Problems in Karlgren's Hypothesis on Sino-Korean*

Ik-sang Eom

Karlgren (1926, 1940) proposed that the Go-on readings of Sino-Japanese were transmitted directly from Eastern and Southeastern China in the sixth and seventh centuries whereas Kan-on was transmitted from Northern China by the Koreans a century later. However, his claim is contradicted not only from the historical but also from the linguistic point of view. This article claims that Go-on was transmitted by the ancient (Paekche) Koreans whereas Kan-on was transmitted from China directly to Japan.

1. Introduction

The dating of dialects has been one of the main concerns of the historical linguists of Chinese in the past century. Dating a dialect is important not only because it can furnish us with a better idea about the evolution of the Chinese language but also because it can provide linguistic insight into the history of the civilization. The importance is even more serious in the case of the Sinoxic dialects. The term Sinoxic dialects was first used by Samuel Martin to refer to the foreign readings of Chinese characters, such as Sino-Korean, Sino-Japanese, and Sino-Vietnamese. By Sino-Korean, Sino-Japanese, and Sino-Vietnamese, I mean the systems of pronunciation of Chinese characters in Korea, Japan, and Vietnam respectively. The

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periods in which the Sinoxenic dialects are based may reflect the times that the majority of Chinese characters were borrowed. Hence, the periods in which they were borrowed must be closely related to the times of the civilizations of these countries.

In this article, I will review Karlgren's hypothesis on Sinoxenic dialects from the historical and linguistic points of view and point out some problems in his ideas, particularly on the routes of transmitting the characters in East Asia. I will eventually propose a new hypothesis on the routes of the transmission and will provide linguistic evidence.

2. Three Hypotheses on Sino-Korean

Concerning the date of Sino-Korean, three important hypotheses have been made up-to-date.

Table 1. Three Important Hypotheses on Modern Sino-Korean

<table>
<thead>
<tr>
<th>Scholars</th>
<th>Sino-Korean</th>
<th>Go-on</th>
<th>Kan-on</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maspero(1920)</td>
<td>5th C. the Wu</td>
<td>6th C.</td>
<td>8th C.</td>
</tr>
<tr>
<td>Arisaka(1936)</td>
<td>10th C. Kaifeng</td>
<td></td>
<td>Changan, Tang</td>
</tr>
<tr>
<td>Karlgren(1926)</td>
<td>600 A.D.</td>
<td>5~6th C.</td>
<td>7~8th C.</td>
</tr>
<tr>
<td></td>
<td>N. China</td>
<td>Directly from</td>
<td>From N China via Korea</td>
</tr>
<tr>
<td></td>
<td></td>
<td>E, SE China</td>
<td></td>
</tr>
<tr>
<td>Karlgren(1940)</td>
<td></td>
<td>6~7th C.</td>
<td>7~8th C.</td>
</tr>
</tbody>
</table>

Henri Maspero (1920) proposed that the Wu dialects (Suzhou/Shanghainese) of the fifth century are the basis of the present Sino-Korean readings. This view was rejected by Karlgren (1922, 1915~26), and it is not generally accepted by current specialists owing to the lack of evidence to substantiate it. Nevertheless, what is interesting about Maspero's view is that it could possibly be correct if he had claimed that the fifth century Wu dialects were the basis of Sino-Paekche, one of the variants of Old Sino-Korean.1

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1 Karlgren (1922:4-6) points out Maspero's two errors: firstly, the Wu or Go-on cannot be treated as having a totally different sound system from that of the Qieyun. Secondly, Maspero's reasons are "decidedly weak" and his claim is based on historical probability.

### Table 2. A Chronological Chart of Ancient East Asia

<table>
<thead>
<tr>
<th>CHINA</th>
<th>KOREA</th>
<th>JAPAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western Han (206 B.C.~8 A.D.)</td>
<td>Chosŏn (57 B.C.~668 A.D.)</td>
<td>Clan Period (552~589)</td>
</tr>
<tr>
<td>Eastern Han (25~220)</td>
<td>Silla (108 B.C.~313 A.D.)</td>
<td>Han Commanderies (206 B.C.~313 A.D.)</td>
</tr>
<tr>
<td>Three Kingdoms (220~265)</td>
<td>Koguryŏ (37 B.C.~668 A.D.)</td>
<td>(25~220)</td>
</tr>
<tr>
<td>Western Jin (265~317)</td>
<td>Paekche (18 B.C.~668 A.D.)</td>
<td>(25~220)</td>
</tr>
<tr>
<td>Eastern Jin (317~420)</td>
<td>Kaya (42 A.D.~562 A.D.)</td>
<td>(25~220)</td>
</tr>
<tr>
<td>Nanbeichao (420~589)</td>
<td></td>
<td>(25~220)</td>
</tr>
<tr>
<td>Sui (581~618)</td>
<td>Unified Silla (668~935)</td>
<td>Late Yamato (552~710)</td>
</tr>
<tr>
<td>Tang (618~907)</td>
<td>Nara (710~874)</td>
<td>(552~710)</td>
</tr>
<tr>
<td>Five Dynasties (907~960)</td>
<td>Heian (794~857)</td>
<td>(552~710)</td>
</tr>
<tr>
<td>Northern Song (960~1127)</td>
<td>Koryŏ (918~1392)</td>
<td>Fujiwara (857~1160)</td>
</tr>
<tr>
<td>Southern Song (1127~1279)</td>
<td></td>
<td>Taira (1160~1185)</td>
</tr>
</tbody>
</table>

By Old Sino-Korean, I mean the very first stage of the Korean readings of Chinese characters during the period of the so-called Three Kingdoms: Koguryŏ (38 B.C.~668 A.D.), Paekche (18 B.C.~668 A.D.), and Silla (57 B.C.~935 A.D.).

Archaeological evidence suggests that the Koguryŏ Koreans first used Chinese characters due to the influence of the Han Commanderies (108 B.C.~313 A.D.) in the northern part of the Korean peninsula. Owing to the cultural uniqueness and the politically competing relationships among the three states, I assume that there were three or more dialectal variants in Old Sino-Korean, and the basis of Sino-Paekche seems to be closer to Maspero's view. I will discuss this point later in more detail.
Arisaka Hideyo (1936, 1957), on the other hand, proposed a more persuasive hypothesis. He claimed that the origin of Sino-Korean is the tenth century Kaifeng Chinese of the Song dynasty. Even though Arisaka provided considerable internal evidence, his view was rejected by later scholars, such as Kōno Rokurō (1968:14) and Pak Pyōng-ch'ae (1971:282), because his judgement was based on incomplete sources of Sino-Korean in a deductive way. It is, however, very notable that Arisaka inferred two layers of Sino-Korean: Pre and Post-Koryō (918～1259). I also believe that at least two or more strata are mingled in Modern Sino-Korean, although I do not agree with Arisaka in terms of the dividing point of the period.

Another hypothesis, the most widely accepted and the one that eventually replaced the above two, was initially made by Bernhard Karlgren (1915～26, 1922, 1926). As is well known, he was the first western linguist who recognized the importance of Sino-Korean as one of the Chinese (foreign) dialects that provides good sources for the reconstruction of Middle Chinese. Through a comparison of Sino-Korean and other Chinese dialects, Karlgren (1922, 1926:76) refuted Maspero and concluded that Sino-Vietnamese dates back to the ninth century whereas Sino-Korean dates back as far as c. 600 A.D., and Sino-Japanese dates back to between the fifth to the eighth

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3 Kim Yong-hwang (1978:135) has very much the same view on the date although he reaches this conclusion from other grounds. His view is hardly acceptable but interesting because it is one of the rare North Korean materials available to us.

4 Pak Pyōng-ch'ae (1971:282) criticizes Arisaka's methodology of sorting two layers. Pak claims that Sino-Korean does not have any different layers in the system. However, I do not quite agree with Pak because I believe that there must be different layers of Old and Middle Sino-Korean traces even in the current system of Sino-Korean. Arisaka's division should have made Unified Silla as the milestone. Thus, it will be more reasonable to divide them into Pre-Unified Silla and Post-Unified Silla.

5 It is 'Ancient Chinese' in Karlgren's term. In this paper, however, I will replace Karlgren's 'Archaic Chinese' and 'Ancient Chinese' to 'Old Chinese' and 'Middle Chinese,' as these are more commonly used in the current literature of the field. For the periodization, I follow Jerry Norman (1988:23) temporarily. Karlgren's reconstruction of some Middle Chinese finals heavily relied on Sino-Korean sources. For instance, *-ARI and *-AI are good examples in which Karlgren made the best use of Sino-Korean evidence in his reconstruction of Middle Chinese.
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centuries. According to Karlgren (1926:77), Go-on, the old system of Sino-Japanese, was borrowed from Southeast and East China in the fifth and the sixth centuries and Kan-on, a subsequent system of Sino-Japanese, from North China between the seventh and the eighth centuries. In his later work, Karlgren (1940:65) slightly revised his earlier ideas and dated Go-on one century later than in his 1926 book. He claimed that Go-on is based on the Chinese of the sixth to seventh centuries and Kan-on is based on seventh to eighth century Northern Chinese.

Karlgren's view has been widely supported to date by later studies of his own and of other scholars. Among many others, Kōno Rokurō (1968) and Pak Pyŏng-ch'ae (1971:301) reached more or less the same conclusion in their considerably extensive studies in this field. Karlgren's proposal is the most acceptable as far as the periods and the source dialects of China are concerned, but it leaves room for further discussion on the transmission routes of Chinese characters in East Asia.

Karlgren (1926:124-126) holds a view which contradicts general knowledge. He argues that the direct contact between East China and Kyūshū, the southwesterly islands of Japan, possibly goes further back than the contact via Korea. This view implies that Go-on was transmitted earlier and directly to Kyūshū by the southern Chinese. To the contrary, Kan-on was transmitted later by the Koreans who immigrated to Izumo, a town in the southwest coast of the main island of Japan.

According to the present study, Karlgren seems to have made the above conclusion without a thoughtful examination of the history of East Asian civilization throughout the entire period. His view is implausible not only due to historical reasons but also due to linguistic analysis, as will now be clearly shown.

3. Historical Problems with Karlgren's Hypothesis

Karlgren's statements above involve serious problems from the historical point of view. First, it is unacceptable to propose that Japan's direct contact with the continental culture occurred prior to her indirect contact with it through the Koreans. Even if Japan's earliest official contact with China occurred as early as 57 A.D., it is a common belief among historians that the early contact between the Japanese and the Chinese had been made
possible by the Chinese and the Korean people in the Han commanderies in northern Korea, up until the closing of those commanderies in 313 A.D. Unlike Karlgren’s claim that Kyūshū served as an easy seafaring route from China, Kyūshū, in fact, was closer to Korea than to China. The closest point from the Korean peninsula to Kyūshū is only 120 miles across the Korea Strait. Thus, it is not difficult to presume that Japan’s earlier contact with the continental cultures took place through Korea rather than directly from China. The *Weizhi* section in the *Sanguozhi* or Account of the Three Kingdoms (297) points out explicitly the exact route that cultural and political intercourse was carried out from the Han commanderies in Korea to northern Kyūshū in the early centuries A.D. (Reischauer and Fairbank 1958 & 1960:463).

Later, the Japanese received many aspects of the continental culture, such as the art of writing Chinese characters, Confucian classics, Buddhism, and pottery skills. These were made possible through the people in the Korean peninsula, particularly in Paekche (18 B.C. ?-660 A.D.), the southwestern state in the peninsula. As is stated in Reischauer and Fairbank (1958 & 1960:471), the steady immigration from the peninsula to the capital district of the Yamato state was made during the fifth and sixth centuries. Many leaders of the immigrants took prominent positions in the Yamato aristocracy and devoted themselves to the political and cultural development of the Yamato. Conrad Schirokauer (1978:131) states clearly that “the direct contacts between China and Japan did not become general until late in the seventh century and, even then, remained hazardous.”

At any rate, concerning the transmission of the characters, conclusive

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6 According to the *Weizhi*, an official intercourse between ancient Japan and China occurred in 57 A.D. An envoy from the Wa state of Nü visited the Han court and received a seal, which may be the one that was found in north Kyūshū in 1789. However, it is not clear what was the exact route of this specific incident. See Reischauer and Fairbank (1968:463-464) and Schirokauer (1978: 134). Other related statements are also found in Quale (1975:255).

7 It is not difficult to list the references supporting this statement. Among many others, see Reischauer and Fairbank (1958:409) and Schirokauer (1978:136). Hong (1988) explicitly demonstrates the Paekche people’s role in the development of Yamato Wa.

8 Reischauer and Fairbank do not state explicitly from which part of Korea the majority of the immigrants came at that time.
Problems in Karlgren's Hypothesis

Statements are found in the *Kojiki* or Records of Old Affairs (712) and the *Nihon shoki* or Chronicles of Japan (720), two of the oldest extant historical documents in Japan. According to the *Nihon shoki*, Paekche's Wang-in [more widely known as Wani by the Japanese reading] brought ten copies of the *Lunyu* or Analects of Confucius and one copy of the *Qianziwen* or Writing of Thousand Characters to Japan and became the teacher of the heir apparent in the sixteenth year of the Emperor Homuda (Ōjin Tennō) [405 A.D. or earlier]. Eventually, Wang-in received the title of 'Fumi no Obito' or the Chief of Writing.

Karlgren (1926:124) takes the meaning of this event as Jaya's "official reception of the art of writing" after having been acquainted with writing in a more popular way. However, the significance of this statement is more than just receiving the art of writing. As W.G. Aston (1956:262) spells out, Wang-in's arrival was "the beginning of a training in Chinese ideas which has exercised a profound influence on the whole current of Japanese thought and civilization up to our own day." Korean historians, such as Yi Pyŏng-do (1971:18), generally interpret the significance of Wang-in's arrival in Japan as the arrival of 'Chinese civilization' via the Chinese classics.

If the historical adduction above is correct, is Karlgren still right in insisting an affinity between Sino-Korean and the Kan-on? It would be much more reasonable to posit a connection between Sino-Korean and Go-on. Then, one may question how Sino-Korean reflects a later stage of Chinese than Go-on if the Koreans imported the characters earlier than the Japanese did? If this is the case, Sino-Japanese should have reflected the same or at least a later stage of Chinese than Sino-Korean does.

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9 This incident is recorded in Book X of the *Nihon shoki* or W.G. Aston (1956:262-263). See Yi Pyŏng-do (1971:16-17 or 1983:578-579) to see about the editions of the books that Wang-in brought with him. The reliability of the *Kojiki* and the *Nihon shoki* as historical sources is very restricted as is widely pointed out (See Schirokauer 1978:137). For instance, the date of this incident ranges more than a hundred years by historians between 346 and 405, regardless of the year given on the text, 285 A.D. Yi Pyŏng-do (1983:576-578) speculates the year is roughly sometime between 346-405 A.D. According to Aston (1956:267) it is 405 A.D. Karlgren (1926:124) also speculates it is 405 A.D. However, these books still can be used with careful examination on the validity of each issue. The above incident is widely considered as true, except for the given date.
The reality, however, is the opposite, as if it is in favor of Karlgren's ideas. How do we solve this seemingly contradictory problem? This is the main concern of this research. I will provide my answer in the next section.

4. A New Hypothesis

Based upon the historical interpretation discussed so far, I propose a new hypothesis opposed to Karlgren. I assume that Sino-Paekche must have played the role of an intermediary in transmitting Chinese characters and their sounds to Japan. Accordingly, I hypothesize that the Go-on readings are the very sounds that the people of Paekche transmitted to Japan whereas the Kan-on readings are the ones that the Japanese people imported directly from the northern part of China in the later period.

This hypothesis makes sense when we think about the interrelationships of that time between China and the three states in the Korean peninsula: Koguryo, Paekche, and Silla. Koguryo, which was located in Manchuria and the northern part of the peninsula, had the easiest access to Chinese culture, mainly the northern culture. Paekche, on the other hand, was prevented by Koguryo from making direct contact with China. Hence, she kept marine contact with southern China. Silla, which was in the far southeastern part of Korea remained, in the early stage, the state most greatly isolated from Chinese culture. Accordingly, it is not difficult to imagine that Koguryo acquired northern Chinese pronunciations and that Paekche readings were greatly influenced by southern Chinese dialects. This is another reason why I hypothesize that Sino-Paekche mediates between a

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10 One may add Kaya (42 A.D. -562) or Karak here. Mimana is the Japanese name. This was located in the south between Paekche and Silla. The history of Kaya remains the most controversial when compared with that of the other three states. I excluded it here not because I underestimate its importance, but because it had a closer relationship with Japan than with China.

11 According to the Samguk sagi, Paekche's first tribute to China was made to the Jin in 372 A.D. From that time onward, approximately fourteen tributes were made to the southern states of China such as Jin, Sung, Southern Qi, Liang, and Chen. However, only a couple of tributes were made to the northern states, such as Wei, until the Sui dynasty was established in 581 (See Yu 1983:12-14). From these facts, it is apparent that Paekche's contacts with China took place mostly with the southern states of China.
southern dialect of China and the Go-on readings.

In addition, it is very interesting to note that Go-on has been mainly preserved in the case of reading Buddhist Sutras. This seems to be closely related to the historical fact that the Paekche people transmitted Buddhism to Japan presumably in 538 A.D.\textsuperscript{12} These two facts imply that Go-on and Sino-Paekche are closely related.

Returning to the question that I raised at the end of section 3, my answer is that among Old Sino-Korean, Sino-Paekche had different phonological systems from the ones that we can trace back from Modern Sino-Korean. In other words, the phonological characteristics of Sino-Paekche merged into Middle Sino-Korean without leaving many traces of itself. After Silla unified most of the peninsula in the seventh century, the language of Silla assimilated all other dialectal divergences from Kaya, Koguryõ, and Paekche(Yi Ki-mun 1972:38-39). Ever since the period of Unified Silla, Korea had remained one unified country until the current division in this century. Thus, Modern Sino-Korean pronunciations are based on the character readings of Silla(more specifically the Unified Silla, Yi Ki-mun 1972:66 & 73). That is why Modern Sino-Korean reflects a later stage of Chinese than Go-on does. Now, it becomes clear why I commented that Maspero's hypothesis is somewhat closer to the basis of Sino-Paekche and that Arisaka's division should have used Silla as the turning point.

5. Linguistic Evidence

The last problem, but the most important one, is how to prove the above hypothesis through linguistic analysis. It seems easy to obtain a conclusion through the comparative method of answering the following questions: Does Sino-Paekche have more properties in common with Go-on than with Kan-on? Upon which Chinese dialects are Sino-Paekche and Go-on based? Unfortunately, these are not simple questions because of the sparse corpus of Sino-Paekche. There is so little information available about the phonological systems of Sino-Paekche and its native language. At the moment, I will follow Yu Ch'ang-gyun's(1983) pioneering reconstructions of Sino-Paekche without justification not because of its reliability but because of

\textsuperscript{12} For the more information on the early stage of Buddhism in Japan, see Reischauers and Fairbank(1958 & 1960:474-475).
What is unique in his reconstructions is that there are voiced obstruent initials, which do not exist as phonemes in Modern Sino-Korean as well as in Modern Korean. Because initial voicing is one of the crucial points that distinguish Go-on from Kan-on, I cite here his initials only.

<table>
<thead>
<tr>
<th>Labials</th>
<th>p</th>
<th>b</th>
<th>m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alveolars</td>
<td>t</td>
<td>d</td>
<td>n</td>
</tr>
<tr>
<td>Velars</td>
<td>k</td>
<td>g</td>
<td></td>
</tr>
</tbody>
</table>

I will now present some phonological rules based on the changes from Middle Chinese to Kan-on. These rules will demonstrate eventually the affinity between Go-on and Sino-Paekche. Changes in the initials, such as obstruent devoicing (*b- > p-), denasalization (*m- > b-, *n- > d-), and affrication (*t > ts-), show the three most striking differences between Go-on and Kan-on. For the sake of saving space, I shall present very few data.

<table>
<thead>
<tr>
<th>MM</th>
<th>OC</th>
<th>MC</th>
<th>GO</th>
<th>KO</th>
<th>SP</th>
<th>MSK</th>
</tr>
</thead>
<tbody>
<tr>
<td>ping 2(level)</td>
<td>bieng</td>
<td>biAng</td>
<td>byō</td>
<td>hei</td>
<td>bEr</td>
<td>p'yEng</td>
</tr>
<tr>
<td>dou 4 (beans)</td>
<td>do</td>
<td>dEu</td>
<td>zu</td>
<td>tō</td>
<td>dE</td>
<td>tu</td>
</tr>
<tr>
<td>cun 3 (exist)</td>
<td>dzuEn</td>
<td>dzuEn</td>
<td>zon</td>
<td>son</td>
<td>dzEn</td>
<td>tson</td>
</tr>
<tr>
<td>she 2 (tongue)</td>
<td>diat</td>
<td>dziet</td>
<td>zetsu</td>
<td>setsu</td>
<td>dzEr</td>
<td>sEl</td>
</tr>
<tr>
<td>zhu 4 (assist)</td>
<td>dZIa</td>
<td>dZIo</td>
<td>zyo</td>
<td>so</td>
<td>dzEr</td>
<td>tso</td>
</tr>
<tr>
<td>chou 2 (foe)</td>
<td>gIEu</td>
<td>gIEu</td>
<td>gu</td>
<td>kyū</td>
<td>kE</td>
<td>ku</td>
</tr>
</tbody>
</table>

[For typographical reasons, v, ì, g, i, and ë are replaced by A, E, Z, I, and Ŭ, respectively. Reconstructions here and after are based upon Wang Li (1958) for Old Chinese (OC)/Middle Chinese (MC); Todo et al. (1988) for Go-on (GO)/Kan-on (KO); Yu Ch'ang-gyun (1983) for Sino-Paekche (SP); and my own readings for Modern Sino-Korean (MSK).]

13 For the native language of Paekche, To Su-hui's (1987) collective work is now available. He seems to put more energy on sorting out the language sources than on presenting sound systems.

14 According to Yu Ch'ang-gyun (1980: 270), Sino-Koguryo also had voiced stops. Yi Ki-mun (1972: 65-66) speculates that the native language of Silla did not have voiced obstruent initials. This also supports my view.
The changes can be formulated as follows under the framework of standard generative phonology\textsuperscript{15}:

Rule 1: Obstruent Initial Devoicing Rule

\[
\begin{bmatrix}
\text{[+cons]} \\
\text{[+voiced]}
\end{bmatrix} > \text{[[-voiced]]/#}
\]

Data 2A (*m->b-, *n->d-):

<table>
<thead>
<tr>
<th></th>
<th>MM</th>
<th>OC</th>
<th>MC</th>
<th>GO</th>
<th>KO</th>
<th>SP</th>
<th>MSK</th>
</tr>
</thead>
<tbody>
<tr>
<td>ma 3(horse)</td>
<td>mez</td>
<td>ma</td>
<td>ma</td>
<td>me</td>
<td>ba</td>
<td>mEr</td>
<td>ma</td>
</tr>
<tr>
<td>nu 2(slave)</td>
<td>nα</td>
<td>nu</td>
<td>nu</td>
<td>do</td>
<td>nar/nEr</td>
<td>no</td>
<td></td>
</tr>
</tbody>
</table>

Rule 2A: Initial Denasalization Rule A

\[
\begin{bmatrix}
\text{[+cons]} \\
\text{[+nas]} \\
\text{[+ant]} \\
\text{[+voiced]}
\end{bmatrix} > \text{[[-nas]]/#}
\]

Data 2B (*ng->g-):

<table>
<thead>
<tr>
<th></th>
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<th>SP</th>
<th>MSK</th>
</tr>
</thead>
<tbody>
<tr>
<td>yi 4(justice)</td>
<td>ngIa</td>
<td>ngIe</td>
<td>gi</td>
<td>gi</td>
<td>Ei</td>
<td>ii</td>
<td></td>
</tr>
</tbody>
</table>

Rule 2B: Initial Denasalization Rule B

\[
\begin{bmatrix}
\text{[+cons]} \\
\text{[+nas]} \\
\text{[+ant]} \\
\text{[+voiced]}
\end{bmatrix} > \text{[[-nas]]/#}
\]

Data 3:

<table>
<thead>
<tr>
<th></th>
<th>MM</th>
<th>OC</th>
<th>MC</th>
<th>GO</th>
<th>KO</th>
<th>SP</th>
<th>MSK</th>
</tr>
</thead>
<tbody>
<tr>
<td>zhi 1(know)</td>
<td>tIe</td>
<td>tIe</td>
<td>chi</td>
<td>chi</td>
<td>tE</td>
<td>tçi</td>
<td></td>
</tr>
<tr>
<td>zhi 2(straight)</td>
<td>dIĒk</td>
<td>dIĒk</td>
<td>jiki</td>
<td>chyoku</td>
<td>tEr</td>
<td>tçik</td>
<td></td>
</tr>
</tbody>
</table>

Rule 3: Initial Affrication Rule

\[
\begin{bmatrix}
\text{[+cons]} \\
\text{[+cor]} \\
\text{[+ant]}
\end{bmatrix} > \text{[[-ant]]/#}
\]

\textsuperscript{15} The formulation of rules is based on Kenstowicz and Kisseberth(1979).
Because these rules account for the diachronic changes, rule 1 should be applied before rule 2. In other words, rules 1 and 2 are crucially ordered, so they are in a counterfeeding relationship.

Kan-on has undergone all the changes above, but Go-on has gone through one change fully and another partially. Modern Sino-Korean has undergone two changes, but Sino-Paekche has gone partially through one change. They are tabulated as follows by ‘+’ standing for the one having gone through the change and ‘−’ for the opposite:

<table>
<thead>
<tr>
<th>Rule</th>
<th>Go-on</th>
<th>Kan-on</th>
<th>Sino-Paekche</th>
<th>MSK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rule 1</td>
<td>−</td>
<td>+</td>
<td>−/+</td>
<td>+</td>
</tr>
<tr>
<td>Rule 2A</td>
<td>−</td>
<td>+</td>
<td>−</td>
<td>−</td>
</tr>
<tr>
<td>Rule 2B</td>
<td>+</td>
<td>+</td>
<td>−</td>
<td>−</td>
</tr>
<tr>
<td>Rule 3</td>
<td>−/+</td>
<td>+</td>
<td>−</td>
<td>+</td>
</tr>
</tbody>
</table>

Now, it is clear that Go-on shares more in common with Sino-Paekche. It is very interesting to see the voiced obstruent initials both in Go-on and in Sino-Paekche. This gives good support to my hypothesis.

Kan-on displays similarities with Modern Sino-Korean. Karlgren is correct in finding the phonological similarity between them, but the similarity does not mean that Sino-Korean was the intermediary for the Kan-on readings. Kan-on seems to have been transmitted directly from northern China either by the Chinese or the Japanese, or possibly by both of them. The most conservative position is that the Koreans did not play as active a role as before in the transmission of Kan-on.

The reason why I assume this, is that by the eighth century direct contact between Japan and China became more frequent through the Japanese embassies to China. They were accompanied by all sorts of students, such as Buddhist monks, scholars of the Chinese classics, painters, musicians, and government officials, who stayed in the Tang for several years (Reischauer and Fairbank 1958 & 1960: 476–478, 489). What is significant here is that the Japanese embassies sailed directly to China to avoid Silla’s blockade of her coastal and land routes. Thus, I surmise that those

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16 The notion of this notation and the features of Go-on and Kan-on in the table are from Margaret Sung (1989).
students who studied in Tang China played an important role in the transmission of the Tang pronunciations, which eventually became the basis of Kan-on.

There is a difference between Sino-Korean and Sino-Japanese. In Sino-Korean, alveolar affricate initials (*ts-, *ts', *dz-) of the Middle Chinese remain unchanged, but in Sino-Japanese, they changed to the alveolar fricatives (s-, z-). For instance, ‘zi3’ (son), /*tsIE/ in Middle Chinese is read /zi/ in both Go-on and Kan-on, but /tsER/ in Sino-Paekche and /tsa/ in Modern Sino-Korean. This point leaves room for further study in dating Sino-Paekche as older than Karlgren’s dating of Go-on. At the same time, it is also necessary to justify the validity of his dating of Go-on. However, I shall leave all the questions about dating for future study.

The last question about the source dialect of Sino-Paekche and Go-on is not yet answered. As is commonly known, the voiced obstruent initials suggest that there must be a certain tie between them and the Wu dialects. On the other hand, the initial labiodentalization (*p- > f-), the milestone between Early and Late Middle Chinese, excludes the Min (Fuzhou/Amoy) dialects from all other Chinese dialects. Old and Modern Sino-Korean are on the side of the Min as well as Go-on and Kan-on. Their grouping seems to reflect genetic relationship among the Min dialects, Sino-Korean, and Sino-Japanese. This interesting view, which was originally proposed by Margaret Sung (1989), should be further studied to clarify which one was the source dialect between the Wenzhou dialect of the Old Wu and the Old Min dialects.17

6. Conclusion

As a conclusion, I claim that Sino-Paekche Korean dates back as early

17 The initial voicing and labiodentals may not play an important role in determining the sources of Sino-Paekche and Go-on. This is owing to the facts that when these Sinoxenic dialects were transmitted to Korea and Japan, all the dialects of Chinese presumably still had retained voiced obstruent initials. Furthermore, none of them had yet developed labiodental initials. Professor William Baxter expressed a similar opinion at the Second Northeast Conference on Chinese Linguistics. Even though I agree with him on one hand, I still feel that Old and Middle Chinese traces preserved in modern dialects are the most fruitful sources for historical linguists to make use of in their initial investigations.
as Old Chinese and it mediated presumably a southern (the Min or the Wu) Chinese dialect to Japan as the basis of the Go-on readings. Kan-on was directly transmitted to Japan. This view is totally opposed to the previous view on the topic, which was held by Bernhard Karlgren and most of the later historical linguists.

My view will be strengthened through my ongoing research. If it is supported by more evidence, this study will make a great contribution to the historical phonology of Chinese by illuminating the otherwise vague route and time of the transmission of Chinese characters in East Asia. An even greater contribution will be made to historical linguistics of Korean by suggesting some crucial features of the hardly known Paekche language.

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Problems in Karlgren’s Hypothesis


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