

The Informatization of Korean Historical Data

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Computerization of Korean historical data began with electronic publications and has developed toward publication of CD-ROMs and internet services through websites. Much of the data were computerized in 2000, and a rapid increase in internet users has made it possible to provide enormous amounts of history data through various websites.

Nowadays, so much data have been computerized that information on computerized data may become necessary for effective use of such data. In compliance with this necessity, this article will introduce the present situation of computerization of Korean historical data and provide information helpful to users.

Various data such as chronology, literary works, codes of law, census registration, old documents, and maps were computerized. Reports on excavation in archaeology and field works are served through the web.

For researchers to choose and develop a research topic, it is necessary to gather information on existing results and approach them. I will introduce several sites containing lists of such information and also some of the typical computerized data of Korean history from the viewpoint of convenience and historical value.

There are many websites registered on the internet. Among them, those related to history are being operated by institutions for Korean studies, related departments of universities, academic societies, personal home pages, and amateur angler clubs, etc. These websites contain a variety of information lists such as original texts, publication lists, contents of the activities of academic societies, introductions to lectures, data concerning relics and ruins, and personal interests.

Keywords: Computerization of Korean historical data, websites of Korean history, CD-ROM data, Korean history books

Introduction

Popularization of the computer and the internet has caused an enormous change in the research environment. The researchers who have experienced the power of computerized data instead of ordinary records are expecting the computerization of more research data. Until the beginning of the 1990s, few scholars had an interest in the computerization of historical data. But now the project to informatize knowledge has been vigorously carried out in every field of studies and it has become very popular to access the necessary information on research through the internet.

The internet has positioned itself as one of the major media, and the demand for fostering the research environment by means of the internet has increased more and more. The wide use of information online has made the demand on Korean history diverse. Scholars, students, and the public have shown increased interest in computerized Korean historical data. In fact, they have presented various demands as users. The project to computerize Korean historical data has progressed to meet demand and to make access to information easier through the internet. Computerized data are no longer the exclusive possession of the major scholars and the necessity emerges to meet the interest and demand from the public on history.

Computerization of Korean historical data began with electronic publications and has developed toward publication of CD-ROMs and internet services through websites. In 1990, *Japgwa bangmok* was computerized and published as *Joseonsidae jagwahapgeokja chongnam* (Japgwa Roster of the Joseon Dynasty). The project to computerize Korean historical data began with the publication of “CD-ROM *Joseon wangjo sillok*” (The Annals of the Joseon Dynasty) in 1995 and became activated after the publication of “CD-ROM *Sama bangmok*” (Sama Roster of the Joseon Dynasty) in 1997. A lot of data was computerized in 2000 and a rapid increase in internet users has made it possible to serve an enormous amount of historical data through various websites.

Nowadays, so many data have been computerized that information on computerized data may become necessary for the effective use of such data. In compliance with this necessity, this article will introduce the present situation of computerization of Korean historical data and provide information helpful to users.

An Environmental Change of Computerization

Professor Edward Wagner of Harvard University in the United States originally conceived of the project to computerize Korean historical data. In the middle of the 1960s, he began the project to computerize *Mungwa bangmok* (Mungwa Roster of the Joseon Dynasty) that was the roster of mungwa civil service examination passers during the Joseon Dynasty, which was a fresh shock to the field of Korean history.¹ In spite of these efforts, it was at the turn of the 1980s that an interest in computerizing Korean historical data was realized in Korea.

The Academy of Korean Studies had a keen interest in the computerization of Korean studies data, and computerized a directory of researchers on Korean studies in 1980. Afterward, The Academy revised, supplemented, and published *Hangukhak yeongu inmyeongnok* (The Directory of Researchers in Korean Studies) in 1983, which contained the backgrounds of institutions, the brief histories of researchers, theses or writings, and other catalogues of publications centering on 3,164 domestic and foreign researchers on Korean studies and 290 institutions as of February 1981 (The Academy of Korean Studies 1983).² *The Directory* was processed by computer in *hangeul*, Chinese characters, and English, and was evaluated as a then epoch-making attempt. Because of the earlier condition where accumulated experience of computerization and database functions were lacking, it was published at the stage of nothing more than an electronic publication without any supplementary edition.

The interest of The Academy of Korean Studies in the computerization of Korean studies data grew and resulted in an international academic meeting in 1981. Under the title of “Hangukhak jaryoui jeonsanhwa yeongu” (The Studies on the Computerization of Korean Studies Data), “Hangukhak jeonsanhwaui hyeonhwangwa jeonmang” (The Situation and Prospects of Computerization

1. The “Mungwa Project” of Prof. Wagner was epoch-making, but it took a long time to bear fruit. Inputting the data of Chinese characters in English, supplementing the data by referring to the contents of a clan register and *Manseong daedongbo* as well as those of *Mungwa bangmok* to solve the problem of Chinese characters were painstaking work. Prof. Wagner did not see its publication during his lifetime. But Prof. Song Jun-ho who had worked together with him carried out the finishing touches and produced it on a CD-ROM, “*Wagner and Song joseon mungwa bangmok*” (Wagner and Song’s Mungwa Roster of the Joseon Dynasty) published by Dongbang Media in 2003.

2. This is a revised and supplemented edition of *Hangukhak yeongu inmyeongnok*, which was published in 1979.

of Korean Studies) by Yi Gi-yeong, “Hangukhak jaryo jeonsanhwae isseoseoui jemunje” (Various Problems of the Computerization of Korean Studies Data) by Edward W. Wagner, and “Hangukhak yeongu inmyeonggwa seoji jeongboui jeonsanhwa” (The Names of Researchers on Korean Studies and the Computerization of Bibliographic Information) by Jeon Hye-seong were presented. Through the case presentations of those researchers who had recognized the situation of computerization of Korean studies data, the necessity of computerization was raised by those who had participated in the real projects of computerization, and the problems therein were surveyed and analyzed (The Academy of Korean Studies 1982).

The beginning of the 1980s was a period lacking awareness of computerization of Korean historical data and the knowledge and experience of the projects of computerization. Meanwhile, in 1983, Kim Gi-hyeop tried to create a method for computerizing Korean historical data through *Hanmun jaryoui keompyuteo cheoribangbeop yeongu* (A Study on Computer Processing of the Data in Chinese Characters) and *Goryeosai keompyuteo pail seolgye* (Construction of a Computer File of Goryeo History). His attempts were also unprecedented because he dealt with the basic problems of computerization of Korean historical data for the first time (Kim Gi-hyeop, 1983a; Kim Gi-hyeop, 1983b).

The Academy of Korean Studies has been interested in computerization early on, and this project to computerize *Japgwa bangmok* (Japgwa Roster of the Joseon Dynasty) began in 1984. It was the first attempt to computerize Korean historical data in Korea. Spurred by the project on the computerization of *Mungwa bangmok* (Mungwa Roster of the Joseon Dynasty) by Prof. Wagner, Prof. Yi Seong-mu, and I began the project to computerize *bangmok* (roster). *Japgwa bangmok* was the list of passers of *japgwa*, which was an examination to choose technical officials during the Joseon dynasty. Among the *Japgwa bangmok*, *Yeokgwa bangmok* was computerized, followed by *Uigwa bangmok*, *Yulgwa bangmok*, *Ungwa bangmok*, *Juhak ipgyeogan*.

As we had no experience of computerizing historical data at all, we had a great difficulty in structuralizing the data of the *Bangmok* with our computer system as regards inputting, and processing the data. Above all, the then computer had a capacity of processing no more than 4,888 Chinese characters and thus it took considerable time to publish the *bangmok*. The Chinese characters beyond the computer’s capacity were treated by means of “jjokja” (a single piece of printing type made by combining parts taken from other pieces) at the stage of publication and *Joseonsidae japgwa hapgyeokja chongnam*

(Comprehensive Bibliography of the Japgwa Passers on the Joseon Dynasty) was published in 1990 (Yi Seong-mu, Choi Jin Ok, and Kim Hi-bok 1990).

Through computerization, this bibliography was published with a concordance of 7,600 passers of *japgwa* according to their name, family name, and origin, and it contributed greatly to improving the research environment for researchers. The results of research using *Japgwa bangmok* followed this publication. The data of *Japgwa bangmok* published in 1990 were not constructed into databases because of the situation at that time but the “CD-ROM *Japgwa bangmok*” (CD-ROM Japgwa Roster of the Joseon Dynasty) was published in 2002 on the basis of available data (The Academy of Korean Studies and Dongbang Media).

In the middle of the 1980s, researchers using computers increased by virtue of increased supply of personal computers. Accordingly, interest in computerization was aroused and the basis for computerization was fortified from the viewpoint of individual researchers and the academic society.³ Hanguksa Saryo Yeonguso (The Institute for Korean Historical Data) run by Prof. Heo Seong-do, the Department of Chinese Literature at Seoul National University contributed to solving the problem of processing Chinese characters that had been a dilemma until that time. The Institute had had the capability of processing 10,880 Chinese characters, except the existing 4,888, since 1989 and advanced the input capability of Chinese characters by processing total a total of 15,768 in Hangeul 2.0 Edition in 1992.

The projects to computerize the *bangmok* by The Academy of Korean Studies continued and *Sama bangmok* and *Mungwa bangmok* were computerized in turn. Aside from *Japgwa bangmok*, *Sama bangmok* was constructed in a database and was published on the “CD-ROM *Sama bangmok*” in 1997, while *Mungwa bangmok* was served through the web of Digital Korean Studies in 1998. When *Sama bangmok*, with a search function, was published on CD-Rom, it was greatly welcomed by the academic world. When *Mungwa bangmok* was served online, access to the service was almost explosive.

The Academy of Korean Studies led the effort on informatization of Korean studies data while continuing computerizing projects and arranging the results of

3. *Hangeul* Jeonsanhakhoe (The Society of Computerizing the Korean Language) was established in 1988 and Gugeo Jeongbohakhoe (The Society of Korean Language Informatics) in 1990. Accordingly, the interest of scholars of the humanities in computerization and informatics increased and vitalized research (Kim Byong-sun 1994).

the projects and searching for new direction. The Academy dealt with the problem of “Hangukhak jaryoui jeonsancheori” (The Computerization of Korean Studies Data) as a special feature articles of *Jeongsin munhwa yeongu* (Korean Studies Quarterly) and arranged the experiences The Academy had in the process of computerization (Kim Byong-sun 1994; Heo Heung-sik 1994; So Gang-chun 1994; Choi Jin Ok 1994). In 1998, The Academy held an international academic meeting under the title of “The Korean Studies in the 21st-Century Informatization Era” and dealt with “Problems Concerning the Interpretation of Korean Studies Data” and “Korean Culture in an Era of Informatization” (The Academy of Korean Studies 1998). The brisk supply of computers and growth of the internet brought about these outstanding results and heightened interest.

The Annals of the Joseon Dynasty published on CD-ROM by Seoul System in 1995 provided an epoch-making possibility for computerizing Korean historical data. As a full-fledged project done for the first time, Seoul System was indulged in developing the type of 17,367 Chinese characters that had been a problem in computerizing Korean historical data. The trained manpower that participated in that project became a driving force behind later projects to computerize Korean historical data.

The labor project of informatization led by the government vitalized the projects to computerize historical data. In the project to informatize Korean historical data as part of the two-year project toward informatization in 1998-1999, The Academy of Korean Studies, the Independence Hall of Korea, the National History Compilation Committee, the National Assembly Library, and the National Central Library all participated. They began to make computerized listings and serve text images of data through the web. This project was meaningful because it attempted a large-scale computerization of Korean history. The Korean government’s intention to develop contents in Korean history became serious in 1999. The Ministry of Information and Communications and the Korean Institute for Computerization which inherited the labor project of informatization tried to establish the Unification of Korean History Information as a part of a project to construct national knowledge and information. This project brought the computerization of Korean historical data to an incredible level.

The projects to computerize Korean historical data have developed rapidly since 2000. Until the middle of the 1990s, the necessity of computerizing Korean historical data had not been fully recognized. But the development of the informatizing project together with the supply and expansion of computers and

the internet brought about an enormous change in informatizing Korean historical data. In particular, the informatizing project of Korean historical data was spurred in the 2000s by virtue of the trend of the times to develop the contents of information on humanities. Accordingly, various data such as chronology, literary works, codes, census registration, old documents, and maps were computerized. Reports on excavation in archaeology and field works are served through the web. This epoch-making development has something to do with the fact that Korea became one of the biggest IT powers in the world.

The Present Situation of Computerizing Korean Historical Data

The research area of Korean history widely covers the prehistoric age and the modern period. Accordingly, the contents of the data are diverse. As ancient times have more ruins and relics than literary works, the databases are constructed centering on reports on excavations or relics. On the contrary, as the amount of literary works was enormous during the Joseon dynasty, the computerized historical data mainly consist of literary works. As most of the data during the Joseon dynasty were written in Chinese characters, it was very difficult for the students and the public lacking in such understanding to access the data. Considering this problem, it was translated editions, rather than the originals among data from the Joseon dynasty, that became primarily computerized.

It took much time and effort for researchers to visit libraries in various places to research the data. As for data lacking a search function, it took extra effort to choose the data necessary for research. When searching the process of historical events, some of the cases might be omitted. In particular, it was very difficult to get statistics manually.

Computerization greatly contributed to solving these difficulties and inconveniences. The most important merit of computerized data was to facilitate the approach to the data. It became easy to access necessary data through search functions. As it was possible to confirm whether a library had certain data or not by searching lists of books, time and spatial restrictions lessened. The range of using data constructed as databases like *The Annals of the Joseon Dynasty* and *bangmok* reached an advanced stage that we could not imagine before computerization. It was an epoch-making change to be able to confirm and output content from a remote place when the service for the original texts is available.

For researchers to choose and develop a research topic, it is necessary to

gather information on existing results and approach them. Considering these processes, I will introduce several sites whose lists can be searched and also some of the typical computerized data of Korean history from the viewpoint of convenience and historical value.

1. Search for the Research Lists

For a researcher to carry out research on a subject he/she is interested in, he/she must, first of all, find out the results connected with his goal. There are many ways to find out results of studies. The most important one is to access sites to easily search lists of existing results. Representative sites providing lists of articles and books on Korean history are as follows:

- ◆ The Korean Historical Connection (KHC): <http://khc.hongik.ac.kr>
This is a search site for the lists of research on history run by professors and students of the Department of History Education, Hongik University, since 1996. This contains 65,820 bibliographical items of the lists of writings on Korean history published from 1872 to early 2004. When inputting a word to search for, the list of related articles and writings can be searched by year. It also has a home page in English and an exclusive copying service of the data for foreign residents is available.
- ◆ The Bulletin for Korean Historical Studies: <http://nhcc.go.kr>
This is a web version of the Bulletin for Korean Historical Studies that has been published by the National History Compilation Committee since 1973. While the quarterly Bulletin for Korean Historical Studies is useful to understand the trends of research for a certain period, the website is useful to search lists of related studies. The results of searching serve the lists together with bibliographical items and are helpful to search the necessary data.
- ◆ Korean Education Research Information Service: <http://www.riss4u.net>
This is a site run by the Institute for Korean Education Research Information that enables us to search articles, theses, books, and serials that universities throughout the country possess. The results of searching serve bibliographical items and the lists and indexes owned by the universities. A copying service is also available.

◆ Korean Studies Information Co. Ltd.: <http://www.kstudy.com>

This is a site that can search 800 thousand volumes of domestic academic journals, college publications, and collections of research theses. The downloading of the original texts is also possible.

2. History Books

The data of Korean history research are diverse in character and content. I will deal with several major history books essential to Korean history research.

a. *Samguk yusa* (The Legends and History of the Three Kingdoms of Ancient Korea)

i. *Samguk yusa indeuk* (A Concordance of the Legends and History of the Three Kingdoms of Ancient Korea) was published by Hangeul Sasangsa Yeonguso (The Institute for Korean Ideological History) in 1992. The Institute made a standard text by comparing and revising various block books of *Samguk yusa*. According to the order of editions, total strokes of Chinese characters, and Korean sounds, the concordance was possible. Therefore, it attracted special attention at the time of publication (The Institute for Korean Ideological History 1992). As it was published only in book form, it is not available online or on CD-ROM.

ii. “CD-Rom *Samguk yusa*” was developed by Nuri Media on the basis of the *Samguk yusa* that was translated, annotated, and revised by Yi Byeong-do. The translated text and annotations can be searched in the order of a table of contents and be connected to the original text of a related article. To search for a concordance, related articles can be searched in classified items such as an official title, a person’s name, a place name, etc. The basic text was published a long time ago thus recent research results are not contained.

b. *Samguk sagi* (The Historical Records of the Three Kingdoms)

i. “CD 96 *Samguk sagi*” edited by the Institute for Korean Historical Data “CD 96 *Samguk sagi*” published by Hangeul and Computer in 1996 had punctuation and class marks. It also had the function to search for revised editions, translated editions, *jeongdeok* block editions, annotations, and it has a dictionary of Chinese characters that enables us to search the necessary data easily. It is possible to see the original text in Chinese characters

as a revised edition, and also to see the translation in Hangeul and its image in block edition form at the same time. The Institute for Korean Historical Data run by Prof. Heo Seong-do contributed greatly to computerizing the data in Chinese characters including *Samguk sagi*.

ii. “CD-ROM *Samguk sagi*” edited by The Academy of Korean Studies

The Academy of Korean Studies revised and translated the original text of *Samguk sagi* that had already been published. The Academy included all academic research results and, through annotation, published five volumes of *Yeokju samguk sagi* (Translated and Annotated Historical Record of the Three Kingdoms) in 1998. The Academy constructed a database and published the “CD-ROM *Samguk sagi*” on the basis of *Yeokju samguk sagi* in 1999. This CD-ROM provides the translated text, annotations, and the original text together related the search results of and is very easy to use. It helps readers understand each article through detailed annotation and needs no other references at all.

c. *Goryeosa* (The History of the Goryeo Dynasty)

It was developed by researchers of Yeolnin Database and produced by Nuri Media. The translated edition of *Goryeosa* by the Institute for Korean Classics of North Korea was used as the text. The search for concordance was classified into an official title, a person’s name, and a place name, etc. To search for each article is possible. The results of searches are connected to the image of the original text.

d. “CD-ROM *Gugyeok joseon wangjo sillok*” (The Korean Translation of The Annals of the Joseon Dynasty)

The most conspicuous project of computerization of Korean historical data was that of *The Annals of the Joseon Dynasty*. *The Annals* consist of the historical records of the 472 years between 1392-1863 from King Taejo, the founder of the Joseon dynasty, to the 25th King Cheoljong. *The Annals* minutely recorded all the fields relating to statecraft such as economics, society, military affairs, education, science, industry, and culture, etc., not to mention the contents of the king’s administration of state. It is of course the most important historical data for studying the history and culture of the Joseon dynasty.

However, it was very difficult to use the data because of the immense amount of original texts written in Chinese characters in the 413 volumes. The *Korean Translation of The Annals of the Joseon Dynasty* published by Minjok

Munhwa Chujinhoe (The Korean Classics Research Institute) and Sejongdaewang Ginyeom Saeophoe (The King Sejong Memorial Society) did not have enough concordance function. Accordingly, it was very difficult for researchers to search and use data in spite of its importance.

Thus, historical data of the highest necessity and efficiency in usage via computerization is *The Annals of the Joseon Dynasty*. In 1992, Seoul System Co. Ltd. and the Institute for Korean Studies Database began the project to computerize *The Annals of the Joseon Dynasty*. They published the “CD-ROM Korean Translation of *The Annals of the Joseon Dynasty*” in October 1995 on the basis of the *Korean Translation of The Annals of the Joseon Dynasty* published by Minjok Munhwa Chujinhoe (The Korean Culture Research Institute) and Sejongdaewang Ginyeom Saeophoe (The King Sejong Memorial Society) (Kim Hyeon 1995).

They contained the immense data of 413 books on three CD-ROMs that had functions both for concordance of all the articles by date and classification, and for searching a word in *hangeul* and Chinese characters. The efficiency of using the Annals was heightened and it became possible to output the results of searches and move to another applied program to copy. A revised edition was published in 1997 and was put on CD-ROM by virtue of compact technology in 1999.

As the text of the “CD-ROM Korean Translation of *The Annals of the Joseon Dynasty*” is an edition translated in *hangeul*, it is very easy for the public to access the data. But it is necessary for professional researchers to access original text written in Chinese characters. There are problems such as errors in translation and inefficiency of results of *hangeul* concordance by date. Accordingly, the necessity to computerize the original Annals in Chinese characters arises.

As a joint project between the National History Compilation Committee and the Institute for Korean Studies Database of Seoul System, the project to construct a database of a marked edition of *Wonjeon joseon wangjo sillok* (The Original Annals of the Joseon Dynasty) was pushed forward. Under the supervision of the National History Compilation Committee, the database of *The Annals of the Joseon Dynasty* marked with seventeen sentence signs and revising symbols was put onto CD-ROM and is being served to domestic and foreign researchers through the internet (Yi Nam-hi 2000).

The publication of the “CD-ROM *Annals of the Joseon Dynasty*” was an epoch-making event in the computerization of historical data. It enabled users to access the necessary data easily. It also enhanced usability of the data of the

Annals and contributed to recognizing the value and efficiency of computerization. In addition to researchers in historical science, those working in the social and natural sciences can easily access the data, and so can broadcasters, the press, and authors. The basis of the experience of computerizing the Annals triggered the vigorous project to computerize other historical data.

e. The “CD-ROM *Gojong-Sunjong sillok*” (The Annals of King Gojong and King Sunjong)

In 1927, Yi Wang-jik compiled the *Annals of King Gojong and King Sunjong* according to the past compiling system of the annals. There was a possibility of distortion because Japanese participated in the compilation during the Japanese occupation. However, it is of help to research King Gojong and King Sunjong periods. When constructing a database, Joseon Wangjo Sillok Yeonguhoe (The Society of Research on The Annals of the Joseon Dynasty) translated the “CD-ROM *Gojong-Sunjong sillok*.” The “CD-ROM *Gojong-Sunjong sillok*” published in 1998 contains both translated text and the original in Chinese characters written together with punctuation marks, and it is easy to search using *hangeul* and Chinese characters.

f. *Seungjeongwon ilgi* (The Daily Records of the Royal Secretariat of the Joseon Dynasty)

This was the record of the Royal Secretariat that received and transmitted royal decrees during the Joseon dynasty covering the period between 1623 (the first year of King Injo) and 1910 and contains an enormous record of 3,243 books. This was the record of the whole national administration such as the daily schedule of kings, royal decrees, reports of government departments, and memorials to the Throne, and the duties and personnel administration of the Royal secretariat, etc. This was more enormous and detailed than *The Annals of the Joseon Dynasty*. The original is preserved at Gyujanggak, Seoul National University and was designated both as National Treasure No. 303 and as an international written heritage under UNESCO. The original database served by the National History Compilation Committee contains a total of 72 books covering the period between March 1623 (the 1st year of King Injo) and May 1770 (the 46th year of King Yeongjo).

Meanwhile, *Gugyeok seungjeongwon ilgi* (Korean Translation of the Daily Records of the Royal Secretariat of the Joseon Dynasty) is being served by Minjok Munhwa Chujinhoe (Korean Classics Research Institute). A total of 179

books covering the period between 1864 (the 1st year of King Gojong) and 1898 (the 35th year of King Gojong) has been constructed as a database.

3. The Data of Social History

a. *Bangmok* (The Rosters of Passers)

Bangmok was the first target for computerization among historical data at home and abroad. Since Prof. Edward Wagner of Harvard University in the United States tried to computerize *Mungwa bangmok* of the Joseon dynasty for the first time in the middle of the 1960s, The Academy of Korean Studies has computerized *Japgwa bangmok*, *Sama bangmok*, and *Mungwa bangmok*. The *Mungwa bangmok* project of Prof. Wagner, in collaboration with Prof. Song Jun-ho of Jeonbuk University, faced great difficulty inputting not in Chinese characters but in English. It lacked perfection as data due to problems when dealing with homonyms and inputting because of restricted columns in terms of input field. It took nearly 40 years to broaden the data by supplementing and revising the contents with related data of *Manseong daedongbo*, *Gukjo inmulji*, and *The Annals of the Joseon Dynasty*, etc. The trials and errors resulting from transcribing in English were solved in the late 1990s. *Boju joseon mungwa bangmok* (Wagner and Song *Mungwa* Roster of the Joseon Dynasty), containing the personal data of 14,600 persons, was published on CD-ROM in 2003.

Japgwa bangmok (Technical Examination) was the roster of passers who passed the national examination that chose technical officials during the Joseon dynasty. *Japgwa* was composed of *Yeokgwa* (to choose interpreters), *Uigwa* (to choose medical personnel), *Yulgwa* (to choose law officials), and *Ungwa* (to choose astronomers and geographers). In computerizing *Japgwa bangmok*, the project to computerize *Yeokgwa bangmok* began for the first time and was followed by the computerization of *Uigwa bangmok*, *Yulgwa bangmok*, and *Ungwa bangmok*. *Juhak ipgyeogan* (Calculation) was also computerized and was transmitted in the form of *bangmok* and contained the personal data of the passers of qualifying examinations who were not the objects of civil service examinations.

It took a long time to publish *Japgwa bangmok* because the project began with no experience of computerizing historical data, a lack of trained personnel, and only 4,888 Chinese characters available for computer processing. The Chinese characters that could not be processed by computer were treated by means of *jjokja* at the stage of publication. As a result, *Joseonsidae japgwahap-*

gyeokja chongnam (Comprehensive Bibliography of the Japgwa Passers on the Joseon Dynasty) was published in 1990 (Yi Seong-mu, Choi Jin Ok, and Kim Hi-bok 1990).

There was no photographic edition of *Japgwa bangmok* at that time, but the results of computerization contained a function of searching for all the passers of Japgwa according to name of a person, family name, and family origin. Accordingly, research articles including doctoral or M.A. dissertations using these results are being presented without cessation. The data of *Japgwa bangmok* was not constructed into a database because of the then unfavorable situation of computerization and so it was published only in books. In 2002, The Academy of Korean Studies published the “CD-ROM *Japgwa bangmok*” in collaboration with Dongbang Media

After the computerization of *Japgwa bangmok*, The Academy of Korean Studies began to computerize *Sama bangmok* in 1986 and published its results, the “CD-ROM *Sama bangmok*,” in 1997. It contains the personal information on names, minor names, family origins, residence, names and official posts of fathers, and brothers, etc. of 40,649 passers of the minor and secondary grade civil service examinations.

The results of computerizing *Mungwa bangmok* were not constructed into CD-ROM but were served through the internet in 1998. The personal information on 14,600 passers of *mungwa* during the Joseon dynasty was served through the Unitel system of The Academy of Korean Studies and Digital Korean Studies and is being served through Empas at present.

The computerization of *bangmok* has made it easy to use information on the passers of the civil service examinations. Afterward, *bangmok* and *Mugwa bangmok* will be constructed into databases consisting of all the passers of the civil service examinations and served online.

b. Family Registers

Prof. Jeong Du-hi of Sogang University tried to computerize family registers for the first time. The only family register published in an photographic edition among the family registers of the Joseon dynasty was *Gyeongsangdo danseonghyeon hojeokdaejang* (The Family Register of Danseong District of Gyeongsang Province). It contains family registers from the 17th century to the 19th century and can trace long-term, continuous changes of a region. Accordingly, the data can be said to be invaluable. Daedong Munhwa Yeonguwon (The Institute for East Asian Culture) of Seonggyungwan

University began to computerize family registers seriously. The Institute published *Gyeongsangdo danseonghyeon hojeokdaejang* (The Family Register of Danseong District of Gyeongsang Province) in 1606-1888 on six CD-ROMs. The data were processed in Microsoft Excel. It is possible for computer users to use the function of Excel freely, which is of great help to research. At present, the data are computerized only in Hangeul and will be computerized in Chinese characters in 2006. The theses as to the characteristics of the data of family registers and various social phenomena and changes shown in the family registers were accompanied with computerization and academic presentations at the same time. Afterward, further development of research on family register will be expected.

4. Code

Gyeongguk daejeon (The National Code), compiled in 1485, was the basic code of the Joseon dynasty. The Code contains various systems of the Joseon dynasty and is essential to understanding government systems and social structure. The Academy of Korean Studies published *Yeokju gyeongguk daejeon-beonyeokpyeon* (The National Code—Translated Edition) and *Yeokju gyeongguk daejeon-juseokpyeon* (The National Code—Annotated Edition) in 1985. The CD-ROMs *Yeokju gyeongguk daejeon-beonyeokpyeon* and *Yeokju gyeongguk daejeon-juseokpyeon* published in 2000 were based on those published in 1985. The original text in Chinese characters was processed as images and researchers do not have to refer to the original text separately.

Daejeon hoetong (A Comprehensive Collection of National Codes) was published in 1865, the second year of King Gojong. It contains all the changed contents of *Gyeongguk daejeon* (The National Code) and *Daejeon hoetong* and is of great use to understand the Joseon dynasty. It was constructed as a database by the Institute of Korean Culture, Korea University, and is composed of the main text in modern Korean translation, the original text in Chinese characters, and images of the main text.

5. Literary Works

Literary works contain all the writings of an author. They also contain information on persons connected by blood, scholastic, and regional relations, not to mention personal history, viewpoint of learning, political and social activity, and

values, and is of great use to understand the human relations surrounding an author.

It is estimated that there are about 4,000 kinds of existing literary works. Minjok Munhwa Chujinhoe (The Korean Classics Research Institute) is planning to select about 1,200 literary works of renown figures and publish 500 volumes. The publication project started in 1988 and has published a total of 340 volumes whose contents and bibliographical notes served as a database. At present, the total contents of 182 volumes and the bibliographical notes of 483 types have been constructed into a database. The bibliographical notes deal with the formation of a bibliography for literary works, introductions of authors, family trees, achievements, and the structure and contents of literary works. The database of literary works is available via the home page of the Korean Classics Research Institute.

6. Others

In addition to the above-mentioned basic data, I will introduce several valuable and useful databases as important references to Korean history. *Jeungbo munheon bigo* (Reference to Old Books, Enlarged with Supplements) is a kind of encyclopedia that classified various systems and civilization according to 16 researches and is arranged in chronological order. It is composed of the enormous number of 250 volumes. On the database on the basis of a translated edition by Sejongdaewang Ginyeom Saeophoe (The King Sejong Memorial Society) it is possible to search for concordance and is constructed for easy use. The image of the original text according to the results of searches is also being served.

Daedongyeojido (Map of the Great East) was made by Kim Jeong-ho and is the oldest map in Korea. The menus of the database are composed of the reading of a complete map, a map of a castle, a map of the capital, and a map of a district. Searching is possible in each menu and concrete information on the places is served for each search result. At the same time, maps are presented on the right side of the monitor and spatial information is also provided. If you click an area you are searching on the complete map, you can look in at a partial map. If you click on an area you are searching on the partial map, you can get information on the area concerned.

Most of the computerized data are from the Joseon period and a few are from the Goryeo period. *Palman daejanggyeong* (Tripitaka Koreana) did not deal with the history of the Goryeo dynasty but was constructed during the Goryeo

period. It is a typical cultural heritage of Korea designated as an international cultural heritage by UNESCO. Goryeo Daejanggyeong Yeonguso (The Institute for Researching Tripitaka Koreana) pushed forward the computerization of *Palman daejanggyeong*. Its CD-ROM, *Goryeo daejanggyeong*, reflects the ability to research Korean Buddhism. As well, the Institute compiled *Palman daejanggyeong* on 15 CD-ROMs. About 110,000 Buddhist terms can be searched in *hangeul* and Chinese characters and by *Sutras*. The concrete bibliographical notes on searched *Sutras* are served and linked to the original of the *Sutras*. It is also possible to move to MS-Word, and to edit and output the results.

Palman daejanggyeong, served by Nuri Media, was constructed into a database according to the results of the Center of National Classics of the Institute for Social Science, North Korea. The bibliographical notes of *Palman daejanggyeong*, a dictionary of 4,000 items of Buddhist terms, and 48 slides of Buddhist relics and ruins are served through the web.

Aside from CD-ROM, there are a lot of historical data served on the internet. Historical data such as *Samguk sagi* on CD-ROM are also served on the internet through the web. But *Bibyeonsadeungnok* (Records of Border Defense Council) is served only on the internet. The home pages of universities and research institutions relating to Korean studies are serving the data and so are some firms specialized in digital content like Dongbang Media and Nuri Media. Aside from CD-ROM, a lot of data are being served online and it is easy to get information anywhere, both at home and abroad.

Related Sites

I have introduced the status of computerizing historical data according to type up to now. This chapter will introduce related sites according to user convenience. There are many websites registered on the internet. Among them, those related to history are being operated by institutions for Korean studies, related departments of universities, academic societies, personal home pages, and such things as amateur angler clubs, etc. They provide a variety of information on lists of writings including data such as original texts, publication lists, contents of the activities of academic societies, introductions to lectures, data concerning relics and ruins, and personal interests. Most of the databases constructed by distinguished institutions of Korean studies are being united and operated by Hanguk Yeoksa Jeongbo Tonghap Siseutem (The Integrated System for Korean

Historical Information). Now, I will introduce several major history sites to take advantage of the enormous amount of data.

1. The Academy of Korean Studies: <http://www.aks.ac.kr>

The home page of The Academy of Korean Studies provides *Digital Korean Studies*, the *Encyclopedia of Korean Culture*, the *Integrated System of Korean Historical Information*, the *Digital Library of Korean Studies*, and *A Book of Korean Folk Culture*. Among them, *Digital Korean Studies* is the largest portal site on Korean culture and is served on Empas (<http://koreandb.kdaq.empas.com>). The *Integrated System of Korean Historical Information* (<http://yoksa.aks.ac.kr>) can be used to search for database on old documents of civil possession.

2. The Korean History Compilation Committee: <http://nhcc.go.kr>

The database of Korean history constructed by the Korean History Compilation Committee is divided into *hanguk tongsa* (Korean history), a chronological table of Korean history, a list of the data, ancient history, medieval history, modern history, and contemporary history. The contents of the database are diverse and the databases relating to the history of the Independence Movement and contemporary history are particularly conspicuous.

3. Gyujanggak Archives: <http://kyujanggak.snu.ac.kr>

Gyujanggak constructed a database of old books, old documents, old maps, printing tablets, and tablets. Old books are classified as *Gyeongsajajip* (the Classics of Confucianism, the Four Books, Masters, and Prose and Poetry) and their texts in Chinese characters, images of the original texts, lists in Chinese characters, bibliographical notes in *hangeul*, Chinese characters and English are all served. Old maps are classified as world maps, national maps, and regional maps, etc. and their images of original maps and bibliographical notes are also available. In case of printing tablets and tablets, only images are available.

4. The Korean Classics Research Institute: <http://www.minchu.or.kr>

The database of the Korean Classics Research Institute is composed of the bibliographical notes and lists of *Gojeon gugyeok chongseo* (Korean Translation of a Series of Korean Classics), *Gugyeok seungjeongwon ilgi*

(Korean Translation of the Daily Records of the Royal Secretariat of the Joseon Dynasty), *Gugyeok ilseongnok* (Korean Translation of Records of Daily Reflection) and *Hanguk munjip chonggan* (A Series of Korean Literary Works). Among *Gojeon gugyeokchongseo* (Korean Translation of a Series of Korean Classics), the names of books and authors of 17 types published in a series of Korean translations like *Goryeosajeolyo* (Essentials of Goryeo History) and *Sinjeung dongguk yeojiseungnam* (Newly Enlarged Edition of the Augmented Survey of the Geography of Korea) can be searched for brief bibliographical notes and translations. The original texts of some can be also searched.

5. ZININZIN Excavation Report Database: <http://www.excavation.co.kr>

Zininzin is a company specialized in academic information on archaeology and has been serving overall solutions to archaeology. The information on 1,750 volumes of the original excavation reports of about 40 institutions has been constructed. It is possible to access lists of original excavation reports, institutions, periods, regions, and characteristics. It is very meaningful and serves data essential to research on archaeology of ancient history.

6. The Home Pages of the Departments, Academic Societies, and Individuals

On the home pages of the departments related to the history of domestic universities, academic societies, and professors of history and institutes, it is also possible to access a variety of historical data. The home page of a department of history at a typical university is easy for students to access and is composed of an introduction to the lectures, a list of books the department possesses, the theses of the graduates, a data room to help the class, and introductions to useful sites, etc.

The home pages of academic societies contain lists of academic journals published by the societies, activities, data rooms, theses, and the essentials of discussions. In case one can not attend a meeting, it is possible to download the contents and grasp the trends of society. The web addresses of major societies are as follows:

- Yeoksa Hakhoe: <http://www.hongik.ac.kr/~yoksa/>
- Hanguksa Yeonguhoe: <http://www.hongik.ac.kr/~hansa/>
- Joseonsidae Sahakhoe: <http://www.chosun.or.kr>

- Hanguk Godaesa Hakhoe: <http://www.hongik.ac.kr/~kosa/>
- Hanguk Yeoksa Yeonguhoe: <http://www.koreanhistory.org>
- Hanguk Geunhyeondae Sahakhoe: <http://www.kmch.or.kr>
- Hanguk Minjokundong Sahakhoe: <http://konama.new21.net>

In order to get information on activities of societies, that is, monthly presentation, symposiums, and discussions, it is essential to search the individual sites of the societies. However, it is possible to search only one site for the news of activities of societies. Histopia, a Korean history portal site (<http://histopia.net>), contains information on activities of the society. At the same time, the home pages relating to Korean historical data (data, maps, lists, photos, etc.), recommended books, the history of the times, and taxonomic history can be searched in the web directory.

There are a few distinguished home pages of professors such as those of Kim Tae-sik of Hongik University, Han Gyu-cheol of Gyeongseong University, and Yi Cheong-gyu of Yeongnam University. On the home page of Prof. Kim Tae-sik (<http://www.hongik.ac.kr/~kayakim>), it is possible for anyone to upload and download the historical data and writings related to Korean ancient history. In the open data room of Hanguk Godaesa Hakhoe, there are historical data, theses, presentations, and the main points of discussions related to the history of the ancient Gaya situated in the southern part of the Korean peninsula.

On the home page of Prof. Han Gyu-cheol (<http://www.kyungsung.ac.kr/~pahaee>), it is possible to search the original texts of *Samguk sagi* and *Samguk yusa*, his theses on the history of Balhae, the lists of writings on Balhae of Korea, China, Japan and Russia, lists of history, archaeology, politics, and economy of North Korea and all the lists of northern civilization. It is possible to get abundant information relating to the history of Balhae such as the pictures of ruins taken by China and Russia, and lectures in the natural voice on the history of Balhae, etc.

On the home page of Yi Cheong-gyu (<http://www.leeck.co.kr>), it is possible to search for information on lectures, archaeology, and museums. The home page has a remarkable site connecting to the home pages of 20 academic societies, 30 interested institutions, 13 special institutions for the investigation of cultural heritage, 78 national, public, and private museums, 72 university museums, and 13 various institutions for analysis. It is fantastic not only to access each individual home page but to find them linked on a certain site.

The Direction of the Computerization of Historical Data

The Korean history of traditional ages was written in Chinese characters. Accordingly, accessing historical data is restrictive to the general public. History is not the exclusive possession of researchers. Until now, history has been transmitted mainly through paper books. But now, new media like the CD-ROM and the internet have been accelerating the popularization of history.

The computerization of historical data has a common aim to satisfy the needs of historians and the public simultaneously. At first, the historical data needed by researchers were computerized, the results of which did not leave any boundaries. The services of the original texts of old documents and books are useful to researchers but the “CD-ROM *Joseon wangjo sillok*” is useful to both researchers and the general public. Even if the data were exclusively for researchers being served not in books but on the internet, they would be open and exceed all sections and classes.

The computerization of historical data started from the electronic stage of inputting and publishing data and we have reached the stage of the construction of databases, publication of CD-ROMs, and internet service. The amount of information served online is rapidly increasing compared to that served offline. In accordance with this trend, it is necessary to survey the direction of computerization.

The merits of computerization are the easy custody and use of data. The “CD-ROM *Joseon wangjo sillok*” contains the history of 472 years on CD-ROM. From the viewpoint of custody and preservation, it can be said to be very useful. The data served on the internet transcend time and place at home and abroad. It is very efficient to access the necessary data instead of going in person to the place holding the data. It is characteristic of such media to serve all kinds of data like sounds and images as well as literal data. Afterward, it will be necessary to maximize the characteristics of these media.

It is easy to get information through searches, which develops the productivity of research through various applied methods. It has saved us the laborious effort of searching each individual book for necessary data and has lessened the possibility of omission amidst vast amounts of data. If we search *Sama bangmok* for the names of the passers of the minor and secondary grade civil service examinations, we can get information on their personal data. On a CD-ROM constructed as a database, it is also easy to get information on the lists of the passers of a special family name, origin, and region, which is almost impossible

to search for in books.

As surveyed above, important historical books were computerized in a rather shorter period after *Joseon wangjo sillok* was constructed on CD-ROM. Meanwhile, *bangmok* and *hojeok* (Census Register) were constructed as databases from the very beginning. But historical books and literary works were computerized on the basis of the already published translations and annotations, which lacks the reflection of the recent results of research. Translation was not done around the time when CD-ROM was constructed; rather, translation already done a long time ago prior to the construction of this CD-ROM was chosen to be used as text. Accordingly, there are errors in translation which are not reflected in the results within the academic world. Emphasis should be put on the computerization of fresh data rather than that of existing results.

When choosing the data for computerization, basic data should be taken into consideration. Data in highly efficient databases should be chosen first of all. For example, the basic but neglected data for history research such as chronological tables, names of persons, names of places, a lexicon of history, a dictionary of each individual field, etc. should be strengthened.

The trends towards CD-ROM and the internet will be accelerated by degree. In particular, the number of internet users is much larger than that of offline. When services in foreign languages for researchers abroad become available, users will rapidly increase. Accordingly, it is necessary to develop foreign language versions. First of all, it is necessary to serve in English and then in Chinese, Japanese, and other languages according to the data.

To solve these problems, it is urgent to foster specialized manpower. We should make an effort to train specialized human resources in various fields necessary for the computerization of historical data. Cooperation between specialists on computerization and historians will make it possible. Accordingly, when human resources with understanding and knowledge of the other fields are developed, more tangible results will be expected.

References

- Choi Jin Ok. 1994. "Hanguksa jaryoui jeonsancheori" (The Computerization of Korean Historical Data). *Jeongsin munhwa yeongu* (Korean Studies Quarterly) 17(3). Seongnam: The Academy of Korean Studies.
 Hanguk Sasangsa Yeonguso (The Institute for Korean Ideological History).

1992. *Samguk yusa indeuk* (The Concordance of the Legends and History of the Three Kingdoms of Ancient Korea). Seoul: Tongnamu.
- Heo Heung-sik. 1994. "Hangukhagui mongnokhwawa jeonsanjeongbohwa" (The Listing of Korean Studies and Computerized Informatization). *Jeongsin munhwa yeongu* (Korean Studies Quarterly) 17(3). Seongnam: The Academy of Korean Studies.
- Kim Byong-sun. 1994. "Hangukhak jaryo jeonsancheoriui gibon munje" (The Basic Problems of Computerizing Korean Studies Data). *Jeongsin munhwa yeongu* (Korean Studies Quarterly) 17(3). Seongnam: The Academy of Korean Studies.
- Kim Gi-hyeop. 1983a. "Hanmunjaryoui keompyuteo cheori bangbeop" (Computer Processing of the Data in Chinese Characters). *Jungguk hakji* (Chinese Academic Journal) 1. Daegu: Keimyung University.
- _____. 1983b. "Goryeosai keompyuteo pail seolge" (Construction of Computer File of Goryeo History). *Daegu sahak* (Daegu History) 23.
- Kim Hyeon. 1995. "Hanguk gojeonjeogui jeonsanhwawi seonggwawa gwaje-<The Annals of the Joseon Dynasty CD-ROM> gaebalsaeopui gyeonggwawa baljeon banghyang" (The Results and Tasks of Computerization of Korean Classical Books-the Process and Developmental Prospects of Constructing "The Annals of the Joseon Dynasty"). *Minjok munhwa* (National Culture) 18. Minjok Munhwa Chujinhoe.
- So Gang-chun. 1994. "Bangeonjaryoui jeonsanhwae daehaye" (On Processing the Data of Dialects). *Jeongsin munhwa yeongu* (Korean Studies Quarterly) 17(3). Seongnam: The Academy of Korean Studies.
- The Academy of Korean Studies and Dongbang Media. 2002. CD-ROM *Japgwa bangmok*.
- _____. 1982. *Hangukhak jaryoui jeonsanhwa yeongu* (Studies on Computerization of Korean Studies Data). Seongnam: The Academy of Korean Studies.
- _____. 1983. *Hangukhak yeongu inmyeongnok* (The Directory of Researchers on Korean Studies). Seongnam: The Academy of Korean Studies.
- _____. 1998. *21segi jeongbohwa sidaeui hangukhak: Je10hoe hangukhak guknehsulhoeui nonmunjip* (Korean Studies in the Informatization Era of the 21st-Century: A Collection of Theses on Korean Studies Presented at the 10th International Academic Meeting).
- _____. 2003. CD-ROM "Wagner and Song joseon mungwa bangmok." Dongbang Media.

Yi Nam-hi. 2000. "Joseonsidae jaryoui jeonsanhwa" (The Computerization of the Data of the Joseon Period). *Joseon sidaesa hakbo* (The Journal of the History of the Joseon Period) 12.

Yi Seong-mu, Choi Jin Ok, and Kim Hi-bok. 1990. *Joseonsidae japgwa hapgyeokja chongnam* (Comprehensive Bibliography of the Japgwa Passers on the Joseon Dynasty). Seongnam: The Academy of Korean Studies.

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