Tangut Script – Studies of the unique features

ARAKAWA Shintaro

Tokyo University of Foreign Studies

0. Introduction

Tangut is the official language of the 西夏 *Xixia* dynasty which was located in the Northwest area of China in 11 – 13 C. The language is known through the documents written in the Tangut script promulgated when the dynasty was established. After the fall of Xixia, Tangut language and script had been used till the time of the 明 *Ming* period and probably, they died out after then. The language belongs to Tibeto-Burman language group and has the relationships to the minority languages in modern China. The Tangut script is one of the "Pseudo-Chinese scripts" from the historical and geographical views. In this presentation, we describe the features and studies of the Tangut script.

1. Xixia

The Xixia dynasty was founded in the 宋 *Song* period, and coexisted with the *Song,* 遼 *Liao* and 金 *Jin* dynasties. The 党項 *Dangxiang* (Tanguts) ruler 李元昊 *Li Yuanhao* told the Song emperor that he called himself 'The emperor of the Great Xia', and declared his independence from the Northern Song in 1038 AD. Even though they called their dynasty 'Great Xia (大夏 *Daxia*)', the Song people called it 'Western Xia (西夏 *Xixia*)' and the dynasty is commonly known as 'Xixia'. In their own Tangut language, they sometimes called the dynasty 'the Great White and High State'.

A majority in the Xixia is the 'Tangut' from the word 党項 *Dangxiang* in the Chinese history books. As the name of the language, it is called 'Tangut' in Russia and Western world and 西夏語'*Xixia yu*' in China or 'Seika-go' and Japan. And they call themselves *Mi* or *Mi nya* (*Mi* means "human" and *Nya* means "black"). In the historical records written in Tibetan, it remains as 'Mi Nyak'.

During the 唐 *Tang* period, the Tangut people migrated from the 四川·青海 *Sichuan-Qinghai* region into the Ordos region (located in a part of the present-day Inner Mongolia Autonomous Region) and northern 陝西 *Shanxi* region. The Tangut is the northernmost tip of the Tibeto-Burman language group.

The dynasty was based in present-day 寧夏 *Ningxia* Province, and ruled a part of western 甘肅 *Gansu* Province, 陝西 *Shanxi* Province, the Inner Mongolia Autonomous Region and 青海 *Qinghai* Province. It built the capital in 興州 *Xingzhou* (known as 興慶府 *Xingqingfu* in the following period, and then as 中興府 *Zhongxingfu*, present-day 銀川 *Yinchuan* city, Ningxia).

As Xixia was surrounded by various other lands, such as Song, Liao, Jin, Tibet, and so on, the Xixia Dynasty set up twelve local military commands called '監軍司 *Jianjun Si* (Military Police Boards)' along its borders, in order to fortify its defenses. One of these was set up in the downstream region of the Black River (黑河 *Heihe*, Ejina River). It was called '黑水鎮燕軍司 *Heishui Zhenyan Junsi* (the Heishui Military Police Board)'. Now the ruin is called 黑

水城 *Heishuicheng*. The documents unearthed from there contribute to clear up the history and language of Tangut.

Afterwards, during the reign of 李仁孝 *Li Renxiao* (仁宗 *Renzong*: reigned 1139-1193), Xixia reached its most prosperous age in social, economic and cultural terms. However, at the beginning of the 13th century, the Mongol Empire, led by Genghis Khan, invaded the Xixia territory many times. Although Genghis Khan died of illness while invading Xixia, immediately after his death, the Xixia Emperor surrendered. Accordingly in 1227, the Xixia dynasty was completely conquered by the Mongol Empire. From its establishment to its fall, the dynasty had been ruled by ten emperors.

Tangut language and script continued to be used for several hundred years after the fall of the Xixia dynasty. The last written material has been confirmed to bear the date of the 15th year of 洪武 *Hongwu* (1502) in the 明 *Ming* period. Later, the Tangut script seems to have been extinct.

2. Tangut language and script

The dead language, Tangut belongs to the Tibeto-Burman language group. Large amount of surviving texts written in Tangut script allows a reconstruction of the phonology and grammar of the language. Based on the present-day studies, the phonology and grammar of Tangut are closed to the minority languages in 四川 *Sichuan* and 雲南 *Yunnan* province, especially rGyalrongic.

In terms of linguistic typology, Tangut belongs to the so-called Subject-Object-Verb (SOV) group of languages. Usually the structure of Tangut verb phrase is complicated. It consists of Prefix - Verb Stem - Suffix.

The noun of Tangut is modified by following adjective. And sometime it is marked by the 'case-marker'. We introduce the Tangut noun-phrase through the trace of Tangut, which remains in the place name. 黑水 *Heishui*,

meaning "black river" in Chinese is present-day 額済納 *Ejina* in the Inner Mongolia Autonomous Region, China. "Black river" in Tangut is "Zyir Nya", meaning "river", "black" respectively. In Mongolian, retroflexed r- and z- are avoided to be located at the head of words. So, similar to Japanese "o-" in the front of retroflexed r-, e.g. "Russia" to "o-rosya", the neutral vowel e- was added to "Zyir Nya" and changed into as "E-Zyir Nya".

緻脈 ^{1}zyIr ^{1}nya: "water" ← "black"

Tangut has unique linguistic features, found in neither Old Tibetan nor Old Burmese. These are 'Agreement' between personal pronouns and pronominal suffixes and unique set of verb-prefixes which probably originated from 'directional marker'. See a sample sentence of the 'Agreement'.

巰	夃	麤	甀	蘵	蕭	巰
^{2}nga	^{1}'a?	^{1}lo	^{1}han	^{1}ca:	^{2}ryor	^{2}nga
I	阿羅漢(Arhat)		way	get		I (Suff. 1sg.)

I get the Arhat way.

In the sample sentence, the first character meaning "I, first person and singular" appeared once again after the main verb (in the end of the sentence).

In addition, the directional prefixes which express the direction of the action precede the verbs in some cases. The same directional elements remain in some minor languages in Tibeto-Burman. So, the grammar of Tangut is a required subject for the studies on ancient Tibeto-Burman languages.

Tangut scripts were established for writing the Tangut language. It has been confirmed that approximately 6,000 such characters were produced.

As the type of script, similar to the Chinese script, one Tangut script expresses one word (or one morpheme) and one syllable. Tangut script is a logogram and it derives new scripts from other existing scripts in the same way as Chinese script. Tangut script, however, has no "hieroglyphic" feature like Chinese script. See the basic example below.

䣛 "sun"   䌊 "moon"
䎁 [1]leu "one", 䍤 [1]nyI' "two", 䎑 [1]soq "three", 䍀 [1]ldyIr "four",
䎂 [1]ngwI "five", 䌮 [1]cheu' "six", 䍥 [1]sha:q "seven", 䏅 [1]ya:r "eight",
䍩 [1]gwyI' "nine", 䏆 [2]'aq "ten"

While a single element (part) of Chinese script becomes to one character independently, a single Tangut element is not independent and should be added the other elements. See the samples below.

䍿 "earth",   䎈 "dust"   䏇 "iron",   䏈 "knife"

The Tangut script can be divided into basic components such as the left part and the right part, and its manner of composition, or 会意 *huiyi* (compound ideographs) and 形声 *xingsheng* (combining semantic and phonetic components), are similar to Chinese characters. However, because there are certain basic components which are not similar to Chinese, it is impossible to understand the meaning of the Tangut script through a knowledge of Chinese characters.

See the following samples; the element of 1) "water", 2) "tree", and 3) phoneme.

1) 䍞 "water", 䍟 "wine", 䍠 "to flow"
2) 䍡 "tree", 䍢 "tea", 䍣 "pole", 䍤 "pine tree"
3) 䍥 gyu^2 "three", 䍦 gyu^2 "world", 䍧 gyu^1 "to cross", 䍨 gyu^1 "canal"

And see derivational patterns.

会意 *huiyi* (compound ideographs)

禾 "not" + 禾 "there is not" = 禾 "to gather"

形声 *xingsheng* (combining phonetic components)

禾 <mo> + 禾 <ya> = 禾 <mya>

Derivation step by step

禾 "heart" + 禾 "there is not" = 禾 "to forget", 禾 "not" + 禾 "to forget"

= 禾 "to think"

Of course, it must be emphasized that the derivation of characters is not on the same level with the derivation of words. See the samples below. In Tangut script, there are several characters meaning "to hear". B is derived from A as a character but derived from C as a word.

A 禾 ²ni: "to listen"   B 禾 ¹mo: "to listen"

C 禾 ¹mi: "to listen"

3. Tangut Script as the Pseudo-Chinese script

Around the Song period, various new 'Pseudo-Chinese scripts' were invented in northern and north-western China, such as the Kitai, Xixia, and Jurchen script. These were invented for the purpose of expressing the specific languages of the Liao dynasty (916-1125), the Xixia dynasty (1038-1227), and the Jin dynasty (1115-1234), respectively. These scripts, which were similar to, but yet different from, the Chinese script, played an important role in each culture.
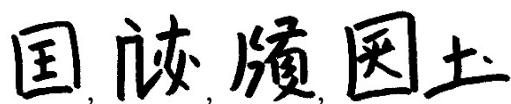
dynasty	Liao	Xixia	Jin
tribe	Kitai	Tangut	Jurchen
language group	Mongolic	Tibeto-Burman	Tungus
script	Kitan (large and small)	Tangut	Jurchen

Even though they are considered as Pseudo-Chinese scripts, they are actually different systems. And the situations of the each material are quite different.

The Kitan script is divided to Kitan "Large" script and "Small" script which have quite different forms and structure. The Kitan small script is absolute phonetic letter like Hangul. Compare the samples of Pseudo-Chinese scripts.

Comparison: "country"「国」in each script; Kitan large, Kitan small, Tangut, Jurchen

From the samples above, we can see the direct influence from Chinese to Kitan large and the indirect influence from Kitan large to Jurchen. On the other hand, there is no similarity concerning form between Tangut, Kitan small, and Chinese. The logograms such as Kitan large, Tangut, and Jurchen are different from phonetic letters such as Kitan small. The Kitan small script looks like Chinese script but actually, it is phonetic alphabet ordered as Hangul. Imagine, "book" is expressed as $\begin{smallmatrix} bo \\ ok \end{smallmatrix}$. And the unit means one "word".

From the viewpoint of the form, Kitan large and Jurchen scripts have the similar characters to Chinese. However, they have no concept of "radical" element like Chinese. On the other hand, Tangut script does not have the

same characters with Chinese but it has the concept of "radical" like Chinese. Tangut "radical" elements are not hieroglyphic but logogram.

Roughly to say, the system of these scripts are below.

	Kitan large	Kitan small	Tangut	Jurchen	Chinese in Japanese
syllable	1～some	1～some	1	1～some	1～some
similarity to Chinese	△	×	×	△	○
radical	×	×	○	×	○
hieroglyphic	△	×	×	△	○

4. Characteristic features of Tangut materials

The situations of materials remained are different between Tangut and Kitan/Jurchen. Genarally to say, Tangut script was written on the "papers" including manuscripts and printed matters. On the other hand, Kitan/Jurchen script were written on the "stones" including inscriptions on the tombstones.

Over 90 percent of the Tangut materials are Buddhist texts. Most of them were translated from Chinese and Tibetan text and remains were Tangut origins. Some of them are very precious from the viewpoint of Buddhist studies, because the original texts written in Chinese or Tibetan, were lost. In contrast, we have not yet discovered the Buddhist materials written in Kitan and Jurchen script.

While the Chinese classics, such as 論語 *Lunyu* (*Analects of Confucius*) were translated, a Tangut-Chinese bilingual glossary, original legal Xixia codes, collections of poems, collections of sayings, rhyme dictionaries and so on were compiled at the same time.

Based on the classical Chinese phonology, Tangut phonology was established in Xiaia dynasty. While the former was developed for the practical use (for making Chinese rhyming poems), the latter was made for the analysis of Tangut sounds and editing the rhyme dictionaries.

In Xixia, the unique rhyme dictionary 同音 *Tong-yin* was published many times (See the photo). The title means "homo-phone". So, the volume collected the characters which have the same syllable. See the sample page. The different Tangut characters from circle (◯) to circle (◯) have the same sound. Interestingly, the dictionary classified not rhymes but initials of Tangut syllables. The system might be influenced by not Chinese but Indian phonology.

5. Discovery of the materials and collection in the world

The excavation and collection of numerous Xixia documents at Khara-Khoto (literally, Black City) by the Russian Kozlov expedition in 1908, caused Xixia studies to advance by leaps and bounds. The Black River, which originates in the 祁連 *Qilian* Mountains, extends from the south to the north, running through the 河西 *Hexi* Corridor and the Badain Jaran desert, and culminates in the Ejina region. In the Xixia period, the walled city was called 'Black

River' in Tangut, and prospered as an important location in the northern part of the Xixia dynasty.

"Khara-Khoto" means "black city" in Mongolian and "Khara-Khoto" is a more famous name than 黒水 *Heishui* in Europe.

Chinese, Tangut, Mongolian, Tibetan, Persian, Arabian and other documents written in the Xixia and Yuan periods were unearthed from these ruins, which tell of contact with various regions in the golden age. Besides these, Buddhist pictures, Buddhist images, and numerous Buddhist scriptures have been excavated from Buddhist ruins inside and outside the wall.

The Kozlov expedition team brought back numerous excavated materials to St. Petersburg, the capital at the time, under the instructions of the Russian Geographical Society. The Russian Empire, and later Soviet Union, that obtained a large amount of original sources of the Tangut language in advance of other countries, then led the historical study on Xixia and the Tangut language.

The material written in the Tangut script is divided roughly into a large number of manuscripts, printed texts and a small number of stone inscriptions. Though the stone inscriptions remain in China, the manuscripts and printed texts have been collected not only in China but also in other countries.

Other than in China, Tangut documents have been collected in The Institute of Oriental Manuscripts of the Russian Academy of Science (St. Petersburg, Russian Federation), The British Library (London, Britain), and The Bibliothèque Nationale de France (Paris, France) and other institutes. In addition, a certain number of Tangut documents have also been collected in Japan and these also have important academic value as historical and linguistical source.

The collections of Kyoto University, Tenri University, and Ryukoku University are widely known to current researchers through previous studies,

together with the Tangut documents of some other universities and research institutes.

After the collapse of USSR, the materials kept in Russia are being opened to the public a step at a time. In addition, Chinese publishers have published the collections in Russia, UK, China, France, and Japan. See the samples of the large volumes. The presenter edited the *Xixia Documents Collected in Japan* as the co-editor.

## 6. Decipherment of Tangut script and recent situation of the linguistic studies

Even though the Tangut script was forgot completely, it was re-discovered and deciphered by modern linguists. In 1870, Wylie introduced the script to Europe but he mistook it as Jurchen script. In 1989, Deveria identified it Tangut script rightly. It is recorded that before then, a Chinese 張澍 *Zhang Shu* recognized the script on the stone in 涼州 *Liangzhou* was Tangut script in 1804. Of course, they just identified it as Tangut script but did not understand the contents.

The classical Chinese phonology and the modern linguistics have contributed to the reconstruction of Tangut. Here, we show the outline of the modern studies on Tangut phonology.

The sources are divided into the "inner materials" and "outer materials". Whereas the inner materials are the rhyme dictionaries and phonetic tables written in Tangut, the outer materials are phonetic transcriptions between Tangut and Chinese, Tibetan and Sanskrit.

There were interesting and various sources for phonological studies in numerous kinds of documents written with Tangut and other scripts. In the early stage of reconstruction of Tangut sound, the scholars took up the phonetic transcriptions between Tangut and other languages, such as

Tangut-Chinese, Tangut-Tibetan, and Tangut-Sanskrit. The source, however, did not cover all the Tangut syllables and the studies were not systematic. See the sample pages of 『番漢合時掌中珠』 *Fanhan-heshi-zhangzhongzhu* preserved in Russia. It was a glossary of Tangut-Chinese with phonetic transcriptions.
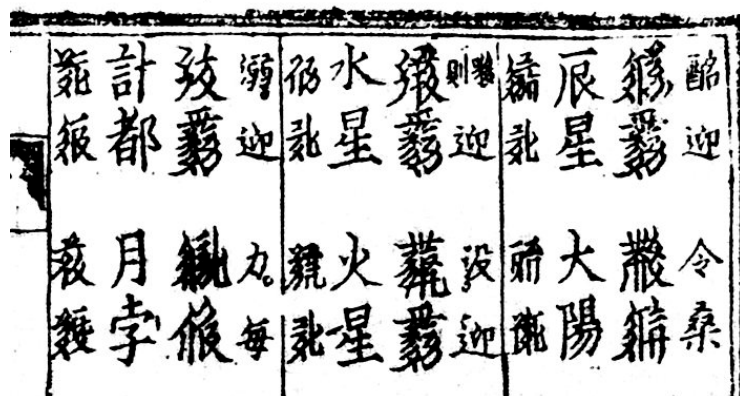
In the 1960s, Nishida (1964, 66) and Sofronov (1968) discovered the system of Tangut rhyme dictionaries and they reconstructed the Tangut phonemes systematically. They used the 反切 *fan-qie* of Tangut based on the Chinese classical phonology. The studies covered the sounds of most of all the Tangut characters. To the 1980, the Tangut rhyme dictionaries such as 文海 *Wen-hai* and 同音 *Tong-yin* were refined and translated into Chinese (Shi et al. 1983 and Li 1986). Furthermore, Nishida and Sofronov revised their reconstructions partly (Nisida 1981-83, 89, 2012 and Sofronov 1972, 80).

In the 1990s, the re-discovery of 文海宝韻 *Wen-hai bao-yun* was the epoch (Kychanov 1995, Shi 1999). And the catalogue of the Tangut documents, including *Wen-hai bao-yun* was published (Shi, Wei and Kychanov 1997) and it contributed to the phonological studies. Based on the previous works, Gong's reconstruction of Tangut sounds and his system of transcription are being the mainstream (Gong 2003). Recently, the studies on the cognates between Tangut and Tibeto-Burman languages are popular.

7. Structure of Tangut script and recent studies

The studies of Tangut script consist of three parts, namely 形·音·義 *Xing Yin Yi* "form", "sound", and "meaning". The second and third are treated in phonetics/phonology and morphology /lexicology /syntax in linguistics. On the other hand, modern linguists do not establish the proper methodology of the studies on the form and structure of script. In fact, however, the description on the forms of Tangut characters exists in the rhyme dictionaries similar to Chinese. See the sample.

薤　蘒𦶎𦶎𦶎 "tea": the top of "tree" is head part and the whole of "medicine" is lower part.

Although the description was important source which reflects the opinion by Tangut people, it is not enough to analyze the form of each character, since it described with only four characters.

In 20th century, "the decipherment of Tangut script" includes the analysis of the structure of the Tangut script. The classical one is 『西夏国書類編』 *Xixiaguoshuluipian* （1915） by 羅福成 *Luo Fucheng,* in which the radicals of Tangut were already identified and listed.

A series of theoretical studies on Tangut script were done by the late Prof. 西田龍雄 Nishida Tatsuo. The famous publications are 『西夏語の研究』 *Seikago-no kenkyuu* in 1964, 66 and 『西夏文字』 *Seika moji* in 1967, 80 which include the system and structure of Tangut script. And he continued to study and introduce the features of Tangut script to the end of his life (e. g. 1996, 1998, 2001).

First, the unique derivational patterns of Tangut script from his studies will be introduced. The followings are "symmetric" characters: derived by changing parts from left to right.

俶 ²dzwo: "human" VS 絴 ¹ne:' "heart"

缀 ¹zyIr "water" VS 潷 ²zyu "fish"

Next, the latest views by Prof. Nishida on the relationship between the grammar of Tangut and Tangut script will be introduced. He named the "pair characters". The concept is that the words with the same (or similar) meaning are expressed by two Tangut characters. The inflection and derivation in the Tangut language are described by scripts.

A 蒇 lefi （上）	見	A 繼 tsefi （上）	悟
B 崴 li （上）		B 繼 tsifi （上）	

"Pair characters changing verb stem"

語幹 A 形式	語幹 B 形式	意　味
缾 wi （平 10）	缾 wĭɔfi （平 51）	「送る」
終 wi （平 10）	絍 wĭɔfi （平 51）	「造る，する」
嚴 khĭɔɴ （平 56）	叕 khĭeɴ （平 42）	「与える」
繚 ⁿdžɛfi （上 32）	瘊 ⁿdžĭɔfi （上 44）	「もつ，有る」

Complex "pair characters" (double "pair characters")

	A 形式	B 形式
平聲	瓶 rir （平 79）	蘿 rĭor （平 90）
上聲	屁 rir （上 72）	羅 rĭor （上 81）

The other one of most excellent scholars on Tangut script is the late Prof. Gong Hwangchern (龔煌城) in the Academia Sinica, Taipei. Based on the wide knowledge about Chinese classical phonology and the languages of Tibeto-Burman language group, he contributed the phonological studies of Tangut so much. He made the base of reconstruction forms of Tangut sound

and it has been used as the standard for Tangut studies. On the other hand, he published many articles on the studies of the "form" of Tangut script now.

He showed the classification of the Tangut script formation in 1981, the influence from the shapes of Chinese script to Tangut script in 1982, the derivational formation of Tangut script in 1984. And in 1991, he made a generalization of his ideas, including several derivations. See the following samples.

1. 㧛 kê² 憎惡 ──────→ 2. 㣸 kô² 憎惡（爲了分別字形加「⼇」偏旁）

↓

3. 㧛 khê¹ 厭、惡、苦 ──→ 4. 㣸 khô¹ 厭、惡（同上）
 5. 㧛 khê¹ 苦（从蛆「味」省，㧛 khê¹聲，形聲字）
 6. 㧛 khê¹ 植物名（从蕬「木」省，㧛 khê¹聲，形聲字）
 7. 㧛 wə¹ 憎惡（从㧛 wə¹省聲，形聲字）
 8. 㧛 khon¹ 厭惡（从㿉 khon¹聲，形聲字）

37. 㧛 ka̱¹ 七

↓

38. 㧛 ŋwə̱¹ 七 ──→ 39. 㧛 ŋwə̱² 綵帛

↓

40. 㧛 ŋwə̱¹ 青 ──→ 41. 㧛 ŋwə̱² 濕
 42. 㧛 ŋwə̱¹ 眷
 43. 㧛 ？ 青
 44. 㧛 dźâɯ² 青
 45. 㧛 bə² 青

 46. 㧛 tshwu¹ 青 ══→ 47. 㧛 tshwu¹ 染
 48. 㧛 tshwu¹ 誓
 49. 㧛 tshwu¹ 虹蜺，彩雲

 50. 㧛 ngôn² 海(珠) ──→ 51. 㧛 ngôn² 蟲名

 ──→ 52. 㧛 xi̱u¹ (青)虛虛

↓

53. 㧛 xu² 蹄

↓

54. 㧛 kwei¹ 蹄 ──────→ 56. 㧛 nga² 蹄

↓

55. 㧛 kwei¹ 蟲名
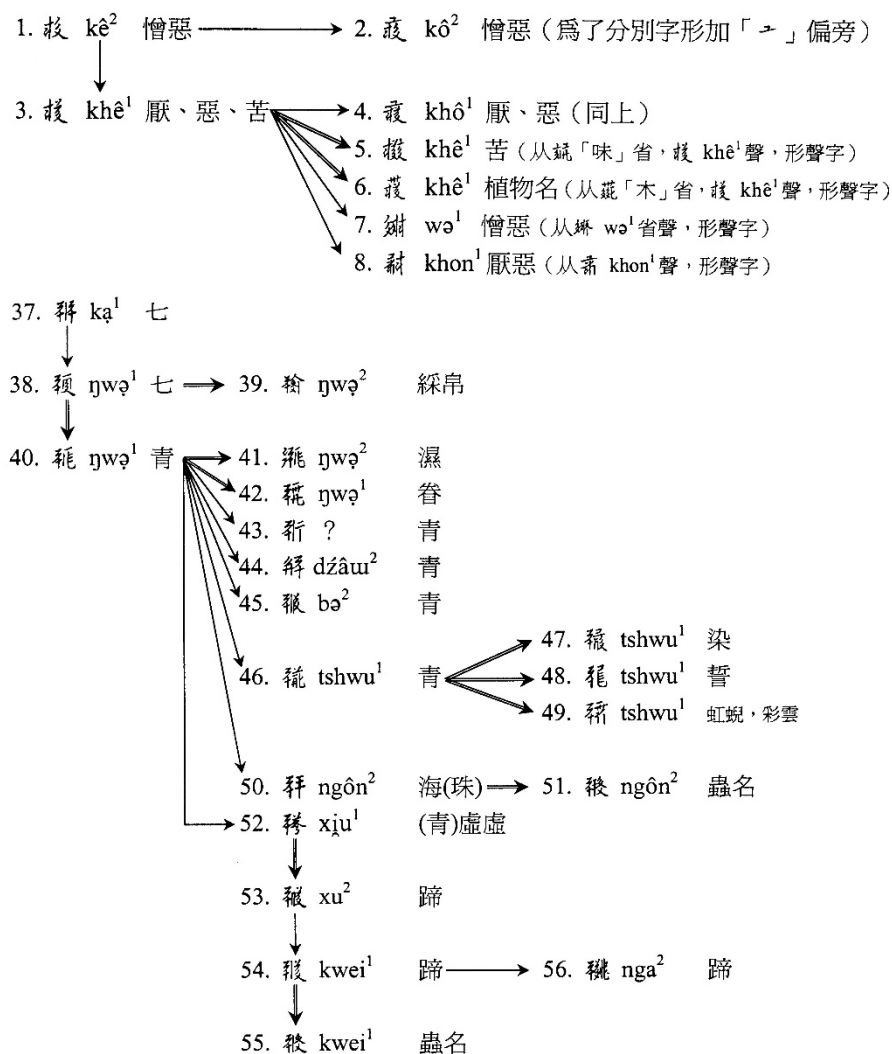
As the topic of Tangut studies, in 1990's, after the fall of USSR, the Tangut materials preserved in Russia have been opened and published as catalogues. After 2000's, the topics are the increase in the number of Chinese scholars, the organization of several academic societies of Tangut study, and the practical use of Tangut fonts on PC. Now the practical Tangut font sets have enabled scholars to establish the large-scale corpus of Tangut texts. And the discussion on the standardization of Tangut fonts (Unicode) is progressing between the scholars in various countries.

In Japan, Dr. 小高裕次 Kotaka Yuji, Dr. 中嶋幹起 Nakajima Motoki et al. developed Tangut font set personally. And the presenter supervised the development of Tangut fonts by the private company (今昔文字鏡 Konjyaku Mojikyo). Here, we will see the fonts and input method.
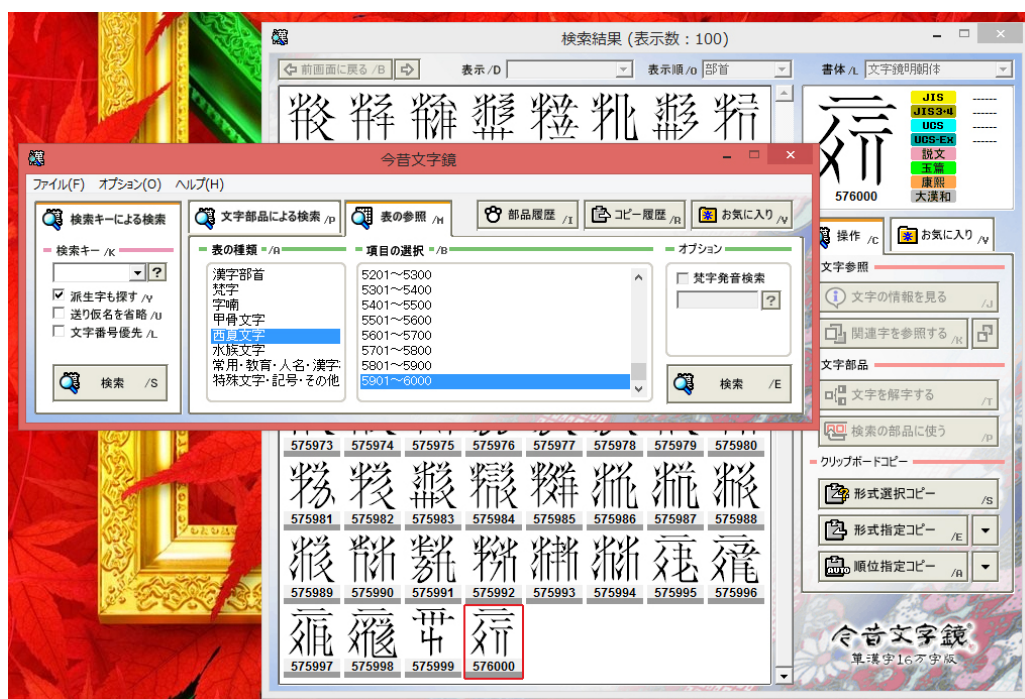
After the publication of the Tangut-Chinese dictionary 『夏漢字典』 *Xia-Han zidian* (1997), the Tangut scholars can read the texts written in block style of Tangut script all by themselves. In the recent studies, the decipherment of the texts written in cursive style is popular. See the samples of Tangut cursive writings.

コード番号	楷書字形	甲種	乙種	推定音	意味	出典位置（甲）	出典位置（乙）
0089	𗄊	𗄊	𗄊	^{1}chya:	「上に、於いて」	156/6/8/2	237/5/5/11
0100	𗇋	𗇋	𗇋	^{1}leu	「一」	155/5/5-1/3	236/4/9/16
0113	𗈪	𗈪	𗈪	^{1}shyen	「成」	158/10/10/3	237/5/1/7
0433	𗉘	𗉘	𗉘	^{1}byu	「により」	157/8/4/6	235/1/6/5

8. Tangut script as the script in Asia

From ancient to now, Asia is an important area for the studies on scripts, since there are many kinds and types of scripts. Needless to say, the most famous system is Chinese script as the logogram and the derived scripts such as Hiragana and Chu-nom were developed from it. And Chinese script made the pseudo-Chinese scripts such as Tangut and Kitan. The Chinese script is surrounded with the different-type scripts. For example, Indic such as Tibetan and Hpags-pa, Syrian such as Uyghur and Mongolian, Alphabet such as Latin and Cyrillic, and the unique group such as Hangul and Tomba.

From the view point on the establishment of scripts, there are several different types including "official" scripts which were made by the emperor (Tangut, Hangul, and so on) and "private" scripts which were made by the

public (Hiragana, Chu-nom, and so on). The latter was recognized as the script more inferior to Chinese.

Even though Tangut script is a dead script, it shows the unique features and play an important role in the studies of Asian script in the future.

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Kokujoo shutsudo Seikago oningaku shiryoo koo『黒水城人文与環境研究－黒水城人文与環境国際学術討論会文集』(沈衛栄ほか主編)、中国人民大学出版社、北京: 562-570

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