

Sanskrit in Japanese Linguistic Studies

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Key Words

sandhi : In Sanskrit grammar it usually means the phonetical change taking place in a compound word made out of two or more words. In Japan it was applied to mean the phonetical change taking place within a Sanskrit compound letter or word while reading it in certain cases. The concept was extended to phonetical changes taking place in Japanese words. In Japan it was called *renjo* and *onbin*.

chandravindu : Nasal stop element, /ng/, /ñ/, /ṅ/, /ṇ/, /m/

visarga : Oral stop element, /k/, /c/, /ṭ/, /t/, /p/

hasant : A diacritical mark that designates the Sanskrit consonant letters as alphabets.

mantra : These are esoteric holy expressions which were supposed to bring divine blessings when pronounced accurately. They were also called **dharani**.

konai : Guttural oral or nasal stop element, /k/, /ng/

zetsunai : Lingual oral or nasal stop element, /t/, /n/

shinnai : Labial oral or nasal stop element, /p/, /m/

dakuten : A diacritical sign for voiced Kana characters.

gemination : Duplication of consonants, like /kk/, /tt/, /pp/, /ss/,
etc.

1. Introduction

The Japanese studied Sanskrit simply because they had to recite the **mantras** for conducting Tantric religious rituals. The **mantras** are esoteric expressions, the correct pronunciation of which was believed to bring supernatural effects. The translators of Buddhist texts in China kept the **mantras** in their original Sanskrit script without translating them. They, however, transcribed the **mantras** with Chinese characters to assist their readings. The transcriptions usually brought about deviation in pronunciation. The Japanese monks were vaguely aware of this, and hence studied the script for picking up correct pronunciation. They had a big problem in committing the script to memory, and as such continued to rely on the Chinese transcriptions. However, the knowledge they gained in the course of their Sanskritic studies, stimulated linguistic studies in Japan. The areas of Japanese language and linguistic studies where Sanskritic ideas made some contributions will be studied in this paper.

The Sanskrit script form that was used in China was known as Siddham. This word acquired the meaning of Sanskrit language also. The Japanese pronounced this word as *shittan* 悉曇. In this paper, the word Siddham will mean both the language and the script. For easy identification, the words and sounds will be given in bold letters for Sanskrit, bold italics for Chinese, thin italics for Japanese, and

/.../ for others.

2. Origin of the Kana Characters

The Japanese started borrowing script from China from around the fifth or sixth century of the Christian era, and shortly after that they started using the Chinese characters to write their own language. Manyoshu 万葉集, the oldest collection of Japanese poems supposed to have been compiled during the latter half of the eighth century, provides a very good idea of the way the Japanese employed the Chinese characters to write their language. It shows that the Japanese used the Chinese characters phonetically, ignoring their semantic values, for writing the Japanese words. These phonetically used Chinese characters gave birth to two types of Japanese characters, Katakana 片仮名 and Hiragana 平仮名 in due course of time. The two script forms are also known by the common name Kana 仮名.

The oldest specimens of Katakana script appear in the Chinese Buddhist scriptures in the form of phonetical symbols. The Chinese Buddhist texts employed a large number of Chinese characters, and reading them was a big problem for the Buddhist monks in Japan. The monks simplified some characters by eliminating a part of the characters, and used the truncated characters to denote the reading of the difficult characters having the same reading. The simplification affected only the shape of the characters, and not their readings. In this way the monks evolved a set of phonetic symbols, the Katakana, for reading the difficult Chinese characters. It is needless to say that the set they evolved satisfied the phonetical requirements for writing the Japanese language also. It is generally believed that the Katakana

script evolved during the later part of eighth century and the early part of the ninth century.

There were much speculations about the origin of the Katakana script during the Japanese middle ages. A hypothesis somehow arose that these characters were created by Kibino Makibi 吉備真備, an eminent scholar and minister, who studied in China for eighteen years from 717 to 735. Arai Hakuseki 新井白石 (1657–1725), an eminent scholar of the eighteenth century, speculates about the origin of Japanese Kana characters as follows in his *Dobun Tsuko* 同文通考, written during 1711–1715. He says that taking cue from the consonantal ligatures of Brahmi letters, the Katakana characters were formed by omitting a part of the Chinese characters and then pronouncing these truncated characters according to their original readings. The word *kata* 片 has a meaning similar to the consonantal ligature of Sanskrit.¹⁾

In Sanskrit, there are many words with compound sounds made by two or more consonants. These compound sounds are expressed with compound letters made from the involved consonant letters. The consonant letters are often modified in shape and then amalgamated to form the compound letters. In China and Japan these modified letters, or consonantal ligatures, were called *hantaiji* 半体字. Fig. 1 shows some of the compound letters formed by consonantal ligatures. Tantric Buddhism, where reciting the **mantras** constituted an integral part of religious rituals, was introduced to Japan in the first decade of the ninth century. The **mantras** were a type of esoteric expressions which were believed to have magical power. The two most powerful sects of the period, Shingon 真言 and Tendai 天台, borrowed heavily from Tantrism. Tantric belief demanded that the **mantras** should be

pronounced correctly for achieving the desired result. The **mantras** contained a large number of words constituted by compound consonantal sounds.

Fig. 1 Some compound letters formed by consonantal ligatures

pa		ta		da		sa		ra		ma
प		त		द	दध	स		र		म
र	प्र	य	त्य	ध		व	स्व	म	र	म
ra	pra	ya	tya	dha		va	sva	ma	ma	mma

The translators of Buddhist scriptures in China kept the **mantras** in the original Sanskrit script without translating them. They, however, transcribed the readings of the **mantras** with Chinese characters. The transcriptions corrupted the sounds since it was not possible to reproduce the sounds of the **mantras**, especially the sounds of compound consonants, accurately with the help of Chinese characters. The Chinese monks, therefore, were encouraged to study the Sanskrit script. The Tantric monks in China prepared textbooks for studying Sanskrit letters in order to recite the **mantras** correctly. In Japan, the monks of the Shingon and Tendai sects also made strenuous efforts to learn the Sanskrit script. The Sanskrit script form that was commonly used in China was known as Siddham. In China, this word acquired the meaning of Sanskrit language also. The Japanese also thought that Siddham meant both the Sanskrit script and the Sanskrit language. They read the Chinese transcription of the word Siddham as Shittan. A large number of Shingon and Tendai monks studied the Siddham script even in the days of Arai Hakuseki for conducting religious

rituals. So when Arai Hakuseki tried to evolve a hypothesis on the origin of Katakana script, he found a ready-made model in the consonantal ligatures of Siddham. He linked the origin of Katakana script with the consonantal ligatures. Fig. 2 shows some of the Chinese characters from which the Katanas evolved.

Fig. 2 Parent Chinese Characters of some Kanas

阿 → ア	伊 → イ	宇 → ウ	江 → エ	於 → オ
a	i	u	e	o
加 → カ	幾 → キ	久 → ク	天 → テ	呂 → ロ
ka	ki	ku	te	ro

It has been stated above that the Kanas evolved from the Chinese characters. However, there is one Kana which did not originate from the Chinese characters. The arrangement of Kanas does not include this Kana. It is shown as a separate entity. It is the Kana *n*. The independent sound /n/ is not a native Japanese sound. The traditional Japanese syllabic pattern is CV, where C denotes a consonant, and V denotes a vowel. A syllable may or may not contain a consonant C, but must contain a vowel V. In other words, a single vowel may constitute a syllable in Japanese. Again, all the syllables must end in a vowel. The Japanese started borrowing Chinese words on a large scale from around the seventh century, and many of the Chinese characters ended in the sound /n/. The independent sound /n/ appeared in Japanese under the impact of this large scale borrowing. The Japanese usually transcribed this sound with Chinese characters having the reading /mu/ or /nu/ in the early stages. After the Kanas evolved, the Kanas *mu* and *nu* were used to express this sound. At

some unknown point of time the Kana *n* was conceived to express this sound. The practice of using the Kanas *mu* and *nu* for expressing the sound, however, continued even after the Kana *n* appeared. Since this was not a native sound, the arrangement of Kanas ignored it.

Arai Hakuseki advanced a hypothesis on the origin of the Kana *n* in his *Dobun Tsuko*. He says that both the Katakana and the Hiragana *n* were obtained by modifying the Siddham **chandravindu** sign. He also says that the dot-like sign used in Siddham for elongating the vowel was borrowed in Japanese to duplicate a Kana sound. Again, the curved sign used in Siddham for elongating the vowel **a** was borrowed for duplicating the Japanese words²⁾. These signs have been shown in Fig. 3. It must be added that there are other hypotheses also on the origin of the Kana *n*.

Fig. 3 Evolution of Kana *n* and some Siddham signs used in Japanese

 → 	 ↔ 		 ↔ 	
chandra- vindu <i>n</i>	u-long elonga- tion sign	duplicating a character	a-long elonga- tion sign	duplicating a word

3. Gojuonzu Arrangement of Kana Characters

The Japanese Kanas are a phonetic form of writing, and as such they express the sounds used in the Japanese language. A very important question in the process of evolution of the Kana characters was the number of sounds involved in the Japanese language. Arai Hakuseki mentioned above has proposed a hypothesis in this regard

in his *Dobun Tsuko*. He writes that under an imperial edict during the reign of Emperor Saga 嵯峨, Kukai 空海 (774–822), the founder of the Tantric Shingon Sect in Japan, analysed the sounds involved in Japanese on the basis of Siddham and found that there were forty-seven sounds.³⁾

Once a rough idea of the number of Kana characters was obtained, the question of their arrangement cropped up. The Japanese of the period had two ready-made models before them. One was the traditional Indian arrangement of the Siddham letters, and the other was the arrangement of the Chinese characters given in the Chinese primer *Senjibun* 千字文, popularly known as the Ametsuchi 天地 model. The Japanese tried both the arrangements, but gave up the Ametsuchi model before long. The arrangement of the Kana characters

Table 1 Arrangement of Siddham letters

A) Vowels: a ā i ī u ū e ai o au am ah

chandravindu ☺ nasal stop element
visarga : oral stop element

B) Consonants

i) Plosives UV-UA UV-A V-UA V-A N

Velar	ka	kha	ga	gha	nga	UV: unvoiced V: voiced
Palatal	ca	cha	ja	jha	ñā	UA: unaspirated A: aspirated
Retroflex	ṭa	ṭha	ḍa	ḍha	ṇa	N: nasal
Dental	ta	tha	da	dha	na	[ng is a single sound denoted by ṅ in phonetic script.]
Labial	pa	pha	ba	bha	ma	

ii) Non-plosives: ya ra la va śa ṣa sa ha kṣa

prepared on the basis of the Siddham model is known as Gojuonzu 五十音図, which literally means fifty sounds chart. It is called so because the total number of the vowel Kanas and the unvoiced con-

Table 2 Standard Gojuonzu

ア	イ	ウ	エ	オ			
a	i	u	e	o		guttural	guttural
カ	キ	ク	ケ	コ			
ka	ki	ku	ke	ko	guttural	velar	guttural/velar
サ	シ	ス	セ	ソ			
sa	shi	su	se	so	lingual	dental	lingual/dental
タ	チ	ツ	テ	ト			
ta	chi	tsu	te	to	lingual	lingual	lingual
ナ	ニ	ヌ	ネ	ノ			
na	ni	nu	ne	no	lingual	lingual	lingual/nasal
ハ	ヒ	フ	ヘ	ホ			
fa	fi	fu	fe	fo*	labial	labial	labial
マ	ミ	ム	メ	モ			
ma	mi	mu	me	mo	labial	labial	labial
ヤ	イ	ユ	エ	ヨ			
ya	i	yu	e	yo	guttural	dental	guttural/lingual
ラ	リ	ル	レ	ロ			
ra	ri	ru	re	ro	lingual	lingual	lingual
ワ	ヰ	ウ	ヱ	ヲ			
wa	i	u	e	wo	labial	velar	guttural/labial

Nasal: n ン

Myokaku's Goin Shidai Keichu's
arrangement arrangement arrangement

Voiced Kanas

ガ	ギ	グ	ゲ	ゴ
ga	gi	gu	ge	go
ザ	ジ	ズ	ゼ	ゾ
za	ji	zu	ze	zo
ダ	ヂ	ヅ	デ	ド
da	ji	zu	de	do
バ	ビ	ブ	ベ	ボ
ba	bi	bu	be	bo

* Note: The *fa fi fu fe fo* sounds have changed to *ha hi fu he ho* sounds at present.

sonant Kanas given in the chart comes to fifty. The voiced sounds are traditionally ignored in this arrangement. Table 1 shows the arrangement of the Siddham letters, and Table 2 shows the standard Gojuonzu chart which is in use at present. The voiced sounds have also been shown here following the current practice.⁴⁾

The oldest specimen of Gojuonzu appears at the end of a copy of Kujakukyo Ongi 孔雀經音義, a work dealing with the reading of words in the Chinese translation of Buddhamatrika Mahamayuri Vidyarajni Sutra and their meanings. The copy containing the Gojuonzu chart is believed to have been made between 1004 and 1028. It contains only eight lines with five characters in each line as shown in Table 3. A comparison of this chart with the standard Gojuonzu given in Table 2 shows that the vowels and *na*-line are missing here. Again, the order of vowels and the sequence of consonants are also different.

Table 3 Oldest Gojuonzu

<i>ki</i>	<i>ko</i>	<i>ka</i>	<i>ke</i>	<i>ku</i>	四 キ カ ケ ク	<i>ki</i>	四 シ ソ セ ス	<i>shi</i>	四 イ ヤ エ ウ	<i>i</i>	比 ヒ フ ヘ フ	<i>fi</i>
<i>shi</i>	<i>so</i>	<i>sa</i>	<i>se</i>	<i>su</i>	四 キ カ ケ ク	<i>ko</i>	四 シ ソ セ ス	<i>so</i>	四 イ ヤ エ ウ	<i>yo</i>	比 ヒ フ ヘ フ	<i>fo</i>
<i>chi</i>	<i>to</i>	<i>ta</i>	<i>te</i>	<i>tsu</i>	四 キ カ ケ ク	<i>ka</i>	四 シ ソ セ ス	<i>sa</i>	四 イ ヤ エ ウ	<i>ya</i>	比 ヒ フ ヘ フ	<i>fe</i>
<i>i</i>	<i>yo</i>	<i>ya</i>	<i>e</i>	<i>yu</i>	四 キ カ ケ ク	<i>ke</i>	四 シ ソ セ ス	<i>se</i>	四 イ ヤ エ ウ	<i>e</i>	比 ヒ フ ヘ フ	<i>fu</i>
<i>mi</i>	<i>mo</i>	<i>ma</i>	<i>me</i>	<i>mu</i>	四 キ カ ケ ク	<i>ku</i>	四 シ ソ セ ス	<i>su</i>	四 イ ヤ エ ウ	<i>ya</i>	比 ヒ フ ヘ フ	
<i>fi</i>	<i>fo</i>	<i>fa</i>	<i>fe</i>	<i>fu</i>	四 キ カ ケ ク		<i>chi</i>	四 イ ヤ エ ウ		<i>mi</i>	比 ヒ フ ヘ フ	
<i>i</i>	<i>o</i>	<i>wa</i>	<i>e</i>	<i>u</i>	四 キ カ ケ ク		<i>to</i>	四 イ ヤ エ ウ		<i>mo</i>	比 ヒ フ ヘ フ	
<i>ri</i>	<i>ro</i>	<i>ra</i>	<i>re</i>	<i>ru</i>	四 キ カ ケ ク		<i>ta</i>	四 イ ヤ エ ウ		<i>ma</i>	比 ヒ フ ヘ フ	
					四 キ カ ケ ク		<i>te</i>	四 イ ヤ エ ウ		<i>me</i>	比 ヒ フ ヘ フ	
					四 キ カ ケ ク		<i>tsu</i>	四 イ ヤ エ ウ		<i>mu</i>	比 ヒ フ ヘ フ	

The Kanas were, by and large, arranged arbitrarily in the Gojuonzu charts up to around the second half of the thirteenth century, and did not follow the standard Siddham pattern. The oldest Gojuonzu with arrangement conforming to that of Siddham bears the date of 1204, although two older but undated charts are also known. This

gradually became the standard Gojuonzu, and more or less got general acceptance towards the end of the thirteenth century.

Most of the Gojuonzus appear in the copies of Buddhist texts as in the above case. Majority of them are the works on Siddham which the monks wrote for their disciples. A scrutiny of the early charts reveals that although the separate entity of the vowels and the consonants as found in Siddham was maintained, the order of the vowels and the sequence of the consonants differed. Again, the order and sequence also varied from chart to chart. Even the same author has used charts with different sequences in different works. The deviation from the standard arrangement can be explained in some cases, but for others it is difficult to pinpoint the reason.

Myokaku 明覚, the most eminent Siddham scholar of his time, has given a number of charts in his works. Three of his works on Siddham and one on the phonetics of Chinese characters carry these charts. The charts appearing in Shittan Yoketsu 悉曇要訣, his most famous work on Siddham, and in Hanon Saho 反音作法, a work on the phonetics of Chinese characters, perhaps, hold some clue for the discrepancy in the arrangement of the Kanas. Shittan Yoketsu carries one chart and Hanon Saho carries two. The vowels come in the very beginning and their order is the same in all the three charts, but the sequence of the consonant Kanas differs from chart to chart. The order of the vowels is *a, i, u, e, o* as in the present-day Gojuonzu. The three different sequences of the consonant Kanas given in the three charts are (a) *ya, ka, sa, ta, na, ra, fa, ma, wa*, (b) *ka, ya, sa, ta, na, ra, fa, ma, wa*, and (c) *ka, sa, ta, na, ra, fa, ma, wa, ya*.⁵⁾ These three arrangements differ from the standard arrangement of *ka, sa, ta, na, fa, ma, ya, ra, wa* used at present as shown in Table 2.

The Japanese tried to understand the reading of the Siddham words from their Chinese transcriptions. These transcriptions quite often changed the pronunciation of the Siddham words. The Indian grammatical works divide the plosive consonants into five categories, velar, palatal, retroflex, dental and labial. In Japan, these five categories of sounds were modified into three groups called *sannai* 三内 in order to accommodate the phonetical changes brought about in the readings of the Siddham words by the Chinese transcriptions. The velars constituted the *konai* 喉内 or guttural group, the palatals, retroflexes and dentals constituted the *zetsunai* 舌内 or lingual group, and the labials constituted the *shinnai* 唇内 or labial group. This grouping dates back to the early years of Sanskritic studies in Japan. Annen 安然 (841–915 ?), the first serious writer on Sanskrit, has discussed these three groups in his works. In Shittan Junirei 悉曇十二例 he says that the twenty-five plosive letters come in three types of sounds. The **ka** letters begin with the *konai* or guttural sound, the **ca**, **ṭa** and **ta** letters begin with the *zetsunai* or lingual sound, and the **pa** letters begin with the *shinnai* or labial sound. The nine non-plosive letters also come in three types of sounds. The letters **ya**, **ha** and **kṣa** begin with the *konai* or guttural sound, the letters **ra**, **la**, **śa**, **ṣa** and **sa** begin with the *zetsunai* or lingual sound, and the letter **va** begins with the *shinnai* or labial sound.⁶⁾ In short, the **ka** letters and the letters **ya**, **ha** and **kṣa** constitute the guttural group, the **ca**, **ṭa** and **ta** letters and the letters **ra**, **la**, **śa**, **ṣa** and **sa** constitute the lingual group, and the **pa** letters and the letter **va** constitute the labial group.

The Japanese scholars adopted the three groupings along with the five Siddham sound categories for Japanese phonetical studies. Myokaku arranged the consonant Kanas in his Gojuonzus in conformity with

the three groups of Annen stated above. Thus, Myokaku grouped the *ka* and *ya* Kanas as the gutturals, the *sa*, *ta*, *na* and *ra* Kanas as the liguals, and the *fa*, *ma* and *wa* Kanas as the labials. It will be seen that the *ya* Kanas come at the end after the labial *wa* Kanas in the third chart. This shifting may be due to carelessness on the part of the person who copied the text, although the possibility of deliberate attraction cannot be ruled out completely. The *ka* Kanas precede the *ya* Kanas in the standard Gojuonzu arrangement. But the order has been reversed in the first chart. As will be seen in the next paragraph, this change in the order was done by Myokaku himself. It must be mentioned here that there are many cases where different copies of the same text carry different versions of Gojuonzu. For instance, three extant copies of Bonji Keiongi 梵字形音義, also written by Myokaku, carry three different versions. The oldest copy made in 1122 gives the Kanas in the order of *a*, *ka*, *sa*, *ta*, *na*, *fa*, *wa*, *ya*, *ra* and *ma*. The copy of 1250 shows the order as *a*, *ka*, *sa*, *ta*, *na*, *ra*, *fa*, *ma*, *wa* and *ya*. The most recent copy made in 1726 shows the order as it is known in the standard arrangement.⁷⁾

Myokaku wrote Shittan Yoketsu for explaining the readings of Siddham words as practised in Japan. The readings often deviated from the spellings. Myokaku tried to explain the readings with the help of Japanese words. He used the terms guttural, lingual and labial to explain his points in this work. Rather than following the Siddham arrangement mechanically, he, perhaps, thought it better to arrange the Kanas in a way that would facilitate the understanding of the Siddham readings. Myokaku writes as follows just before introducing his own version of Gojuonzu.

In Japan there are forty-seven characters. All of them are

phonetic characters. They were conceived on the basis of Sanskrit. As in the case of weaving, here nine characters constitute the warp, and five characters constitute the woof. They weave forty-five characters. Two more characters are added to them making forty-seven characters in all. Of these, five characters are similar to the twelve vowels **a**, etc., of the Sanskrit letters, and nine characters are similar to the thirty-four letters like **ka** and the others. The five characters are *a*, *i*, *u*, *e* and *o*. The nine characters are *ya*, *ka*, *sa*, *ta*, *na*, *ra*, *fa*, *ma* and *wa*. In the Sanskrit letters, thirty-four letters form the warp and twelve letters form the woof. They weave four hundred and eight letters. Now, the Kanas will be shown by appending the Sanskrit letters. This will show that the sounds are the same.⁸⁾

Following this, Myokaku gives the Kanas in the sequence stated above along with their Siddham transcriptions. The sequence of Kanas clearly shows that Myokaku did not copy the Siddham model deliberately. The Japanese monks manipulated with the arrangement of the Kana characters no aoubt, but they never tempered with the traditional arrangement of the Siddham letters.

4. Diacritical Sign for Voicing

It has been stated above that the Gojuonzu charts traditionally ignored the voiced sounds. A look at the voiced Kana characters given in Table 2 will show that they are basically the same as their unvoiced counterparts. The only difference is that they have a diacritical voicing sign, called *dakuten* 濁点, a two-dot symbol on the right-hand top. For instance, the unvoiced Kana character *ka* ㇰ turns into

voiced *ga* 𑖀 with the addition of the voicing sign. The Chinese characters from which the unvoiced Kanas evolved have been identified by the Japanese scholars long time back, and there are many old works containing the Gojuonzu written in Chinese characters. But this process of evolution did not take place for the voiced sounds. The interesting fact is that a chart showing the twenty voiced sounds in Chinese characters has been found, but these Chinese characters did not evolve into the voiced Kana characters.

The fact that the Japanese opted for a diacritical sign for voicing rather than evolving the voiced Kana characters presupposes that they had a fairly good understanding of the science of phonetics. They knew that the unvoiced and the voiced sounds basically belonged to the same phonetical category. So instead of evolving the voiced Kana characters, they invented a voicing symbol and converted the unvoiced characters into their voiced counterparts by adding the symbol. In this way they eliminated twenty characters at one stroke.

It is difficult to say about the extent of familiarity the Japanese had with Sanskrit when the Kana characters evolved. But it will not be wrong to assume that they got the concept of unvoiced-voiced classification of sounds from the Chinese philological writings. The unvoiced-voiced classification of sounds was a very common topic in the Chinese philological works of the period.

A study of the orthographic rendering of the voiced sounds in Japanese reveals some interesting facts. Kojiki, the oldest record of Japanese mythology and early history compiled in 712, differentiates, as a rule, the voiced sounds from the unvoiced sounds. Here, the unvoiced sounds have been recorded with unvoiced Chinese characters, and the voiced sounds have been shown with voiced Chinese charac-

ters. This distinction broke down occasionally in Manyōshū, a collection of poems compiled towards the end of the eighth century. The distinction broke down completely during the ninth century. This coincided with the time when the Japanese started using the Kana. As if reflecting the breakdown of unvoiced-voiced distinction, the voiced sounds were written with the unvoiced Kana. A literate Japanese of the period could easily say whether a Kana should be read in its unvoiced or voiced form in a Japanese passage from the context. The need for specifying the voicing sounds, however, arose from another exigency.

It has been stated above that Tantric Buddhism laid primary emphasis on pronouncing the **mantras** correctly. The translators of the Sutras left the **mantras** untranslated. However, they transcribed their readings with Chinese characters by the side of the Siddham letters of the **mantras** in order to assist their recitation. A scrutiny of the Sutras of early ninth century Japan reveals that in the translated sections of the main texts many Chinese characters bear pronunciation notes, but no such notes appear with the Chinese transcriptions of the **mantras**. The reason is very simple. They were not sure of the pronunciation of the Siddham words, and hence were not in a position to add pronunciation notes to the transcriptions. There was nobody around to guide them.

The Tantric sects founded in the beginning of the ninth century laid great emphasis on reading the **mantras** directly from the Siddham script. This was done to ensure correct pronunciation. Although the Japanese monks tried to read the **mantras** directly from the Siddham script, committing the letters and their pronunciations to memory was a formidable task. The Chinese transcriptions of the Siddham

letters proved to be a good guide no doubt, but there was no Indian to turn to in case of doubt. Around this time the unvoiced-voiced distinction in the orthography was also breaking down in Japan. The Chinese voiced characters were often read in an unvoiced manner. Since, the **mantras** were totally foreign to the Japanese, specifying the voiced sounds in the transcriptions became an urgent necessity. This forced the monks to add voicing pronunciation notes to the transcriptions. Thus, the first attempts at recording the voicing of sounds were made in the transcriptions of the **mantras**.

One of the earliest documents recording the voicing diacritical sign is a copy of Kongocho Rengebu Shinnen Jugiki 金剛頂蓮華部心念誦儀軌. This Sutra was translated by Amoghavajra in the third quarter of the eighth century and brought to Japan in 847. This Sutra carries many **mantras** written in Siddham script along with their Chinese transcriptions. In the copy concerned, a Japanese monk added the voicing diacritical sign to the Chinese transcriptions of the **mantras** around 889. These Chinese characters gave the approximate reading of the Siddham letters. Since the trend was to read the voiced characters in an unvoiced manner, the voicing diacritical note told the reader that the reading should be in the voiced form. The diacritical sign used here has the shape of water radical 氵, which happens to be the radical of the character *daku* 濁 of *dakuten* also. This character *daku* was used as a technical term for the voiced sounds in Chinese phonetical writings. The noteworthy fact with this document is that the voicing diacritical sign appears only with the transcriptions of the **mantras** and nowhere else.

The Japanese monks devised other symbols also for denoting the voiced sounds. In another copy of Kongocho Rengebu Shinnen Jugiki

the voicing sign appears in the form of a dot added on the left-hand top of the concerned Chinese characters. Here, the reading has been given in unvoiced Katakana also. It bears the date 987. A copy of Taizokai Shiki 胎藏界私記 made in 979 carries the voicing sign in the form of a dot below the unvoiced Katakana characters. Another work, Myoho Rengekyo Shakumon 妙法蓮華經釈文 of around the beginning of the eleventh century, shows voicing by adding a dot on the right-hand top corner of the unvoiced Kana characters. The voicing sign has been shown in the form of two circles above the Chinese characters in a copy of Gomamitsuki 護摩蜜記 bearing the date 1035.⁹⁾ Fig. 4 shows the different types of voicing signs discussed above. It may be added that the voicing sign in its present form came into standard use only during the Edo period (1603–1868).

Fig. 4 Different types of voicing signs

(a)	(b)	(c)	(d)
庵	縛 ^ゝ ba	遶 ^ゞ jo	o—
阿	垢 ^ゝ do	繞 ^ゞ jo	•—
毗 ^ゝ bi	駄 ^ゝ da	軒 ^ゞ gen	—
羅			△△
吽			

- (a) . → sign for unvoiced sound
 . . → sign for voiced sound

(b) Dot below the character is the voicing sign.

(c) Single dot on the right-hand top of the character is the voicing sign.

(d) Other voicing signs

5. Euphonic Changes

In Sanskrit, **sandhi** constitutes a very important area in grammar. It deals with the phonetical changes taking place in compound words made out of two or more words. As stated above, the **mantras** were transcribed with Chinese characters in China in order to facilitate their reading. These transcriptions introduced an oral or a nasal stop element in the readings of the words in certain cases. As a result, the readings of such words deviated from their spellings. In China this was interpreted as **sandhi**. The Chinese translated this word as *renjo* 連聲. With no Indian around to guide, the Japanese Siddham scholars assumed that the oral and the nasal stop elements introduced by the Chinese transcriptions had something to do with the pronunciation of the words. In short, they accepted the Chinese interpretation of *renjo*.

The introduction of oral and nasal stop elements produced two types of phonetical changes in the words. The Japanese Siddham scholars interpreted them as follows. In one type, two adjacent letters of a word or of a compound letter were involved in the phonetical change. The first letter acquired an oral or a nasal stop element under the influence of the second letter. This was called the *nitai sozoku* 二体相續 type of **sandhi**. In the other type also two adjacent letters were involved, and here also the first letter acquired an oral or a nasal stop element under the influence of the second letter. But in this case the second letter lost its own sound. This was called the *ittai fuzetsu* 一体不絶 type of **sandhi**. In other words, in the first case the reading of a word or compound letter acquired an additional oral or nasal stop element which was actually not present in the spelling. In the second

case a letter in a compound letter got transformed into an oral or a nasal element. In short, the first was the case of acquisition, and the second was the case of transformation.

The case of *nitai sozoku* will be illustrated with two words discussed by Myokaku in his *Shittan Yoketsu*. In one place Myokaku says that if the letters **ca, cha, ja, jha, ṭa, ṭha, ḍa, ḍha, ta, tha, da, dha, ra, la, śa, ṣa,** and **sa** follow a letter, the preceding letter acquires a lingual **visarga** sound. For instance, the word **gata** is pronounced as *ketta* 藥多 ... If the letter **ma** follows a letter, the preceding letter acquires a labial **chandravindu** sound. For instance, the word **sama** is pronounced as *samma* 三摩.¹⁰⁾ The term **visarga** means the oral stop element and **chandravindu** means the nasal stop element.

In the case of **gata**, the two characters used in transcriptions were read something like *ket* and *ta* in China. Myokaku has given the reading of these two characters with three Kana characters, *ke*, *tsu* and *ta*. The final /t/ of *ket* in the Chinese transcription represents the lingual **visarga** or oral stop element. It will be seen that the Chinese transcription introduced this element. It was interpreted that the two letters **ga** and **ta** were involved in the phonetical change here. The letter **ta** belonged to the lingual category and possessed the **visarga** element /t/. The letter **ga** acquired this /t/ under the influence of the immediately following letter **ta**. Hence the reading became /gat/, and consequently the Chinese transcribed it as *ket*. Myokaku has rendered this **visarga** or oral stop element /t/ with the kana *tsu*. It appears in the form of gemination of the immediately following consonant, which is /t/ in this case. So the Japanese reading became *ket-ta*. In the case of **sama**, the two characters used in transcription were

read something like **sam** and **ma**. The final /m/ of **sam** in the Chinese transcription represents the labial **chandravindu** or nasal stop element. Here also, the Chinese transcription introduced this element. It was interpreted that the two letters **sa** and **ma** were involved in the phonetical change here. The letter **ma** belonged to the labial category and possessed the **chandravindu** element /m/. The letter **sa** acquired this /m/ under the influence of the immediately following letter **ma**. So the reading became /sam/. Unfortunately Myokaku has not given the reading of these two characters in Kana as in the above case. The Japanese perhaps transcribed it as *samuma* in Kana and read as *samma*.

The case of *ittai fuzetsu* will be illustrated with the word **dharmā**. This word is made up of three letters **dha**, **ra** and **ma**, with **ra** and **ma** forming a compound letter **rma**. The word was transcribed with two characters read, perhaps, as **tat** 達 and **ma** 磨. The final /t/ of **tat** in the Chinese transcription represents the lingual **visarga** or oral stop element. Here also the Chinese transcription introduced this element. It was interpreted that the two letters **dha** and **ra** were involved in the phonetical change here. The letter **ra** belonged to the lingual category. So the letter **dha** acquired the lingual oral stop element /t/ under the influence of the immediately following letter **ra** and the reading became /dhat/. The letter **ra** lost its sound in the process. In Chinese, /dhat/ was transcribed as **tat**. So the reading of the word became something like **tatma**. The Japanese transcribed and perhaps pronounced the word as *tatsuma*.

The Siddham letters proved to be a big hurdle for the Japanese monks. With no Indian around, there was nobody to enlighten them about the correct pronunciation of the letters. In China, different au-

thors have used different Chinese characters with different pronunciations for transcribing the same letters and words. Besides, the Middle Indian, South Indian and North Indian ways of pronouncing the words and letters mentioned in the Chinese and the early Japanese works aggravated the problem further for the Japanese monks. They were aware that the Chinese transcriptions gave only the rough reading. So their only source of guidance was the tradition of reading transmitted orally from teacher to disciple. Consequently, most of the Siddham scholars of Japan took great care in explaining the pronunciation of the Siddham words in their writings. Myokaku, mentioned above, often cited examples from Japanese for explaining the deviations in pronunciation of the Siddham words from their spellings in his work Shittan Yoketsu. These examples provide extremely valuable data on the phonetical changes that took place in the Japanese words during the eleventh and twelfth centuries. The phonetical changes taking place within the Japanese words observed by Myokaku were popularly known as *renjo* among the Siddham scholars. Myokaku defined it as convenience in pronouncing the sounds or words. The later day Japanese language scholars called it *onbin* 音便 or euphonic change. The Japanese school grammar uses this term at present.

Myokaku has written Shittan Yoketsu mostly in the form of questions and answers. A typical set of question and answer where Myokaku has cited the euphonic changes in Japanese words for explaining the phonetic changes undergone by the Siddham words while pronouncing is given below.

Question: The sound of the letter **hu** is *ko* or *ku*. So, when **chandravindu** is added to it, it should be pronounced as *kom* or *kum*. Why is it pronounced as *um*? It sounds like the **chandra-**

vindu sound **m**, or sound **um** formed by combining **chandra-vindu** with the letter **u**. There is no sound of the letter **ha** in the pronunciation.

Answer: Indeed the letter **hum** should be pronounced as *kom*. Vajrabodhi also has given its reading as *kom* using two characters *ko gom* 戸含 with a note 'combine two'...¹¹⁾ But in Japan, this letter is read as *um* in the **dharanis**... Both in China and in India, the five characters *ka, ki, ku, ke, ko* interchange with the characters *a, i, u, e, o*. So the word **simha** is transcribed in Chinese character as *sima* 辛阿 ... In many Buddhist texts, **isana**, the presiding deity of Kamadhatu has been called as **kisana**. Here also, *i* and *ki* have been interchanged. In Japan also, we say *kakite* as *kaite*, *kikite* as *kiite*, *tsukite* as *tsuite*, *nakimono* as *naimono*, *fukakusa* as *fukausa*, *shitagutsu* as *shitauzu*.¹²⁾

The Japanese Siddham scholars conventionally read the letter **ha** as *ka*. In pronouncing the Siddham words containing this letter or its combination, often the sound /k/ was dropped in Japan. So an explanation for the dropping of /k/ while pronouncing was sought in the question. Myokaku tried to explain the dropping by citing similar examples from day-to-day Japanese of his time.

Myokaku has given other examples of such phonetical changes. To a question why the letters **ra, la, ca, cha, ja, jha, śa, ṣa**, and **sa** become (geminal) *tsu* when combining with other letters, Myokaku says that these letters are the linguo-dentals and other types of lingual sounds. So they are read with the lingual stop sound. When the letter **na** is read as *ja* and comes before a letter, it is read as lingual oral stop sound. In Japan also, the Kana characters *ra, ri, ru, re* and *ro* become (geminal) *tsu* when they are pronounced abruptly (*kyusei*

急声). For example, *sarishi* is pronounced as *sasshi*, *torisaka* as *tossa-ka*, *harite* as *hatte*, *kirite* as *kitte*, etc.¹³⁾ These are the cases of the Kanas *ra*, *ri*, *ru*, *re*, *ro* assuming the form of lingual oral stop /t/. It appears in the form of gemination in the words. They also assume the form of lingual nasal stop /n/ in certain cases. For example, *tarinamu* turns to *tannamu*, *arinamu* to *annamu*, *sarunotoki* to *sannotoki* and so on. There are also cases when the Kana *nu* turns into lingual nasal stop /n/. For example, *shiranuchi* becomes *shiranchi*, *toranuchi* becomes *toranchi* and so on.¹⁴⁾

Myokaku tried to explain here that the Siddham letters cited above turned into lingual oral stop when they came before another letter. This transformation appeared in the form of gemination of the immediately following consonant. Unfortunately he has given only the letters and not the Siddham words. The Japanese examples given by Myokaku here involve three types of changes. The first set of examples involves the transformation of the Kanas *ra*, *ri*, *ru*, *re*, *ro* into gemination of the immediately following consonant. The second set of examples involves the transformation of these Kanas into lingual nasal stop /n/. The third set involves the Kana *nu* becoming lingual nasal stop /n/.

Some of the other types of phonetical changes recorded by Myokaku elsewhere in his work are given below.

<i>sashite</i> → <i>saite</i>	<i>nashite</i> → <i>naite</i>
<i>kachite</i> → <i>katte</i>	<i>kafite</i> → <i>kaute</i> (pronounced <i>kote</i>)
<i>faruame</i> → <i>farusame</i>	<i>kanemono</i> → <i>kanamono</i>

Myokaku did not make any attempt to systematically classify his data on the phonetical changes in Japanese words. An attempt was made around 1734 by a monk Shoten 盛典 in his Wago Renjoshu 倭語連声集 to classify the changes. This was perhaps the first attempt of its kind. Shoten adopted the model of **sandhi** or *renjo* classification used in Siddham studies as the basis for his classification.

Shoten made a number of assumptions that were current among the Siddham scholars of his time for his model. He assumed that the twenty-five plosive consonants **ka, kha, ga, ... ba, bha, ma** harboured nasal stop elements in latent form. The non-plosive consonants **ya, ra... sa, ha** harboured the latent oral stop elements. In the case of the Kanas, the *a, ka, ya* Kanas belonged to the guttural category, the *sa, ta, na, ra* Kanas belonged to the lingual category, and the *fa, ma, wa* Kanas belonged to the labial category. Of the oral stop elements, the guttural element /k/ was expressed by the Kanas *ki, ku*, the lingual element /t/ by the Kanas *chi, tsu*, and the labial element /f/ by the Kana *fu*. Similarly of the nasal stop elements, the guttural element /ng/ was expressed by the Kana *u*, the lingual element /n/ by the Kana *n*, and the labial element /m/ by the Kana *mu*.¹⁵⁾

Shoten explained his model as follows. Two adjacent sounds or Kana characters in a Japanese word sometimes underwent a phonetical change. This phonetical change took place in two types. In one type, of the two Kanas involved, the first Kana was read with an additional oral or a nasal stop sound under the influence of the second Kana. The second Kana lost its own sound in the process. This was called the *ittai fuzetsu* phonetical change. In the other type, of the two Kanas involved, the first Kana was read with an additional oral or nasal stop sound under the influence of the second character as in the

above case. But here, the second Kana was also read simultaneously. This was called the *nitai sozoku* phonetical change.¹⁶⁾ To say in other words, the first type involved transformation of a Kana into an oral or a nasal stop element. As against this, the second type involved acquisition of an oral or a nasal stop element. The transformation or acquisition sometimes remained confined within the same sound class and sound category of the second Kana which was assumed to be responsible for the change. But sometimes the transformation or the change went beyond the sound class and sound category of the second Kana. Hence, it became necessary for Shoten to make a more detailed classification in order to take care of all these situations.

It has been stated above that Shoten divided the Kanas into two sound classes, oral and nasal. When the conversion or acquisition remained within the same nasal stop class or oral stop class, it was called *soken* 麁顯. But when the conversion or acquisition took place between the nasal stop class and the oral stop class or vice versa, it was called *nanmitsu* 𪛗密. Thus, *soken* was within-the-class change, and *nanmitsu* was between-the-classes change. Shoten also divided the Kanas into three sound categories, guttural, lingual and labial. When the conversion or acquisition involved remained within the same category, say, within the guttural category, it was called *onbin* 音便 phonetical change. But when the conversion or acquisition took place between the categories, say, between guttural and lingual, it was called *fuonbin* 不音便 phonetical change. In other words, *onbin* was within-the-category change, and *fuonbin* was between-the-categories change.¹⁷⁾ Shoten's model of the *renjo* phonetical changes has been shown in Table 4 below. The changes have been explained in Appendix 1.

Table 4 The *renjo* model of Shoten¹⁸⁾

<i>renjo</i>	ittai fuzetsu	soken	onbin	Guttural	<i>nakunasu</i> → <i>naunasu</i>
				Lingual	<i>kachitori</i> → <i>kandori</i>
				Labial	<i>kamita</i> → <i>kamuda</i>
		fuonbin	Guttural	<i>akifito</i> → <i>akiudo</i>	
			Lingual	<i>tofiya</i> → <i>tonya</i>	
			Labial	<i>nani</i> → <i>namusureso</i>	
	nanmitsu	onbin	Guttural	<i>fukakuiru</i> → <i>fukauiru</i>	
			Lingual	<i>shirinashi</i> → <i>shinnashi</i>	
			Labial	<i>kamito</i> → <i>gafuto</i>	
		fuonbin	Guttural	<i>ichibito</i> → <i>ichiudo</i>	
			Lingual	<i>ichibito</i> → <i>ichindo</i>	
			Labial	<i>fakuki</i> → <i>fafuki</i>	
nitai sozoku	soken	onbin	Guttural	<i>oyobuka</i> → <i>oyofauka</i>	
			Lingual	<i>tataku</i> → <i>tandaku</i>	
			Labial	<i>tobi</i> → <i>tomubi</i>	
		fuonbin	Guttural	<i>fotaru</i> → <i>foutaru</i>	
			Lingual	<i>figashi</i> → <i>fingashi</i>	
			Labial	<i>katori</i> → <i>kamudori</i>	
	nanmitsu	onbin	Guttural	<i>toka</i> → <i>touka</i>	
			Lingual	<i>nifatori</i> → <i>nifattori</i>	
			Labial	<i>baba</i> → <i>bamuba</i>	
		fuonbin	Guttural	<i>nyobou</i> → <i>nyoubou</i>	
			Lingual	<i>ariya</i> → <i>aranya</i>	
			Labial	<i>tekuwa</i> → <i>temuguwa</i>	

Shoten has explained each and every phonetical change given in the above table with the help of Siddham letters. This he did, perhaps, due to the difficulties he experienced in explaining the changes in certain cases. A study of the changes undergone by the first word *nakunasu* and the seventh word *fukakuiru* will give some idea of the problems faced by Shoten in classifying the changes. In both the cases *ku* changed into *u*. The change was within the guttural category. He in-

terpreted the first case as a change within the nasal class, and the second case as a change from the oral class to the nasal class. Shoten explained the apparent inconsistency with the help of the Siddham letters. He assumed that the Kana *ku* in the first case belonged to the family of the Siddham letter **ka**. This **ka** was a plosive guttural letter and harboured the nasal stop element /u/. So *ku* naturally changed into its nasal *u*. Therefore, it is a case of *soken* or within-the-class change. In the second case the Kana *ku* belonged to the family of the Siddham letter **ha**. This **ha** was a non-plosive guttural letter and harboured the oral stop element /k/. Here, *ku* changed into guttural nasal *u* instead of its own guttural oral /k/. So it is a case of *nanmitsu* or between-the-classes change. This situation perhaps prompted Shoten to explain every example with the help of Siddham letters.

Shoten based his classification of phonetic changes exclusively on the Siddham **sandhi** model. As against this, another attempt at classifying the phonetical changes from a totally different angle was made about fifty years later around 1784 by Motoori Norinaga 本居宣長 in his Kanji Sanonko 漢字三音考. He based his classification on the final results of the phonetical changes. In doing so, he arrived at a much simpler classification. He called it *onbin* or euphonic changes. His *onbin* classification is the accepted model in the Japanese school grammar at present.

Motoori Norinaga contended that the Japanese words underwent four basic types of *onbin* changes. The first type was the *i-onbin*, where the sound *ki* turned into *i*. The changes like *okite*→*oite* and *tsukitachi*→*tsuitachi* fell under this category. The second type was the *u-onbin*. This phonetical change occurred under diverse situations. Sometimes a word acquired the sound *u*. For instance, *shikashite*→*shi-*

kaushite. Again, sometimes the sounds *ma, mi, mu, fa, fi, fu, fe, fo, ku*, etc., changed to *u*. For instance, *temizu*→*teuzu*, *omofite*→*omoute*, *yoku*→*you*, and so on. The third type was the *hatsu-onbin* 撥音便 involving the nasal stop, usually represented by *n*. It appeared in two forms. In one case, such sounds like *ni, nu, fa, fi, fo, bi, mi, mu, mo, ri* and *ru*, etc., got transformed into *n*. The changes like, *ikani*→*ikan*, *shinobite*→*shinonde*, *karina*→*kanna* represents such transformation. In the other case the word acquired the nasal stop *n*. The change *manaka*→*man-naka* is a typical case of acquisition. The fourth type was the *soku-onbin* 促音便 where a consonant was geminated. In this case also, sometimes the geminate consonant was an acquired one or sometimes a sound was transformed into the geminate of the immediately following consonant. The change *mataku*→*mattaku* was a case of geminate acquisition, and the change *narite*→*natte* was a case of geminate transformation.¹⁹⁾

Motoori Norinaga was familiar with the Shittan phonetical theories which played an important role in the development to Japanese linguistic studies. As stated above, the Chinese entering tone sound /k/, /t/, and /p/ were written in Kana as follows: /k/→*ki, ku*, /t/→*chi, tsu*, and /p/→*fu*. Motoori was aware that this was not correct. He writes as follows.

The foreign entering tone sounds (the syllables ending in /k/, /t/, /p/) do not possess the vowels as in the cases of *ki, ku, chi, tsu, fu*. Although they appear to be simple sounds they are not pure simple sounds. The ending gets chocked inside the throat and is barely audible. It is like the *ak* 悪 of *akki* 悪鬼, *it* — of *ittan* — 旦 and so on.... If we express these entering tone sounds (the consonantal ending, like /k/ of *ak*, /t/ of *it*, etc.) with

the help of the **visarga** sign, it will be like writing the Toon 唐音 pronunciation of the characters 日 (sun) and 月 (moon) as *jit* and *et*. I have done this (i. e., used the **visarga** sign) not because I like exotic things. I have done this because there is no way to express it (such endings) with the help of Kana. If we add this sign (viz., the **visarga** sign), everybody will know that the syllable has a chocking ending.²⁰⁾

Fig. 5 Visarga sign of Motooti Norinaga

㇀	ジ ㇀	エ ㇀	ナ ㇀ テ
Motoori's visarga sign	<i>jit</i>	<i>it</i>	<i>natte</i>

Here, Motoori Norinaga has used the **visarga** sign with slight modification, and not the conventional Kana *tsu*, to express the sound /t/ of *jit* and *et*. He has written the two dots of **visarga** horizontally and not vertically as shown in Fig. 5. He used this modified Siddham **visarga** sign as a symbol for gemination instead of the conventional Kana *tsu*. He called the modified **visarga** sign as *ten* 点 and not *ji* 字. In Siddham, the vowels come in two forms, letter form and vocalic sign form. The vocalic sign form is used with the consonants to obtain their vocalic combinations, like **ka + i → ki**. The vowel letters are called *ji*, a word synonymous with character. The vocalic signs are called *ten*. Motoori perhaps reasoned that when a consonant is geminated, say /kk/, /tt/, /pp/, etc., the first consonant of the two is not a character. Hence it is not correct to use the Kana *tsu*, a character, to

express a single consonant. So he decided to use the **visarga** sign, which the Siddham scholars had been using for explaining the entering tone endings /k/, /t/, /p/, of the Chinese characters. Being familiar with the Siddham phonetical theories, Motoori was well aware of the importance of Siddham in phonetical studies. In his *Kanji Sanonko*, he has devoted a section on Siddham phonetics. In it he has stated that in Siddham, the sounds like the Chinese entering tone endings are called the **visarga** sounds. In expressing such sounds in Siddham, two dots are added by the side of the letters. These two dots are called *nehanten* 涅槃点 or **visarga**. In this section he has further stated that Siddham holds the clue for knowing the old sounds of the Chinese characters. So Siddham is usually employed in discussing the Old Chinese sounds. A knowledge of Siddham is a must for those who want to study the science of phonetics.²¹⁾

Motoori was familiar with the **sandhi** or *renjo* hypothesis of Siddham studies. He says that in Siddham there are five letters **nga**, **ña**, **ṇa**, **na** and **ma**. At the time of *renjo*, if these letters follow another letter, they impart a nasal element to the letter preceding them. Similarly, if the eight letters **ya**, **ra**, **la**, **va**, **śa**, **ṣa**, **sa** and **ha** follow another letter, they impart an oral stop element to the letter preceding them.²²⁾ Motoori has also employed the *sannai* or three stops hypothesis of Siddham studies in his explanation. He says that the Brahmi letters have three types of **chandravindu** or nasal stop sounds, viz., guttural, lingual and labial. Of the Sanskrit sounds transcribed in the Buddhist texts, those transcribed with the characters like 仰 **gang**, 講 **kang**, etc., (i. e., those ending in /ng/) are called the guttural nasal stop sounds, those transcribed with characters like 安 **an**, 見 **ken**, etc., (i. e., those ending in /n/) are called the the lingual nasal stop

sounds, and those transcribed with the characters like 嚴 *gom*, 劍 *ken*, etc., (i. e., those ending in /m/) are called the labial nasal stop sounds.... The **visarga** or oral stop sounds also come in three types, guttural, lingual and labial. Of the Sanskrit sounds transcribed in the Buddhist texts, those transcribed with the characters like 惡 *ak*, 索 *sak*, etc., (i. e., ending in /k/) are called the guttural oral stop sounds, those transcribed with the characters like 悉 *sit*, 壹 *it*, etc., (i. e., those ending in /t/) are called the lingual oral stop sounds, and those transcribed with the characters like 濕 *sip*, 澁 *jip*, etc., (i. e., those ending in /p/) are called the labial oral stop sounds. These three types correspond to the entering tone finals. The Chinese characters whose endings turn into *ki*, *ku* in Japanese are called the guttural oral stop characters, whose endings turn into *tsu*, *chi* are called the lingual oral stop characters, and whose endings turn into *fu* are called the labial oral stop characters.²³⁾

6. Describing the Kana sounds

It has been stated above that in Siddham the sounds are classified into five groups, viz., velar, palatal, retroflex, dental and labial. The Chinese adopted this classification, but modified them into guttural, dental, lingual, velar and labial. The Japanese adopted the Chinese version for their linguistic studies. Unlike India, the classification of the Siddham letters was not standardised in China. Every writer classified the Siddham letters in his own way. The Japanese followed suit. The classification varied from author to author. Even the same author used different classifications in different works. This was reflected in the Gojuonzu also. Some of these classifications have been shown in

the Gogonzu of Table 2. There is a description of the sounds represented by the Kana characters based on one of such classifications in a work Goin Shidai 五韻次第. Although the book carries the name of Ryogen 良源, a monk of the tenth century, as its author, it is generally believed to be a work of the thirteenth century. Here, the first Kana of each group has been given in Chinese transcription. It says that the *a* sounds are produced from the throat. The other sounds are produced from lips, tongue, molars and teeth. The *ka* sounds are produced from the molars. The *wa* sounds are produced by moving the side of the mouth a little. The *sa* sounds are produced from the teeth. The *ya* sounds are produced by moving the jaw a little. The *fa* sounds are produced by putting the lips together and releasing the breath abruptly. The *ma* sounds are produced by putting together the lips a little and releasing the breath gently. The *ra* sounds are produced by rolling the tongue. The *ta* sounds are produced by putting the tongue against the palate and then releasing the breath. The *na* sounds are produced by putting the tongue against the palate lightly and then releasing the breath through the nose. The book also carries a table stating that the *a* Kanas are guttural sounds, the *ka* and *wa* Kanas are velar sounds, the *sa* and *ya* Kanas are dental sounds, the *fa* and *ma* Kanas are labial sounds, and *ta*, *ra* and *na* Kanas are lingual sounds.²⁴⁾

It is generally believed that the present day Japanese *ha* sounds evolved from archaic *pa* sounds via *fa* sounds. The sixteenth century Jesuit missionaries and the Dutch visitors up to the nineteenth century have recorded the *ha* sounds as *fa* sounds. The description of pronunciation of the *fa* sounds given above also suggests that the sounds were at an intermediate stage between the archaic *pa* sounds

and the *fa* sounds at that point of time. Again, the description of the *sa* sounds, and the identification of these sounds together with the *ya* sounds as dental sounds suggest that the phonetic value of the *sa* sounds was closer to /ch/ or /ts/ in those days.

Waji Seiransho 和字正濫鈔, written by Keichu 契沖 (1640–1701) around 1693, also carries a description of pronouncing the Kana characters. He initiates his discussion with the Siddham letters. He says that in Siddham there are twelve vowels. Seen in the light of Japanese, these can be summed up into five vowels *a*, *i*, *u*, *e* and *o*. Next, there are the thirty-five consonants. By eliminating the homophonic and the voiced consonants their number comes down to nine, viz., *ka*, *sa*, *ta*, *na*, *fa*, *ma*, *ya*, *ra* and *wa*. The five vowels are the guttural sounds. The first sound that comes out as the mouth is opened is *a*. It is ever present inside the throat. The sound *a* gets transformed into *i* when the breath touches the tongue. This is the first transformation of the sound *a*. The sound *a* gets transformed into *u* when the breath touches the lips. The sound *e* is produced from the sound *i*. It is the weakened form of *i*. Here also the breath touches the tongue. The sound *o* is produced from the sound *u*. It is the weakened form of *u*. Here also the breath touches the lips. Thus, both *e* and *o* are produced from the sound *a*. The *ka* sounds are produced from a little rear part of the throat. Although they belong to the guttural category, they touch the molars. So they are also called the velars. The *sa*, *ta* and *na* sounds are the lingual sounds. The *sa* sounds touch the tip of the tongue. They also touch the teeth. So they are also called the dentals. The *ta* sounds are produced by scratching the middle of the tongue against the upper jaw. The *na* sounds are produced by scratching the tip of the tongue against the upper jaw. It is also pro-

duced from the nose. So the **dharanis** carry a note that they are the nasal sounds. Both the *fa* and *ma* sounds are the labial sounds. The *fa* sounds are lighter and the breath touches the inner side of the lips. The *ma* sounds are heavier and the breath touches the outer side of the lips. Thus the seven types of sounds described above are grouped into guttural, lingual and labial categories. Such grouping is done in the *sannai* or three stops hypothesis also. The *ya* sounds are gutturo-lingual in character. The *ra* sounds are just the linguals. Here the tongue is rolled up and the upper jaw is scratched more strongly than the *ta* and *na* sounds. The *wa* sounds are gutturo-labial in character. Here the breath touches the inner side of the lips very lightly when compared with the *fa* sounds. The three sounds *ya*, *ra* and *wa* are placed in the guttural, dental and labial categories respectively.²⁵⁾

A comparison of Keichu's description of the *fa* sounds with that given in Goin Shidai reveals that the sounds had changed to a certain extent in the intervening period. He does not mention of the two lips touching each other in his description.

Philological evidences show that the sound *fa* coming in non-initial position of a word sometimes changed into the sound *wa* during the eleventh century²⁶⁾. Myokaku has recorded such change in his Shittan Yoketsu. He says that the literal reading of the Chinese transcription 率堵波 of the Siddham word **stupa** (pagoda) is *sotofa*, but in Japan it is usually read as *sotowa*. In Japan, the words 'one' and 'two' are called *fitotsufa* and *futatsufa*. They are also called *fitotsuwa* and *futatsuwa*.²⁷⁾ Myokaku has written these words with the Katakana characters. This record also attests the occasional change of the sound *fa* into *wa*.

7. Keichu's New Japanese Characters

Keichu proposed a new form of script for writing the Japanese language in his *Waji Seiransho* mentioned above. It was an academic exercise which, perhaps, no other Japanese ever tried. He designed his script on the basis of Siddham. The concept he described can be summed up as follows. In Siddham writing, the vowels are abbreviated into signs when they are added to the consonants. These vocalic signs are something like the water radical of the Chinese characters. Take for instance the letter **ka**. When **i** is added to it, it becomes **ki**, when **u** is added it becomes **ku**, when **e** is added it becomes **ke**, and when **o** is added it becomes **ko**.... The vocalic signs behave like the rimes of the Chinese characters.²⁸⁾ New characters can be formed in the same manner for the other Kanas *sa, ta, na, fa, ma, ya, ra* and *wa*. Thus, the nine sets of Kanas will have four forms each. So there will be thirty-six of them. The total number will come to fifty.²⁹⁾

As stated above, Keichu designed his Kanas on the Siddham principle of forming vocalic combinations of the consonants. In Siddham, all the vowels combine with the consonants excepting for the first vowel, the short **a**. Instead of adding the vowels as such to the consonants, they are modified into signs in such combinations. In China, these vocalic signs were called *ten*, as against the term *ji* or letter used for the vowel letters. In his proposed Kanas, Keichu selected five Chinese characters for the five vowels *a, i, u, e, o*, and nine Chinese characters for the nine consonant Kanas *ka, sa, ta, na, fa, ma, ya, ra, wa*. Next, he modified the four *i, u, e, o* vowel characters into signs as in the case of Siddham. These four signs have been shown in Fig. 6. Keichu next added these signs to the nine Chinese characters

to get the other Kanas. For example, in Siddham the letter **ki** is obtained by adding the vocalic **i**-sign to the consonant **ka**. Keichu designed the Kana *ki* exactly in the same way by adding the sign for the vowel *i* to the Kana *ka*. Keichu designed fifty Kanas in this way and arranged them in the form of Gojuonzu. After giving the chart, Keichu writes that he prepared the chart on basis of Shittan.³⁰⁾ Table 5 shows the Gojuonzu with the new Kanas made in this way by Keichu.

Fig. 6 Vocalic signs of Keichu

以 → 人 宇 → 于 江 → 工 遠 → 袁
i *u* *e* *o*

Table 5 Keichu's Gojuonzu with new characters

和 <i>wa</i>	良 <i>ra</i>	也 <i>ya</i>	末 <i>ma</i>	波 <i>fa</i>	奈 <i>na</i>	太 <i>ta</i>	左 <i>sa</i>	加 <i>ka</i>	安 <i>a</i>	喉音 声韻 能生 一本
契 <i>i</i>	奧 <i>ri</i>	央 <i>i</i>	夾 <i>mi</i>	焚 <i>fi</i>	突 <i>ni</i>	次 <i>chi</i>	矣 <i>shi</i>	契 <i>ki</i>	以 <i>i</i>	唯 舌 韻非 安所 生
孛 <i>u</i>	孛 <i>ru</i>	孛 <i>yu</i>	孛 <i>mu</i>	孛 <i>fu</i>	孛 <i>nu</i>	孛 <i>tsu</i>	孛 <i>su</i>	孛 <i>ku</i>	宇 <i>u</i>	唯 牙 韻非 安所 生
聖 <i>e</i>	皇 <i>re</i>	聖 <i>e</i>	聖 <i>me</i>	聖 <i>fe</i>	聖 <i>ne</i>	聖 <i>te</i>	聖 <i>se</i>	聖 <i>ke</i>	江 <i>e</i>	唯 末 舌 韻非 以所 生
袁 <i>wo</i>	袁 <i>ro</i>	袁 <i>yo</i>	袁 <i>mo</i>	袁 <i>fo</i>	袁 <i>no</i>	袁 <i>to</i>	袁 <i>so</i>	袁 <i>ko</i>	遠 <i>o</i>	唯 末 牙 韻非 宇所 生

五十音圖
 橫各行同韻相通
 豎各行五音相通

8. Concept of Alphabet

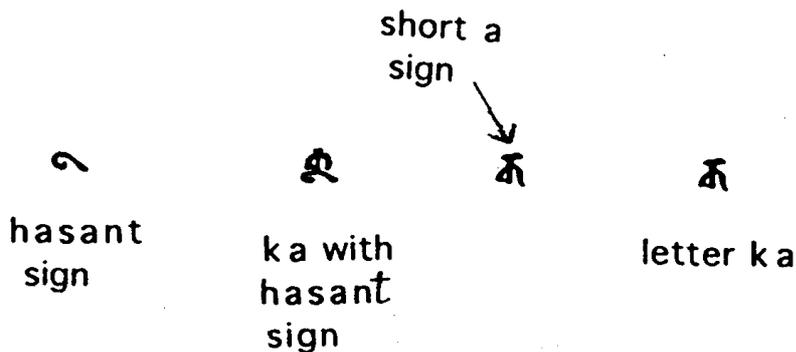
The consonant letters of Siddham possess a dual character. They sometimes behave like alphabets and sometimes behave like syllables. By convention, the Siddham consonant letters are pronounced with a short /a/ sound, such as **ka**, **kha**, **ga**,... When these letters come in a word, their pronunciation sometimes retains the short /a/ sound, and sometimes drops it. When the short /a/ is dropped, the letter behaves like an alphabet. In a consonant ending word, the consonant is usually pronounced as an alphabet. For instance, the word written as **bala** (strength) is pronounced as **bal**. Often, an orthographical sign called **hasant** is added to the consonant letter to show specifically that it is alphabetic. Again, when two or more consonant letters form a compound letter, the non-final letters become alphabetic. For instance the compound letter formed by the three letters **sa**, **ta** and **ra** is pronounced as **stra**. Here the letters **sa** and **ta** behave like alphabets, /s/ and /t/. In such cases, the letters are modified in shape called consonantal ligatures, and the ligatures are joined together to form the compound letters. Some such compound letters have been shown in Fig. 1 earlier. The pictographic Chinese characters are syllabic in nature, and cannot be resolved to represent the individual constituent sounds. As a result, they were not suited to reproduce the alphabetic property of the Siddham letters. Because of this, understanding the alphabetic behavior of the Siddham consonant letters was a big problem for the Chinese and the Japanese.

One of the early Japanese scholars to pay serious attention to the alphabetic behavior of Siddham consonant letters was Myokaku. In China, the **hasant** sign was called *tatsu* 怛達 and the consonantal liga-

tures were called variously as *hantaiji* 半体字 or *hanji* 半字 or *hanon* 半音. The Siddham words quite often had consonant letters with the **hasant** sign attached to them. The transcription of such consonant letters often carried a reading note *hanon*, which basically meant consonantal ligature. Since a consonant letter behaves like an alphabet in its ligature form, this was, perhaps, an attempt to specify the alphabetic property of the letters. Myokaku found an explanation of *hanon* in Dainichi Gishaku 大日義積. It says that if the letter short **a** is subtracted from the letter **ka** and then the sound short **kai** 械 is made within the throat, the sound does not remain **ka** any more. The letters **ka** and short **a** make the sound **ka**. Hence, without the letter short **a** it is not possible to produce the sound **ka**. It is a compound sound.... If the sound short **a** is absent, or in other words, if the mouth is not opened, the sound will not be produced. The letters like **ka** with the **hasant** sign attached to them do not have the sound short **a**³¹⁾ Myokaku has used the Chinese transcriptions mostly in his explanation. Fig. 7 shows the **hasant** sign and the horizontal line symbolic of short **a**.

The explanation cited above by Myokaku suggests that he was aware of the alphabetic behavior of the consonant letters. Following

Fig. 7 Symbolic short a sign and hasant sign



the above explanation, he expressed the alphabetic property with the help of the Kana characters. He says that the sound of the letter **ka** is *kua*. If *a* is not there, the sound becomes *ku*. The sound of the letter **ta** is *tsua*. If *a* not there, the sound becomes *tsu*.³²⁾ Myokaku has used the sounds *ku* and *tsu* here to express the alphabetic value /k/ and /t/ of the letters **ka** and **ta**. In short, Myokaku used *ku* and *tsu*, or in other words, the u-syllabic form of the Kanas to express the alphabetic property of the consonantal letters in this work.

Myokaku employed a similar method to express the alphabetic values of the consonant Kanas in his work Hanon Saho. He expressed the value of the Kana *ka* as *kua*, *ki* as *kui*, *ku* as *kuu*, *ke* as *kue*, and *ko* as *kuo*. Similarly, he expressed the value of the Kana *sa* as *sua*, *shi* as *sui*, *su* as *suu*, *se* as *sue*, and *so* as *suo*. He used this method to express the phonetical values of other consonant Kanas also.³³⁾ In the example quoted above, he used the Kanas *ku* and *su* to express the alphabetic values /k/ and /s/ as in the case of the Siddham letters. In short, he used the u-syllabic form of the consonant Kanas to express their alphabetic values. Myokaku was able to do this because he had a good understanding of the alphabetic and syllabic behavior of the Siddham consonant letters.

Myokaku has given the phonetic values of *sa*, *shi*, *su*, *se*, *so* as *sua*, *sui*, *suu*, *sue*, *suo*, and those of *ta*, *chi*, *tsu*, *te*, *to* as *tsua*, *tsui*, *tsuu*, *tsue*, *tsuo* in his Hanon Saho.³⁴⁾ At present, the *sa*-line Kanas have two consonants, /s/ and /sh/. Similarly, the *ta*-line Kanas have three consonants, /t/, /ch/ and /ts/. Myokaku has used the Kana *su* to express the former, and the Kana *tsu* to express the latter. This suggests two possibilities. One is that the *sa*-line Kanas and the *ta*-line Kanas had only one consonant each in the days of Myokaku. Another is that he

just generalised the phonetical values for conducting his arguments.

9. Gender

Unlike the Japanese words, the Sanskrit words have three genders, viz., masculine, feminine and neuter. Most of the Siddham scholars of Japan have treated gender very casually, perhaps because they did not face any gender related problems. Some Siddham scholars, however, have tried to assign gender to the Japanese words. Shoten, mentioned above, says that in Sanskrit there are masculine gender and feminine gender. The masculine gender form of the word god is **deva**, and its feminine gender form is **devi**. The Kanas ending in /a/ sound like *a*, *ka*, *sa*, etc., express the masculine form, and the Kanas ending in /i/ and three other vocalic sounds express the feminine form. In the two words *amanogawa* (heavenly river, milky way) and *amenoshita* (under the heaven), *ama* is the masculine form and *ame* is the feminine form of the word heaven.³⁵⁾

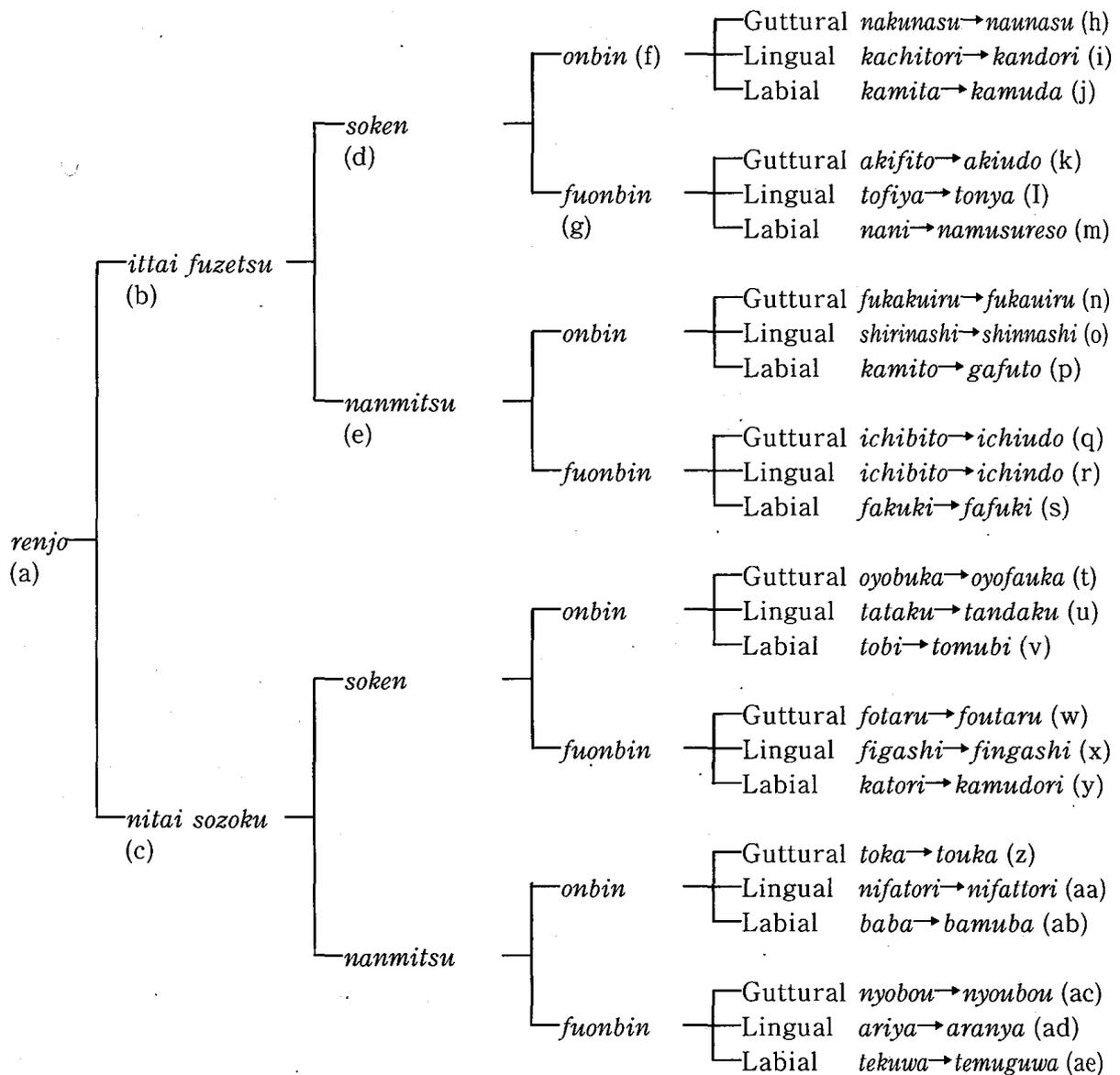
10. Concluding remarks

Sanskrit had a profound linguistic interaction with the Japanese language. The consonantal ligatures used in making the compound letters in Sanskrit may have provided some idea in evolving the Kana characters by truncating the Chinese characters. After the Kanas evolved, they were arranged in a number of ways. One such arrangement, the Gojuonzu, was based on the Sanskritic model, and this model was used extensively in phonetical studies. The necessity to read the **mantras** correctly was a factor in devising the diacritical sign for

expressing the voicing sounds. This voicing sign eliminated the need for evolving twenty voiced Kanas. The concept of **sandhi**, as interpreted in China and Japan, played an important role in classifying the *onbin* phonetical changes taking place in the Japanese words. The Sanskrit classification of sounds was employed in describing the phonetical values of the Japanese Kana characters. A new set of characters for writing the Japanese language was designed on the princi-

Appendix 1

Table 4 The *renjo* model of Shoten



ple of vocalic combination of the Sanskrit letters. Some scholars had a vague idea of pure consonants. Some also tried to assign gender to Japanese words.

- (a) The term *renjo* was coined in China for the Sanskrit grammatical category **sandhi**. In Japan, the Siddham scholars applied it to mean the euphonic changes taking place within the Japanese works.
- (b) In *ittai fuzetsu* euphonic change, a Kana character in a word gets transformed into an oral stop or a nasal stop element.
- (c) In *nitai sozoku* euphonic change, a word acquires an oral or a nasal stop element not originally present in it under the influence of the Kana that immediately follows the acquired element.
- (d) In *soken*, the euphonic change remains confined within the same class, that is within the oral stop class or the nasal stop class.
- (e) In *nanmitsu*, the euphonic change takes place between the classes, that is from oral stop class to nasal stop class and vice versa.
- (f) In *onbin*, the euphonic change takes place within the same category, i. e., within the guttural category or lingual category or labial category.
- (g) In *fuonbin*, the euphonic change takes place between the categories, say, from guttural category to lingual or labial category and so on.
- (h) In *nakunasu*, the Kana *ku* belongs to the plosive guttural category and harbours the nasal stop element /ng/, which is expressed by *u*. The *renjo* reading is *naunasu*. Here, *ku* has been transformed into this guttural nasal *u*. So it is a case of *onbin*. This is within the nasal class and within the guttural category change.

- (i) In *kachitori*, the Kana *chi* belongs to the plosive lingual category, and harbours the nasal stop element /n/. The *renjo* reading is *kandori*. Here *chi* has been transformed into this *n*. So it is a case of *onbin*. This is within the nasal class and within the lingual category change.
- (j) In *kamita*, the Kana *mi* belongs to the plosive labial category, and harbours the nasal stop element /m/, which is expressed by *mu*. The *renjo* reading is *kamuda*. Here, *mi* has been transformed into this *mu*. So it is a case of *onbin*. This is within the nasal class and within the labial category change.

The above three are the cases of within-the-class and within-the-category changes.

- (k) In *akifito*, the Kana *fi* belongs to the plosive labial category, and harbours the nasal stop element /m/ which is expressed by *mu*. The *renjo* reading is *akiudo*. Here *fi* has been transformed into guttural nasal *u* and not *mu*. So it is a case of *fuonbin*. This is within the nasal class, but between-the-categories (from labial to guttural) change.
- (l) In *tofiya*, the Kana *fi* belongs to the plosive labial category, and harbours the nasal stop element /m/ which is expressed by *mu*. The *renjo* reading is *tonya*. Here *fi* has been transformed into lingual nasal *n* and not *mu*. So it is a case of *fuonbin*. This is within the nasal class, but between-the-categories (from labial to lingual) change.
- (m) In *nani*, the Kana *ni* belongs to the plosive lingual category, and harbours the nasal stop element /n/. The *renjo* reading is *namu* of *namasureso*. Here *ni* has been transformed into labial nasal *mu* and not *n*. So it is a case of *fuonbin*. This is within the nasal

class, but between-the-categories (from lingual to labial) change.

The above three are the cases of within-the-class but between-the-categories changes.

- (n) Shoten assumes that the Kana *ku* in *fukakuiru* is the non-plosive guttural Siddham letter **hu**. So the Kana *ku* belongs to the non-plosive guttural category, and harbours the oral stop element /k/. The *renjo* reading is *fukauiru*. Here *ku* has been transformed into guttural nasal *u*. So it is a case of *onbin*. This is between-the-classes (from oral to nasal), but within the guttural category change.
- (o) In *shirinashi*, the Kana *ri* belongs to the non-plosive lingual category, and harbours the oral stop element /t/. The *renjo* reading is *shinnashi*. Here *ri* has been transformed into lingual nasal *n*. So it is a case of *onbin*. This is between-the-classes (from oral to nasal), but within the lingual category change.
- (p) In *kamito*, the Kana *mi* belongs to the plosive labial category, and harbours the nasal stop element /m/. The *renjo* reading is *gafudo*. Here *mi* has been transformed into labial oral *fu*. So it is a case of *onbin*. This is between-the-classes (from nasal to oral), but within the labial category change.

The above three are the cases of between-the-classes but within-the-category changes.

- (q) Shoten assumes that the Kana *bi* in *ichibito* is the non-plosive labial Siddham letter **vi**. So the Kana *bi* belongs to the non-plosive labial category, and harbours the oral stop element /f/ expressed by *fu*. The *renjo* reading is *ichiudo*. Here *bi* gets transformed into guttural nasal *u* instead of *fu*. So it is a case of *fuonbin*. This is between-the-classes (from oral to nasal) and between-the-categories (from labial to guttural) change.

(r) Shoten assumes that the Kana *bi* in *ichibito* is the non-plosive labial Siddham letter **vi**. So the Kana *bi* belongs to the non-plosive labial category, and harbours the oral stop element /f/ expressed by *fu*. The *renjo* reading is *ichndo*. Here *bi* gets transformed into lingual nasal *n* instead of *fu*. So it is a case of *fuonbin*. This is between-the-classes (from oral to nasal) and between-the-categories (from labial to guttural) change.

(s) In *fakuki*, the Kana *ku* belongs to the plosive guttural category, and harbours the nasal stop element /ng/ which is expressed by *u*. The *renjo* form is *fafuki*. Here *ku* has been transformed into labial oral *fu* instead of *u*. So it is a case of *fuonbin*. This is between-the-classes (from nasal to oral) and between-the-categories (from guttural to labial) change.

The above three are the cases of between-the-classes and between-the-categories changes.

(t) In *oyobuka*, the Kana *ka* belongs to the plosive guttural category and harbours the nasal stop element /ng/, which is expressed by *u*. The *renjo* form is *oyofauka*. Here the word has acquired *u* under the influence of *ka*. So it is a case of *onbin*. This is within the nasal class and within the guttural category change.

(u) In *tataku*, the Kana *ta* belongs to the plosive lingual category and harbours the nasal stop element /n/. The *renjo* form is *tandaku*. Here the word has acquired *n* under the influence of *ta*. So it is a case of *onbin*. This is within the nasal class and within the lingual category change.

(v) In *tobi*, the Kana *bi* belongs to the plosive labial category and harbours the nasal stop element /m/, which is expressed by *mu*. The *renjo* form is *tomubi*. Here the word has acquired *mu* under

the influence of *bi*. So it is a case of *onbin*. This is within the nasal class and within the labial category change.

The above three are the cases of within-the-class and within-the-category changes.

(w) In *fotaru*, the Kana *ta* belongs to the plosive lingual category and harbours the nasal stop element /n/. The *renjo* form is *foutaru*. Here the word has acquired guttural nasal *u* under the influence of *ta* instead of acquiring *n*. So it is a case of *fuonbin*. This is within the nasal class but between-the-categories (from lingual to guttural) change.

(x) In *figashi*, the Kana *ga* belongs to the plosive guttural category and harbours the nasal stop element /ng/ which is expressed by *u*. The *renjo* form is *fingashi*. Here the word has acquired lingual nasal *n* under the influence of *ga* instead of acquiring *u*. So it is a case of *fuonbin*. This is within the nasal class but between-the-categories (from guttural to lingual) change.

(y) In *katori*, the Kana *to* belongs to the plosive lingual category and harbours the nasal stop element /n/. The *renjo* form is *kamudori*. Here the word has acquired labial nasal *mu* under the influence of *to* instead of acquiring *n*. So it is a case of *fuonbin*. This is within the nasal class but between-the-categories (from lingual to labial) change.

The above three are the cases of within-the-class but between-the-categories changes.

(z) Shoten assumes that the Kana *ka* in *toka* is the Japanese form of the non-plosive guttural Siddham **ha**. So this Kana *ka* belongs to the non-plosive guttural category, and harbours the oral stop element /k/, expressed by *ku*. The *renjo* reading is *touka*. Here the

word has acquired guttural nasal *u* under the influence of *ka*. So it is a case of *onbin*. This is between-the-classes (from oral to nasal) but within the guttural category change.

(aa) In *nifatori*, the Kana *to* belongs to the plosive lingual category and harbours the nasal stop element /n/. The *renjo* reading is *nifattori*. Here word has acquired lingual oral /t/ under the influence of *ta*. So it is a case of *onbin*. This /t/ is written with the Kana *tsu*, and it appears in the form of gemination of *to*. This is between-the-classes (from nasal to oral) but within the lingual category change.

(ab) Shoten assumes that the second Kana *ba* in *baba* is the Japanese form of the non-plosive labial Siddham letter **va**. So the Kana *ba* belongs to the non-plosive labial category, and harbours the oral stop element /f/, expressed by *fu*. The *renjo* reading is *bamuba*. Here the word has acquired labial nasal *mu* under the influence of *ba*. So it is a case of *onbin*. This is between-the-classes (from oral to nasal) but within the labial category change.

The above three are the cases of between-the-classes but within-the-category changes.

(ac) In *nyobou*, the Kana *bo* belongs to the plosive labial category, and harbours the oral stop element /f/, expressed by *fu*. The *renjo* reading is *nyoubou*. Here the word has acquired guttural nasal *u* under the influence of *bo* instead of acquiring *fu*. So it is a case of *fuonbin*. This is between-the-classes (from oral to nasal) and between-the-categories (from labial to guttural) change.

(ad) In *ariya*, the Kana *ya* belongs to the non-plosive guttural category, and harbours the oral stop element /k/, expressed by *ku*. The *renjo* form is *aranya*. Here the word has acquired lingual nas-

al *n* under the influence of *ya* instead of acquiring *ku*. So it is a case of *fuonbin*. This is between-the-classes (from oral to nasal) and between-the-categories (from guttural to lingual) change.

(ae) Shoten assumes that the Kana *ku* in *tekuwa* is the Japanese form of the non-plosive guttural Siddham letter **hu**. So this Kana *ku* belongs to the non-plosive guttural category, and harbours the oral stop element /k/. The *renjo* reading is *temuguwa*. Here the word has acquired labial nasal *mu* under the influence of *ku*. So it is a case of *fuonbin*. This is between-the-classes (from oral to nasal) and between-the-categories (from guttural to labial) change.

The above three are the cases of between-the-classes and between-the-categories changes.

References

- 1) Arai Hakuseki: Dobun Tsuko, p. 160B, 166T, Kokugogaku Taikei, V. 5, Kokusho Kankokai, Tokyo, 1975 (新井白石, 同文通考)
- 2) Ibid., pp. 171, 177
- 3) Ibid., p. 162B
- 4) The Japanese tried two other models, the Taini model and the Iroha model, to arrange the Kana characters. The Iroha model is attributed to monk Kukai mentioned above. The Taini model was also soon given up. Only the Gojuonzu model and the Iroha model have survived. The traditional practice had been to arrange the Katakana characters in the Gojuonzu model, and the Hiragana characters in the Iroha model.
- 5) Myokaku: Shittan Yoketsu, pp. 529B–530T, The Taisho Shinshu Daizokyo, Vol. 84, The Taisho Shinshu Daizokyo Kankokai, Tokyo, 1963 (明覚, 悉曇要訣)
- 6) Annen: Shittan Junirei, p. 463, The Taisho Shinshu Daizokyo, V. 84 (安然, 悉曇十二例)
- 7) Yamada Yoshio: Gojuonzu no Rekishi, p. 89, Hobunkan, 1943, Tokyo (山田孝雄, 五十音図の歴史)
- 8) Myokaku: Shittan Yoketsu, p. 529B
- 9) Tsukishima Hiroshi: Kokugono Rekishi, pp. 52–67, Tokyo Daigaku Shuppankai, Tokyo, 1992 (築島裕, 国語の歴史)

- 10) Myokaku: Shittan Yoketsu, p. 508B
- 11) The note 'combine two' means that /k/ of *ko* and /om/ of *gom* should be combined together to get the sound *kom* of the letter.
- 12) Myokaku: Shittan Yoketsu, p. 529T, M
Myokaku wants to say here that by transcribing the word **simha** as *sima*, /h/ has been dropped. Since Siddham **ha** is read as *ka* in Japan, this becomes a case of dropping of /k/.
- 13) The Japanese evolved the convention of writing the gemination of consonant with the Kana character *tsu*. For examples, *kitsute*→*kitte*. Myokaku has used this convention in his works.
- 14) Myokaku: Shittan Yoketsu, p. 509M
- 15) Shoten: Wago Renjoshu, pp. 49, 46, Kokugogaku Taikai, V. 3, Kokusho Kankokai, Tokyo, 1975 (盛典, 倭語連声集)
- 16) Shoten: Wago Renjoshu, pp. 47-48
- 17) Shoten: Wago Renjoshu, p. 48
- 18) Ibid., pp. 49-52
- 19) Motoori Norinaga: Kanji Sanonko, pp. 127-135, Kokugogaku Taikai, V. 3 (本居宣長, 漢字三音考)
- 20) Ibid., p. 88
Toon is a general term for the pronunciation of Chinese characters transmitted to Japan since the twelfth century.
- 21) Ibid., pp. 89-90
- 22) Ibid., p. 89
- 23) Ibid., pp. 108, 111
- 24) Ryogen: Goin Shidai, pp. 5-6, Kokugogaku Taikai, V. 3 (良源, 五韻次第)
- 25) Keichu: Waji Seiransho, pp. 116-17, Keichu Zenshu, V. 10, Iwanami Shoten, Tokyo, 1973 (契沖, 和字正濫鈔)
- 26) The word swamp is called *sawa* in modern Japanese. This word has been recorded as *safa* in Kokin Wakashu 古今和歌集 compiled around 913. The pronunciation changed from *safa* to *sawa* in the days of Myokaku in the eleventh century. The *fa* line Kanas in non-initial position were read as the *wa*-line Kanas. This phenomenon is known as *hagyō tenkoon* 八行転呼音. Okimori Takuya, ed.: Nihongoshi, pp. 16-17, Ofusha, Tokyo, 1992 (沖森卓也編, 桜楓社)
- 27) Myokaku: Shittan Yoketsu, p. 535B
Myokaku has recorded the above words in Katakana. In this way he has recorded a very important phonetical phenomenon of his time while explaining the reading of a Siddham word.
- 28) The Chinese language is basically monosyllabic, where each word consists of a syllable. The syllable can be represented by S = IMVE/T,

where S: syllable, I: initial consonant, M: medial vowel which is a glide, V: main vowel, E: end consonant, and T: tone. The group MVE is called the final or rime, and as against this, I is called the initial. A syllable may or may not have I, M, E, but must have V. In the word *kuan* 官, *k* is the initial and *uan* is the final. In *uan*, *u* is the medial vowel, *ɔ* is the main vowel, and *n* is the end consonant. There are four tones in Chinese, viz., even tone, rising tone, departing tone and entering tone.

29) Keichu: Waji Seiransho, pp. 117–18

The four *i*, *u*, *e*, *o* vocalic forms each of the nine consonant Kanas *ka*, *sa...ra*, *wa* make thirty-six Kanas. These together with the nine consonant Kanas *ka*, *sa...ra*, *wa* and the five vowel Kanas *a*, *i*, *u*, *e*, *o* make a total of fifty Kanas.

30) Ibid., pp. 117–20

31) Myokaku: Shittan Yoketsu, p. 527M

32) Ibid., p. 527M–B

33) Myokaku: Hanon Saho, p. 20

34) Ibid., p. 20

35) Shoten: Wago Renjoshu, pp. 44–45

List of Chinese characters used in the main text

ak 惡 *akki* 惡鬼 Ametsuchi 天地 *an* 安 Annen 安然 Arai Hakuseki 新井白石 Bonji Keiongi 梵字形音義 Dainichi Gishaku 大日義釈 *daku* 濁 *dakuten* 濁点 Dobun Tsuko 同文通考 *et* 月 *fuonbin* 不音便 *ga* 方 *gang* 仰 Goin Shidai 五韻次第 Gojuonzu 五十音図 *gom* 嚴 Gomamit-suki 護摩蜜記 *hanji* 半字 *hanon* 半音 Hanon Saho 反音作法 *hantaiji* 半体字 *hatsu-onbin* 撥音便 Hiragana 平仮名 *it* 壹 *it* 一 *ittai fuzetsu* 一体不絶 *ittan* 一旦 *ji* 字 *ji* 日 *ka* 力 *kai* 穢 Kaŋa 仮名 *kang* 講 *kata* 片 Katakana 片仮名 Kanji Sanonko 漢字三音考 Keichu 契沖 *kem* 劍 *ken* 見 *ketta* 麩多 Kibino Makibi 吉備真備 *ko gom* 戸含 *konai* 喉内 Kongocho Rengebu Shinnen Jugiki 金剛頂蓮華部心念誦儀軌 Kujakukyo Ongi 孔雀經音義 Kukai 空海 *kyusei* 急声 *ma* 磨 Manyoshu 万葉集 Motoori Norinaga 本居宣長 Myoho Rengekyo Shakumon 妙法蓮華經釈文 Myokaku 明覚 *nanmitsu* 栗密 *nehanten* 涅槃点 *nitai sozoku* 二体相続 *onbin* 音便 *renjo* 連声 Ryogen 良源 Saga 嗟峨 *sak* 索 *samma* 三摩 *sannai* 三内 Senjibun 千字文 Shingon 真言 *shinnai* 唇内 Shittan 悉曇 Shittan Junirei 悉曇十二例 Shittan Yoketsu 悉曇要訣 Shoten 盛典 *sima* 辛阿 *sip* 濕 *sit* 悉 *soken* 鹿巖 *soku-onbin* 促音便 *sotofa* 率堵波 Taizokai Shiki 胎藏界私記 *tat* 達 *tatsu* 怛達 *ten* 点 Tendai 天台 Toon 唐音 Wago Renjoshu 倭語連声集 Waji Seiransho 和字正濫鈔 *zetsunai* 舌内