LITERARY HUB

So, Gutenberg Didn't Actually Invent the Printing Press

On the Unsung Chinese and Korean History of Movable Type

By M. Sophia Newman June 19, 2019

If you heard one book called "universally acknowledged as the most important of all p books," which do you expect it would be?

If you were Margaret Leslie Davis, the answer would be obvious. Davis's *The Lost Gute Astounding Story of One Book's Five-Hundred-Year Odyssey*, released this March, begins that descriptor. It recounts the saga of a single copy of the Gutenberg Bible—one of tl surviving copies of the 450-year-old Bible printed by Johannes Gutenberg, the putativ of the printing press, in one of his earliest projects—through a 20th-century journey f auction house to collector to laboratory to archive.

Davis quotes Mark Twain, who wrote, in 1900, a letter celebrating the opening of the Museum. For Davis, Twain's words were "particularly apt." "What the world is to-day, wrote, "good and bad, it owes to Gutenberg. Everything can be traced to this source. . Indeed, Gutenberg's innovation has long been regarded an inflection point in human l innovation that opened the door to the Protestant Reformation, Renaissance, the scie revolution, the advent of widespread education, and a thousand more changes that tou everything we now know.

The only problem?

The universal acclaim is, in fact, not so universal—and Gutenberg himself is *a*, but not of printing. Rather, key innovations in what would become revolutionary printing tech began in east Asia, with work done by Chinese nobles, Korean Buddhists, and the des of Genghis Khan—and, in a truth Davis acknowledges briefly, their work began sever before Johannes Gutenberg was even born.

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In a traditional printing press, small metal pieces with raised backwards letters, known

movable type, are arranged in a frame, coated with ink, and applied to a piece of paper paper away, and it's a printed page. Do this with however many pages make up a book there's a printed copy. Do this many times, and swiftly printed, mass-produced books

The printing press is often said to have been created by Gutenberg in Mainz, Germany 1440 AD, and it began taking root in Europe in the 1450s with the printing of the aforementioned Bible. Books themselves had been present in Europe long before then but only in hand-copied volumes that were accessible mainly to members of the clergy mass-produced books revolutionized Europe in the late 1400s, with advancing literacy religion, politics, and lifestyles worldwide.

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At least, this is how the story is rendered in most books, including, for the most part, *Gutenberg*. But a single sentence late in the book nods to a much longer story before th "Movable type was an 11th-century Chinese invention, refined in Korea in 1230, befo conditions in Europe that would allow it to flourish—in Europe, in Gutenberg's time.

That sentence downplays and misstates what occurred.

The first overtures towards printing that began around roughly 800 AD, in China, wh printing techniques involving chiseling an entire page of text into a wood block backw applying ink, and printing pages by pressing them against the block. Around 971 AD, Zhejiang, China, produced a print of a vast Buddhist canon called the *Tripitaka* with t carved woodblocks, using 130,000 blocks (one for each page). Later efforts would crea

movable type—including the successful but inefficient use of ideograms chiseled in wo brief, abortive effort to create ceramic characters.

Meanwhile, imperial imports from China brought these innovations to Korean rulers Goryeo (the people for whom Korea is now named), who were crucial to the next step printing history. Their part of the story is heavy with innovation in the face of invasion

First, in 1087 AD, a group of nomads called the Khitans attempted to invade the Kor peninsula. This prompted the Goryeo government to create its own *Tripitaka* with wo printing, perhaps with the aim of preserving Korean Buddhist identity against invader attempt would be prescient; it preserved the concept and technique for later years, whe invaders eventually arrived. In the 12th and 13th centuries, the Mongol ruler Genghis created the largest empire in human history, which stretched from the Pacific coast of to Persia. After he died in 1227, his successor, Ögedei Khan, continued conquering, ir gaining ground that Genghis Khan had never held. In 1231, Ögedei ordered the invas Korea, and in 1232, invading Mongol troops reached the capital. As part of their conq they burned the Korean copy of the *Tripitaka* to ash.

The Goryeo dynasty immediately recreated the book. This is thought to have been "as the power of Buddhas for the protection of the nation from the invading Mongols," pe Thomas Christensen, but it was also done with the intention of preserving the dynasty This was important; attacks by Mongols would continue for the next 28 years.

The *Tripitaka* reboot was scheduled to take Korean monks until 1251 AD to complete meanwhile, the rulers began expanding into printing other books. In 1234 AD, they a minister named Choe Yun-ui to print a Buddhist text called *The Prescribed Ritual Text and Present* (*Sangjeong Gogeum Yemun*). But the lengthy book would have required an i large number of woodblocks, so Choe came up with an alternative. Building on earlier attempts to create movable type, he adapted a method that had been used for minting coins to cast 3-dimensional characters in metal. Then he arranged these pieces in a fra them with ink, and used them to press sheets of paper. When he was done, he could r

the metal characters, eliminating the need to persistently chisel blocks. It was faster—
extent. He completed the project in 1250 AD.

> Perhaps it should be Choe Yun-ui whose name we remember, not Gutenberg's.

It is important to recognize what this means. The innovation that Johannes Gutenberg have created was small metal pieces with raised backwards letters, arranged in a frame, with ink, and pressed to a piece of paper, which allowed books to be printed more quic Choe Yun-ui did that—and he did it 150 years before Gutenberg was even born.

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However, Korea's printed books did not spread at a rapid pace, as Gutenberg's books v years later. Notably, Korea was under invasion, which hampered their ability to dissem innovation. In addition, Korean writing, then based closely on Chinese, used a large n different characters, which made creating the metal pieces and assembling them into p process. Most importantly, Goryeo rulers intended most of its printing projects for the nobility alone.

Nonetheless, it is possible that printing technology spread from East to West. Ögedei Mongol leader, had a son named Kublai who had situated himself as a ruler in Beijing Khan had access to Korean and Chinese printing technology, and he may have shared knowledge with another grandson of Genghis Khan, Hulegu, who was then ruling the part of the Mongol empire. This could have moved printing technologies from East A westward by thousands of miles. "Mongols just tended to take their technologies every go, and they become a part of local culture, sometimes acknowledged, sometimes not," University Asian history professor David Robinson explains.

To get from East Asia to Persia at that time, one traveled the Silk Road. In the middle route lay the homeland of the Uyghur people, a Turkic ethnic group that had been rec the Mongol army long before. "If there was any connection in the spread of printing b Asia and the West," the scholar Tsien Tsuen-Hsien wrote in *Science and Civilization in* 1985, "the Uyghurs who used both blocking printing and movable type had good opp to play an important role in this introduction."

This is because, in the 13th century, Uyghurs were considered distinguished, learned p sort for whom printing might be a welcome innovation. They had also something no c printing had had up till then: an alphabet, a simple group of relatively few letters for w every word one wished to say.

There was no explosion of printing in the Western Mongol empire. "There was no ma need for the leaders to reach out to their subjects, no need to raise or invest in capital i industry," the historian John Man points out in his book, *The Gutenberg Revolution*. N movable-type Uyghur-language prints have been discovered in the area, indicating the technology was used there.

Furthermore, the Mongols may have carried the technology not only through Uyghur Persian territory, but into Europe, including Germany. The Mongol empire repeatedly Europe from roughly 1000 to 1500 AD; that period saw the entry of enough Western recruits and captives to bring the loanword *horde* from their Turkic languages into Eur ones. "Generally, if something is going from East Asia [to the west], it would be hard without the Mongols," Christopher Atwood, a Central Eurasian Studies professor at I University, said in an interview.

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centuries of relevant efforts.

Eventually, early capitalists in Europe invested in Johannes Gutenberg's business ventu one that combined technology quite like the movable type innovated by Choe Yun-ui screw-threaded spiral mechanism from a wine or olive press to ratchet up printing to c speeds. That business took decades of his life to bring to fruition, forced him into banl and led to court filings by investors who repeatedly sued him to get their money back. notes in *The Lost Gutenberg*, these records are the means by which we know Gutenberg Bible: "This most famous of books has origins that we know little about. The stories w the man, and how the Bibles came to be, have been cobbled together from a fistful of l financial records, and centuries of dogged scholarly fill-in-the-blank."

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Indeed, the entire history of the printing press is riddled with gaps. Gutenberg did no own story in documents created on the printing presses he built; to the best of modern knowledge, he did not leave any notes on his work at all. And if Gutenberg was reticen Mongols, their Uyghur compatriots, and Eastern Asia government heads were even m

But if doubts are natural, then the result we've made of them is not. The fantastical ide Gutenberg alone invented the printing press ignores an entire continent and several ce relevant efforts and makes no effort to understand how or why technology might have During a study of Gutenberg's lettering techniques, computer programmer Blaise Agü Arcas pointed out how strange this is: "The idea that a technology emerges fully forme beginning is nuts. Anyone who does technology knows that's not how it works."

To her credit, Davis notes the same, explaining it this way: "Perhaps the image of Joha Gutenberg as a lone genius who transformed human culture endures because the swee followed is so vast that it feels almost mythic and needs an origin story to match."

But Davis, who was unavailable for an interview for this article, does little to correct tl in *The Lost Gutenberg*. She mentions China just a few times and Korea only once—anc Mongols, Uyghurs, and non-Christian aspects of printing history not at all.

Indeed, she never explains that the Gutenberg Bible is *not* universally acclaimed as the important book in history. Nor are copies of the Bible the oldest books created with m type that still exist today—although a reader could be forgiven for gathering that impr from *The Lost Gutenberg*.

Rather, the earliest extant movable-type-printed book is the Korean *Baegun Hwasang Buljo Jikji Simche Yojeo* ("The Anthology of Great Buddhist Priests' Zen Teachings"). I 1377 and has served as a starting point for scholarship on the origin of movable type.

Korea regards it and other ancient volumes as national points of pride that rank amon important of books. But it is only very recently, mostly in the last decade, that their vie and the Asian people who created printing technologies have begun to be acknowledg Most people—including Davis, who declined an interview with the remark, "I'm afrai really add much further on the topic of ancient printing"—still don't know the full sto

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