households still didn't own personal household Bibles, as they were still quite expensive despite Luther's Bible being a bestseller in the 16th century. The real agents of Protestant Reformation were the mass production of pamphlets, brochures, and flyers

"Kissing the Pope's feet" was one woodcut from a series of Anti-Catholicism propaganda by Lucas Cranach commissioned by Martin Luther. This type of propaganda is usually referred to as a Papstspottbilder.



"Kissing the Pope's feet" (1545) Anti-Catholic Propaganda⁴.

with images depicting the Clergy as corrupt and Luther as the Good Shepherd⁴. The graphic images carried an anti-Clergy message to the illiterate when the re-printings of the Ninety-Five Theses and the German bibles could not.

The mechanized movable type printing press was the technology that made the spread of religious knowledge and revolutionary theological ideas possible to many Europeans. Before Gutenberg, the process of printing was more complex and expensive, only giving those with large amounts of money access to printed materials. With the Gutenberg printing press, printing became more efficient and inexpensive, which allowed for mass production of materials such as Martin Luther's Ninety-Five Theses, his German Bible, and anti-Catholicism propaganda. While the printing press allowed for increased mass production of printed materials in general and thus increasing literacy, still only a small portion of the population was literate. However, the spread of knowledge and ideas manifested also in graphic illustrations on portable flyers to reach the rest of the illiterate population in ways never before possible, thus making the Gutenberg printing press a disruptive technology. This technology was also partially responsible for the shift in the power from the religious authority to the people, allowing for the Protestant Reformation to happen.

Mechanized movable type didn't always prevent errors. The Bible of 1613 had a standardized error of "not" being omitted from the seventh commandment. It was adequately named the "wicked" Bible soon after.

Print and its uses in the History of Science

Print didn't affect all areas of human culture equally. The scientific community utilized print in similar fashions as the Church; however, print ended up revolutionizing the scientific community in different ways than the Catholic Church.

Since science was considered a subject of high academia and scholarship, it wasn't a prominent part of many citizens' daily lives like religion was. The study of science itself was confined to a select few scattered around the globe. As a consequence, the effects of print on the development of science and the general populations were much slower than that of religion, and often not seen until the seventeenth century⁶. Even though the movable type printing press increased the amount of inexpensive scientific books available to both the scientific scholars and the rest of the population, most of the general population didn't buy the books because the topics were irrelevant or too complex for their understanding⁴. Thus, the main consumers of early scientific material were still

mostly scientific scholars in the immediate years after the innovation of the printing press. The printing press did play a huge role in the Scientific Revolution within the scientific community, which later led to the spread of scientific knowledge to the rest of the general population¹.

Before the printing press, many professional scientists kept much of their work from publication. When they did publish, it would be handwritten or printed using wooden stamps that easily deteriorated. Mistakes and textual corruptions in publishing scientific reports were extremely prevalent⁷. After the printing press, published works could circulate more easily within the scientific community with fewer errors. This allowed for easier exchange of ideas and discoveries between scientists of geographical and time constraints⁸. Also, the development of movable type metal plates in place of wooden plates made accurate visual information such as diagrams, maps, anatomical drawings and representations of flora and fauna more permanent⁴. Lastly, the printing press encouraged reprinting and distributing of ancient texts by previous scientists for current scientists to access and consult freely⁴.

Major works marking the Scientific Revolution, such as Nicolaus Copernicus' *De Revolutionibus* and Andreas Vesalius' *De Humani Corporis Fabrica*, are examples that were greatly affected by the technological advances of printing and publishing at the time.

Copernicus' *De Revolutionibus* revolutionized 2,000 years of scientific concepts by placing the sun in the center of the universe instead of the earth¹. His claims were backed up with evidence and diagrams just as previous scientific works had done, but he could utilize the printing press to publish his work in both increased quantity and quality. While at first, his work only circulated the scientific community, within the next 100 years, the rest of Europe had heard of his radical ideas¹. Print not only allowed for Copernicus to publish his work accurately to a mass population both inside and outside his own country, but it also allowed him to access and study the reprinted works of great astronomer Ptolemy about the geocentric universe model from around 100

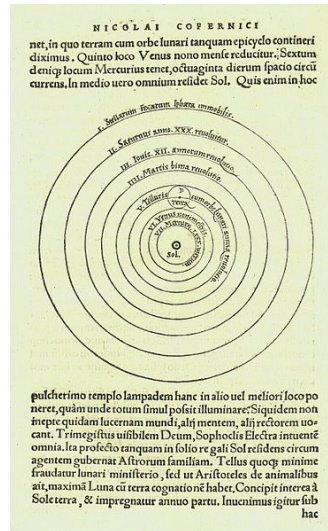
A.D. freely with his fellow scholars⁴. Without being able to read the earlier scientific works of Ptolemy, it would be most likely that his ideas wouldn't have been formed the way they did, nor would he have had the ability to disprove the previous dominant theory.

Similarly, Vesalius' *De Humani Corporis Fabrica* was the most important work in human anatomical studies for the next 200 years. Thanks to print, he was able to consult reprinted previous works of Roman scientist Galen. Galen only based his work off of animal dissections and sometimes off of surgeries because scientific methods were limited during his time⁶. Unlike his predecessor, Vesalius based his work mostly on human dissection, which led to more accuracy. His work compiled many precise and detailed images or diagrams of veins, bones, tissues and muscles in the human body never seen before¹. The printing press allowed for mass production of these detailed drawings, which would have taken years to print one copy by other printing processes or a scribe⁹.



A. Vesalius, *De Humani Corporis Fabrica*⁶

Print not only had an effect on the accessibility of current works to both the scientific community and the general population, it also gave rise to the development of modern science methodologies. After the innovation of the Gutenberg printing press, publication became easier and faster. This led to an information overload much like a simple Google search would cause today. It became harder to determine which scientific works were credible academic studies and which weren't. One way to tell the difference was through formal committee



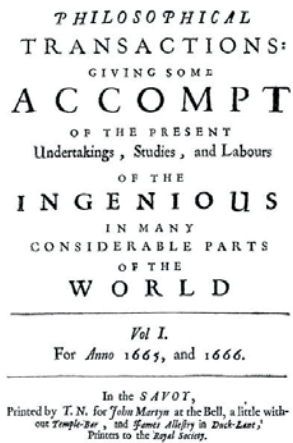
Heliocentric Model Diagram from Nicolaus Copernicus's *De Revolutionibus* (1543)⁵.

Today, writing scientific papers based on the model of scientific inquiry is not only required for professional researchers, but is also required for all students taking any science course.

Another major work in medical history was William Harvey's *Exercitatio Anatomica de Motu Cordis et Sanguinis in Animalibus*. Harvey's book tracked blood flow through arteries, veins and capillaries of the human body. This was a major milestone in understanding human physiology, not just anatomy.

evaluation of works. Any new work published wasn't deemed an actual scientific study unless it was granted formal approval of a committee consisting of various well-known scientists of the scientific society¹⁰. Most accepted submissions tended to follow a certain pattern, one that is very close to the modern design of scientific inquiry. This could be because writing in that particular format showed academic scholarly status. After being submitted to the committee, the committee would write a review on the paper, ultimately determining its validity¹⁰. The same tradition continues today. Peer-reviewed articles of primary scientific articles circulate as much if not more than primary scientific studies in modern scientific journals.

Another way to organize the sudden influx of scientific literature was to sort it into larger volumes. These larger volumes soon became regularly published scientific journals that included a variety of scientific writings. Each included both original primary works and peer-reviewed articles⁶. Journals sped up circulation of scientific news and enabled scientists of different geographic regions to keep tabs the work of their foreign colleagues. Every aspiring



Philosophical Transactions of the Royal Society. Vol. 1. (1665-1666).⁷

scientist soon wrote their works in similar format to those already published if they wanted any chance at publication. This periodic publication is viewed as a further extension and standardization of scientific reporting⁶.

Print didn't shift the power from the elite to the common people in the science sector as it did in religion. It did, however, allow for an increase in the spread of knowledge and discoveries to both the scientific community and the general public through scientific journals and other published works of scientific inquiry. Without the printing press, great works such as Nicolaus Copernicus' *De Revolutionibus* and Andreas Vesalius' *De Humani Corporis Fabrica*, wouldn't have been written, circulated to wider audience and allowed

In 1665, Philosophical Transactions was one of the first scientific journals. Another scientific journal that came out concurrently was Journal des Scavans.

for the Scientific Revolution to take place the way it did; making the printing press a disruptive technology in more than one area of our lives.

Change in Language Standards

Gutenberg's movable type printing press may have affected the scientific and religious communities in numerous different ways, but it also affected both in a few similar ways. One such example is the change of standard print language from Latin to vernacular, or native, languages. These languages included Spanish, French, German, and English among others at the time. In Europe, Latin was the official language of science, the Church, and the monarchy⁴. Latin was known as the language of the educated elite. The language's connection to the glorious days of the Roman Empire and its use in classic literature made this language the obvious choice to be the standard language of other academic and dignified pursuits such as scientific and religious study¹. Reading books specifically was also associated with these elite communities for the purposes of enlightenment and gaining knowledge. Citizens of lower economic and social status often had no free time or energy after a day of labor-intensive work. It wasn't surprising that 77 percent of all books printed in Europe before 1501 were printed in Latin⁴.

This language connected scholars from all around Europe despite geographical constraints. International academic readers of these topics enjoyed a uniformity among their fellow scholars which set them apart from the general public. However, Gutenberg's movable type printing press allowed for the development and use of metal stamps of the more common vernacular languages' unique letters. This soon had a democratizing effect on Europe¹. More Europeans of lower social and economic status demanded books in their own languages since they could now afford personal copies of scientific works and religious texts. As books became more affordable and accessible with the growing widespread number of printing shops, the idea of equality in accessibility and understanding of knowledge spread throughout spanned Europe as other influential figures, including Italian scientist and astronomer

Galileo Galilei, also began to publish works in their native languages, believing that every citizen should be aware of the progress in the study of science and religion. Although there was much unrest from international readers and scholars when the first bibles or scientific works were printed in vernacular languages, the supremacy of Latin was gradually eroded⁴.

As more scientific and religious works were printed in the vernacular languages, a stronger sense of nationalism and revival of culture arose in many European countries¹. Every time an elite academic figure published works of high importance, new sense of pride and unity was brought to that figure's home country as it was believed that the country's greatness was connected to the importance of the scholars who grew up in that country. Especially in the scientific world, citizens rooted for scientists from their own country to make the next big discovery first. This is much different than before, where scientists kept to themselves and their colleagues, and were more connected to other members of the scientific community through the mutual language of Latin than to their own country¹. In the religious sector, more people could access and form their own opinions of religious texts, eventually leading to the social change behind the Protestant Reformation. This widespread cultural shift wouldn't have been possible without Gutenberg's printing press and the spread of religious and scientific knowledge. The movable type printing press and other concurrent innovations allowed for printed materials to be inexpensively mass produced in good quality. This allowed for printed materials previously available only to elite scholars and important religious figures to be easily accessible to the rest of the general population. Newfound accessibility of printed materials increased literacy and ideas of equality in knowledge, led to the disruption of the standard print language of Latin with individual vernacular languages.

Printed Materials as Agents of Change

Gutenberg's movable type printing press was a disruptive innovation in more ways than one. In addition to making printed materials more accessible, it

After he observed imperfections on the surface of the moon in 1609, Galileo Galilei was rumored to consistently poke fun in subsequent published works towards people who still believed the geocentric model or that God created everything to be perfect. He later spent the rest of his life under house arrest by the Roman Inquisition.

allowed for the spread of knowledge both within elite communities, like the Catholic Church and the scientific community, and also to the rest of the general population. It brought about new innovations and ideas that lead to changes in power and standards in both the religious and scientific areas of European culture. These included a shift in religious power from the Church authority to the general population, standardization of scientific reporting, and an influx of new scientific discoveries. Although it may seem like the printing press affected the European science and religious community differently, the changes between the two are actually intricately intertwined. Both scientific and religious works were subject to a language change from Latin to vernacular languages. All of these changes were possible because of the printing press. Even more, it allowed for greater accessibility and spread of all kinds of knowledge throughout a wider population never before seen, bringing about several new social dynamics that will lead to several social revolutions.

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Printing as a Catalyst for Social Revolution

-Alissa McAlpine-

In the 15th century English began to emerge as a language spoken in instructional settings, then spread into the political and academic worlds as well. Along with this development came a slow but steady rise in literacy in England and the world in general. While there were a great many social, political and religious influences on this development, none of them would have been possible without the invention of the printing press. The introduction of this groundbreaking machine to the English speaking world sparked a new literary age, which ultimately established the foundation on which future revolutions of religion and politics would be built.

Caxton's Printing Press

When printing was first introduced to England, the English language varied widely among its users. There were five distinct dialects, and even within these five groups spelling differed greatly, depending on the writer. While attempts were made by the Chancery of Westminster to standardize spelling in previous years, there was really no way to enforce any standard spelling rules. Then, with the advent of printing and the massive release of identical texts, it followed that the dialect used by the printers became commonplace, as it was what people were



16th Century Dialect Map¹

reading. William Caxton first introduced the printing press to England in 1476. He began his business in London, whose major dialect was that of the East Midlands.

Over time, East Midlands spelling became the standard, due to the fact that it was the most common dialect in which literary works were printed¹. On the surface, this was purely a literary change, but beneath the surface there were some significant political issues that arose as a result of this movement. It raised questions of “correct” versus “incorrect” English, mirroring the modern debate of “who” and “whom,” whether or not it is appropriate to end a sentence with a preposition, and so on.

English as a Formal Language

Until the 14th century, English was generally seen as a language only spoken by the common people. It was not refined. People of status would more often speak French and almost all political, religious, and scientific writing was done in Latin. However, with the advent of printing in London, English became a language of literature in addition to being commonly spoken among the working class. It gained more and more prestige but was ultimately still seen as a lower-class language. The general opinion that English as a language was inferior to the more formal languages was expressed by Caxton himself when he stated that he was translating a Dutch work “in to this rude and comyn englyssh².” There were attempts to make English a more formal language, and so some Latin spelling standards were adopted at this time in an effort to add prestige to the English language and make it more acceptable in high society. Many of these words are still in use today, which provides some explanation for the tremendously complex “sometimes, but not always” rules of English spelling.

French was the language of the higher class at this time, and so English adopted many words related to government, food, and entertainment from French. A few examples of borrowed words are “administer,” “ribbon,” and “innocent.”

The fact that Caxton’s works were spread among a wide audience with consistent spelling, grammar and punctuation gave his work authority, and in that manner his style came to be recognized as a “standard” for written

English^{3,4}. In addition, authors' individual writing styles were influenced by the broader exposure in the world and the faster production of written materials. The awareness that their work would be held under scrutiny by a wide array of intelligent people provided additional motivation to ensure that their work was of high quality and easily understood, which had a hand in the rise of linguistic standardization⁵. The effects of these efforts came to be realized quite quickly at this time with the emergence of the English middle class. Suddenly members of the upper-class elite found themselves socializing with people of different social and cultural backgrounds, and as a result the English language was transmitted through exposure. The increase in contact between the highest classes and more common people created an optimal social situation to foster a rise in acceptance of the English language. As a result, the courts were using English on a regular basis as early as 1356. Latin was still overwhelmingly used in scientific and medical fields, but the English language itself was well on its way toward becoming England's primary spoken language⁶.

Over time, these standards came to be accepted and eventually English became the language used in government in England. Of course, English wasn't perfect by any means. There was still some variation regarding spelling and the borrowed words from French and Latin certainly complicated matters, but that being said, it is undeniable that this was a period of significant change for the English language, and firm foundations were built on which modern standards have been formed. Without the introduction of the printing press during this shift of linguistic perspective, it is entirely possible that the tremendous variation with which people wrote and spoke would have prevented the kind of effective communication that led to the rise of independent thinking that is evident throughout the Renaissance.

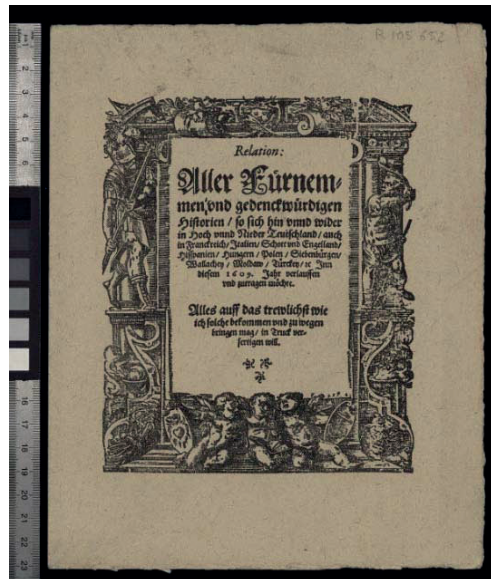
The Early Spread of Literacy

Given printing as a faster way of spreading information and the development of a somewhat standard spelling system, progressively more

people became literate throughout the 15th century. When the printing press was first introduced to England, only 5% of adults in the United Kingdom were considered literate. It is important to note that, given the fact that there is no official census data from this period to determine who was literate and who was not, historians rely on the ability to sign one's name as proof of literacy. As opposed to modern conceptions of literacy relating to the general ability to read, write, and comprehend, this means that at this point in history, only 5% of adults were capable of signing their name, let alone reading or writing more complex texts. Given increased access to printed materials provided by the tremendous increase in the speed of book production, the ability to read and write became a much more useful skill. By 1550 literacy rates in England had tripled. In the early 1600s education became an integral part of urban life in England and there was a sharp spike in literacy, rising to 53% of the adult population in 1650^{7,8}.

The Rise of the Newspaper

As literacy rates rose among the general population there was suddenly a fast and efficient way of informing the general public: through a regular printed work. The first newspaper in Europe was printed in Strasbourg, Germany by Johann Carolus in 1605. Entitled *Relation aller Fürnemmen und gedenckwürdigen Historien*, it was formatted as a book with text in one column⁸. At this time newspapers were printed weekly, eventually expanding to bi-weekly or even daily publications later on. Newspapers allowed the general public to stay in touch with important events, and this access allowed common people to feel more connected with the events of their time. Through this new



Title Page of Carolus's Newspaper²

medium newspaper publishers were able to keep the public informed of current events, which was a crucial part of the political and social upheaval that was soon to follow.

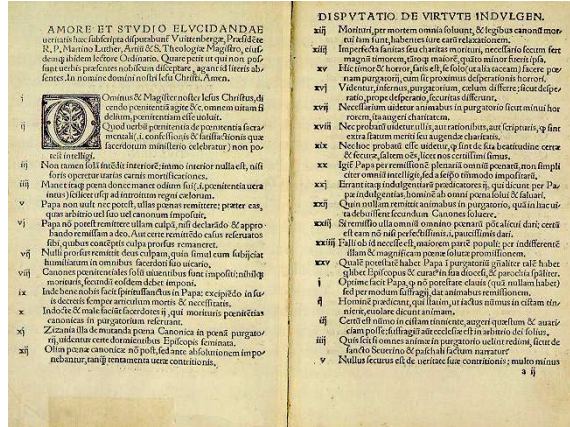
At this point there was already a strong system of censorship established throughout Europe, but the rapid pace of newspaper media made it more difficult for the church or government to keep tabs on what was being printed. Their careful attempts to control the spread of information were shown in the choice of many newspapers to print articles about things that were happening farther away in order to avoid retribution by censors⁹. One of the most significant impacts of the advent of printing was that, in a way, it made the world a smaller place. Cheap and easy access to printed pamphlets and newspapers allowed the general public to be more involved with larger events in the national or global communities. The ability to read opened people up to ideas that they simply would not have been exposed to in the world before printing.

Pamphlets and the Spread of Social Agendas

Among the new possibilities posed by the printing press was the idea of a printed pamphlet containing information or opinions. They typically consisted of several sheets that were loosely bound together with paper covers. These pamphlets were published throughout the world, but were particularly common in England, France, and Germany in the 16th and 17th centuries. They contained religious, social, scientific, and political writings that authors and printers wanted to make available to the general public. They were relatively cheap to print (in comparison with longer works printed with higher quality materials) and so were also cheap to distribute. Through these pamphlets various people were suddenly able to make their perspectives widely known, and this ability was used to promote a variety of disruptive ideas. They abounded in the early 16th century in the religious setting, with many writers working to spread support for religious reform¹⁰.

Martin Luther

One of the most commonly cited revolutionary pamphleteers of the 16th century was Martin Luther. He is credited with starting the Protestant revolution in Germany when he nailed his “95 Theses on the Power and Efficacy of Indulgences” to the door of a Catholic church in Wittenberg in 1517. In this work, he argued that only the scripture is authoritative and generally challenged the power of the Pope.



Martin Luther's “95 Theses”³

These writings eventually got him excommunicated from the Church, but that ultimately led those who agreed with him to break away from the Catholic Church and establish Protestantism¹¹. After originally posting them outside of the church, the “95 Theses” were printed and disseminated to the masses, which sparked a time of widespread religious upheaval and eventually led to the rise of the Protestant church. Mechanized printing allowed him to make enough copies of his work to spread it to the surrounding areas and create a strong body of support from the populous¹².

It is important to note that there was unrest within the Catholic Church prior to this point. Luther was one of many individuals who spoke out against corruption in the Catholic Church at this time, and there were certainly a number of other important figures in the instigation of the Protestant Reformation. However, Luther’s publication of the “95 Theses” came at a time when the political situation was ripe for revolution, and the availability of

printing as a means to quickly spread his ideas led to his movement being the spark that was needed to ignite the Reformation¹³.

Women in the Printing Industry

These developments in the religious world demonstrate the power that the printing press held to spark revolutions, but other areas of the social environment were also strongly influenced by the new ability to quickly produce and distribute printed works. For instance, Europe was firmly established as a patriarchy in the 16th century. Women, in general, did not work outside of the home and were often viewed as political pawns. The rise of the printing industry, however, created an opportunity for women to start to be heard more and more. In addition, printing created jobs that women could take outside the home that were socially acceptable.

Up until this point there were women who could read and write and did so frequently, but these women were almost always members of the highest social classes and their ideas were not viewed as equal to those of men. It is also important to note that female literacy rates were drastically lower than those among men. This changed somewhat as general literacy rates rose, but it remained highly uneven despite these developments. Some women chose to write and publish under a male pseudonym in order to be taken more seriously. Some recognizable names from the 18th century such as George Elliot and George Sand were pseudonyms for female authors who preferred to publish under a male name¹⁴. This practice continued and evolved with the advent of printing, allowing for women to release their ideas to the public. With the new print culture, women were involved with the production of books in all areas. Writing, printing, stitching, binding, and distributing were all acceptable fields in which women could participate. While true centralized efforts for gender equality would not arise until much later, the change in attitude that surrounded the establishment of the printing industry allowed for a change in political station on the part of women in general¹⁰.

One example of the varied roles women played in the printing industry is in *The Mother's Legacie, to her Unborne Childe* by Elizabeth Jocelene, which had women involved in all of the processes of writing, printing, and publishing.

Printing and the Social Environment

Printing in and of itself had a wide range of significance within the social spheres from its conception through the Renaissance and even into modern times. It allowed greater access to information on a global scale and fostered the kind of intellectual curiosity that sparked events such as the Protestant Reformation, the industrial revolution, and political revolutions worldwide. The linguistic developments brought about through printing are also significant. The rise of the printing press created a baseline by which to establish a standard of the English language, which then shifted with other social and political pressures and slowly became the system we know and use today. The adoption of this new technique and the explosion of mechanized printing procedures revolutionized the way information was disseminated, and forever changed how the world perceives the spread of knowledge.

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Censorship

– Meghan Link –

Imagine being imprisoned for publishing personal opinions or ideas. This was a common punishment due to censorship. What is censorship? It is basically what happens when anything is deemed inappropriate by a government. Censorship suppresses speech, public communication, and other forms of information and literature¹.

In ancient Rome, censorship was regarded as an honorable task since it was ideal for good governance to shape the character of the people². Meaning that the Roman government was expected to decide what the people were taught, learned, and knew. In ancient Chinese societies, censorship was also used for regulating the moral and political life of the population². Ultimately authors and printers



In this painting, *The Death of Socrates*, the other men, unlike the stoic Socrates, show emotional distress¹. Socrates was one of many writers sentenced to death due to censorship.

were forced to drink poison or sentenced to prison for corrupting the people through their illegal material. This sounds extreme, but it was done as a benevolent duty in the best interest of the public. For as long as the written word has existed, it has been targeted for censorship.

The invention and evolution of the printing press further encouraged the kind of disruptive writing and thinking that only increased the demand for censorship. More books were written, copied, and were now more widely disseminated. Ideas perceived as subversive and heretical were spread beyond

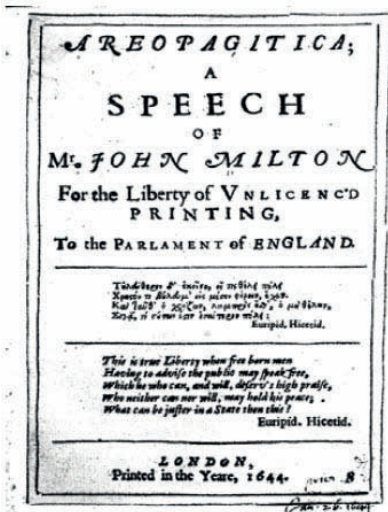
the control of the rulers, so what happens next? Censorship became more rigid and punishment more severe.

The Licensing Order of 1643

England's parliament instituted the Licensing Order of 1643 in an attempt to eliminate piracy and chaos in the printing industry, protect parliamentary activities, and suppress royalist propaganda³. The Licensing Order reintroduced strict censorship regulation including pre-publication licensing and registration of all printing materials with the names of author, printer, and publisher. Basically, the Licensing Order made it nearly impossible for controversial written work to be published because everything printed was required to be approved. In addition, authors, printers, and publishers were subject to search, seizure, and destruction of any books found to be offensive to the government. Arrest and imprisonment for any writers, printers, or publishers was common³. The Licensing Order made it particularly difficult to write or print anything unless approved by the Stationer's Company. This was a group of men appointed by the government to censor anything inappropriate according to them³.

John Milton's *Areopagitica*

John Milton vigorously opposed the Licensing Order in his plea for freedom of the press through his much disputed speech *Areopagitica*. In this work, Milton argued forcefully against the Licensing Order of 1643, which required authors to have a license approved by the government before their work could be published. Milton's purpose was to voice his grievances about the censorship regulations and concluded his introduction by encouraging Parliament to obey 'the voice of reason' and to be willing to repeal any act for the sake of



Areopagitica is regarded as one of the most eloquent defenses of press freedom ever written because many of its expressed principles form the basis for modern justifications of that

truth and upright judgment⁴. Milton argued that Parliament's licensing order would fail to suppress scandalous, seditious, and slanderous books². He points out that Parliament will not protect the people from banned books through censorship because the books would more likely end up in the hands of the people in some way or another, and he was right.

Forbidden Books

The censorship system could not stop the production of oppositional literature during the Enlightenment. For example, French authors could publish controversial works in Switzerland, England, or the Netherlands⁵. Banned books were sought after and expensive. Readers were interested in the merging themes of pulp fiction like philosophical, sexual, and anti-monarchical interests, which further increased the fascination with reading banned books.

Banned material could not be handled in the same way as legal works. There were underground marginal entrepreneurs who were willing to take the risk of publishing illegal works⁹. In comparison to ordinary books, banned books were worth more on the market, cost more to produce, and involved greater risks along the process⁹. The prices of forbidden books began at a higher rate, usually twice that of an ordinary book. The price then dipped and soared depending on condemnations and police raids, which was always good publicity for the books and business

Trade Jargon

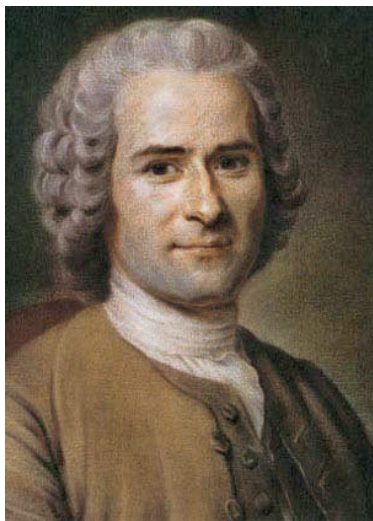
Language offered problems when trading forbidden literature because people could not openly talk about the various titles or subjects. There were terms used to talk about banned material like 'clandestine books,' 'drugs,' 'miseries,' and *mauvais livres* – 'bad books'⁹. Publishers and booksellers preferred to use the term *livres philosophiques* – 'philosophical books.' This term served as a signal in the commercial code to designate books that could get booksellers or publishers in trouble, books that were required to be handled with extra care and caution⁹. The elaborate trade process of forbidden books

relied on this code. Because everyone in the trade shared the code, the booksellers assumed their supplier would know what they were talking about when they issued orders such as ‘three copies of all your newest philosophical works’.

Contraband works were published in Swiss centers and then brought over the mountains to a merchant on the other side of the border of France⁵. Customs would rarely check an aristocrat’s baggage, providing the perfect secret route for illegal material. The underground book trade operated profitably alongside the legal production and sale of books⁵. There was always a ready market for works that ridiculed the degenerate court, the king’s sexual inability, and other political figures mixed with pornography; therefore, the forbidden books would continue to be published, dispersed, and read.

Jean-Jacques Rousseau

Jean-Jacques Rousseau was one of the most influential philosophers during the Enlightenment in 18th century Europe. However, many people did not agree with his disruptive ideas. In his early work, Rousseau wrote in response to essay contests. He argued that the progression of the sciences and arts had caused corruption of virtue and morality, and that human beings are



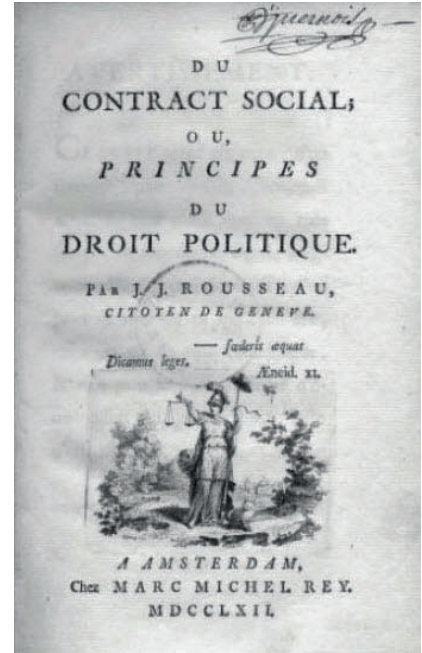
Jean-Jacques Rousseau³

basically good by nature, but were corrupted by complex events that resulted in the present-day society⁷. Rousseau’s work was considered somewhat controversial, but yet people continued to read his work, which caused a disruption to the government’s censorship of what the people read and learned. In 1762, Rousseau’s works *The Social Contract* and *Émile* were published within months of each other. These works caused great controversy in France and were immediately banned by authorities⁸. Rousseau fled France and settled in Switzerland, but continued to face difficulties.

The Social Contract

The Social Contract systematically outlines how a government could exist in such a way that it protects the equality and character of its citizens⁶. In Rousseau's opinion, the problem can be fixed by making a social contract in which the citizens give up some of their rights to the government in exchange for the government giving the citizens' equality and freedom⁸. The French authorities obviously disagreed with Rousseau's proposed social contract for they immediately banned *The Social Contract*.

Rousseau originally intended the political ideas expressed in *The Social Contract* to form part of a much larger and more elaborate work of literature, but ironically it was the brief and to the point pamphlet-like style, along with the banning in Paris, that made it very disruptive and popular.



***The Social Contract* was one of many of the forbidden books during the Enlightenment in Europe⁴**

Émile



As described in *Émile*, the teacher lets his pupil discover and reflect while teaching him to follow nature⁵

Émile is a work that details Rousseau's philosophy of education. Rousseau wrote *Émile* as part novel and part philosophical exposition. This work was written in first person with the narrator as the tutor, and *Émile*, the pupil, is described from birth to adulthood⁸. The major point of controversy that led to the banning of the book, was not his philosophy of education, but rather that it argues against traditional views of religion.

Rousseau's views on religion presented in his works struck some as conflicting with the doctrines of both Catholicism and Calvinism⁶. At the time, Rousseau's strong endorsement of religious tolerance was interpreted through *Émile* as advocating indifferentism, a heresy at the time. This also led to condemnation of the book in both Calvinist Geneva and Catholic Paris. Between the banning of *Emile* and *The Social Contract*, Rousseau was subject to arrest and fled.

Regardless of the brutal and severe punishments for producing illicit material, authors, printers, and publishers continued manufacturing and selling forbidden books. Books proved to be disruptive because the freedom of expression through written works caused censorship and the banning of numerous amounts of literature.

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Voltaire: An Example of Enlightenment Censorship

-Jennifer Hight-

The Age of Reason, also known as the Enlightenment, emerged from the Protestant Reformation and emphasized reason and individualism, which was a new thought process⁶. This Enlightenment caused many new writers, philosophers, and artists to question the traditional authority. The authority that was most questioned during this period of time was the monarchy.

The various monarchies throughout Europe were afraid that this movement would be disruptive to the old orders. The Enlightenment raised questions about the rule of monarchs which made many nobles nervous, and questioned the authority of the Catholic Church⁶. To these powers that had held firm control of Europe since the Middle Ages, the writers of the Enlightenment were a threat that would disrupt their carefully held power.

The Enlightenment was a cultural movement towards reason and away from religion during the 1700-1800's.



Painting on French nobility in 1700's¹

One nation in particular was very wary when it came to dealing with this new Age of Reason. France had been under the control of a very powerful monarchy since the formation of the nation. However, by the time of the Enlightenment that monarchy had begun to weaken and allowed for more

dissent to begin to grow. Under the pitiful rule of King Louis XV, the new movement undermined the monarchy at every turn⁵. The monarchy began to enforce strict censorship laws against these writers.

The censorship in France made it so there was no political criticism in the press at all during this time period. Any writers who would be caught violating this rule would be thrown in prison, no questions asked². These harsh enforcements kept many writers compliant with the French monarchy, the new disruptive Enlightenment created more and more writers who refused to conform to the censorship laws. One such writer in the Age of Reason was Voltaire. Originally the French court's pet writer, Voltaire would manage to get himself banished and had many of his works banned from France due to the censorship laws².

Voltaire and his Interesting Life Choices

On November 21, 1694 one of the most notable Enlightenment writers was born in Paris. Voltaire, the famous philosopher adored by France, was named Francois-Marie Arouet before changing his name later in life¹. Born to an upper-middle class family, Voltaire had access to a strong education that allowed for him to become such a famous writer. Growing up, Voltaire was the youngest of five children, which is a difficult date for anyone to deal with¹. However, his life became even harder when his mother passed away when he was seven years old. Turning away from his family, Voltaire grew quite close to his godfather who was famous for being a freethinker. This relationship is what originally kick-started Voltaire's inspiration for the Enlightenment¹.



Voltaire²

In 1704, Voltaire began to show exceptional promise as a writer. This allowed him to be accepted to a Jesuit school when he was only ten years old. Voltaire was taken to a Jesuit University, which would be considered a combination of college and high school today. There he received a "classical" education. This means that Voltaire was able to study art, history, philosophy, and literature, which were quite the achievement for the young man. At this point in time, classical education was typically reserved for the aristocracy.

After school Voltaire went on to be one of the most accomplished writers in France where he is still read to this day. His works are typically divided into four different sections: poetry, philosophy, history, and plays¹. Today Voltaire is best known for his philosophy. His works, including *Plato's Dream*, are still taught in philosophy classes today across the world.

While Voltaire was considered to be one France's greatest writers, during the Enlightenment he had a troubled history with the aristocracy. Depending on what work Voltaire was currently publishing, he would be the darling of the court, or banished from the country due to the scandalous content¹. While most people would try to keep out of such trouble, Voltaire seemed to revel in it. At various points until his death, Voltaire managed to get himself arrested and banished from an impressive array of nations.

The First Exile From France

In 1726, Voltaire managed to get himself involved in a potential duel with a French noble. The noble went to the King of France, Louis XV, with a complaint about Voltaire and within the space of a day Voltaire was thrown into the Bastille¹. At the time period, the Bastille was where many nobles put those they considered to be disruptive in the hopes that they would quickly be forgotten. That means that there is no trial for the person who is imprisoned and they can be left there until they die if the noble wishes. Voltaire was understandably afraid of this outcome and instead pleaded to be allowed to go to Great Britain⁷. The French government happily agreed.

Bastille: The most infamous prison in France where many writers and thinkers were imprisoned for opposing the crown.

The time in England influenced Voltaire greatly. He fell in love with the concept of a constitutional monarchy. During this time Voltaire began to advocate getting rid of France's absolute monarchy and replacing it with the British system⁷. That did not go over well with the French monarchy. To add insult to injury Voltaire began to openly criticize France's judicial system in his writings.

Three years into the exile, Voltaire returned to France where he met Emilie du Chatelet. At the same time as this Voltaire collected all of his writings criticizing France's government and published it in France. His work, "Philosophical Letters on the English," was published without the French court's approval. It was immediately banned and burned in France and caused Voltaire to be banished once again⁷.

Voltaire fled to the border of France where he met Marquise du Châtelet. Her name was Gabrielle Émilie le Tonnelier de Breteuil and she was in charge of the entire region where Voltaire was hiding out. As long as she remained on his side, she would be able to protect Voltaire from the French government, which made her Voltaire's main supporter at the height of his career.

It seems that Voltaire had learned from his earlier dealings with the law and kept his head down while staying with the Marquise. He continued writing plays, philosophical works, and experimenting with the sciences. Many of the works he wrote during this time were banned in France because they spoke about England's superiority. So while Voltaire had learned to keep out of trouble, he apparently hadn't taken it to heart.



Voltaire at work ³

He managed to keep an interesting lifestyle by being friends with many important people in Europe. He was friends with the crown prince of Holland,

Sir Isaac Newton, and many more. Most famous was his friendship with King Frederick of Prussia. Their friendship was so great that Voltaire was sent to be France's ambassador to Prussia with orders to be a spy on the side. Voltaire was apparently a terrible spy because Frederick found out and banished Voltaire from the Kingdom of Prussia⁷.

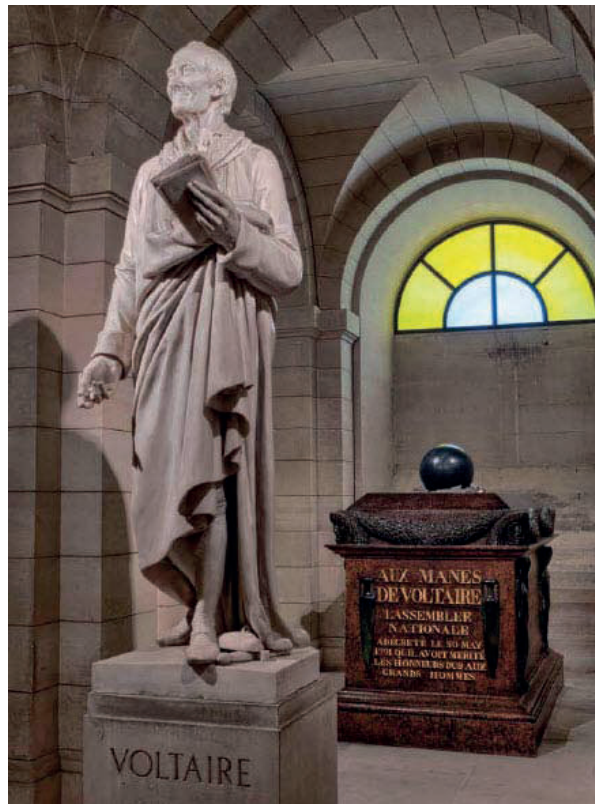
Voltaire's Later Years

In 1744 Voltaire left the Marquise and entered his final romantic relationship. He had an affair with Marie Louise Mignot, and the two remained together until his death. While this may seem to be sweet, it is actually kind of disturbing because Marie was his niece¹. Their relationship was understandably a huge scandal and may have played a role in Voltaire's move to Geneva late that year. He continued his writings in Geneva, adding religion to the list of topics he covered. Voltaire continued to insult the French monarchy with his writing, and so he continued to live in exile with his works banned from his home country. However, his works were banned from a new country at this time: England⁷. Why? Simple, because Voltaire publically supported the American Revolution and was close friends with Benjamin Franklin.

In 1778 Voltaire returned to Paris for the first time in twenty years. If you were wondering, yes, he was still banished when he returned. The 83-year-old was convinced the journey was too much for him to take and called all his friends together to say goodbye before he died. He recovered shortly after and went to see his play *Irene* performed where he was welcomed as a hero¹.

He became ill again after the play and actually died on May 30, 1778. He refused to accept the last rites from the Catholic Church and was therefore denied a Catholic burial. What this means is he was buried with murderers and heretics in the outskirts of the graveyard. He became a national hero during the French Revolution, and in 1814 it was believed a bunch of religious fanatics stole his bones from his grave⁷. This was later disproved when they dug up his grave and found his body. Or so France says.

Voltaire's life shows the dangers of being a writer during the Enlightenment. You never knew one day to the next if you would be a hero, or end up exiled from your country for the foreseeable future.



Voltaire's Tomb in Paris, France ⁴

Two Key Censored Works

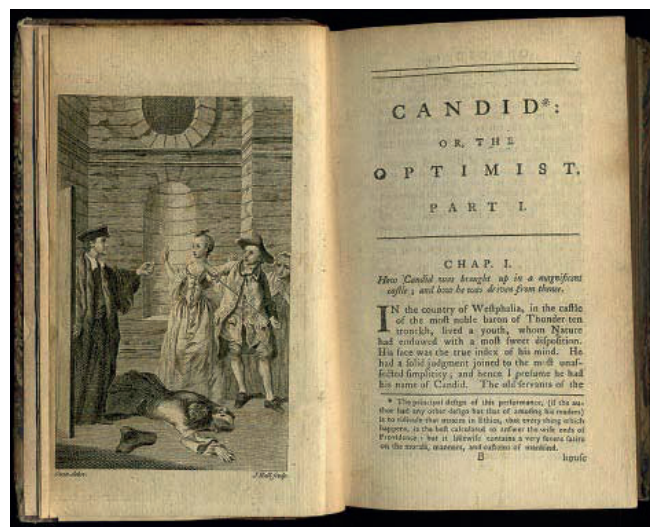
In 1760, Voltaire decided to publish a new comedy for the theaters of France, disregarding the fact that he was in exile from said country. This comedy, "L'Ecossoise," helps to demonstrate the types of works that were being censored by the French monarchy at this period of history.

The comedy was set during the middle of the Enlightenment itself featuring several notable writers from the time period. While this was a rather common form of theater for the time, what Voltaire did was slightly different.

He wrote a play that highlighted the achievements of his friends, the Enlightenment writers whose own works had been censored. This included writers such as Rousseau and famous scientist Sir Isaac Newton³. Both authors had their works banned from France during this period of history.

This alone would be enough to create a ban on the play, but Voltaire decided to take “L’Ecoissaise” one step further. He decided to openly criticize the monarchy in his play³. By having his writers openly speak out against the king of France, and even going so far as to mention abolishing the monarchy, Voltaire made his private opinion about the crown quite public.

“L’Ecoissaise” was heavily censored in France under the crown’s authority because of this open disregard for the crown³. This was a problem that was not just applied to Voltaire, but too many of the other Enlightenment writers. Criticisms that would be considered quite mild by today's standards were seen then as incredibly dangerous to the various monarchies throughout Europe. For example, in France “L’Ecoissaise” was considered to be very disruptive to the French government’s authority and produced quite the scandal when it was published.



Voltaire's work: *Candid* ⁵

Not everything went smoothly for Voltaire. Towards the end of his life he began to face serious threats from the French crown, and Voltaire began to try and get back in the good graces of the French court. He began to write works that expressed fealty for the monarchy, especially towards then queen Marie Antoinette.

To achieve this goal, Voltaire followed a process known as “galanterie.” What this process entailed was that with each work he completed, Voltaire would send it to the French court where they would read it over. Once they had finished reading the document the court would then edit it so it would be more "appropriate" for the French public⁴. Many of Voltaire’s later works underwent this process in the hopes of gaining support from the monarchy. And as you can probably guess, he was spectacularly bad at getting on the crown’s good side, which led to his last exile.

Voltaire was just one of many writers who had to go through such actions. Other writers from the Enlightenment also had to go through the process of “galanterie” in order to try and get published⁴. Many would fail to pass the process and would have their works banned. Others would go around the process and try to get their works published in other countries. While not the only writer to receive such treatment during the 18th century, Voltaire is one of the best examples of how these writers could be considered disruptive by the various monarchies throughout Europe.

Why Does Voltaire Matter?

It may seem strange to be looking at one particular writer from the Enlightenment when there are so many to choose from. Why look at Voltaire over other brilliant writers like Immanuel Kant or Thomas Hobbes? What about his writing made Voltaire so special to not just France, but the world today? Voltaire shows perfectly how disruptive these writers were considered. The aristocracy feared his writing because it reached out to the everyday people of France in the forms of banned books and pamphlets. It challenged

them to think and question authority. Even when Voltaire tried to behave and follow censorship, his writings were considered to be too dangerous to be allowed to spread through France. The monarchy feared the power of written word so deeply that they used any means possible to keep it under lock and key. This was shown by their desperate attempts to exile Voltaire as far away from them as possible.

But Voltaire also shows just how disruptive Enlightenment writers actually were at this point in time. Voltaire's writings were embraced by the French people dreaming of a better tomorrow, and his writings helped to create the French Revolution which eventually toppled the French monarchy. This means, indirectly, that what Louis XV feared was true: Voltaire's writings were disruptive enough to destroy the French monarchy. Written words are a powerful force, and Enlightenment writers like Voltaire only made that force stronger.

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Evolution of the Codex

-Kristin Eck-

By the mid-18th century, the rise of literacy in the West had spurred the development of a large reading public that reflected an appreciation for the potential of the codex. In earlier centuries, the book found its form through clay tablets, scrolls, bamboo strips, papyrus, and even on the backs of turtle shells. At the dawn of the Christian era, the codex was introduced as a revolutionary invention that would continue to work as a disruptive technology up until the conception of the modern ebook¹. Proving to be a pivotal era in addressing its potential as a revolutionary innovation, the codex finds weight in the 17th-19th centuries. Its evolutionary progress can be tracked through the formation of the encyclopedia, the chapbook, the almanac, and the novel. Bearing their own unique and intriguing histories, these forms possess characteristics that prove disruptive in the political, social, and economic spheres of world history.

Diderot's Encyclopédie

Due to the creation of his *Encyclopédie*, Denis Diderot (1713-1784) was a prominent French Philosopher and writer during the Enlightenment¹. Although not the first encyclopedia ever published, Diderot's is notably the most disruptive and progressive. Because of censorship and regulation, the *Encyclopédie* gained notoriety during the French Enlightenment. Composed of 17 folio volumes, it was published in 1751, and because of its popularity, later achieved 11 more extravagant volumes¹. The compilation process engaged 150 of Europe's intellectual elites including Voltaire, Jean-Jacques Rousseau, mathematician Jean d'Alembert, and medical scientist Louis de Jaucourt².

What makes this encyclopedia notable is its compilation of revolutionary ideas that spoke out against the fortitude of the church and crown. Because of contributions made by various historical figures, Diderot's

Encyclopédie became a vision of free thought, secular principle, and private enterprise². The *Encyclopédie* tucked revolutionary insights, opinions on political philosophy, religion, and various outcries against French society into its neatly organized articles. For example, in the first volume titled “Aiuslocutius,” Diderot begins by commenting on the high degree of freedom enjoyed by the English and Dutch, specifically in matters of religion⁴. He humbly suggests that the same freedom be granted to the French in matters of speech and thought. The conglomeration of authors that contributed to the book only added to the slights that can be found between its pages. It contained articles concerning unfair taxation, dissatisfaction with the government, hostility towards absolutism, and mentions the radical possibility of a constitutional monarchy⁴. As long as Diderot remained confined within reasonable ideological limits, the government wouldn’t intervene³. But he did not, and in the late 1750’s the *Encyclopédie’s* license for publication was revoked until political protection could be negotiated³.

In addition to its controversial content, the *Encyclopédie* was disruptive in form as well. Diderot sparked the beginnings of a legacy regarding the way knowledge and information was to be organized and disseminated. Present-day educators of technology can look at Diderot’s endeavor to better understand how the packaging of information has contributed to the ways in which our educational facilities are delivered³.

For example, if a class uses an encyclopedia structured with overarching concepts rather than the alphabet, their research may be more thorough and comprehensive. For the *Encyclopédie*, Diderot focused mainly on the Mechanical Arts of the era: masonry, trade, and



The Marquise de Pompadour¹

Left: In spite of its notoriety, many high-ranking political figures, such as The Marquise de Pompadour, supported the intellectual pursuits of the *Encyclopédie*. She is seen here posing with a few volumes of Diderot’s *Encyclopédie*.

blacksmithing. He attempted to organize articles based on divisions of knowledge such as memory, reason, and imagination, but typically deferred to basic alphabetization³. This system proved inadequate and lacked consistency, but paved the way for future attempts at representing knowledge and is a system that is reflected in contemporary texts today. Because of this, Diderot's *Encyclopédie* is historically disruptive as it was a new form of the codex, but its influence has permeated into the present day and guided the way we organize and compile knowledge.

The Convenience of Chapbooks

Chapbooks became popular in the beginning of the 17th century and continued to be used up until the end of the 19th century. Ranging from four to twenty-four pages long, chapbooks were made from cheap, rough paper with woodcut illustrations¹. Never intended to last very long, the cheap material quickly fell apart. The word "chap" literally comes from the old English word 'ceap' meaning trade, which is reflective of their nature⁵. A handful of upper-class members owned private leather-bound collections, but they were primarily created for lower-class people who could not afford books¹. This specialized book form was intended for children, the poor, and those people in rural communities. They covered a wide variety of topics such as folk tales, children's stories, nursery rhymes, poetry, religious works, fairy tales, romances, and histories¹. Due to the increasing literacy rate, chapbooks were printed for the masses in the 17th century and sold in the millions up until the late 19th century. Because they could be widely and easily

Many people became peddlers because they had a physical disability that kept them from regular work⁶.



The Colporteur²

Left: An anonymous French painting of a Colporteur from 1623.

dispersed, their influence on culture and modern life is apparent all over the world. In France, chapbooks were called “*bibliothèque bleue*,” and in Spain, they were called “*pliegos sueltos*” which literally translates to loose sheets¹. With their wide and successful distribution, governments began requiring chapbook peddlers to be licensed. In 1696 all English chapbook peddlers were required to have proper paperwork; 500 were authorized in London alone¹.

Not only did chapbooks provide entertainment from the tedium of long work days and a somewhat dull existence, they often offered suggestions for daily life. Some included calendars, horoscopes, recipes, magical remedies and medical advice, etiquette books, and alphabet books for children¹.



Left: Example of a chapbook from 1882, written in gothic and roman print.

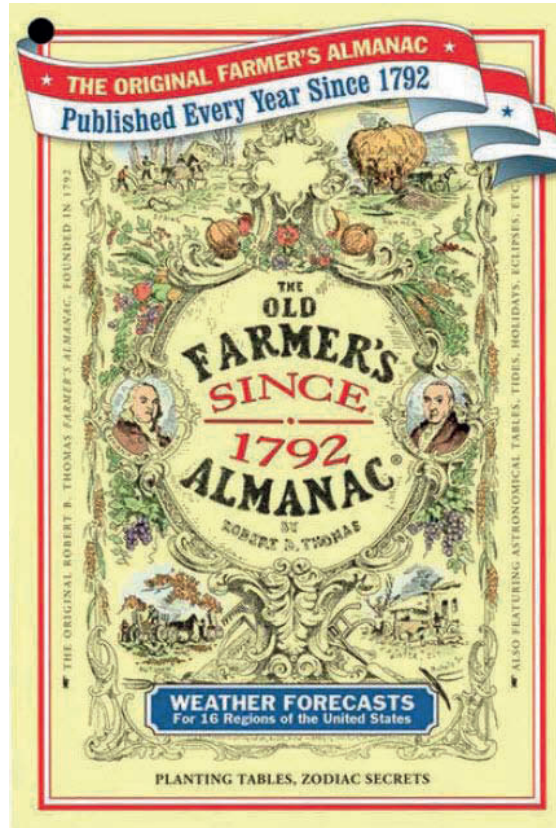
Chap-Books of the Nineteenth Century³

Chapbooks were typically written in very simple language; today they would be considered rudimentary. To add to this, they were almost always written in gothic print. During this time, the art of the book was changing, which brought new typefaces to the surface of book publishing. Roman print began competing with traditional gothic print and—depending on the intended audience—books were published in one or the other. Besides being used for contemporary literature, roman print became popular in the science and political sphere of society¹. Gothic remained for religious works such as the Bible and Book of Hours, and was popular with newspapers¹. Because the Bible was typically the only text affordable to the lower-class, they could only read in gothic print. Because of this, chapbooks were almost always printed in gothic. Due to their high print rate, wide dissemination, and appeal to the lower class, chapbooks proved an influential tool for the spreading of popular culture across Europe.

The Influence of the Almanac

The beginnings of the almanac can be traced back to the 13th century with the Catholic Book of Hours, but the almanac did not become prolific until the 17th century during the Western Enlightenment⁶. Similar to the encyclopedia, almanacs became popular for their gathering of useful information, such as astrological tables, predictions and prophecies, religious holidays, and important fairs¹. Some almanacs were so instructive they were considered, by some members of society, a sort of manual for everyday life. In a sense, they were an annual calendar (in the traditional codex

form) with an abundance of other information helpful for life. Farmers and their families found almanacs especially useful due to weather forecasts, advice for harvesting, recipes, and herbal remedies¹. One of the most notable almanacs is Robert B. Thomas' *The Old Farmer's Almanac*, dating back to 1792 during Washington's first term as president⁷. It included information about the rising and setting of the sun, tides, weather, and time. It still exists to this day and is notably the most successful and longest running periodical to be published. It is



Evergreen Cover⁴

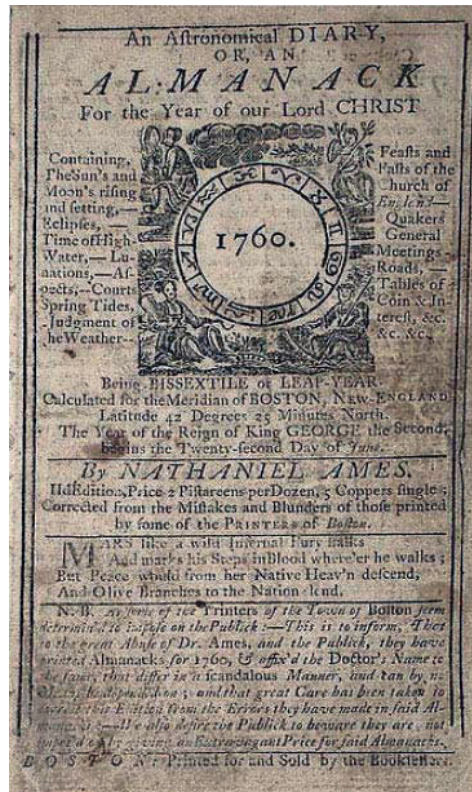
Left: The cover of an original *Old Farmer's Almanac* containing weather forecasts for regions in the United States.

It is said that Robert B. Thomas had a secret weather forecasting formula, which is traditionally said to be accurate 80% of the time. Today, his formula is tucked away in the almanac offices of New Hampshire⁷.

believed that this almanac became popular because it was more entertaining, its weather predictions were more accurate, and its advice was more useful.

The market for the almanac found a foothold in Germany, England, France, Spain, and Italy, and was being produced and sold in the millions by the end of the 18th century. Nathaniel Ames' *Astronomical Diary and Almanac* was so popular in 1726, it was considered to be a household necessity alongside the Bible⁶. Because these almanacs were treasured by their owners, their influence on the daily lives and culture of their readers is evident. Around the same time, the scientific community began to scrutinize the content of almanacs. Up until publication of Benjamin Franklin's *Poor Richard's Almanac* in 1733, astrology had been accepted as a standard explanation for ideas concerning the Earth, sun, moon, stars, and planets⁶. But with the

Enlightenment came new scientific discoveries that questioned the validity of astrology⁶. The progressive and analytical tone of the Enlightenment did not prevent people from finding entertainment in the almanac, but it did generate the opportunity for publishers to experiment with the content. With a turning away from astrological prophecies, almanacs printed records of important historical events and useful statistics. But because of their blandness, they did not sell well. Italy, on the other hand, was successful in producing almanacs for subjects in fashion, the courts, and for teaching manners to young children. The



Left: The cover of a 1760 version of Nathaniel Ames', *Astronomical Diary and Almanac*.

Many modern newspapers still contain daily horoscopes. This tradition is actually a reflection of early almanacs and shows how their influence is present in today's society¹.

An Astronomical Diary⁵

prevalence of the almanac in the lives of the people played a large role in molding the social, political, and scientific culture of its era.

The Rise of the Novel

The novel became a revolutionary form due to its assembly of preexisting characteristics of the book. It derived its form from early romances and novellas, which is the Italian name for “little new thing”⁹. These two forms were short tales in prose fiction and typically had shallow morals and simple plotlines. Nothing in the novel was necessarily new; character development, plot-making, situation, and incident had all previously been studied and executed in dramas, novellas, and long narratives⁸. Although somewhat difficult to pinpoint, the novel is said to have arose in the early 18th century with the publication of Daniel Defoe’s *Robinson Crusoe*, and Samuel Richardson’s *Pamela*⁹. These two works pioneered a path for the future of literature by establishing a realistic account of an individual’s experience. The novel became a disruptive technology because it established this new perspective and reexamined the type of content readers would enjoy. Books became imbued with ennobling sentiments that spoke to the emotional side of their readers. By giving them something to relate with, the novel quickly revolutionized the way text was interpreted. This innovative form of the book has continued to influence the world of literature up to modern day, and has left a lasting resonance among readers.



Sir Walter Scott⁸

Walter Scott (1771-1832) is credited with making the novel a respectable form of literature¹. Famously known for *Ivanhoe*, *The Lady of the Lake*, and *Waverley*, Scott sold more novels than any other English author of his time, and grew to be internationally recognized. His fame was due to the fact that he

wrote novels with the intent to make his readers cry. By focusing on the lives of the middle and working class, he created realistic stories that sympathized with the people. Walter Scott was essential in making the novel a form that directly addressed domestic and social concerns of lower ranking individuals, caught up in the system of societal hierarchy. Because of this, the novel is sometimes referred to today as a sort of “criticism on life”. Other notable authors who achieved the same affluence were Henry Fielding, Charles Dickens, William Thackeray, and Jane Austen¹.

The 18th century also proved to be a pivotal era in the development of the narrator. As the novel evolved, authors began experimenting with this specific role. They started asking questions like: *Who is the narrator? How much do they know? Do they talk to the reader? From whose perspective is the story told?* Authors like Dickens and Thackeray played with the idea of an omniscient narrator: a figure who is aware of all the characters and events that will unfold⁹. Since this time, authors have developed other methods of writing that portray a more individualistic kind of narrator or voice. They focus on creating a single stream of consciousness, concentrating less on dialogue and syntax, and more on the characters’ emotions, thoughts, and experiences⁹. These early developments through the 17th-19th centuries were essential to the creation of the novel and heavily contributed to mass diversity that is seen in the book industry today. Because of its thorough portrayal of modern life, its ability to resonate with readers, and its analysis of the societies in which characters live, the novel exists as an essential feature of the book as a disruptive technology.

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Mechanization of the Printing Press

- Robin Roemer -

One of the important leaps in the technology of copying text was the mechanization of printing. The speed and efficiency of printing was greatly improved through mechanization. This took several forms including: replacing wooden parts with metal ones, cylindrical printing, and stereotyping. The innovations of printing during the 19th century affected the way images were reproduced for illustrations as well as for type. These innovations were so influential on society because they greatly increased the ability to produce large quantities of work quickly. This was very significant for printers of newspapers, who were limited by the amount their press could produce in a short amount of time.

Iron Printing Press

One major step in improving the printing press was changing the parts from wood to metal. Although many other inventors were part of innovations which led up to the metal printing press, Charles 3rd Earl of Stanhope was the first to succeed in creating a machine made of metal in 1798¹. This reconfigured technology greatly improved upon the wooden printing press in many ways. The quality of the type increased because the metal press printed more evenly.



Stanhope Press from Fontaine de Vaucluse, France¹

The metal press could also print twice as much in one print compared to a

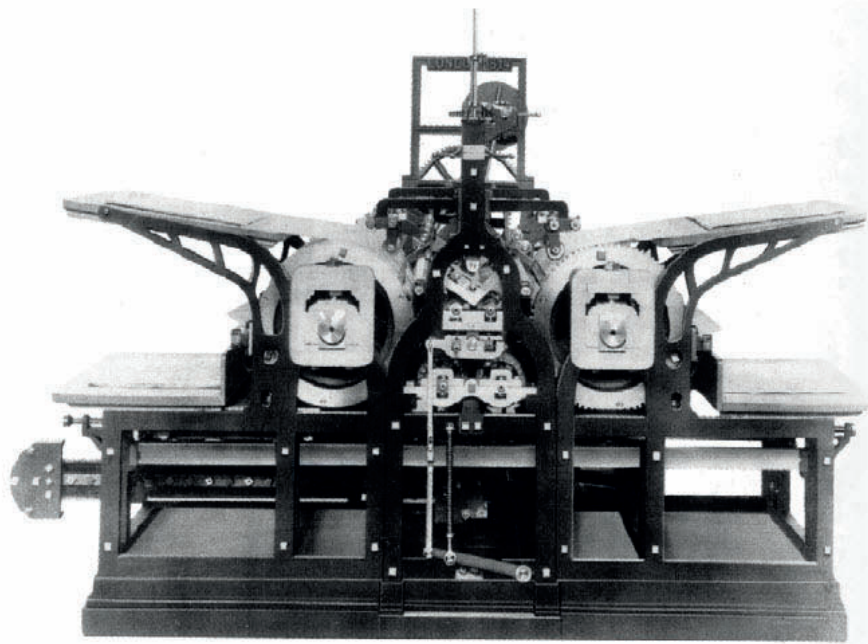
wooden press since the metal created a clearer mark even with a larger plate. This doubling of efficiency greatly influenced the production of the printing press which led to faster output and more pages printed at one time. The metal also lasted longer than wooden presses¹. Less wear was an advantage for printers because they would have to replace the parts less often. Although this was a great improvement; it still resembled the wooden press more closely than other innovations in printing to come.

Other adaptations of the metal printing press increased the efficiency of the design. The Columbian press created by George Clymer used levers in the pressing mechanism instead of turning a screw, which decreased the work and increased efficiency¹. Later, a new device was added to improve the inking process. Samuel Rust created a method of applying ink with automated rollers in the metal press in 1827¹. The metal printing press was further improved upon by Isaac Adams who used an automated machine, although he was not the first to do so. With the use of steam power, he automated the mechanism for applying ink, and the movement of paper in the press. The ink was applied with rollers and the paper was drawn to the platform of the press, then lifted up to the typeface². Many others adopted and added to this technology. The most well-known of these was R. Hoe and Company of the United States, which was “the leading manufacturer of large presses in the second half of the [19th] century¹.” As the technology changed and was distributed, the dispersal of printed material also increased. While the metal press was constantly being changed, another type of press which looked radically different was created.

Steam Powered Cylinder Press

The steam powered cylinder press further improved the efficiency of printing. This type of printing press was created by the German engineer Frederich Koenig in several stages¹. His first innovation was to take a flat press and power it through steam technology¹. Although he gave up this idea, he continued to work with steam technology. Koenig combined the concepts of a cylinder press and printing in other fields such fabric patterns and illustration

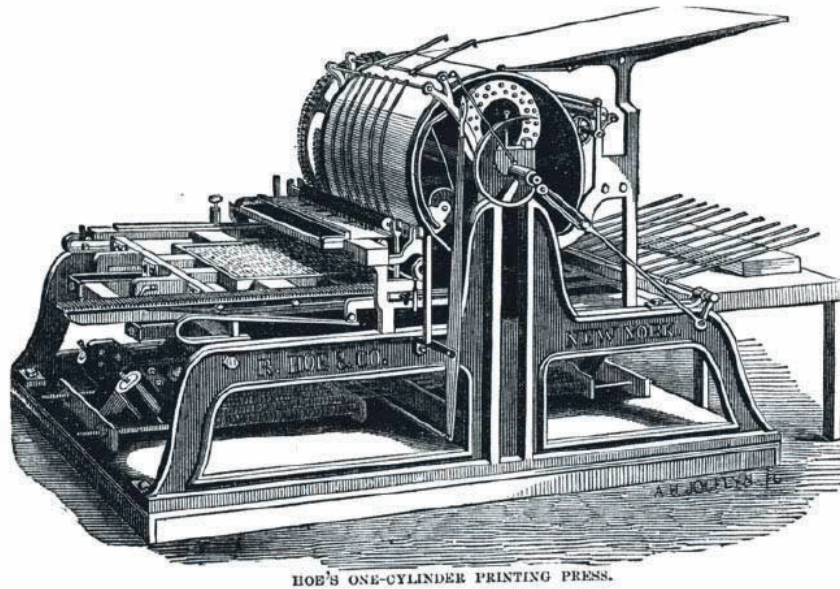
with the addition of steam power¹. The first versions of this press had the printing block on a flat surface while the cylinder moved the paper¹. This changed with the advent of stereotyping, which allowed the type to be on the cylinders themselves. Another result of using the cylinder to print was that a page could be printed on both sides at the same time as in Koenig's later design¹. As with the flat printing press, others improved upon Koenig's design. David Napier used the design in America in 1825. Later it was used by Richard Hoe, who also used double-sided printing¹.



Koenig's 1814 Steam-powered Printing Press³

Adopted early by newspapers, this press allowed them to greatly increase their production and therefore their readership. One of the most famous examples of this is the *Times*. On November 29, 1814 the London *Times* issued its first edition printed on the cylinder steam powered press¹. They needed to print their works quickly and the automated cylinder press helped them to achieve this goal. One source pointed out that newspaper subscription was limited by the production capabilities of the printing press¹. When printing technology improved, newspapers were able to increase their circulation to a

larger audience. In fact, “six years after steam-power printing was introduced, the *Times* had doubled its circulation¹.” The wide production of newspapers, which was possible because of the rotary press, became a significant part of the culture during this time. In the middle of the 19th century, Sir Edward Bulwer Lytton suggested in a speech that the *Times* rather than other aspects of society could be a good “memorial of existing British civilization¹.” The significant innovation of the cylinder steam powered printing press would not have been nearly so important without the innovation of the stereotyped plates. Machines which tried to have type on a rounded surface without the metal plates, such as the rotary press, were not nearly as successful.



Cylinder Printing Press²



Stereotype plate⁴

Stereotyping

The process of stereotyping improved efficiency by creating a metal plate for each complete page instead of resetting the type¹. This allowed for less difficulty in reprinting classic books because the old stereotypes could be reused instead of setting the type each time. The original type was placed into a soft cast, removed, and then the cast was dried or hardened¹. Then the cast was put in a tray and molten metal was poured over it to create a plate of type. This process took many years to become popular. It was invented by Johann Zeiger in 1696, who used an imprint in paper pulp, dried, it and used it to cast a metal plate. Despite its early existence, it was not readily applied until it was rediscovered hundreds of years later. In 1829, Claude Genoux patented his stereotyping process which also used paper pulp. Later, plaster of Paris, a substance which holds an imprinted shape when hardened, was used as a mold.

After a time, electrotyping was invented as a different form of casting type into plates. In this process the plate was created with a softer substance, such as graphite. This material was put into an impression to attract the metal and create the plate¹.

Stereotyping was useful for the cylinder press because the metal plates could be bent around each cylinder, greatly speeding up the printing process. In combination with the new types of printing machines, stereotyping allowed for massive quantities of printing. Unlike other printing processes, which used individual letters of type, plates could be reused for reprinting without resetting the whole page¹.

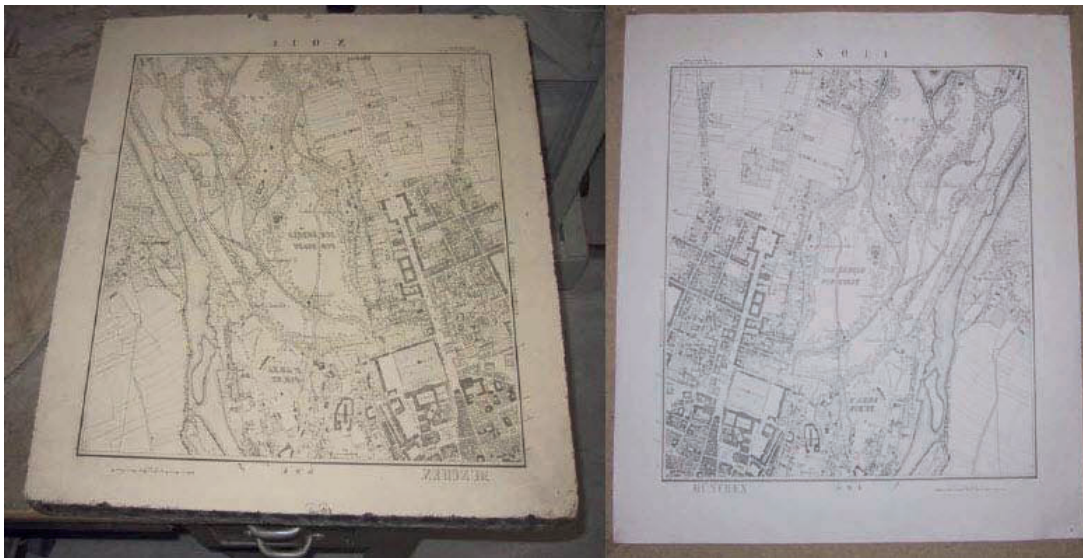
Unsurprisingly, stereotyping was protested by many people working in the printing industry, especially typesetters. William Ged, a researcher studying the stereotyping process at the University of Cambridge, had to give up his work when the people he was working with halted his work by tricking him. The people who molded letters gave him bad copies, while the people who set up the type and the printers also tried to sabotage his work because they thought it would take their jobs¹. This is a common aspect of disruptive technology, which often causes disapproval by some of the people working in the industry where it is introduced. Whenever there is a strong movement to a new technology, there are people that long for the previous form. Even today, we sometimes talk about the sentiment attached to getting a hand-written letter rather than an e-mail.

Illustrations

The illustrations that went with the type also changed during this time. Three processes were commonly used to produce illustrations: wood engraving, copper plates, and lithography. Wood engraving was created by carving out the wood from the picture to be printed. The white space would be carved away to leave the design³. Blocks of wood used for printing were limited to five inches in size, so pictures larger than that had to be printed with multiple blocks

fastened together⁴. Copper plates gave sharper clear pictures than wood. For multicolor prints each color would be printed separately.

Lithography used stone and pencil to create an area where the surface would not be printed on because of water dispelling the oil-based ink. This process was created by Alois Senefelder⁵. The stone was carved with acid so it could hold water to dispel ink. The ink would cling to the areas of the block with graphite on them⁵. This process required less carving and thus less work to create the plate. Lithography became popular in America starting in 1828, and color lithography was invented in 1837⁵. The use of lithography spread wildly in the U.S. after its introduction. Printed images were important in books, but they were also widely used for business transactions, advertisements, and magazines. The new use of illustrations helped to greatly increase magazine subscription as well as the number of magazine titles⁵. Stereotyping and electrotyping were used for illustrations as well as type, and they were created through the same method³.



Lithograph of Map with Lithography Stone⁵

From the Press to the People

The new technologies of printing created during the 19th century allowed for more efficiency, leading to a wider distribution of materials, including books and newspapers. Although mechanization greatly increased the abilities of printers to produce many more copies of works and, in turn, increased distribution, it was not the only factor in the increase in literacy and the spread of printed works. Other factors such as publishing companies and lending libraries also had great effect on the growth of the book in 19th century society.

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Publishers and Authors in the Nineteenth Century: Changing Roles

-Reina Morgan-

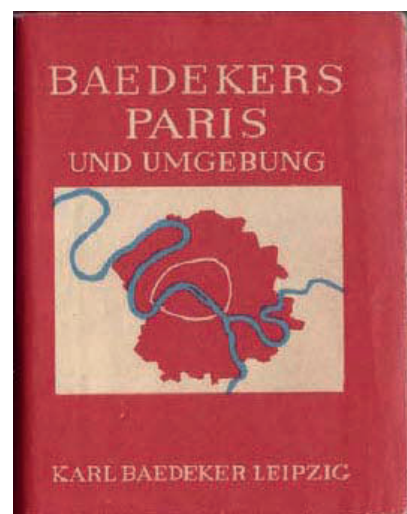
Technical innovations like the cylinder press, stereotyping, electrotyping, and the production of paper in wooden pulp rolls made the reproduction of books less expensive than ever before¹. With cheaper books came the production of more books, which in turn led to a need for regulation. During the nineteenth century, publishers started to become more specialized and authors started to get decent wages for their work.

The Changing Role of the Publisher

Historically, there was no clear distinction between the printer, publisher, and bookseller. In the nineteenth century, this changed as publishing roles started to become more specialized. Around the mid 1820's, booksellers started to create their own associations separate from the printer's guilds. The publisher was no longer just a position that was passed down the family tree; it was now open to outsiders as well since the guilds were no longer in control.

Publishers no longer needed a background in printing. Instead they needed to be creative, independent, and adventurous entrepreneurs. They now had to be knowledgeable about the market in order to make decisions that fit the demand. Their role was to make decisions about price, paper quality, format, advertising, and distribution. It was also at this time that publishers started to develop

A guild is an organized group of people who have joined together because they share the same job or interest².



Karl Baedeker's Guidebook on Paris¹

their own niches. Karl Baedeker, for instance published guidebooks³. This more specialized way of publishing replaced what came before it and is similar to what we still see today. By disrupting the publishing industry we now have publishers who are experts in their areas.

Royalties in the Twenty-First Century

A royalty is the percentage of book sales that is paid to an author. Today this is how authors make their money. The rate of royalties are set and paid by the publisher and is usually between 1-10% of the cover price for paperback books and 10-15% for hardcover books. It is a very rare case when an author is in a position to demand a higher royalty.

Some publishers will pay a straight flat fee instead of a percentage of the book's profits.

Authors receive part of the royalty in a lump sum in advance. Authors can expect to receive an advance of \$1,000-\$10,000 when signing their first contract, though well-established authors can expect larger advances. For example, an author might have a royalty rate of 10% and be given \$3,000 up front. Since \$3,000 is 10% of \$30,000, once the sales of their book reaches \$30,000 they would start receiving more royalties routinely as sales continue⁴. Most publishers issue royalty statements every six months (once the advance has been earned and they are owed royalties).

The author will likely not know how much money they can expect to get during each pay period because they usually don't know how many of their books have sold. Publishers will also hold some of the author's royalties for a reserve against returns. This is in case a bookstore is not selling very many copies of the book, and they return a significant amount to the publisher. For this reason, publishers will withhold a percentage of royalties against returns to avoid overpaying the author. Some publishers will demand the return of any portion of the advance that goes unearned⁵!

An author can license their book for foreign markets, magazines, movies, etc. in order to try to increase their income. This is known as a sub-right.

Royalties in the Nineteenth Century

In the early nineteenth century, instead of distributing royalties like they do nowadays, publishers would pay an author a lump sum for a manuscript and the author would not make any additional money from sales of the book. This meant that the amount the author made had nothing to do with how many copies of the book sold. So if the book was very popular and sold many copies, it was only the publisher who would benefit from it because the author would make the same amount regardless of whether or not the book sold well.

Later, it became customary to pay authors based on how many copies of their book were printed. This number was often very different from the number of books that actually sold. This was good for the author because they were paid for every book, but bad for the publisher if not very many copies sold. It wasn't until the late nineteenth century that a true royalty system like we have today was developed³.

Some authors chose to self-publish in the 19th century even though legal and technological hurdles made it difficult.

International Copyright

Now that authors were able to make a reasonable amount of money based on the number of copies their book sold, there was just one problem; they still didn't earn anything on global sales. This is because there wasn't an international copyright agreement in place. But this too was starting to change. In the 1850's some individual countries signed a series of bilateral treaties that made pirating books illegal; however it wasn't until 1886 at the Bern Convention for the Protection of Literary and Artistic Works that the first international copyright agreement was signed³.

The Bern Convention made it so that the author must give permission in order for someone to translate, make adaptations and arrangements of the work; recite literary works in public; communicate to the public the performance of such works; perform dramatic, dramatic-musical, and musical works in public; broadcast; make reproductions; and use the work as a basis for an audiovisual work⁵.

The Chace Act (1891)

British authors had difficulty getting American copyright protection in the nineteenth century so they had to get a little creative. They discovered that if they could get an American to act as a collaborator on their book, then they would be able to get their book registered in Washington, D.C., under their collaborator's name. These authors would frequently have the American write something like a short preface and that was enough for them to be a part of the book, thus making it eligible to be registered in the United States. Now that's sneaky!

Then, in 1891 the Chace Act was passed, which allowed copyright protection in the United States for citizens of other countries. This helped American authors too! Other countries were more inclined to grant authors from the U.S. international copyright protection because they were being given protection. Before the Chace Act, American works were unprotected abroad⁸.

Easier Access to Books

Books came a long way in the nineteenth century, from the publishing industry being opened up to outsiders, to authors getting paid royalties, to the development of an international copyright agreement. With authors finally making money from their books, both domestically and internationally, there was more motivation than ever before to write books. This resulted in greater accessibility.

While books were getting cheaper and cheaper as a result of new technology, there were still many people who were unable to afford them. Even if people could afford a few cheap books, this only allowed them to read certain books that were within their price range. Then they would only have those same few books to read and who wants to read the same books over and over again?

Unless maybe it is a really good one, of course! This led to the creation of the institutions we are so familiar with today: libraries.

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San Francisco Public Library¹

The Path to Present-Day Libraries

- Julia Grabhorn –

Since the time of monastic libraries, libraries have become much more of a public place. In the centuries that the monastic libraries were a part of, libraries were not a place for just anyone. Monastic libraries were almost entirely reserved for scholarly purposes, only being utilized by monks and other religious officials. Over the years, libraries started to become more and more of a widespread concept. However, they continued to stay out of public reach for some time. In the span between the first religious libraries and the rise of publicly accessible libraries, libraries were typically held in the private homes of wealthy individuals. For a large part of literature's history, reading and owning books was a sign of power and stature for the wealthy. Because of this, the lower classes were left out of literacy almost entirely. This imbalance of literacy didn't begin to even out until the last part of the 19th and the beginning of the 20th century. At this point in time public literacy was being vigorously integrated into society through the use of libraries. There are some major stepping stones in the time between monastic libraries and the emergence of what we think of as public libraries today that make up the overall path that leads to present-day libraries. This chapter will outline the more recent of these stepping stones that began to shape this path in the 19th century.

The Beginnings of 19th Century Book Distribution

At the beginning of the 19th century, literacy was not at all what it is today. In 1820 (the earliest recorded year), the world literacy rate sat only at 12%. This is very different than the worldwide literacy rate of 83% in 2010 (the most recent recorded year), which doesn't even compare to the incredibly high literacy rates of today's well-developed industrialist countries with rates

between 99% and 100%¹. This information has me asking myself, what led to such a vast rise in literacy in that 190 year span?

Though the answer to that question has many contributing factors, one vital aspect that I want to focus on is access to literature. Without the increase of access to literature in the 19th century, literacy rates might have taken a lot longer to reach where they are today. But with the major advancement of literature that occurred by the end of the 19th century, most large industrialized cities had achieved mass literacy.

This wasn't something that happened overnight as soon as the 18th century ended; it took some time before the book business really began to boom. In the early years of the 19th century, the dissemination of literature had changed little from that of the 18th century. Individual publishing businesses and their few partner booksellers were just about the only way for the public to buy literary works of the time. However, this wasn't a very efficient method of dispersal in the least. Booksellers were required to provide multiple references, as well as evidence of their professional work ethic, before even being considered given a bookselling license². This system stayed in place for the better half of the 19th century. However, after about 1850 the publisher and bookseller began to take on very distinct roles. Where their job titles had marginally overlapped in book sales before, there became a disconnect³. This gap left room for the success of independent bookstores. In the second half of the 1800s, the book selling business took off. Independent bookstores started popping up on street corners left and right. The more populous the city, the more numerous their bookstores were. This made book buying exponentially easier for the public. For the first time ever, the entire population of a city, in theory, had access to the same books².

A worldwide international market for books even began to take shape by the end of the 19th century³.

Though these bookstores ultimately meant more people could get their hands on literary works, prices were still a huge issue for some people. Theoretically, everyone had access to the books in the bookstores more so than they did at the beginning of the century simply because the books were there,

not because they could actually afford to buy them. The middle and lower classes still struggled to find the funds to support buying literature, which kept literature from becoming fully publically accessible.

In order for something to be truly disruptive in nature, it must create widespread accessibility to more people than the previous technology did. Something that solved the issue of accessibility that bookstores were having in the 19th century was libraries. There were multiple different types of libraries during this time period that share similarities with, but are still very different, than the libraries we have grown to know and love in our society today.

Circulating Libraries

One early form of library was called circulating libraries. Though circulating libraries had been around for some time, they didn't become popular until the 19th century when the demand for public access to books really spiked. The big difference between historical circulating libraries and modern day public libraries is cost. Circulating libraries throughout history were ultimately money making businesses for the owners, which meant that the customers were required to pay in order to use them. Circulating libraries offered a very broad collection of books that would be entirely too expensive for any one person to buy on their own, no matter how wealthy they were. For this reason, paying the monthly or annual fee to rent the books from the libraries was a very good deal. Someone could pay a circulating library no more than they would to purchase a handful of books, and be able to check out hundreds of different books over the course of a year⁴.

G. E. PAGE'S,
CIRCULATING LIBRARY
(In connection with Mudies, London)
Long Street, Dursley.

≡ **RULES** ≡

1. Time allowed to Subscribers is limited to 14 Days.
2. Books can be exchanged not more than three times a week.
3. Single Vols. can be had by Non-subscribers :—
Class A—(New Works) 3d. per week or part thereof. 2d. per week Fine if kept beyond 7 days,
Class B—2d. per week or part thereof. 1d. per week Fine if kept beyond 7 days.
4. Subscribers to have first call on New Books when required.

OVER 400 BOOKS TO SELECT FROM
FRESH PARCEL OF BOOKS AT LEAST ONCE A MONTH
Subscribers can have any Books procured at the first available opportunity

TERMS: SUBSCRIPTIONS PAYABLE IN ADVANCE

	3 Months			6 Months			12 Months		
CLASS A	£	s.	d.	£	s.	d.	£	s.	d.
One Volume	7	0		12	0		1	1	0
Two Volumes	10	6		18	0		1	11	6
Four "	14	0		1	4	0	2	2	0
Six "	1	1	0	1	16	0	3	3	0

N.B.—Two Volumes of Class B can be had in place of One Volume Class A if preferred.

Special Subscription for Class B Books only, exchangeable once a Week, 2/- per Quarter, or 7/6 per Year.

Dursley Circulating Library Rules²

These libraries undoubtedly made borrowing books way more affordable for people rather than buying books outright. Though they made reading habits more reasonably priced for a lot of the upper and middle class people, patrons of the circulating libraries still needed a good amount of money and free time to use what the libraries had to offer. The annual cost to subscribe to even the cheapest circulating libraries was still far above the annual income for the majority of the working class⁵. Because of this, even circulating libraries didn't solve the problem of extensive accessibility completely. The middle class had finally been included in the book business with the blossoming popularity of circulating libraries, but when were the working class people going to get to join the influx of literacy?

Lending Libraries

Later in the 19th century, a second form of the library emerged to help with the inclusion of the working class people. These libraries, called lending libraries, had essentially the same function that we identify with public libraries



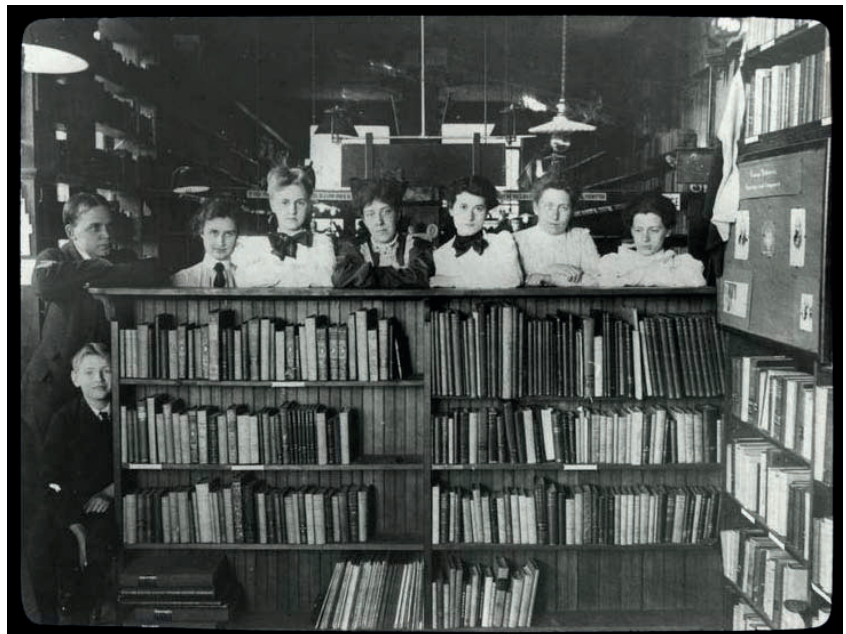
Former Circulating Library³

today: publically accessible free literature. The foundation of free lending libraries stemmed from the passing of the Public Libraries Act in 1850 by the United Kingdom Parliament. With the passing of this act, the local governments in the United Kingdom held the power to establish lending libraries that were free to the public for the first time ever⁶. Local governments of cities with a population greater than 10,000 people were allowed to levy

taxes for the production of public libraries. This one act was the fundamental origin of complete access to information through the free dissemination of books. This widespread access didn't just stop in the UK, it quickly extended all across the globe within a fairly short amount of time. In 1877 the number of European cities that had constructed free lending libraries was around 75, and that number grew to well over 300 by 1900⁷.

With this surge in public access to literature, not only did literacy rates go up in the already common book audiences of upper and middle class men, but new audiences also formed. Because literature was more available and the work days were shorter, leaving more leisure time, a wider variety of people were left with the time and means to read. These audiences included not only the working class men, but also women and children. Before the onset of public

libraries, women, children, and workers had never had the chance to indulge in literature, at least not often. This revolutionized society as a whole, bringing class structure into question. For the first time ever a person from any economical class, any social standing, any age or any gender, could walk in



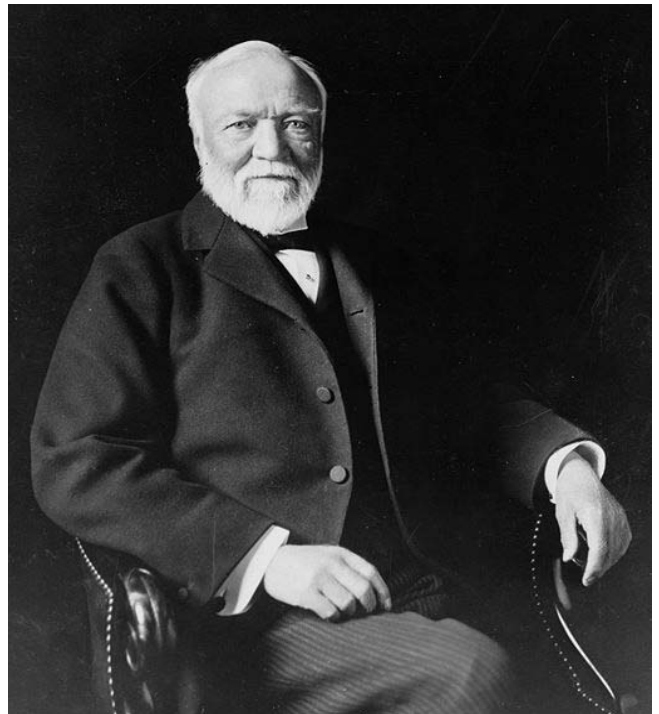
19th century Webster library staff⁴

exact books as everyone else. This brought into question the aspects of social structures at that time, challenging the way things worked in the past and forcing people to build bridges between the social classes⁸. In this way, the creation of public libraries didn't only affect the literacy of the public, but also the way people viewed and acted within their society.

All of these public libraries that started to spring up around the world didn't come without expenses however. The majority of the expenses that presented themselves within the construction of public libraries were gained through the levying of public taxes. So, in a sense, these public libraries weren't truly and wholly free to the public. However, the way taxes were set up still made it affordable for the working class citizens to use the libraries unlike it had been in the past. Another way that cities received the funds necessary to build public libraries for their populations was by private donations. Many wealthy people contributed to the production of public libraries in different circumstances.

The Development of Carnegie Libraries

One extremely well-known example of a private library donor is Andrew Carnegie. Born in 1835, Carnegie spent his younger years growing up in the working class of Dunfermline, Scotland. His father was a small businessman weaver who had helped found a subscription library for tradesman use. After attending only three years of school from ages 8 to 11, Carnegie and his family were forced to move to Allegheny, Pennsylvania when his dad lost his job in the textile industry. After the move Carnegie was sent to work in the textile industry at just age 12 to help the family through hard times. His educational inquiry never ceased however, and began to be fulfilled when he became a messenger boy for the local telegraph company. Through this messenger work, he was able to become acquainted with Colonel James Anderson, a wealthy



Andrew Carnegie: American businessman and philanthropist⁵

man with a large personal library that he opened up to working young men on Saturdays so they could borrow books that they couldn't afford to read otherwise. When Col. Anderson's representatives tried to persuade him to turn away from this library use, Carnegie defended the rights of the working boys by writing to the *Pittsburg Dispatch*. After writing this letter, he determined that if he ever happened upon any amount of wealth he would create similar opportunities for young working men that deserved access to information just as everyone else did⁹.

While working his messenger job, Carnegie taught himself the trade of telegraphing. He soon left that job to become the personal telegrapher and assistant to the superintendent of the Pennsylvania Railroad's western division. This was an important step that later led to him becoming the superintendent of the Pennsylvania Railroad's Pittsburg division. While earning his modest salaries through the railway, Carnegie invested a substantial amount of his earnings in locomotives, oil, iron and steel businesses. With the accumulation of prosperity through the success of those businesses, Carnegie left the railroad and founded the Keystone Bridge Company in 1865¹⁰. By the 1890s he had opened his own steel plant, Carnegie Steel Company, and had previously bought out his rival steel company, Homestead Steel Works. In 1900, Carnegie continued to expand his business horizons by using some of his wealth to establish the Carnegie Technical Schools for the sons of local steel mill workers to attend in Pittsburg, Pennsylvania. In 1901 Carnegie sold Carnegie Steel Company to J.P. Morgan for \$480 million, officially making him the world's richest man alive⁹.

**Carnegie
Technical
Schools are still
around today as
part of a private
engineering
school called
Carnegie
Institute of
Technology¹⁰.**

Andrew Carnegie accomplished many things with this enormous wealth throughout his lifetime, but one of the biggest and most important of his achievements was the establishment of the Carnegie Libraries. Though the production of his line of libraries began before he became a multimillionaire, this added wealth only expedited the process. The first of Carnegie's libraries opened in 1883 in his birthplace of Dunfermline, Scotland. Following this, he

began to finance the building of libraries in and around Pittsburg, Pennsylvania. He started with these areas that held significant meaning in his life, but eventually broadened the span of his impact by establishing libraries all over the English speaking world¹⁰. Between the years of 1883 and 1919, Carnegie had created 2,509 free public libraries in various countries. These countries included the US, the UK, Ireland, Canada, Australia, New Zealand, Serbia, the



to be Carnegie Library in Dallas, Oregon⁶

Caribbean, Mauritius, Malaysia, and Fiji. In 1919, 3,500 public libraries existed in the United States and 1,789 (over half!) of them were financially established by Andrew Carnegie. Carnegie had established so many libraries that he began known as the great patron of libraries

worldwide by the end of his lifetime, and still today¹¹.

Throughout Carnegie's life, he consistently shared his passions for knowledge with the world. Even as a poor working boy, he dedicated his wishful wealth to the cause that he felt so strongly about. He wholeheartedly believed that those with prosperity should live modestly and use their excess funds to benefit the common people who didn't have enough funds to live without worry. He also stated in one of his essays that a library was one of the best gifts that someone could give to the public because they encourage personal improvement of all people. By the end of his lifetime, he had donated nearly \$350 million (almost 90% of his fortune) to various charities, most of which were public libraries. Carnegie's devotion to the public's access to knowledge was a revolution for literacy worldwide. From the opening of his

first library in 1883, to the time of Carnegie's death in 1919, the worldwide literacy rate had risen 13%¹². Even though Carnegie only dealt with a small portion of the world as a whole, he started something that would continue to live on even after he passed. Since his time, widespread public access to literature has become a cultural norm in almost all parts of the world.

Present-Day Public Libraries

Libraries today are irrefutably much different than they were before the 19th century. They are a place where anyone can access information through books, quite the opposite of 18th century libraries. Though they can be used to find scholarly articles and scientific information, they are mostly used for entertainment purposes. The centuries-long move to publicly accessible literature has changed the intent of book audiences worldwide. Entertainment has increasingly become the goal of book audiences, especially now that fiction books are readily available and people have over double the amount of free time than the working class did in the 18th century¹³.

This shift in the public's motivation to read has in turn shifted the architecture of public libraries. Even with the saying "don't judge a book by its cover," people are judging everyday things by their appearance left and right in our society, libraries included. Modern libraries attempt to invoke certain feelings and emotions in the people who use them, usually along the lines of comfort and sincerity. In order to portray these things, libraries are



Kansas City Public Library⁷

built with them in mind. Like designing a book cover that will intrigue people to open it, libraries are being built in ways that make people want to go inside and look around.

Targeting lovers of literature in this way is not just being attempted by public libraries, but also with bookstores and small privately owned libraries. And when I say ‘small,’ I mean tiny. Little Free Libraries of all different designs are starting to pop up in cities all around the globe. These tiny libraries are usually about the size of a birdhouse that the owner fills with books of their choice that are up for grabs to the public. People can borrow one and bring it back or take one and leave another, whatever suits their needs. This is just one way that people are starting to aim their literature collections at different groups of people rather than just the public as a whole¹³. You can see it everywhere from comic book stores to hole in the wall second hand book stores. It has started to become more and more about catering to what people want rather than giving a select few the privilege to view whatever is available.



Little Free Library-Easthampton, Massachusetts⁸

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Developing Printed Forms of Fiction

- Audrey Jones -

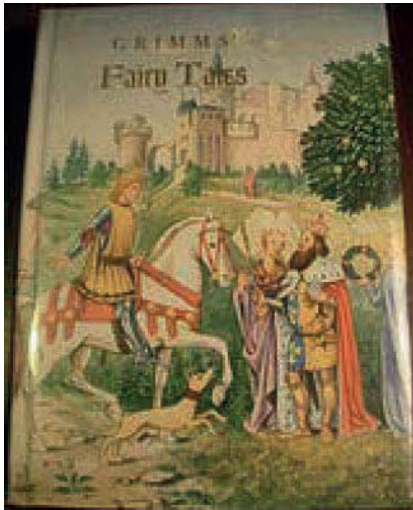
Literature has evolved in a multitude of ways over the years, ranging from the humble origins of early book forms - such as scrolls and codices - to the increasing versatility of forms such as heavy bound encyclopedias and cheap paperbacks. Over the course of history, the growing possibilities for uses of the book have opened up many new markets for consumers. These have changed the way that the general populace interacts with printed materials and their suppliers, including publishing companies and authors. As the rise of lending libraries led to a greater demand for entertainment in the form of fiction, more marketing opportunities opened up within that broad genre. In the late 18th and 19th centuries, this resulted in the emergence in popularity of several notable literary forms. These various developing printed forms each had their own effect on the market, society, and culture in which they existed.

The Market for Printed Fiction

As printed material became more accessible, literacy rates began to go up, and as more people became literate, more people became interested in reading fiction as a form of entertainment¹. With an increase in consumers reading for pleasure, a greater need developed for various specific *types* of reading material in order to cater to the growing literary audience. This instigated the creation of new markets within the arena of authoring and publishing, contributing further to the field and continuing changes which resonated forward in history; this influenced new genres, new perceptions, societal issues, and the overall market for fiction. For example, the fairytales popularized by the Grimm brothers became widely known only after they were made more accessible in the form of printed books. Innovations such as the

serialization of novels and the introduction of cheap and compelling dime novels reached out to a greater audience through the type of medium in which they were printed. The accessibility that these provided to the growing world of readers became an important part of the developing book and of literature.

The Brothers Grimm



Grimm's Fairy Tales ¹

The Grimms' Fairy Tales, first compiled in the late 19th century, brought together a multitude of German folktales. Up until this point, the folktales were primarily conveyed through the oral tradition of story-telling. Any written record would have been informal and private. Brothers Jacob and Wilhelm took on the project in order to preserve and unify the traditional stories and the culture within the Germanic community².

The Grimm brothers began collecting the folktales that they would eventually publish while still in their teenage years².

Before the brothers came along, the stories were well-known but confined within a single culture and society. While the tales might have endured in this secluded setting from which they originated, it took collecting and publishing to get them out into the world and before the eyes of many avid readers. Without the creation of this record, the folklore could have been lost forever, or at the very least would never have spread far beyond its roots and would have existed only as stories passed down within families and small communities. This publication also allowed for these stories to be retold orally in other nations, providing a transportation service of sorts. The Grimm brothers facilitated this wide-spread growth in accessibility. In doing so, they immortalized what is now seen as universally appealing content, a collection of fairytales and folklore which is so well-known and frequently told, retold, and adapted into various other mediums.

By spreading these folktales outside of the culture they originated in, Jacob and Wilhelm were able to assist in meeting the growing need for reading

material. Libraries, bookstores, and the general populace were now allowed access to these stories and were able to build upon their literary repertoire. The Grimm brothers helped to meet this demand by bringing stories into the format of printed fiction from that of oral storytelling. The increased accessibility that this transition of forms provided allowed for the traditional folk culture to spread its influence across other literary disciplines and ingrain itself in the folklore and children's tales of other nations³. The impacts can be seen today, as these fairytales have persisted throughout history. While they have been revised and censored many times over, they still appear in some form throughout our children's stories and are constantly being adapted into new forms of entertainment.

Serialization of Novels

The serialization of novels first began in the early 18th century. This involved the publication of fictional works in parts, rather than producing an entire story at once. By this method, readers would receive their stories in installments, through mediums such as newspapers or magazines which were published periodically. This serial fiction was often provided as part of a subscription service for the material in which it was printed, meaning that a novel that went on and on over a great period of time could end up costing the reader a great deal of money – as well as making more money for the publishers and the author⁴.

This serial format for the distribution of fiction created a new avenue through which authors could draw in the reader and potentially achieve greater success in their writing. The method of publishing created the necessity for writers to create engaging content with suspenseful endings in order to capture and maintain the interest of their audience throughout the weeks, months, or other specified intervals between publications. As for the readership, consumers in this market were granted a new way to enjoy fiction specifically for

entertainment purposes. For some, it was a more convenient way of acquiring reading materials; the serial novels would be regularly distributed to the readers under the subscription service, rather than an individual having to go to the bookstore or library for an entire book every time they wanted something to read.

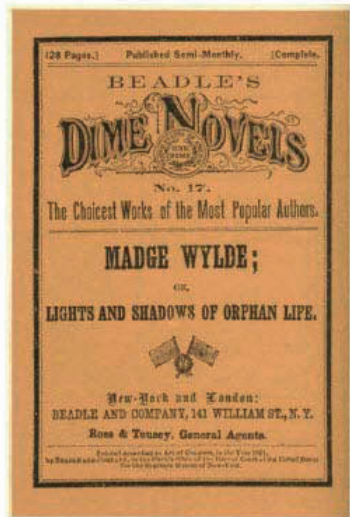
Publishing entrepreneurs such as W. F. Tillotson took advantage of the industry for serial fiction. He took over his father's printing firm and incorporated Tillotson's Fiction Bureau into the preexisting Bolton News network in England⁴. Newspapers and other publishing mediums that were already successful had the opportunity to increase their success by taking advantage of the serialized fiction market, meeting the demands of the audience that would already be in place. The financial opportunities provided by periodical fiction could greatly benefit the backing printing and publishing entities, economically and in popularity. Authors were also given another method through which to expose their writing. It was potentially more financially practical for them to publish their stories piece by piece – if they could keep their novel in the paper for long enough. This changed the entire way the business worked. In addition to affecting the method of writing and production, the quality, content, and style were also influenced.

The serialization of fiction which began around the 18th century influenced the market for years to come. The effects are not only lasting, but have also evolved into many different forms of media. Within the realm of books, many novels which were originally serialized in periodicals were later put together into one singular form and distributed as such at different prices; *The Count of Monte Cristo* and *Uncle Tom's Cabin* are a couple of examples which have remained popular as a part of well-known literature⁵. Book series and films are often serialized in order to maintain the audience's interest and bring in continued revenue, as well as satisfy the demand for continuation and elaboration of certain story lines.

Dime Novels

Dime novels were a cheap form of fiction popularized in the 19th century, produced using inexpensive materials and processes in order to create a product that was widely affordable to the general public⁶. Beadle's Dime Novels (as pictured below) was a major publishing company for dime novels in America. Known as dime novels in many areas, this phenomenon of popular material at appealingly low prices did exist in many countries throughout the world. The British counterparts to dime novels were known as "penny dreadfuls" (also pictured below); similarly priced and composed, they were sold at the price of one penny. Popular genres in other areas, such as detective novels in Russia, also followed these same parameters; though not called "dime novels," they were mass-produced in similar forms in order to satisfy the consumer demand⁷.

Piracy and plagiarism ran rampant in the production of dime novels, as authors and publishers looked for quick ways to produce a story.



Beadle's Dime Novels – Madge Wylde 1861 ²



Spring Heeled Jack: The Terror of London - "Price One Penny" ³

The format and content of these books drew readers in through low prices and exciting stories; cheap and accessible, they were both widely distributed and widely read.

Dime novels in America were primarily geared toward the younger working-class. The subject matter was not deeply complex literary content, and was written to be exciting and crowd-pleasing. Because of this, differences in class and economic status were further accentuated by the popularity of dime novels. These issues influenced a divide between those thought of as more educated and well-off, and those who might be factory workers and who enjoyed reading cheap sensational fiction for entertainment⁸. At this time, there was also a large reader base and resulting demand for this type of fiction among women; these stories were primarily read by the young working-class, as well as middle-aged and older females. These dime novels were mostly domestic and romantic in genre, meant to appeal to the experiences and fantasies of the average young woman or housewife at the time⁹.

The low cost of books like dime novels allowed them to be used for many purposes, such as distributing political propaganda and anti-governmental literature. For example, in pre-WWI Germany, radical anti-socialism and anti-government texts were widely produced. They



Freisinnige Zeitung, 1892 ⁴

The *Sozialdemokratische Zukunftsbilder* was a cheap fictional novel authored by Eugen Richter; the title translates to “Scenes of the Social Democratic Future.” The medium in which it was published, “Freisinnige Zeitung,” translates to “Freethinkers’ News”¹⁰.

were either sold very cheaply or distributed for free to the general populace – who might not otherwise be informed. The “Freisinnige Zeitung” was an anti-socialism booklet which contained the fictional *Sozialdemokratische*

Zukunftsbilder marketed in the manner of the dime novel which was freely handed out to 300 factory workers; this marketing strategy got the words out there quickly, making it highly accessible. It also created the potential for change in attitudes of the general populace as well as influencing the politically inexperienced¹⁰. This accessibility and opportunity for the rapid and wide-spread dissemination of information would not have been possible without the format of the dime novel.

Mass Production of Fiction

The increase in books and other reading material based on the developing literary forms that have been discussed meant greater access to these books and rising literacy rates, which in turn increased the demand for books¹¹. In order to meet this growing demand, publishing companies and authors felt pressured to rapidly produce material to be marketed and sold, exploring the various genres at their disposal and the relative success rates. The engaging content that typically resulted from this mass-production encouraged a greater reader base, especially among young adults. However, among the “intellectual elite,” the content was seen as more of indulgent entertainment rather than complex literature.

Going forward with the intent of quickly pleasing readers on a large scale encouraged quick production and allowed for massive sales in popular works. In this instance, the wide-spread distribution of fiction became all about the marketing strategies, and what it would take to meet and satisfy the demands of the reader. Regardless of the method of publication, the aim was to please and to make sales¹. This rapid exploration of what would or wouldn't sell resulted in the emergence and recognition of popular genres which appealed to a wide reader-base. By testing the reception of so much mass-produced reading material, publishers were able to identify what would be successful. These results have helped pave the way for future publications and

authors, and formulaic stories geared toward drawing in large numbers of readers can still be seen in many books today.

Influences of the Rise of Fiction

Throughout all the printed forms of fiction that have been discussed in this chapter, the overarching theme is accessibility. We can see how the world of literature as we know it would certainly not have been the same without the development of various forms of the book and fiction. By creating new ways of acquiring and producing stories, authors and publishers disrupted the market for reading material and in many instances changed not only *how* it would be accessed by consumers, but *who* would be able to do so as well. The developing forms of printed fiction contributed to the massive spread of information and literacy over many cultures, societies, and economic classes.

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Revolution of Printing Technology and the Development of Paperbacks

-Braden Shribbs-

The shift of the reading population in the late nineteenth and early twentieth centuries from a primary focus on religious texts, to a wider consumption of fiction titles was predicated on an improvement in the machinery within the printing industry. The change, which included the Linotype and the Monotype machines, allowed for a quicker production of printed materials, such as newspapers and books.

Increased mechanization also resulted in the rise of the paperback as a new and easier way to absorb knowledge. This was a distinct improvement over the past. The paperback book disrupted the established way of manufacturing the printed word that had remained relatively unchanged, for the most part, since the time of Gutenberg.

The Machines: Linotype and Monotype

Two machines developed in the late nineteenth century were influential to the advancement of the worldwide printing industry. Both are equally important, but for different reasons. The first of these was the Linotype, invented and patented by Ottmar Mergenthaler in 1884. The development of this machine heavily influenced the newspaper printing industry to the point where remnants of the changes can be seen in the present day¹.

The Linotype produced a band of paper, which corresponded to indentations that represented the letters. These letters would then be decoded by the machine. They were punched into hot metal to create the template². Because

of the advancements in printing speed afforded by the Linotype, the efficiency and production of printed material changed significantly.

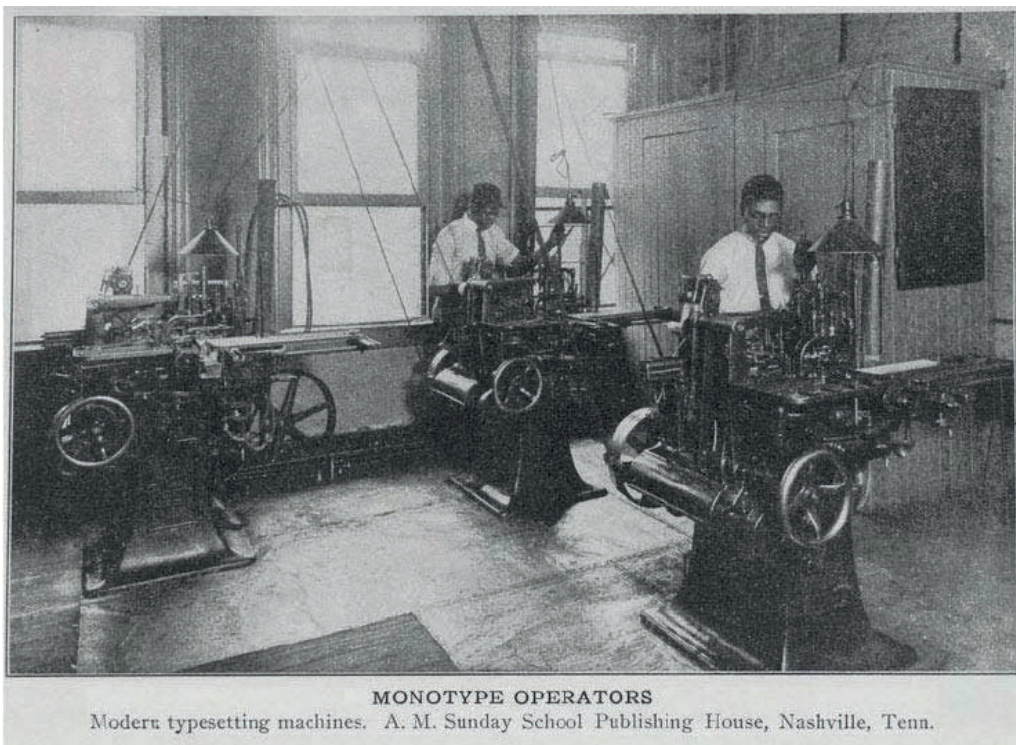
The changes in the printing process were disruptive in that they changed the way printing occurred. Originally, letter blocks were arranged to form lines of text. With this new technique, printed materials could be created at a faster rate. Another way in which the Linotype served to disrupt the printing industry was that it changed the amount of skill fundamentally required to print. The Linotype did not have the need for specialization in the movement of letters that was required by traditional printing techniques.



An Example of the Linotype Machine¹

The Linotype, however, was severely limited in what could be edited after the point of “setting the type.” Setting the type refers to the phase that revolves around the creation of the line of type that would then be inked and pressed onto the rolling sheets of paper. It was more difficult to correct mistakes that were made in the production of the printed material. This was later corrected by the introduction of the second machine. The Monotype was

created and patented between 1887 and 1889 by Tolbert Lanston³. The goal was to produce lines of perforated type on a strip of tape through a keyboard-like contraption. Once this was completed, the operator would rip off the tape and feed it into another casting machine that would create a mold of the indented letters. When compared to Linotype casting, Monotype casting had the clear advantage of being far easier to edit and correct. This was because one could remove a single letter of type, rather than recasting an entire line of type. This was more effective for book production than the Linotype machine, which was better equipped for newspaper production, as news is time-sensitive. This was because it was focused on producing material as efficiently as possible, which suited the function of the news media rather than the function of the fictional media.



An Example of Monotype Machines²

Paperbacks

The introduction of the Monotype machine caused a surge in the number of books that were printed on a daily basis. This allowed for books to be produced with the least expense on the part of the publisher, and would in turn be available to the masses at a cheaper price than in the past. Hardcover books were seen as a mark of wealth and class because of the expensive materials they were made from, including gold embossing and stiff cardboard. Hardcover books had been the industry go-to because of their reputation and the wealth they signified. However, a revolution to increase the availability of printed materials to the masses was soon to take place in the printing industry.

Two crucial elements caused this revolution and disrupted the present climate: design and price. The first idea was manufactured in the mind of entrepreneur Robert de Graff, who bought out a one page ad in *The New York Times* that read “OUT TODAY—THE NEW POCKET BOOKS THAT MAY TRANSFORM NEW YORK’S READING HABITS⁵.” The so-called ‘Pocket Books’ were more aptly referred to as paperbacks. It is important to note that the idea of Pocket Books was pitched towards American publishers. They rejected a part of de Graff’s original ad idea, specifically the wording of “will,” which was apparently seen as too much of a risk with American publishing companies⁵. In other words, the American publishing companies did not think that selling cheaply produced books with everyday items would benefit them financially.

The other avenue that revolutionized the book printing industry was the matter of price. Hardcovers were far more expensive to produce, with a price of \$2.50⁶. Size was also an issue. The bulky nature of hardcover books made them nearly impossible to carry around if you were out doing errands or travelling for a long period of time. Robert de Graff miniaturized the novel, condensing the wider and more cumbersome format into a petite 4 by 6 inches, and reducing the price to 25 cents⁶. At the time, no one in America thought this was going to catch on. The American publishing companies were wrong; they were not able

During the late 1800s and early 1900s, \$2.50 was the equivalent of \$40 in today’s currency. During the late 1800s and early 1900s, \$2.50 was the equivalent of \$40 in today’s currency.

to keep up with the demand for the new form of reading. This cosmetic change may have appeared simple, but it revolutionized the paperback book industry. The paperback paved the way for innovation through American publishing companies in the growing market of small-form novels.

Paperbacks were influential and disruptive for a variety of reasons. Location and availability proved to be the most important disruptive features of their existence. At the time of de Graff's proposal of Pocket Books, there were only 500 bookstores in America, which resided in only the most populated cities. Not everyone had the time or patience to go to bookstores and spend hours sorting through books to find the perfect book to buy. They wanted the process to be far quicker, like at the grocery store.

By placing the Pocket Books in places where large numbers of consumers were guaranteed to regularly gather de Graff placed the product directly in the hands of the customer, rather than forcing the customer to go out of their way to interact with his product. This was part of the reason that American publishing companies were wary of marketing Pocket Books. Bookstores would already attract those who were literate and had the time to go out of their way to get books for entertainment. This, however, was not the goal with Pocket Books and paperbacks. The Pocket Books, with the assistance of the magazine distribution industry, were marketed at drugstores, grocery stores, and airport terminals. These specific places received the bulk of the marketing because that was where people of the lower classes were known to shop and visit on a regular basis. This marketing decision proved to be a success for de Graff, resulting in 17 million books sold within two years of beginning his venture⁶.

The success of de Graff's business deal has been noted by many people. Historian Kenneth C. Davis, author of *Two-Bit Culture*, commented that they couldn't keep up with demand for the product and that they had

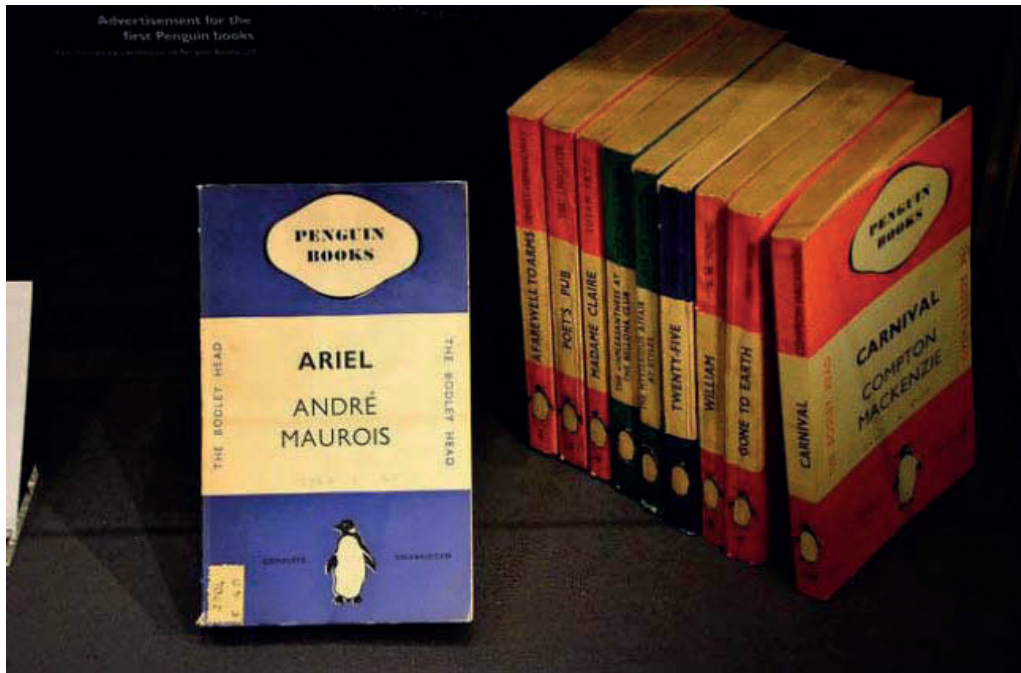
unknowingly tapped into a huge number of Americans who were not usually avid readers⁶. Following the early success of de Graff, numerous small publishing companies rushed into the new market. These smaller publishing houses merely wanted to cash in on an emerging trend and were not overly concerned with producing quality products that people wanted to read and own for long term reading pleasure.

The excitement of this new industry resulted in the production of a wide range of materials including mysteries, westerns, and poor-quality romance in order to exploit consumer curiosity. Many people, including intellectuals, referred to this specific growth within the market as a “flood of trash.” They did not believe these materials served to expand the knowledge and life experiences of the public. The inferior romances, mysteries, and westerns were also not seen as well-constructed due to the lack of prestige in the upstart publishing houses, as they did not have any widely-known authors. However, this resulted in the distinct American literary genres which are widely-known today.

Penguin Paperbacks

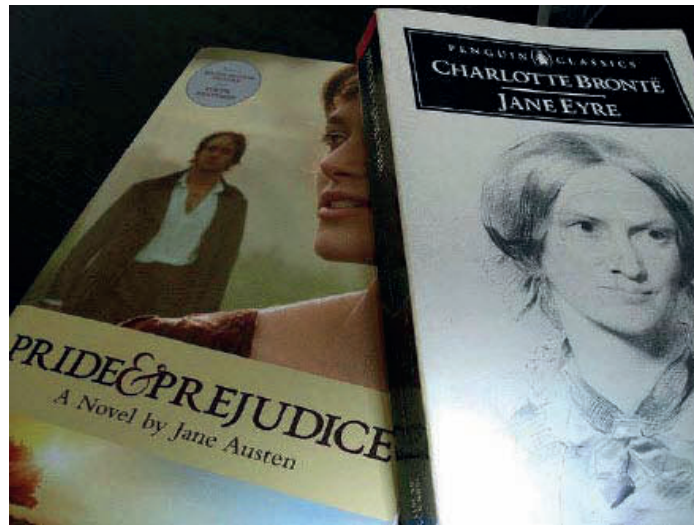
Penguin paperbacks resisted the belief held by the publishers of this era: the market for quality books was limited to a handful of elite readers. One man pioneered the way that changed how publishing companies thought about their readership. Allen Lane was working for another publishing company at the time and was coming back from a weekend meeting with Agatha Christie in Devon. Once in the station, he was annoyed and perturbed to find only Victorian reprints and popular magazines lining the railway station kiosk in Exeter. After observing this, he convinced himself that there was a need for moderately priced editions of good-quality contemporary writing⁷. He continued to ponder the idea of selling small, cheap fiction and non-fiction titles at the cost of sixpence apiece, which was less expensive than a pack of cigarettes⁴. This was of great significance when the public was not always thought to have had a desire to read. Allen Lane’s company, Penguin, was established in July of 1935

and radically changed the reading habits and lives of those who lived in the English-speaking world⁷.



The first 10 Penguin books³

The first set of paperbacks that Penguin published included: *Ariel: A Shelley Romance* by André Maurois, *A Farewell to Arms* by Ernest Hemingway, *Poet's Pub* by Eric Linklater, *Madame Claire* by Susan Ertz, *The Unpleasantness at the Bellona Club* by Dorothy L. Sayers, *The Mysterious Affair at Styles* by Agatha Christie, *Twenty-Five* by Beverley Nichols, *William* by E.H. Young, *Gone to Earth* by Mary Webb, and *Carnival* by Compton Mackenzie⁸.



Example of Penguin Classics⁴

Penguin set themselves apart as a company due to their revolutionary system of paperback classification. This system successfully broke new ground when it defined the differences between various genres. Each genre had its own respective color: orange for fiction, green represented crime novels, pink stood for travel and adventure, dark blue was for biographies, red signified drama, purple was for essays, yellow was for miscellaneous subjects like crosswords, and gray was for world affairs. When consumers were looking at someone who was reading, they would be able to see the Penguin symbol on the book, quickly observe the color, and determine what type of book they were reading. Penguin also employed a number of branches within their company to assist in specialized production of different material. Among these divisions were: Pelican who used light blue for non-fiction, Ptarmigan Books who published puzzles and word games, Puffin Books produced children's books under the Penguin banner, and Peacock focused on young adult readers⁹.

Penguin books were disruptive because they truly provided a system of classification for their products that were recognizable at a glance. In addition, the name recognition that came with publishing well-known authors was beneficial in giving weight to the credibility of Penguin's high-quality paperbacks and novels.

Penguin is a great example of a relatively new company that was offering a wide selection of material for new readers at a fraction of the cost of traditional hardcover prices. And whose products later gained prestige because they were shown to be of superior quality to the previously made Dime Novels and chapbooks. What did this all mean for the American reading public?

It meant that they were able to choose books more confidently. They could now go up to a shelf in a convenience store, bookstore, or a railway station and clearly see from simply the color of the book what genre it contained. They might not know all of the details, like the plot and things of that nature, but they would have a far better understanding of what they were buying simply on face value. The average consumer was more inclined to casually pick up a book and start reading it because they already knew what they were purchasing: a good quality, well-written book. The paperbacks that were manufactured by Penguin were a vast improvement over the previous productions as they would not have to spend large amounts of time sorting through reading material that could possibly not be up to their expectations.



Penguin Paperbacks are still collected today.⁵

The Lasting Effects of Mechanization

Machine-led production allowed for quicker printing and distribution to the public for both newspapers and novels. The public was then able to consume this information at a faster pace and was hungry for more. When American publishers saw that books and newspapers were selling out quicker than previously thought they saw this as an increase in demand. Because of the rise in demand for printed materials, the publishing companies would produce more printed material to meet the wishes of the public. The public's hunger for new and interesting reading material would not be stifled now that it had been awakened. These changes resulted in a larger market for literature of all kinds that suited a wide range of tastes. The diversity of reading material available to people, including fictional books to escape mundane life and academic texts to enrich the mind, showed the paperback had done what it was meant to do: open up the world of reading to as many people as possible.

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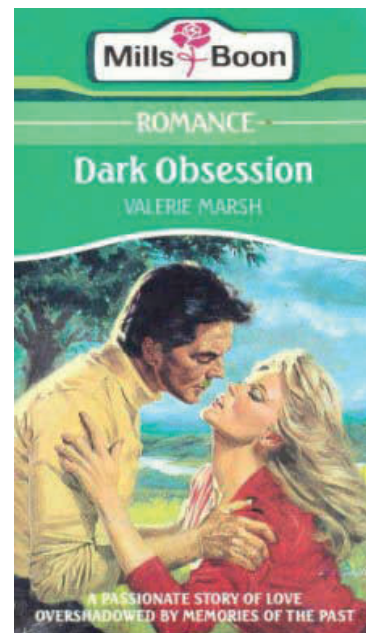
The Genre

-Keelie Daquilanto-

The rise of paperback and Penguin books paved the way for authors to begin aiming their writing toward a specific audience. In turn, this led to the rise of the genre. The genre quickly became important to the reading audience for a variety of reasons. It not only gave readers an easier way to access the kinds of books they enjoyed, but it also gave them the comfort in knowing what to expect from their books¹. The creation of genres allowed for publishing companies to disseminate their material with ease to the people they knew were going to buy them¹. A few of the genres that came about, such as romance novels, children's books, and illustrated books, caused book audiences to begin changing. These different types of books appealed to those who did not otherwise have access to material that was tailored toward them, such as women and children. This allowed for a new audience of readers to feel like they finally had a place in the world of literature.

Romance Novels

Many authors and publishers had a hand in making the romance novel industry what it is today. Two of the biggest contributors to the genre were Gerard Mills and Charles Boon, who created the publishing company Mills & Boon². Mills and Boon started their company in 1930, and began publishing books for lending libraries, expanding the number of readers who could come into contact with their books². As a result, Mills & Boon decided to make romance the genre of choice for their company, as they noticed that it was a popular choice among their



Mills & Boon romance novel book cover¹

readers. When Mills & Boon began publishing their romance novels, class and wealth were prevalent themes. The hero of the story was often a member of the upper class, and the heroine was younger and a member of the lower social class². As society as a whole began changing, so too did the content of these novels. In the 1930s and 40s, the women in these books tended to live in England and were dealing with life during war and domestic situations. In the 50's, this focus shifted to motherhood and being a widow². By the 1960s the heroine of these stories began displaying interests in starting her own career, oftentimes as a nurse³. Their novels then became popular among working class women. In 1971, Mills & Boon was purchased by the business Harlequin, which furthered the company's overwhelming success³.

Mills & Boon focused on publishing romance novels by women authors, something that had not been attempted before².

The romance novel was disruptive for book loving audiences in multiple ways. Throughout its evolution, the romance novel appealed to a wide variety of different women. In most cases the content of books was aimed more toward educated men. However, with this new genre, women now had material that was specifically designed for them. This provided an opportunity for women to become more literate, educated, and feel included within the literacy world. As Mills & Boon became a more established publishing company, they focused on keeping their prices low so that as many women as possible could have access to their material. This allowed for a wide range of dispersal. By 1998, the company had global sales of 160 million copies published in 24 different languages³. With their overwhelming success among the women of the time, Mills & Boon helped influence how the world still approaches the genre of romance today.

Children's Books

With the rise of genre fiction and books for specialized populations came the creation of children's books. Before the 18th century, material aimed at children was simply in the form of spoken stories, songs, and poems that were used to educate⁴. Books slowly began to be created for children. However, they were still mostly educational in nature and aimed toward teaching subjects

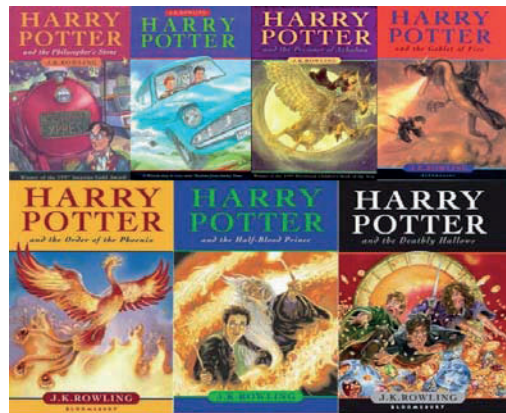
such as the alphabet³. Until the 19th century, children were usually taught to read within the home using horn-books, which were flat pieces of wood that held a sheet of paper containing things like the alphabet or The Lord's Prayer³. With the turn of the 19th century came collections of fairy tales such as Hans Christian Andersen's *Fairy Tales* that included *The Princess and the Pea* and *The Little Mermaid*³. As the century progressed, children's literature began shifting from magical plot lines to those centered on young main characters with more realistic stories such as *Anne of Green Gables* and *Treasure Island*³. Children's books were becoming an essential piece of the book market as the number of children reading for pleasure began to rise. In England around 1940, children's paperback books were released and sold at lower prices, making book buying finally possible for children⁴.



Cover illustration of a set of fairy tales written in the 19th century²

Charlotte's Web was said to be one of the only children's books of its time that faced the subject of death⁴.

As it became clear that children were a source of demand in the book industry, publishers began getting creative. They released items such as pop-up books and stories with multiple endings³. All of these things led to books now being a continuous part of children's lives. The market for children's books stayed steady through the 1900s. However, in 1997 the book industry showed just how high the demand for children's books could get with the publication of the *Harry Potter* by J. K. Rowling⁴. The *Harry Potter* series has

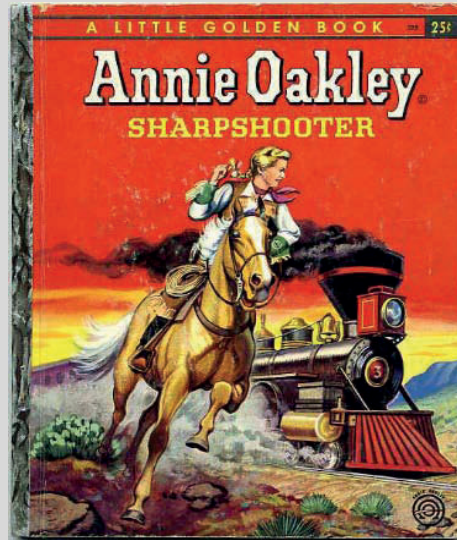


Original British Harry Potter series cover art³

sold over 400 million copies and has been translated into countless different languages in order to be accessible for children all over the world³. Publications such as *Harry Potter* brought about a new culture of book lovers. As the industry for children's books continued growing, a new type of reader emerged, creating a demand for these certain types of books.

The formation of the children's book was disruptive in many of the same ways that the romance novel was disruptive. Children's books allowed for kids to have their own material, tailored toward them, that was not purely educational. Before this industry was brought about, the only access children regularly had to books was for education or religion. The introduction of books specifically for children allowed them to begin reading for pleasure and entertainment, an activity that they were not included in before. This allowed for children younger than ever to begin picking up books due to the fact that they now had access, in addition to the idea that children started to want to learn how to read⁴. The industry has since helped to establish a culture that involves both children and young adults, that lets them feel as if they have their own genre separate from those aimed at adults.

Little Golden Books



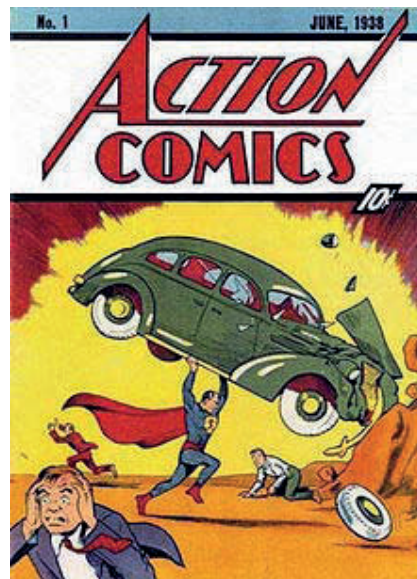
Little Golden Book⁴

In 1942, three different publishing companies joined together to form a new series of children's books geared toward beginning readers between the ages of 3 and 8⁵. They decided to call this series *Little Golden Books*, characterized by the gold binding. *Little Golden Books* were inexpensive, selling for only 25 cents, and sturdy enough to hold up to the wear and tear a young child may inflict⁵. These books were brightly colored and appealing to children, making them want to read. Soon *Little Golden Books* were being sold in many different places from grocery stores to drug stores. These books were easily accessible to all children, regardless of socioeconomic status or level of reading ability⁵. *Little Golden Books* as an industry were disruptive in and of themselves due to the fact that they changed how, when, and why children read. They not only became a popular publishing company, but a beloved staple in the homes of many children.

Illustrated Books

During the 20th century, the world began to see the rise of illustrated books³. The developments happening in technology during this time period helped to improve the quality and affordability of color photographs³. These advances led different types of illustrated books to become more widely accessible and desirable to the general population. Different cultures began to adapt different forms of illustrated books, such as comic books and manga.

Before comic books became popular, the world had “pulp.” “Pulps” were sold for 10 cents on newsstands and focused on the adventures of action heroes⁶. Comic books as we know them today came about in 1938 when *Action Comics* launched their first issue featuring Superman⁷. This began what is known as the Golden Age of Comic Books due to the high volume of sales⁷. These sales then died down, however the Silver Age of Comic Books sprang up in the late 60’s and early 70’s. This era was marked by Marvel Comics, which introduced naturalistic superheroes, such as Spider-Man⁷. The world



First issue of Action Comics featuring Superman⁵

The Justice Society of America was the first fictional superhero team to appear in a comic book, founded in 1940⁶.

of comic books became disruptive for a variety of reasons. Comic books were not only appealing to children, but to young adults and even older adults. These types of books were able to capture people’s attention not just by their illustrations, but by their riveting stories as well. As most comic books stayed inexpensive, they were accessible to the wide variety of people that read them, and today are still collected by millions of people.

Japanese comics, different from American comics, are often referred to as manga. Manga utilizes a wide variety of themes to appeal to its readers such as school life, action and adventure, and romance³. The term “manga” was first

coined by artist Katsushika Hokusai, who used it to describe spontaneous drawings that excite the imagination³. Manga is traditionally read from top to bottom and right to left, and utilizes caricature type illustrations³. Manga is said to have originated from scrolls created by Buddhist monks in the 6th and 7th centuries⁸. These scrolls featured images such as cherry blossoms and red leaves outlining the passage of time, a common theme in many manga today⁸. Modern manga began after World War II when Japan was rebuilding its infrastructure⁹. In 1951, the launch of a manga series known as Astro Boy helped to shape the history of manga⁹. Astro Boy was a super powered robot, as well as a little boy⁹. Many of the subjects introduced in Astro Boy had much to do with the Japanese society at the time such as the need for world peace after the war⁹. Between 1950 and 1969, Manga appealed to audiences due to the fact that they specialized in two main marketing genres,



Astro Boy⁶

shōnen (meaning period of youth) manga for boys and shōjo (meaning little girl) manga for girls⁹. Today, manga continues to specialize in topics that appeal to many different types of readers. This idea in itself makes the world of manga disruptive. These types of books are accessible to a variety of different people young and old, and continue to be in demand all around the world today.

The Popularity of the Genre

Aside from those discussed in this chapter, there are a variety of other genres that have become popular over the years. These genres include science fiction, mystery, self-help, and many others. The genre has led people to feel as if they have



Bookstore separated by genre⁷

a place in the book world. People are free to pick and choose which genres of books they want and do not want to read. This has led to more accessibility, and tailoring of books by publishers to their readers. The rise in popularity of the genre not only provided a new variety of entertainment for readers, but it also gave way to new cultures of book loving audiences everywhere.

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The Electronic Book as a Disruptive Technology

-Janel Chandler-

In 2011, the United States made \$90.3 million in the ebook market¹. The electronic book, or ebook, is a book that is read on a computer or other electronic device². Ebooks were invented in 1971 with Michael Hart's "Project Gutenberg," and later took the world by storm in 1998 with the invention of the ereader by Peanut Press^{2,3}. Ebooks were originally just digital copies of books that someone typed up and put on the Internet. This new technology was a disruptive innovation because it granted instant availability, allowed for easier storage, was more convenient, and completely revolutionized the book market¹.



Electronic books like the Nook and the Kindle have revolutionized the reading market¹.

Transition from Print

Electronic books as we know them today began as online databases of historical and classic texts that were maintained by universities³. For example, Michael Hart's "Gutenberg Library" now holds 30,000 free books³. Some early ebook devices include: the Rocket ebook that could connect to the internet that came out in 1998; the Softbook Reader that was ergonomically designed for long reading on screen; the EveryBook Reader that had a database of books, magazines, and sheet music; the Gemstar ebook that came out in 2000 and featured a color screen; and the Cybook that could store up to 30,000 pages on the device memory⁴.

Many electronic reading devices employ the use of “skeuomorphs,” which are threshold features such as the notebook paper lines on notepad applications, and are used to slow the transition between concrete objects and their electronic successors. There is no imperative need for there to be lines on this automated electronic application, but it makes the experience of using this application more familiar to us because it’s like using a real notebook with lined paper. These features are used to comfort those who are apprehensive about the big changes associated with new technology. They are used to maintain audience. These features often inadvertently alienate some users. For example, the switch away from the lined format of the notepad application on



The floppy disk is used as the save icon on many electronic devices, and is a perfect example of an archetype².

the iOS 7 Apple software towards a more function-based layout. Another example of the use of a skeuomorph is the icon associated with the save feature on most devices--a floppy disk. The use of the floppy disk icon is associated with the save feature, although floppy disks are basically obsolete. This type of widespread recognition is known as an archetype, which is

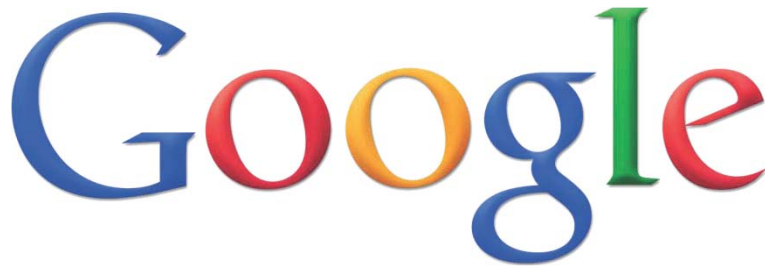
a widely accepted and innately understood object or idea⁵. Ebooks have many of these features employed merely for familiar format rather than function. These will slowly disappear throughout their existence. Examples of this are margins, originally used to provide a place for a reader to hold onto the book without covering any text, and bibliographies, which hyperlinks make almost obsolete).

Ebooks are seemingly taking over the limelight. Ebooks are commonly cheaper than paperbacks, but originally had very limited success¹. One reason for this commonly expressed by readers is the lack of tactile feelings associated

with reading a print book, like feeling the pages, turning the pages, and seeing their reading progress.

Role of the Internet

Ebooks have experienced many changes throughout the years, but all of this progress began with the invention of the Internet. The World Wide Web



The advent of the Internet and Google changed the electronic book market and literacy as a whole³.

made its debut in 1991, but reached initial widespread popularity in 1995³. The internet allowed information to be more widespread, easier to transfer, and in turn, more easily shared⁶. A major downfall of the ebook market is that people are often not willing to pay for things online, as they are seen as public domain. This has been a problem for many online businesses. This may be solved in the future by embedding paid advertisements in the pages of online books⁶.

Effects on Print Market

There is a debate about the effect that ebooks and other similar technologies will have on the print market. The distribution costs of electronic books are virtually nonexistent, but that may not be enough to discount the enjoyment people gain from having solid possession of intellectual property⁶. Some argue that new technologies are making the sales of print books easier and more efficient, and although print books may become less mainstream, they will never lose their usefulness in maintaining important documents and information⁶. The ebook market has taken a lot of business from the print market, but has yet to completely replace it.

New Technologies

Some say new technologies can be distracting, and can take away from more real forms of entertainment. Regardless, new technologies are coming to the surface every day. In most new technologies, innovators look to previous technology to design the future.

There is a big debate about the integrity of ebooks and the transcribing of classics into electronic format. Those in favor of this innovation claim that extra media added to stories add context and history to the story, make it easier to understand, and make it more of an interactive experience. Those against this declare that this format was not the way the author originally intended it to be read. The reason some classic books can still be altered is because their copyright protection time is over, making use of these books public domain.

There are many other new technological advances that aid in the advancement of the book market. There are Print-on-Demand kiosks that can



print books on the spot. You select a book from the machine's archive, and 15 minutes later you have a freshly printed and bound book. This allows avoidance of surplus and uses technology to advance the market of print books.

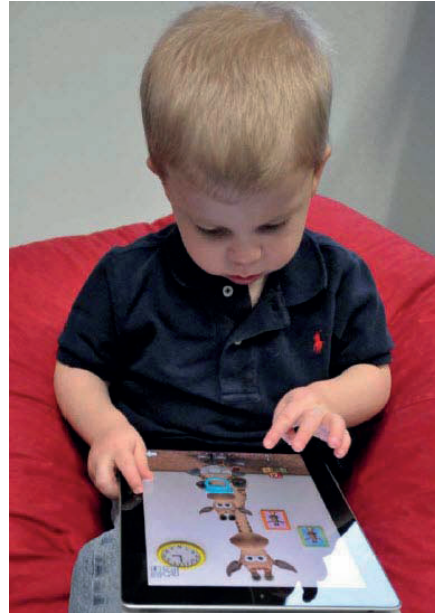
Print-on-Demand kiosks provide a new and innovative way to meet print book demands⁴.

The future holds a newer format of book, made from “smart paper.” This “smart paper” is composed of millions of tiny rubber balls, black on one side and white on the other. These balls are electrically charged, and form to the

pages of whatever book you download. This maintains the tangible aspects of reading a print book, but intertwines the use of new technologies⁶.

Accessibility

Due to the prevalence of libraries, print books are currently more accessible to the general public. Education has taken new reading technologies and used them extensively in schools, especially with young children. More than half of U.S. children are reading on electronic books, which is twice as many as American adults².



Many schools have adopted the use of electronic readers in youth education⁵.

There was a large study conducted based on the differences in reading quality between electronic and print books. The study concluded that on average, people read print materials faster. It was also found that there is no difference in comprehension of material read⁷.

Ebook as a Disruptive Innovation

As originally stated by David Staley, “the computer may be more like the printing press than we ever imagined before. The printing press transformed the production and distribution of writing, but not its form or structure⁶.” The ebook came from left field and completely revolutionized the book market. It has had many effects on the format and function of electronic versions of books, and has changed the printed book world as we know it.

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The Future of the Book and the Slow Book Movement

-Sarah Ellen Pettigrew-

The future of books is not clearly known, but the ebook has a high likelihood of taking over as the primary method of reading. Ebooks are disruptive to the realm of written works. These technologies essentially “steal” customers from the already established and successful methods, such as printed



books. Disruptive technology is a slow process, and can be seen in the rise of popularity of the ebook. Although we are moving into an era that is embracing the advancements of technology and continually trying to progress, the progression

into an ebook-only society could be challenging. Ebooks require a device in order to access them. This, among many other reasons, argues that there could be many downsides to ebooks.

The Downside of Ebooks

As with accessing any source of information, there is often an associated cost. Aside from libraries, books come at a price. For many people, purchasing ebooks is not a problem, but there are an increasing number of people (especially children) under the poverty line. UNICEF (United Nations International Children's Emergency Fund) states that an approximated 1 billion people were not literate at the beginning of the 21st century and these people are living in poorer health and poverty than those who are literate¹. This statistic included an estimated 130 million children. These statistics are worldwide. However, if we want to change the method of reading, it is essential that the goal would be for literacy to spread worldwide in order to for the

technologies that allow for this to truly be disruptive. To tell a child whose family cannot provide enough food that the only means of acquiring books is through a computer may prevent this child from ever having access to books, and



ultimately literacy rates among those in poverty will continue to decline. Not only is this an issue for these children throughout their childhood, but also throughout their life. By not becoming literate, they will most likely continue to live in poverty, especially in developing countries. For this reason, it is essential that print books continue to exist and be used until all households can afford a computer.

Ebooks require power in order to be used, and more often than not, an ereader or other electronic device needs to either be charged or continuously plugged in. This can become a problem, as print books never required any additional materials in order to use them. If a person is using an ereader, they are burdened by the nagging battery bar that warns them that their access to books is quickly running short.

Ebooks are not as easily lent or borrowed compared to print books². Although it may be possible to access ebooks through an online library, the ability to share your elibrary with your friends and family is not necessarily possible, especially considering the people you are lending to would need compatible devices to read the ebook on. Also, some people do not like reading from a screen for long periods of time, so the preferences of different readers could prevent them from sharing their books with others.

Ebooks also are increasingly being read on computers and tablets with multiple applications. This increases the amount of distraction occurring while reading, since there can be many other windows, tabs, or applications open simultaneously on the device. This could be viewed negatively since distraction when reading is not desirable. According to a study performed by using technology from Mozilla's Firefox browser, one half of Firefox users have more than two tabs open at all times³. The ability to be easily distracted by advertisements is obvious, but sites like Facebook, Twitter, Tumblr, and YouTube have also contributed to the distracted reading that can occur while reading ebooks². Clearly distracted reading is



not preferred for being able to connect with the works, which is where the movement from the idea of slow reading is rising.

Slow Book Movement

The Slow Book Movement arose from the Slow Food Movement, which encouraged eating traditional types of foods as opposed to fast foods, and also put an emphasis on farming⁴.

In a similar fashion, the Slow Book Movement urges readers to read more classic works⁵. Focusing on the classics will allow for readers to develop a better understanding of themselves and of how to connect with



others. The notion that the books being read must be classics is debatable, although the reasoning behind it can apply to many other works. The idea of

reading classics is to challenge the reader and for the reader to be confronted with moral dilemmas in the books they read. This will allow for personal growth as the reader empathizes with the characters of the story.

Reading books in a way that creates a personal connection allows for the reader to internalize the stories and to explore the opinions of the authors and of themselves. These results come from the “slow” part of the movement as readers dedicate a small amount of time, say 30 minutes a day, to slowly reading a novel⁶. Breaking apart novels into small chunks over a long period of time allows the reader to become more connected to the text.

With the rise of the Internet, readers are able to absorb a range of small facts rather than deep and meaningful concepts⁷. Although we are learning a large amount of information, we are not trying to contemplate these facts and relate them to one another. This is one of the goals of the Slow Book Movement, as the reader will purposefully take time to think over the small chunks that they read and have time to make connections that otherwise may not have been discovered.

Pro-Reading

The Slow Book Movement is really moving towards a new culture in which people enjoy reading and make an effort to reflect on and analyze the material. Reading is a skill many people acquire at a young age. The texts we choose to read are often selected based on readability⁸. When we are familiar with a text, or the verbiage used is familiar, we tend to read faster. With the addition of more complex ideas and words being used, however, the reader is forced to slow down. The idea behind the Slow Book Movement is to



read more thought-provoking and challenging works, such as the classics, in order to slow down your reading.

Reading has many benefits, including mental stimulation, stress reduction, increased knowledge, vocabulary expansion, memory improvement, strengthened analytical skills, improved focus and concentration, better writing skills, and entertainment⁹. According to the Slow Book Movement, there is a need to read daily. The retention of readers when slowing their process down increases, as they are able to form a connection to the text. This connection will not only allow for the benefits of reading slowly, but the general benefits of reading will be greater.

Can Old Technology be Disruptive?

The question “can old technology be disruptive?” stems from the idea of a movement away from ebooks towards print books in the Slow Book Movement. This transition clearly provides benefits to the readers, but is it truly disruptive? The best way to examine this is to go back to what disruptive technology actually means.

Disruptive technology is essentially a simple concept that is introduced to the public and gains popularity, eventually surpassing the established technologies¹⁰. Typically they have smaller target audiences and a simpler approach. The beginning stages of disruptive technology do not seem promising, but the lack of enthusiasm in the beginning stages allows for the future boom in success¹⁰.

The Slow Book Movement could be disruptive, as it will take the fast reading nature of the ebook and transition into a more purposeful and meaningful reading style. The ebook has attempted to overtake printed books as a disruptive technology, but there are clearly groups who do not see this technology as disruptive or better, and are urging readers to look to the past to see the future of the book. The ebook in of itself, has not successfully been

disruptive, as it has not displaced the printed book. In this way, it may be arguable that reverting to an all-print book society would not be disruptive but just a more standard use of the “norm.” In the end, readers may find that the only way to see the future of the book is to look to the past rather than to the new technologies of ebooks.

The Future of Reading

Besides the debate of the future of books is the greater debate of the future of reading. There is a fear that future generations will abandon what we know as reading now, for more fast-paced absorption of information¹¹. The ability to access books has become so easy with the instant-download feature of ereaders and tablets, so the future of reading could also be readers who read a more diverse range of materials. Much like the way that people have switched the way they purchase and listen to music, very few people buy CDs and many people digitally download songs to an electronic device or cloud service. This transition took some time, but the majority of the population has embraced the change in this technology.

For this reason, it would appear that ebooks may soon take over print books, but movements like the Slow Book Movement will still allow readers to be in control of which “tablet” they read from.

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