

Visual History with Choson Dynasty Annals

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ABSTRACT

For this paper, the authors selected three historical events taken from the *Annals of the Choson Dynasty* that represent dramatic and tragic stories about parents and their sons for data visualization. By connecting names with entities indicating conductions from history books, they found interesting patterns that tell stories with embedded relations. The visualized images in this paper were mainly code-generated, based on the data of the *Annals*, with some graphic embellishment added.

There Is No Passive Recording

At the 2006 and 2009 SIGGRAPH Art Gallery, we presented serial information visualizations of two generative artworks based on family tree, or “Jokbo,” data, entitled *Visual Genealogy* [1]. Jokbo is a Korean family tree record usually kept for more than 30 generations. A list of names like this without any commentary might at first appear meaningless, but when the data and visualization were examined, interesting stories about various family histories were revealed [2]. While the data is simple, the stories are profound; although the data consists of simple proper nouns—individuals’ names—each name represents the dense abstraction of a human life.

The desire to further investigate these complex historical stories inspired this current study. Searching the historical data was fairly straightforward [3]. What proved to be the most difficult aspect of this investigation was establishing pure, unbiased records for illustrating the subject because historical data is frequently distorted or at least filtered by the historian’s point of view or prejudice towards a certain belief, or due to external political-social pressure. History books are sometimes more like fact-inspired literature in which the truth is hidden between the lines. This is inevitable because history is written by humans, not by recording automata [4], with the exception of some extraordinary cases, such as the 500 account books and 50,000 business-related papers recorded by Francesco Datini who, incidentally, had not intended for them to be viewed by the general public [5].

Annals of the Choson Dynasty

The *Annals of the Choson Dynasty* is a collection of historical documents that were recorded with unusual strictness and objectivity. This heritage contains daily records in chronological form [6] and mainly consists of news and events from the conversations between a king and his vassals over the course of the 500 years of Korea’s Choson dynasty. It consists of a total of 1,967 books, which if stacked up would be taller than a 10-story building. Such is their importance and authenticity that, in 1997, UNESCO registered the *Annals of the Choson Dynasty* as a “Memory of the World” [7].

While the sheer volume of the collection is impressive, the credibility of its information is significant. The fairness and objectivity of the records, which span 500 years, are due to the strict rules protected by official historiographers. The affairs of a king, whether positive or negative, were recorded every day without exception, and the officers writing the records were not allowed



to be influenced by anyone, including the king himself. In fact, the annals of a king could only be opened after his death. In short, a king was not able to view his own annals while he was alive.

Undoubtedly, with its many interesting hidden stories, this type of detailed and credible data is a valuable source for data visualization. One such story reveals the credibility of these records: In 1404, the second king, King Taejong, fell from his horse in an accident. He was so embarrassed that he asked the historiographers not to record his mistake. However, the information about this event is available to us today, because the historiographers not only recorded that the king fell from his horse, but also recorded that he pleaded for the event to be omitted from the annals [8].

Computational History Mining

While investigating the annals is an interesting process, it is time-consuming and difficult work. While the annals describe many historical events and reveal the causes and effects of incidents, the format is such that the path of any single story can easily be lost. Additionally, in terms of names, the structure of the annals is closer to social network visualization than to traditional narrative storytelling [9].

Fortunately, the *Annals of the Choson Dynasty* has already been digitized by the National History Compilation Committee of Korea (with Korean and Chinese characters) [10]. In fact, this current project would otherwise not have been possible, as it would have required a team of researchers.

For this project, the names from the *Annals* were parsed, extracted, and categorized. Various methods were then used to connect or trace them according to subject. This was not always a simple task, because of homonyms, bynames, pseudonyms, and various titles; for example, a king's mother can be referred to in various ways: by her actual family name (e.g. Chang), the title of the previous king's wife (e.g. Bin), the title of the new king's mother (e.g. Dae Bin), or in other ways (e.g. Hee Bin Chang).

After data-mining more than 100,000 HTML pages and connecting names with words indicating connotations (e.g. compliments, reward as positive words, exile, execution as negative words), we found interesting patterns that tell stories with embedded relations.

The visualized images in this paper were mostly code-generated, with some graphic embellishment added. Therefore, the images could be considered hybrid data visualizations.

In this paper, we selected three historical events taken from the *Annals* that represent dramatic and tragic stories about parents and their sons. These stories are described below.

Father, I Will Finish What You Started: Taejong “Bang Won Yi” (1367–1422) [11]

The Goryeo dynasty (918–1392) preceded the Choson dynasty (1392–1910); apparently, Korea is named after old Goryeo, which Marco Polo recorded as “Cauli” (Italian) [12]. Seong-gye Yi (1335–1408) was one of Goryeo's powerful generals and a national hero who was never defeated in numerous wars lasting over 30 years. As the hero's power increased, the might of his followers also increased, eventually resulting in an uprising.

In 1388, General Yi disobeyed King Goryeo's order to send his army to attack the large neighboring country of Ming (old China: Ming dynasty, 1368–1644). The uprising against the old aristocrat's orders, at that time, was probably spurred by the common people's will, since they could not endure another war. Instead of instigating war as ordered by the king, the general had

his army retreat into the king's castle and soon became the new king. Many such empires in world history have fallen through such revolts from within. For example, nepotism corrupted the Ottoman Empire, while the Praetorian Guard's absolute power eventually led to the demise of the Roman Empire. The Roman Praetorians controlled powerful private troops and eventually became the authority as to whether an emperor should be overthrown and who would be the new emperor.

In this visualization (Figure 1), we traced the names and incidents in the first three books of the *Annals*. This time-series visualization distinguishes between two parties based on vector directions (upward lines for the new country vs. downward lines for the old country). Each vector line of a man was generated by a computational connection of each record about him in the annals with spline interpolation. The scatter dots around the entire timeline are notable records in the annals; we manually applied colors and particles based on the frequency of homicide for a dramatic presentation, such as bloody scattered lines on the right side of the picture. The fading of the bright lines in the visualization represents the deaths during the founding time of the Choson dynasty (1392), when the purging of the rulers began, mainly by the new king's fifth son, Bang Won Yi (1367–1422) [13].

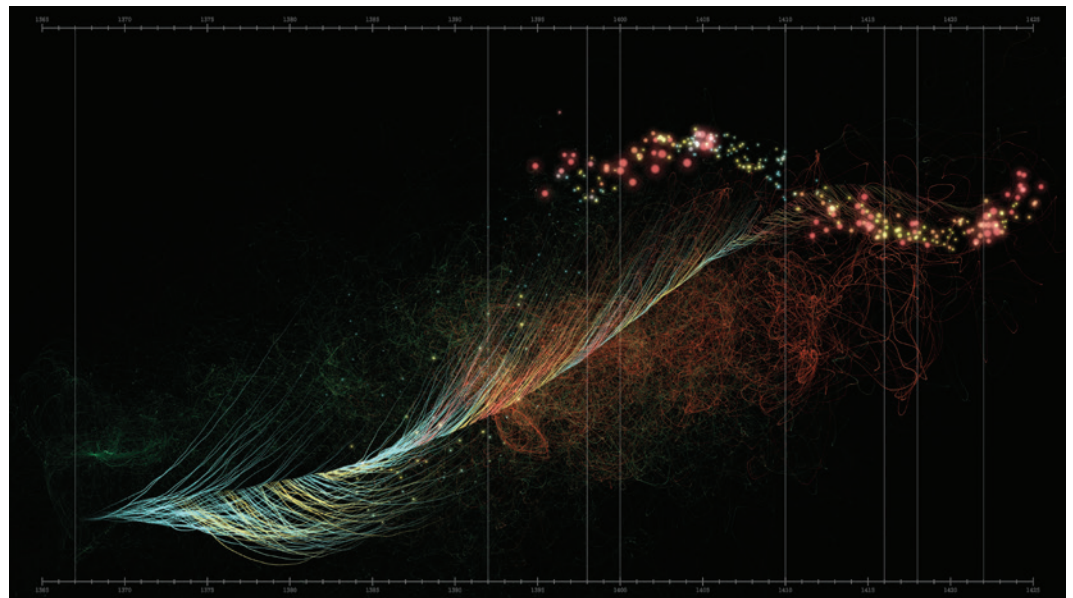


Figure 1. The beginning of Choson dynasty: The Purging (1388–1420). (© 2016 Jin Wan Park)

After the new dynasty was brought into existence, King Taejo the First (posthumously named Seong-gye Yi) announced his last (eighth) son would be his successor, because many of the lieges (feudal superiors) of the founding contributor believed Bang Won Yi (the fifth son, highly influential as a contributor to the new dynasty) was uncontrollable and not fit to be a king. In 1398, during the king's brief absence, Bang Won Yi assaulted the palace and killed his political enemies, including his brother the crown prince. The king was filled with anger and sorrow. He enthroned his second son (King Jungjong the Second) and left the castle.

A few years later, in 1400, Bang Won initiated the second Strife of Princes. Many of his rivals (especially his brothers) and followers were executed or exiled. In this intimidating situation, Jungjong gave up his crown to Bang Won, and the fifth son finally became king (King Taejong the Third). King Taejong then eliminated potential political enemies who might jeopardize his

reign, including his wife's family, who had tried to take a consort clan's power [14]. The end of the visualization shows all of the thin lines disappearing with bloody tips, representing the massacre; it also depicts this fratricide as a dark splatter of a deeper red color.

This visualization depicts the intense bloodshed that occurred; indeed, how much blood needed to be shed for the sake of obtaining the throne? The slain were not always enemies, but were once friends, blood allies, in-laws, and even King Taejong's own blood! While this appears to be a very cruel story, King Taejong, by eliminating all the private forces, stabilized Choson in a very short period of time so that the common people could finally live without war and hunger. He established a new, peaceful and robust dynasty, which his father had only dreamed of, even though he did not follow in his father's footsteps—because he believed his was the only way.

Historical writers usually record more spectacular events and, unlike the Choson annals, they did not necessarily record all of the cruel, shameful, and controversial facts. The truth is sometimes rather ugly or even inexplicable. Even today, before undertaking a military coup d'état, many dictators and generals will first attempt to control the media and education. Indeed, while the span of time between Hitler and King Qin Shi Huang (BC 259–BC 210) was more than 2,000 years, the followers of both of these leaders burned books.

Mother, They Will Pay with Blood: “Yeonsan-gun” (1476–1506)

This tragic story centers on a mother and her son. Yeonsan-gun (1476–1506) was one of the most infamous kings in Choson history, carrying out many bloody purges of his political and personal enemies.

Mary I, the Queen of England, executed countless Protestants and was named “Bloody Mary” for her reign of terror [15]. She had an unhappy childhood due to her mother's exile when she divorced Mary I's father, Henry VIII [16]. While not always the case, an unhappy childhood can be the root of the later development of a twisted mind, although in many cases a specific moment can also trigger psychological damage—this was especially the case for Yeonsan-gun, whose mother was deposed and executed.

Yeonsan-gun's mother, Queen Yoon (?–1482), was chosen for her beauty as the second wife of his father (Seongjong, the ninth king of Choson, 1469–1494). For various reasons, but mostly jealousy, she committed misdeeds such as poisoning other concubines and cursing them with puppets (similar to voodoo hexing), and later even scratched the king's face with her nails. The queen was deposed in 1479. In addition, Yeonsan-gun's grandmother, Grand Queen Insu (Yoon's mother-in-law), and her party abetted Yoon with a frameset. Yoon was finally poisoned to death by the king in 1482, when Yeonsan-gun, the crown prince, was only six years old.

In 1494, when he was 12 years old, Yeonsan-gun became king. There were periods when the new king governed wisely, during the beginning of his reign. Five years later, in 1504, a rusticated privy counselor (Sa-hongIm) revealed to Yeonsan-gun the details of his mother's death by showing him an old cloth that was stained with blood—the cruel vestiges of his mother's execution by poisoning; the son became obsessed with vengeance.

Yeonsan-gun began to take revenge against everyone who was responsible for his mother's death. First, he beat two of his father's concubines to death and threw their bodies into the wilderness. The concubines' sons, his step-brothers, were exiled and their death by self-poisoning was later ordered. Yeonsan-gun's grandmother (Grand Queen Insu) died from shock immediately after he

violently pushed her during an argument. Exacting brutal punishment, he then executed and condemned everyone he deemed responsible for his mother's death, which haunted him until the end of his reign.

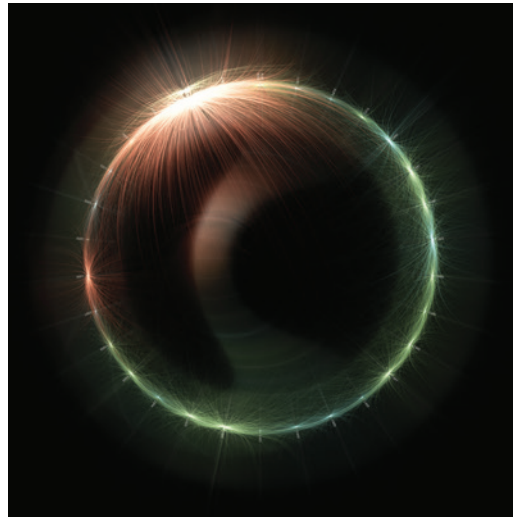


Figure 2. Yeonsan-gun (1476–1506) and posthumous execution.
(© 2016 Jin Wan Park)

This visualization (Figure 2) is generated by the circular layout algorithm (one year is $\pi/15$), with cross-reference line connections. The bright lines at the top of the image (depicting the years 1498–1504) indicate the cruelty of the terror. The visualization also shows interesting ghostly trails, referring to the record in the annals describing dead people who were figuratively resurrected to be killed again. To emphasize the lines representing posthumous execution, contrast and glare effects were applied to the image. One of these ghosts was Myeong-hoi Han, who wielded absolute power in the previous king's era and died in 1487. His name appears suddenly in 1504, the year of the purging, when Yeonsan-gun took revenge against Myeong-hoi Han with a posthumous execution: he excavated the dead body, cut off the head, and displayed it in the street [17].

Antagonism towards the tyrannical king grew each day. Two years later (1506), he was overthrown and replaced by his step-brother, Jungjong, through an uprising. When Yeonsan-gun's vengeance was assuaged, he possibly also lost his reason for living. Two months later, he died from an illness while in exile [18].

All I Ever Wanted Was One Loving Gaze, One Kind Word from My Father: Prince Sado (1735–1762) [19]

This visualization illustrates the story of a relationship between a father and his son, who longed only to be loved by his father. The father expected his son to be greater than him. Despite the son's efforts, he never satisfied his father. The son began to feel unworthy and soon became destructive. This conflict between father and son is a common phenomenon and still occurs today in most societies.

Yeongjo (1694–1776) was the strictest king, in terms of self-discipline, among all the kings of the Choson dynasty, due to controversy over the legitimacy of his succession. He struggled to be perfect in every way—in his studies, his reputation, and his politics. He lived to the age of 83, and thus reigned for the longest period of all the Choson kings [20].

At the age of 41, Yeongjo fathered a son, Prince Sado (1735–1762), whom he favored and loved in Sado's youth, and he had great expectations of his son. Crown Prince Sado became a joy for the king because of his remarkable brightness. Although Yeongjo wanted him to study, Sado, unlike his father, was more interested in painting and martial arts, and showed a free-spirited nature while he was growing up.

The king pushed his son to be the perfect crown prince he desired, and he behaved in a coercive and strict manner toward his son; this treatment resulted in the confident and cheerful son

developing aphasia (language impairment). Due to the gradually increasing and ongoing stress, Sado also developed and suffered from a mental disorder which resulted in his causing harm to other people. Political conflict ensued when he went insane and warned that he would even kill his father.

When the tension between father and son was mentioned in the court, the party in opposition to the king transformed the family conflict into a political confrontation. The king was fearful that the outbreak of political conflict would lead to usurpation of the throne. To protect the royal family, including the king's grandson (Sado's son), the king needed Prince Sado to die. However, King Yeongjo could not bring himself to kill his son with his own hands. So he ordered Sado to be locked in a large sealed wooden rice chest on a hot July day in 1762. After eight days, Sado died.

They were connected as king and crown prince, but they never really developed a father-son relationship. The visualization (Figure 3) represents the tragedy as three distinctive parallel twisted lines that never meet: Yeongjo, Sado, and Sado's son Jungjo. The color and length of the lines are determined by computation, but the arrangement of the lines is based on our impression of the story. The underlying image filled with nodes is not from Yeongjo's annals, but Taejong's. Surprisingly, although the eras are separated by 300 years, they matched well visually. After all, history is recursive.

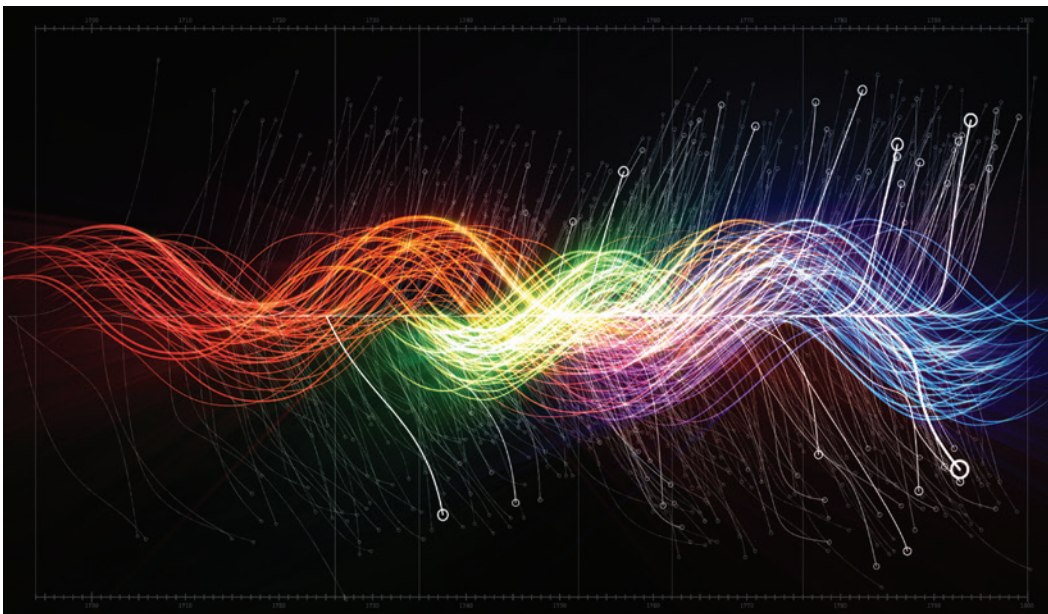


Figure 3. The king, the son, and the grandson. (© 2016 Jin Wan Park)

History Flows Concurrently

While the *Annals* consist of 1,967 volumes, only a small fraction of the vast number of episodes has been presented here. Although the data in the annals is very credible, imagination is still required to weave the facts together to recreate a story; we therefore cannot guarantee that the suggested stories are the only possible interpretation. However, these three stories are believable because they describe plausible family relationships; even today, we can still sympathize with the struggles of the individuals involved in these tragic events. Maybe people basically never change.

The overall flow of history as seen through the results of the visualization of the *Annals* is akin to a series of unpredictable waves. Meanwhile, just as the weather and the sea eventually become

silent after a storm, there were periods where connections could be made. A pattern in the long 500-year history was identified. In the Choson dynasty, the same mistakes were often repeated, suggesting that history often repeats itself, with variations.

Finally, in this study, while we encountered precious data and visualized it with passion as an interdisciplinary artist and engineer group, we still have a long way to go. We expect to conduct further studies through detailed analysis and visualization for each period of the Choson dynasty through the annals, with the expectation that the concerns of a single family will reflect widespread human concerns.

Acknowledgment

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References and Notes

1. J.W. Park, *Visual Genealogy*, ACM SIGGRAPH 2007 Art Gallery, San Diego, California, 2007; J.W. Park, *Visual Genealogy: MR. Park, Myrang-Hwarok Clan*, ACM SIGGRAPH 2009 Information Aesthetics, New Orleans, Louisiana, 2009.
2. J.W. Park, "Information Aesthetics with Visual Genealogy Project," *Leonardo* Vol. 44, No. 5, 464–465 (2011).
3. Unlike static historical data, contemporary data grows and becomes big data, which makes it hard to mine and analyze. A good example of computer-based visual analysis for contemporary data is Lev Manovich's cultural analytics, which covers films, animations, video games, comics, magazines, books and other media. <<http://lab.softwarestudies.com/p/cultural-analytics.html>>.
4. Carr argues that viewing history as accurate (and independent of human opinion) is improper, because historians selectively choose facts based on particular interests. E.H. Carr, *What is history?*, 3rd Revised ed. (Basingstoke, UK: Palgrave Macmillan, 2002). Hayden White also points to the problem of historical representation, which recounts not merely a neutral real event, but entails an ontological and epistemic choice with distinct ideological and even specific political implications. H. White, *The Content of the Form: Narrative Discourse and Historical Representation* (Baltimore: Johns Hopkins University Press, 1990).
5. In 1870, Francesco Datini's business records were found in Prato. These private records provide insight into the medieval-renaissance merchant class in the 14th and 15th centuries.
6. Historical facts recorded by day, month, and year, which is the most common and traditional way of recording history in Eastern Asia.
7. The *Annals* was listed in UNESCO's Memory of the World Register, and despite the existence of other annals around the world, this is the first and only case of annals being listed.
8. Annals of Taejong, fourth year (1404), February 8th, fourth article. "After the king fell from a horse, he looked left and right, and he asked, 'Do not let historiographers know this.'"
9. A similar structure can be found in "Saga" or in the epic novel. A. Cappelli et al., "The Social Network of Dante's Inferno," *Leonardo* Vol. 44, No. 3, 246–247 (June 2011).
10. *The Annals of the Joseon Dynasty*, <<http://sillok.history.go.kr/main/main.do>>.
11. From the movie *Star Wars: The Force Awakens* (2015): "Nothing will stand in our way. I will finish what you started." The father and son relationship is the same in this epic contemporary fictional saga as the one recorded in the *Annals*.
12. J. Brown and J. Brown, *China, Japan, Korea: Culture and Customs* (Seattle: Book Surge Publishing, 2006).
13. "Taejong" is Bang Won Yi's posthumous royal name.
14. H. Park, "King Taejong as Statesman: From Power to Authority," *Korea Journal*, 207 (Winter 2006).

15. M. Waller, *Sovereign Ladies: The Six Reigning Queens of England* (New York: St. Martin's Press, 2006) 116.
16. A. Whitelock, *Mary Tudor: England's First Queen* (London: Bloomsbury, 2009).
17. On executing people whose cardinal sins are exposed after death: Records show that Oliver Cromwell of England was also sentenced to a posthumous execution by Charles II. R.L. Bradshaw, *God's Battleaxe* (Bloomington, IN: Xlibris, 2010) 379–381.
18. Although the king's revenge was the only motive that had been recognized, the political confrontation between the two parties of courtiers might also be a plausible reason. His opponents used the king's fury to gain political leverage.
19. Quotation from the movie *Sado* (2015), directed by Joon-ik Lee.
20. Yeongjo created a policy with the intention of adjusting the balance between political parties to prevent conflicts.