Kunana Evidence for the Number of Phonemically Distinct Syllables in Old Japanese

By

Mary Esther Beckman

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[Signatures]

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[Signature]
Glossary of Sources and Technical Terms

Ateji  'Assigned graphs'. Certain manyōgana spellings for proper nouns and some other words had become standard and were maintained as pseudo-logographs even after the development of the hiragana syllabary. Later scribes sometimes recognized that these fossilized kungana and ongana spellings were not logographic and called them ateji.

Ancient Chinese  Karlgren coined this term to designate 'the language around 600 A.D. codified in the dictionary Ts'ie yün, essentially the dialect of Ch'ang-an in Shensi; during the lapse of the T'ang era it became a kind of Koine, the language spoken by the educated circles in the leading cities and centres all over the country' (Karlgren, 1954, p. 212).

Engi Shiki  'Procedural Codes of the Engi [Period]'. The early tenth century collection of procedural prescriptions for implementing the administrative code. It includes liturgies for official Shintō functions transcribed in senmyōgaki.

Hentaigana  'Variant form kana'. Up until 1945 any number of hiragana symbols could be used interchangeably to
write a syllable. In the orthographic reform of 1945, however, one symbol was designated the correct one for each syllable and the other symbols became hentaigana by default.

Hiragana 'Cursive kana'. By the tenth century the strict syllabic transcription had completely superseded the other styles of man'yōgana. There were fewer graphs in common use as ongana or kungana and they were written in an extremely cursive form that distinguished them from graphs used as logographs in the pseudo-Chinese of official documents. These cursive one-syllable kungana and ongana have been used with occasional stylistic modifications up to the present day and in 1945 were codified into the modern Japanese hiragana syllabary.

Kami-ichidan A class of Old Japanese verbs defined by the following inflexional endings: /-Ci_A/ in the imperfective base and in the continuative and imperative forms, /-Ci_Aru/ in the sentence-final and attributive forms, and /-Ci_Are/ in the perfective base.

Kami-nidan A class of Old Japanese verbs defined by the following inflexional endings: /-Ci_B/ in the imperfective base and in the continuative and imperative forms, /-Cu/ in the sentence-final form, /-Cu're/ in the per-
fective base and /-Curu/ in the attributive form.

Kana  'Loan graphs' (as opposed to mana 'proper graphs' for graphs in logographic use in pseudo-Chinese). The term was first applied in the tenth century to graphs in cursive forms used in syllabic transcription (see hiragana). It has since been generalized to mean any type of phonographic use of Chinese graphs and is the element -gana in such compound terms as ongana, kungana and man'yōgana (q.v.).

Kojiki  'Record of Ancient Affairs'. An early eighth-century chronicle that records legends, myths and oral history to support the dynastic claims of the reigning Yamato clan. It includes a hundred and twelve old poems that were part of the oral historians' repertoire.

Kokugaku  'National learning'. The nationalistic scholarly movement that prompted a revival of interest in Old Japanese texts and produced the great philological works of the seventeenth century. The kokugaku scholars laid the groundwork for many aspects of modern linguistic investigation of eighth- and tenth-century Japanese.

Kō/otsu distinction  'A/B distinction'. The eighth-century writing system has pairs of graphemes corresponding to
some single graphemes in tenth-century orthography. The two graphemes in such a pair are believed to represent two phonemically distinct syllables that merged into the single syllable represented by the later grapheme. Rather than prematurely deciding on the features that distinguished the two syllables, it is customary to designate one an A-type syllable and the other a B-type syllable and to speak of an A/B distinction in relation to the later syllable. For example, there are two eighth-century graphemes corresponding to the tenth-century grapheme for /bi/, so one of the two eighth-century graphemes represents an A-type syllable /bi_A/, the other represents a B-type syllable /bi_B/, and an A/B distinction exists for /bi/ in the eighth century.

Kō-rui, Kō-type 'A-type'. See Kō/otsu distinction.

Kun 'Gloss'. Borrowed from a Chinese philological term meaning 'scholium', it came to refer first to Japanese translation of a Chinese text, later to the Japanese words that became attached to particular graphs as glosses, and finally to the practice, which I call 'logographic use', of utilizing the Chinese graphs as direct symbols of the Japanese words attached to them. It is in this third sense that the term kun is used in
the compound word kungana (q.v.).

Kungana Kana based on logographic usage with the sounds of the Japanese glosses intended. When a graph is borrowed to represent a word or part of a word homophonous to one of the graph's kun values it is being used as a kungana. (Compare on and ongana.)

Man'yōgana 'Man'yōshū kana'. Sometimes this term is restricted to ongana and one-syllable kungana, but usually it means all of the different styles of writing in the Man'yōshū from the most logographic to the strictest syllabic transcription.

Man'yōshū (Abbreviated in citations as MYS) 'Collection [for] a Myriad Ages'. A mid-eighth-century anthology of more than four thousand poems compiled from many earlier collections. Ōtomo Yakamochi (died 785) is generally considered to be the final editor who collected the twenty volumes together into a giant anthology.

Nihon Shoki 'Written Record of Japan'. (Also called Nihongi 'Record of Japan'.) An early eighth-century chronicle similar to the Kojiki. A fair number of the legends and poems in the Nihongi are virtually identical with those in the Kojiki.
Old Japanese The standard court dialect of the eighth century as recorded in the poems of the Kojiki, Nihon Shoki, Man'yōshū and several other works.

On 'Pronunciation'. Borrowed from the Chinese philological term for 'pronunciation', this term refers to use of graphs of which the Chinese sound is intended. The term was no doubt first applied to the actual Chinese pronunciations which Japanese tried to imitate. (The Nihon Shoki mentions Chinese 'professors of pronunciation' employed at the University Bureau from the mid-seventh century on.) It later came to refer to two separate phenomena: Japanese approximations of Chinese words that gradually developed into the extensive body of Chinese loan-words in Japanese, and the use of graphs as phonographs to write Japanese syllables phonetically similar to the Chinese word represented (see ongana).

Ongana Kana based on phonographic usage of graphs with the sounds of the Chinese words intended. This first type of kana developed from the Chinese practice of transcribing foreign words syllabically with graphs used only for the phonetic values of the Chinese words they represented.

The relationships among on, ongana, kun and kungana
can be illustrated if we imagine what might have happened if Latin had been written with a logographic script. The early Germanic-speakers who borrowed the Latin writing system would originally have used the graph ݣ to write the Latin word *campus 'plain, field' or some Germanic-accented imitation of the word. From this usage they could then borrow the graph as an ongana to write the Germanic word *kamboz 'comb'. Through a tradition of translation the graph would also become associated with the Germanic word *felbu 'field'. This would be one of its kun values. It could then be borrowed as a kungana to write the first three syllables of the two words *felu bunnu-- 'many thin--'.

Otsu-rui, otsu-type 'B-type'. See Ō/otsu distinction.

Senmyōgaki A type of man'yōgana in which the inflexional endings and case particles (transcribed phonographically with one-syllable kana) were written half the size of the nouns and verb stems (transcribed usually with logographs).

Shoku Nihongi 'Record of Japan, Continued'. Late eighth-century chronicle that records official history after the last events recorded in the Nihon Shoki. The imperial edicts and proclamations in the Shoku Nihongi
are recorded in senmyōgaki and are the only extensive prose texts in Old Japanese.

**Yodan**  A class of Old Japanese verbs defined by the following inflexional endings: /-Ca/ in the imperfective base, /-CiA/ in the continuative form, /-Cu/ in the sentence-final and attributive forms, /-CeB/ in the perfective base and /-CeA/ in the imperative form.
I. Introduction

The investigation of written records has always been an invaluable tool in historical linguistics. It could even be called the primary tool; for it was only out of desperation at the lack of written records for many stages of many languages that linguists developed other tools such as the comparative method. It is not a perfect tool, however, because writing is only an imperfect and distorted representation of speech. Even alphabets give distorted pictures, because they tend to preserve the conventions of earlier stages of a language or even of a completely different language if borrowed from another speech area. But these problems are minuscule in comparison with those presented by written records in non-alphabetic writing systems.

Suppose for the moment that Latin texts had been written in a logographic script, that the attested form of the Latin word for 'goat' were not CAPRA but 羊. Then on the basis of regular correspondences among cognates in the modern Romance dialects we would reconstruct from the modern words for 'goat' a proto-Romance /kapra/ which we might posit as the phonetic value of 羊 in Latin. In fact, however, Latin did not employ a logographic writing system, and it is precisely the close fit between reconstructed proto-Romance and Latin as attested in written records that gives linguists confidence in the comparative method. Now, Bernhard Karlgren believed that the language
codified in the *Ch'ieh Yün* rhyming dictionary (c. A.D. 600) was the ancestor of most modern Chinese dialects just as Latin was the ancestor of modern Romance dialects (Karlsgren, 1954, p. 212). Unlike Latin, however, this Ancient Chinese has been preserved only in records in logographic Chinese script. So Karlsgren reconstructed a proto-language, supplementing material from modern dialects with loanwords into Japanese, Korean and Vietnamese, and posited his proto-forms as values for the Chinese logographs in the seventh-century texts. But if Karlsgren was forced to reconstruct proto-forms, what advantage did the written records give him over the Germanic scholar who reconstructs proto-Germanic? First, the written records allowed him to assign a date to his proto-language. Second, they provided many valuable clues such as rhymes and a few phonographic transcriptions of foreign words. Still there is no way to get around the paradox that because of the logographic nature of the Ancient Chinese writing system Karlsgren was forced to reconstruct attested forms.

Around the time of Karlsgren's Ancient Chinese, the Chinese writing system was imported into Japan. As noted above, when a writing system is adopted from one speech area into another, the conventions developed for writing the first language are not always appropriate for writing the second. This was the case when the Ancient Chinese logographic writing system was adopted to write a non-
analytic language, Old Japanese. Even before the writing system was imported into Japan, however, the Chinese had developed a method of using Chinese graphs as phonographic symbols for the transcription of foreign words. This method was expanded in Japan into a crude syllabary to write names and, later, poetry. But because of the prestige of Chinese and the Chinese writing system, the syllabic principle never completely replaced the logographic principle in the Japanese writing system. Moreover, until orthographic reform in 1945, the Japanese never hit upon the idea of one graph for one syllable. In the traditional syllabaries there have always been several alternate symbols for a single syllable, and in the eighth-century writing system there were dozens. In reconstructing the phonology of Old Japanese, then, a necessary preliminary step is to determine which graphs can be used interchangeably to write any one syllable. Assuming that these sets of interchangeable graphs, or graphemes, represent phonemically distinct syllables in Old Japanese, we can then proceed to reconstruct values for them by means of evidence from later stages of the language and from Ancient Chinese. In this paper, however, I will not proceed to the second step of reconstruction. Instead, I will concentrate on a hitherto relatively neglected aspect of the eighth-century writing system in an attempt to set up more accurate graphemes for Old Japanese texts.
II. The Man'yōgana Writing System

Japanese is attested in names in Chinese chronicles from as early as the third century (Doi, p. 59), but it is not until the eighth century that there is any extensive body of texts. Between these two dates there is the obscure and intricate history of the importation of the Chinese writing system into Japan and the development from it of a native Japanese writing system.

From references to Japan in Chinese histories and accounts of relations with Korea in later Japanese chronicles, the importation of the Chinese writing system into Japan has been dated roughly to the middle of the fifth century (Mabuchi, 1968). It is extremely likely that writing in Japan was at first the exclusive province of Chinese and Korean scribes. It is also extremely likely that all writing was at first done in Chinese. That is, Chinese in Japan played a role roughly analogous to that of Latin in medieval Europe. From the mid-seventh century on, however, there are increasingly numerous texts in increasingly Japanized Chinese (Kotani, pp. 16-17). While texts in Japanized Chinese cannot, of course, be taken as attestations of Japanese, they are evidence that writing was no longer the exclusive province of non-native scribes. Moreover, there is a progression from these to later texts which are in Japanese. And because of the logographic nature of the Chinese writing system, no clear line can be drawn between
texts in a very Japanized Chinese and texts in Japanese written in a very logographic style. In other words, the evidence is that at some point there emerged a class of native record-keepers who knew little or no Chinese, but who had been forced to memorize enough rules about Chinese word-order and such to be able to write reports and official accounts in something that looked like Chinese, but was meant to be read in Japanese.

Now, the Chinese had from early times a convention of transcribing foreign words syllabically by using logographs only for the phonetic value of the Chinese word represented. This had been used in China for the transcription of Buddhist texts in Sanskrit and Pali, and for the transcription of foreign names in general. When the Chinese writing system was introduced into Japan this convention was naturally adopted to write Japanese names, and at some point was generalized to write whole sentences of Japanese. The earliest extant text in which the method is used to transcribe anything longer than names or single words in glosses is the Kojiki of 712, in which one hundred and twelve poems transcribed syllabically are interspersed with a prose text in mildly Japanized Chinese. But it is clear from a passage in the preface to the Kojiki that the method of syllabic transcription had been in rivalry with translation into Chinese for some time:
In ancient times it was difficult to lay out sentences and construct phrases in Chinese graphs. When setting down a narrative using the graphs only according to their semantic values (kun), the words did not fit the meanings. When stringing the graphs out entirely for their phonetic values (on), the account tended to be ever so long. Therefore, we will now either mix kun and on in a single phrase, or sometimes within the narrative of a single event we will record entirely using kun. Then, if the purport of a word is hard to see, we will make it clear with a note, but if the meaning is easy to grasp we will not further annotate (NKBT Kojiki, pp. 46-49).

Clearly the compilers of the Kojiki intended that the work be read in Japanese, and even provided notes glossing obscure logographs in syllabic transcriptions. But for the sake of economy, they say, they chose to write it mostly in translation. This is rather simplistic, of course. The tremendous prestige of the Chinese language and culture was no doubt an even more influential factor, and practically all of the extant prose from this period is in Chinese or quasi-Chinese.

Poetry, however, was a different matter. Records and historical accounts could be translated with reasonable assurance that the sense of the original would be recovered when the text was read back into Japanese. But with poetry, where the actual wording and not the sense was paramount, translation was not a suitable method. Yet translation was prestigious. The rivalry between translation and syllabic transcription was thus especially fierce in the recording of poetry. The writing systems of the Man'yōshū, an anthology of more than four thousand poems compiled circa 750,
attests to the skirmishes and various uneasy compromises between the two. Some of the poems in the Man'yōshū, like those in the Kojiki, are in strict syllabic transcription. Others are in a very logographic style that is Japanized Chinese taken to the extreme. Most of the poems, however, fall somewhere between and are transcribed in a clumsy mixture of the two systems whereby a graph could be used logographically to write a Japanese word corresponding in meaning to the Chinese word the graph represented, or phonographically as an ongana to write a syllable in Japanese that was close in sound to the Chinese word. As a further complication, a graph that had become associated with a particular Japanese word in the logographic system could be 'borrowed' as a kungana to write another homophonous word or part of a word. For example, the graph 毛 (Ancient Chinese [mau]² 'fur, feathers') can be read as an ongana for the syllable /mo/, as a logograph for the Old Japanese word /keA/ 'fur, hair', or as a kungana for the syllable /keA/ in another word. Moreover, most graphs had more than three possible readings, because, as the compilers of the Kojiki put it, 'The words did not fit the meanings.' That is, there was rarely a simple correspondence between one Japanese word and the Chinese word represented by the graph. Most graphs could be used as logographs for two or three Japanese words, and hence as kungana for two or three different syllables or sequences of syllables. In addition,
the Japanese were not averse to puzzles and conundrums that made the system even more complicated. For example, in MYS 1874 the two syllables /-duku-/ in /yupudukuyo/ 'early evening moon' are written 三伏一向 'three prone and one supine' because of a dice throw called /tuku/ in which three of the dice land face down and the fourth face up.

There is some evidence that even by the time of the compilation of the Man'yōshū, the unwieldiness of this motley writing system was leading to its disfavor. The Man'yōshū was a hodge-podge anthology put together from earlier collections with no attempt to edit or rewrite, and the man'yōgana writing system varies in complexity from volume to volume. While many of the poems cannot be precisely dated, there does seem to be a correlation between the date of a poem and the complexity of its transcription. Poems attributed to earlier authors are in the mixed logographic-syllabic styles. Poems attributed to eighth-century authors are for the most part in the more strictly syllabic styles. It is especially significant that there are concentrations of poems in a strict syllabic transcription in volumes Five, Fourteen, Fifteen, Eighteen and Twenty. These five volumes contain poems written or collected by the probable editor of the Man'yōshū or by relatives and family friends of his father's generation.⁴ The same style of using only ongana and one-syllable kungana was used to transcribe the poems in the Kojiki and the Nihon Shoki.
(compiled 720). It seems that by the early eighth century, the more logographic man'yōgana styles were losing out to the strictly syllabic ones.

By the time of the next big concentration of texts in Japanese two centuries later, the strictly syllabic style of man'yōgana had developed into the cursive script that is the basis of the modern Japanese hiragana syllabary. Man'yōshū poems in the more logographic styles of man'yōgana could no longer be read by the average literate person and readings for these poems were passed down from generation to generation as secret traditions in families of poet-scholars until a revival of interest in the Old Japanese texts occurred in the Tokugawa period nearly a millenium later.

III. 'Extra' Graphemes in Man'yōgana

As noted above, there was a revival of interest in Old Japanese texts in the Tokugawa period (1603-1867). This revival was in large part a reaction against the tremendous prestige accorded to Chinese studies by the Tokugawa ruling class, which found justification for its paternalistic regime in various Chinese Classics. While government scholars studied the Classics, poets and scholars centered in and around the old capital at Kyoto stressed kokugaku 'national learning'. They regarded the native culture and language as superior to any importations and looked to the Kojiki, Man'yōshū and other Old Japanese texts as standards for the native language in its 'purest' form. There was an immense
outpouring of commentaries and treatises on these hitherto neglected texts. In such close study the old orthography could not be ignored, and more than one of these kokugaku scholars noted discrepancies between man'yōgana and the later syllabaries. One such 'discovery' was Motoori Norinaga's observation that the syllabic style of man'yōgana in the Kojiki had two sets of graphs in complementary distribution corresponding to some single graphemes in later syllabaries. For example, for the later kana symbol 乙 the Kojiki had two man'yōgana, 许 and 乙, and a word written with 许 would never in another place be written with 乙. Norinaga's student Ishizuka Tatsumaro later expanded on this and drew up lists of graphs that were used as ongana in the Kojiki, Nihon Shoki and Man'yōshū, grouping them in sets according to which could be used interchangeably with which. For twenty of the symbols in later syllabaries he set up two distinct man'yōgana sets.

Motoori's passing observation was only one of many brilliant insights tossed off in a sentence or two in his extensive work, however, and Ishizuka was a relatively minor and obscure student. The original observation and Ishizuka's work on it were largely ignored until the early part of this century when Hashimoto Shinkichi rediscovered the phenomenon and wrote an article on Ishizuka's work. Hashimoto revised Ishizuka's work, reshuffling several of his man'yōgana
sets, and then went on to interpret them as not merely a strange old orthographic convention, but reflections of phonemic distinctions in the Old Japanese sound system. For the two distinct sets corresponding to later /e/, for example, Hashimoto posited values /e/ and /ye/. Hashimoto was hesitant to posit actual values for the other sets, but he made several shrewd observations that have influenced all subsequent scholarship on the topic.

First, Hashimoto noticed that the later syllables corresponding to distinct pairs of man'yōgana sets could be arranged in three groups: syllables ending with final /i/ (/ki, gi, fi, bi, mi/), syllables ending with final /e/ (/ke, ge, fe, be, me/) and syllables ending with final /o/ (/ko, go, so, to, do, no, ro, yo/). Next, he noted that the man'yōgana sets for syllables in the i-group and e-group played a part in some Old Japanese inflexional categories. That is, for later syllable /ki/, /fi/ and /mi/ there are pairs of man'yōgana which can be represented by graphs 仏, 比 and 美 as against 異, 斐 and 微. The continuative bases of yodan class verbs such as /oki/ 'to place', /kofi/ 'to beg' and /fami/ 'to gnaw' were always written in man'yōgana with graphs from the sets 仏, 比, and 美. But the continuative bases of kami-nidan class verbs such as /oki/ 'to rise', /kofi/ 'to long', and /tami/ 'to go around' were always written with graphs from the sets 異, 斐 and 微. Similarly, for later sylla-
bles /ke/, /fe/ and /me/ there were pairs of man'yōgana
sets represented by 祢,敝 and 賣 as against 氣, 閑 and 米. The imperative forms of the yodan class
verbs /oke/, /kofe/ and /fame/ were always written with
graphs from the sets 祢,敝 and 賣. But the perfec-
tive bases of these same verbs were always written with
graphs from the sets 氣,閑 and 米. Hashimoto con-
cluded that the man'yōgana sets used to write the contin-
uative bases of yodan verbs must represent syllables with
some common phonetic element that distinguished these from
the continuative bases of the kami-nidan class verbs, and
he accordingly grouped the former sets together as repre-
senting kō-rui ('A-type') syllables and the latter as
representing otsu-rui ('B-type') syllables. Similarly,
the sets used to write the imperative forms of the yodan
class verbs must represent syllables with some common
phonetic element distinguishing them from the perfective
bases. He grouped these sets together as representing
kō-rui syllables. The sets used to write the perfective
bases then became representations of otsu-rui syllables

The paired sets of man'yōgana corresponding to later
syllables with final /c/ could not be so neatly classified
on the basis of their function in distinguishing inflexional
categories. Hashimoto noted, however, that graphs used as
ongana in one set of a pair never occurred in the same rhymes in Ancient Chinese as those for ongana in the other set of the pair. On the basis of the Ancient Chinese rhyme charts, then, he was able to group these sets of man'yōgana into similar kō and otsu types.

One last observation that Hashimoto made was that the distinction between the kō-rui and otsu-rui syllables was probably not a difference in the initial consonant. Because the later syllables for which there were kō/otsu distinctions in man'yōgana orthography all ended in /i/, /e/ or /o/, never in /a/ or /u/, Hashimoto thought that the distinction between the two types must have been a difference in the vowel. He found further evidence for his view in that the Ancient Chinese words represented by the graphs used as ongana for kō-rui syllables of the o-group never occurred in the same rhymes as those represented by graphs used as ongana for the otsu-rui syllables (Hashimoto, 1966, p. 158).9

Hashimoto's theory that the non-interchangeable sets of man'yōgana corresponding to later single graphemes represented phonemically distinct syllables in Old Japanese, his grouping of these sets into two types on the assumption of a common phonetic element, and his view that the distinction between the two types was not a difference in initial consonant have all three become tenets of the accepted orthodoxy. Subsequent scholarship can be described as a series
of attempts to interpret Hashimoto's kō-rui and otsu-rui syllables. These attempts have relied on either the Ancient Chinese values for the ongana or on evidence within Japanese.

IV. Interpretations Based on Evidence Within Japanese

One of the most influential scholars to follow upon Hashimoto was Arisaka Hideyo. Arisaka did a great deal of work in Ancient Chinese phonology and drew his main conclusions about the values of Old Japanese phonemes from comparison with Ancient Chinese values for the graphs used as ongana. But he is remembered today mostly for his work on two phenomena within Old Japanese. The first of these phenomena is that of vowel alternation among sets of related morphemes such as /sakeB/ 'rice wine' and /sakadukiA/ 'wine cup'. Arisaka was by no means the first to notice these alternations, but he can be credited with systematically separating them from dialectal variations and with reducing them to three or four basic correspondences between vowels occurring in the bound morphs and vowels occurring in the freely occurring morphs:

1. /eB/ in the unbound form --/a/ in the bound form
2. /iB/ in the unbound form --/u/ in the bound form
3. /iB/ in the unbound form --/oB/ in the bound form

(Arisaka, pp. 3-68).

Other scholars took these alternations as evidence for postulated values for the eighth-century vowels, saying,
for instance, that since /e_B/ alternated with /a/ it must have been closer to the low vowel than /e_A/ was. Arisaka was quick to point out the fallacy of such arguments. He stressed that these alternations were already a well-established fact in the period from which the earliest texts date and that they have continued to be in opposition up to the present day. They can tell us no more about the values of the Old Japanese phonemes than they do about the values of the modern phonemes involved. Granted that these alternating vowels probably developed from allophones of single vowel phonemes and that at the time when the alternations developed the actual values of the alternating phones must have been close, that time could have been a hundred years or a millenium before the first Old Japanese texts. They are no grounds for concluding that the two vowels in the eighth century were anything like each other (Arisaka, pp. 424-425).

Arisaka discovered the second of the two phenomena for which he is remembered when he was trying to class the two types of /mo/ in the Kojiki into a ko- type and an otsu-type. While examining the other syllables in the o-group, he noted that certain types of syllable tended not to occur in the same stem with the otsu-type syllables in the o-group. That is, syllables ending in /a/ and /u/ and syllables of the type /Co_A/ occurred together freely in the same stem, but these three types of syllable co-occurred
only very rarely with syllables of the type /CoB/. On the basis of this tendency Arisaka classified the man'yōgana 毛 as representing /moA/ in the Kojiki and the man'yōgana 母 as representing /moB/. But he did not stop there. After setting up these 'rules of syllable combination' within word stems, Arisaka noted that there was some evidence that the restrictions may have held across morpheme boundaries at an earlier period in the language. For instance, the last syllable /koB/ in such words as /koBkoB/ 'here' and /soBkoB/ 'there' could be analyzed as a suffix meaning '-place'. It could further be analyzed as a variant form of the syllable /-ku/ in /iduku/ 'where', with the 'rules of syllable combination' determining which variant form would be suffixed onto which particular word. Arisaka interpreted all this as the last remnants of an earlier system of vowel harmony with /a/, /u/ and /oA/ as masculine (or back) vowels and /oB/ as a feminine (or mid) vowel (Arisaka, pp. 103-116). In light of Arisaka's scruples against taking the vowel alternations as evidence for any postulated values for the eighth-century vowels, one would expect a similar hesitation in applying a vowel harmony system proposed for some earlier stage of the language. Arisaka, however, had earlier proposed on the basis of the Chinese evidence that /oB/ differed from /oA/ in being a more mid vowel. He took the restrictions on syllable combination as supporting evidence of this (Arisaka, p. 67).
Most later scholarship based on evidence within Japanese has been internal reconstruction elaborating on Arisaka's work. The one notable exception is Roy Miller's reconstruction of proto-Tōkyō-Satsuma. Setting up correspondences between modern standard Tōkyō Japanese and the Satsuma dialect spoken in southern Kyūshū, Miller postulates eight vowels for the proto-language. Miller then goes further and identifies this eight-vowel proto-language with the eighth-century central dialect recorded in the Old Japanese texts. He takes his reconstructed vowel system as evidence supporting the orthodox eight-vowel interpretation of the extra graphemes in man'yōgana (Miller, pp. 180-184). As Haruo Aoki points out, however, there is evidence in eighth-century gazetteers that the Kyūshū dialects were already markedly different from the central dialect represented in the bulk of the man'yōgana texts, and a proto-Tōkyō-Satsuma probably should not be identified with such a late stage of the language. Aoki further questions Miller's reconstructed eight vowels, proposing rules that show how five vowels in the proto-language could develop into the eight vowel correspondences that Miller set up for the two dialects.

V. Interpretations Based on Evidence From Chinese

Evidence within Japanese has thus offered at best only indirect hints as to what the extra graphemes in man'yōgana represented. As Arisaka pointed out, internal reconstruc-
tion based on vowel alternations within related morphs can give an idea of the values of the phonemes involved at some earlier period before they split off from each other, but these values cannot be applied to the period of the man'yō-
gana texts. Likewise with the evidence for vowel harmony, we have no assurance that all the vowels in any set retained the common feature determining the set into the eighth century after the vowel harmony system had broken down.\textsuperscript{11}

Similarly, the problem of dating prevents applying the comparative method. Contemporary accounts and the provincial poems recorded in gazetteers and anthologies show a great deal of dialectal variation within eighth-century Japanese, and there is no evidence that any two modern dialects diverged from the central dialect rather than developing separately from their eighth-century ancestors. Reconstructions of proto-languages from modern Japanese dialects can give an idea of the phonemes in the language at some earlier stage, but these values cannot be applied to Old Japanese.

In contrast, the Ancient Chinese values for graphs used in Old Japanese texts can be dated and, because of the ongana, can be applied to the interpretation of the extra graphemes in man'yōgana. Scholars were quick to recognize this. Hashimoto himself used the Ancient Chinese rhymes to class syllables in the o-group into kō- and otsu-types, and as evidence supporting his hypothesis that the extra
graphemes represented a difference in the vowel rather than in the initial consonant or pitch of the syllables involved. And there have been any number of scholars since Hashimoto who have reconstructed values for Old Japanese phonemes on the basis of the Ancient Chinese pronunciations of the graphs used as *ongana*. Most of these reconstructions have been prejudiced by an initial assumption about what the extra graphemes represented. This assumption is that eighth-century Japanese must have had a strict (C)VCV syllable structure. Therefore, when there are two graphemes in *man'yōgana* corresponding to later single graphemes, these two graphemes must represent syllables with the same initial consonant but differing vowels, and therefore there must have been eight vowels with three of the vowels occurring after only some of the consonants.

Recently, however, some scholars have challenged this assumption. Hattori Shirō, for example, has noted that it makes more sense to postulate a palatal glide for the *kō*-type syllables in the *e*- and *i*-groups than to insist on two separate vowel phonemes that can occur only after five out of nineteen consonants. Mabuchi Kazuo has interpreted the Ancient Chinese values for the *ongana* in the *Nihon Shoki* as indicating an opposition of syllables of the structure /CwV/ versus /Co/ for the two types of syllable in the *e*-group (Mabuchi, 1973). And Roland Lange has worked with the Ancient Chinese values for the *ongana* in the *Man'yōshū* to
reconstruct palatal glides as the distinguishing feature in the ı-group and e-group syllables and labio-velar glides as the distinguishing feature in the o-group.

Roland Lange's work challenges the orthodox interpretation on another point as well. There are examples in the *Man'yōshū* of graphs for ongana classed as otsu-type being used to write syllables classed as kō-type and vice versa. Some of this can probably be dismissed as later scribal errors, but not all. Especially for the o-group syllables with initial consonants /y, r, s, t, d/ there are many examples of breakdown in the kō/otsu distinction. Unlike earlier dismissals of these as mere 'exceptions' heralding the later merger of the two types, Lange's interpretation is that these syllables were already no longer phonemically distinct in the eighth-century central dialect (Lange, pp. 125-126). Lange's interpretation is important in that it reopens the question of graphemics. Most scholars up to now have unquestioningly accepted the man'yōgana graphemes set up by Hashimoto and only argued over what features distinguished the extra ones. Lange questions the extra graphemes themselves. Because his criteria of what constitutes a man'yōgana set are stricter than Hashimoto's were he proposes five fewer graphemes. In the next chapter I will examine the graphs used as kungana in the *Man'yōshū* to see what graphemic sets they fall into.
VI. **Analysis of Man'yōgana Graphemes on the Basis of the Kungana**

Unlike the ongana, which provide the link to the phonetic evidence available in Ancient Chinese, the kungana provide few clues to the actual values of the phonemes of Old Japanese. For this reason scholars have for the most part ignored the kungana in their interpretations of the extra graphemes in man'yōgana.\(^{12}\) It is a mistake, however, to ignore the kungana when setting up graphemic sets. Even if they give no clue to the phonetic values represented, they do show which words or parts of words were homophonous and which were in phonemic opposition. Indeed, in theory the kungana are better evidence than the ongana for this. That is, at a time when the scribes were no longer necessarily speakers of Chinese, the association between the Chinese word represented by a graph and the use of that graph as a borrowed symbol for a phonetically similar syllable was lost. When used as an ongana a graph became an arbitrary phonographic symbol for a particular syllable. But with the kungana the association to the native word could still be a part of the scribe's mental furniture. It could be argued that when a graph was used as a kungana the scribe was making an almost conscious statement about the homophony of two words or parts of words. Surely this must have been the case when the scribe contrived such a kungana representation as 三伏一向 for the /-duku-/ in /yupudukuyo\(_A\)/ (see
p. 8 above). And surely something like this would be better evidence of which syllables were in phonemic opposition and which were not than the ongana, where spelling errors could mean merely that the scribe had forgotten to which grapheme an arbitrary phonographic symbol belonged.

This argument does not work for all the kungana, however. The evidence is that some of the one-syllable kun-gana were arbitrary phonographic symbols no different from the ongana. The graphs 半 and 呼, for example, were used as kungana for the syllable /wo/, the first because it was a logograph for the interjectional particle /wo/ and the second perhaps because it could be a logograph for the exclamation /wo/ "Hey you!". By the time of the Man'yōshū, however, the original associations between the graphs' use as logographs and their use as kungana seem to have been lost. There are no unequivocal examples of 呼 being used as a logograph for the exclamation, and 半 was used so often and in so many different contexts as a kungana for /wo/ that it seems unlikely that a scribe using it to write the interjectional particle would consider it a logographic use. By Man'yōshū times these two graphs had surely become arbitrary phonographic symbols like the ongana. Later scholars even mistakenly classed them as ongana.13

However, while it is incorrect to say that all kungana are better indicators of what syllables were in phonemic opposition, they are all at least as good as the ongana. And it is significant that the kungana in the Man'yōshū show
exceptions to Hashimoto's kō/otsu sets for all those syllables that the ongana do. The syllables for which Lange rejected the traditionally postulated kō/otsu opposition are /zo, to, do, yo, ro/. For each of these syllables there are examples of graphs classed as kungana for kō-type syllables being used to write syllables classed as otsu-type or vice versa. Many of these examples are in the poems recorded in the mixed logographic-syllabic styles of man'yōgana, i.e. in poems that probably were recorded in the seventh century or earlier. Taken together with the ongana exceptions, these kungana spelling errors are strong evidence that the kō- and otsu-types for these five syllables had merged and were no longer in phonemic opposition by the eighth century. In addition, the kungana evidence is that /soA/ and /soB/ had also merged and that /giA/ and /giB/, /kiA/ and /kiB/ may have been on the point of merging. In what follows I will summarize the kungana evidence for mergers in each of these syllables.

A. /toA/ and /toB/; /doA/ and /doB/:14

1. In MYS 546 and 3215 取 /toAri/ 'to grasp' is used as a kungana to write the last two syllables of /yadoBri/ 'to take shelter for the night, lodge'.

My positing /toAri/ for 'grasp' could be questioned since the majority of ongana examples in the Man'yōshū have 等 or 等, which are graphs for the otsu-type syllable. The few exceptions are all in provincial poems or in vol-
ume Eighteen and so can be rejected as dialectal variation or later scribal errors. In the **Kojiki**, however, the word is usually written with 斗, an **ongana** for /toA/, and since the **Kojiki** is the more conservative orthographically (it preserves a kō/otsu distinction for /mo/, for example), I have taken /toari/ as the correct form and MYS 546 and 3215 as **kungana** errors.

2. The graph 利 /toA/ 'steel, acuity' is used to write the syllable /doB/ in /tukapeBmeBdoB/ 'although I would serve' in MYS 780 and /adoBmopiAte/ 'mustering' in MYS 1718.

   For the value of 利 compare /koBkoBroBdoA/ 'emotional steel, staunchness' written 情利 in MYS 2525 and 3275 with the same word written 情度 in 4173 and 許己呂度 in 3973 (度 is an **ongana** for /doA/).

   For /adoBmopiAte/ compare 安藤毛比 in MYS 199, 安藤母比 in 4331 and 阿藤母比 in 1780 (藤 is an **ongana** for /doB/).

3. The graph 言 /toBpu/, the quotative case particle plus 'to say', is used to write the last two syllables of /tumadoApu/ 'to woo' in MYS 2011.

   My positing /tumadoApu/ for 'to woo' could be questioned on the basis of the one **Kojiki** example of the word, which has 査, an **ongana** for /doB/. (The only **Man'yōshū** example of the word in syllabic transcription is in volume Eighteen.) I have posited /tumadoApu/ on the grounds that
it is a compound word formed from the morpheme /tuma/ 'wife' and /to_Apu/ 'to visit, to ask'. A slight majority of the syllabic transcription examples of 'to visit' in the Man'yō-
shū and the Kojiki have ko-type ongana for the first syl-
lable.

4. The graph 車 /to_A/ 'gate' is used to write the
quotative case particle /to_B/ in the line 生刀刺て寸
/ike_Ari to_B mo naki_A/ 'It's not as if I live' in MYS 2525.

Some scholars read this line /ike_Aruto_A mo naki_A/ 'I
have no determination to live', analyzing the /to_A/ of
/ike_Aruto_A/ as being the same element as the /do_A/ in
/kō_kōBoro_B do_A/ 'staunchness'. This analysis is supported by
the same line being written 生刀毛無 in MYS 215 and 227
(刀 is an ongana for /to_A/), and this would make the kun-
gana spelling correct in 2525. But if we accept this anal-
ysis we would have kungana errors in MYS 946 and 2980, where
the same line is written 生友奈重二 and 生友名師
(友 /to_Bmo/ 'companion' being used to write the syllables
/...to_A mo/).

5. The graph 跡 /(a)to_A/ 'footsteps, traces' is used
as a standard kungana for /to_B/ and /do_B/.

All occurrences of the word 'traces' written in syl-
labic transcription have /to_A/ for the second syllable (cf.
阿都 in Nihon Shoki 96 and 安刀 in MYS 3625), and yet
the graph is used hundreds of times as a kungana to write
the syllables /to_B/ and /do_B/, fewer than a dozen times to
write /to_A/ or /do_A/. There are two possible explanations for this: either (1) all the examples of the word for 'traces' being written in syllabic transcription as /ato_A/ are wrong, or (2) at the time when the graph was being established as a standard kungana the phonemic opposition between /to_A/ and /to_B/ was already breaking down. Ōno Susumu's explanation that the kungana reading is 'secondary' and so somehow does not count as evidence for lack of phonemic opposition must be rejected (Ōno, 1976, p. 61). Because there must have been a time when there was a direct and primary association between the graph's use as a logograph and its use as a kungana for a homophonous syllable in another word. If we accept the first of the two possible explanations, then there are several more ongana examples against a ko/otsu distinction for /to/ and the examples of 記 being used to write /to_A/ are also errors. If we accept the second possible explanation, then the merger between the two syllables must have begun well before the eighth century. Either way we have more evidence that /to_A/ was no longer phonemically distinct from /to_B/ by the eighth century.

6. The graph 記 for /(a)to_A/ 'traces' is used to write the quotative case particle /to_B/ in MYS 1023, 1047 1059, 2089, 3791 (3x), etc.

These are only some of the examples of 記 being used to write otsu-type syllables. See the discussion for 記 in
the section above.

B. /ro\textsubscript{A}/ and /ro\textsubscript{B}/:

The graph カ /siro\textsubscript{A}/ 'white' is used to write the syl-

lables /siro\textsubscript{B}/ in the place name /ipasiro\textsubscript{B}/ in MYS 141 and

the syllables /ziro\textsubscript{B}/ in the noun /aziro\textsubscript{B}/ 'fishing weir'

in MYS 264 and 1137.

For the place name in MYS compare the same name written

磐代' in MYS 10, 143, 144 and 146 and 石代' in 1343 (代' is a kungana for /siro\textsubscript{B}/). For /aziro\textsubscript{B}/ the only other ex-

ample in syllabic transcription is 阿自吕 in MYS 1135

(吕 is an ongana for /ro\textsubscript{B}/), but the word is probably a

compound word from /ami\textsubscript{A}/ 'woven, net' plus /siro\textsubscript{B}/ 'enclosed

space'. (It was not uncommon for an earlier sequence of

nasal plus vowel plus unvoiced obstruent to go to simply a

voiced obstruent through syncope and assimilation. Compare

such words as /to\textsubscript{A}zi/ 'matron', which probably came from

/to\textsubscript{A}/ 'gate' plus /nusi/ 'master', or /abi\textsubscript{A}ki\textsubscript{A}/ 'drawing in

the net' from /ami\textsubscript{A}/ 'net' plus /pi\textsubscript{A}ki\textsubscript{A}/ 'pulling'.)

Taken by themselves these three kungana examples would

hardly constitute enough evidence to propose a merger be-
tween /ro\textsubscript{A}/ and /ro\textsubscript{B}/. They can only supplement the con-
vincingly large bulk of evidence from ongana examples.

Lange lists a few of these (Lange, pp, 164-165).

It is not surprising that there are so few kungana ex-

amples for the merger between these two syllables; there are

very few examples of these syllables being written with kun-
gana. In fact, there are only a very few graphs that can be
used as kungana for these syllables, or for any syllable that begins with /r/. This is because /r/ never occurs word-initially in Old Japanese.

C. /yoA/ and /yoB/:

1. The graph 夜 /yoA/ 'night' is used to write the syllable /yoB/ in /tukuyoB.miA/ 'god of the moon; moon' in MYS 3245.

   Compare /tukuyoB.miA/ written 月余美 in MYS 3599 and 3622 (余 is an ongana for /yoB/).

2. The graph 世 /yoB/ 'age, world' is used to write the syllable /yoA/ in /isayoApu/ 'to waver' in MYS 1008.

   Compare /isayoApu/ written 伊佐夜歴 in MYS 428, 不知夜歴 in MYS 1071, 不知夜經 in MYS 1084 and 射狭夜歴 in MYS 393 (夜 is a kungana for /yoA/).

3. The graph 代 /yoB/ 'age, world' is used to write the syllable /yoA/ in /isayoApu/ 'to waver' in MYS 264.

   As with /ro/ these three kungana examples only supplement a much larger group of ongana examples. And, again as with /ro/, it is not surprising that there are so few kungana examples of the merger between the two syllables /yoA/ and /yoB/; there were relatively few words in which these syllables occurred in Old Japanese. Also, for some reason none of the logographs for the one-syllable words /yoA/ 'night' and /yoB/ 'age, world' became standard kungana as did 跡 and 迹 for /toB/ and 乎 and 呼 for /wo/. It could be that the graphs 跡 and 迹, because they shared the
same phonetic element, looked like ongana (just as 呼 and 呼 probably did), and so it may have been easier for them to become arbitrary phonographic symbols like the ongana. Of the standard logographs for 'night' and 'age, world', on the other hand, no two share the same phonetic, and they were all used so often as logographs that it might have been difficult for them to be treated as arbitrary phonographic symbols.

D. /so_A\ and /so_B/; /zo_A\ and /zo_B/:

1. The graph 世 /yo_B so_A/ 'forty' is used to write the word /yo_B so_B/ 'something alien' in MYS 383.

The /so_A/ of 'forty' is the same element meaning 'ten' as in /yas_0_A/ 'eighty'. Compare /yas_0_A/ written 甲在 in MYS 3856, 4349 and 3613 (甲 is an ongana for /so_A/). Compare also the frequent use of the graph 十 'ten' as a kun-gana for /so_A/.

For the value of /yo_B so_B/ 'something alien' compare the word written 隅曾 in MYS 3978, 4169 and 4269 (曾 is an ongana for /so_B/).

2. The graph 副 /so_Ape_B/ 'to keep by one's side' is used to write the syllables /so_Bpe_B/ in /yo_B so_Bpe_B/ 'to liken to, to be linked by rumor to' in MYS 2326 and 2659.

My positing /so_Ape_B/ for 副 could be questioned on the grounds that 'to keep by one's side' is written syllabically 曾倍 in MYS 1642 (曾 is an ongana for /so_B/). On the other hand, it is written 倍 in MYS 4465, and the
related intransitive verb /so\textsubscript{A}pi\textsubscript{A}/ 'to go alongside, to be a companion' is written 素布 in MYS 2637 (素 and 素 are both ongana for /so\textsubscript{A}/). The other examples of these two verbs written in syllabic transcription all have ongana for /so\textsubscript{A}/ for the first syllable also, but they must be rejected as evidence because they are from volume Eighteen or from dialect poems. One last piece of evidence for the value of 副 is that it is used to write the last two syllables of the verb /naso\textsubscript{A}pe\textsubscript{B}/ 'to treat as' in MYS 2463. Compare the same verb written syllabically as 多義 in MYS 1448 and 萊蘇倍 in MYS 4307.\textsuperscript{16}

For the verb /yo\textsubscript{B}so\textsubscript{B}pe\textsubscript{B}/ 'to liken to' compare 与曾悟 in MYS 1641 (曾 is an ongana for /so\textsubscript{B}/).

3. The graph 衣 /so\textsubscript{A}/ 'cloth, robe' is used as a standard kungana for the syllables /so\textsubscript{B}/ and /zo\textsubscript{B}/.

Although there are no unequivocal examples of /so\textsubscript{A}/ 'cloth, robe' written in syllabic transcription in extant Old Japanese texts, the compound word /so\textsubscript{A}de/ 'sleeve' from /so\textsubscript{A}/ 'robe' plus /de/ 'hand' (compare /ko\textsubscript{B}ro\textsubscript{B}mode/ 'sleeve' from /ko\textsubscript{B}ro\textsubscript{B}mo/ 'robe' plus /de/ 'hand') is invariably written in syllabic transcription with ongana for /so\textsubscript{A}/. Also, many philologists think that /so\textsubscript{A}/ 'cloth, robe' is only an extended meaning of the word /so\textsubscript{A}/ 'flax, linen'. Yet in dozens of examples in the Man'yōshū, the graph 衣 is used as a kungana for the syllables /so\textsubscript{B}/ and /zo\textsubscript{B}/. In only one example is it used to write /so\textsubscript{A}/. (This is /ariso\textsubscript{A}pe\textsubscript{A}/ 'rocky beach' written 在衣边 in
MYS 189.) As with the kungana和跡, there are only two possible explanations for this discrepancy. Either (1) all the examples of 'sleeve' written /soA_de/ are wrong, in which case we have more ongana evidence for the lack of phonemic opposition between /soA/ and /soB/ in the eighth century, or (2) at the time before the eighth century when the graph 衣 was becoming established as a standard kungana the phonemic opposition between the two syllables was already breaking down.

E. /kiA/ and /kiB/; /giA/ and /giB/:

1. The graph 霧 /kiBri/ 'mist' is used to write the syllable and following consonant /giAr/ in /minagiArapu/ 'to pile up in billows' in MYS 1401.

For the value of 霧 compare 'mist' written syllabically as 奇里 in 3580, 3615 etc., as 奇利 in 4000, as 奇理 and 絮利 in 4003, as 絮利 in 799, 839 and so on (奇, 絮 and 絪 are all ongana for /kiB/).

For /miAnagiArapu/ compare the same verb written as 濡難蟻羅毗 in Nihon Shoki 118 and as 水難合 in MYS 1849 (蟻' is an ongana for /giA/ and 難 /kiAri/ 'to cut, to slay' is a kungana for the /giAr/ here).

2. The graph 難 /kiAru/ 'to cut, to slay (attrib. form)' is used to write the syllables /giBru/ in the compound verb /yoBkoBoBgiBru/ '(of cloud or mist) to trail across' from /yoBkoB/ 'sideways' plus /kiBri/ 'to mist, to cloud' in MYS 688.
For the value of 敷 compare 'to cut' written syllabically as 伎 in 3603 and as 伎流 in 892 and 4026 (伎 is an ongana for /ki_A/).

For /ki_Bru/ 'to mist' compare the ongana examples in the section above for the derived noun /ki_Bri/ 'mist'.

3. The graph 乙, as an abbreviated form of 起 /oki /oki_B/ 'to rise', is used to write the word /oki_A/ 'offing' in MYS 43 and 511.

There are no examples of the verb /oki_B/ 'to rise' being written syllabically in the Man'yōshū, but since it is a kami-nidan class verb it should have an otstu-type syllable in its continuative-subjunctive base. Also it is written syllabically in Nihon Shoki 83 as 於乙 (乙 is an ongana for /ki_B/).

For /oki_A/ 'offing' compare the word written syllabically as 伎 in MYS 3710, 3628, 3614, as 伎 in 3673 and 4220, as 伎 in 3654 and 3993 and so on (伎, 伎 and 伎 are all ongana for /ki_A/).

4. The graphs 引 and曳, both logographs for /pi_Aki_A/ 'to pull, to draw', are used any number of times as kungana for the syllables /pi_Aki_B/ in the epithet /asipi_Aki_B no_B/.

The literal meaning of this poetic epithet for /yama/ 'mountain' is unknown, but in the nearly one hundred examples of its being spelled out with ongana or one-syllable kungana it is invariably written /asipi_Aki_B no_B/. Yet it is
written twenty times with 足引 (足/asi/ 'foot'), five
times with 足曳, and once with 蘆引 (薬/asi/ 'reed').
There are also several examples of it written 足疾 and 足
痛, which would suggest that it was being analyzed as
meaning something like 'pulling on the feet, foot-wearying'
(疾和痛 are logographs for /yami_A/ 'to be ill' and
/itaki_A/ 'painful'). There are two possible ways to explain
this discrepancy: either (1) there were two variant forms
for this epithet, an old form /asipi_Aki_B no_B/ and a newer
folk-etymologized form /asipi_Aki_A no_B/, or (2) the phonemic
opposition between /ki_A/ and /ki_B/ was already beginning to
break down at the time before the eighth century when足引
became a standard kungana spelling for the epithet.

In addition to these kungana spelling errors, there is
one more bit of evidence that the く/otsu distinction was
breaking down for /gi/. The verb 'to grow calm' is a kami-
nidan class verb /nagi_B/ rather than a kami-ichidan class or
yodan class verb */nagi_A/. We know this because its attrib-
utive form in MYS 4019 is /naguru/ rather than */nagi_Aru/ or
*/nagu/, and also because it is written as /nagi_B/ in syl-
labic transcription. Compare it written 名木 in MYS 1781,
奈木 in MYS 753 and 奈疑 in MYS 4185 (木/ki_B/ 'tree'
is a kungana for /ki_B/ and /gi_B/ and 疑 is an ongana for
/gi_B/). Yet the noun 'calm' derived from this verb is
invariably written as /nagi_A/. Compare it written syllabi-
cally as 茶藝 in MYS 3627, 3993, 4025 etc., as 名藝 in
935, as き in 3333, 509, 1164 and so forth (き is an ongana for /gi_A/ and つ /ki_A/ 'inch' is a kungana for /ki_A/ or /gi_A/). 17

VII. Conclusion

The traditional interpretation of ongana spelling errors in the Old Japanese texts is that they are no more than early exceptions heralding the later breakdown of the kō/otsu distinction sometime between the late eighth century and the early tenth. As long as a separation of the two types is generally maintained in a text, phonemically distinct kō and otsu syllables have been posited for that period. This has led linguists to date the merger between the two types of syllable for later /so, to, do/ etc. as after the compilation of the Man'yōshū, and the merger for /ko/ as occurring as late as the early tenth century.

But writing systems as a rule are conservative. When people write they tend to write words the way that they have seen them written elsewhere. And if two different sets of ongana had become associated with two different sets of words on the basis of an earlier kō/otsu distinction it would not be surprising if this association should happen to have been maintained in writing even after the distinction in the spoken language had broken down. On the other hand, if ongana from one set were used to write words from the other set more than just once or twice, this cannot be at-
tributed to mere happenstance. This is the sort of reasoning that prompted Lange to reject the traditional ko/otsu sets for the syllables /to, do, zo, yo, ro/:

One must remember that the evidence generally taken as proof of a ko-otsu distinction is a type of negative evidence; that is, this evidence consists of the fact that examples in which two characters from different sets are used to write the same syllable in the same word are not found. Of course, even if two characters had exactly the same value in Japanese, it might happen, as a result of chance, that within a given document they were not both used in the same word. This would especially be likely to happen if the characters had become associated with different words on the basis of an earlier ko-otsu distinction. If two characters are used to write the same syllable in the same word, however, it cannot be ascribed to chance. One must presume either human error or identity of value (Lange, pp. 125-126).

Ironically, this is precisely the reasoning that the same linguists who blindly accept the traditional interpretations of ongana spelling errors must be following when they interpret hiragana spelling errors in later texts as evidence to date later sound changes such as the merger between /o/ and /wo/ sometime in the eleventh century. That is to say, the ongana evidence by itself should be enough to date the ko/otsu merger for the syllables /zo, to, do, yo, ro/ as having begun before the middle of the eighth century. And when the hitherto neglected kungana are examined, the date for the merger can be pushed back even farther, for the kungana spelling errors show that these mergers had already begun by the time of the poems in the mixed logographic-syllabic transcription. They also show that similar mergers were taking place between /soA/ and /soB/, /kiA/ and /kiB/,
and /gi_A/ and /gi_B/. In other words, the Old Japanese writing system seems to have had five to eight fewer graphemes that those proposed by Hashimoto and accepted by orthodox opinion ever since. A linguist may reconstruct two phonemically distinct syllables for later /to, do, so, zo, yo, ro, ki, gi/, but he cannot automatically posit these values as applying to the eighth-century sound system. Rather they must apply to some earlier period before the kō/otsu distinction began to break down for these syllables, some period after the introduction of writing into Japan but before the bulk of the Old Japanese texts.
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Notes

1. Compare such forms as Rumanian capra, Italian capra, Lugodoro kraba /kraβa/, Engadine /k'evra/, Frael /k'avrə/, French chevre, Provencal /kabro/, Spanish and Portuguese cabra (Meyer-Lübke, para. 164).

2. All Ancient Chinese forms cited are taken from Grammata Serica Recensa (Karlgren, 1957).

3. As evident even in the Kojiki passage cited, there must have been a great deal of confusion between word and symbol. Because the Japanese had borrowed a logographic writing system developed for another language, there was usually more than one native word that corresponded in meaning to the Chinese word (or words) represented by the graph. Moreover, many Japanese who knew little or no Chinese were using these logographs. For them, the correspondence in meaning that formed the initial link between the many native words and the single logograph did not exist. Under such circumstances it is not surprising that the Japanese assigned meaning to the graph itself rather than to the words represented by it.

However, it is a mistake for linguists to copy this usage and talk of 'the character's meaning', as Lange does. In Lange's case, especially, it leads to an unfortunate confusion between the use of a graph as a logograph and its use as a kungana, and consequently to some rather absurd statements on the relation among sound, symbol and meaning.
in the *man'yōgana* writing system (Lange, p. 18).

4. There are other possible explanations for the concentration of poems in strict syllabic transcription in these volumes. As pointed out, these volumes contain poems collected or composed by the probable editor of the *Man'yōshū* or by relatives of his father's generation. Because the other volumes represent even older collections and anthologies, I have chosen to interpret this as a gradual abandonment of the more complicated logographic styles. Roland Lange, however, interprets it differently:

> These volumes deal mostly with poems composed or recorded by members of the Ōtomo clan. This leads one to suspect that *ōngana* may have been the favored system in that clan for use in the private anthologies of the various members (Lange, p. 16).

Another possible explanation is similar to Lange's but more sophisticated. Mabuchi Kazuo has proposed that the more logographic styles of *man'yōgana*, because they look more like the quasi-Chinese required in official records and documents, were favored for poems for public occasions. Poems collected for private amusement or composed for family occasions could, however, be written in the simpler syllabic style (Mabuchi, class lecture, 1978). Mabuchi's explanation gains plausibility when *senmyōgaki* is taken into consideration. *Senmyōgaki* is a later refinement of the mixed style of *man'yōgana* in which most of the *Man'yōshū* poems are recorded. In *senmyōgaki* inflexional endings and case particles (written syllabically) are marked off by
making the graphs for these half the size of those for nouns and verb stems (written mostly with logographs). There are two poems in senmyōgaki in the Man'yōshū. These are MYS 4264 and 4265, a poem and envoy sent by the emperor to his ambassador to China. Other texts in senmyōgaki are the imperial edicts in the Shoku Nihongi (797) and old Shinto liturgies now extant only in the Engi Shiki of 927. Senmyōgaki can be interpreted as a preservation for public documents of the more logographic styles of man'yōgana at a time when syllabic transcription was gaining in favor for private use.

5. As noted above, it was not until this century that the Japanese hit upon the idea of a simple one-to-one correspondence between symbol and syllable. Even in the strictest syllabic style of man'yōgana any one of a large set of graphs could be used to write any one syllable, and the later hiragana syllabary that developed from the cursive forms of these same graphs kept some, if not all, of the members of a set until these 'variant kana' (hentaigana) were eliminated by government fiat in 1945. By 'the later kana symbol ง', then, we mean not just that symbol, but it and all the variant hiragana symbols used to write the later syllable /ko/.

But what then do we mean by 'the later syllable /ko/'? Do we mean the modern Japanese syllable /ko/ or the Tokugawa syllable /ko/ or an even earlier syllable /ko/? It is
important to remember that all the early scholarship on this problem of 'extra' graphemes in man'yōgana was done in the context of the medieval Japanese syllabary as revised by the kokugaku scholars. The medieval hiragana syllabary was based on a tenth-century poem used in writing practice and in cataloguing. The forty-seven syllables in the poem amounted to an inventory of phonemically distinct syllables for the period in which it was composed. But some of the phonemic distinctions represented by the graphemes in the poem were soon lost, and by the mid-thirteenth century there were spelling guides prescribing 'correct' usage of these graphemes. These early spelling guides were for the most part based on eleventh- and twelfth-century models, however, and when the kokugaku scholars came along they rejected these earlier prescriptions. Notably the monk Keichū examined tenth- and eleventh-century texts to prescribe 'better' spellings on the basis of older models. His prescriptions became the standard for 'correct' spelling, and it is through the medium of Keichū orthography that Ishizuka and later Hashimoto examined the Old Japanese orthography (Hashimoto, 1949, pp. 145-147). By 'the later syllable /ko/', then, we mean the tenth-century syllable /ko/ as reflected in Keichū's orthography.

6. Ishizuka listed pairs of man'yōgana graphemes corresponding to later single hiragana graphemes for syllables /e, ki, ke, ko, so, to, nu, fi, fe, mi, me, yo, ro, gi, go,
do, bi, be/. In addition to these he noted distinct sets for later syllables /mo/ and /ti/ in Kojiki usage (Hashimoto, 1949, pp. 126-132).

7. Hashimoto rejected Ishizuka's two distinct sets for later /ti/ in the Kojiki and analyzed Ishizuka's two sets for /nu/ as one /nu/ set and a second /no/ set. Hashimoto also set up pairs of man'yōgana graphemes for later syllables /ge/ and /zo/.

8. It is probably more accurate to credit Ishizuka for having thought of this first. To be sure, in the extant texts of the Kanazukai oku no yama michi he says that he does not know the reason for the non-interchangeability of his pairs of man'yōgana sets corresponding to later single graphemes. But in an allusion to this work in a later philological treatise he is quoted as saying:

There are occurrences of what in ancient words were distinct sounds although they are the same sounds in the present. There is a differentiation of these in the syllabic symbols used in ancient texts and it is very strict (Hashimoto, 1949, pp. 141-142).

9. By 'difference in vowel' Hashimoto did not mean that the kō-type syllables must have had higher or more backed or more unrounded vowels than their otsu-rui counterparts. He was open to the possibility that one type might represent a diphthong or a syllable of the structure C glideV (Hashimoto, 1966, p. 159). Later orthodox opinion, however, insisted that the two types must represent distinct vowels,
that Old Japanese had an eight-vowel system with three of those vowels occurring in limited distribution after only some consonants.

10. In addition Arisaka tentatively set up an alternation between /i_B/ in the unbound form and /o_A/ in the bound form, but he had only one or two unequivocal examples of this (Arisaka, pp. 67, 69-70). Setting this up as a separate alternation from correspondence (3) can be questioned on yet another point: it assumes that the difference between ko-type and otsu-type was a difference in the vowel rather than in the structure of the syllable.

11. Indeed, if there were an earlier system of vowel harmony, how can we know what the common feature determining the vowel sets was? Neither Arisaka nor any of his followers has ever offered any evidence supporting their assumption that the feature was backness.

12. Actually, this is not the only reason for the relative neglect of the kungana. Even Ishizuka Tatsumaro, who did not recognize that the extra graphemes represented distinct syllables, ignored the kungana completely in his survey of the graphs used as kana in the Old Japanese texts. He also excluded any ongana that represented more than one syllable (Hashimoto, 1947, p. 141). Ishizuka was no doubt influenced by his own writing system in which the cursive hiragana each represent one syllable only and are clearly marked off from the graphs used as logographs. It was prob-
ably difficult for him to recognize that a symbol representing more than one syllable could be used to write a word or a portion of a word phonographically rather than logographically. For Ishizuka, no doubt, only the one-syllable *ongana* were *kana*; the two-syllable *ongana* and the *kungana* formed a class together with the logographs. This confusion between the logographic principle and the phonographic principle would be especially easy to make in the case of the *kungana*, since a graph would be read the same way whether it was being used as a *kungana* or a logograph. And this confusion must have existed from very early times. There are a large number of folk-etymologies in tenth-century Japanese that can best be explained as due to later generations mis-interpreting a standard *kungana* spelling for a word as logographic writing. The Old Japanese epithet /mi<sub>A</sub>duku ki<sub>B</sub> no<sub>B</sub>/ 'of a water-submerged barrow', for example, became the tenth-century word /miduguki/ 'writing-brush' because the standard *kungana* spelling for it was 水堆. (In the original *kungana* spelling, 水, a logograph for /mi<sub>A</sub>du/ 'water', is borrowed as a *kungana* to represent phonographically /mi<sub>A</sub>/ 'water (bound form)' plus /du/, the first syllable of /duku/ < /tuku/ 'to be submerged'. The logograph 堆 for the word /kuki<sub>B</sub>/ 'stem' is borrowed to represent /ku/, the second syllable of /duku/, plus /ki<sub>B</sub>/ 'barrow'. The attributive case particle /no<sub>B</sub>/ is not represented directly; the reader is expected to supply it from his know-
ledge of the language. Later, when the literal meaning of the epithet had been forgotten, it was reanalyzed as a compound word from /midu/ 'juicy, fresh' and /kuki/ 'stem', the initial obstruent of the second morpheme became voiced, and /miduguki/ became a poetic word for 'writing-brush'.)

Later, some fossilized kungana spellings were recognized as not being logographic and labeled ateji ('arbitrarily assigned graphs'). But not all philologists were able to extend the same principle to the man'yōgana texts. Some scholars, for example, reserve the term kungana for one-syllable readings and lump the two syllable and longer kungana together with logographs into a single class of kun readings.

13. The traditional classification of these two graphs as ongana rather than kungana is probably due to their having the same phonetic element. Man'yōshū scholars used to seeing graphs such as 支, 仗, 武 and 姑 all being used as ongana for /ki̯a/ or 古, 姑, 萬 and 菅 all being used as ongana for /ko̯a/ probably assumed from 于 and 呼 both being used to write /wo/ that they were ongana. The Ancient Chinese values for these graphs, however, are [yuo] and [xuo], and when graphs for words with initial velar fricatives in Ancient Chinese are used as ongana they are usually used to write syllables beginning with /g/ or /k/ in Old Japanese (e.g. 胡 with Ancient Chinese [yuo] is an ongana for /ko̯a/). Also, there are two graphs 焉 and 焉 which are used to write Ancient Chinese interjectional
particles similar to 頃. These are used in the Man'yōshū as logographs for the Old Japanese interjectional particle /wo/ (e.g. in MYS 361 and 196) which would support the hypothesis that 呼 was read /wo/ originally as a logograph for the same interjectional particle. I have proposed that 呼 was read /wo/ because of the attention-getting exclamation /wo/. The similar use of the graph 口 (Ancient Chinese [kieu] 'to call out, shout') as a kungana for /wo/ would support this. Another possible explanation is that 口 may have been used in Chinese as a loan graph for 呼, in which case it could be used as a kungana from the interjectional particle. Compare the use of 何 as a kungana for /ni/ because it was used in Chinese as a loan graph for 荷, which was then used in man'yōgana as a logograph for /ni/ 'load'.

14. While the later kana syllabaries did not distinguish syllables beginning with voiceless obstruents from syllables beginning with their voiced counterparts, it is generally accepted that the ongana did. Ishizuka recognized this when he set up his charts of ongana used in the Man'yōshū, Kojiki and Nihon Shoki, and a great deal of ink has been expended over whether such-and-such a graph represents a syllable beginning with a voiced or unvoiced consonant, and whether such-and-such an occurrence of a graph is a spelling error in terms of voicing versus unvoicing. The kungana, too, seem to distinguish the voiced consonants from their voiceless counterparts, but here the situation was complicated by restrictions on the occurrence of voiced
obstruents in Old Japanese. That is, voiced stops and fricatives never occur word-initially, but unvoiced stops and fricatives can become voiced at the beginning of the second morpheme in a compound word. In kungana transcription this meant that a graph for the word /to_B^mo/ 'companion', for example, could be used to write the sequence /to_B^mo/ or the sequence /do_B^mo/, being treated in the latter case as if it were the second member of a compound word. For this reason I treat the kungana for /to/ together with those for /do/, the kungana for /so/ together with those for /zo/, and so on. I do not mean to imply by this that the kungana did not reflect the voicing/unvoicing distinction in Old Japanese. For, although an initial obstruent in the sequence represented by a kungana could freely represent either the unvoiced obstruent or its voiced counterpart, a medial obstruent could not. If a medial obstruent in a word was unvoiced, the logograph associated with that word when used as a kungana must represent an unvoiced consonant in the same position in the word it was borrowed to write. There are only three exceptions to this rule. These are  ию иtu/ 'when?' being used to write the first two syllables of /dupe_A/ 'where?' in MYS 88, 倫 /tatu/ 'to stand' being used to write the syllables /tadu/ in /nipa tadum_A/ 'sudden shower' in MYS 1370 and 増 /kak_A/ 'hedge' being used to write the syllables /kagi_A/ in the epithet /tamakagi_Aru/ 'jewel-sparkling' in MYS 2394. The first example can prob-
ably be explained as a later scribe's misinterpreting the logographic 何辻 as phonographic and inserting 時. The later scribe would have been influenced by his own writing system in which the syllabary did not distinguish voiced from unvoiced obstruents.

15. Examples from volume Eighteen are usually rejected as not indicative of the eighth-century sound system because of internal evidence suggesting that this volume in its extant form was rewritten by tenth-century scribes. For example, the ongana in this volume do not distinguish syllables beginning with voiced obstruents with anything like the consistency of the ongana in the other volumes, and it contains a higher concentration of counterexamples to the kō/otsu sets than any other section of the Man'yōshū outside the poems in provincial dialects. Also, many of the graphs used as ongana in volume Eighteen are used nowhere else in the Man'yōshū, but are graphs that were commonly used in cursive from in the tenth-century hiragana syllabary. And this volume contains all the examples of what look like 'archaisms' concocted by later scribes. The strange forms /moi/ for /moye/ 'to bud' in MYS 4111, /makiₐ/ for makeₕ/ 'to commission' in MYS 4113, and /koₕ/piₐ suraba/ for /koₕ/piₐ serēba/ 'if I should be longing' in MYS 4082, for instance, are found nowhere else in any extant Old Japanese text, and the usual explanation of them is that some later scribe, thinking that the older form must be different from the
tenth-century form, 'emended' the text.

16. There is an example of this verb 'to treat as' being written syllabically as /nasōₐpeₐ/ in MYS 4451. If we take that as the correct form and reject /nasōₐpeₐ/, then MYS 2463 is no longer evidence for /soₐpeₐ/ as the value of _True_. On the other hand, that would make MYS 1448 and 4307 two more ongana examples for the loss of a kō/otsu distinction for /so/.

17. Hashimoto noted that the continuative forms of the kami-nidan class verbs ended in /Ciₐ/, but that the continuative forms of the kami-ichidan class and yodan class verbs ended in /Ciₐ/; this was his basis for grouping the graphemes for syllables in the _True_-_group into kō and otsu types. Now, although the three classes of verbs can be distinguished also by their differing attributive forms (/...Curu/ for kami-nidan class, /...Ci ru/ for kami-ichidan class, and /...Cu/ for yodan class verbs), there would be no way to determine the class of a verb from just the continuative form after the phonemic opposition between /Ciₐ/ and /Ciₐ/ had broken down. And the continuative form is the most commonly-occurring form. A rare kami-nidan class verb might easily be re-analyzed as a kami-ichidan class verb after the difference in the continuative form had been lost. This is precisely what happened to a large number of verbs between the eighth century and the tenth. Old Japanese kami-nidan class verbs such as /piₐ/ 'to sniffle, to sneeze' and /piₐ/
'to dry' became tenth-century kami-ichidan class verbs.

It is a mistake, however, to assume that all these changes occurred after the time of the Old Japanese texts. The verb /mi_B/ 'to go around, to follow the curves of', for instance, shows signs of having changed classes quite early. That is, all occurrences of its continuative form written syllabically in the Man'yoshū give it as /mi_B/. The derived verb /tami_B/ of the same meaning (from prefix /ta/ plus /mi_B/) must be a kami-nidan class verb because its attributive form in MYS 942 is /tamuru/. And the derived noun meaning 'windings, curves', as in /urami_B/ 'curves of the shore, inlets' (from /ura/ 'shore' plus /mi_B/) is invariably written with otsu-type ongana when it is written phonographically. All of which would support classing the verb /mi_B/ as a kami-nidan verb. Yet the attributive form is given in Kojiki 5 not as the expected */muru/, but as /mi_Bru/, as if it were a kami-ichidan class verb. Arisaka explains this by saying that /mi_B/ had originally been a kami-nidan class verb, but had changed classes before the time of the compilation of the Kojiki. (Arisaka, p. 537). Surely this could only happen if the phonemic opposition between /mi_A/ and /mi_B/ was already breaking down. A similar interpretation would explain the discrepancy between the kami-nidan class verb /nagi_B/ 'to become calm' and the derived noun /nagi_A/ 'calm'.