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Patterns of Sound Correspondence between Taiwanese and Germanic/Latin/Greek/Romance Lexicons

Part I

by
Chau H. Wu

Victor H. Mair, Editor
Sino-Platonic Papers
Department of East Asian Languages and Civilizations
University of Pennsylvania
Philadelphia, PA 19104-6305 USA
vmair@sas.upenn.edu
www.sino-platonic.org

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Part I

Chau H. Wu

Address for editorial correspondence:

Chau H. Wu, Ph.D.

824 Fair Lane

Northbrook, IL 60062-3530

USA

e-mail: chauwu@sbcglobal.net

Dedicated to the memory of my parents, Joshua Wu 吳約書 and Tse-yu Chou 周慈玉.

The language I learned at their knees begins to yield its hidden, peculiar history.

I should tell you that in this city [*Zayton*[1]] *they have a peculiar language.*

— Marco Polo

Language is the archives of history.

— Ralph Waldo Emerson

Unsere Sprache ist auch unsere Geschichte.

— Jacob Grimm

[1] Choânchiu (Quánzhōu) 泉州. Polo used the name given by Arab traders for the city he claimed to be "one of the two greatest seaports in the world," the other being his home city, Venice (Polo, vol. 2, p. 236). The name Zayton transliterates the Arabic word for 'olives' (Ibn Battúta, p. 287).

INTRODUCTION

Modern research in archaeology, historiography, ethnography and other fields has shown that since earliest antiquity there have long been continuous, extensive contacts between the East and the West. These contacts, not only material but also cultural, were made through the long, tortuous Silk Road linking city-states in Central Asia, with the Steppe Land in Upper Eurasia serving as a superhighway. Inevitably, the cultural contacts also involved linguistic exchanges.

Many researchers have presented evidence of such language contacts. The primary focus has been on lexical similarities between Chinese and Indo-European languages. The earliest paper to present the lexical similarities in a very rigorous way with the aim of excluding similarities merely due to coincidence was written by Samuel Stehman Haldeman, who made a presentation to the American Association for the Advancement of Science in 1856, whose proceedings were published in 1857 (Haldeman). About 15 years later Joseph Edkins (1871) published a book presenting a number of Chinese words similar to their Indo-European counterparts. By the beginning of the twentieth century the Indo-European field had matured and attempts at reconstructing Middle Chinese and even Old Chinese had also begun. With the advances in these fields, sporadic studies were initiated to compile lexical similarities between Chinese and Indo-European (Ulenbrook 1967; Ulving 1968). As the reconstruction of Old Chinese further developed, comparative studies continued to flourish with ever increasing levels of scientific rigor. This is seen in a pioneer study published by Professor Tsung-tung Chang of Goethe University of Frankfurt, Germany (1988). Independently, Zhou Jixu was conducting a similar study at Sichuan University, China (2002a). These are followed by further publications by Zhou (2002b, 2003, 2006), Wei (2005), and by Tan (2006). Interestingly, Østmoe (1995) found a large number

of Tai (especially Thai) words resembling old Germanic. He put forward a hypothesis that Tai received not only Sinitic but also Germanic influences.

The present study also attempts to present lexical correspondences between the Western and Eastern languages, and differs from all the above (except Haldeman's and Østmoe's works) in three major aspects. Firstly, it compares written lexicons of Germanic, Latin, Greek and Romance languages with a living language, modern Taiwanese, whereas the studies cited above are concerned with comparing reconstructed Old Chinese (that is, reconstructed sounds, because its script was not alphabetic or syllabic) — or even Proto-Chinese — with Proto-Indo-European. Thus, the present study is based on known sounds whereas the earlier studies suffer from the fact that, as Wei succinctly puts it, "the reconstruction is built on an edifice of inferences" (Wei 2005). Reconstruction of Middle Chinese has a solid linguistic basis because of the thorough investigation of the rime systems in the successive series of official rime books following the publication of *Qièyùn* 切韻 by Lù Fǎyán 陸法言 in 601 CE. However, because of the lack of rime books and the *qièyùn* system before 601, the sound system of Old Chinese has to be based on inferences. Therein lies an unknown degree of uncertainty.

Secondly, the present study borrows the methodology of multiple sequence alignment analysis (MSAA) commonly employed in studies of the structure–function relationship of cellular proteins. Proteins are long chains of amino acids strung together that are then folded up like origami to form various kinds of architecture. All the proteins in our bodies are made up of building blocks drawn from only 20 kinds of amino acids. This is similar to a word made up of letters drawn from an alphabet of, say, 26 letters (taking the example of English). When a certain kind of protein, for instance, insulin, from various animal species is aligned and compared, one finds that several segments of the protein look alike across all species. These segments must be important for a certain function of the protein. Thus, the technique of aligning all the proteins to find the same segments (which are conserved throughout evolution) and to deduce their function is the basis of the MSAA. In this study, the technique is applied to Taiwanese words in comparison with those of older European languages. The results are a great surprise in that Taiwanese words show correspondences to old Germanic, Latin, Greek and Romance languages in *regular* patterns. Whereas previous studies compared whole words (albeit reconstructed), the present study examines patterns of segment strings

in words so that the correspondences deduced are found to be highly regular; the comparison enables us to discern important details that were missed by previous investigations.

Thirdly, all the previous studies were centered on reconstructed Old Chinese whereas this study focuses on Taiwanese, a variety of Southern Min that in turn is a member of the Min group. If we assume that Min as a subfamily is a member of the larger Sinitic family, as is the traditional view, it must have departed from the main stock of Sinitic fairly early, starting with the Qin and Han dynasties in the second, or even third, century BCE (Schuessler [D2–9], *p.* 125). Wang (1996) used the Neighbor Joining method to analyze the relationship among seven major topolects of Sinitic, including Xiamen (which is very close to Taiwanese). Using two different sets of data, the study found that Xiamen is consistently by far the most distant topolect among the seven. Thus, of all the topolects of Sinitic, Taiwanese should be considered closest to Old Chinese. Furthermore, it is a *living* language, so that, unlike reconstructed words, no guess work is involved as far as the database is concerned.

The present study, however, is not the first done on Southern Min, to which Taiwanese belongs. That honor belongs to the paper by Haldeman cited above. Haldeman selected his data from the *Dictionary of the Hok-këèn Dialect of the Chinese Language* published by Walter H. Medhurst in 1837, which is considered the first extant dictionary of Romanized Southern Min compiled by a Western missionary. I was years into the present study before I came across Haldeman's paper. The paper was astonishing to me in three respects. As far as can be ascertained, this is the first paper linking the European languages with Chinese, predating Edkins' book by 15 years. And Haldeman used to represent Chinese, Hokkien, a *living* language belonging to Southern Min used in Southeast Asia, in contrast to later studies, which used reconstructed Old Chinese. This is similar to my approach, in which I collect data from Modern Taiwanese, a close relative of Hokkien. What is most amazing is that he used a comparison technique (see *p.* 211 of his paper) quite similar to the MSAA technique, which, of course, he did not know about because protein chemistry was still in its infancy in the mid-nineteenth century. I was delighted to realize that I was not alone in my approach based on using the modern MSAA to analyze the correspondence between Taiwanese and European languages.

Because Taiwanese is the subject of this study, a brief description of the language is given below.

LINGUISTIC LANDSCAPE OF TAIWAN

The languages spoken in Taiwan at present can be classified into two major families. The first family is of the Austronesian superfamily spoken by the Native Taiwanese who came to Taiwan in prehistoric times. Of the ten subfamilies in this group, nine have stayed in Taiwan; the tenth emigrated from Taiwan and spread far and wide over the Indian and Pacific Oceans, from Madagascar in the east to Easter Island in the west and from Hawaii in the north to New Zealand in the south (Bellwood). This superfamily, by virtue of the sheer number of its constituent languages and the vast geographic area it covers, ranks among the largest language superfamilies of the world, with Taiwan as its *urheimat*. Most fittingly, the Austronesian superfamily is, in the words of Jared Diamond, "Taiwan's gift to the world" (Diamond).

The second family is that of the Sinitic, of which three topolects are spoken in Taiwan: Southern Min, Hakka, and Modern Standard Mandarin (MSM, of the pre-1949 Republican era). The variety of Southern Min in Taiwan has been named Tâi-oân-ōe 'Taiwanese' since the Japanese colonial era (1895–1945). Both Southern Min and Hakka came to Taiwan about 400 years ago following the collapse of the Ming Dynasty in China. MSM came with the Nationalist Chinese in 1949 when they were defeated by the Communists in civil war in China and took refuge in Taiwan. During the Japanese colonial era, Japanese was the official language in Taiwan, and, with compulsory universal education, the entire population regardless of ethnicity was fluent in Japanese. As 70 years have passed since the end of WWII, the older generation fluent in Japanese is fast disappearing. In its place is the younger generation, brought up in the era of the iron-fisted Nationalist Chinese regime, the majority of whom now speak mostly MSM with only bare proficiency in their respective mother tongues (Taiwanese, Hakka, or Austronesian languages), and the situation is especially dire in big cities in northern Taiwan. As a result, a few Austronesian languages are, sad to say, on the verge of extinction, and Hakka is said to be on 'life-support in the Intensive Care Unit.'

* * *

The subject of this study is Taiwanese, which as mentioned above is the variety of Southern Min spoken in Taiwan. Taiwanese is mainly a hybrid of the two largest dialects of Southern Min, namely, Choân-chiu (Quánzhōu 泉州) and Chiang-chiu (Zhāngzhōu 漳州), and after 400 years of independent development with additional loanwords from Native Austronesian languages, Dutch and Japanese, it has become quite distinct from the parent dialects of Southern Min. Taiwanese is also called Holó, which is an autonym bestowed by its speakers in Taiwan. The term Holó, handed on by oral tradition, has never been transcribed in Chinese characters or mentioned in Chinese literature, and no one knows the historical origin of the name. However, the fact that the name is disyllabic suggests that the language, and by implication its ancient speakers, may have come from outside the sphere of Han Chinese.

Holó has been classified as a member of the Sinitic language family in the Sino-Tibetan superfamily, although its lexical dissimilarity to Chinese is well known. About one quarter to one third of the Taiwanese vocabulary is not shared with Chinese (Douglas [D1–3], *p.* viii; Cheng). The unshared words are designated in this study as Group-1 words (G1W), and the words cognate with Chinese as Group-2 words (G2W). The G2W words will be given their Chinese characters in this paper even though their Holó pronunciations are often at great variance from those of MSM.

There are occasions in this paper where a need arises to properly refer to the ancestral language before its historic migration to Southern Fujian from the Central Plains and points farther north. Therefore, we will follow the model of Germanic–German nomenclature, which allows us to call English a Germanic language instead of a 'German' language, and use the term Holó to designate this language family across time and space, instead of the usual coinage, Southern Min, that appears to confine itself to Southern Fujian. Thus, the varieties of Holó spoken in Southern Fujian are Southern Min, the one in Taiwan Taiwanese, and another in Min communities in Southeast Asia Hokkien. The reconstructed language before its migration from Central Plains to Fujian will be called Proto-Holó.

THE LITERARY AND VERNACULAR STRATA OF TAIWANESE

Among the various topolects of Sinitic, Taiwanese has the most extensive bilayer of the vernacular and literary strata in coexistence. In reading Sinitic texts, traditionally called *hàn-bûn* 漢文 'Literary Chinese', only the literary version is used. In everyday speech, both versions are used in mixture. Both versions can be written with the Church Romanization script known as *Pē-ōe-jī* 白話字 (presented below).

It is generally accepted that the vernacular version was brought by the Holó people migrating from the Central Plains to Fujian in the period from the end of the Eastern Han dynasty to the beginning of the Jin dynasty. The literary version was established on top of the vernacular during the Tang dynasty when the provincial government with its garrison soldiers, together with the civil examination system, was established in Fujian. This version is very close to the speech of the Tang court. Therefore, the vernacular can be viewed as the substratum and the literary as the superstratum. A sinograph can be pronounced differently according to the version used, similar to the situation of *goon* (呉音) and *kanon* (漢音) readings in Sino-Japanese.

As mentioned above, there is a 70% overlap between Taiwanese and Sinitic; this overlap parallels that of the vernacular and literary versions of Taiwanese. The unshared 30% belongs to the vernacular. The following diagram illustrates the relationship of the different versions of Taiwanese.

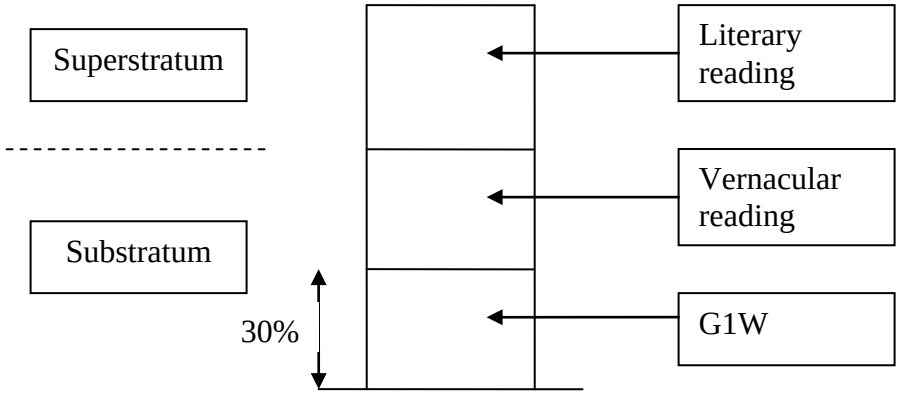


Diagram illustrating the constituent versions of Taiwanese in relation to sinograph readings: literary reading, vernacular reading and G1W (no cognates in Sinitic).

ABBREVIATIONS

Abbreviations of language names

Du	Modern Dutch
E	Modern English
F	Modern French
G	New High German
Gk	Classical/koine Greek
Gmc	Germanic
It	Modern Italian
Jpn	Japanese
L	Latin
MC	Middle Chinese
MSM	Modern Standard Mandarin
OC	Old Chinese
OE	Old English
OF	Old French
OFris	Old Frisian
OHG	Old High German
ON	Old Norse
OS	Old Saxon
PIE	Proto-Indo-European
Rom	Romance (Vulgar Latin)
Rum	Modern Rumanian

Skt	Sanskrit
Sp	Modern Spanish
Tw	Taiwanese

Other abbreviations

aph.	aphetic, aphesis
arch.	archaic (obsolete)
Cf.	*confer 'compare'*
id.	*idem* 'the same'
l.	*literary reading of sinographs in Taiwanese*
lit.	literal, literally
OR	Operational Rule
v.	*vernacular reading of sinographs in Taiwanese*
Bar	Bible translated into Taiwanese by Rev. Barclay ¶
NIV	New International Version (English Bible) ¶
RSV	Revised Standard Version (English Bible) ¶

¶ The Bible will be cited for comparison wherever possible, for the following reasons: (1) the Bible is most familiar to Westerners, (2) it is translated with fidelity as the highest priority, and (3) the Taiwanese and English translations can be compared side by side. Although there are now two newer versions of Taiwanese translation, the one by Rev. Thomas Barclay (1875–1935) completed in 1933 is the most familiar to Taiwanese Christians and the most widely accessible through the Internet in text as well as audio. And it is the audio records in a precise, articulate voice (two versions: one in a male's voice and the other in a female's) that make Taiwanese heard, through the Internet, all over the world.

However, this version was based on the Amoy dialect, which was the best known variety of Southern Min from the late nineteenth to the early twentieth century. Therefore, there are some expressions that are unfamiliar to the Taiwanese ear of the present. On the other hand, this translation preserves many old words that have been lost to Taiwanese. For example, the old Taiwanese word *pek* 焰 'to bake' that corresponded to E *bake* is used in this translation. In Leviticus 23:17, the phrase "baked with yeast" is translated as *chham kàⁿ pek* (where *kàⁿ* means 'yeast' and is related to G *gär-* of *gären* 'to ferment' and ON *gerð* 'yeast'). The word *pek* 焰 has become obsolete, and in its place is *pōe* 焙 'to bake' (see Fig. 7), a loan from MSM, which has lost the final velar stop *-k*.

DATABASE AND

DATA PRESENTATION

- Taiwanese
- Ancient European Languages
- Dictionaries

TAIWANESE

As mentioned before, there are two versions of Taiwanese, literary (*l.*) and vernacular (*v.*), which will be labeled as such. For example, the word for 'goose' will be written as *gô* (*l.*) / *giâ* (*v.*) 鵝 'goose' (*Cf.* OE *gōs* / ON *gás* 'goose').

There are two major accents of Taiwanese which will be called in this study as "Northern accent" and "Southern accent." When it is necessary to distinguish the two, they will be so indicated.

ANCIENT EUROPEAN LANGUAGES

All lexicons used in the study are attested. Reconstructed forms of proto-languages are cited only when they are relevant to the derivations under discussion. Citation of European words will follow the convention of the dictionary entry forms. Thus, the verbs from the Greek and Latin lexicons are the first-person singular forms whereas those of the Germanic such as Old Norse or Old English are the infinitives.

In Romance linguistics it is conventional to cite the accusative case of Latin (Classical or Vulgar) nouns, often with the final *-m* omitted, because it is normally this form that is passed down in Romance languages. Because Taiwanese is not a member of the Romance language family, we are not bound to cite the accusative, and so the nominative will be cited. Only when the accusative is relevant to the derivation of Taiwanese words is it cited. For example, the accusative of L *fungus* 'mushroom' is *fungum*, from which is derived It *fungo*: L acc. *fungum* > *fungu* > It *fungo*. Tw *hiu*^{n}*-ko·* 香菇 'mushroom' can be derived in the same way: L acc. *fungum* > *fungu* > **fungo* > (*f-* > *h-*) > Tw *hiu*^{n}*-ko·* (with *g-* > *k-*) 香菇 'mushroom'.

DICTIONARIES

Dictionaries consulted for this study are presented at the end of the paper, in a separate list from that of references cited in the text. The dictionaries and other resources for languages under discussions are grouped under general categories of languages: (1) Taiwanese and Southern Min including Amoy (Xiamen 廈門) and Tiô-chiu (Cháuzhōu 潮州), (2) Sinitic in general and some selected topolects, (3) Germanic languages, (4) Latin, Greek, Romance languages, and (5) Indo-European linguistics.

The dictionaries are given alphanumeric designations. For example, Schuessler's *ABC Etymological Dictionary of Old Chinese* is designated as D2-9, because it is in the category 2, "Sinitic in general and some selected topolects," and it is number 9 in this list. In the text, the dictionary is simply cited as D2-9. The only exception is Pokorny's *Indo-germanisches Etymologisches Wörterbuch*, which is cited as Pokorny as this is the way it is customarily cited by Indo-Europeanists.

A BRIEF GUIDE TO THE CHURCH ROMANIZATION SCRIPT, *PĒ-ŌE-JĪ*

Taiwanese words are written using the Church Romanization script known as *Pē-ōe-jī* (白話字). The script was designed by British and American missionaries in the 1850s; therefore, the sound values of the Roman letters are close to those of English. Taiwanese words may be divided into two main groups based on word ending. The first group ends in a vowel, nasalized vowel, *-m*, *-n* or *-ng*, and the second group ends in *-p*, *-t*, *-k* or *-h*. The *-h* denotes a glottal stop (IPA [ʔ]). Taiwanese has seven tones: five for the first group and two for the second. The Church Romanization script uses diacritic marks to indicate the tones. The diacritics are retained in this report for orthographic purposes, but they can be ignored without impeding understanding. A brief guide to pronunciation of the 24-phoneme alphabet is given in the table below. A superscripted *n* next to a vowel indicates the vowel is nasalized (same as the tilde diacritic), for examples, a^n = [ã], i^n = [ĩ], and so on.

Pronunciation of the *Pē-ōe-jī* (POJ) letters

POJ	**IPA**	**Similar to**	**Examples**
a	[ɑ]	*a* in *far*	*pa* 爸 'father' (*Cf.* L *pater* id.)
i	[i]	*i* in *machine*	*iâ* 爺 'high official' (*Cf.* ON *jarl* 'earl')
u	[u]	*u* in *flu*	*ú* 雨 'rain' (*Cf.* ON *úr* 'drizzling rain')
e	[ɛ]	*e* in *grey*	*è* 裔 'descendant' (*Cf.* E *heir*)
o	[ə]	*o* in *note*	*ò* 澳 'river mouth' (*Cf.* ON *óss*, L *ōstium* id.)
o·	[ɔ]	*o* in *horse*	*kho·* 呼 'call (animals)' (*Cf.* E *call*)
b	[ɓ]	*b* in *bee*	*bí* 米 'rice' (*Cf.* ON *bygg* 'the cultivated crop')
p	[p]	*p* in *spy*	*pín* (G1W) 'pin; to pin up' (*Cf.* E *pin*)
ph	[p^h]	*p* in *pea*	*phe* (G1W) 'letter' (*Cf.* ON *bréf* 'letter')
t	[t]	*t* in *stay*	*tē* 地 'land' (*Cf.* L *terra* 'land')
th	[t^h]	*t* in *tea*	*thoa* 拖 'tow, drag' (*Cf.* E *tow*)
g	[g]	*g* in *geese*	*gô* 鵝 'goose' (*Cf.* OE *gōs* id.)
k	[k]	*k* in *sky*	*ka* 家 'home, house' (*Cf.* L *casa* 'home, cottage')
kh	[k^h]	*k* in *key*	*khu* 曲 'curved, bent' (*Cf.* L *curvus* 'curved')
ch	[ts]	*g* in *genius*	*cheng* 精 'smart' (*Cf.* L *genius* 'genius')
chh	[ts^h]	*ch* in *cheese*	*chhī* 飼 'to feed' (*Cf.* L *cibō* id.)
s	[s]	*s* in *sea*	*sī* 是 'yes' (*Cf.* It *sì*, Sp *sí* id.)

POJ	**IPA**	**Similar to**	**Examples**
h	[h]	*h* in *he*	*hêng* 刑 'to punish' (*Cf.* ON *hegna* id.)
j	[ʒ]	*j* in *jeep*	*jiû-tō* 柔道 'judo' (*Cf.* L *luctō* 'to wrestle')
l	[l]	*l* in *leek*	*la* 拉 'to pull, draw' (*Cf.* L *laciō* 'to draw gently')
m ¶	[m]	*m* in *me*	*má* 馬 'horse' (*Cf.* ON *marr* 'horse, steed')
n	[n]	*n* in *need*	*ná* 拿 'to get hold of' (*Cf.* ON *ná* id.)
ng ¶	[ŋ]	*ng* in *singer*	*ngō·* 悟 'to begin to know' (*Cf.* L *gnōscō* id.)
-h	[ʔ]		*nih* (G1W) 'to blink' (*Cf.* L *nictare* id.)

¶ Both *m* and *ng* can also function as syllabic consonants in vernacular Taiwanese; for example, *m̂* (梅) means 'plum, prune' and *n̂g* (黃) 'yellow'.

The Ministry of Education of Taiwan established a national Romanization script on October 14, 2006. This system, based upon the Church Romanization script, is now used in elementary schools throughout Taiwan, and the modifications are quite minor. There is a table available from the Internet which shows how the two systems can be interconverted. This paper uses the traditional system because most of the current dictionaries are based on it and there is a large corpus of documents written with it.

As mentioned above, Taiwanese has an extensive bilayer system of two strata, the literary and vernacular. Because the *Pē-ōe-jī* script is based on Taiwanese phonemes, it is capable of writing both.

CONTENTS

1: OPERATIONAL RULES

This section describes six operational rules (ORs), which simplify European words to make them fit the phonological structures of Taiwanese.

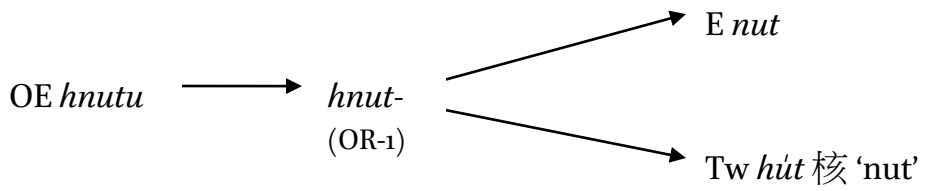
- OR-1 Correspondence to the First Syllable
- OR-2 Simplification of the Initial Consonant Cluster (Declustering)
- OR-3 Infix with Glides (*i*, *u*, *o*)
- OR-4 Conforming to Taiwanese Finals
- OR-5 Denasalization
- OR-6 "S-T Spectrum": Sound Changes among *s-*, *j-*, *ch-*, *chh-*, and *t-*

OR-1. CORRESPONDENCE TO THE FIRST SYLLABLE

If a Germanic, Latin, Greek or Romance word that finds a corresponding Taiwanese word has more than one syllable, it is usually its first syllable to which the Taiwanese word corresponds. For example:

European words	**OR-1**	**Taiwanese words**	**Usage**
ON *ostra* 'oyster', L *ostrea* 'oyster'	*o-*	*ô* 蠔 (蚵) 'oyster'	(*v.*) *ô-á* 'oyster'
ON *óss*, L *ōstium* 'river mouth'	*ō-*	*ò* 澳 'river mouth, harbor'	*Lâm-ò* 南澳 place-name meaning 'South Harbor'
ON *konungr* 'king'	*kon-*	*kong* 公 'king' (PSC: *-on* > *-ong*)	*Chìn-bûn-kong* 晉文公 (a king of the Spring-Autumn period)
OE *hnutu* 'nut'[¶] (*hnutu* > *hnut-* > E *nut*)	*hnut-*	*hu̍t* 核 'nut'	*thô-á-hu̍t* 桃仔核 'the nut inside a peach'
L *pardus* 'leopard'	*pard-*	*pà* 豹 'leopard' (loss of *-rd* > 3rd tone)	*seh-pà* 雪豹 'snow leopard'
Gk κροκόδειλος, L *crocodīlus* 'crocodile'	*croc-*	*khok* 鱷 'crocodile' (*croc-* > *khok*)	*khok-hî* 鱷魚 'crocodile'
Gk τοξικόν 'poison', L *toxicus* 'toxic'	*tox-* (*toks-*)	*to̍k* 毒 'poison, toxic' (*toks-* > *to̍k*)	*to̍k-phín* 毒品 'poison, poisonous substance'

[¶] Note on Item 4: English *nut* and Tw *hu̍t* 核 appear to be doublets originating from the same first syllable (OR-1) of OE *hnutu* 'nut', by declustering the same initial *hn-* (*see* OR-2 *below*). It is interesting to note that English retains the *n-* but drops the *h-* whereas Taiwanese does the opposite.



We also see in English many examples of the first syllable of a word being used as representative of the whole word. Examples are:

doctor	doc
brassiere	bra
mathematics	math
gymnasium	gym
representative	rep
canister	can
fanatic	fan
professional	pro
synchrony	sync
crocodile	croc (Cf. Tw *khok*-*hî* 鱸魚, see Item 6 above.)

It should be noted that this rule is not hard and fast as there are many Taiwanese words that are disyllabic which can be traced to disyllabic European words. Examples are:

European words	**Simpl.**	**Taiwanese**	**Notes**
Gmc **dǽdiz* 'deed, affair' (> E *deed*)	**dǽdi-*	*tāi-chì* (G1W, [事情]) 'deed, affair, matter'	with affric. of the 2nd *-d-* of **dǽdiz*.
ON *saksókn* 'lawsuit'	*saksókn*	*sò͘-siōng* 訴訟 'lawsuit'	with *-kn* > *-ng*
ON *orð-lof* 'praise'	*orð-lo-*	Tw *o-ló* (G1W) 'praise'	
ON *teina* 'basket made of twigs'	*teina*	*tîn-nâ* 藤籃 'wicker-type basket'	with *ei* > *i* (see **CV-1.52** below)
ON *klumba* 'club'	**kumba*	*kùn-pá* 棍把 'club'	Tw has no *-um* sound, thus: **-um* > *-un*.
ON *tálman* 'hindering'	*tálman*	*tài-bān* 怠慢 'hindering, loitering'	Sound change: *á* / *a* > *ai*
Gk δάπανος 'lavish, extravagant'	*dápan-*	*tōa-pān* (G1W) 'lavish, unstinting, extravagant'	infix with *-o-*; Tw has no [d] sound: *d-* > *t-*.
ON *fúlna* 'to become stinking'	*fúlna*	*hiú-nōa* 朽爛 'to decay'; *hú-nōa* 腐爛 'to decay'	
ON *amma* 'grandma'	*amma*	*a-má* 阿嬤 'grandma'	*-mm-* > *-m-*
ON *kanna* 'can'	*kanna*	*kan-á* 矸仔 'can, bottle'	*-nn-* > *-n-*
ON *hamarr* 'hammer'	*hama-*	*ham-á* (G1W) 'hammer' (see **CS-5** below)	*-rr* > *-Ø*
OE *ǣfnung* 'evening'	*ǣfnung*	*ē-hng* 'evening'	*f-* > *h-*

OR-2: SIMPLIFICATION OF THE INITIAL CONSONANT CLUSTER (DECLUSTERING)

When European words with an initial consonant cluster show corresponding words in Taiwanese, the correspondents are found to have only a single consonant out of the cluster. This is because Taiwanese phonology does not allow consonant clusters. Although English allows consonant clusters, there are cases in English where declustering is also observed: *knot* is pronounced [nɔt], *kneel* [nīl], *knock* [nɔk], *knife* [naïf], *knell* [nel], and *knoll* [noul]. In these cases, the *k* is consistently not pronounced. In the case of declustering from European words to Taiwanese corresponding words, it is in most cases difficult to predict which of the consonants will be elided. The following are some examples of declustering observed when European and Taiwanese words are compared.

European words	**Simplif.**	**Taiwanese words**
Gk χλάω 'to weep, lament, wail'	*χάω	*khàu* (*v.*) 哭 'to weep, cry'
Gk χνάω 'to scrape'	*χάω	*khau* (G1W) 'to scrape'
Gk σταυρόω 'to fence with pales' is the root for L *instaurō* 'to set up'	**taur-*	*tàu* (G1W) [拼湊] 'set up', 3rd tone reflects loss of *-r*.
Gk χλάω 'to break, break off'	*χάω	*kiāu* 撟 [撬] *id.*, *e.g.*: *kiāu-khui* 撟開 'break open'
Gk πνίγω 'to strangle'	**nig-*	*nih* 捏 [勒死] 'to strangle' (with PSC: *-g* > *-h*)
OE *stingan*, ON *stinga* 'to sting'	**ting-*	*tèng* 叮 'to sting' (Tw has no **ting*, it is written *tèng*.)

European words	**Simplif.**	**Taiwanese words**
OHG *stam* 'tree trunk' > G *Stamm* 'stem, trunk'	**sam*	*sam* 杉 'tree trunk, lumber'
OFris *splīta* 'split' > **plīta* >	**pīt- *līt-*	*pit* 劈 'split, crack', *lih* 裂 'split, crack'
OE *cnocian*, ON *knoka* 'knock'	**kok-*	*khò·* 扣 / 叩 'knock' (Note 1)
Gk κροκόδειλος, L *crocodīle,* 'crocodile'	**cok-*	*khók* 鱷 : *khók-hî* 鱷魚, 'crocodile'
Gk στόμαχος, L *stomachus,* 'stomach'	**to-*	*tō·* 肚 'stomach' : *ti-tō·* 豬肚 'pig maw'
Kroraina 'an ancient Eastern Central Asian state'	**ro-*	Lô·-lân 樓蘭 Kroraina (Note 2)

Note 1. Tw 扣 (*l.*) *khò·*/(*v.*) *khà* 'knock' dates back to Old Chinese; the philosopher 荀子 (Sûn-chú) writes, "*Khò· chi, kî seng chheng-iông jî oán bûn*" 扣之, 其聲清揚而遠聞 (Knock it and its sound is clear, sonorous and can be heard distantly.) The other sinograph 叩 [(*l.*) *khò·*/(*v.*) *khà*] is a variant form of the same word, as in 叩門 *khò·-mn̂g* (*khà-mn̂g*) 'knock on the door'. The third tone for both characters reflects the loss of the final velar stop *-k* from *knock* (*knok-* > **kok-* > *khò·*).

Note 2. For the correspondence of the name between Kroraina and 樓蘭 MSM *Lóulán* (Tw *Lô·-lân*), see Hansen (p. 35), Mallory and Mair (p. 81), and Hill (p. 87).

OR-3: INFIX WITH GLIDES (*I, U, O*)

When we compare European words with their Taiwanese correspondents, sometimes we find a glide is infixed in the Taiwanese counterparts. Underlying these instances are two semivowels [j] and [w] that are used as glides. Orthographically, the *Pē-ōe-jī* system uses three symbols: (1) <*u*> before vowel *i*; (2) <*o*> before *a* and *e*; and (3) <*i*> before *a*, *o*, and *u*. Examples of their usages are given in the table below.

Infix	**Sinograph**	*-i-*	*-a-*	*-e-*	*-o-*	*-u-*	**European correspondents**
u	櫃 'chest'	*kūi*					L *cista*, Gk κίστη 'chest'
u	規 'guide, rule'	*kui*					It *guida* 'guide'
u	雷 'thunder'	*lûi*					ON *reiðar* 'thunder' (*-ei* > *-i*)
o	罐 'can'		*koàn*				OHG, ON *kanna* 'can'
o	盤 'pan, plate'		*poân*				OE *panne* 'pan'
o	歡 'to rejoice'		*hoan*				ON *fagna* 'rejoice in a thing'
o	地 'earth'			*tōe*			L *terra* 'earth'
o	背 'to bear'			*pōe*			L *ferō*, Gk φέρω 'to bear'
o	雞 'chicken'			*koe*			L *gall-us* 'cock', *-ina* 'hen'
i	鵝 (*v.*) 'goose'		*giâ*				ON *gás* 'goose' (loss of *-s*)
i	挾 'to seize'		*kiap*				L *capere* 'to seize'

Infix	**Sinograph**	*-i-*	*-a-*	*-e-*	*-o-*	*-u-*	**European correspondents**
i	領 (*v.*) 'to get'		*niá*				ON *ná* 'to get, obtain'
i	叫 'call'				*kiò*		PIE **gol-* 'call' (the 3rd tone of *kiò* reflects loss of *-l.*)
i	尿 'urine'				*jiō*		L *lōtium* 'urine' (**liō* > *jiō*)
i	轎 'palanquin'				*kiō*		ON *skjótr* 'vehicle'
i	柳 'willow'					*liú*	Gk λύγος 'willow-like tree'
i	球 'ball'					*kiû*	G *Kugel* 'ball'
i	朽 'to rot' as in 朽爛 *hiú-nōa*					*hiú*	ON *fúna* 'to rot, decay'
i	娘 'a lady'					*niû*	L *nurus* 'a young woman'

Unfortunately, this rule is not hard and fast. Not all words get an infix, and there is no way to predict from the European source word whether or not a corresponding Taiwanese word gets a glide. Furthermore, it has not been possible to discern any factor that triggers insertion of a glide. Further complicating matters, Taiwanese has its own internal variation, for example, the two main Taiwanese accents, the Chiang-chiu (mainly Southern Taiwan) and Choân-chiu (mainly Northern Taiwan) accents differ in pronouncing <*e*> by the presence or absence of the infix <*o*>, which is shown bolded in the table below, displaying the variation of *e* and *oe* between the two regional accents:

Sinograph	**Northern Tw**	**Southern Tw**	**European correspondents**
飛 'to fly'	(*v.*) *pe*	(*v.*) *poe*	PIE **pleu-* 'sail, float'
	(*l.*) *hui*	(*l.*) *hui*	ON *fljúga*, OE *flēogan* 'to fly'
找 'to search'	*chhē*	*chhōe*	It *cercare* 'to search'
隨 'to follow'	*tè*	*tòe*	E *sue* ' to follow', *persue*
地 'earth'	*tōe*	*tē*	L *terra* 'earth' (loss of *-r* > 7th tone)
雞 'chicken'	*koe*	*ke*	L *gallus* 'cock', *gallina* 'hen'
會 'be able to'	*ōe*	*ē*	ON *fá* (1st sg., *fœ*) 'to be able to' (*f-* > *h-* > muting of *h-*)

Another layer of variation is between the literary and vernacular readings of sinographs. A graph (*e.g.*, 氣 'breath, air') is read with an infix in the vernacular but not in the literary reading, whereas another graph (*e.g.*, 肺 'the lungs') is read in just the opposite manner. These are shown in the table below.

Sinograph	**Vernacular Tw**	**Literary Tw**	**European words**
氣 'breath, air'	*khùi* : 喘氣 *chhoán-khùi* 'breathing, panting'	*khì* : 氣溫 *khì-un* 'air-temperature'	Gk πνευμα 'breath, a wind' > *νευ-
肺 'the lung'	*hì* : 肺炎 *hì-iām* 'pneumonia'	*hùi* : 肺腑之言 *hùi-hú-chi-giân* 'confidential words'	Gk πνεύμων, Attic πλεύμων 'the lungs' > *πεύ-

When one examines the rime words in the Tang–Song rime tables, one finds that within the same rime category some words have an infix while others do not. This is because a glide (called 韻頭 *ūn-thâu* in traditional Chinese phonology) is not taken into account in the sound of a rime (Zhú, p. 176). For example, one of the best known Tang poems, *Iû-chú Gîm* 遊子吟 (*The Song of a Traveling Son*) by Bêng Kau 孟郊, which is sung by schoolchildren in Taiwan on Mother's Day, has three rime words: *i* 衣 'clothes', *kui* 歸 'return', and *hui* 暉 'radiance of the sun'. The first word has no glide while the latter two have the glide *-u-*. It does not matter as long as the final *-i* (the main rime) is the same for all three. Thus, the poem rhymes perfectly in Taiwanese.

In summary, Taiwanese words may be found to match their European counterparts by adding a glide between the initial consonant and medial vowel. It has not been possible to discern the determining factors that govern when an infix is required. Taiwanese shows variation of the presence or absence of a glide in the same word between regional accents and between literary and vernacular readings. And in traditional Chinese rime schemes, glides play no part in rimes.

OR-4: CONFORMING TO TAIWANESE FINALS

When European words are borrowed into Taiwanese, the word finals are reshaped according to Taiwanese morphosyllabic structures. Traditional Sinitic (and Taiwanese) phonology classifies words according to word-finals into three main types (Ho, p. 78):

- Class A: *Im-sia*^{n} rhyme 陰聲韻 : open morphosyllables ending in a vowel
- Class B: *Iông-sia*^{n} rhyme 陽聲韻 : nasal morphosyllables ending in *-n*, *-m*, *-ng*, or a nasalized vowel (*V*^{n})
- Class C: *Ji̍p-sia*^{n} rhyme 入聲韻 : closed morphosyllables with a *-p*/-t/*-k*/*-h* final

Examples of Taiwanese words in the three classes

Class	**Final**	**Taiwanese words**	**European corresponding words**
A	*-a*	家 *ka* 'house, home'	L *casa* 'house, hut'
A	*-u*	府 *hú* 'house, office'	ON *hús* 'house'
A	*-u*	哭 (*v.*) *khàu* 'to weep, cry'	(Attic) Gk κλάω 'to weep, wail'
B	*-n*	竿 *kan* 'a cane'	L *canna* 'a cane'
B	*-ng*	(G1W) *leng* 'milk'	L *lactes* (> It *latte*) 'milk'
B	*-m*	杉 *sam* 'tree trunk, lumber'	OHG *stam* 'stem, tree trunk'
B	*-a*^{n}	行 (*v.*) *kiâ*^{n} 'walk, go'	ON *ganga* (*f.*), *gangr* (*m.*) 'walking'
C	*-p*	協 *hiáp* 'assistance'	ON *hjálp* 'help'
C	*-t*	法 *hoat* 'law'	L *fas* 'law, lawful' (with *-s* > *-t*)
C	*-k*	穀 *kok* 'grain'	Gk κόκκος 'a grain, seed'
C	*-k*	毒 *to̍k* 'poison, poisonous'	Gk τοξικόν 'poison', L *toxicus* 'toxic'
C	*-h*	活 (*v.*) *oa̍h* 'to live'	OE *feorh* 'life'

When European words with an ending different from those above are borrowed into Proto-Holó, they need to be reshaped according to its phonology in order to be adopted. An alternative view

would be that the word-finals in Proto-Holó may have been more complex than what they are now, and historical developments may have simplified the finals into their present state.

Below are a few examples to illustrate the processes of simplification.

Case 1. Gk τόξον (*tóxon*) means 'the bow', and the poison that is smeared onto the tip of an arrow is then called τοξικόν (*toxikón*) 'the arrow poison', which was later extended to mean 'poison' in general. Latin borrowed the term for *toxicus* 'toxic' which in turn is loaned to all European languages, *e.g.*, E *toxic*, *toxin*, *detox*, *intoxication*, and *toxicology*. Tw *tók* 毒 'poison' can also be derived from the first syllable *tox-* of this Greco-Latin etymon. However, because Taiwanese lacks the *-x* final but has *-k* instead, and, because *-x* is a double consonant *-ks*, *tox-* then underwent simplification to *tok-* with loss of the final *-s*. Thus,

Gk/L *tox-* > *toks-* > Tw *tók* 毒 'poison'.

Case 2. Compare the following two sets of corresponding words between Old Norse, Old English, and Taiwanese:

Meaning	**Old Norse**	**Old English**	**Taiwanese**
fish	*fiskr*	*fisć*	*hî* 魚 (*v.*)
dish	*diskr*	*disć*	*tî* 碟 (*v.*)

Taiwanese phonology does not have finals like those of ON *-skr* or OE *-sć*. Therefore, when the Germanic words for 'fish' and 'dish' are adopted, the finals are elided to become *hî* 魚 'fish' and *tî* 碟 'dish' in Taiwanese. Parenthetically, because Taiwanese phonology lacks the [f] and [d] sounds, they are substituted by the [h] and [t] sounds, respectively. Tw *tî* 碟 is a small, shallow dish used to hold a small amount of soy sauce or other sauces for dipping, and is usually called by its diminutive form *tî-á*, such as *tāu-iû tî-á* 豆油碟仔 'a small dish for soy sauce'. The larger dishes for main entrées are called: (1) *phiat-á* (G1W) 'plate' which corresponds to It *piatta* 'plate'; and (2) *pôa^{n}-á* 盤仔 'pan' which corresponds to OE *panne*, OS *panna*, and OHG *pfanna* 'pan'.

The next two cases illustrate not only OR-4 but also an important phenomenon in historical linguistics called "correspondence of homophone pairs" between two different languages. The importance of the phenomenon will be discussed after the two cases are presented.

Case 3. Consider the correspondence of the following ON pair of homophones *fors* with their counterparts in Taiwanese *phók*, which are also homophones:

Old Norse words	**Taiwanese words**
fors 'vehemence, wrath'	*phók* 暴 'vehement, tyrannical', Example: *phók-kun* 暴君 'tyrannical ruler'
fors 'waterfall'	*phók* 瀑 'waterfall'¶, Example: *phók-pò·* 瀑布 'waterfall'¶

¶ In the name of a waterfall, *phók* 瀑 is used alone, *e.g.*, Iông-bêng-phók 陽明瀑.

Here we see that the ON *-rs* final is replaced with *-k* in Taiwanese. The dentolabial *f-* is replaced with a bilabial *ph-* with the aspiration imparted by the *-r* in the final of ON *fors*. Thus,

ON *fors* > Tw *phók* (for the parallel correspondences).

Despite the fact that the sinographs for the two Taiwanese words are slightly different: 暴 vs 瀑, with the second sinograph having a 'water' radical added for the purpose of semantic differentiation, the two words *phók* are homophonous up to the level of tones (which is supra-segmental).

Case 4. This case of correspondence was traced from Old Norse back to PIE.

Pokorny	**PIE**	**Old Norse words**	**Taiwanese words**
480	**gwet-* 'to say, speak'	*kviðr* 'saying, word'	*ūi* 謂 'speak, saying'
481	**gwet-* 'bowel' §	*kviðr* 'belly, abdomen'	*ūi* 胃 'stomach'

§ Watkins drops this PIE word from the fifth edition of *American Heritage Dictionary of the English Language* (2011).

The first ON *kviðr* means 'saying, word', from which the etymon is traced back to PIE **gwet-* 'to say, speak'. After declustering of the initial *gw-* to **w-* (OR-2), we arrive at the first Taiwanese word *ūi* 謂:

PIE **gwet-* > **wet-* > Tw *ūi* 謂 'speak, saying' (the 7th tone reflects the loss of *-t*).

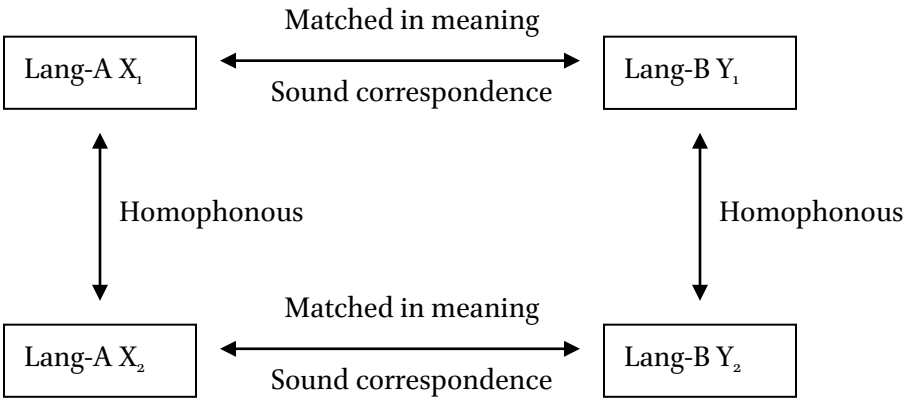
The second ON *kviðr* with the meaning of 'belly, abdomen' can be derived from another PIE **gwet-* 'bowel'. Using the same processes of simplication as before we arrive at the second Tw *ūi*:

PIE **gwet-* > **wet-* > Tw *ūi* 胃 'stomach' (the 7th tone reflects the loss of *-t*).

Thus, the homophone pair of Tw *ūi* mirrors the homophone pair of ON *kviðr* and of PIE **gwet-*.

Correspondence of homophone pairs

When a pair of homophones in Language A corresponds in sounds to another pair of homophones in Language B with matching meaning for each respective word, it is called "correspondence of homophone pairs." The relationships between the two pairs of homophones are shown in the diagram below.



It is clear that, whatever the probability there is for a single match by random chance, say, between Lang-A X_1 and Lang-B Y_1, the probability of a match between the two homophone pairs will be the square of that for a single match, which will no doubt be extremely low. It follows that we can confidently rule out the lexical correspondence by random chance or sporadic borrowing. It leaves us with two possibilities for such a kind of correspondence: mass borrowing or genetic relationship between the two languages. When I discovered Case 4 as the first instance of matching homophone pairs in 1998, it dawned on me that underlying the correspondence is the significance of such a deep-rooted relationship between Taiwanese and European lexicons. Zhou's paper of 2002a (p. 51) also attached a great significance to the correspondence of homophone pairs, and in it he cited a 1999 paper by Xíng Gōngwǎn 邢公畹 that focused on elucidating the significance of "the deep-layer correspondence" for such a phenomenon. When I became aware of Zhou's paper (available online) in 2015, I was pleased that my observation had been independently confirmed.

The first case of homophone pair correspondences between Sinitic and English was discovered by the great sinologist Bernhard Karlgren who pointed out the homophones MSM (*pinyin*) *yàn* 燕 - *yàn* 嚥 corresponding to the English pair *swallow* (noun: the fork-tailed bird) — *swallow* (verb: take in food or drink), respectively. But he was of the opinion that the *swallow* was simply the agent (*swallower*) of the action (*to swallow*), and that the Sinitic-English correspondence of the homophone pair was just coincidental (Karlgren, pp. 117–118).

OR-5: DENASALIZATION

Denasalization plays an important role in realizing the correspondence between European and Taiwanese lexicons. Denasalization is a well-known process of linguistic change among European languages, such as the loss of /n/ from German to English cognates: *gans* > *goose*, *fünf* > *five*, and *uns* > *us*. It is known that Taiwanese literary pronunciation of sinographs, Sino-Japanese *kanon* pronunciation, and the dialect of southern Shanxi of China have undergone extensive denasalization (Forrest, pp. 177–185). In comparing Taiwanese with corresponding Old Norse words, loss of the nasal sound is often found.

Examples of Old Norse–Taiwanese pairs showing loss of the nasal sound

ON words	**Simpl.**	**Tw words**	**Examples (Notes in parenthesis)**
sinn 'time'	*sinn*	*sî* 時 'time'	*sî-kan* 時間 'time'
skinn 'skin'	**kinn*	*ki* 肌 'skin'	*ki-hu* 肌膚 'skin', pleonastic with *hu* 膚 (ON *húð* 'hide' > *hu* 膚 'skin')
skrín 'shrine'	**sín*	*sī* 寺 'shrine'	(*skrín* > OR-2 > **srín* > OR-2 > **sín*)
kyn 'wonder, marvel'	*kyn*	*kî* 奇 'wonder, marvel'	*kî-koan* 奇觀 'sight of wonderment' *kî-miāu* 奇妙 'marvelous, amazing'
horn 'horn'	*horn*	*hō* 號 'horn'	*hō-kak* 號角 'horn, trumpet'
sumar 'summer'	*sum-*	*sú* 暑 'summer'	*sú-ká* 暑假 'summer vacation'
matr 'meat'	*matr*	*bah* (G1W) 'meat'	*ti-bah* (G1W) 'pork'
rim 'rail in a	*rim*	*lî* 籬 'rail in a	*lî-pa* 籬笆 'fence, paling', combined

ON words	**Simpl.**	**Tw words**	**Examples (Notes in parenthesis)**
paling'		paling'	with *pa* 笆 (< L *pālus* 'a pale, stake')
sunr 'son'	*sunr*	*chú* [§] 子 'son'	*chú-lú* 子女 'son and daughter' [§] (See OR-6: S-T spectrum, below)
nœmi 'study, learning'	*nœm-*	*liām* [¶] 唸 'read, study'	*liām-chu* 唸書 'read out loud, study' [¶] (*n-* > *l-*: see **CV-4.2**, 娘日歸泥說)
níð 'derision'	*níð*	*ki* 譏 'derision'	(See **PSC-5:** *n-* > *k-*)
níu 'nine'	*níu*	*kiú* 九 'nine'	(See **PSC-5:** *n-* > *k-*)

Generally, denasalization happens in the following several ways:

(1) Word-final *-n, -m, -ng, -nr* > *-Ø, e.g.*, ON *sinn* 'time' > Tw *sî* 時 *id.*

(2) Word-initial *n-* > *l-* > *j-*; *m-* > *b-*, *e.g.*, E *smell* > **mel-* > Tw *bī* 味 'smell'

(3) Word-initial *n-* > *k-* / *h-*, *e.g.*, ON *níu* 'nine' > Tw *kiú* 九 *id.*

(4) Word-initial cluster *hn-* > *h-*; *kn-* > *k-*, *e.g.*, OE *hnutu* 'nut' > Tw *hu̍t* 核 *id.*

(5) Word-final *-n* > *-k* / *-h*, *e.g.*, L *anas* 'duck' > *an-* > Tw *ah* 鴨 *id.*

OR-6: "S-T SPECTRUM"

This important operational rule is best explained from the internal variation of Taiwanese phonology. Consider the pronunciations of various sinographs with the phonophore of 者:

Pronunciations of various sinographs with the phonophore of 者

su	***ju***	***chu***	***chhu***	***tu***
暑 *sú* 'summer'	--	豬 *chu* 'pig'	--	豬 *tu* 'pig'
緒 *sū* 'summary'	--	諸 *chu* 'many, some'	--	著 *tù* 'write, publish'
署 *sū* 'administration'	--	煮 *chú* 'cooking'	--	箸 *tū* 'chopstick'
曙 *sū* 'daybreak light'	--		--	儲 *tû* 'store, save'

As the table clearly shows, the sinographs bearing the 者 phonophore falls into three categories of pronunciation, *su*, *chu*, and *tu*, and none in *ju* and *chhu*. Sinographs bearing other phonophores have different distribution patterns of *s-j-ch-chh-t* (data not shown).

When European words with initials of *s-* or *t-* are loaned into Holó, they may get redistributed according to the pattern above. Here we look at just a few examples for illustration (the ones selected for discussion are underlined in the table).

A. OE *sumor*, OHG, ON *sumar* 'summer', through OR-1, is simplified to *sum-*, and after denasalization becomes **su-*, to which Tw *sú* 暑 'summer' corresponds.

B. At the beginning of a Chinese book, there usually is a summary or abstract of the book. The summary is called 緒言 (Tw *sū-giân*) or 緒論 (Tw *sū-lūn*), in which the 緒 *sū* corresponds to L *summa* 'summary' through denasalization:

L *summa* 'summary' > *sum-* > (denasalization) > **su* > Tw *sū* 緒 'summary'.

C. On New Year's Day people in Taiwan love to flock to the East Coast to welcome the first ray of sunlight of the New Year. Sunlight is called 曙光 *sū-kong,* comprised of 曙 *sū* 'the sun' and 光

kong 'light'. 曙 *sū* may be correlated with the Germanic word for 'sun', OE *sunne*, *sunna*, OHG, ON *sunna*, Goth *sunnō*. After denasalization of Gmc *sunn-*, we obtain *sū* 曙 'the sun'.

D. ON *sumr* means 'some', following denasalization to **su* and through the S-T spectrum, we see that it corresponds to Tw *chu* 諸 'many, some'.

E. After L *sus* 'pig' or OE *sū*, *sugu* 'sow' is loaned as **su* to Proto-Holó, it undergoes sound changes according to the S-T spectrum, and eventually settles in *chu* and *tu*, both of which are the literary reading of the sinograph 豬 'pig'. The vernacular is *ti*, which closely resembles Albanian *thí* 'pig' (D5-1, p. 161). Parenthetically, there is a *u*↔*i* interchange in Taiwanese between the literary and vernacular readings, *e.g.*, 書 'book' is read *su* (*l.*) and *si* (*v.*).

The first three examples follow a straight-forward path of **su-* to *su*, however, the correspondences in Cases D and E can be explained only by the S-T spectrum (OR-6).

The following are actual applications of the S-T spectrum where European words can be correlated with their Taiwanese counterparts.

1. ON *súl* 'pillar, column' > Tw *chù* 柱 'column, pillar'

ON *súl* 'pillar, column' corresponds to Tw *chù* 柱 'column, pillar' with the sound change of *s-* to *ch-*. The third tone of Tw *chù* reflects the loss of the final *-l* from ON *súl*.

2. L *scīre* 'to know' > Tw *ti* 知

L *scīre* 'to know' through its participial form *scient-* gives rise to E *science* and *prescient*, among others. By OR-2 to decluster the initial *sc-* and OR-6 for sound change, we obtain L *scī-* > **sī-* > Tw *ti* 知 (MSM *zhī*) 'know'. Interestingly, Rumanian has *şti* with the *t* appearing between *ş-* and *-i*.

Contradiction to and attempt at reconciling with a rule in historical linguistics:

The last step **sī-* > Tw *ti* 知 and the correspondence between L *sus* 'pig' and Tw *tu* 豬 'pig' cited above (as well as many others) seem to challenge a well established pattern in historical linguistics that the sound change of *s* to *t* before various vowels is extremely rare (Campbell, p.

232). Note the stated directionality of from *s-* to *t-*. The opposite direction, of from *t-* to *s-,* is well documented, as in E *water* > G *Wasser*, E *better* > G *besser*. To reconcile the data that we have accumulated in this study with the rule, it may be explained by the fact that in Sinitic there are many sinographs that can be pronounced with either an *s-* or *t-* initial. Examples are (in *literary* Taiwanese) 沈 *sím* / *tîm*, 直 *sit* / *tit*, 湯 *siong* / *thong* / *tōng*, 栻 *sek* / *thek*, 單 *siān* / *tan*, and many others. Then there is a large number of sinographs bearing the same phonophore that are pronounced with either an s- or a *t-* initial. Examples are: 垂 > 睡 *sùi* / 錘 *thûi*, 盾 > 遁 *tūn* / 循 *sûn*, 是 > 匙 *sî* / 題 *tê*, 屯 > 純 *sûn* / 鈍 *tūn*, among many other examples of such alternations. It has been accepted that in Old Chinese these sinographs with dual pronunciations may have had an initial consonant cluster which was later split into an alternating single consonant, *e.g.*, **st-* > *s-* and *t-*. Thus, when L *sus* 'pig' was borrowed into Old Chinese as well as Proto-Holó, it may have the form of **su-* initially. In fact, the 豕 radical ('young pig, piglet'), which serves as the semantophore for 豬 'pig', is still pronounced in Taiwanese as *sí* today. Later the pronunciation of 豬 may have been re-analyzed and hyper-corrected as *tu*, through a round-about pathway, from the original **su* via an intermediate **stu* to *tu* finally.

3. ON *síð* is an adverb meaning 'late'. The Taiwanese correspondent is *tî* 遲 'late'. The two words can be correlated through the S-T Spectrum: *síð* > **sí-* > Tw *tî* 遲. Notice that the phonophore for the graph 遲 *tî* is 犀 'rhinoceros', which is pronounced *se* in Taiwanese (*xī* in MSM). This fact suggests that 遲 originally may have been pronounced as **si* which later changed to *tî*. Thus, we can reconstruct the chain of events as: ON *síð* > **sí-* > Proto-Holó **si* 遲 > Tw *tî* 遲.

2: PATTERNS OF SOUND CORRESPONDENCE

In the following section, nine patterns of sound correspondence (**PSC**) between Taiwanese and European lexicons are presented:

- PSC-1: ***-orn*** > ***-ong***
- PSC-2: ***-aumr*** > ***-oan***
- PSC-3: ***-angr*** > -(***o***)***an***
- PSC-4: ***-ang***(***u***)***or***, ***-angar*** > -(***i***/***o***)***an***
- PSC-5: ***n-*** > ***k-***
- PSC-6: ON ***sC$_1$alC$_2$***... (or ***sC$_1$álC$_2$***...) > Tw ***C$_1$iau*** (Where ***C$_1$*** and ***C$_2$*** Are Consonants)
- PSC-7: L ***im-*** > Tw ***im***
- PSC-8: Loss of word-final ***-s***
- PSC-9: OE ***-ea-*** > Tw ***-ia-***

PSC-1: *-orn* > *-ong*

1.1 ON ***fórn*** > Tw ***hōng*** 奉 (*f-* > *h-*)

ON *fórn* 'offering, gift' has an *f-* initial, but Taiwanese lacks the /f/ phoneme. One of the two most common changes of /f/, when it is adopted into Taiwanese, is to become /h/. Furthermore, Taiwanese, like other Sinitic languages, does not differentiate between long and short sounds. Therefore, the long <ó> in Old Norse resulted in no phonemic bearing of sound length in Taiwanese. Thus, Tw *hōng* 奉 'offering' corresponds to ON *fórn* and is usually combined with a synonym *hiàn* 獻 'offering' to form *hōng-hiàn* 奉獻 'offering' (Fig. 1).

Fig. 1. 奉獻 is chiseled on a side of a purification well in a shrine in Kyoto, Japan. (Photo by C. H. Wu)

Fig. 2. The sign pleads to "Donate for the organs in the Elisabeth Church" in Marburg, Germany. (Photo by C. H. Wu)

The synonym *hiàn* 獻 'to offer, donate' in the compound *hōng-hiàn* 奉獻 can be derived from Germanic languages such as OE *spendan* (> E *spend*), OHG *spentōn* (> G *spenden*, Fig. 2), or ON *spenna* 'to donate', following a pattern of sound correspondence (PSC) *spen-* / *sven-* > *h*(*i*)*an*, designated as Side Note-1 (**SN-1**) of **PSC-1:**

———————

PSC-1(SN-1): ***spen-*** / ***sven-*** > ***h(i)an***

1(SN-1).1. OHG ***spen****tōn* 'to donate' > Tw ***hiàn*** 獻 'to offer, donate'

1(SN-1).2. L *sus****pen****dere* 'to suspend' > (apheresis) ****spen-*** > Tw ***hiân*** 懸 'to suspend'

1(SN-1).3. L *exp****en****dere* 'to spend' > (aphesis of *ek-*) ****spen-*** > Tw ***hiān*** 現, which in this case means 'spendable' as in ***hiān-kim*** 現金 'spendable cash'

1(SN-1).4. It ***spen****sierato* 'carefree' > Tw ***hân*** 閒 (alternatively 閑, and in older texts 間) 'carefree, leisure'

1(SN-1).5. It ***sven****ire* 'to faint' > Tw ***hiân*** 眩 'to feel dizzy, to faint'

Since **PSC-1(SN-1)** involves an unusual sound change of *sp-* (or *sv-*) to *h-*, we can subject this PSC to a test. Because Taiwanese lacks the /f/ phoneme, it usually renders a foreign initial *f-* into *h-*, as mentioned above in **PSC-1.1**, we can select a foreign word with a *fen-* initial (which, incidentally, partners with *spen-* to form a minimal pair: *f-e-n* vs. *sp-e-n*) and test to see whether there may be a corresponding Tw. **hian* (ignoring the tone). If **PSC-1(SN-1)** is valid, both the foreign word with the *fen-* initial and the Taiwanese word **hian* should match in meaning. Indeed, one is found which is given below as **1(SN-1).Test-1**:

1(SN-1).Test-1. L ***fen****estra* 'window' > ***fen-*** > Tw ***hian*** 軒 'window'

軒 *hian* has many meanings, one of which connotes 'window' as can be seen in a poem entitled 過故人莊 (*Kò Kò·-jîn Chong*) 'Over to an Old Friend's Farmstead' (Fig. 3) by the Tang poet 孟浩然 Bēng Hō-jiân. The fifth line of the poem reads, "開軒面場圃 *Khai hian biān tiông phó·* (Opening the

window [we] face the field-yard and garden)." This match is quite a surprise because the usual Taiwanese word for 'window' is *thang* 窗 (*v.*). And the original meaning of the sinograph 軒 was 'a carriage with a high front used by high officials' and it later was also used to denote 'a study or library'. Normally, we would not connect 軒 *hian* with 'window'. In the Tang it was adopted to write 'window', probably borrowing it for its sound to match L *fen-* as in *fenestra* (> It *finestra*, G *Fenster* 'window'). Thus, this test not only validates the regularity of **PSC-1(SN-1)** but also manifests its predictive power.

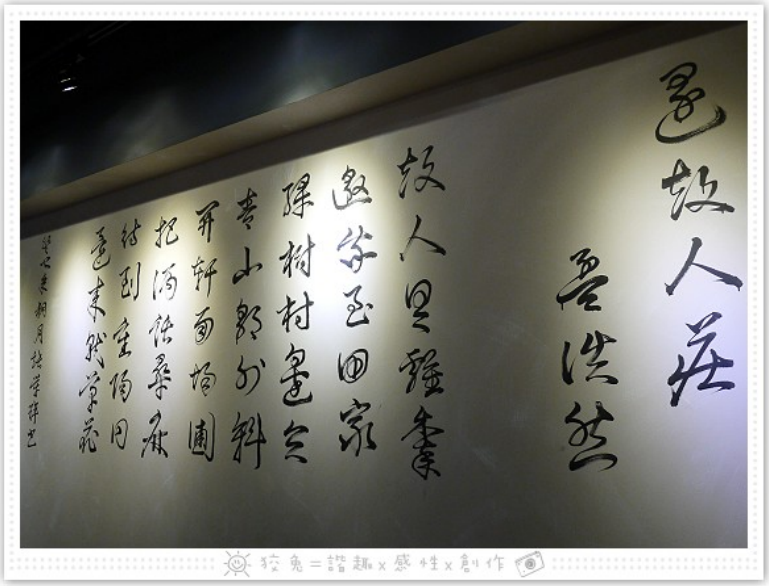


Fig. 3. The poem 過故人莊 on a wall in a restaurant at Kaohsiung, Taiwan. 轩 (軒) is second from top on the 5th text line from right. (Photo courtesy of Ms. Chilly Wu)

Since European *p-* often corresponds to Taiwanese *h-*, another test would be to see if there is a match between a European word with an initial *pen-* to a Tw **h*(*i*)*an-*.

> **1(SN-1).Test-2.** OE, OFris ***open*** adj. 'open' > (aphetic) ****pen***- > Tw ***hiān*** 現 'open', as used in compounds: Tw *lō͘-hiān* 露現 'exposed-open' and *tù-hiān* 著現 'disclosed-open'. Its reduplicative form *hiān-hiān* 現現 'wide open' is used for emphasis such as *khòa*^{n}*-hiān-hiān* 看現現 'wide open for all to see'.

1(SN-1).Test-3. OE ***open****ian* (verb stem ***open***-), OFris ***epen****ia* (stem ***epen***-) 'to open' > (aphetic) ****pen***- >Tw ***hian*** 掀 'to open', as in *hian-khui* 掀開 'to open' and *hian chheh* 掀冊 'to open a book'.

1(SN-1).Test-4. L ***pēn****icillus* 'paint brush' > ***pēn***- > Tw ***hān*** 翰, of which the original meaning was 'pheasant/phoenix with red feathers', later changing to 'writing brush', as in *hān-bék* 翰墨 'brush and ink'.

1(SN-1).Test-5. L ***pēn****ūria* (> E ***pen****ury*) 'indigence, want, dearth'; Gk **πένης** (***pén****es*) 'a poor man' > ***pen***- > Tw *hân* 寒 as in *pîn-hân* 貧寒 'poor' and *hân-sū* 寒士 'indigent scholar'. Gk πένης χρημάτων (*pénes chremáton*) denotes 'poor in money'. Note that another word Tw *pîn* 貧 'poor' can also be derived from L *pēnūria* (or Gk. *pénes*) with a sound change of *e* to *i*. Thus, both *pîn* 貧 and *hân* 寒 are essentially doublets of the same Latin-Greek source. Here *hân* 寒, normally meaning 'cold', is borrowed for its sound to write *hân* 'poor'.

Thus, the five tests verify that **PSC-1(SN-1): *spen***- / ***sven***- > ***h*(*i*)*an*** is a valid, regular correspondence. Therefore, it can be concluded that Tw *hiàn* 獻 matches G *spenden* (Figs. 1 and 2).

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1.2 ON ***forn*** > Tw ***óng*** 往 (*f-* > *Ø-*)

ON *forn* 'old, ancient' has an *f-* initial, which is treated in Taiwanese by the second change: deletion of *f-*. Thus, ON *forn* becomes Tw *óng* 往. *Óng* 往 has several meanings, one of which connotes 'old, past', for examples, *óng-sék* 往昔 'the past', *óng-nî* 往年 'past years', *óng-sū* 往事 'past event, past affair'. The Old Norse adverbial phrase *til forna* 'in times past', with loss of the initial *t-* from *til* (> **il* > *í* 以), corresponds to Tw. *í-óng* 以往 'in times past'.

1.3a ON ***horn*** > Tw ***hông*** 夆

ON *horn* 'horn (of an animal)' is a noun; when it is adopted into Taiwanese, it becomes the verb *hông* 夆 '(animals) butt horns'. The noun for 'horn' in Taiwanese is ***kak*** 角 which can be derived from L *cornū* 'horn (of cattle)' or Germanic *horn* by a PSC *-orn* > *-ak*, designated as **PSC-1(SN-2):**

PSC-1(SN-2): *c-/h-**orn*** > ***kak***

1(SN-2).1. L ***cornū*** 'horn (of cattle)' > Tw ***kak*** 角 'horn of animals'. For an alternative derivation, see **1(SN-2).4a.**

1(SN-2).2. Rom ***cornarium*** 'corner' > ***corn-** > Tw ***kak*** 角 'corner'.

Tw *kak* 角 is used in *kak-lóh* 角落 'corner', *oan-kak* 彎角 'angle corner' and *oat-kak* (越角) 'angle corner' (*oat* 越 being related to *oan* 彎 'angle' by homorganic denasalization of *-n* to *-t*).

1(SN-2).3. OE ***corn***, ON, OHG, OS, ***korn*** 'corn' > Tw ***kak*** 穀 'grain'.

Tw *kak* 穀 is used in *ngó͘-kak* 五穀 (*lit.* 'five grains') 'grain (in general)'. The sinograph 穀 can also be pronounced (in literary reading) *kok* 'grain' so that 五穀 is read *ngó͘-kok*. The *kok* 穀 'grain' can trace its origin to Gk *kókkos* (κόκκος) 'grain, seed' following OR-1:

Gk ***kókkos*** 'grain, seed' > (OR-1) ***kók-*** > Tw ***kok*** 穀 'grain'.

1(SN-2).4a. ON ***horn*** 'horn of animals' > Tw ***kak*** 角 *id.* This derivation of *kak* 角 (alternative to **1(SN-2).1**) is based on the *h-* ↔ *k-* interchange often seen between Taiwanese and European lexicons (see below).

1(SN-2).4b. ON ***horn*** 'horn, the musical instrument' > Tw ***kak*** 角 'horn, the musical instrument' as in *sàu-kak* 哨角 'horn, trumpet'. 哨 *sàu* can be derived from the first syllable *sál-* of Gk σάλπιγγος (*sálpingos*) 'trumpet' with the syllable-final *-l* becoming Tw *-u* (see **PSC-6**).

1(SN-2).4c. ON ***horn*** 'drinking horn' > Tw. ***kak*** 角 'drinking horn' (Taiwanese

pronunciation; usage is in Chinese literature). 角 *kak* 'horn' is used as a measure word similar to 'a glass of'. For example, in one of the four great novels of Chinese literature, *Chúi-hó͘-toān* 水滸傳 'Water Margin' (or 'Tale of the Marshes'), we find a sentence in Chapter 3, "先打四角酒來 *Sian tá^{n} sì-kak chiú lâi*" 'First bring over four horns of booze.'

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1.3b ON ***horn*** > Tw ***hông*** 簧

ON *horn* also means the musical instrument 'horn.' Tw *hông* means the mouthpiece of a wind instrument, with 簧 (*lit.* 'reed') borrowed to write it.

1.3c ON ***horn*** > Tw ***kong*** 觥 (觵)

The third meaning of ON *horn* is 'drinking horn'; the Eddas and Icelandic sagas tell of occasions where horns are used for drinking. Called rhyton (ῥυτόν) by the ancient Greeks, drinking horns had a long history and were widely used in the Mediterranean, Central Asia and Northern Europe. They were also used in China and were called *kong* 觥 with a lesser-known variant *kong* 觵, both of which have a 角 'horn' semantophore and connote 'drinking horn'. The word *kong* 觥 is preserved in a set phrase *kong-tiû-kau-chhò* 觥籌交錯, describing the aftermath of a happy, raucous, game-filled banquet in which drinking horns (*kong* 觥) and chips for wine games (*tiû* 籌) were in total disarray (*kau-chhò* 交錯 'criss-crossed'). Compare the following figures of ancient drinking horns (rhytons) preserved in museums in Mainz, Germany (Fig. 4) and Xi'an, China (Fig. 5).

Fig. 4. Rhyton (drinking horn) at Landesmuseum, Mainz, Germany. (Photo by C.H. Wu)

Fig. 5. Rhyton (drinking horn) at Shaanxi History Museum, Xi'an, China. (From: www.huaxia.com/zhwh/whrd/2010/04/1830160.html)

It should be noted that in **1.3c** the Germanic *h*- initial of *horn* becomes Taiwanese *k*- initial in *kong*. The next example shows just the opposite; the [k] sound of a Latin *c*-initial becomes [h] in Taiwanese (similar to Grimm's Law, *Cf.* L *centum* 'hundred' and E *hundred*; L *cannabis* and E *hemp*).

1.4 L c***orn***ūcōpia > c***orn***- > Tw *hong* 豐

L *cornūcōpia* is the name in Greek mythology for the horn of the goat Amalthea placed among the stars, meaning 'the horn of plenty', and is a ubiquitous emblem during American Thanksgiving holiday in celebrations of bountiful harvests. By OR-1 we obtain from *cornūcōpia* the first syllable *corn*-, which can then be linked to Tw *hong* 豐. This morphosyllable has several meanings, the main one being 'abundant, bountiful', as in Tw *hong-siu* 豐收 'bountiful harvest'. The Oracle Bone graph for 豐 depicts a standing vessel filled with harvest produce, and the first definition given for *hong* 豐 by Campbell (D1-2, p. 213), *khì-kū tóe-míh móa-móa* 器具裝物滿滿 'vessel filled with stuff fully', marvelously echoing in imagery the definition for L *cornūcōpia* in the West.

1.4a L *c**ornū**cōpia* > *c**ornu*- > Tw *hong-hù* 豐富 'abundant'

With the *n*- to *h*- correspondence, the first two syllables *cornū*- of L *cornūcōpia* can be related to Tw *hong-hù* 豐富 'abundant'.

1.5 L ***cornū*** > ***corn***- > Tw ***kiong*** 弓

Another definition of L *cornū* is 'bow'; Tw *kiong* 弓 'bow' can be associated with L *cornū* after OR-1 for the first syllable and OR-3 with insertion of *-i-*.

1.6 OE ***corn***, ON, OS, OHG ***korn*** > Tw ***khong*** (*v*. ***khng***) 糠

ON *korn* 'corn, grain' is cognate with OE *corn* and OFris, OS, and OHG *korn*. Tw *khong* 糠 appears to be related to the Germanic *korn*, but with a slight semantic shift. Tw *khong* 糠 refers to 'chaff, bran, and husks of grain'; its vernacular contracted form *khng* (*ng* = syllabic ŋ) in the compound *chho·-khng* 粗糠 (*lit.* 'coarse corn') refers to 'chaff'.

1.7a ON ***þorn*** > Tw ***tōng*** 撞

Germanic þ and Greek θ become [t], [t^h] or [s] in Taiwanese. ON *þorn* is a noun meaning 'thorn'. The Taiwanese verb *tōng* 撞 means 'to probe or poke with a pointed tool' and thus can be related to Germanic *thorn*. Here we see /þ/ becomes /t/. It may be noted that the Taiwanese word for 'thorn' is *chhì* 刺 which can be related to G *Stich* 'prick' (the third tone of *chhì* reflecting the loss of *-ch* from *Stich*).

1.7b ON ***þorn*** > Tw ***siông*** 松

The pine tree is called *siông* 松 in Taiwanese. From its thorn-like needle leaves, we see that ON *þorn* becomes Tw *siông* 松 (here ON *þ-* is changed to Tw *s-*.)

Tw *siông* 松 can also be derived from ON *þollr* 'fir-tree' following a PSC of *-ollr* > *-ong*, but it involves a semantic shift from 'fir-tree' to 'pine-tree'.

1.8 L ***fornāx*** > Tw ***hong*** 烘

L *fornāx* (acc. *fornācem*) 'oven' gives rise to It *forno* 'oven' of the family kitchen and bakery (Fig. 6), and It *fornace* 'furnace, kiln' of the industrial type. And through Old French, it also loans to E *furnace*. It *fornaio* means 'baker'. Using OR-1 we take the first syllable *forn-* and apply the [f] > [h] sound change because of the Taiwanese lack of the [f] sound, we arrive at Tw *hong* 烘. Thus,

L *fornāx* > *forn-* > Tw *hong* 烘 'baking'

Hong 烘 connotes 'baking' as in *hong-pōe* 烘焙 'baking, bakery' (Fig. 7) and from *forno* (> *forn-* **no* >) one derives Tw *hong-lô͘* / (*v.*) *hang-lô͘* 烘爐 'oven'. Incidentally, *pōe* 焙 can be correlated to OE *bacan*, OHG *bachan*, and ON *baka* 'to bake' so that the compound *hong-pōe* 烘焙 is a pleonastic compound of two synonyms.

Fig. 6. A pizzeria named *Il Forno* 'The Oven /Bakery' in Deerfield, Illinois. (Photo by C. H. Wu)

Fig. 7. A bakery store named *Ching Ching French Bakery* 親親法式烘焙 in Tamsui 淡水, Taiwan. (Photo by C. H. Wu)

1.9 L ***forn**ix* > Tw ***kióng*** 拱

L. *fornix* means 'arch'. Its corresponding Taiwanese word is *kióng* 拱, which is combined with *hêng* 形 'shape' to form a compound *kióng-hêng* 拱形 'an arch shape'. Normally, an *f-* initial in a European word changes to an *h-* in Taiwanese. However, there appeared to be an interchange of *h-* ↔ *k-* in earlier stages of phonology that led to the formation of Taiwanese words with a *k-* initial replacing an *h-*, and vice versa. An example of such interchange is **1.3c** ON *horn* 'drinking horn' > Tw *kong* 觥 'drinking horn'. The reverse is also true for **1.4** L *cornūcōpia* > Tw *hong* 豐. Another example is the morphosyllable 共 *kiōng* with a *k-* initial serving as the phonophore in two groups of words that are pronounced with [k] and [h], respectively, (1) *kiòng* 供, *kióng* 栱, *kióng* 拱, and *kióng* 珙; and (2) *hong* 烘, *hông* 洪, and *hóng* 哄. Recalling a similar *k-* ↔ *h-* sound change from Proto-Indo-European *k-* to Proto-Germanic *h-* as described by Grimm's Law (L *centum vs.* G *hundert*, L *canis vs.* G *Hund*, L *cannabis vs.* G *Hanf*), it is reasonable to assume that at the early stages of the development of Proto-Holó, the ancestor speakers were of heterogeneous origins on both sides of Grimm's Law.

1.10 ON ***forn*** in "***forn** siðr*" > Tw ***hong*** 風 in ***hong**-siók* 風俗

ON *forn siðr* means 'old custom' where *forn* 'old' has been discussed above (see **1.2**). Tw *hong-siók* 風俗, usually translated 'custom', actually means 'old custom' where *hong* 風 (*lit.* 'wind') is borrowed to transliterate ON *forn*. The second morphosyllable *siók* 俗 of the compound *hong-siók* 風俗 can be derived from Gk *éthos* (ἔθος) 'custom', whose aphetic form **thos* undergoes three regular changes (*th-* > *s-*; infix *-i-*; *-os* > *-ók*) to arrive at *siók* 俗.

Alternatively, Tw *hong* 風 of *hong-siók* 風俗 can also be derived from Gk νομός 'custom' with νομ- (*nom-*) becoming *hong* due to two PSC sound changes: *n-* > *h-* and *-om* > *-ong* (data not shown).

1.11 L ***forn**icatiō* > Tw ***hong*** 風 in ***hong**-liû* 風流

L *fornix* usually meant 'an arch, a vault' but also referred to 'a brothel' due to the fact that vaulted rooms were tenanted by prostitutes in Roman times. L. *fornix* gave rise to the Late Latin word *fornicatiō* (> E *fornication*) 'sexual intercourse outside of marriage'.

From L *fornicatiō* we obtain *forn-* (via OR-1) and thus arrive at *hong* 風 in *hong-liû* 風流 'dallying in sex, sexual attraction' (D2-7, p. 278). Here we see another case in which *hong* 風 (*lit.* 'wind')

is conscripted to transliterate *forn-*, a syllable that has nothing to do with the wind. *Liû* 流, the second morphosyllable of *hong-liû*, literally meaning 'flow', is borrowed to transliterate L *lustror* 'to frequent brothels', the *liû* 流 being arrived at through the following changes:

L *lustror* > (OR-1) *lu-* > (OR-3 with infix of *-i-*) Tw *liû* 流 (only in 風流).

1.12 OHG ***horn****uz*, OS ***horn****ut* > Tw ***hong*** 蜂

OHG *hornuz* and OS *hornut*, both meaning 'hornet', develop to become modern G *Hornisse* and Du *hoornaar*, respectively. The first syllable *horn-* of either OHG or OS word matches Tw *hong* 蜂 'bee'. Thus, 'bee honey' in Taiwanese is *hong-bit* 蜂蜜. *Hong* is the literary reading of 蜂 whose vernacular reading is *phang*. In everyday usage *phang* 蜂 refers simply to 'bee', but it is also used in combination with descriptors for other insects of the wasp family, such as *bít-phang* 蜜蜂 'honeybee' and *hó·-thâu-phang* 虎頭蜂 'hornet, wasp' (*lit.* tiger's head bee, due to the bright orange-brown stripes on their heads and bodies).

1.13 ON ***morn*** > Tw ***bōng*** 望

ON *morn* means 'feeling a lingering, often nostalgic desire; pining away'. In Taiwanese, the corresponding word is *bōng* 望. The correspondence involves denasalization of the initial [m] to [b], a prominent feature of sound changes in Taiwanese. Thus, ON *morn* (through **mong*) becomes Tw *bōng* 望. *Bōng* 望 has not only several closely related meanings such as 'gazing far, expecting', but also 'thinking of, longing for'. *Bōng-sióng* 望想 and *bōng-bō·* 望慕 both mean 'longing for'. *Bōng-hong-hoâi-sióng* 望風懷想 is an idiomatic expression for 'thinking of (somebody or something)' (D2-7, p. 1045).

The poet Kò· Hóng 顧況 of the Tang Dynasty has a verse in his poem *Sòng Piát Jít Boán Ko* 送別日晚歌 (Evening Farewell Song on Parting Day), "*Bōng ka-jîn hê put-hoân* 望佳人兮不還" 'I am longing for my beloved, O; [but she is] not returning.' This is a variation on a verse of a classic poem by Khut Goân 屈原 of the Warring States period, who wrote of "*Bōng bí-jîn hê bī-lâi* 望美人兮未來" 'I am longing for my beloved, O; [but she is] not coming.' Perhaps the most famous of this formulaic expression is none other than that of the illustrious So· Sek 蘇軾 in his *Chiân Chhek-pek Hù* 前赤壁賦

(First Rhapsody on the Red Cliff), "*Bōng bí-jîn hê thian it-hong* 望美人兮天一方" 'I am longing for my beloved, O; [but she is] at the other end of the sky' (Fig. 8).

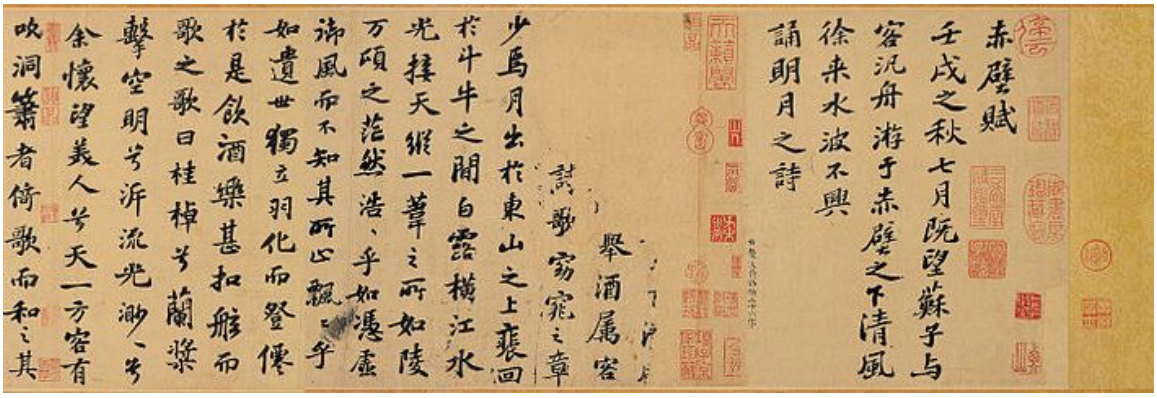

Fig. 8. So· Sek's *Chiân Chhek-pek Hù* in his own writing (Partial detail). The sentence 望美人兮天一方 is in the second line from left. (National Palace Museum, Taipei, Taiwan)

There is a Taiwanese folk song with a subdued yet ever so subtly suggestive title *Bōng Chhun-Hong* 望春風 'Longing for a Spring Breeze'; it is a thinly veiled expression for 'longing for my lover' from a young lady's perspective.

1.14 ON ***morna*** > Tw ***bông*** 曚

ON *morna* (stem *morn-*) means 'to become morning, to dawn'. Again through denasalization, we see its correspondence with Tw *bông* 曚 'dim daylight', such as *bông-lông* 曚曨 'the dim light of early dawn' (D2-7, p. 624) and in the set phrase *sîn-hun-bông-éng* 晨昏曚影 'dim light in the dawn and dusk'.

1.15 ON ***norn*** > Tw ***lōng*** 弄

Fig. 9. *Die Nornen* (*The Norns*) by Johannes Gehrts (1889)

In Old Norse female supernatural beings are called Norns. According to Norse mythology, every person had a destiny determined by the Norns, who were able to see the past, the present, and the future. The three principal Norns (Urðr, Verðandi, Skuld) dwelled by the well of Urd, situated beneath one of the roots of Yggdrasill tree. They were said to determine the lives of men and allot their lifespans. There were other Norns as well who were thought to visit each child as it was born (Fig. 9); some were benevolent while others malevolent, all of whom could reverse a person's fortune at their whim. This background information about Norns in Norse mythology will be useful for us to appreciate the Taiwanese corresponding word *lōng* 弄.

The correspondence of ON *norn* to Tw *lōng* 弄 involves denasalization of [n] to [l]. MSM retains both nasal and denasalized pronunciations *nòng* and *lòng* for 弄. Tw. *lōng* 弄 usually means 'play (with), do, fiddle with', but its usage in two idiomatic expressions strikingly resembles the role of Norns in Norse mythology: (1) *chō-hoà lōng-jîn* 造化弄人 'The Creator plays tricks with a person'; (2) *miā-ūn chok-lōng* 命運作弄 'Fate is playing tricks'. Thus, it is very likely that the word Norn was introduced into Asia and became converted to a verb *lōng* 弄 with the sense of 'be tricked by

Fate/Creator'. Since mythology is fundamentally conceptual and abstract, this *norn* > *lōng* correspondence stands out as among the strongest pieces of evidence to support the notion of a true correspondence between Taiwanese and European lexicons presented in this paper.

1.16 ON ***orna*** > Tw ***ōng*** 旺

ON verb *orna* (stem *orn-*) means 'to warm, to get warm'. Tw *ōng* 旺 originally means 'warm' as can be deduced from the 日 'sun' radical. With semantic expansion, it now covers a wider range, from *hóe-ōng* 火旺 'the blazing up of a fire' to *ōng-sēng* 旺盛 'prosperous'.

1.17 L *adōrnō* > Tw ***chong*** 裝, 妝, 粧

L *adōrnō* 'to adorn' (after aphesis to **dōrnō* and palatalization of the initial *d-* to Tw *ch-*) corresponds to Tw *chong*. Three sinographs 裝, 妝, and 粧 have the same sound and meaning. *Hòa-chong* 化裝 (or 化妝) means 'to make up, dress up'; *chong-siu* 妝修 'to adorn, dress up'; *chong-sek* 裝飾 (or 妝飾) 'to adorn, to ornament'; and *chong-hông* 裝潢 'to ornament, decorate'.

1.18 ON ***stjórn*** > Tw ***chióng*** 掌

Fig. 10. A full-scale replica of a ninth-century Viking ship that sailed from Norway to America for the 1893 Columbian Exposition in Chicago. The paddle-like steering board at left is called *stjórn* in Old Norse. (Photo by C.H. Wu)

ON *stjórn* (substantive) has three levels of meanings: (1) 'rudder, steering board' (Fig. 10), the essential implement for navigation; (2) 'steering, steerage', the concept of control for navigation; (3) 'rule, government', an extension of the concept of control to government. ON *stjórna* is a verb (stem *stjórn-*) with the meaning of 'to govern'. Its corresponding Taiwanese word is *chióng* 掌 (with palatalization of *stj-* to *chi-*). The literary (reading) pronunciation of 掌 is *chióng*, which is the same as that of Taipei and Choân-chiu (Quánzhōu 泉州). In contrast, it is pronounced *chiáng* in Tainan and Chiang-chiu (Zhāngzhōu 漳州). Its usage includes: *chióng* (*chiáng*)*-tō* 掌舵 'to steer the rudder/helm'; *chióng* (*chiáng*)*-koán* 掌管 'to rule, have authority over'; *chióng* (*chiáng*)*-koân* 掌權 'to hold power'; *chhia-chióng* (*chiáng*) 車掌 'train (or bus) conductor'.

Because of the paddle shape of the steering board, ON *stjórn* may have lent itself to the Taiwanese word *chióng* 槳 for 'oar, paddle'.

1.19a OE, OS ***torn*** > Tw ***tōng*** 慟

OE, OS *torn* 'grief, affliction' matches Tw *tōng* 慟 'grief, affliction' as used in the pleonastic combination, *ai-tōng* 哀慟 'grief, sadness, mourning'.

1.19b OE, OS ***torn*** > Tw ***tōng*** 動

OE, OS *torn* also means 'anger, indignation, rage, wrath'. One may cite an example in Beowulf, lines 2401–2402, when the dragon ravages the country,

torne gebolgen
dryhten Geata dracan sceawian

swollen in rage
the lord of Geats went seeking the dragon

Fig. 11. Dragon fight. An illumination from a thirteenth-century French manuscript from Bibliothèque Municipale de Dijon (MS 168, fol. 4b) is superimposed on the first page of the Beowulf manuscript from the British Library. Collage by Benjamin Slade. (From www.news.wisc.edu/newsphotos/beowulf.html)

Fig. 11 shows the dragon fight as described in Beowulf. It may be added here that *gebolgen* (in *torne gebolgen*) is the past participle of the reflexive verb *gebelgan* 'to make one angry, enrage', thus *torne gebolgen* is actually two synonyms strung in tandem. Furthermore, OE *gebelgan* is related to ON *bólgna* 'to swell, become swollen' which corresponds to Tw *phòng* 膨 'to swell, become swollen'. The Taiwanese word corresponding to OE *torn* is *tōng* 動, which is used in the pleonastic compound *tōng-nō·* (*l.*) / *tāng-nō·* (*v.*) 動怒 'to get angry, to lose one's temper'. Here in this compound, *tōng* 動 is taken to be synonymous with *nō·* 怒 'anger, rage, wrath'.

1.20 L ***ōrn****ō* > Tw ***hông*** 潢

L *ōrnō* 'to decorate, adorn' gives rise to E *ornament*. Tw *hông* 潢, originally meaning 'a pond, lake', is borrowed to write the compound *chong-hông* 裝潢 'to ornament, decorate'. Some European words with an initial vowel correspond to their Taiwanese counterparts with a prefix *h-* added. The reason may be that the words may have been pronounced with a heavy-breathing guttural sound. The fact that ON *óstr* and *hóstr* both mean 'throat' and that from the latter Tw *hô* 喉 (*l.*; *v. âu*) 'throat' can be derived suggest that the prefixing with an *h-* may have been a continuous process stretching from Europe to Asia.

1.21 Gk χρόνος > Tw ***kong*** 光 as in *kong-im* 光陰

Gk χρόνος 'time' > (metathesis) > *χόρν- (**chorn-*) > *kong* 光

Gk χρόνος generally means 'time'. With metathesis of *chron-* we obtain an intermediate form **chorn-* and arrive at Tw *kong* 光 as in *kong-im* 光陰 'time'. The usual sense of Tw *kong* 光 is 'light'. Here it is borrowed to write the *kong* of *kong-im* 'time'. A famous proverb, based on a Tang poem by 王貞白 Ông Cheng-pe̍k, advises us that, *chi̍t-chhùn kong-im chi̍t-chhùn kim* 一寸光陰一寸金 'an inch of time is worth an inch of gold.'

Incidentally, the second element *im* 陰 of the compound *kong-im* 光陰 may be derived from the Germanic word for 'time': OE *tima* and ON *timi*. Through a sound change of *t-* to *h-* and subsequent muting of the *h-*, OE/ON *tim-* becomes **him-* > (muting of *h-*) > Tw *im* 陰.

PSC-2: -***aumr*** > -***oan***

2.1 ON ***taumr*** > Tw ***thoân*** 團

ON *taumr* 'team' originally meant 'a rein, bridle', but later became 'a line of animals harnessed together, a team' and *taum-hestr* meant 'a led horse'. Tw *thoân* 團 'a lump of material such as dough or clay made into a ball' is borrowed to write the word 'team', such as *thoân-tūi* 團隊 'a team', *thoân-khè* 團契 'association, fellowship', *thoân-oân* 團員 'team member', and *thoân-kiat* 團結 'solidarity'. In modern Taiwanese /t/ and /th/ (= [t^h]) are separate phonemes, but in earlier stages of the language, /t/ and /th/ seemed not so well differentiated so that ON *taumr* could end up corresponding to Tw *thoân* 團 now.

2.2 ON ***straumr*** > Tw ***chhoan*** 川

ON *straumr* is 'a stream, river' (cognate with OE *strēam* and OHG *stroum*), which corresponds to Tw *chhoan* 川 'a stream, river'. Tw *hô-chhoan* 河川 is a compound meaning 'river, stream'. The Church Romanization <chh> represents the phoneme /č/, realized as either [ts^h] before central and back vowels or [ts^{hy}] before front vowels. European word-initial *str-* often corresponds to Tw *chh-*, some examples of which are given as **PSC-2(SN-1)** below:

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PSC-2(SN-1): ***str-*** > ***chh-***

2(SN-1).1 OHG ***str***ō 'straw' (> G *Stroh* 'straw') > Tw ***chh***ó (*l.*)/***chh***áu (*v.*) 草 'straw, grass'. Straw hat in German is *Strohhut* (Fig. 12) and in Taiwanese *chháu-bō* 草帽. Both Tw *chhó-lí* 草履 and *chháu-ê* 草鞋 mean 'shoes or sandals made of straws'.

Fig. 12. German *Strohhut* 'straw hat' is *chháu-bō* (*chhó-bō*) 草帽 in Taiwanese. German *Stroh* corresponds to Tw *chhó* (*l.*) / *chháu* (*v.*) 草. (Photo by C.H. Wu)

2(SN-1).2 Gk στρωμα (***str***oma) 'bed' / L ***str***ōma 'mattress' > (OR-1) ***str***om- > Tw ***chh***ông 床 (牀) 'bed' with PSC *-om* > *-ong* (data not shown).

2(SN-1).3 OE ***str***ewian / OHG ***str***ewen 'strew' > (stem) ***str***ew- > Tw ***chh***u (G1W). The original meaning of Tw *chhu* is 'to strew' as in *chhu-chháu* (*chhu*-草) 'to strew straw on the floor', which then extends to 'to spread' as in *chhu-thán-á* (*chhu*-氈仔) 'to spread a blanket'.

2(SN-1).4 L ***str****epitare* > It. ***str****epitare* 'to yell and shout' > (OR-1) *****str****ep-* > Tw. ***chh****eh* (G1W) 'to yell and shout' (with the final *-p* > *-h*).

2(SN-1).5 ON ***str****íðr* 'stubborn' > Tw ***chh****î* 持 'to persevere' as in *kian-chhî* 堅持 'to persevere, insist, hold out'; *chhî-siok* 持續 'to continue, go on'; *pó-chhî* 保持 'to maintain, preserve'; *chhî-siú* 持守 'to hold on'; and *chhî-chi-í-hêng* 持之以恆 'holding it (persevering) to the end'. Incidentally, through other PSCs, ON *stríðr* 'stubborn' corresponds to two Tw doublets, *thih* and *khí*, which are recombined to form *thih-khí* (G1W) 'stubborn', sometimes written with borrowed sinographs 鐵齒 *thih-khí* (*lit.* 'iron teeth').

2(SN-1).Test.

We can subject **PSC-2(SN-1)** to a test. Suppose we are strolling down Wells Street in the Old Town ward of Chicago, and see a store sign that says "String A Strand" (Fig. 13). With the knowledge of **PSC-2(SN-1)** firmly under our belt, we ask, "What the two English words *string* and *strand* would correspond to in Taiwanese?"

- Tw *chhng* (G1W) means 'to insert something into a small hole, to thread a needle', which then extends to 'to string beads together into a strand'. The derivation is: E *string* > **chh*(*i*)*ng* > Tw *chhng* (G1W).
- Tw *chhoàn* 串 means 'a strand'. Its derivation is as follows: E *strand* > (assimilation of the final *-d* into *-n*) > **stran* > (infix with *o*) > Tw *chhoàn* 串.
- Therefore, we can confidently say that **PSC-2(SN-1)** has passed at least one test.

Fig. 13. A store named "String A Strand," specializing in beading and trinkets in the Old Town ward of Chicago. (Photo by C.H. Wu)

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2.3 ON ***draumr*** > Tw ***hoān*** 幻

ON *draumr* means 'dream', and with a sound correspondence of *dr-* > Tw *h-* (see **PSC-2(SN-2): *dr-* > *h-*** below), it may be shown to give rise to Tw *hoān* 幻, the second element of the compound *bōng-hoān* 夢幻 'dream'. It should be noted that *hoān* 幻 can also be derived from Gk φαντασία (> L *fantasia*) 'fantasy' through *fan-* > Tw *hoān* 幻, as in *hoān-kak* 幻覺 'illusion, fantasy' and *hoān-iáⁿ* 幻影 'illusory, phantom'.

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PSC-2(SN-2): ***dr***- > ***h***-

2(SN-2).1 OFris ***dr***ām 'dream' > Tw ***h***ām (G1W) 'dream' as in *hām-bîn* (G1W) 'dream'.

2(SN-2).2 OE ***dr***ēam 'joy, delight' > Tw ***h***im 欣 (忻) 'joy, delight' as in *him-hí* 欣喜 'to rejoice, be pleased'.

2(SN-2).3 ON ***dr***óttna 'to rule, govern' > Tw ***h***ong 封 'to appoint someone to govern', as in *hong-hô·* 封侯 'to appoint someone as governor'.

2(SN-2).4 ON ***dr***úpa (stem ***dr***úp-) 'to hang the head low (*e.g.*, for sorrow)' > Tw ***h***ú 俯 'to hang the head low', as in *hú-siú* 俯首 'hang the head low'.

2(SN-2).5

ON ***dr***aga (stem ***dr***ag-) 'to launch (a ship)' > Tw ***h***ā 下, used only in the special situation of launching a ship: ON *draga fram skip* 'to launch a ship' corresponding to Tw *hā-chúi-lé* 下水禮 'a ceremony to launch a ship'.

It should be noted that **PSC-2(SN-2)** is not the only kind of correspondence to European *dr-*. As an example, European *dr-* also corresponds to Tw *t-*/*th-*. Thus, ON ***dr***óttna 'to rule, govern' > Tw ***th***óng 統 as in *thóng-gū* 統御 'to govern the whole country'; and ON ***dr***aga 'to draw, drag, pull' > Tw ***th***oa 拖 'to pull, drag'.

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2.4 ON ***gaumr*** > Tw ***koàn*** 眷; ***koan*** 關

ON *gaumr* means 'heed, attention' to which two Taiwanese words correspond, based on a pattern of sound change of *g-* to *k-*. Tw *koàn* 眷 is used in *koàn-kò·* 眷顧 'to pay attention to, take care of'

whereas Tw *koan* 關 is used in *koan-sim* 關心 'to give attention to' and *koan-chù* 關注 'to care about, to use interest on behalf of another'.

2.5 ON ***glaumr*** > Tw ***hoan*** 歡

ON *glaumr* means 'noisy merriment'. Tw *hoan* 歡 normally denotes a milder state of 'joy, being delighted, being merry, happiness'. But in the set phrase *chīn-hoan-jî-sàn* 盡歡而散 'at the end of noisy merriment people disperse' this Tw *hoan* 歡 matches ON *glaumer*. This correspondence is based on a pattern of European *gl-* > Tw *h-*. A few examples are shown below.

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PSC-2(SN-3): *gl-* > *h-*

2(SN-3).1 L ***gl****adius* 'sword' > ***gl****ad-* > Tw ***h****âi* 械 'weapon', as in *kun-hâi* 軍械 'military weapon' (with a PSC of *-aC* [*C* is a consonant] to *-ai*).

2(SN-3).2 ON ***gl****epja* 'to confuse one, to confound' > Tw *hėk* 惑, 'to confuse, confound', as in *bê-hėk* 迷惑 'to confuse, deceive'. (There is an exchange of the final stop, *-p* > *-k* in this case, which occurs frequently.)

2(SN-3).3 ON ***gl****æa* 'to glow, glisten'; ***gl****æsiligr* 'splendid' > Tw ***h****ôa* 華 'splendor', as in *êng-hôa* 榮華 'glory, splendor'.

2(SN-3).4 Gk γλοιός (***gl****oiós*) 'glue' > Tw ***h****ô·* (*l.*) / *kô·* (*v.*) 糊 'glue'

2(SN-3).5 Gk γλωχίν (***gl****ōchín*) 'any projecting point; the point of an arrow' > ***gl****ōch-* > Tw ***h****ong* 鋒 'a sharp point; the tip of a lance or bayonet' (through a PSC of *-okh* > *-ong*).

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2.6 ON ***raumr*** > Tw ***hoan*** 蕃 (番)

ON *raumr* means 'a big and ugly person' to which Tw *hoan* 蕃 (variant form 番) corresponds because of the traditional Han Chinese condescending way of designating foreigners. More specifically, in the Tang dynasty, peoples from outside of the Passes (*sài-gōa* 塞外), ranging from the northeastern to the northwestern regions, were referred to as 蕃 (*hoan* in Taiwanese), except those in the Western Region (西域) who were called 胡 (*hô·* in Taiwanese). And the Tang court employed quite a number of 蕃將 *hoan-chiòng* 'foreign mercenary generals'. The correspondence of ON *raumr* > Tw *hoan* involves a sound correspondence of *r-* > *h-*, which is shown below as **SN-4**:

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2(SN-4).1 L ***rūs*** 'the country, as opposed to the town' > ***rū-*** > Tw. ***hu*** 墟 'the country', as in *hu-lók* 墟落 'village'. Ông Î 王維, one of the most celebrated painter-poets of Tang dynasty, brushes a most picturesque pastoral scene in the opening line of his poem *Ūi-chhoan Tiân Ka* 渭川田家, "*Siā kong chiàu hu-lók* 斜光照墟落" 'The slanting sun-rays shine on the village'. Incidentally, the *lók* 落 of *hu-lók* 墟落 may also be derived from L *rūs* through a PSC of *-us* > *-ok* (L *rūs* > Tw *lók* 落).

2(SN-4).2 L ***ratis*** 'a raft' > ***rat-*** > Tw. ***hoat*** 筏 'a raft'

2(SN-4).3 ON ***rótt*** 'resting' (*Cf.* G ***Ruhe*** 'rest') > Tw ***hioh*** 休 (*v.*) 'rest'.

2(SN-4).4 ON ***róa*** 'to row, row out to sea' > Tw ***hôa*** 划 'to row'

2(SN-4).5 ON ***ruglan*** 'confusion, disturbance' > ****rug-lan*** > Tw ***hūn-loān*** 混亂 'confusion, disturbance'. The syllabic-final *-g* often becomes Tw *-n*.

2(SN-4).6 L ***ruīna*** 'ruin' (used mostly in pleural ***ruīnae*** 'ruins') > (denasalization) > ****ruī-*** > Tw ***hùi*** 廢 'abandoned, ruined' as in *hùi-hu* 廢墟 'ruined village/site'.

The sound correspondence of European *r-* to Taiwanese *h-* is just one of the three most commonly encountered, the other two being *r-* > *l-* and *r-* > *k-* (the latter via *h-* > *k-*). The reason for the *r-* > *h-* may be that Europeans pronounced the r with a throaty sound that was mistaken for *h-* by the Proto-Holó.

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2.7 ON ***aumr*** > Tw ***boán*** 懣

ON *aumr* means 'unhappy, miserable, wretched'. The simplest correspondence *aumr* > **oan* (disregarding the tone) failed to produce a match. Only after a prefix of *b-* was added was a match found: ON *aumr* 'unhappy, miserable, wretched' > Tw *boán* 懣 'unhappy, sad, sorrowful'. It suggests that some time in a Proto-Holó stage a glide [w] was probably added as a prefix; this eventually became *b-* today. The sinograph 懣 has a second pronunciation of *būn,* which is the same as 悶 *būn*, and the latter has completely taken over the former, as in the set phrase 悶悶不樂 *būn-būn-put-lo̍k* 'sad and unhappy'.

2.8 ON ***saumr*** > Tw ***chhoan*** 栓

ON *saumr* connotes 'nail, especially the nail used in planking a ship'. Tw *chhoan* 栓 means 'nail made of wood or bamboo'. It can be shown that the ON *s-* changes to Tw *chh-* through the "S-T Spectrum" (OR-6). Support is found in MSM 栓 'wooden nail' (*i.e.*, 木釘 *mùdīng*), which is pronounced in MSM *shuān*, indicating that the initial consonant of the original loanword *s-* is preserved in MSM.

PSC-3: -***angr*** > -(***o***)***an***

3.1a ON ***angr*** > Tw ***oan*** 灣

ON *-angr* is an element of Norse local place-names connoting 'bay, firth', whose corresponding Taiwanese word is *oan* 灣 'bay, cove, gulf', as in *Tang-Kia^{n} Oan* 東京灣 'Tokyo Bay (of Japan) including the Yokohama and Tokyo harbors'.

3.1b ON ***angr*** > Tw ***oàn*** 怨

ON *angr* means 'grief, sorrow'; its corresponding Taiwanese word is *oàn* 怨, as in *oàn-thàn* 怨歎 'to be aggrieved or low in spirits, to repine'. Note that the Old Norse word *angr* is homophonous with the preceding one (**3.1a**) and its Taiwanese correspondent *oàn* 怨 is homophonous with *oan* 灣 too, except for the difference in tones.

3.2 ON ***rangr*** > Tw ***loān*** 亂

ON *rangr*, derived from **wrangr*, is cognate with Late OE *wrang*, *wrong* 'wrong'. Its corresponding word in Taiwanese is *loān* 亂, which has dual meanings: 'messy, chaotic' and 'wrong or wrongly'. Here the second meaning matches the ON *rangr* 'wrong'. Examples of usage in Taiwanese: *loān-kóng* 亂講 'speaking wrongly (falsely)', *loān-lâi* 亂來 'doing/behaving wrongly', and *loān-phòa^{n}* 亂判 '[the court] ruling wrongly'.

Taiwanese phonology lacks the r sound; therefore, the European /r/ is usually substituted with /l/ in Taiwanese. The following Side Note **PSC-3(SN-1)** shows examples of substitution of *r* by *l*:

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PSC-3(SN-1): *r*- > *l*-

3(SN-1).1 L ***r****ōs* 'dew' > Tw ***l****ō·* 露 'dew', such as in *lō·-chúi* 露水 'dew drop' and *tiau-lō·* 朝露 'morning dew'.

3(SN-1).2 ON ***r****oða* 'road' > ***r****oð-* > Tw ***l****ō·* 路 'road'.

3(SN-1).3 L ***rēs*** 'a matter of business' > ***rē-*** > Tw ***lí*** 理, as in *seng-lí* 生理 (> MSM *shēngì* 生意) 'business'.

3(SN-1).4 L ***rēs*** 'reason' > ***rē-*** > Tw ***lí*** 理, as in *lí-iû* 理由 'reason'

3(SN-1).5 L ***rītus*** 'ritual, ceremony' > ***rī-*** > Tw ***lé*** 禮 'rite, ritual'.

3(SN-1).6 ON ***ristill*** 'ploughshare' > ***ri-*** > Tw ***lê*** 犁 'plough'.

3(SN-1).7 ON ***regn*** 'rain' > (*-gn* > *-ng*) > Tw ***lêng*** 零 (archaic) 'drizzling rain', as in a poem entitled *Tong San* 東山, in the classic *Si Keng* 詩經 'Book of Odes', 豳風 (Tw *Pin-hong*) 'Poems of the State of *Pin*', "*Lêng ú kî bông* 零雨其濛 (The drizzling rain is so misty)." Today *lêng* 零 means 'falling, loose, fragments, remnants' and in mathematics it stands for 'zero'. But with the 'rain' 雨 semantophore, we know it started out as a word associated with rain. Through the relationship described in **3(SN-1):7** we have been able to uncover its original meaning and find its correspondence to European sources. For *-gn* > *-ng*, see **CV-2.1** Pregnant.

3(SN-1).8 L ***rēgnum*** 'kingly government, royal power' (> E. ***reign***) > Tw ***léng*** 領. The word *léng* 領 is usually used in combination with a related or synonymous word to denote 'a director, leader, king or president'. Examples are as follows: *léng-siù* 領袖 'a leader, chief'; *siú-léng* 首領 'a leader, chieftain'; *léng-tō* 領導 'to lead, to direct'; *léng-tō-chiá* 領導者 'a leader, director'; and *tāi-thóng-léng* 大統領 (Jpn. *daitōryō*) 'the great leader, (Jpn) the president of a country'. Fig. 14 shows the cover of a 2-CD set of President Obama's Inaugural Speech (オバマ大統領演說). Other uses related to 'sovereignty' that contain the *léng* 領 element are *léng-hék* 領域 'territory, domain'; *léng-thó·* 領土 'territory, domain'; *léng-khong* 領空 'sovereign airspace'; *léng-hái* 領海 'territorial waters'; and *léng-thó·-koân* 領土權 'territorial rights'.

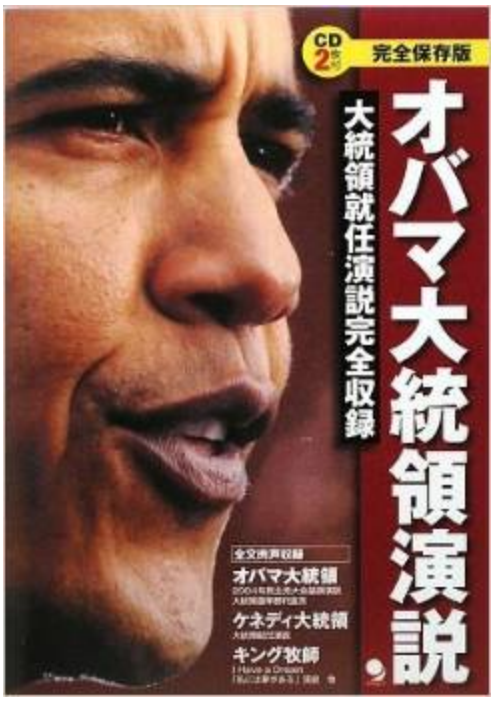

Fig. 14. Cover of a 2-CD set of President Obama's Inaugural Speech published in Japan.

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3.3 ON ***rangr*** > Tw ***oan*** 彎

ON *rangr* has a second meaning, 'crooked, wry', as opposed to *réttr* 'straight'. The corresponding Taiwanese word is *oan* 彎 'crooked, bent — said of personality', as opposed to *tit* 直 'straight'. The sound change involves a loss of the initial *r-*, most likely through *r-* > *h-* > muting of *h-*.

3.4 ON ***svangr*** > Tw ***sán*** (G1W)

ON *svangr* 'slim, slender, thin' has an initial consonant cluster. By OR-2 the cluster gets simplified (*sv-* > *s-*) so that ON *svangr* corresponds to Tw *sán* (G1W) 'slim, slender, thin, emaciated'. The latter is cognate to MSM *shòu* (*sòu*) 瘦 'slim, slender' through a "Tripartite" relationship (to be shown in Part II of this series).

3.5 ON sam-g***angr*** > Tw sa^{n}-k***àn*** (sio-k***àn***) (G1W)

ON *sam-gangr* is a compound word consisting of *sam-* 'together' and *gangr* 'walking', and the compound means 'going together' or 'intercourse', both of which find correspondence in Taiwanese as *sa^{n}-kiâ^{n}* 相行 'going together' (especially during courtship) and *sa^{n}-kàn* (*sio-kàn*) 'intercourse', respectively. Here the second meaning fits the PSC. Normally, *sa^{n}-kàn* (*sio-kàn*) is a taboo word, which is substituted with euphemistic words such as *khùn-chò-hóe* 睏做伙 'sleeping together'. This correspondence involves devoicing of *g-* to *k-*, examples of which are shown below as Side Note-2 (**SN-2**).

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PSC-3(SN-2): *g-* > *k-*

3(SN-2).1 ON ***g****unnr* 'war, battle' > Tw ***k****un* 軍 'military'.

3(SN-2).2 ON ***g****an* 'frenzy' > Tw ***k****án* (*l.*) / ***k****óa^{n}* (*v.*) 趕 'frenzy, hurry'.

3(SN-2).3 ON ***g****ap* 'gap in a mountain range' > Tw ***k****iap* 峽 'gap in a mountain range'.

3(SN-2).4 ON ***g****ata* 'street' > Tw ***k****eto* 街道 'street' (Fig. 15).

Fig. 15. Stallgatan 'The Stablestreet' in Stockholm. Sw *gata* 'street' is from ON *gata*. The final *-n* in *-gatan* is an enclitic definite article. (Photo courtesy of Ms. Anne Chen)

3(SN-2).5 L ***g**allus* 'a cock' / ***g**allina* 'a hen' > ***g**a-* > Tw ***k**e* 雞 'chicken'.

3(SN-2).6 OE ***g**iefan* (ON ***g**efa*) 'to give' > Tw ***k**ip* 給 'to give, supply'.

3(SN-2).7 L ***g**audeō* 'to rejoice' > Tw ***k**o* 高 as in *ko-hèng* 高興 'to rejoice'.

3(SN-2).8 ON ***g**egnum* 'through' > ***g**egn-* > Tw ***k**eng* 經 as in *keng-kòe* 經過 'through' (with *-gn* > *-ng*, see **CV-2.1** Pregnant).

3(SN-2).9 ON ***g**anga* 'walking' > *gang-* > Tw ***k**iâ*^{n} (行) 'walking'.

3(SN-2).10 L ***g**igās*, ***g**igant-* 'giant size' > ***g**ig-* > Tw ***k**ì* 巨 / 鉅 'giant size'

3(SN-2).11 Rom *****g**uttāria* (> Sp ***g**otera*, OF ***g**otiere*) 'gutter' > *gu-* > Tw ***k**au* 溝 'gutter'. The correspondence involves a PSC of *-u* > *-au*.

———————

3.6 ON ***v**angr* > Tw *p**án*** 坂

ON *vangr* 'field' corresponds to Tw *pán* 坂 'field by the hill or river'. Because Taiwanese lacks the [v] sound, *v-* in foreign words is often rendered either as *b-* or more often as *p-* (unaspirated) or *ph-* (aspirated). A classic example is the Buddhist term *nir<u>van</u>a* which is transliterated in Taiwanese as *liap-<u>poân</u>* 涅槃 where *-van-* is rendered as *poân* 槃. Other examples of European *v-* becoming Tw *p-* / *ph-* are given below as Side Note-3 (**SN-3**):

———————

PSC-3(SN-3): *v-* > *p-* / *ph-*

3(SN-3).1 ON ***v**inr* 'friend' > Tw ***p**êng* 朋 as in *pêng-iú* 朋友 'friend'.

3(SN-3).2 ON ***v**ölr* 'staff' > Tw ***p**io* (v.) 標 as in *pio-kan* 標竿 'staff'.

3(SN-3).3 ON ***v**án* 'hope, expectation' > Tw ***ph**àn* 盼 'hope, expectation'.

3(SN-3).4 ON ***v**arp* 'casting, throwing, of a net' > Tw ***ph**a* (G1W) 'casting, throwing, of a net'. The correspondence involves the loss of the final *-rp*. An example of the usage of Tw *pha* can be found in

the Bible, John 21:6, where Jesus told his disciples to "cast your net on the right side of the boat"; it is translated into Taiwanese as "*Pha bāng tī chûn ê chià^{n} pêng* (拋網在船的正旁)."

3(SN-3).5 ON ***v**enda* (stem: ***v**end-*) 'to change, alter' > Tw ***p**iàn* 變 'to change, alter'. (*Cf.* **PSC-1(SN-1):** *sp<u>e</u><u>n</u>-* > *h(<u>i</u>)<u>an</u>-*.)

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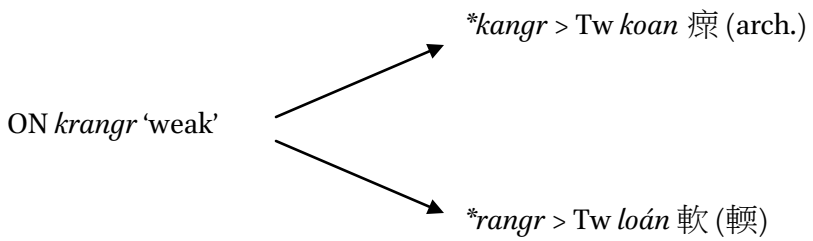
3.7 ON ***kr**angr* > Tw ***k**oan* 瘜 (archaic), ***l**oán* 軟 (variant form: 輭)

After **PSC-3: -*angr*** > **-(*o*)*an*** was discovered, a prediction was made for possible correspondents for ON *krangr*, and based on the prediction, **PSC-3.7** was found. Thus, this correspondence actually shows the predictive power of the PSC. ON *krangr* 'weak, frail' has an initial cluster of *kr-*, and with OR-2 this can be declustered by altenative splicing into two Taiwanese doublets with initials of *k-* and *l-* (with the *r-* replaced by *l-*):



Two words are found that have the proper initials and that correspond to the meaning of the Old Norse word. *Koan* 瘜 'weak, lack of energy' is an archaic word and no longer in use. The word in currency is *loán* 軟 (輭) 'weak, soft, pliable' which is commonly combined with a synonym *jio̍k* 弱 to form a compound *loán-jio̍k* 軟弱 'weak, frail'. What is important about this correspondence is that, were it not for the predictive power of PSC-3, the archaic word *koan* 瘜 would not have been found.

PSC-4: ***-ang(u)or, -angar > -(i/o)an***

This PSC is similar to PSC-3, the only difference being in the final of the European words.

4.1 L ***angor*** > Tw ***ân*** (G1W)

The Latin *angor* (noun), *angustus* (adjective) and *angere* (verb) all convey the sense of 'tightness' and give rise to English words *anxiety*, *angst*, and *angina* (short for *angina pectoris*), all referring to mental or physical (*i.e.,* cardiac) tightness. The Taiwanese word is *ân* 'tight', which has no cognate in Sinitic (MSM has *jǐn* 緊 for 'tight'). The following are a few examples of its usage:

- *pa̍k-ân* 'tie tightly'
- *kat-ân* 'tie a tight knot'
- *ân-tok-tok* 'very tight'
- *phê-pi^{n}-hō͘-ân* 'make your skin tight, (*metaphor*) be ready for a whipping'
- *chî^{n}-koan ân* (*lit.*) 'money-gate (is) tight' = 'cash flow is tight'
- *sim-koa^{n}-thâu kám-kak ân-ân* 'the heart feels a little tight'

4.2 L *cl**angor*** > Tw *kh**ian*** 鏗

L *clangor* 'a sound, clang, noise' and the verb *clangere* 'to clang, resound' give rise to E *clangor*, *clangorous*, and *clang* (noun and verb). Its Taiwanese match *khian* 鏗 means 'the sound of metals or stones being struck'. It is preserved in an idiomatic expression *khian-chhiong-iú-seng* 鏗鏘有聲 'sounding sonorous as that of clangorous metals'. It may be further noted that the second word in the expression, Tw *chhiong* 鏘, is a palatalized derivative of *clang-* from *clangor*.

4.3 L ***languor*** > Tw ***lán*** 懶

L *languor* 'faintness, weariness, feebleness' together with the related verb *languēre* 'be faint, weak' and adjective *languidus* 'faint, weak' are the sources of E *languor*, *languid*, and *languish*. The Taiwanese corresponding word is *lán* 懶 'languid, weary, feeble'. It is usually used in a reduplicated form *lán-lán* 懶懶 to mean 'a little weary or feeble'. The compound *ià-lán* 厭懶 means 'tired, weary'.

4.4 L ***plangor*** > Tw ***pān*** 挬 (arch.)

L *plangor* means 'striking or beating, accompanied with noise'. The Taiwanese correspondent *pān* 挬 'striking, beating', listed in Kangxi (D2-3) and Campbell (D1-2), is obsolete now.

4.5 OHG ***swangar*** > Tw ***bián*** 娩, ***sán*** 產

OHG *swangar* means 'pregnant' which developed into G *schwanger* 'pregnant' and *Schwangerschaft* 'pregnancy' (Fig. 16). OHG *swangar* has an initial cluster *sw-*, which can be declustered into *s-* and *w-*, producing two Taiwanese doublets. With *s-* as the initial, the Taiwanese corresponding word is *sán* 產 'childbirth, produce'. Because German /w/ usually corresponds to Taiwanese /b/, the second correspondent is *bián* 娩 'childbirth' (with an infix of *i*). Tw *bián* 娩 is normally used in compounds such as *hun-bián* 分娩 'to give birth'. Although these words show a slight shift of meaning from that of OHG *swangar* 'pregnant', they nevertheless belong to the same semantic field.

Fig. 16. The section of books on pregnancy and birth in a bookstore at Frankfurt am Main, Germany. (Photo by C.H. Wu)

It should be noted that the sinograph 娩 has two other pronunciations (see the table below), neither of which corresponds to OHG *swangar*. Tw *boán* 娩 means 'complaisant, agreeable' and as such it is mentioned in 禮記 *Lé Kì*, "*oán-boán theng-chiông* 婉娩聽從" 'pleasant and submissive in speech and manner — said of an obedient wife'. The etymological origin of this word is not known.

The second pronunciation is Tw *būn* 娩 'childbirth'. In a commentary on a rhapsody by the prodigious scientist-poet 張衡 Tiu^{n} Hêng of Han Dynasty, reference is made to *būn* 娩 in this meaning when it says "the people of *Chê* (*Qí*, in modern Shandong) call 'childbirth' *būn* 娩 (齊人謂生子曰娩)." It is interesting to note that both *būn* 娩 and another related word *hun* 分 can be derived from ON *burðr* (cognate G *Geburt*) 'birth', and the two words are often used in pleonastic combination as 分娩 which should have been **hun-būn* but nowadays is pronounced as Tw *hun-bián* 'give birth', with *bián* 娩 deriving from OHG *swangar*.

Three ways of pronouncing 娩

Taiwanese	**MSM**	**Meaning**	**Correspondence**	**Earliest citation sources**
娩 *boán*	*wǎn*	complaisant		*Lǐjí* 禮記
娩 *būn*	*wèn*	childbirth	ON *burðr*	*Commentary to Wénxuǎn* 文選注
娩 *bián*	*miǎn*	childbirth	OHG *swangar*	*Zhèngyùn* 正韻

Tw *sán* 產 is used in many compound words pertaining to 'pregnancy at term or childbirth' such as: *sán-hū* 產婦 'pregnant woman near/at term', *sán-kî* 產期 'due date', *sán-ká* 產假 'maternity leave', *sán-pâng* 產房 'delivery room', *sán-pô* 產婆 'midwife', *liû-sán* 流產 'miscarriage, loss of pregnancy', *hū-sán-kho* 婦產科 'gynecology and obstetrics department', and *seng-sán* 生產 'to give birth, produce'. For an alternative derivation of *sán* 產, see **CV-2.4** "To be born".

4.6a OE ***swangor*** > Tw [arch. ***poân*** 磐, ***sàn*** 散], ***san*** 姍 ; ***boân*** 蹣 , ***san*** 跚

OHG *swangar* 'pregnant' (discussed above) is derived from West Germanic **swangra-* 'heavy, difficult, clumsy, ponderous' which has a reflex in OE *swangor* 'heavy in movement of the body or mind, slow, sluggish'. Five corresponding words are found in Taiwanese: *poân* 磐, *sàn* 散, *san* (*sian*) 姍, *boân* 蹣, and *san* 跚, again after declustering the initial *sw-* to *s-* and *p-* / *b-*.

The earliest set of correspondences to West Germanic **swangra-* is found in 史記 *Sú Kì* (*Records of the Grand Historian*), completed in 91 BCE by 司馬遷 Su Má-Chhian (145/135–86 BCE). In the monograph on 平原君虞卿 *Pêng-goân-kun Gû-kheng*, the phrase 磐散行汲 *poân-sàn-hêng-khip* is used to describe a handicapped man with a lame foot walking (*hêng* 行) to a well to fetch water (*khip* 汲), with a pleonastic combination of 磐散 *poân-sàn* describing a slow, cumbersome and swaying way of walking. Although obsolete, the two words *poân* 磐 and *sàn* 散 well fit the PSC-4 correspondence:

West Germanic **swangra-* > Tw *poân* 磐, *sàn* 散.

The third word Tw *san* 姍 'slowly, tardily' is used in a set phrase *san-san-lâi-tî* 姍姍來遲 'walk slowly and come tardily', which is attested in *Hàn Su* 漢書 'History of the Former Han' by the first-century historian 班固 Pan Kò· (32–92 CE). The original is *san-san-kî-lâi-tî* 姍姍其來遲 (Fig. 17, arrow).

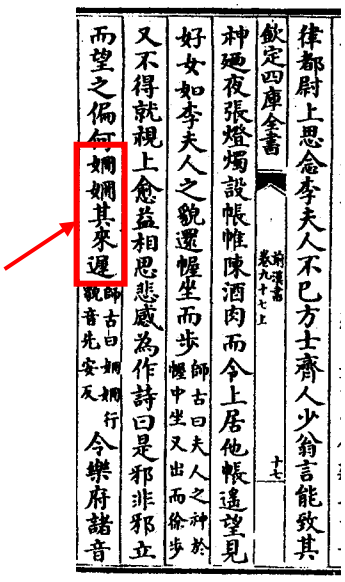

律都尉上思念李夫人不已方士齊人少翁言能致其
欽定四庫全書
神通夜張燈燭設帳帷陳酒肉而令上居他帳遙望見
好女如李夫人之貌還幄坐而步師古曰夫人之神於
又不得就視上愈益相思悲感為作詩曰是邪非邪立
而望之偏何姍姍其來遲師古曰姍姍行
貌音先安反今樂府諸音

Fig. 17. Text of *Hàn Su* 漢書 where *san-san-kî-lâi-tî* 姍姍其來遲 is shown.

The fourth and fifth words, *boân* 蹣 and *san* 跚, are considered as doublets deriving from declustering the same OE *swangor*. These two words are always used together in a compound *boân-san* 蹣跚 to connote 'walking heavily, clumsily or ponderously', as in the idiomatic expression *pō·-lí-boân-san* 步履蹣跚 'walking with heavy and ponderous steps'. Its use can be found in a poem by one of the great poet-writers of Song Dynasty, 蘇轍 So· Tia̍t (1039–1112 AD):

兩足幾蹣跚 *Lióng chiok ki boân-san*

'My two feet walking almost clumsily'

4.6b OE ***swangor*** > Tw ***siān*** (G1W) ; ***bān*** 慢

OE *swangor* also bears the meaning of 'slothful, indolent', generally in the sense of 'disinclined to exert oneself'. The match in Taiwanese is *siān* (G1W) 'slothful, disinclined to exert oneself'. *Siān-siān*, the reduplicative form, means 'lack of energy, lethargic'.

Additionally, OE *swangor* means 'slow', which, with the change of the initial *w-* to *b-*, corresponds perfectly to Tw. *bān* 慢 'slow'.

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Discussion of PSC-4.5, 4.6a and 4.6b.

The three correspondences we observe in PSC-4.5, 4.6a, and 4.6b lead us to two interesting insights.

1. Multiple variant copies of the same "gene" after transmission to Asia

If the West Germanic **swangra-* can be likened to a gene in a DNA, we see that it stayed in Europe as OE *swangor* 'heavy in movement, slow, clumsy' and OHG *swangar* 'pregnant'. But after it was transmitted to Asia, this gene multiplied into several variant copies, such as those in Taiwanese: *san* 姍, *boân* 蹣, *san* 跚, *siān* (G1W), *bān* 慢, *bián* 娩, and *sán* 產. Of these gene copies, the first three are restricted to literary use whereas the remaining four enjoy a productive life in everyday usage. In

contrast, OE *swangor* succumbed to the Norman Conquest of England in 1066 and has left no traces in Modern English. West Germanic **swangra-* 'heavy, clumsy, ponderous' underwent "mutation" to become OHG *swangar* 'pregnant', the only surviving "gene" left in Europe whose reflexes are G *schwanger*, Danish *svanger*, and Dutch *zwanger*, all meaning 'pregnant'.

2. More than one wave of transmission to Asia

West Germanic **swangra-* 'heavy, clumsy, ponderous' went two ways. Part of it remained in Europe as evidenced in its only reflex OE *swangor*. Part of it was transmitted to Asia as evidenced by its matches in Taiwanese as shown in **4.6a** and **4.6b**. Then West Germanic **swangra-* in Old High German underwent innovation (or mutation in analogy to genes) to become *swangar* with the new meaning of 'pregnant'. The latter was then loaned to Asia in another wave of transmission, resulting in the matches shown in **4.5**. Thus, the two sets of matches (**4.5** and **4.6**s) can be accounted for by two waves of transmission, one before and the other after the innovation in Old High German (See flow chart in Fig. 18 below). Note that the words in the two ovals are not related, which is a result of one-way directional transmissions at different times in history.

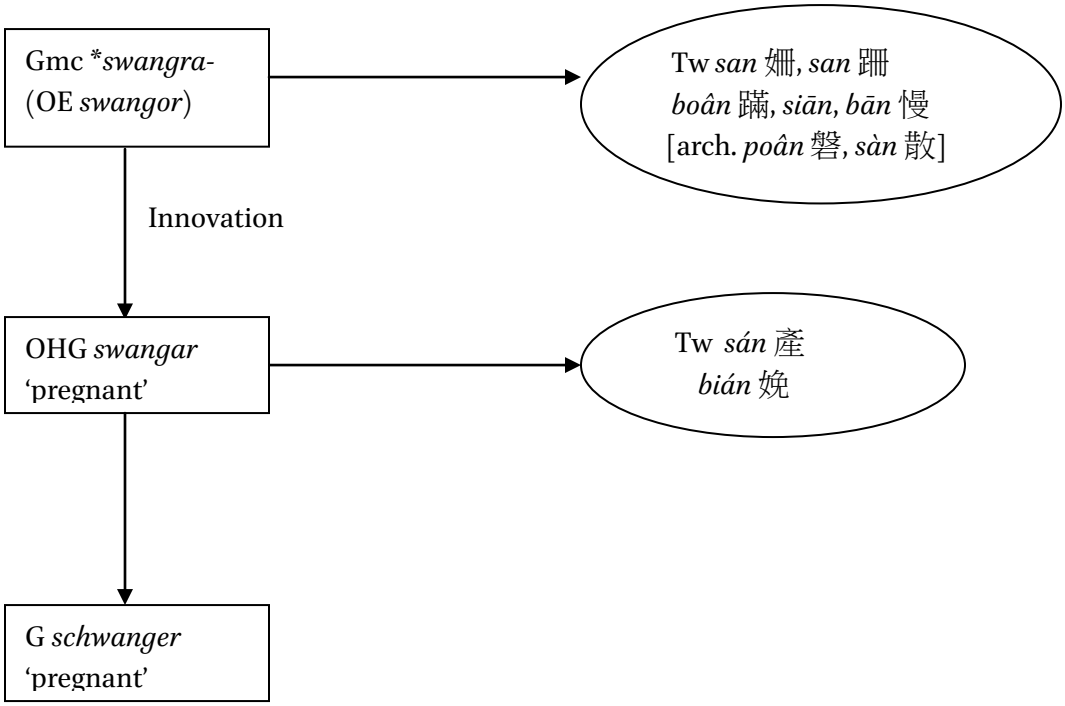

Fig. 18. Two waves of transmission of loan-words from Gmc **swangra-* and, after innovation, OHG *swangar* to Asia, as shown in two sets of Taiwanese words

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PSC-5: ***n-*** > ***k-***

There is a pattern of sound correspondence between European *n-* initial and Taiwanese *k-*. Examples of the correspondence are shown in the table below.

Examples of PSC-5: *n-* > *k-*

European words	**Simpl.**	**Taiwanese words**	**Usage**
L *nārrō* 'narrate'	*nār*(*r*)-	*káng* 講 (*-r* > *-ng*)	*káng-sut* 講述 'narrate'
L *nāvis* 'a ship'	*nāv-*	*kàm* 艦 (*-v* > *-m*: homorg. nasaliz.)	*kun-kàm* 軍艦 'a battle ship'
Late L. *nōnnus* (> It *nonno* 'grandfather')	*non*(*n*)-	*kong* 公 (see usage) (PSC: *-on* > *-ong*)	*á-kong* 阿公 'grandfather'
Gk νῦν, L *nunc*, *num* (*Cf.* G *nun*) 'now'	*nun-*	*kim* 今 (PSC: *-un* > *-im*)	*hiān-kim* 現今 'now'
L *nōtitia* 'a notice, a being known'	*nō-*	*kò* 告 'to notify'	*kong-kò* 公告 'public notice'
OHG *noh* (> G *noch*) 'still'	*noh*	*koh* (G1W) 'still, more'	*koh gō· lí* (*lit.* still 5 miles) '5 more miles'
L *nātiō*(*n*-) 'race' (> E *nation*)	*nā-*	*ka* 家 (see usage)	*kok-ka* 國家 'nation' (書經 "立政": 相我國家)
ON *nagl* 'nail'	*nagl*	*kah* 甲 (see usage)	*chéng-kah* 指甲 'nail'
OHG, OS *nagan* OS *knagan*, *gnagan* 'gnaw, gnash'	*nag-*	*kā* 咬 'to bite' (loss of *-g* > 7th tone)	*kā-gê* 咬牙 'gnashing of the teeth'

European words	**Simpl.**	**Taiwanese words**	**Usage**
ON *neðri*, OFris *nethera*, OE *niþera* 'nether, lower'	*neth-*	*kē* (低) 'low' (loss of *-th* > 7th tone)	*kē-im* (低音) 'low pitch'; *kē-un* (低溫) 'low temperature'
OE *ner* (OE *nēar*), ON *nær* 'near'	*ner*	*kīn* 近 'near' (with *-r* > *-n*)	*kīn-chêng* 近前 'draw near'
ON *nóg*, *í nóg* 'enough'	*nóg*	(*l.*) *kò͘*, (*v.*) *kàu* 夠 'enough' (loss of *-g* > 3rd tone)	(*l.*) *iú-kò͘*, (*v.*) *ū-kàu* 有夠 'enough'
ON *níða* (stem *níð-*) 'deride, lampoon'	*níð-*	*ki* 譏 'deride'	
ON *níð* + *-it* > *níðit* '(the) derision'	*níðit*	*ki-chhì* 譏刺 'derision'	(Note: ON *-it*, enclitic def. article for neuter noun)
ON *nálgast* 'come near to, come by, get'	*nál-*	*kàu* (到) (*-l* > *-u*)	*kàu-ūi* 到位 'arrive at destination'
ON *nár* 'corpse, dead man'	*nár*	**kiang* > *kiong* 僵 (with *-r* > *-ng*)	*kiong-si* 僵屍 'corpse, dead man'
ON *nefnd* 'a levy or contribution'	*nefnd*	*koan* 捐 'levy, tax, donation'(PSC:*-en*, *-end*, *-efnd* > *-oan*)	*sòe-koan* 稅捐 'levy, tax'
ON *níta* (stem *nít-*) 'deny, refuse'	*nít-*	*kī* 拒 'deny, refuse' (loss of *t* > 7th tone)	*kī-choát* 拒絕 'refuse, reject'

European words	**Simpl.**	**Taiwanese words**	**Usage**
ON *neinn* 'any, any one, anybody'	*nein-*	(*v.*) *kì*^{n}, (*l.*) *kiàn* 見 (*-ei* > *-i*)	*kì*^{n}*-nā* 見若 'any' (見若 is phonetic writing.)
ON *nú* 'now'	*nú*	*kú* (G1W) 'now'	*chit-kú* (G1W) 'right now'
OHG *naht* 'night' (> G *Nacht*)	*naht*	*kang* (G1W) orig. 'night', adapted for 'day' (see **SA-2**)	*Chit lé-pài hioh-khùn sì-kang* 此禮拜休睏四 *kang*, 'This week has 4 days off'
L *nervus*, Gk νεῦρον 'sinew, tendon'	*nerv-* / *neur-*	*kin* / *kun* 筋 'sinew, tendon'	*kin-mėh* 筋脈 'sinew'
Gk νέμω 'to deal out, pass, manage'	*ném-*	*keng* 經 'manage' (PSC: *-em* > *-eng*)	*keng-êng* 經營 'manage' (ON *önn* 'business > 營 *êng*)
Gk νοσέω 'to be sick' Gk νόσος 'sickness'	*nos-*	*kò·* 痼 'chronically ill'	*kò·-chėk* 痼疾 'chronic illness'
Gk νᾱός 'temple'	*nao-*	*kau* 郊 'place of worship'	*lâm-kau* 南郊[¶1] 'the place for worshipping the heavens on winter solstice' *kau-biāu* /*-biō* 郊廟[¶2] 'temple for worship'
ON *níu* 'nine'	*níu*	(*l.*) *kiú* 九 'nine'	*kiú-siau* 九霄 'cloud nine'

[¶1] *Lâm-kau* 南郊 : *Sú Kì* 史記 705, "冬日至, 祀天於南郊" 'Upon arrival of the winter solstice, worship the heavens at South *Kau* [where an altar was set up for worship]'.

[¶2] 魏書 *Gūi Su* (MSM *Wèi Shū*) 'Book of Wei' 109 (p. 2828).

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Test of PSC-5: ***n-*** > ***k-***

PSC-5 is a fairly peculiar sound correspondence. However, a good example is found that may serve as a test for this PSC. The snap pea, also known as sugar pea, is the sweet plump pod of the pea species *Pisum sativum* var. *macrocarpon*. When the pod is broken, it makes a snapping sound, hence the name snap pea. The Taiwanese name is *kiap-tāu* 莢豆, with the *tāu* 豆 element of the compound meaning 'pea'. Thus, *kiap* 莢, the first element, is the counterpart of *snap*. After declustering the initial cluster *sn-* to *n-* (OR-2) and the infix of the glide *-i-* (OR-3), we obtain, *snap* > **nap* > **niap*. By comparing **niap* and Tw *kiap* 莢, we see that the initial *n-* corresponds to Tw *k-*. Thus, PSC-5 stands the test in this case. Fig. 19A and B show side by side *snap pea* (trade name *Snapea*) and Japanese *kinusaya* 絹莢 where Sino-Japanese 莢 *saya* is also read *kyō* that corresponds to Tw *kiap*.

Fig. 19A. A snack made from snap peas.

Fig. 19B. Snap peas (*Kinusaya* 絹莢) from Hyōgo 兵庫 of Japan.

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PSC-6: ON *sC₁alC₂…* (OR *sC₁álC₂…*) > TW *C₁iau* (WHERE *C₁* AND *C₂* ARE CONSONANTS)

There is a group of Taiwanese words, each of which shows extensive modification when compared with their Old Norse correspondents. Yet when they are aligned, they make a consistent pattern, which is designated as **PSC-6**. The diagram below shows the general outline, in which the modifications involve four processes: (1) the initial consonant cluster *sC₁-* is simplified to *C₁-* (OR-2); (2) a glide *-i-* is inserted after the new initial *C₁* (OR-3); (3) the medial (or final) *-l* is changed to *-u*; and (4) the final consonant *C₂* and all that follow it are elided. In all this complicated scheme of modifications, the vowel *a* remains unchanged.

There are nine words that fit this pattern, which are shown in the alignment scheme after the diagram. In addition, there are four words that fit only partially, probably because they were subjected to other influences that caused them to deviate from the pattern. These latter words are called "atypical" and are shown at the end.

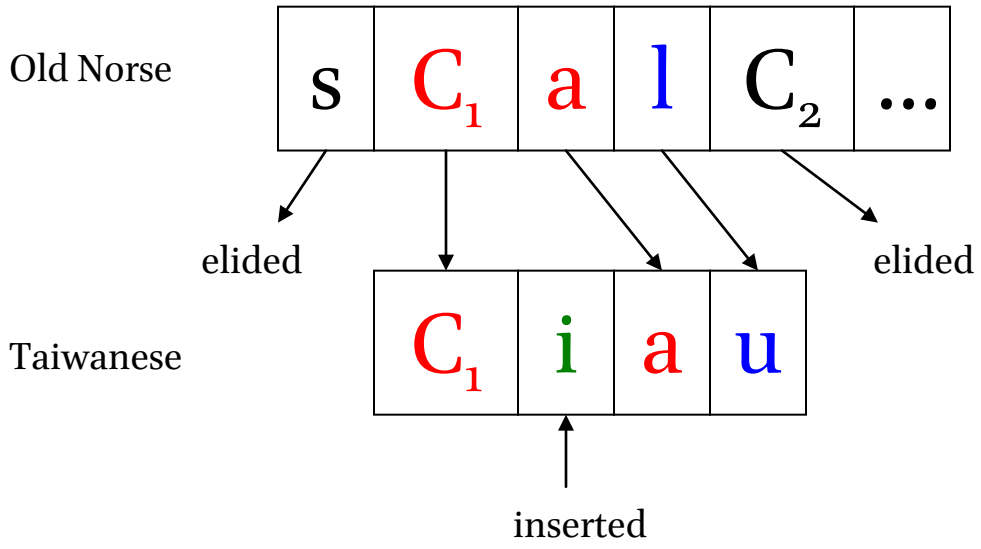


Diagram showing the changes involved in the correspondence pattern PSC-6.

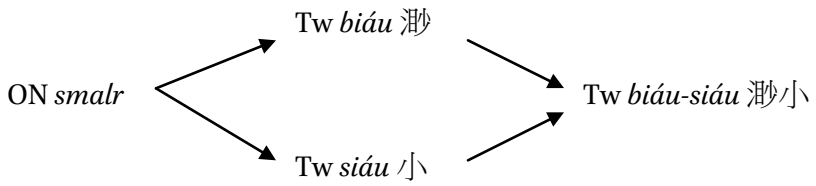
The following table lists the correspondences according to PSC-6. Items 1–9 are the typical type, whereas Items 10–13 are the atypical. The letters are aligned according to the scheme shown on the diagram above. This type of alignment is exactly the same as that used for protein analysis in which corresponding amino acids are aligned. In order to accommodate the glide *-j-* in three Old Norse words (Items 4–6), a gap is created (shown as a hyphen) in the corresponding position for other words. As the data clearly show, the typical examples fit the PSC exactly. The four atypical ones have some partial fit.

Old Norse	**Gloss**	**Taiwanese**		**Gloss**
$sC_1alC_2..$		C_1iau		
Typical:				
sk-áli	hall, room	kiau	喬	tall mansion
sk-all	noise	kiàu	噭	loud noise
sk-álp	idle talk	kiáu	譑	idle talk
spjald	tablet, square	piau	標	tablet, label
spjall	saying, tale	piáu	表	expressing, saying
spjalla	to destroy	piáu	摽	to hit
sm-alr	small, little	biáu	渺	small, little
st-allr	animal stall	tiâu	(G1W)	animal stall
st-allra	to stall, falter	tiâu	(G1W)	to get stuck
Atypical:				
sk-álm	short sword	kiàm	劍	double-edged sword
sk-ál	bowl	au	甌	small bowl
sk-álpr	scabbard, sheath	siàu	鞘	scabbard, sheath
sm-alr	small, little	siáu	小	small, little

Despite the complexity of a word being modified simultaneously by four operations, nine pairs of Old Norse-Taiwanese words are found in correspondence in a consistent pattern. It is difficult to conceive that such correspondences could occur by coincidence.

All the source words in the table above are from Old Norse only. One of these words, the ON *skáli* 'hall, room' seems to have been promoted to a higher status after its adoption into Taiwanese as *kiau* 喬 'a tall mansion'. It is used in a very formal, polite expression *kiau-chhian chi hí* 喬遷之喜 'celebration of (your) moving into a tall mansion'. This word is among the lexicon of "Words of Prestige and Politeness" which will be discussed in Part II of this two-part series. It is similar to the injection of French lexicon into English after the Norman Conquest of 1066, the French-derived words becoming part of the refined vocabulary of formal English.

Lastly the table shows an interesting pair of doublets derived from the same Old Norse word *smalr* 'small, little'. With the typical derivation we obtain Tw *biáu* 謬 (with denasalization) and with the atypical Tw *siáu* 小, both connoting 'small, little'. The two doublets then recombine to form a pleonastic *biáu-siáu* 謬小, emphasizing 'very small':



Chang was the first to report the derivation for *biáu-siáu* 謬小 (Chang, pp. 31–32). But he tracked it all the way to PIE **smīk* and Proto-Germanic **smāh* (Pokorny, p. 966). Based on what we have obtained through PSC-6, it appears that it is not necessary for the derivation to be traced so far back.

PSC-7: L ***im-*** > TW ***im***

The first syllable *im-* of the following Latin words becomes Taiwanese morphosyllables.

Examples of PSC-7: L *im-* > Tw *im*

L/VL words	**Simplif.**	**Tw words / Usages**
imbibō 'to imbibe, drink in'	*im-*	*ím* 飲 (*l.*) 'to drink'
		ím-liāu 飲料 'beverage'
immergō 'to immerse'	*im-*	*im* 淹 'to immerse'
		im-chúi 淹水 'flooding'
imbuō 'to steep, saturate, soak'	*im-*	*ìm* 醃 / 蔭 'to pickle' (Footnote)
		ìm-koe 蔭瓜 'pickled dills'
imber 'a shower of rain, heavy rain'	*im-*	*îm* 霪 'a long rain'
		îm-ú 霪雨 'a long rain'
immoror 'to stay in/on/at, dwell upon'	*im-*	*îm* 淫 'to dip into, absorb'
		chìm-îm 浸淫 'to dwell upon'
impleō 'to fill up'	*im-*	*îm* 淫 'to overfill'
impudīcus 'unchaste, immodest, lewd'	*im-*	*îm* 淫 'unchaste, lewd'
		îm-loān 淫亂 'lewd, lecherous'
VL *imne* / *ymne* 'hymn'	*im-* /*ym-*	*im* 音 'music, sound'
		im-ga̍k 音樂 'music'

Fn: Both 醃 and 蔭 are borrowed to write *ìm* 'to pickle'. The first sinograph 醃 is borrowed for its meaning whereas the second 蔭 is for its sound. Today 蔭 is more often seen. Fig. 20 shows a small bottle of pickled dills 蔭瓜 *ìm-koe*.

Fig. 20. Pickled dills *ìm-koe* 蔭瓜 produced by a Taiwanese food company.

PSC-8: LOSS OF WORD-FINAL *-s*

One of the distinctive features of Eastern Romance languages is the loss of Latin *-s* at the end of a word (Posner, p. 61). The Western Romance languages still keep it, although, more recently, French final *-s* has ceased to be pronounced. If we compare the Romance words for 'two' derived from L *duos*, we can see: It *due*, Rum *doi* against Sp *dos*, Portuguese *dous*, and OF *dues* (> modern F *deux*).

When we compare Taiwanese words with their European correspondents, we also see the loss of final *-s*.

8.1 OE *gōs* > Tw *gô* 鵝 (*l.*)

OE *gōs* connotes 'goose', and with loss of the final *-s* Tw *gô* 鵝 (*l.*) 'goose' is derived.

8.2 ON *gás* > Tw *giâ* 鵝 (*v.*)

ON *gás* 'goose' is cognate to OE *gōs*. With the same process, we obtain Tw *giâ* 鵝 (*v.*) with an infix of *-i-*. The following advertisement (Fig. 21) is to be read in vernacular Taiwanese, *giâ-báh chiū^{n}-chhī* 鵝肉上市 'goose meat on market'.

Fig. 21. An advertisement announcing that "goose meat (is now) on market" in four horizontal characters. The four vertical ones say "limited amount each day".

The 市 *chhī* 'market' in the advertisement is derived from OE *cēap* 'market, trade' (the seventh tone of Tw *chhī* 市 reflects the loss of *-p*). The sinograph 市, here 'market', is also used for 'city', which is derived from L *civitās* 'city' (L *civitās* > *ci-* > *chhī* 市 'city').

8.3 OHG *gans* > Tw *gān* 雁 (*l.*)

OHG *gans* 'goose' is also a cognate of OE *gōs*. Tw *gān* 雁 (*l.*) can be derived from it with the loss of *-s*. OHG *gans* refers to both the domesticated and wild 'goose' whereas Tw *gān* 雁 covers not only wild goose (Fig. 22) but also other migratory birds such as ducks, cranes, etc., that fly in I or V formations.

Fig. 22. A gaggle of Canada geese. Canada goose is called *Kanadagans* in German. Tw *gān* 雁 connotes 'migratory birds that fly in I or V formations.' (Photo by C.H. Wu)

8.4 ON *hús*, OE *hūs*, OHG *hūs* > Tw *hú* 府 (*l.*)

ON *hús* 'house' and its cognates correspond to Tw *hú* 府. *Hú* 府 is solely a literary word; there is no vernacular form of the same origin. And this word is used only in formal speech. It will be discussed in the section on "Words of Prestige and Politeness" in Part II of this series.

OE *hūs* has changed to *house* in modern English. Similarly OHG *hūs* has also changed to *Haus* in modern German. But Scandinavian languages still maintain the original sound *hus*, as shown in the figure below (Fig. 23). Tw *hú* 府 also maintains the original *-u-* sound but has lost the final *-s*.

Fig. 23. Skagen Hus is a Scandinavian gift shop in Williams Bay, Wisconsin. It is named after Skagen, a town at the northern tip of Denmark. (Photo by C.H. Wu)

8.5 ON *dís* > Tw *chí* 姊 (Northern Taiwan) / *ché* (Southern Taiwan)

ON *dís* means 'sister', which with palatalization of *d-* and loss of the final *-s*, corresponds to Tw 姊 'older sister', which is pronounced *chí* in the Northern accent and *ché* in the Southern accent.

8.6 L *rōs* > Tw *lō·* 露

L *rōs* connotes 'dew' and with loss of the final *-s* corresponds to Tw *lō·* 露 'dew'. Examples are: *lō·-chúi* 露水 'dew water', *tiâu-lō·* 朝露 'morning dew'. Chô Chhò 曹操, a Machiavellian warlord of the Three Kingdom era, was likening life to the evanescence of the morning dew, when he said, *Jîn-seng ki-hô, phì-jû tiâu-lō·* 人生幾何, 譬如朝露 (What is life? It is like the morning dew.)

8.7 L *rēs* > Tw *lí* 理

L *rēs* has many meanings, one of which is 'reason'. Through loss of the final *-s* and the *e* ↔ *i* exchange, we obtain Tw *lí* 理 'reason'.

8.8 L *pūs* > Tw *pū* (G1W)

L *pūs* is the source of E *pus* and can also be the source of Tw *pū* (G1W) 'pus'. The Taiwanese word *pū* is not used alone; it is usually combined with *lâng* 膿 'pus' to form a compound *pū-lâng* (G1W) 'to form pus'. Incidentally, because pus resembles loamy clay and OE *lām* 'clay' was the source of ME *lam* and *lom*, which then turned into E *loam*, it is possible that Tw *lâng* 膿 'pus' may trace its origin to OE *lām* (with *-am* > *-ang*).

8.9 L *glōs* > Tw *ko·* 姑

L *glōs* connotes 'husband's sister', and, with loss of the final *-s* and *gl-* turning into *k-*, corresponds to Tw *ko·* 姑 'husband's sister'. *Tōa-ko·* 大姑 is 'husband's older sister' and *sió-ko·* 小姑 'husband's younger sister'. Children also call 'father's sister' *ko·* 姑.

8.10 Gk τοξικόν (*toxikón*) / L *toxicum* > Tw *ták* 毒

Gk τόξον (*tóxon*) connotes 'bow', and thus the archery society of England used to be named *The Royal Toxophilite Society*. Τόξα (*tóxa*), the plural of τόξον, means '(bow and) arrows'. When the arrows are smeared with poison, they become *toxikón* from which L *toxicum* is derived. All European words related to poison bear the root *tox-*. Since *x* is comprised of two consonants *ks*, the root *tox-* can be treated as *toks-*. With loss of the final *-s* from the root, we derive Tw *ták* 毒 'poison'. Examples of its usages are: *ták-iòh* 毒藥 'poison', *ták-phín* 毒品 'poisonous substance' (now referring mostly to narcotics, addictive substances, stimulants, and hallucinogens), *tiòng-ták* 中毒 'intoxication', *kái-ták* 解毒 'detoxication', *ták-bu̍t-hák* 毒物學 'toxicology', and *ták-sò·-hák* 毒素學 'toxinology' (the study of toxins from animals, plants and micro-organisms).

8.11 L *taxō* > Tw *tak* (觸) / *tah* 搭

L *taxō* 'to touch' belongs to a family of words with *tax-* as the root. L *tactus* 'a touch', *tactilis* 'that may be touched' (> E *tactile*), and *tangō* 'to touch' (> E *tangible*). The root *tax-* can also be treated as *taks-*, and from this we derive Tw *tak* 'touch' (G1W, [觸]). Its weakened form *tah* 搭 is frequently used, for example, *tah keng-thâu* 搭肩頭 'touch the shoulder'.

8.12 OHG *sloz* (> G *Schloss*) > Tw *só* 鎖

OHG *sloz* means 'lock' from which is derived modern G *Schloss* 'lock'. And *Schlosser* is 'locksmith'. It was in the thirteenth century that Middle High German *slōz* developed a new meaning 'castle, palace'.

The *-z* can be treated as an *-s* and thus with the loss of the final *-z* we can derive Tw *só* 鎖 'lock' (OHG *sloz* > **soz* > Tw *só* 鎖). Because Tw *só* 鎖 does not carry the additional meaning of 'castle, palace', it implies that this word must have come to Asia before the Middle High German times.

Fig. 24 shows a rusty, original chain and lock *Fesseln mit Schloß* (*Schloss*) of Roman times at the fortress of Saalburg, Germany.

Fig. 24. An old, rusty Roman chain and lock, *Fesseln mit Schloß* (*Schloss*), in a display at the ancient Roman camp at Saalburg, Germany. (Photo by C. H. Wu)

8.13 OHG *lahs* (> G *Lachs*) > Tw *láh* 鮥 / 鱳

Of all the lexical correspondences, this one ranks among the most intriguing. The OHG *lahs* means 'salmon' and the modern German word is *Lachs*. Fig. 25 shows the bag label of an eco-friendly-raised smoked salmon *Öko-Räucher Lachs*.

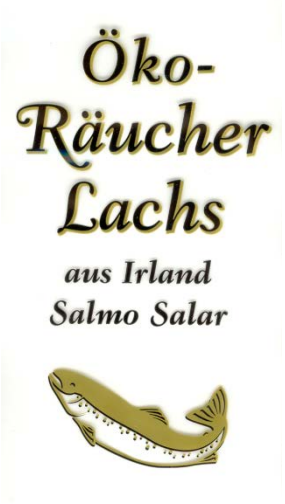


Fig. 25. Smoked salmon. G *Lachs* means salmon.

láh [R. láp (?), mixed in confusion]. **oai-kô láh-chhoáh**, awry; not even or square.

獵 **láh** (R. láp, liáp). **phah-láh**, to hunt. **chiong-kun bô-tī--teh, sió-kun phah-láh**, when the general is away, the soldiers play. **láh-káu**, a hunting dog; a man who is seldom to be found at his own house.

勒 **láh** [R. lék; to rein; to compel]. **ah-láh**, to force; to compel, = ek-lék.

láh — **hong-láh**, a sort of disease in new-born infants. **tiòh-láh**, to have that disease. **láh-chháu**, herbs used for its cure.

鱳 **láh** (R. liáp), (C. lèh). **ka-láh**, a fish that tastes slightly like salmon. **ka-láh-hî**, id.

Fig. 26. The *ka-láh* fish mentioned in Douglas' *Chinese–English Dictionary of Amoy* (1899).

The cognates to OHG *lahs* are OE *leax*, ON *lax*, and OS *lahs*. All the countries surrounding the Baltic Sea have similar names for salmon. For example, Russian has *losósĭ*, Lithuanian *lašišà*, Latvian *lasis,* and Old Prussian *lasasso*. The PIE word has been reconstructed to be **loḱsos*. And far away in Central Asia, at the margin of the great desert of Taklamakan, the Tocharians at Kucha remembered *laks* as 'fish'.

Taiwan is located too far south of the normal range of the Pacific salmon. Therefore, it is understandable that Taiwanese has no native name for 'salmon'. The modern Taiwanese word *san-bûn-hî* 三文魚 is just a transliteration of E *salmon* for the imported fish. Interestingly, Taiwan has a fresh-water landlocked salmon, remnant of Ice Age salmon that roamed down to such low latitudes. The tectonic uplifting of the island trapped the fish in the high mountains a million years ago. This endemic fish, named *Oncorhynchus masou formosanus*, had been known only to the Native Taiwanese who lived in the mountainous areas. People living in the plains were unaware of it until its discovery by scientists in 1919.

However, there is a kind of fish called *ka-láh* 嘉鱳 that has long been a favorite of the Taiwanese. The fish has now been identified as the red seabream (*Pagrus major*). It ranks as their second most favorite fish, as shown in a rhyming saying, *It bián*, *jī ka-láh*, *saⁿ chhiong*, *sì bé-ka* 一鮸, 二

嘉鱲, 三鯧, 四馬鮫 (The first is the brown croaker, second the red seabream, third the pompano, and fourth the mackerel.)

Rev. Carstairs Douglas compiled *Chinese-English Dictionary of the Vernacular or Spoken Language of Amoy* (first edition, 1873; second edition, 1899), in which he included the *ka-láh* (Fig. 26). He stated that the fish "tastes slightly like salmon." Rev. Douglas came from Scotland, so he knew what he was talking about. Thus, *ka-láh* somehow resembles salmon, and because of the similarity its name may be linked to Germanic roots such as OHG *lahs* 'salmon'.

There is an internal reduplication in Taiwanese phonology whereby a word with an *l-* initial is reduplicated with a *k-* initial word, or vice versa, and then the two recombine. For example, L *cadō* 'to drop, fall' becomes Tw *ka-lak* 'to drop' and ON *lauss* 'loose, disengaged from' becomes Tw *làu-kau* 'disengaged, loose'. This is similar to the reduplication seen between L *lacte* 'milk' and Gk *gálaktos* (γάλακτος) 'milk'. Therefore, we can derive *ka-láh* from OHG *lahs* as follows:

OHG *lahs* > PSC-8 > *lah-* > reduplication > **kah-lah* > dissimilation > *ka-láh*

Thus, it appears that the Holó still remember the salmon their remote ancestors had enjoyed before migration from Europe.

8.14 Gk ψάμμος (*psámmos*) > Tw *soa-bō·* (MSM *shāmò*) 沙漠

Gk ψάμμος (*psámmos*) means 'sand'. When it is used with the definite article ἡ, it means the sandy desert of Libya, quotable from Herodotus. The word ψάμμος, after declustering (of *ps-* to *s-*) and loss of the final *-s*, becomes MSM *shāmò* and (with denasalization) Tw *soa-bō·* 沙漠 'sandy desert'.

Pulleyblank (1973) discussed the loss of the final *-s* from Old Chinese, as inferred from Chinese transcription of Buddhist terms in Prakrit, that the final *-s* is actually replaced by a *-j* in the departing tone (去聲) in Early Middle Chinese. The final *-j* in Middle Chinese is realized in Modern Taiwanese as the final *-i*. However, we see that in **PSC-8** after the loss of the final *-s*, none of the Taiwanese words show a final *i* in the departing tone. In the two cases that do show a final *i* in the Taiwanese words

(**PSC-8.5, 8.7**), the *í* is in the rising tone and comes from the long vowel *i* or *e* (not the final *-s*) of the European correspondents. Thus, the phenomenon Pulleyblank observed is not seen in **PSC-8**.

PSC-9: OE *-ea-* > TW *-ia-*

This PSC shows the correspondence between Old English words with a medial *-ea-* and Taiwanese words with a medial *-ia-*. The alignment is shown first, followed by comments on each item.

Old English	Gloss	Taiwanese	Gloss
-ea-		-ia-	
cēap	business, market	giảp 業	business
lēaf	a leaf of a tree	iảp 葉	a leaf of a tree
lēaf	a leaf of a book	iảp 頁	(*l.*) a leaf of a book
lēaf	a leaf of a book	iảh 頁	(*v.*) a leaf of a book
lēad	lead (metal)	iân 鉛	lead (metal)
sċearp	sharp pointed	chiam 尖	sharp pointed
sċearp	pungent	hiam (G1W)	pungent
sċearp	sharp to the taste	siap 澀	sharp to the taste
sċeaf-an	shave	siah 削	(*v.*) shave
sceatt	money	chiân 錢	money
sceald	shallow	chhián 淺	shallow
steall	stall for animals	chian 羰	stall for sheep/goats
ceafl	cheek	kiap 頰	cheek

9.1 OE *cēap* > Tw *giảp* 業

OE *cēap* originally connoted 'cattle (as property)' and as cattle were the chief objects of sale, the meaning expanded to cover 'saleable commodities, price, sale, bargain, business, and market'. We have seen that Tw *chhī* 市 'market' (as in *chhī-tiûⁿ* 市場 'market') corresponds to OE *cēap* 'market' with loss of the final *-p*. Since OE *cēap* (the *c-* pronounced like velar *k*) also means 'sale, business', the

second Taiwanese word that corresponds to it under PSC-9 (and with *k-* > *g-*) is *giap̍* 業 'business' as in *siong-giap̍* 商業 'commerce', *kang-giap̍* 工業 'industry', and *chit-giap̍* 職業 'job, occupation'.

Giap̍ 業 often couples with Tw *êng* 營, which is derived from ON *önn* 'work, business', to form a compound *êng-giap̍* 營業 'to run a business'. Posted at the entrance to a business or store in Taiwan is a table of *êng-giap̍ sî-kan* 營業時間 'business hours'.

9.2 OE *lēaf* > Tw *iap̍* 葉

From **9.2** through **9.5** the OE words have an *l-* initial, but all correspondents in Taiwanese have lost the *l-*.

It is interesting to note that the loss of the *l-* initial from OE *lēaf* > Tw *iap̍* 葉 agrees with the finding from a totally different approach, the historical phonology of Sinitic, known as 聲韻學 (MSM *Shēngyùnxúe*). In discussing the origin of the *i* initial (as in *iap̍* 葉), Li Fang-kuei 李方桂 has presented a persuasive argument that the Old Chinese value of 喻母四等 (the *yù* initial, Division IV) is a flapped *r* or *l*, similar to the pronunciation in American English of the medial consonants of *ladder* or *latter* — however, he writes it as **r* (Li, p. 10). As evidence he points to the Han Dynasty transcription of Alexandria (Ἀλεξανδρεια), the name of many cities founded by Alexander the Great in Central Asia and India, as 烏弋山離 (Tw *O͘-ék-san-lî*), where *-lex-* became MC *-jiək* (Tw *-ék*), showing the loss of *-l-*. In line with the current research, the zdic.net website gives the reconstructed sound of 葉 in Old Chinese as **leb* (www.zdic.net/z/22/yy/8449.htm).

OE *lēaf* connotes 'a leaf of a tree', and with PSC-9 and loss of the initial *l-*, we obtain Tw *iap̍* 葉 'leaf (leaves) of a tree'. This is the literary reading of 葉; the vernacular reading is *hio̍h* 葉, which can be derived from L *folium* 'leaf' (*folium* > *fol-* > **hol-* > *hio̍h*).

9.3 OE *lēaf* > Tw *iap̍* (*l.*) 頁

9.4 OE *lēaf* > Tw *iah̍* (*v.*) 頁

OE *lēaf* also connotes 'a leaf of a book', and similar to **9.2**, we obtain Tw *iap̍* 頁 'a leaf of a book'. This is the literary reading of 頁 (**9.3**); the vernacular reading is *iah̍* 頁 (**9.4**), which is a "weakened" form of the literary *iap̍* (*l. iap̍* > *v. iah̍*).

9.5 OE *lēad* > Tw *iân* 鉛

OE *lēad* 'lead (metal)' has a final *-d*. After homorganic nasalization, *-d* becomes *-n*, resulting in Tw *iân* 鉛 'lead'.

9.6 OE *sċearp* > Tw *chiamp* 尖

OE *sċearp* 'sharp' connotes either 'having a fine edge' or 'having a fine point'. The corresponding Tw *chiam* 尖 means 'having a fine point'. Word-final *-r* often becomes *-n* and final *-rp* becomes *-m*. Therefore, *sċearp* corresponds to *chiam* 尖.

9.7 OE *sċearp* > Tw *hiam* (G1W)

OE *sċearp* also connotes 'pungent' (D3-13, p. 817). Since the cognates in other Germanic languages are OFris, OS *skarp*, OHG *scarf*, and ON *skarpr*, the initial cluster *sċ-* in OE *sċearp* is equivalent to *sk-*. With declustering and *k-* to *h-* exchange, we can derive Tw *hiam* (G1W) with the meaning of 'pungent, spicy' from OE *sċearp*.

9.8 OE *sċearp* > Tw *siap* 澀

OE *sċearp* has another meaning, 'sharp to the taste'. Its corresponding Tw *siap* 澀 means 'tart'. It is interesting to note that from OE *sċearp* Taiwanese derives two doublets, *hiam* 'spicy' and *siap* 'tart'.

9.9 OE *sċeafan* > Tw *siah* (*v.*) 削

OE *sċeafan* is a verb (stem *sċeaf-*) meaning 'to shave'. The stem final *-f* turns into *-h* in Taiwanese. Thus, OE *sċeafan* corresponds to vernacular Tw *siah* 削 'to shave'.

9.10 OE *sceatt* > Tw *chiân* 錢

OE *sceatt* means 'money'. Its correspondent in literary Taiwanese is *chiân* 錢 'money'. The *-tt* in OE *sceatt* underwent homorganic nasalization to *-n* in Tw *chiân*.

9.11 OE *sceald* > Tw *chhián* 淺

OE *sceald* 'shallow' also underwent similar homorganic nasalization to Tw *chhián* 淺 'shallow' as **9.10** above.

9.12 OE *steall* > Tw *chian* 羼 (arch.)

OE *steall* 'stall for animals' finds cognates in OFris *steall*, OHG *stal* (> G *Stall*) and ON *stallr* 'stall for a horse'. Word-final *-l* or *-ll* often turns into *-n* in Taiwanese. Thus, OE *steall* had a corresponding Tw *chian* 羼 'stall for sheep or goats'. However, this word has become obsolete now. In its place is the current Tw *tiâu* (G1W) 'stall for animals' which can be derived from OHG *stal* or ON *stallr* through **PSC-6** (*stal-* > *tiâu*).

9.13 OE *ceafl* > Tw *kiap* 頰

OE *ceafl* has several meanings: 'cheek, jaw, cheek bone, jaw bone'. The meaning of 'cheek' corresponds to Tw *kiap* 頰 'cheek'.

3: SHARED ABERRANCY

Shared aberrancy, primarily in morphology, is considered to be of great probative value in that it indicates kinship (Campbell 2004, pp. 350-352) or mass borrowing between languages. A frequently cited example of shared aberrancy is the comparative and superlative forms of the adjective *good*, which in English is *good – better – best* and in German *gut – besser – best*, instead of the expected *good – ˣgooder – ˣgoodest*. Thus, the similarity in aberrancy indicates a close affinity between the two languages. Because Taiwanese as well as other Sinitic topolects lack grammatical inflections typical of Indo-European languages, there is not much morphology to compare; therefore, the area that may yield evidence of shared features is in peculiarity in lexical usage.

In the following section, shared aberrancies (**SA**) between Taiwanese and Germanic lexicons showing unusual lexical usage will be presented. The specific subjects to be discussed are:

- SA-1: 'Winter' is used for counting 'years'
- SA-2: Reckoning of time by nights
- SA-3: A single word is used for 'blue' and 'black'
- SA-4: A single word is used for 'grandchild' and 'nephew/niece'
- SA-5: The word for 'bone'

SA-1. 'WINTER' IS USED FOR COUNTING 'YEARS'

In old Germanic languages the winter season is used for counting years. Examples:

> "His name was Edgetho / His life lasted many winters." (*Beowulf* lines 263–264)
>
> "He had been king in Uppsala for twenty-five winters and was in Gautland for another twenty-five winters whilst King Halvdan was in Uppsala." (Sturlason, *Ynglinga Saga* in *Heimskringla*, p. 17)
>
> "After Eric, his son Björn was king in Sweden for fifty winters." (Sturlason, *The History of Harald Hairfair* in *Heimskringla*, p. 64)
>
> "Egil stayed with Skallagrim for several winters." (*Egil's Saga*, p. 94)
>
> In Taiwanese *tang* 冬 'winter' is typically used for counting 'years' as well. Examples:
>
> *Poeh tang chêng* 八冬前
> (*lit.* eight winters ago) 'eight years ago'
>
> *Ji̍t-pún koán Tâi-oân ū gō͘-cha̍p tang*. 日本管台灣有五十冬
> 'Japan ruled Taiwan for fifty winters (= years).'
>
> *Tha̍k sió-ha̍k ài la̍k tang*. 讀小學要六冬
> 'Elementary school requires six winters (= years) of study.'
>
> *Góa ū ko-hiat-ap í-keng tang-pòa*^{n}. 我有高血壓已經冬半
> 'I have had high blood pressure already for [a] winter and half (= year and half).'

Pah-gōa tang chêng Tâi-oân chiū ū tiān-hóe. 百外冬前台灣就有電火

'Hundred-some winters (= years) ago Taiwan already had electric light.'

Chi̍t tang kòe liáu koh chi̍t tang. 一冬過了又一冬

'Passing one winter after another winter (= passing one year after another).'

Fig. 27. A concert held in Taipei for "*The Dream of 60 Winters of Perseverance*" commemorating the founding of Formosans' Free Formosa in Philadelphia 60 years ago. (Photo courtesy of Ms. Kuan-Miao Lin, Reporter for *Taiwan People News*)

Fig. 27 shows a pictorial example of using *tang* 冬 'winter' to count as 'year'. This was for a concert held in Taipei on January 1, 2016, commemorating the founding of "Formosans' Free Formosa" (3F) by five intrepid Taiwanese men in Philadelphia 60 years ago (intrepid because it was during the McCarthy era and the U.S. was supporting the Chinese Nationalist regime under Dictator Chiang Kai-Shek), which eventually developed into a world-wide organization called "World United Formosans for Independence" today. The concert theme, as indicated on the right panel, was "The Dream of 60 Winters of Perseverance", clearly showing that in Taiwanese 'winter' is used as 'year'.

SA-2. RECKONING OF TIME BY NIGHTS

The ancient Germanic people reckoned time by nights. Tacitus stated in *Germania* (XI), "They do not reckon time by days, as we do, but by nights." Julius Caesar also noticed that the Gauls "compute the divisions of every season not by the number of days but of nights" (Caesar, *De Bello Gaullicum*, vi). For example, a calendar month was called in ON *mánuðr þritognáttar* 'month of 30 nights'. This custom is preserved lexically in E *fortnight* 'a period of two weeks (*lit.* fourteen nights)' and (arch.) *sennight* 'seven nights (*i.e.,* 1 week)'. Christmas is called in German *Weinachten*, where *nacht* means 'night'. In Iceland today, an infant is said to be so many 'nights' old, for example, *tíu nátta gamalt* (*lit.* 'ten nights' old) means 'ten days old'.

The vernacular Taiwanese uses a special word *kang* (G1W) with the meaning of 'day' to reckon time. From OHG *naht* (> G *Nacht*) 'night' we can derive Tw *kang* through two PSCs for sound changes, *n-* > *k-* (**PSC-5**) and *-aht* > *-ang* (data not shown). Note that the usual words for 'night' in Taiwanese are: *mî* 暝 (< ON *myrk* 'dark'), *iā* 夜 (< ON *natt* 'night'), *àm* 暗 (*Cf.* G *Abend* 'evening'), and *e-hng* (*Cf.* OE *ēfnung* 'evening'). This use of Tw *kang* is a special usage of 'night'. Examples of '*kang*' for counting 'days' are as follows:

Koh sa^{n} kang chiū kè-nî (隔三 *kang* 就過年)
'three more days (*lit.* nights) then New Year'

Ták-kang (G1W)
'every day' (*lit.* 'every night')

I ji̍p-ī^{n} í-keng ū peh-kang! (伊入院已經有八 *kang*!)
'He has been in hospital eight days (*lit.* nights) already!'

The above discussion is about the vernacular Taiwanese word *kang* deriving from 'night' to use for counting 'days'. The most surprising is that the literary Taiwanese word for 'day' *ji̍t* 日 can also

be traced to the Germanic word for 'night'. According to *Liông-ji̍t-kui-nî-soat* (娘日歸泥說) theory of Zhāng Tàiyán 章太炎 (see **CV-4.2**), Tw *ji̍t* 日 'sun, day' traces its origin to a hypothesized **nit* (*Cf.* Jpn *nitsi* 日), which corresponds to OE *niht* 'night'. Examples are as follows:

Sa^{n} ji̍t lâi, bô lâng lâi pò-miâ 三日來無人來報名
'For three days no one has come to register.'

Tē sa^{n} ji̍t Iâ-so· koh-oa̍h 第三日耶穌復活
'On the third day Jesus is risen.'

SA-3. A SINGLE WORD IS USED FOR 'BLUE' AND 'BLACK'

In Old Norse the word *blár* was used to describe either 'blue' or 'black'. Thus, *blá-rendr* is 'blue-striped' and *blá-eygr* 'blue-eyed'. In contrast, *blá-maðr* means 'a black man' and *falda blá* 'to wrap the head in black (the color of mourning).' In Swedish, *blå*, the modern word for 'blue', was also used for 'black' until the early twentieth century. The dual designation is still the case to a limited extent in modern Faroese. In Modern Icelandic *blár* means 'blue' only.

Tw *chheng* (*l.*; *v. chhe*^{n} / *chhi*^{n}) 青, the modern word for 'blue', was also used for 'black' in Middle Chinese. Perhaps the most famous case for the use of 青 for 'black' is *chheng-si* 青絲 'black silk' standing for 'black silky hair' in poems, such as the verses by 李白 Lí Pe̍k, transcribed below into Taiwanese Romanization, instead of MSM *pinyin*, because it rhymes in Taiwanese, but not in MSM:

高堂明鏡悲白髮　　*Ko tông bêng-kèng pi pe̍k-hoat*
'In the lofty hall I lament my white hair reflected in the shiny mirror,

朝如青絲暮成雪　　*Tiau jû chheng-si bō· sêng soat*
What was in the morning like black silk has by evening become snow.'

In Modern Taiwanese *chheng* 青 is used for 'blue' only, but its old meaning of 'black' is still preserved in set phrases in which *chheng* 青 'black' is used together with and stands opposite to its antonym *pe̍h* 白 'white' to express the idea of "covering polar opposites, all over the place, totally":

chhe^{n}*-thui-pe̍h-thui* 青推白推
'push things all around forcefully'

chhe^{n}*-liap-pe̍h-liap* 青捏白捏
'make up a story totally out of thin air'

chhe^{n}-pōng-péh-pōng 青碰白碰

‘come up suddenly — out of the blue’

chhe^{n}-ioh-péh-ioh 青臆白臆

‘guess half-heartedly and with total disregard’

chhe^{n}-pōng-péh-pōng 青謗白謗

‘boast and exaggerate every which way’

SA-4. A SINGLE WORD IS USED FOR 'GRANDCHILD' AND 'NEPHEW/NIECE'

Taiwanese has only one word *sun* for both 'grandchild' and 'nephew / niece'. So, *cha-po͘-sun* (*lit.* male-*sun*) can mean either a 'grandson' or 'nephew', and *cha-bó͘-sun* (*lit.* female-*sun*) a 'grand-daughter' or 'niece'. In order to avoid the ambiguity, some people call nephews or nieces *sun-á* to differentiate it from *sun* intended for 'grandchild'. However, some others do it the opposite way. Confusion usually ensues. It generally requires one or more follow-up questions to clarify which is meant.

Interestingly, exactly the same ambiguity occurred in Latin. L *nepōs* means both 'a grandson' and 'a nephew', *neptis* both 'a granddaughter' and 'a niece'. Italian inherits the ambiguity doubly in that all four descendants are named in the same way; It *nipote* is used for 'grandson, granddaughter, nephew, and niece'. Rumanian has *nepot* for 'grandson' and 'nephew', and *nepotă* for 'granddaughter' and 'niece'.

The fact that the dual designations for 'grandchild' and 'nephew / niece', which results in confusion, occur for the *same* familial relationships in Taiwanese as in Italian and Rumanian (in the eastern branch of the Romance language family) is extremely important. If we liken the vocabulary of a language to a long strand of DNA of a cell, there is in the DNA an unusual "gene" coding for a protein that serves dual functions, in this case, 'grandchild' and 'nephew / niece'. The dual-function "gene" is found in Taiwanese as well as the Eastern Romance languages, strongly suggesting that the "gene" in the Latin vocabulary is passed on not only to the Eastern Romance languages but also to Taiwanese.

Combining with the three sets of shared aberrancy above, it is necessary to conclude that the Taiwanese ancestral language Proto-Holó may have inherited, or borrowed massively from, the Germanic and the Latin-Romance traditions. As we look deeper into the Taiwanese term *sun* for these familial relations, we are rewarded with an interesting insight into the interaction between Germanic and Latin/Romance lexicons in Taiwanese. Taiwanese does not use L *nepōs / neptis*; instead, it uses *sun*, which resembles the Germanic term for 'son', *e.g.*, OE, OFris, OS, OHG *sunu*, ON *sunr* (*sonr*), and Goth *sunus*. If Tw *sun* is a loanword, why is there a semantic shift from 'son' to 'grandson' (and the implied 'nephew' due to ambiguity)? The key to the answer lies in the Germanic way of calling a grandson or granddaughter (considering the matter only from the son's side in this discussion):

'Grandson'

OE *sun**a** sunu* 'son's son'

'Granddaughter'

OE *sun**a** dohter* 'son's daughter'

With OE *suna* being the genitive of *sunu* 'son', OE *suna sunu* means 'son's son' and *suna dohter* 'son's daughter'. Therefore, it is reasonable to surmise that, based on the principle of least effort, Proto-Holó might have adopted from the first syllable *sun-* of the first element of OE *sun**a** sunu* (*sun**a** dohter*) for the meaning of 'grandchild'. We may further assume that the Germanic-derived *sun* probably took over the underlying L *nepōs* / *neptis* together with its associated ambiguity. If this is true, we may deduce that the Latin-Romance-based lexicon may have been the underlying substratum whereas the Germanic could be the late-arriving dominant superstratum at some stages of Proto-Holó.

SA-5. WORD FOR 'BONE'

Of all the cases for shared aberrancy, the word for 'bone' is the most peculiar in three respects. Firstly, this is seen only between High German (and Danish tangentially) and Taiwanese (and Sinitic); other Germanic languages (such as English or Icelandic) do not share this aberrancy. Secondly, both languages abandoned the original word for 'bone' and adopted the word for 'knuckle-/joint- bone', of all the bones, to substitute for 'bone' in general. Thirdly, the original word for 'bone' was relegated to 'leg', and this change happened to both languages. In our discussion of this interesting shared aberrancy, the European side is presented first, and then the Taiwanese-Sinitic side follows.

E *bone* is derived from OE *bān*, whose cognates in other Germanic languages are OS, OFris *bēn*, ON *bein*, and OHG *bein*. The word for 'bone' in Gothic is unknown. The reconstructed Germanic word is **baina*-, of which no further cognates are recognized in the Indo-European family (D3-13, p. 106), for example, Greek has ὀστεόν and Latin *os*. This piece of information is important, as **baina*- can be treated as "a signature word for Germanic." When it shows up in Asia, we can be sure that it comes from Germanic and no other language group.

The ON *bein*, in addition to connoting 'bone', also had a secondary meaning, 'leg'. However, the latter played a minor role. ON *bein* stayed true to its original meaning of 'bone'. For 'leg' ON had *fótleggr* and *leggr* 'leg'; the latter originally meant 'the hollow bone of arms and legs' but later came to mean 'leg'. English borrowed ON *leggr* for the word *leg*. In the English branch, OE *bān* gave rise to E *bone*.

The story of these words in High German is very different. The OHG *bein* (from the ninth century on) connoted both 'bone' and 'leg' (D3-18, p. 93). Gradually the 'bone' meaning started to retreat, leaving only 'leg' as its sole meaning. However, in compound words *bein* still carries the meaning of 'bone' such as for the bones of the skull: *Stirbein* 'frontal bone', *Scheitelbein* 'parietal bone', *Schläfenbein* 'temporal bone', *Keilbein* 'sphenoid bone', *Nasenbein* 'nasal bone', and *Hinterhauptbein* 'occipital bone', among others. As the word *bein* became restricted to the meaning of 'leg', the void of the 'bone' meaning was filled by *knoche* beginning with Middle High German which then became *Knochen* in Early New High German (1350–1600). Even so, Martin Luther preferred to use *Bein* for

'bone' (D3-16, p. 681), which can be seen when we compare his translation (1522) of Luke 24:39 with a modern one, describing Jesus, after resurrection, meeting with his disciples and asking them to look at him in flesh and bones (underlines added to words for 'bones'):

Version	**Translation of Luke 24:39**
English (NIV)	"Look at my hands and my feet. It is myself! Touch me and see; a ghost does not have flesh and <u>bones</u>, as you see I have."
Luther's	"Fühlet mich an und sehet; denn ein Geist hat nicht Fleisch und <u>Bein</u>, wie ihr sehet, daß ich habe."
Modern German	"Seht meine Hände und meine Füße, ich bin's selber. Fasst mich an und seht; denn ein Geist hat nicht Fleisch und <u>Knochen</u>, wie ihr seht, dass ich sie habe."

MHG *knoche* is related to E *knuckle*. Probably because of German influence, Danish has adopted the Nordic cognate *knogle* for 'bone' (*Cf.* G *Knochen*) in addition to *ben* derived from ON *bein*. The following table compares the current words for 'bone' and 'leg' of several insular and continental Germanic languages. It can be deduced that the insular languages, Icelandic and English, retain the Gmc **baina-* derived words for 'bone', and there is no semantic shift to 'leg'. Scandinavian languages retain both meanings of 'bone' and 'leg' of ON *bein*. Danish has an additional *knogle* (cognate of G *Knochen*) for 'bone'.

What stands out as the most peculiar instance is New High German, which has *Knochen* for 'bone', in which *Bein*, the original descendant of Gmc **baina-* 'bone', has taken the meaning of 'leg'.

Words for 'bone' and 'leg' in modern Germanic languages

Language	**'Bone'**	**'Leg'**
English	*bone*	*leg*
Icelandic	*bein*	*fótleggur*, *leggur*

Language	**'Bone'**	**'Leg'**
German	*Knochen*	*Bein*
Danish	*ben*, *knogle*	*ben*, *kølle*, *lår*
Nowegian	*ben*	*ben*, *lår*
Swedish	*ben*	*ben*, *fot*

Now we turn to the Taiwanese (and Sinitic) side, which interestingly also shows a semantic switch very similar to the High German case. Before we delve into the interesting case of shared aberrancy, two PSCs need to be introduced. The first table is the correspondence between European *b-* and Tw *h-*. The second table shows the correspondence of *b-* > *k-*.

Examples of correspondence between European *b-* and Taiwanese *h-*.

European words	**Simplif.**	**Taiwanese words**
Gmc **baina-* > OE *bān* 'bone'	**bai-*	*hâi* (also *kai*) 骸 'bone, skeleton, shank' *e.g.*, *chân-hâi* 殘骸 'skeletal remains'
OE *bān* 'bone'	*bān*	*hān* (also *kàn*) 骭 'leg, shank, skeleton'
Gk βήξ 'a cough'	*béx*	*hâi* (also *khek*) 咳 'cough'
Old It *banca* 'moneychanger's table' > E *bank*	*bank*	*hâng* 行 as in *gîn-hâng* 銀行 'bank'
L *barbarus* 'foreign'	*bar-*	*hoan* 番 (also *bân* 蠻) 'uncivilized'
L *basilica* 'a public building with halls and porticoes'	*bas-*	*hā* 廈 'a great hall, a big house' (Loss of *-s* is reflected in the 7th tone.)
Bactria 'an ancient nation in Central Asia'	*bact-*	*hā* 夏 as in *Tāi-hā* 大夏 'Bactria' (Loss of *-ct* is reflected in the 7th tone.)

European words	**Simplif.**	**Taiwanese words**
Kabul 'a city in Central Asia' (now in Afghanistan)	*kabul*	*Ko-hù* 高附 Kabul (loss of *-l* reflected in the 3rd tone; vowel change *-a* > *-o*)
L *boō* (*boāre*) 'cry aloud'	*bo-*	*ho·* 呼 'cry aloud'
ON *ban* 'ban, limit'	*ban*	*hān* 限 as in *hān-chè* 限制 'limit, ban'
L *balteus* 'a girdle, belt'	*bal-*	*hâ* 繓 'to girdle'

Examples of the correspondence of European *b-* > Taiwanese *k-* (*kh-*)

European words	**Simplif.**	**Taiwanese**
ON *bíða* 'wait for, abide'	*bíð* > **bí-*	*kî* 期 as in *kî-thāi* 期待 'wait for, expect'
ON *bægir* 'shoulders'	**bægr*	*keng* 肩 'shoulder'
ON *barn* 'child'	*barn*	*kiáⁿ* (*káⁿ*) 囝 'child'
ON *barna-* 'chldren's'	*barna*	*kana-* (G1W) : *kana-sun* 'great-grandson'
ON *bifast* 'shake, tremble'	*bif-*	*khî* (G1W): *khî-khî-chùn* 'shake, tremble'
ON *beina* 'stretch out'	*bein*	*keng* 更 : *keng-tiuⁿ* 更張 'stretch out'
ON *blunda* 'shut the eyes'	**bund-*	*khùn* 睏 'shut the eyes, take a nap, sleep'
ON *brú* 'bridge'	**bú*	*kiô*, *kiâu* 橋 'bridge' (PSC: *u* > *o* > *au*)
ON *bú* 'household, house'	*bú*	*ku* 居 'house, to stay'

European words	**Simplif.**	**Taiwanese**
ON *boða* 'announce'	*boð*	*kò* 告 'announce': *kong-kò* 公告 'public announcement'
ON *bróðir* 'brother'	**bróð-*	*ko* 哥 'older brother'
Gmc **bund-* > E *bundle*, G *Bündel*	**bund-*	*khún* 捆, 綑 'bundle'
OHG *bitten* (> G *bitten*), OE *biddan*, ON *biðja*	**bitt-*	*kî* 祈 : *kî-kiû* 祈求 'bid: ask someone for something'
OE *bān* 'bone'	*bān*	*kàn* (also *hān*) 骭 'bone, leg, shank'
Gmc **baina-*	**bain-*	*kai* (also *hâi*) 骸 'bone, skeleton, shank'

From Gmc **baina-* 'bone' and through *b-* > *h-* and through denasalization, we obtain **bain-* > *hâi* 骸 which has dual meanings: (1) 'bone' as in *kut-hâi* 骨骸 (reverse in MSM, 骸骨) 'bone, skeleton' and *chân-hâi* 殘骸 'skeletal remains'; and (2) 'leg, shank', as *Shuowun* 說文 says, "骸, 脛也 *Hâi, kèng ià*" '*Hâi*, that is leg/shank.' Parenthetically, the 脛 *kèng* can be derived from Gk κνήμη 'the part between the knee and ankle' (*knéme* > **kém-* > Tw *kèng* 脛 'leg'). Similarly, as OE *bān* is derived from Gmc **baina-* 'bone', we can derive from the same etymon Tw *hān* / *kàn* 骭 with the same dual meanings of 'leg, shank' and 'skeleton' of the Germanic.

Language	**'Bone'**	**'Leg'**
OHG	*bein*	*bein*
ON	*bein*	*bein*
Sinitic / Proto-Holó	骸, 骭	骸, 骭

Now let us turn to the basic word 骨 'bone'. Its graph is documented in the oracle bone inscriptions. Its pronunciation in Old Chinese is not certain; however, the Middle Chinese (MC) rime dictionaries provide some clues. For 骨, the classic *Kóng-ūn* 廣韻 (D2-2, p. 1375) has "*kó· hut chhiat* 古忽切", *i.e.*, *kut*, formed by splicing together the initial of *kó·* 古 and the rime final of *hut* 忽, which shows its reflex in Tw *kut*. More interesting than "骨 *kut*" itself are the derivative words bearing 骨 as the phonophore. Here we focus on only two derivatives. The first is 滑 'slip, slide, slippery, polished'. *Kóng-ūn* 廣韻 gives its MC pronunciation as not only "*kó·-hut-chhiat* 古忽切" (*kut*), but also "*hō·-pat-chhiat* 戶八切", *i.e.*, **hat* / **huat*. From these dual prounciations, MSM inherits the duality: (1) MSM 滑 *gǔ* as in *gǔji* 滑稽, meaning 'double speak', which is a vestige from ancient literature (Modern 滑稽 is pronounced *huáji* in MSM with the different meaning of 'funny'.); (2) MSM 滑 *huá* means 'slip, slide, slippery, polished'. Today, MSM 滑 is pronounced as *huá* almost exclusively with the only exception being *gǔji* 滑稽 'double speak'.

The second derivation is 猾 'crafty, cunning, sly, treacherous'. *Kóng-ūn* 廣韻 gives its MC pronunciation as "*hō·-pat-chhiat* 戶八切", *i.e.*, **hat* / **huat*, from which MSM derives a single pronunciation of *huá*. Since both 滑 and 猾 have 骨 as the phonophore, this indicates that "*hō·-pat-chhiat* 戶八切" may have been another pronunciation of 骨.

In contrast, Taiwanese pronunciation of the three graphs shows: 骨 *kut*, 滑 *kut̍*, and 猾 *kut̍*, all with the basic *kut* sound but differing slightly only in tones (fourth vs. eighth tones).

The table below summarizes the pronunciations of the three graphs in MC, Tw, MSM and Japanese (excluding *goon* 吳音).

	Middle Chinese		**Tw**		**MSM**		**Japanese**	
	**kut*	**hat*	**kut*	**hat*	*gu*	**huat*	*kot*	*kat* (**bān>*kat*)
骨	**kut*	--	*kut*	--	*gǔ*	--	コツ *kotsu*	(**bān* > ほね *hone*)
滑	**kut*	**hat* / **huat*	*kut̍*	--	*gǔji* 滑稽	*huá*	コツ *kotsu*	カツ *katsu*
猾	--	**hat* / **huat*	*kut̍*	--	--	*huá*	--	カツ *katsu*

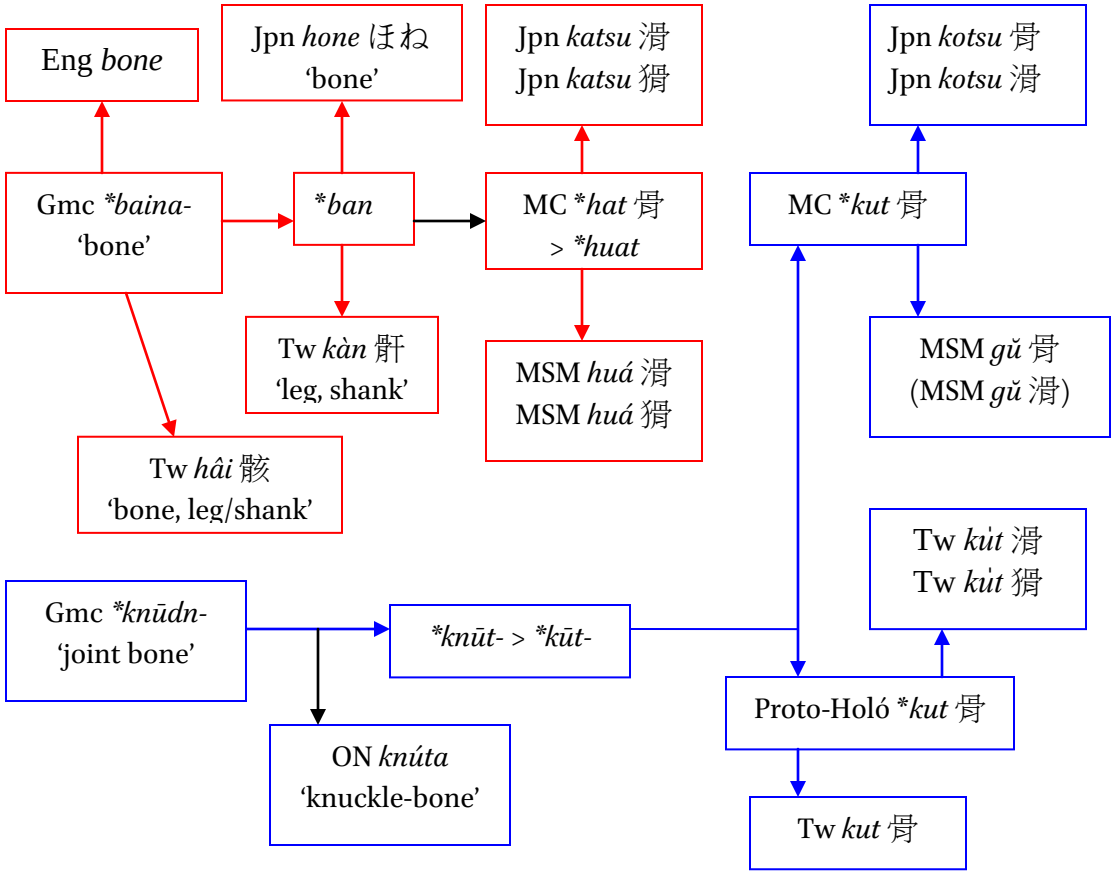


Diagram: Derivation of Tw, MSM, Jpn words for 'bone', 'leg', 'shank', 'slip' and 'sly'.

All the data shown in the table above can be explained by two derivation pathways as shown in the diagram above. We now discuss the two pathways separately.

(1) Derivation pathway marked in red.

The first etymon for 'bone' that came to Asia might have been Gmc **baina-* in the form of **ban*, somewhat similar to OE *bān*. This was loaned to Japanese to produce ほね *hone* 'bone' through *b-* > *h-* and *a-* > *o-* sound changes. It was also loaned to Old Chinese and Proto-Holó to produce 骭 *hān* / *kàn* with the meaning of 'leg, shin bone'. Following a homorganic denasalization, the final *-n* of **ban* became *-t*, and with the *b-* > *h-* sound change, **ban* > **hat* (or **huat*) with the meaning of 'bone' 骨 may have existed in Old Chinese. It suggests that **hat* (or **huat*) may have been the original

pronunciation of 骨 'bone'. From this pronunciation, 骨 imparts its sound of **hat* (or **huat*) to its derivatives 滑 and 猾. As evidence we see that Sino-Japanese 滑 and 猾 are both pronounced *katsu* カツ. Toward the end of the Song Dynasty, the final stops *-p*/*-t*/*-k* were lost to Middle Chinese, so that today MSM pronounces both graphs as *huá*. Finally, Gmc **baina-* gave rise to *hâi* 骸 in Proto-Holó and Old Chinese with the meanings of 'leg/shank' and 'bones' much like G *Gebeine* 'bones'. Around the time 滑 and 猾 were developed and subsequently loaned to Japanese, a second sound for 骨 emerged and displaced the first sound as shown in the next pathway.

(2) Derivation pathway marked in blue.

A Germanic word derived from Gmc **knūdn-* 'joint bone, knot, etc.' appeared in Asia some time later than the first pathway; this derivative is closely related to ON *knúta* 'knuckle-bone' that appeared much later in the Viking Age and is ultimately related to New High German *Knochen* 'bone'. Following declustering of the initial **kn-* cluster, the simplified **kūt-* may have been taken up by Middle Chinese as well as Proto-Holó and shown up as **kut* spelled as "*kó·-hut-chhiat* 古忽切". In Modern Taiwanese it is *kut* 骨 'bone' and in MSM *gǔ* (following the loss of the final *-t* in late Song). Because Proto-Holó was not exposed to the "red" pathway, both derivatives 滑 and 猾 are pronounced simply as *kút*. In contrast, because MSM had already followed the "red" pathway, both MSM 滑 and 猾 had been set as *huá*, and the new pronunciation of *kut* was not able to displace the old pronunciations. There is only one exception, which is the literary reading of 滑稽 'double speak' as *gǔji* in the old literature. From Middle Chinese **kut* 骨 Japanese borrowed and normalized it to *kotsu* コツ. Japanese also acquired the second reading of 滑 *kotsu* コツ.

The two derivation pathways presented above seem to be the most straightforward and most parsimonious explanations to account for all the data regarding the semantic switch of words from 'bone' to 'leg', the borrowing of the word for 'joint-bone' to represent 'bone', and all the various derivatives bearing 骨 as the phonophore in Tw, MSM, and Japanese.

Seebold (D3-19, p. 94) states under the entry for G *Bein* 'leg' that "*Die heute vorherrschende Bedeutung 'untere Extremität' ist erst in Deutschen entwickelt worden.*" (The present prevailing meaning of 'lower extremity' was first developed in German.) In light of what we have found, this statement needs to be updated as the semantic shift was first observed in Sinitic and Proto-Holó and can at least be dated to the times of *Shuowun* 說文, *i.e.*, the Eastern Han dynasty.

4: CULTURAL SIMILARITIES

Language is an integral part of a culture. If there are similarities and shared aberrancies between the lexicons of two languages, it is likely that there can be found cultural similarities (**CS**) between them as well. In the following section, several similarities between Taiwanese and European cultures will be presented:

- CS-1: Place Names
- CS-2: Fairy Tales
- CS-3: Burning the King's Ship (*Sio Ông-Chûn* 燒王船)
- CS-4: Tour of Domain by Goddess
- CS-5: Thunder, Lightning and Thor's Hammer
- CS-6: Special Bonds to Maternal Uncles
- CS-7: Memorial of the Deceased on the Seventh Day after Death
- CS-8: Roadside Shrines
- CS-9: Special Topic: Genetic Diseases

CS-1. PLACE-NAMES

When people migrate to a new place, they often name the new settlement after their homeland. Good examples can be found in America, where names such as Plymouth, Lexington, Lancaster, New York, New Orleans, etc., commonly have referents in the Old World. There are two words that are common elements in place-names favored by the Nordic people, *bær* and *tún*. Surprisingly, their corresponding words in Taiwanese are also the most favored words for place-names in Taiwan.

(1) ON ***bær*** > Tw ***po·*** 埔.

The ON *bær* 'farmstead, town' is the most favored word of the Norse people in forming their place-names, and it appears as *bo*, *bö*, *by*, *bø* in present-day Scandinavia, *bær* in Iceland and *by* in Danelaw areas in England. Examples are: Krylbo, Lessebo, Habo, Bjöbo, and Sjöbo in Sweden; Maribo, Rødby, and Sæby in Denmark; Nærbo, Valebø, and Ovrebø in Norway; and Ábær, Glaumbær, Saurbær, and Fellabær in Iceland. Fig. 28 shows the road sign to Sjöbo, Sweden.

The most popular word in Taiwanese place-names is Tw *po·* 埔 'farmstead, village'; local town names in Taiwan with po· 埔 are numberless, *e.g.*, Tang-po· 東埔 'East Farmstead', Sai-po· 西埔 'West Farmstead', Lâm-po· 南埔 'South Farmstead', Pak-po· 北埔 'North Farmstead', Sin-po· 新埔 'New Farmstead', Tōa-po· 大埔 'Big Farmstead', Tiong-po· 中埔 'Middle Farmstead', Hái-po· 海埔 'Marine Farmstead', Iâm-po· 鹽埔 'Salt Farmstead', Po·-lí 埔里 'Farmstead Community', etc. Figure 29 shows a road sign to Pak-po· 北埔 in Sin-Tek 新竹 (Hsin-chu) County. Thus, *po·* 埔 resembles strikingly the ON *bær* 'town'. Cleasby and Vigfusson (D3-4, p. 92) state that, "wherever the Scandinavian tribes settled, the name *by* or *bö* went along with them." It appears that this unique Nordic custom is carried on in Taiwan.

Fig. 28. A road sign to the town Sjöbo, Sweden. The element *-bo* is inherited from Old Norse *bœr* 'town', the Scandinavians' most favored word for place-names

Fig. 29. A road sign to the town Pak-po· 北埔 'North Farmstead', Taiwan. Like the *bœr*-derived words in Scandinavia, the *po·* 埔 'farmstead' is the most popular place-name element in Taiwan. (Photo courtesy of Mr. Jen-Cheng Tsai)

(2) ON ***túnn***, OE ***tūn*** 'town' > Tw ***tùn*** 屯 'town'.

The ON *túnn* and OE *tūn* came from Gmc **tūna*- with the meaning of 'fence', whose reflex is seen in Modern German *Zaun* 'fence'. In Old Norse and Old English, however, a new meaning, 'town', developed (D3-19, p. 904). It exists as the final element *-tun* in place-names in Norway (*e.g.*, Nesttun, Fortun, Havtun, Logtun), *-tuna* in Sweden (*e.g.,* Eskilstuna, Altuna, Skultuna), and *-ton* in England and the U.S. (*e.g.,* Wellington, Boston, Washington, Lexington, etc). The *tuna*-names are among the most discussed Scandinavian place-names (Andersson 1991). Fig. 30 shows the road sign to Sigtuna, an old royal center of Sweden founded *ca.* 970 in central Sweden, and Fig. 31 a sign that welcomes visitors to Barrington, Illinois.

Fig. 30. A road sign to Sigtuna, Sweden.

Fig. 31. A sign welcoming visitors to Barrington, Illinois. (Photo by C. H. Wu)

In Taiwan *tùn* 屯 is the second most popular place-name element after *po·* 埔. Examples are: Chháu-tùn 草屯 'Straw Town', Pak-tùn 北屯 'North Town', Sai-tùn 西屯 'West Town', Lâm-tùn 南屯 'South Town', Peh-soa-tùn 白沙屯 'White Sand Town', etc. Figure 32 shows a road sign to the town of Chháu-tùn 草屯 (MSM *Cǎotún*). It may be noted that some places in northeastern China also use 屯 (MSM *tún*) in place-names, *e.g.,* Shanhetun 山河屯 'Mountain River Town'. In the early Middle Ages, 屯 was replaced by another character 邨, which was originally pronounced similar to Tw. *tùn* (just like 屯) but later changed to *chhun* (MSM *cūn*). The character 邨 was eventually replaced by a new graph 村 *chhun* (MSM *cūn*) that is the current sinograph for 'village, town' and is the most prevalent place-name element in China today. The graph 村 emerged quite late, a fact noted by the Kangxi dictionary as it states that the 村 graph did not exist in the Classics, "經史無村字 (The Classics and Histories do not have the 村 character)" (D2-3, p. 439).

Fig. 32. A road sign to Chháu-tùn (MSM *Cǎotún*) 草屯, Taiwan. (Photo by C. H. Wu)

CS-2. FAIRY TALES

One of the best known fairy tales in the West is *Hansel and Gretel* (Fig. 33) in the Brothers Grimm's collection of fairly tales, *Kinder- und Hausmärchen* (1812). This tale is said to belong to a group of similar European tales especially popular in the Baltic region (Opie and Opie, 1974). A popular childhood fairy tale in Taiwan, *Hó· Ko·-pô* 虎姑婆 'The Grandaunt Tiger' (Fig. 34), is very similar to *Hansel and Gretel*. Both tales use the same setting (a hut in the forest), the same main characters (two children against a child-eating witch), and the same plot (the children outwitting the witch in the end). Both tales caution children to be wary of strangers. The similarity between the two tales has been noted by Wolfram Eberhard who conducted a field study of the tale among schoolchildren in Taiwan (Eberhard, 1970).

However, there are a few minor differences. The witch in the Taiwanese tale can change into a tiger *hó·* 虎, an added feature (because tigers occur only in Asia) presumably to rationalize that the witch can eat children. Unlike *Hansel and Gretel*, the hut in the Taiwanese version belongs to the children's family. The children in the Taiwanese tale kill the witch by pouring hot oil over her whereas Gretel kills the witch by pushing her into an oven. The Western version features the parents abandoning their children in times of famine, which is believed to be related to the medieval period of Great Famine (1315–1321) when desperate parents resorted to such deeds (or even cannibalism) in order to fend for themselves. The fact that this feature is lacking in the Taiwanese version suggests that, if the fairy tale was indeed brought to Asia by migrating people, it must have come prior to that bleak period in Europe. Since fairy tales, just like languages, pass orally from generation to generation, the similarity of the tales is in concert with the lexical correspondences found by the present study.

Fig. 33. Western fairy tale: Hansel and Gretel. Illustration by Arthur Rackham (1909).

Fig. 34. Taiwanese fairy tale, *Hó͘-ko͘-pô* 虎姑婆. Cover of book published by Yow Fu Culture Co. Used with permission of the publisher.

CS-3. BURNING THE KING'S SHIP (*SIO ÔNG-CHÛN* 燒王船)

On Shetland Island, located in the North Sea off Scotland and famous all over the world for its very fine wool, there is a fire festival called Up Helly Aa that is billed as the largest fire festival in Europe, attracting thousands of spectators each year. Shetlanders, descendants of the Vikings of the Middle Ages, build an elaborate Viking longboat. On the last Tuesday of January they hold a day-long festival, re-enacting the ancient boat burial of Viking kings and parading the longboat in a great procession through Lerwick (Fig. 35), which culminates in the burning of the longboat (Fig. 36).

Fig. 35. Up Helly Aa — Parade of a longboat to be burnt in the festival. (From www .visitscotland.com)

The tradition of burying a king in a burning ship dates back to the Viking Age. *Heimskringla* mentions that King Haki of Sweden (if historical, he would have lived in the fifth century), nearing death, "had a ship brought up that he owned, and had it laden with dead men and weapons, had it floated out to the sea, had the rudder shipped and the sail hoisted, and had fire put to pitch wood and

a firebale made on the ship. The wind blew from the land… The burning ship then sailed out on the sea and that was much talked about for a long time after." (Sturlason, p. 16).

In Norse mythology, the funeral of the god Baldr echoes the traditional Norse funeral. Baldr was a son of the greatest of all Viking gods, Odin. Baldr was killed by his blind brother Hoder through the trickery of the cunning god Loki. A funeral pyre was built aboard Baldr's ship *Hringhorni* and his body placed atop it, alongside which was laid the body of his wife, who had died of deep grief, broken-hearted. According to the Eddas,

Fig. 36. Shetland's Up Helly Aa festival, re-enacting the ancient burial of Viking kings.
(From www.happyanniversarytext.com)

"Suddenly a gleam of light flashed over the water, the pile had been kindled, and the flames, creeping slowly at first, climbed faster and faster until they met over the dead and rose skyward. A lurid light filled the heavens and shone on the sea…" (Mabie, pp. 77–78).

A medieval Arab traveler Ahmad ibn Fadlan wrote an eye-witness account during the years 921–922 CE. He served as secretary of an embassy from the Caliphate of Bagdad to the Bulgars of the middle Volga. The Rus' had set up a camp and trading post in what would become the town of Bulgar, frequented by Arab traders. Ibn Fadlan's whole account of his journey has been translated into German and French, but never English. Fortunately, the section on the ship-burial of a Viking king has been translated by H. M. Smyser. This is a rather lengthy account, including the gruesome slaying of a slave girl to accompany the king to the netherworld. Only the part on ship-burning is quoted below (Jones, pp. 425–430):

> Then the people came up with tinder and other firewood, each holding a piece of wood of which he had set fire to an end and which he put into the pile of wood beneath the ship. Thereupon the flames engulfed the wood, then the ship, the pavilion, the man, the girl, and everything in the ship. A powerful, fearful wind began to blow so that the flames became fiercer and more intense…

A key element in the ship burial is that the ship is always laden with precious gifts for the dead. In the funeral of the god Baldr in Norse mythology, his favorite horse was sacrificed and also placed on the pyre so that Baldr would have a means of transport in the afterlife. His father, Odin, also gave one of his most prized possessions, the arm-ring Draupnir, lovingly placing it on Baldr's arm.

Similarly, in the Prologue of *Beowulf* where the poet describes a ship-burial of the Danish king Shild, we read (lines 36–40; 43–44):

> … Next to the noble corpse
> They heaped up treasures, jeweled helmets,
> Hooked swords and coats of mail, armor
> Carried from the ends of the earth: no ship
> Had ever sailed so brightly fitted…
> … they refused
> To give him less from their hoards of gold….

After Scandinavia had forsaken paganism and converted to Christianity, the ship burial completely stopped. Only in the nineteenth century was the Up Helly Aa of Shetland established as a fire festival.

Surprisingly, ship-burning ceremonies have long been a tradition in Taiwan, where the ceremony is called *Sio Ông-chûn* 燒王船 'Burning the King's Ship'. According to Katz, the earliest mention of ship-burning ceremonies was by Zhuāng Chuò 莊綽 in 1133 CE in his *Jīlē Biān* 雞肋編 ("Chicken Rib Compilation"); the ceremony took place in Lǐ Zhoū 澧州 in Shaanxi (Katz, p. 7). In the Ming and Ching dynasties, the ship-burning festivals flourished greatly in Holó communities in Taiwan and along the southeastern coast of China in places such as Fujian and Zejiang, and many were recorded in local historical gazettes, such as in *Choân-chiu-hú Chì* 泉州府志 (Gazette of Quánzhōu Prefecture) for the year 1763 and in *Tâi-oân-koān Chì* 台灣縣志 (Gazette of Taiwan County) for 1720 (Katz, pp. 14; 117). The ceremonies are for receiving deities (迎王 *ngiâ-ông*) or for chasing away pestilence (送瘟 *sàng-un*), different in purpose from the king's burial at sea in Scandinavia. Often when a new temple is being consecrated, a ship-burning festival is held to conclude the consecration. The temple Tang-Liông Kiong 東隆宮 in Tang-káng 東港 in Pintong Prefecture of Taiwan regularly holds a ship-burning festival every three years. Shown below (Fig. 37) are pictures of such a festival in Tang-káng 東港, Taiwan. This is the most famous ship-burning festival of all in Taiwan and is a must-see for tourists. The organizers spend much time building an exquisite boat made of the best wood. On the day of ceremony at the temple, fancy material goods (cakes, brocades, refrigerator, TV, fax machine, etc.) are placed in the boat, which is paraded through the town. The boat is burned on the seashore at the climax, a sight to behold.

Two aspects of the Taiwanese ship-burning festivals show a close similarity to the Scandinavian ones. First, the Taiwanese festival has the 'King' element in its name, echoing the king's ship-burial in the Viking Age. Second, as was the custom in the Scandinavian king's burial, the Taiwanese festival also requires that the finest gifts be placed in the ship before setting it on fire. It is possible that these are remnants of an old custom of a king's burial whose ancient meanings are lost to history.

Besides Holó communities in Zhejiang, Fujian, and Taiwan, the ship-burning festival is also held in Bagansiapiapi, Indonesia, a town of the Hokkien people. The festival is held on the 16th day of

the 5th month in the Chinese lunar calendar, to commemorate the date when the Hokkien settled in the place and to honor the founding father Kì Ông-iâ 紀王爺 'the King of Ki' (Yokhan Lansin Niu, *personal communications*).

Fig. 37. Parading and burning of a king's ship in Tang-káng 東港, Taiwan. (Photos courtesy of Mr. Shen-Tsai Lin)

CS-4. TOUR OF DOMAIN BY GODDESS

Tacitus's *Germania* (XL) mentions that many Germanic tribes with the common designation Suebi worshipped a common goddess, Nerthus, that is, Mother Earth, and believe that she intervenes in human affairs and rides among their peoples. There is a sacred grove on an island in the Ocean, in which there is a consecrated chariot, draped with a cloth, which the priest alone may touch. "He perceives the presence of the goddess in the innermost shrine and with great reverence escorts the goddess in her chariot, which is drawn by female cattle," in her tour of the domain (Tacitus, p. 58). "There were days of rejoicing then and the countryside celebrated the festival, where she deigned to visit and to accept hospitality." Fig. 38 shows country folk line up to welcome and receive blessings from the goddess.

Fig. 38. Spring tour of the goddess Nerthus in a wagon drawn by cows. (From H. Elsner, *Die Germanen*. Tessloff Verlag, Nürnberg, Germany)

This ancient Germanic custom continued into the Viking Age. Archaeology has provided corroborative evidence in the form of two magnificently carved wooden wagons recovered from a Danish peat bog dated to the 200s CE. In the great Oseberg ship burial was found, among the finest of

the items contained in the ship, a wheeled wagon with a long yoke, suitable for its being drawn by horses or cattle (Allan, p. 107).

A similar custom is observed in Taiwan. There is a cult of Má-chó· 媽祖, who is worshipped as the Goddess of the Maritime. This cult is also widespread along the southeastern seacoast of China and extends to Hokkien communities in Southeast Asia. Má-chó· is said to be historical, and according to the record of a temple reconstruction in 1150 CE, she was born Bėk Lîm 林 默 on 960 CE on an islet Bî-chiu-sū 湄洲嶼 in Fujian. Every spring around her birthday (the 23rd day of the third month in the lunar calendar), she will go out in a palanquin to tour her realm to bring peace and prosperity, similar to what Tacitus describes of Nerthus. The tour is called *Má-chó· jiáu-kéng* 媽祖遶境 and is always accompanied by very raucous festivities.

Fig. 39. Spring tour by Má-chó· of a town in Taiwan. People knelt in line to receive blessings from the deity Má-chó·. (From www.epochtimes.com for April 20, 2006)

There are contrasting and similar features between Nerthus and Má-chó·. Unlike Nerthus who, as described in Tacitus, toured her realm in a wagon drawn by cattle, Má-chó· is carried in a palanquin, a vehicle called in Taiwanese *kiō* 轎 that is related to ON *skjótr* 'vehicle'. There are three similarities. First, both tours occur in spring time. However, this may be a coincidence because Má-chó· is said to be born around this time. Second, Nerthus's wagon was covered with cloth. The palanquin Má-chó·

rides in is also covered with cloth except for a small opening in the front (Fig. 40). Third, people lined up to receive Nerthus's blessings (Fig. 38), as is the case for Má-chó· (Fig. 39).

Fig. 40. Má-chó· joined the Taiwanese in a UN-for-Taiwan demonstration in New York. The palanquin in which Má-chó· is riding is covered except for an opening in the front. (Photo by C. H. Wu)

CS-5. THUNDER, LIGHTNING, AND THOR'S HAMMER

There is an interesting parallel between Old Norse and Taiwanese beliefs regarding thunder and lightning. In the Old Norse pantheon, the favorite deity was the thunder-god Þórr who is remembered in the Germanic names for Thursday, ON *Þórsdagr*, OE *Þur*(*e*)*sdæg*, and OHG *Donarestac* (> G *Donnerstag*). Adam of Bremen (active in the eleventh century) reported in his *Gesta Hammaburgensis Ecclesiae Pontificum* (IV, 26) that, not far from the city of Sigtuna there was a very famous temple called Uppsala. In the temple, entirely decked out in gold, the people worshipped the statues of three gods in such a way that the mightiest of them, Thor, occupied a throne in the middle of the chamber; Wotan and Frikko had places on either side (Adam, p. 207). He further noted that the Norse people said Thor presided over the air, which governed the thunder and lightning. In his right hand he held a hammer (ON *hamarr*) called *Mjǫllnir* 'the miller' (Fig. 41), which Adam perceived as a scepter. Forged by the dwarves, the hammer, when thrown, had the property of always hitting its target before returning to Thor's hand. Thus, the Old Norse word for 'lightning, thunderbolt' is *þórs hamarr* 'Thor's hammer'.

In Taiwanese 'thunder' is *tân-lûi* (G1W), which is a pleonastic compound derived from two European words. From the first syllable *ton-* of L *tonitrus* 'thunder' and *tonāre* 'to thunder' (cognate to Skt *stan-*), Tw *tân* (G1W) can be derived through the usual change of *o* to *a*. And from ON *reiðar* 'thunder', the first syllable *rei-*, through the PSC of *ei* to *i*, we obtain Tw *lûi* 雷: ON *reiðar* > *rei-* > (PSC *ei* > *i*) > **ri-* > Tw *lûi* 雷 'thunder'. Additionally, we can derive from PIE *(*s*)*ten-* 'thunder' the Taiwanese word *tiān* 電 which formerly meant 'lightning' but now connotes only 'electricity'. Furthermore, owing to the relationship between -(*i*)*an* and *-eng*, *tiān* 電 can also be related to *têng* 霆 'thunder', the latter being combined with *lûi* 雷 to form a pleonastic compound *lûi-têng* 雷霆 'thunder'.

What is most intriguing about 'thunder' is that the Taiwanese word for 'hammer' is *hám-má*, which is strikingly similar to ON *hamarr* 'hammer'. From *hám-má* a verb *hám* 撼 'to hammer' is formed. When someone is killed by lightning, the expression in Taiwanese is: *hō· lûi-kong hám sì* 被雷公撼死 (*lit.* by the Thunder-god hammered dead). This unique usage of *hám* 撼 in relation to 'thunder and lightning', not shared with MSM, directly harks back to Old Norse mythology.

Fig. 41. *Thor's Fight with the Giants* by Mårten Eskil Winge (1872), now at Nationalmuseum, Stockholm, Sweden.

Furthermore, 'lightning' in Taiwanese is *sih-nà*, which resembles ON *skína* 'to shine': *skína* > (OR-2) > **sína* > Tw *sih-nà* (G1W, [閃電]). And that is the word used in translating Matthew 28:3, regarding the brilliance of an angel whom some women saw as they approached Jesus's empty tomb — "his appearance was like lightning":

Mt 28:3 - "I ê bīn-māu chhin-chhiū^{n} sih-nà" (伊的面貌親像[閃電]).

CS-6. SPECIAL BONDS TO MATERNAL UNCLES

Tacitus describes a special Germanic social custom in his *Germania* (XX):

> The sons of sisters receive the same honor from their uncles as from their fathers. Some even regard it a more sacred and a closer tie of blood and when demanding hostages insist on it for preference. It is as if they thereby have a tighter grip on the affections and a wider hold on the family.

The notion of a special bond between a maternal uncle and his nephew or niece can be seen down to the times of Early Middle High German when the *Nibelungenlied* was composed, a heroic epic claimed to be surpassed only by the *Illiad* of Homer. In the poem, when the amazonian Queen Brunhild of Iceland is about to leave her realm to marry King Gunther of the Burgundians, she asks her maternal uncle to take charge of her Iceland, all the people, fortresses and lands (*Nibelungenlied*, p. 74). However, this special bond seems to have disappeared from Europe.

Surprisingly, it is still observed by the Taiwanese today. A slight difference from that of the Germanic people of Roman times is that a maternal uncle in Taiwan will treat his nieces as fairly as his nephews. The special bond is best manifested in a wedding, when a nephew or niece is getting married; the maternal uncle is seated in the most honored seat in the banquet (母舅坐大位 *Bú-kū chē tōa-ūi*). Naturally the uncle will give them the largest monetary gift. There are two folk sayings that exemplify the special bond:

(1) *Bú-kū siōng-tōa* 母舅上大 (The maternal uncle is the greatest.)

(2) *Thi^{n}-téng Thi^{n}-kong, tōe-ē bú-kū-kong* 天頂天公, 地下母舅公 (In Heaven [there is] the Heavenly God, and on earth the maternal uncle.)

CS-7. MEMORIAL OF THE DECEASED ON THE SEVENTH DAY AFTER DEATH

After a person died, the Norse held a memorial on the seventh day (with the day of death counted as the first). The term for the memorial is *sjaund*, which originally meant 'a period or term of seven' (*Cf.* ON *sjau* 'seven', *sjaundi* 'the seventh'). But this word in the old Nordic law had been adapted to mean 'a funeral, funeral service' held on the seventh day after death. In Viking society, a funeral banquet is called *sjaundar-görð*, with *görð* connoting 'making, building, doing, act, deed'. ON *görð* corresponds to Tw *chò* 做 / 作 'do, make' (with palatalization of the *g-* initial). Figure 42 shows a painting of a funeral for a Rus' chieftain by the great Polish artist Henryk Siemiradzki in 1883.

Fig. 42. *Funeral of a Rus' Nobleman* by Henryk Siemiradzki (1883) now in the State Historical Museum, Moscow, Russia (Picture from: commons.wikimedia.org)

In Taiwan, the day a person dies is also counted as the first day, and the seventh day is called *thâu-chhit* 頭七 or *thâu-sûn* 頭旬 'the first seven-day period'. It can be shown that Tw *sûn* 旬 corresponds to ON *sjaund* through an *-aun*(*d*) > *-un* sound change. Here 旬 is borrowed to write *sûn*;

originally 旬 means 'ten days' but here it is 'seven days'. Thus, the *chhit* 七 'seven' in *thâu-chhit* 頭七 is a translation of ON *sjaund* 'a period of seven', whereas *sûn* 旬 in *thâu-sûn* 頭旬 is a transliteration of its corresponding sound, with *thâu* 頭 meaning 'the first'. Fig. 43 shows a rite of the *thâu-chhit* 頭七.

This day is the most important day for memorializing the deceased, and the rite is called *chò-chhit* 作七 'conducting the seven'. Tw *chò-chhit* 作七 nicely corresponds to ON *sjaundar-görð*, in its meaning and usage, with the only difference being that the two morphemes are reversed. Traditionally a complete service requires seven cycles of seven days, up to *chhit-sûn* 七旬 'the seventh seven-day period', for a total of forty-nine days. Because Taiwan has now become industrialized, the complete rite now is offered as an option of an accelerated schedule of twenty-four days, with the first and last *sûn* retaining the required seven days and the remaining five *sûn* of only two-day periods.

Fig. 43. A memorial service of *thâu-chhit* 頭七 'the rite of the first seventh day' in Taiwan. (Photo from endless456.wordpress.com)

The solemn ritual of Taiwanese *thâu-chhit* 頭七 is in great contrast to the boisterous drinking nature of the Old Norse *sjaundar-görð*. In the Saga of Óláf Tryggvason in *Heimskringla* (Sturluson, pp. 175–176), King Svein of Denmark held a funeral feast (*sjaundar-görð*) in honor of his father King Harald. As was the custom, the *sjaund* was the occasion for him to enter into his inheritance. He

invited all the chieftains in his realm to attend. Because of heavy drinking, all the valorous chieftains made too many vows while under the influence. On the following morning when the Viking chieftains were sober, they realized they had said too much and had to consult together to decide what to do. Thus, we may conclude that, apart from the name of the *sjaundar-görð* and the honoring of the deceased on the seventh day, there is no other resemblance between the Taiwanese and Norse practices. On their conversion to Christianity around 1000 CE, Scandinavians ceased their practice of this rite.

CS-8. ROADSIDE SHRINES

Tacitus' *Germania* (IX) says that the Germanic people "consecrate woods and groves and they apply the names of gods to that mysterious presence which they see only with the eye of devotion." This practice later changed into placing an idol at the places where they worshipped. Today roadside shrines are common sights in Catholic regions of German-speaking countries. Figure 44 shows a roadside shrine near an apartment in Vienna where Beethoven once lived.

There is a religious practice of worshipping huge trees called *pài chhiū-thâu-kong* 拜樹頭公 (*lit.* worship the tree-head-god) in Taiwan (Khu, pp. 19–20), a practice quite similar to the worshipping of woods or groves by the Germanic people.

Fig. 44. A roadside shrine to Santa Maria near Beethoven's former apartment in Vienna, Austria. (Photo by C. H. Wu)

Furthermore, it is very common to find small shrines in cities and in the countryside, at the end of an alley, underneath a large tree on the roadside, squeezed into a rock crevice, or in the middle of rice paddies. Figure 45 shows a small figure guarding a country path in Iá-liú 野柳, Taiwan.

Fig. 45. A roadside shrine in Iá-liú 野柳, Taiwan. (Photo by C. H. Wu)

CS-9. SPECIAL TOPIC: GENETIC DISEASES

The Taiwanese today look physically not much different from southeastern Asians. However, two genetic diseases usually associated only with Germanic peoples are also found in Taiwan. These are familial amyloid polyneuropathy and Factor V Leiden. They are discussed as follows.

Familial amyloid polyneuropathy (*FAP*).

This genetic disease is due to a single mutation of the blood protein transthyretin at position 55 of the protein chain, mutating the normally present amino acid, proline, into another amino acid, leucine. The physiological function of transthretin is to carry the thyroid hormone thyroxine and deliver it to all tissues. Mutation of the protein causes it to form amyloid clumps, resulting in polyneuropathy. This disease was reported in a kinship group from West Virginia whose ancestors are Dutch and German (Jacobson *et al.*, 1992; Scriver *et al.*, 1995). Exactly the same mutation with similar clinical features has also been reported from Taiwan in three separate studies (Chang *et al.*, 1989; Yamamoto *et al.*, 1994; Chou *et al.*, 1997). Interestingly, the Taiwanese family studied by Yamamoto *et al.* (1994) claimed to have no known *recent* ancestors of foreign origin. The gene coding for the protein transthyretin has a total of 181 nucleotides. So far, over 40 mutations of the protein have been described, and there are likely to be more. The probability of finding the same mutation at exactly the same position in two separate ethnic groups is extremely low. The mutant gene must have been carried to Asia by a migrating people in the distant past.

Factor V Leiden.

Blood coagulation is an important life-saving physiological process that stenches continuous bleeding. This process is spontaneous and self-controlled, mediated by a chain of reactions called the "blood coagulation cascade," involving several proteins. Dysfunction of any step in the cascade may result in either hemophilia or spontaneous thrombosis, both of which are life-threatening. One of the proteins in the cascade is called Factor V. A specific mutation of the protein, characterized by a change of amino acid from arginine to glutamine at position 506 of the protein chain (designated as Arg506Gln), was first discovered by researchers at the University of Leiden, Netherlands, hence it is called Factor V

Leiden. The mutation puts the patient at increased risk for venous thrombosis. In a worldwide study of 3,380 chromosomes (that is, from 1,690 unrelated individuals) from 24 populations (Rees *et al.*, 1995) — the Taiwanese population included in the study was that of Native Taiwanese — Factor V Leiden was found to be restricted to Europeans. It was not found in any of 1,600 chromosomes from Africa, Southeast Asia, Australasia, and the Americas. Only two cases among 180 South Asians were found to carry the mutant gene, which were attributed to admixture with Europeans because of India's colonial history. Other studies show that the prevalence rate is high in Scandinavia (Zöller *et al.*, 1996; Larsen *et al.*, 1998). Two separate studies (Ko *et al.*, 1996; Hsu *et al.*, 2001) have reported two individuals in Taiwan carrying the gene heterozygously (of the pair of chromosomes one carries the mutant gene and the other does not).

Medical researchers found the two hereditary diseases in Taiwan in studies that were aimed at other factors but found them serendipitously. Now in light of the new findings of close linguistic and cultural similarities between Taiwanese and European populations, the genetic diseases need to be more thoroughly investigated.

5: CORE VOCABULARY

In the following section, Taiwanese words in core vocabulary (**CV**) corresponding to European lexicons will be presented in four categories:

- CV-1: Mankind and Family Relationships
- CV-2: Life: Birth, Live/Life, Work, Love, Marriage, and Death
- CV-3: Personal Pronouns
- CV-4: Numerals

CV-1. MANKIND AND FAMILY RELATIONSHIPS

1.1a Man (in general) – (*l.*) Tw *hu* 夫

L *hūmānus* 'human, person' > *hū-* > Tw *hu* 夫 'man'.

1.1b Man (in general) – (*v.*) Tw *lâng* (G1W) [often written 人]

Gmc *man* 'man' > (transpos.) > **nam* > (denasal.) > **lam* > (PSC: *-am* > *-ang*) > Tw *lâng* (G1W) [人].

1.2 Man, people – Tw *bîn* 民

L *vir* 'man' > Tw *bîn* 民 'man, people' (*v-* > *b-*; *-r* > *-n*).

1.3 People – Tw *lîn-bîn* 人民

L *vir* 'man' > Tw *lîn* 人 'man, human' (*v-*/*w-* > *l-*; *-r* > *-n*). This word and *bîn* 民 are doublets derived from the same Latin etymon *vir*, and they recombine to form a pleonastic compound *lîn-bîn* 人民 to connote 'people'.

1.3a Populace (common people) – Tw *peh-sì*^{n} 百姓

L *plēbī* (*plēbis* or *plēbei*) *scītum* connotes 'the populace, common people, the masses'. From the simplified form **plēb- scīt-*, we derive Tw *peh-sì*^{n} 百姓 'the populace, common people, the masses' (in contrast to the ruling class).

1.3b Populace (common people) – Tw *lāu-peh-sì*^{n} 老百姓

From Gk λᾱός (*lāós*) 'the people, populace', with loss of the final *-s* (**PSC-8**), we derive a dependent morpheme *lāu*, which is written with a borrowed sinograph 老 for its sound. It is affixed to *peh-sì*^{n} (**1.3a** above) to form a pleonastic compound *lāu-peh-sì*^{n} 老百姓 with the same meaning of 'the common people, populace'.

1.4 Man (male) – Tw *po·* (G1W)

Gk πόσις (*pósis*) 'husband' > **po-* > Tw *po·* as used in *cha-po·* (G1W) 'man'.

Alternatively, L *homō* 'man' > **ho-* > (*h-* > *p-*) > Tw *po·*.

1.5 Man (male) – Tw *lâm* 男 'man, male'

OE *man* 'man' > (transposition) > **nam* > (denasal.) > Tw *lâm* 男 'man, male'.

1.6 Man (male) – (*l.*) Tw *lông* 郎 'man' (polite term)

OE *mon* 'man' > (transposition) > **nom* > (*-om* > *-ong*) > Tw *lông* 郎 'man'

Tw *lông* 郎 is a polite term for 'man'; its usage includes *lông-kun* 郎君 'gentleman'; *sin-lông* 新郎 'bridegroom'; and *lông-châi lú-māu* 郎才女貌 'the man talented, the woman beautiful'.

1.7 Gentleman – Tw *kun* 君 'gentleman' (polite term)

OE *guma* / ON *gumi* 'man' > **gum-* > (*g-* > *k-*) > Tw *kun* 君 'gentleman'.

Taiwanese phonology does not have the final **-um*, therefore, *-um* in European words changes to *-un* in Taiwanese. *Kun* 君, like other Germanic words typically, is used in Taiwanese as a polite term, mostly in poems, songs, and polite expressions such as: *jû-ì lông-kun* 如意郎君 'a gentleman of heart's desire'; *Hô-jít kun chài lâi?* 何日君再來？ 'What day wilst thou return?' is the title of a popular Chinese as well as Taiwanese song; *Kun ka chāi hô-chhù?* 君家在何處？ 'Sir, where is your home?' is a well-known verse from a Tang poem in the five-syllabic quatrain style (五言絕句 *Ngó·-giân choát-kù*).

1.8 Woman, wife – Tw *bó·*

L *mulier* 'woman, wife' (> It. *moglie* 'wife') > **mo-* > (denasalization) > Tw *bó·* (G1W) 'wife', also as in *cha-bó·* 'woman' (G1W).

1.9 Woman (honorific term) - Tw *ki* 姬 (*l.*, arch.)

Gk γυνή (*guné* > *gyné* from which is derived E *gynecology*) 'woman' > **γυ-* > Tw *ki* 姬 'woman' (*l.*, an archaic honorific term).

1.10 Woman (in general) – Tw *lú* 女

IE **dhugh*(*ə*)*ter* (> *e.g.*, OE *dohter*) 'daughter' > **du-* > Tw *lú* 女 'woman'

Tw *lú* 女 originally connoted only 'daughter', as shown in 'The Song of Mulan' (木蘭辭), said to be composed in the times of Northern Wei, which has a verse,

唯聞女嘆息 *Ûi bûn lú thàn-sek*

'only heard the daughter letting out a sigh.'

1.11 Woman – Tw *hū-lú* 婦女 (modern term)

ON *frú* 'mistress, lady' > (altenative splicing) > **fu*; **ru* > Tw *hū* 婦; *lú* 女; both mean 'woman'. They are doublets derived from an alternative splicing of the initial consonant cluster *fr-* and then recombined to form a pleonastic compound *hū-lú* 婦女 meaning 'woman'.

Mermaid is called in Danish *havfrue* (*lit.* sea lady) in which *hav* comes from ON *haf* 'the sea' (> Tw *hái* 海 'the sea') and *frue* from ON *frú*. Fig. 46 shows a statue of the little *havfrue* of Christian Anderson's fairytale in the harbor of Copenhagen.

Fig. 46. The statue of *Den lille Havfrue* in the harbor of Copenhagen. (Photo by Celesteh, Creative Commons)

1.12 Husband – Tw *ang* (G1W) 'husband'

L *marītus* 'husband' (> It *marito* 'husband') > **mar-* > (metathesis) **arm-* > Tw *ang* (G1W) 'husband'.

Tw ***ang*** 'husband' pairs with ***bó·*** 'wife' (see **1.8**) and the pair corresponds nicely to It ***mar****ito* 'husband' pairing with ***mo****glie* 'wife' (**1.8**) as seen in an Italian saying, *Tra moglie e marito non mettere il dito* [*lit.* Between wife and husband do not place the finger] 'You do not snoop into the private matters between husband and wife'. Taiwanese has a saying in a similar vein: *Chheng-koan lân-ûi ang-bó· tāi* 清官難為 *ang-bó·* 代 '(A) fair judge (can) hardly deal with the affair between husband and wife', in which the *tāi* 代 is short for *tāi-chì* 代誌 meaning 'affair, act, deed, matter' and the latter can be derived from Gmc **dædiz-* (or *ðēðiz*, [D3-14, p. 72]) 'act, deed' whose modern reflexes are E *deed* and G *Tat*.

1.13 Wife – (*v.*) Tw *khane* (G1W, a disyllabic word) 'wife'

ON *kona* 'woman, wife' (> Dan *kone* 'wife') > Tw *khane* (G1W, a disyllabic word) 'wife'.

From *khane*, another term for 'wife' *khan-chhiú* 牽手 [*lit.* 'hold hand'] developed in the Holó communities of mixed Chiangchiu-Choânchiu (彰泉) speakers in Southeast Asia that was then brought back to Fujian and thence to Taiwan (Ang, pp. 3–6). The original meaning of *khan-chhiú* 牽手 was 'wedding, marriage', as evidenced in *Doctrina christiana* of 1605, published by the Catholic Church in Manila. This meaning was later superseded by 'wife'.

Incidentally, Japanese *onna* (おんな) 'woman, female (sometimes with a derogatory connotation)' may have come from ON *kona* 'woman' through a *k-* > *h-* change followed by muting of the *h-*. Japanese *kanai* (かない 家内) means 'wife' and may also be derived from ON *kona*.

1.14 Husband – Tw *hu* 夫 'husband, man'

L *spuso* (> It *sposo*) 'groom, husband' > **spu-* > Tw *hu* 夫 'husband'

When combined with *hū* 婦 'wife' (see **1.15** below), the compound *hu-hū* 夫婦 means 'a couple'. The term *hu-hū* 夫婦 is mentioned in Mencius (c. 372–289 BCE) in the phrase '夫婦有別 *hu-hū iú piát*' meaning 'between man and woman there are differences,' there *hu-hū* 夫婦 meant only 'man and woman', not 'husband and wife'.

1.15 Wife, woman – Tw *hū* 婦 (*l.*) 'wife, woman'

L *spusa* (> It *sposa*) 'bride, wife' > **spu-* > Tw *hū* 婦 'wife' as in *hu-hū* 夫婦 'husband-wife' (see **1.14** above).

1.16 Wife, woman – Tw *pū* (*v.*), *hū* (*l.*) 婦 'wife, woman'

ON *brúðr*, OHG *brūt*, OS *brūd*, Goth *brūþs* 'bride' > **bru-* > Tw *pū* (*v.*), *hū* (*l.*) 婦.

The Gmc words for 'bride' were loaned to VL *bruta*, *brutis* 'daughter-in-law', hence F *bru* 'daughter-in-law'. Thus, Tw *pū* (*v.*) and *hū* (*l.*) 婦 are used for compound words meaning 'daughter-in-law': *sek-hū* 媳婦 (*l.*) and *sim-pū* 新婦 (*v.*).

1.17 Daughter-in-law – Tw *sek* 媳 as in *sek-hū* 媳婦 (*l.*)

From G *Schwiegertochter* 'daughter-in-law' and *Schwiegermutter* 'mother-in-law' and so on, we see the first element *schwieger-* means 'in-law'. It came from Gmc **swegrō* whose reflexes in OE *sweger* and ON *sværa* mean 'mother-in-law'. The morpheme *sweger* later developed into 'in-law' in Continental German. Gmc **sweg-* gave rise to Tw *sek* 媳 'daughter-in-law',

**sweg-* > **seg-* > Tw *sek* 媳.

This is used in pleonastic combination with *hū* 婦 (see **1.11** and **1.15**) to form *sek-hū* 媳婦 'daughter-in-law'.

1.18 Daughter-in-law – Tw (*v.*) *sim-pū* 新婦

Gk νύμφη originally 'bride' but later 'daughter-in-law' > **nym-* > **him* > **hsim-* > Tw *sim* (G1W), the latter is a dependent morpheme whose meaning becomes manifest only in the compound *sim-pū* 'daughter-in-law' with *pū* coming from a Germanic source (see **1.16**)

In Hellenistic times Gk νύμφη 'bride' took on the meaning of 'daughter-in-law' and replaced the original word νυός, as evident in the Septuagint and New Testment (D5-1, p. 125). For example, the verse of Matthew 10:35 has νύμφην for 'daughter-in-law' (McReynolds [D4-4], p. 37). Gk νύμ- (**nym-*) underwent sibilization with two proposed intermediate steps (> **him* > **hsim-*) to become Tw *sim*.

1.19 Father – Tw *pà* / *pâ* 爸, *pē* (G1W), *hū* 父

L *pater* / Gk πατήρ 'father' > **pa-* > Tw *pà* / *pâ* 爸, Tw *pē* (G1W) 'father'.

OE *fæder* 'father' > *fæ-* > Tw *hū* 父 'father'

1.20 Mother – Tw *bó* / *bú* 母

OE *mōdor* / ON *móðir* 'mother' > *mō-* > (denasalization) > Tw *bó* 母 (South Taiwan dial.) 'mother'

OHG *muotar* (> G *Mutter*) 'mother' > *muo-* > (denasalization) > Tw *bú* 母 (North Taiwan dial.) 'mother'

1.21 Grandmother – Tw *a-má*, (some southern dial.) *am-má* (G1W – some use 阿嬤)

ON *amma* 'grandmother' > Tw *a-má*, *am-má* (G1W) 'grandmother'.

Alternatively, *a-má* is a kind of infant babble for 'grandmother', such as L *mamma* 'mother', 'grandmother' and 'nurse'.

1.22 Grandfather – Tw *a-kong* 阿公

Late L *nōnnus* 'tutor, monk' (> It *nonno* 'grandfather') > **non*(*n*)- > Tw *kong* 公 as in *a-kong* 阿公 'grandfather', with sound changes of *n-* > *k-* (see **PSC-5** above) and *-on* > *-ong*.

Alternatively, it is another example of infant babble, *kong-kong* for 'grandfather' which is simplified to *a-kong*.

1.23 Child – Tw *hâi* 孩

Gk παῖς 'child' > (loss of final -s) **pai* > (*p-* > *h-*) > Tw *hâi* 孩 'child'.

1.24 Child – Tw *giná* 囝仔 (disyllabic word) 'child, youngster'

IE **genə-* 'to procreate' > L *gnatus* 'son' / *gnata* 'daughter' > **gna-* > Tw *giná* (G1W, disyllabic word) 'child'.

1.25 Child – Tw *kiá*^{n} (G1W) 'child, youngster'

L *gnatus* 'son' / *gnata* 'daughter' > **gna-* > Tw *kiá*^{n} 'child' with *g-* changing to *k-* under the influence of ON *konr* 'son'.

1.26 Son – Tw *chú* 子; *sū* (*l.*) / *sû* (*v.*) 嗣

ON *sunr*, OE *sunu*, OHG *sun*(*u*) 'son' > *sun-* > (denasalization) **su-* > Tw *chú* 子 'son'

Gmc *sun-* > (denasalization) > Tw *sū* (*l.*) / *sû* (*v.*) 嗣 'son, heir'

1.27 Son – Tw *kong-chú* 公子 'son' (polite term)

ON *konr* 'son, descendant' > (metathesis) **korn* > (**PSC-1**) > Tw *kong* 公

Pleonastic combination with *chú* 子 (see **1.26**) > *kong-chú* 公子 'son' (polite term)

1.28 Son in the sense of 'descendant' – Tw *hō·* 後

L *fīlio* (> It *figlio*) 'son' > (elision of medial -l- and preceding vowel) > Tw *hō·* (*l.*) / *hāu* (*v.*) 後.

Alternatively, Gk ὕιος 'son' > **húios* > (with loss of final *-s*) **hio* > Tw *hō·* (*l.*) / *hāu* (*v.*) 後.

Tw *hō·* (*l.*) / *hāu* (*v.*) 後 with the meaning of 'son' is used in *hō·-è* 後裔 'son as heir' (see **1.29**); *hō·-sū* (*l.*) / *hō·-sû* (*v.*) 後嗣 'son as descendant' (see **1.26**); and *hāu-si*^{n} 後生 'son'. The *si*^{n} in the last term can be derived from ON *sveinn* 'boy' (for example, *svein-barn* 'male child') with *-ei-* > *-i-* sound change.

1.29 Son in the sense of 'heir' – Tw è 裔

L (acc.) *hērēdem* (nom. *hērēs*) 'heir or heiress' (later > *hērem*) developed into OF *heir*, *eir* and the F *heir* which was in turn loaned to E *heir*.

L *hērēdem* or *hērem* > **her-* > Tw *è* 裔 'son in the sense of heir', usually used with *hō·* (*l.*) 後 (see **1.28**) to form *hō·-è* 後裔 'descendant, heir'. An example of using *hō·-è* 後裔 to translate 'son in the sense of heir' can be seen in the prologue of Matthew Chapter 1 (RSV), "The book of the genealogy of Jesus Christ, the son of David, the son of Abraham," which is translated into Taiwanese (Barclay) as:

A-pek-láh-hán ê hō͘-è, Tāi-pít ê hō͘-è, Iâ-so͘ Ki-tok ê ka-phó͘

亞伯拉罕的後裔, 大衛的後裔, 耶穌基督的家譜

1.30 The young (or youngster) – Tw *iù* 幼

L *iuvenis* 'young' > **iu-* > Tw *iù* 幼 'young', as seen in *iù-jî* 幼兒 'young child', *iù-biâu* 幼苗 'young shoot of plants', *iù-chí*^{n} (*v.*) 幼稚 'young and tender', and *iù-tī-hn̂g* 幼稚園 'kindergarten'.

1.31 The young (or youngster) – Tw *chí*^{n} (*v.*); *tī* 稚 (*l.*)

OE *cild* (*ćild*) 'child' – according to the *Oxford Dictionary of English Etymology* (D3-13, p. 169), this is a word peculiar to English. With palatalization it can be seen as a reflex in Tw *chí*^{n} 稚 (*v.*) with the nasalization deriving from OE *-ld*. *Chí*^{n} is usually combined with *iù* 幼 'young' (see **1.30**) to form *iù-chí*^{n} 幼稚 (*v.*) 'young and tender'. By Middle Chinese times, *chí*^{n} (*v.*) had undergone denasalization to **chí*. By the time the sinograph 稚 was used to write it, the pronunciation of 稚, originally *tī*, had also undergone palatalization to something like MSM *chih* (*zhì*). The Taiwanese reading of 稚 *tī* is that of pre-palatalization. Thus, 'kindergarten' is translated as *iù-tī-hn̂g* 幼稚園 'youngsters' garden'.

1.32 Grandchild – Tw *sun* 孫 'grandchild'

1.33 Great-grandchild – Tw *kana-sun* (G1W) 'great-grandchild'

1.34 Great-great-grandchild – Tw *kana-kana-sun* (G1W) 'great-great-grandchild'

The Taiwanese terms for 'grandchild' and its succeeding generations are discussed as a group with reference to the table below.

The Old English word for 'son' is *sunu* (nom.), whose genitive case is *suna*. Therefore, 'grandson' is *suna sunu* meaning 'son's son'. In comparing this with Tw *sun* 孫, it is evident that *suna sunu* was assumed to be a four-syllable word and, by OR-1, the first syllable *sun-* of the first element *suna* 'son's' was adopted for use as *sun* 孫 'grandson' (see the upper linear arrow in the table). The Taiwanese (as well as Sinitic) *sun* 孫 with the meaning 'grandchild' is neuter in gender (semantically devoid of maleness), and requires an adjectival noun *cha-po͘* 'male' or *cha-bó͘* 'female' to specify

'grandson' or 'granddaughter', respectively. This requirement is consistent with the hypothesis that Tw *sun* is derived from *suna* 'son's', rather than *sunu* 'son' itself.

Comparison of Old English, Old Norse, and Taiwanese terms for younger generations

English	**Old English**	**Old Norse**	**Taiwanese**
I	*ić*	*ek* (< **eka* < **egō*)	*góa* 我 (< *egō*, ἐγώ)
son	*sunu*	*sunr*, *sonr*, *konr*	*chú* 子, *kiá*^{n} (G1W)
grandchild	*suna sunu* 'son's son'	*sonar-sonr* 'son's son'	*sun* 孫
		barna-börn 'children's children'	
great-grandchild		**(*barna-barna-börn* 'children's children's children')	*kana-sun*
great-great-grandchild		**(*barna-barna-barna-börn*)	*kana-kana-sun*

As a result, there is a 'skipping of generations' seen in the Taiwanese terms for succeeding generations: what was the Germanic word for 'son' (OE *sunu*, ON *sunr*, OHG *sunu*, Got *sunus*) apparently became the word for 'grandchild' *sun* 孫. Similar phenomena have been observed in Indo-European languages, and these are called a 'skewing of generations' by Mallory and Adams (p. 212).

This misstep, *i.e.*, OE *sunu* turning into Tw *sun*, became the source of skewing of generations for the terms of succeeding generations, 'great-grandchild', 'great-great-grandchild', and so forth. Let us compare the Taiwanese and Old Norse terms at the same generational level (see table above). ON *barn* (sg. nom.) means 'child', *börn* (pl. nom.) 'children', and *barna* (pl. gen.) 'children's'. Thus, *barna-börn*, *lit.* 'children's children', denotes 'grandchildren'. Its cognates in other Germanic languages are OE *bearna bearn* and Goth *barnē barna*. Taiwanese uses *kana* (see the lower linear arrow in the table), a disyllabic word that can be derived from ON *barna* (with *b-* > *k-*, see **SA-5**) and combines it with *sun* 孫 to form *kana-sun* (*lit.* 'children's grandchild') 'great-grandchild'. Its descendant is *kana-kana-sun* 'great-great-grandchild'. If we were to apply the Taiwanese scheme to 'great-great-grandchild' in Old

Norse, its equivalent would be ***barna-barna-barna-börn*, the triple *barna*'s appear to have one more generation than the two Taiwanese *kana*'s.

It should be noted that Tw *kana* can only be used for succeeding generations; it cannot be used for preceding generations. In English, 'great-grandchild' and 'great-great-grandchild' are symmetrically opposed to 'great-grandparent' and 'great-great-grandparent'. Chinese (for example, MSM) also has such symmetry: 曾孫 (*zēngsūn*) and 曾曾孫 (*zēngzēngsūn*) versus 曾祖 (*zēngzǔ*) and 曾曾祖 (*zēngzēngzǔ*). However, in Taiwanese, one can say *kana-sun* and *kana-kana-sun*, but *kana* can never be applied to preceding generations (**kana-kong* or **kana-kana-kong*). The uniquely asymmetric distribution found in Taiwanese makes perfect sense when we see that Tw *kana* is derived from ON *barna* 'children's'.

1.35 Older brother – Tw *heng* (*l.*) / *hia*^{n} (*v.*) 兄

L *frater* 'brother' > *fra-* > (metathesis) > **far-* > Tw *hia*^{n} (*v.*) > *heng* (*l.*) 兄

Note that Taiwanese phonology does not have the f sound; therefore, it is usually substituted with an h sound. The correspondence between *-ia*^{n} (*v.*) and *-eng* (*l.*) is regular.

1.36 Older brother – Tw *ko* (*l.*) 哥

OE *brōþor*, ON *bróðir*, OS *brōthar*, Got *brōþar* 'brother' > *bro-* > (*b-*/*br-* > *k-*) > Tw *ko* 哥 'older brother'.

Tw *hia*^{n} 兄 and *ko* 哥 can be combined to form *hia*^{n}*-ko* 兄哥 which is used to refer to 'brother' when talking to others.

1.37 Younger brother – Tw *tē* (*l.*) / *tī* (*v.*) 弟

Gk ἀδελφός 'brother' > (aphetic) *del-* > Tw *tē* (*l.*) / *tī* (*v.*) 弟 'younger brother'.

The seventh tone (*iông-khì-sia*^{n} 陽去聲) of Tw *tē* (*l.*) / *tī* (*v.*) 弟 is consistent with the hypothesis that the tone manifested itself from the loss of the syllabic final *-l* from *del-*, most likely through an intermediate step of silent *-h* [ʔ]: *del-* > **deh* > *tē* (*l.*) / *tī* (*v.*) 弟.

1.38 Older sister – Tw *chí* (*l.*) / *ché* (*v.*) 姊

ON *dís* 'sister' > (loss of final -s) > *dí-* > (palatalization) > Tw *chí* (*l.*) / *ché* (*v.*) 姊 'older sister'.

1.39 Younger sister – Tw *bē*, *bōe*, *moāi*, *mōe* 妹

There are 4 forms for 'younger sister', two of which show denasalization while the other two retain the nasal *m-*. *Bē* is used chiefly in Taipei and Northern Taiwan whereas *bōe* and *moāi* are employed in Tainan and Southern Taiwan. The variant *mōe* is heard occasionally.

The corresponding forms in Old Norse are *mær* and *mey*.

(1) ON *mær* 'maid, girl, virgin' > Tw *moāi* 妹 'younger sister'.

Comparing ON *mær* and Tw *moāi* 妹, we find again that the loss of the final *-r* from ON *mær* is coupled with the pronunciation of Tw *moāi* 妹 in the 7th tone.

(2) ON *mey* 'maid, girl, virgin' > Tw *mōe* > (denasal.) > Tw *bōe* > *bē* 妹

1.40 Father's older brother – Tw *pek* (*l.*) / *peh* (*v.*) 伯

L *patruus* 'father's brother' > *patr-* > Tw *peh* 伯 (*v.*) > *pek* 伯 (*l.*) 'father's older brother'

Peh (*v.*) 伯 is not only how children address their father's older brother, but also how a wife addresses her husband's older brother. It is a Taiwanese custom that a mother addresses her husband's relatives using the terms her children use.

The correspondence between L *patruus* and Tw *peh* involves (1) a common sound change of *a* to *e*; and (2) a change of *-tr* to *-h*.

Correspondence between *-tr* and Tw (*v.*) *-h*

European languages	**Taiwanese (vernacular)**
L *patruus* 'father's brother' > *patr-*	*peh* 伯 'father's older brother'
ON *matr* 'meat, food'	*bah* (G1W) 'meat'
ON *þváttr* 'wash, washing'	*seh* 刷 'wash, cleanse, a brush' (involving *þv-* > **þ-* > Tw *s-*)
ON *sáttr* 'reconciled, at peace'	*soah* 煞 'reconciled, let drop a quarrel'

1.41 Father's younger brother – Tw *siok* (*l.*) / *chek* (*v.*) 叔

Gk θειος 'father's or mother's brother' [> Late L *thius* > It *zio*, Sp *tio* 'uncle'] > (θ- > *s*-; *-os* > *-ok*) > Tw *siok* (*l.*) > *chek* (*v.*) 叔 'father's younger brother'

1.42 Father's sister (or husband's sister) – Tw *ko·* 姑

L *glos* 'husband's sister' > (*gl-* > *k*-; loss of final *-s*) > Tw *ko·* 姑 'husband's sister / father's sister'.

The derivation involves a regular sound change of *gl-* to *k*-. The table below shows examples of such sound correspondence, with two additional examples of *gl-* > *kh*-. (*Cf.* PSC-2 (SN-3): *gl-*>*h*-, under PSC-2:5).

Etymon		**Taiwanese**
L *glōs* 'husband's sister'	*glō-*	*ko·* 姑 'husband's sister, father's sister'
Gk γλοιός 'glue'	*glo-*	*kô·* 糊 'glue'
L *glōria* 'glory'	*glor-*	*kong* 光 as in *kong-êng* 光榮 'glory'
Gk γλίσχρος 'glutinous, sticky'	*gli-*	*ki^{n}* 羹 'a thick soup made with any kind of stock and thickened with starch powder'
ON *glap* 'beguilement, seduction'	*glap*	*koái* 拐 'beguilement, seduction' (involving sound change of *-ap* > *-ai*)
L *gladius* 'a sword'	*glad-*	*kòe* (*v.*) 械 'weapon', the loss of *-d* is reflected in the 3rd tone (去聲) of *kòe*. Note: 械 (*l.*) is *hâi*.
ON *glaðr* 'glad'	*glað-*	*khoài* 快 as in *khoài-lók* 快樂 'glad' (involving sound change of *-að* > *-ai*)
ON *gljúfr* 'rocky ravine'	*glju-*	*khiu* 丘 as in *khiu-hok* 丘壑 'ravine'

Alternatively, Tw *ko·* 姑 can also be derived from Gk γάλοως 'husband's sister' through elision of the medial *-l-* with its preceding vowel:

Gk γάλοως > **ga<u>l</u>oō-* > **goō-* > Tw *ko·* 姑 'husband's or father's sister'

1.43 Mother's brother – Tw *bú-kū* 母舅 > *kū* 舅

L *avunculus* 'maternal uncle' > (apheresis) **vuncul-* (> E *uncle*) > (denasal. of *-n*) > Tw *bú-kū* 母舅 'maternal uncle'; the loss of the final *-l* is reflected in the 7th tone (*iông-khì-sia*^{n} 陽去聲) of *kū*.

Gradually, the first element *bú-* 母 'maternal' became lost so that only *kū* 舅 has remained. However, *bú-kū* 母舅 is still preserved in set phrases (see **CS-6**).

1.44 Wife of father's older brother – Tw *a-ḿ* (阿姆)

L *amita* 'paternal aunt' > *am-* > Tw *a-ḿ* (阿姆) 'wife of father's older brother'

1.45 Wife of older brother – Tw *só* 嫂

L *soror* 'sister' (> OIt *suora* > It *sorella* 'sister') > **sor-* > Tw *só* 嫂

The loss of final *-r* should have been reflected in the 3rd or 7th tone (*khì-sia*^{n} 去聲). The second tone of *só* 嫂 suggests an irregular development of the word.

As mentioned before, the Taiwanese society is patrilocal in that the bride leaves her household to join that of her husband's family. Therfore, as a sign of affection, the wife of an older brother is treated just like a sister in the family. This is similar to the French term for 'sister-in-law', *belle-sœur* (*lit.* beautiful-sister).

1.46 Husband's father and mother – Tw (*v.*) *ta-koa*^{n} and *ta-ke*, respectively

The vernacular Taiwanese terms for husband's father and mother, *ta-koa*^{n} and *ta-ke*, respectively, are unique among Sinitic languages, and they are the most challenging to etymologists searching for their origins. The following is my attempt at their derivation.

L *atta* / Gk *ἄττα* 'father' (to which Tw *á-tia* 阿爹, a nursery term for 'father', corresponds) and the first syllable of L *genitor* / Gk γενέτωρ 'the begetter, father' form a pleonastic compound **atta-gen-*

(*lit.* 'father-father'). After apheresis of *at-*, the compound becomes **ta-gen*. Based on a PSC of *-en* > *-oan* / *-oa*^{n} (data not shown), we obtain Tw *ta-koa*^{n} 'husband's father'.

L *Acca* (name of a Roman goddess) / Gk *Ακκω* (nurse of Demeter) / Skt *akkā*, all with the meaning of 'mother' (*Cf.* Jpn *o-kaasan* おかあさん 'mother'), through a regular sound change of *a* > *e*, yields an intermediate stage **ake*. And in analogy to *ta-koa*^{n}, Taiwanese adds a prefix *t-* to form *ta-ke* 'husband's mother'.

1.47 Wife's father and mother – Tw (*l.*) *gák-hū* 岳父, *gák-bú* 岳母, respectively

Gk γαμβρός 'relative by marriage' is derived from γάμος 'marriage'. In fact γαμβρός connotes 'son-in-law', 'father-in-law' and 'brother-in-law'. Therefore, we have:

Gk γαμβρός 'relative by marriage' > **gam-* > (denasalization) > Tw *gák* 岳

The morpheme *gák* 岳 is then added as a prefix to *hū* 父 'father' or *bú* 母 'mother' to make *gák-hū* 岳父 'father-in-law' and *gák-bú* 岳母 'mother-in-law', respectively.

1.48 Wife's father and mother – Tw (*v.*) *tiū*^{n}*-lâng* 丈人, *tiū*^{n}*-ḿ* 丈姆, respectively

L *dominus* 'the master of a house, household or family' > *dom-* > [PSC: *-om* > *-iu*^{n} (v.)] > *tiū*^{n} 丈, to which is added *lâng* 人 'man, person' so as to indicate 'wife's father'.

L *domina* 'the mistress of a house, household or family' > *dom-* > *tiū*^{n} 丈, to which is added *ḿ* 姆 'wife of father's older brother, aunt' (see **1.44** above) so as to indicate 'wife's mother'.

1.49 Brother's child – Tw *tít* 姪 (*l.*)

Gk αδελφιδους 'nephew' > (aphetic) *δελφιδ- > (elision of medial *-λ-* and *-φ-*) > **did-* > Tw *tít* 姪 (*l.*).

Because Gk αδελφιδη 'niece' also gives rise to the same Tw *tít* 姪, the latter becomes undifferentiated as far as gender is concerned. Therefore, in order to specify 'nephew' or 'niece', a second element *á* (仔) or *lú* 女 is suffixed to make *tít-á* 姪仔 or *tít-lú* 姪女, respectively. Both terms are used mostly in formal occasions. For the vernacular version, see below (**1.50**).

1.50 Brother's child – Tw *sun* (G1W)

In vernacular Taiwanese, the term for 'brother's child' *sun* is the same as for 'grandchild' *sun*. The ambiguity is shared with these terms in the Romance languages, such as It *nipote* 'grandson, granddaughter, nephew, niece' and Rum *nepot* 'grandson, nephew' and *nepoată* 'granddaughter, niece'. The origin of the ambiguity can be traced back to Late Latin. See the discussion on 'shared aberrancy' **SA-4** above.

Tw *sun* is neuter in gender, therefore, like the terms for 'grandson' and 'granddaughter', *cha-po·* 'male' or *cha-bó·* 'female' is prefixed to *sun* to specify 'nephew' or 'niece'. Alternatively, similar to the above, a second element *á* (仔) or *lú* 女 is suffixed to make *sun-á* or *sun-lú*, respectively.

1.51 Sister's child – Tw *seng* 甥

Rom *nepōte* 'nephew/niece' > **nep-* > (homorganic nasalization) > **nem-* > **hsem-* > **sem-* > Tw *seng* 甥

The steps from **nem-* to *seng* 甥 involve two kinds of sound change. First there is a change of *n-* > *h-*, which is followed by sibilization of *h-* > **hs-* > *s-*. The second sound change **sem* > *seng* is due to the fact that Taiwanese phonology does not have the **sem* sound. As European words with an *-em* final entered Proto-Holó, they underwent changes in one of four ways to *-iam*, *-im*, *-ian* or *-eng*. The change from *-em* to *-eng* will be discussed later.

In everyday Taiwanese usage an element, *gōe* 外 'outside', is added to *seng* 甥 to form *gōe-seng* 外甥, indicating that the sister's son is outside of the family. This is because marriage in Taiwan is patrilocal in that the bride leaves the household of her family to join that of the bridegroom's. Therefore, her children are considered outside of her original family. Even so, there is a special bond between the mother's brothers (the maternal uncles) and her children. What is astounding is that this unique custom of the Taiwanese was also observed by the ancient Germanic as reported by Tacitus (see the section on Cultural Similarities **CS-6** above).

As a side note, the element 外 *gōe* (v.) / *gōa* (l.) 'outside, foreign' can be derived from OE *wealh* / *walh* 'foreigner, foreign' by the well-known PSC of *w-* > *g-* (*Cf. warranty* vs. *guarantee*; *war* vs. *guerre*).

Tw *gōe-seng* 外甥 generally means 'nephew (of the maternal family)'. To specify 'niece' *lú* 女 'girl' is added to form *gōe-seng-lú* 外甥女.

1.52 Mother's sister's husband – Tw *î-tiū^{n}* 姨丈

OHG *eidum* 'sister's husband' > **ei-dum* > Tw *î-tiū^{n}* 姨丈 'mother's sister's husband'

The correspondence involves two sound changes: (1) *ei* > *i*; and (2) *-dum* > *tiū^{n}*. For the first change *ei* > *i*, seven examples are given in the table below.

Correspondence between ON *ei* and Tw *i*

European words	**Taiwanese words**
ON *eitt* 'one' (neuter form)	Tw *it* 'one'
ON *feitr* 'fat'	Tw *hûi* (*l.*) / *pûi* (*v.*) 肥 'fat, fatty'
ON *geigr* 'danger'	Tw *gûi* 危 'danger'
ON *teina* 'basket made of twigs'	Tw *tînâ* 藤籃 'basket made of vines'
ON *veikr* 'weak'	Tw *phî* 疲 'weak, tired'
ON *veill* 'ailing, diseased'	Tw *pī^{n}* 病 'ailing, diseased'
ON *veisa* 'pool or pond of stagnant water'	Tw *pi* 埤 'man-made pond'

The *ei* > *i* correspondence is also attested in Old Chinese (OC). Gk ειρήνη (*eiréne*) 'peace', through the PSC of *ei* > *i*, *eirén-* first becomes **irén-* which then transforms to *í-lêng* 以寧 'peace'; this disyllabic word is found in *Sú-kì* 史記 '*Records of the Grand Historian*', Chapter on *In pún-kì* 殷本記 '*Chronicles of the In* (*Shang*) *Dynasty*', paragraph 13: *Peh-sì^{n} í-lêng* 百姓以寧 'all people are at peace'. OC *í-lêng* 以寧 has become obsolete; in its place is a related word *an-lêng* 安寧, also connoting 'peace'. Fig. 47 shows the Greek word ειρήνη inscribed on the grounds of The 228 Peace Memorial Park in Taipei, commemorating the estimated ten-to-twenty thousand victims massacred by Chinese soldiers in the days following the Incident of February 28, 1947. My mother and I, a 6-year-old kindergartener, survived a massacre at the North Gate in Taipei on March 14.

Fig. 47. The Greek word ειρήνη 'peace' inscribed on the grounds of The 228 Peace Memorial Park in Taipei. (Photo by C.H. Wu)

This Greek-Old Chinese match suggests that the *ei-* > *i-* correspondence dates back as far as the times of Su Má-chhian (145/135–90 BCE). Furthermore, there is also a similar match between Greek *ei-* and Latin *i-*. The Bible, Acts 16:14, mentions that Apostle Paul met a woman from Θυατειρα, a town in Lydia. The Latin name of the town is Thyatira, showing that the *ει* in Greek corresponds to *i* in Latin. Therefore, it is safe to say that the correspondence between ON *ei* and Tw *i* not only has a long history but also follows a universal pattern.

Regarding the second sound change, *dum* > *tiū*^{n}, the underlying cause of the change is that Taiwanese phonology lacks the *um* sound, so that when the *-um* final of European words enters Taiwanese, it must be converted to *-un*. For example, ON *húm* 'twilight, dusk' became Tw *hun* 昏 as in *hông-hun* 黃昏 'twilight, dusk' and in *sîn-hun bông-éng* 晨昏曚影 'dim light in the dawn and dusk' as discussed above. In vernacular Taiwanese, *-un* underwent a further change to become *iu*^{n} so that *dum* > *tiū*^{n} 丈.

Because the *tiū*^{n} 丈 of *î-tiū*^{n} 姨丈 can also be derived from L *dominus* 'master of the family, household' (see **1.48**), the *tiū*^{n} 丈 may be viewed as a result of the merger of L. *dom-* and OHG *-dum* (of *eidum*). Consequently, the *tiū*^{n} 丈 became an independent morpheme connoting 'master of the household' so that *î-tiū*^{n} 姨丈 is interpreted as 'the master of mother's sister's household', creating *î* 姨

(with the *tiū*^{n} 丈 detached from *î-tiū*^{n} 姨丈) to simply mean 'mother's sister'. Furthermore, *tiū*^{n} 丈 can be attached to *ko·* 姑 'father's sister' (see **1.42**) to form *ko·-tiū*^{n} 姑丈 meaning 'husband of father's sister'.

1.53 Wife of maternal uncle – Tw *kīm* 妗

As mentioned above, Gk νύμφη originally meant 'bride' but in Hellenistic times it took on the meaning of 'daughter-in-law'. The wife of a maternal uncle is considered to be a daughter-in-law in the maternal family, therefore, Gk νύμφη developed into Tw *kīm* 妗 with an *n-* to *k-* change (**PSC-5**):

Gk νύμφη > **nym-* > **kym* > Tw *kīm* 妗 'wife of mother's brother'

1.54 Wife of father's younger brother – Tw *chím* 嬸

The wife of the father's younger brother is considered to be a daughter-in-law in the paternal family and, usually being younger than others, also the bride of the family. Therefore, Gk νύμφη again applies, but with palatalization of the initial *k-*:

Gk νύμφη > **nym-* > **kym* > Tw *chím* 嬸 'wife of father's younger brother'

1.55 Stepmother, stepfather – (*v.*) Tw *āu-bú* 後母, *āu-chek* 後叔, respectively

The element *āu* 後 in Tw *āu-bú* 後母 'stepmother' and *āu-chek* 後叔 'stepfather' means 'that which comes after, behind, successor'. Tw *āu* 後 comes from *hāu* after muting of *h-*. Tw *hāu* 後 (*v.*), *hō·* 後 (*l.*) and E *hind* (as in *behind*) can be correlated according to a 'Tripartite' relationship of '*in* / *ind* > *au* > *o* /*o·*' (data not shown; the Tripartite relationship is to be presented in the subsequent paper).

Therefore, Tw *āu-bú* 後母 literally means 'successor mother' — the mother who comes after the original mother has passed away. In a patriarchal society such as Taiwan's, a 'stepfather' is called *āu-chek* 後叔 which literally means 'successor younger uncle' as it is inappropriate to call another person other than the original a father.

1.56 Stepfather, stepmother – (*l.*) Tw *kè-hū* 繼父, *kè-bú* 繼母, respectively

In literary or formal Taiwanese 'stepfather' and 'stepmother' are called *kè-hū* 繼父 and *kè-bú* 繼母, respectively. The element *kè* 繼 corresponding to E '*step-*' may be derived from the enclitic *-ster* of L *patrāster* 'stepfather' and *matrāster* 'stepmother'. With the sound correspondence of *st-* to *k-* and the loss of syllabic final *-r* that is reflected in the third tone (*khì-sia*^{n} 去聲) *-er* > *-è*, we obtain *ster* > *kè* 繼.

One may argue that, if *ster* can become *kè*, why not the element E *step* of *stepfather* / *stepmother* instead? After all, the final *r* often results in a stop (such as *-p*) in Tw, so that *step-* may act similar to *-ster*. The reason is based on the fact that E *stepfather* / *stepmother* come from OE *stēopfœder* / *stēopmōder* (cognate with ON *stjúpfaðir* / *stjúpmóðir* and OHG *stiuffater* / *stiufmuotar*). Since E *step* here originally was *stēop* (cognate with ON *stjúp* and OHG *stiuf*), it is difficult to derive *kè* from it. Instead, OE *stēop* gives rise to Tw *siók* 續 through the sound correspondence of *-eop* / *-iup* > *-iok*. *Siók* 續 is used in a term for 'remarriage' (see below).

1.57 Remarriage of a widower – Tw *siók-hiân* 續絃

The first syllable of ON *kvángast* 'take a wife' or *kvángan* 'the taking of a wife', *kván-*, after OR-2, gives rise to **kan*, which through *k* ↔ *h* exchange results in **han* and finally *hiân* 絃, with the sinograph 絃 'string' being borrowed to write the sound. *Siók* 續 (see **1.56** above) and *hiân* 絃 are combined to form *siók-hiân* 續絃, which is used generally to mean 'remarriage by a widower'.

CV-2. LIFE: BIRTH, LIVE/LIFE, WORK, LOVE, MARRIAGE, AND DEATH

2.1 Pregnant – Tw *pē^{n}-kiá^{n}* / *pī^{n}-kiá^{n}* (G1W – some write 病囝) 'pregnant'

L *praegnāns* > later L *pregnāns* 'pregnant' > *pregn-* + *gna-* > Tw *pē^{n}-kiá^{n}* 'pregnant (with) child'.

Pē^{n}-kiá^{n} is a South Taiwan version; the North Taiwan counterpart is *pī^{n}-kiá^{n}*. Strictly speaking, *pē^{n}* (or *pī^{n}*) in this case is a G1W, but because it is homophonous with 病 *pē^{n}* (or *pī^{n}*) 'illness', some use this sinograph to write 病囝 for 'pregnant'.

The *pē^{n}* of *pē^{n}-kiá^{n}* can be derived from L *pregn-* through a now-lost intermediate **peng*, following simplification of the initial cluster *pr-* to *p-* and a regular correspondence between *-gn* and Tw *-ng*, examples of which are shown in the table below. Thus, L *pregn-* > **peng* > *pē^{n}* (or *pī^{n}*).

Examples of correspondence between European *-gn* and Tw *-ng*

European words	**Simplification**	**Taiwanese words**
ON *hegna* 'to punish'	*hegn-*	*hêng* 刑 'to punish'
Gk ἄγνος 'a willow-like tree'	*ágn-*	*iông* 楊 'a willow-like tree' (MSM *yáng*; Jpn *yanagi*)
ON *regn* 'rain'	*regn*	*lêng* 零 (arch.) 'drizzling rain'
L *rēgnum* 'kingly, royal power'	*rēgn-*	*léng* 領 'to lead, leader' (Jpn 大統領 'president')
OE *þegn* 'thane'	*þegn* (*þ-* > *t-*)	*teng* 丁 as in *peng-teng* 兵丁 'soldier'
ON *gegnum* 'through'	*gegn-*	*keng* 經 'through'
ON *í gegnum* 'through'		*í keng* 已經 'through, already'
ON *bolgna* 'to swell, become swollen'	*bolgn-*	*phòng* 膨 'to swell, become swollen'
OE *gnagan* (> E *gnaw*)	*gnag-*	*ngáu* 齩 (arch.) 'gnaw'
ON *megn* 'strong, mighty'	*megn*	*béng* 猛 'strong, mighty'

European words	**Simplification**	**Taiwanese words**
Gk *ἀγνοέω* 'not to perceive *or* not to know'	***agn-***	***iông*** 佯 'pretend not to know' (MSM 佯 *yáng*)
Gk ἁγνός 'full of religious awe'	***hagn****o-*	***hâng-ngó·*** (G1W) 'full of religious awe' (Note 1)
L ***gn****ōscō* 'to begin to know'	***gnō-***	***ngō·*** 悟 as in *tùn-ngō·* 頓悟 'suddenly begin to know'
ON ***tign*** 'honor'; *tignast* 'to be exalted, glorified'	***tign***	***téng*** 頂 as in *téng-téng tōa-miâ* 頂頂大名 'famous'
ON ***tign****a* 'to worship'	***tign-***	***téng*** 頂 as in *téng-lé bô·-pài* 頂禮膜拜 'to worship'
ON ***togn****a* 'to be stretched'	***togn-***	*tiong* 張 as in *khòng-tiong* 擴張 'to expand, be stretched'
ON ***veign*** 'strong beverage, drink'	***veign***	***bêng*** 酩 'alcoholic drink' as in *phín-bêng* 品酩 'wine tasting'

Note 1: *hâng-ngó·* 'full of religious awe' is sometimes written in sinographs as 行伍 which originally means 'military rank and file'. So by extension, it connotes the splendor of the well-disciplined rank-and-file in military parades. Thus, it is used to translate the phrase "even Solomon in all his glory" in Matthew 6:29 (RSV) into Taiwanese as "*tng Só·-lô-bûn kék hâng-ngó· ê sî* 當所羅門極行伍的時" (Bar). The single *-gn-* in Gk ἁγνός (*hagnós*) becomes reduplicated in Tw *hâng-ngó·*, a process similar to gemination in Italian when pronouncing *vado a casa* ['va:do ak'kasa] 'I go home'.

2.2 Pregnant – (*v.*) Tw *ū-sin* 有身

Tw *ū-sin* (*v.*) 有身 (the literary reading is *iú-sin*, but it is never used as such in daily speech) traces its origin all the way back to *Si-Keng* 詩經 'Book of Odes'. In the section of *Tāi-ngá* 大雅 – *Tāi-bêng* 大明 of the Odes, a poem says, "*Tāi-jīn iú-sin, seng chhú Bûn-ông* 大任有身, 生此文王" 'Tāi-jīn (King Bûn's mother) is pregnant and gives birth to King Bûn.' In fact, one of the oracle-bone graphs for 身 shows a woman's body with a baby inside the belly.

The *sin* of *ū-sin* has two possible correspondences with Indo-European counterparts. The first is ON *þunguð* 'pregnant' (*lit.* 'loaded'), the past participle of *þunga* 'load', which is derived from *þungr*

'heavy'. From *þunguð* Tw *sin* 身 can be derived (the [θ] sound of *þ-* usually becomes [t] or [s] in Taiwanese):

ON *þunguð* > * *þun-* > **sun-* > (u/i exchange) > Tw *sin* 身

Considering the great antiquity of Tw *ū-sin* 有身 and that Old Norse was a language of medieval times, this proposed correspondence can be ruled out on chronological grounds. The more likely source of *sin* 身 is PIE **sunk-* whose reflex in Old Lithuanian is *sunkinga* 'pregnant' (which eventually gives rise to Modern Lithuanian *sunkus* 'heavy'). PIE **sunk-* is related to **swenk-* with reflexes in OE *swangor* 'heavy of movement, slow, sluggish' and in OHG *swangar* 'pregnant', as discussed previously. Thus,

PIE **sunk-* 'pregnant' > **sun-* > (*u*/*i* exchange) > Tw *sin* 身 as in *ū-sin* 有身 'pregnant'.

2.3 Pregnant – (*l.*) Tw *hoâi-īn* 懷孕

L *gravida* 'pregnant, with child' > *grav-* > *hoâi* 懷 as in *hoâi-īn* 懷孕 'be pregnant'.

The *īn* 孕 (Fig. 48) in *hoâi-īn* 懷孕 comes from L *inciēns* 'pregnant', which originally applied to animals only. Later in Romance languages it extended to humans as well, so that from Rom *incincta* 'pregnant' Tw *īn* 孕 'pregnant' is obtained:

L *inciēns* 'pregnant' > Rom *incincta* > **in-* > Tw *īn* 孕 'pregnant'.

Thus, Tw *hoâi-īn* is a pleonastic combination of two synonyms, *gravida* and *inciēns*.

Fig. 48. An advertisement in Taipei Rapid Transit shows the sinograph 孕 garnished with a figure of a pregnant woman to make it a modern pictogram. (Photo by C.H. Wu)

2.4 To be born (1) – Tw *sán* 產; *seng* (*l.*) / *si*^{n} (*v.*) 生

L *nāscor* 'to be born' > *nās-* > (transposition) > **sān-* > Tw *sán* 產 'to be born'.

Alternatively, Tw *sán* 產 can also be derived from OHG *swangar* 'pregnant'. See **PSC-4:5.**

Because of the internal correspondence of *-an* > *-eng*, the intermediate **sān-* also gives rise to Tw *seng* 生 'to produce, be born':

L *nāscor* 'to be born' > *nās-* > (transposition) > **sān-* > Tw *sneg* 生

2.4a To be born (2) – Tw *tàn* 誕

L *nātus* 'born', *nātiō* 'a being born, birth' > *nāt-* > (transposition) > **tān-* > Tw *tàn* 誕 'born, birth'

Tw *tàn* 誕 combines with *seng* 生 (**2.4** above) to form a pleonastic compound *tàn-seng* 誕生 'birth, to be born'.

2.5 Birthing, labor – Tw *hun-bián* 分娩

Tw *hun-bián* 分娩 'birthing, labor' can be derived from ON *burðr* and OHG *swangar*, respectively. See **PSC-4.5** above.

2.5 Infant – Tw *i*^{n} (*v.*) / *eng* (*l.*) 嬰

L *infans* 'infant' > **in-* > Tw *i*^{n} (*v.*) / *eng* (*l.*) 嬰 'infant', from which the literary form *eng* is usually combined with Tw *hâi* 孩 (< Gk παῖς 'child'; see **1.23**) to form *eng-hâi* 嬰孩 'infant'.

In addition, the vernacular form *i*^{n} is usually combined with Tw *âng* 紅 (*v.*) 'red/redness' to form another word for 'baby', *âng-i*^{n} 紅嬰. There are two reasons for calling a baby *âng-i*^{n} 紅嬰 'a red infant'. Because a baby has a thin dermal layer so that the blood circulation in the underlying capillary bed easily shows through the layer, the baby's skin usually appears red. The second reason may be an adoption of ON *barn* 'bairn, child', with loss of the initial *b-* (likely through *b-* > *h-* and subsequent muting of the *h-*), so that **arn* becomes *âng*, and *âng-i*^{n} is a pleonastic compound of two synonyms.

2.6 Baby – Tw *sió* (*v.*) / *siáu* (*l.*) 小

ON *jóð* 'baby' > **jó-* > Tw *sió* (*v.*) / *siáu* (*l.*) 小, which is used in *sió-kiá*^{n} 小子 'little child', *siáu-jî* 小兒 'little child', *chhe-siáu* 妻小 'wife and child/children' and *sió-jî-kho* / *siáu-jî-kho* 小兒科 'pediatrics'.

Of special interest is the term *siáu-khián* 小犬 (*lit.* 'puppy'), which is used as a polite term to mean 'one's own son' in conversation with someone. *Khián* 犬 means 'dog' and is derived from L *canis* 'dog': *canis* (> E *canine*) > **can-* > *khián* 犬 'dog'. This Taiwanese usage mirrors some interesting parallels in Romance languages derived from L *canis* 'dog', which used to mean 'child, boy'. For example, the Erto dialect of Venice has *kanai* 'boy', the Val Anzasca dialect of Lombard has *kanayun* for 'boy', and Catalonian has *kanaya* for 'children' (D4-6, p. 149).

The derivation of ON *jóð* > **jó-* > Tw *sió* 小 is based on a PSC between ON initial *j-* and Tw *s-*. The following table lists examples of the correspondence. Interestingly, the ON *j-* initial also corresponds to MSM *hs-* (Wade-Giles)/*x-* (*pinyin*), therefore, some MSM examples are also included, but here the Wade-Giles *hs-* spelling system is used because the *pinyin x-* is too opaque to bring out the sound correspondence.

Correspondence between ON *j-* initial and Tw *s-* /MSM *hs-* initials

ON words	**Taiwanese words**	**MSM words (Wade-Giles)**
jóð 'baby'	*sió/siáu* 小 in compds. See **2.6**.	*hsiǎu* 小 in compds. such as *hsiǎu'er* 小兒 'baby'
jafn 'equal, the same'	*siâng*/*siāng* 相 id.	*hsiang* 相 as used in: *hsiang-thóng* 相同 'the same'
sam-jafn 'equal to'	*sa*^{n}*-siâng* 相像 'similar, the same'	*hsiang-hsiàng* 相像 id.
jafnan 'constantly'	*siâng-siâng* 常常 'constantly'	
jarl 'noble man, earl'	*siàng/siòng* 相 'minister to king'	*hsiàng* 相 id. (*chǎi-hsiàng* 宰相 'premier')
fjarg 'heathen god' (> **jarg*)	*siâ* 邪 'heathen'	*hsié* 邪 'heathen'
jarna 'to mount a jewel with iron'	*siong* 鑲 'to mount with metal'	*hsiang* 鑲 id.
jöstr 'yeast' (> **jö-*)		*hsiàu* 酵 as in *hsiàumǔ* 酵母 'yeast' [by PSC: *o* ↔ *au*]
björn 'the bear' (> **jörn*)		*hsiúng* 熊 'the bear'

2.7 Child – Tw *jî* 兒

The Taiwanese word for 'child' is *jî* 兒, however, the older form for 兒 is most likely **nî*. This is based on the theory of Zhang Taiyan 章太炎 (1869–1936) that the initials *l-* of 娘 (Tw *l̲iông*) and *j-* of 日 (Tw *j̲it*) in Middle Chinese came from the initial *n-* of 泥 (Tw *n̲î*) of Old Chinese (see **4.2** below), and also on the MSM pronunciation of allied morphosyllables 倪 *ní*, 霓 *ní*, and 輗 *ní*, all of which have the same phonophore 兒. Thus, Tw *jî* 兒 can be derived from **nî*, first through denasalization to **lî* and then palatalization to *jî*. The reconstructed **nî* 兒 then corresponds to OE *cniht* 'boy' with loss of the final *-t*:

OE *cniht* 'boy' > **niht* > **nî* > (denasal.) > **lî* > (palatal.) > Tw *jî* 兒 'child'.

2.7a Child – Tw *tông* 童

Gk τέκνον 'child' > *tékn-* > **têng* > Tw *tông* 童 'child'

There is a regular correspondence between Tw *-eng* and *-ong*, such as between the vernacular and literary readings of singraphs, 宮 *keng* (*v.*) vs. *kiong* (*l.*), 鐘 *cheng* (*v.*) / *chiong* (*l.*), 龍 *lêng* (*v.*) / *liông* (*l.*), and 重 *têng* (*v.*) / *tiông* (*l.*). Thus, it is possible that Gk τέκνον (> *tékn-*) may have gone through an intermediate stage of **têng* (*v.*) which in turn became Tw *tông* (*l.*), and then **têng* was lost so that only *tông* 童 remains.

The morphosyllable *tông* 童 combines with others to form compounds such as *jî-tông* 兒童 'child', *hâi-tông* 孩童 'child', *iù-tông* 幼童 'young child', *tông-chú* 童子 'boy', *tông-iâu* 童謠 'nursery rhyme', and *tông-lú* 童女 'girl, maiden'.

2.8 Live – (*v.*) Tw *oáh* 活

OE *feorh* 'life' > **huorh* > **huoh* (> MSM *huó* 活 'to live') > **hoah* > (muting of *h-*) > (*v.*) Tw *oáh* 活 'to live'.

2.9 Play – Tw *iû-hì* 遊戲

Tw *iû-hì* 遊戲 is a pleonastic compound of *iû* 遊 and *hì* 戲, both meaning 'play'. Tw *iû* 遊 may be derived from Rom **iocāre* 'to play': **iocāre* > **io-* > Tw *iû* 遊. Rom **iocāre* gave rise to It *giocare*, Fr *jouer*, Sp *jugar*, and Rum *juca* 'to play'.

The second element Tw *hì* 戲 corresponds to G *Spiel* (sb.) 'play' and *spielen* (vb.) 'to play' which find usage in G *Spielwaren* (*lit.* 'play-wares', Fig. 49) 'toys' and *Schauspiel* 'drama, play'. G *Spiel* comes from OHG *spil*. We have seen that European *sp-* corresponds to Tw *h-* (**PSC-1(SN-1):** G *<u>sp</u>enden* > Tw *<u>h</u>iàn* 獻), thus, OHG *spil* > **hil* > Tw *hì* 戲 'to play'; the loss of the final *-l* is reflected in the third tone, *hì*. Like G *Spiel* / *spielen*, Tw *hì* 戲 is used in *iû- hì* 遊戲 'to play' and *hì-kek* 戲劇 'drama, play'.

Fig. 49. A mother and child admiring *Spielwaren* at a toy store in Frankfurt, Germany. Tw *hì* 戲 'to play' corresponds to G *spiel-* 'to play'. (Photo by C.H. Wu)

2.10 Labor, toil, work (1) – (*v.*) Tw *tio̍h-bôa* (G1W – [著磨])

Life is not all play; it certainly also involves labor and toil. The Taiwanese word for 'labor and toil', *tio̍h-bôa*, is not found in MSM or Classical Chinese. As a G1W word, it has no sinographs to write it. In the old days, 服勞 (*hók-lô*) was borrowed for the meaning but not the sound (similar to the Japanese way of *kun'yomi* 訓讀), whereas at present 著磨 (*tio̍h-bôa*) is used for transliterating the sound, such as in translating the verse in Psalm 128:2, "You shall eat the fruit of the labor of your hands" (RSV) into Taiwanese as "*Lí beh chia̍h lí ê chhiú tio̍h-bôa só͘ tit-tio̍h--ê* 你欲食你的手著磨所得著的" (Bar). The derivation of *tio̍h-bôa* is as follows:

OE *deorfan* 'to labor, toil' > *deorf-* > (d- > t-) > Tw *tio̍h* (in *tio̍h-bôa*)

Gk μῶλος 'to toil' > **mol-* > **môa* > (denasal.) > Tw *bôa* (in *tio̍h-bôa*)

The derivation of μῶλος > **mol-* > *bôa* follows a PSC of *-ol* / *-or* > *-oa* (data to be shown in Part II of this series).

Thus, Tw *tio̍h-bôa* is a pleonastic compound of two synonyms separately from Germanic and Greek sources.

Fig. 50. An outdoor display of a buffalo model and a plough for farming in old Taiwan. (Photo by C.H. Wu)

Fig. 50 shows a model of a water buffalo and a plough for tilling rice paddies in an outdoor display of old ways of life in Taiwan. Written on the left-hand column is a Taiwanese saying *Chò gû tio̍h thoa, chò lâng tio̍h bôa* 做牛著拖, 做人著磨 'A buffalo must drag (the plough) and a man must toil'. The first 著 *tio̍h* means 'must' and is related to It *dovere* 'must' (It *dovere* > **dov-* > Tw *tio̍h* 'must'). The second 著 *tio̍h* is part of the pleonastic *tio̍h-bôa* 著磨 'toil' but at the same time echoes the first 著 *tio̍h* 'must'. This old saying is a gem: it is pithy, it rhymes, and it embeds a double-entendre. Such is the wisdom of folksy sayings.

2.10a Labor, toil, work (2) - (*l.*) Tw *chò-kang* 做工 (作工)

Taiwanese *chò-kang* 做工 (作工) is a pleonastic compound whose components have correspondents in Old Norse and Greek.

The first element *chò* 做 (作) corresponds to an Old Norse word that has many spelling forms:

göra (D3-4, p. 223), *gøra* (D3-21, p. 177), *gera* (D3-5, p. 163), among others. This word has many meanings, but the prominent ones are 'make' and 'do'. Its Taiwanese correspondent *chò* also has these dual meanings and is written in two graphs 做 'to do, make' and 作 'to make, do'. What is interesting is that the semantic differentiation between 'make' and 'do' is very slight, a notable carry-over from the Norse.

The second element *kang* 工 corresponds to Gk ἔργον 'work' and its associated verb ἐργάζομαι 'to work, labor'. Gk ἔργον 'work' is the etymon for E *ergonomics*. The correspondence involves apheresis, devoicing of *g-* and the *a* ↔ *o* exchange: ἔργον > **gon* > Tw *kang* 工 'to work, labor'.

2.11 Labor, toil, work (3) – Tw *piàⁿ* (G1W – [拼])

Gk πένομαι 'to toil, labor, work' > **pén-* > **pian* > Tw *piàⁿ* (G1W – [拼])

Besides (1) 'labor and toil', vernacular Tw *piàⁿ* has two other homophones having the meanings of (2) 'to clean up, tidy up' (*e.g., piàⁿ pâng-keng* 拼房間 'to clean up the room') and (3) 'to compete' (*e.g., piàⁿ-kè* 拼價 'to compete in prices'). Nowadays, all three words (lexemes) are written with the same sinograph 拼.

Usage of *piàⁿ* 'to labor, toil, work' includes *piàⁿ-thàn-chîⁿ* 拼賺錢 'work to earn money', *piàⁿ-thâu-lō·* 拼頭路 'work for a job', and *ài-piàⁿ chiah ōe-iâⁿ* 愛拼才會贏 'must work (hard) in order to win' (a verse in a popular song).

Alternatively, ON *vinna* 'to work, labor, do work' > (stem) *vinn-* > Tw *piàⁿ*. For the sound correspondence between ON *i* and Tw *ia*, see **2.13** (below).

2.12 Rest – vernacular Tw *hioh-khùn* (歇睏)

Based on the **PSC-2(SN-4)** of *r-* > *h-* as shown before (see **PSC-2.6**), Tw *hioh* (歇) 'rest' is very close to ON *ró* (subs.) 'rest, calm, tranquility', except that the Tw *-h* final suggests that its etymon must have a stop (*-p*/*-t*/*-k*/*-h*) or an *-r* final, which is absent in *ró* but is present in the adjective, *rór* (m) and *rótt* (n). Although the masculine *rór* fits the prediction, it is the neuter form *rótt* that is more likely to be the source because Taiwanese usually matches Old Norse adjectives in the neuter form. Another example of Taiwanese adopting the neuter form is the cardinal number 'one' [ON *einn* (m), *ein* (f), *eitt* (n)]: ON *eitt* (n) 'one' > Tw *it* 一 'one' (see table in **CV-1.52** above). This is similar to English, which borrowed

words from Old Norse, and of the loaned adjectives English picked only the neuter forms. For example, E *want* 'lacking, wanting' was borrowed from ON **want*, *vant*, the neuter forms of *vanr* (m) 'lacking, missing'; and E *scant* 'stinted in measure, limited in extent or amount' was from ON *skamt*, the neuter form of *skammr* (m) 'short, brief'.

The second element of *khùn* 睏 of *hioh-khùn* may be derived from ON *blunda* 'to shut the eyes' or the substantive *blundr* 'dozing, slumber' with the PSC of *bl-* > *k-*/*kh-*/*h-*:

ON *blunda* 'to shut the eyes' > (*bl-* > *kh-*) > Tw *khùn* 睏 'to sleep'

Thus, the pleonastic compound *hioh-khùn* 歇睏 means 'resting and sleeping'.

2.13 Betrothal (1) – literary Tw *bûn-tēng* 文定

Tw *bûn-tēng* 文定 is a polite term for 'betrothal'. Its origin may trace back to the Germanic practice of the bridegroom paying a sum for his bride. The ON *mundr* means 'a sum which the bridegroom had to pay for his bride and which after the wedding became her own property'. In common parlance the definite article was usually added. In Old Norse, if there is no adjective modifying *mundr*, the definite article *inn* (to go with the masculine noun *mundr*) is suffixed to the noun as an enclitic, so now the sum of such a payment is called *mundrinn*. (A related OE word *weddian* means 'make a woman one's wife by giving a pledge of earnest money'. This word has given rise to E *wed* to mean 'marry' in a general sense.) After the word *mundrinn* came to Asia, it has turned into *bûn-tēng* 文定 'betrothal' (Fig. 51) and often appears as *bûn-tēng-chi-hí* 文定之喜 'The happiness of betrothal'.

Fig. 51. A restaurant sign for the banquet for the Chang-Cheng Engagement.

The conversion from *mundrinn* to *bûn-tēng* involves three changes: (1) denasalization of *m-* to *b-*; (2) simplification of the cluster *dr-* to *t-*; and (3) changing the final from *-inn* to *-eng*. The first two changes are quite common across languages. The third change is typical of Taiwanese, making *-in*, *-inn*, *-inr*, *-ind* or *-indr* into *-eng*. Examples are shown in the following table.

Correspondence between European *-in*(*n/r/d/dr*) and Tw *-eng*

European words	**Simpl.**	**Tw**	**Usage**
ON *vin* 'meadow'	*vin*	*phêng* 坪 'meadow'	*chháu-phêng* 草坪 'grass meadow'
ON *minna* 'to remember'	*minn-*	*bêng* 銘 'to remember'	*bêng-kì* 銘記 'to remember'
ON *finna* 'to find, discover, invent'	*finn-*	*bêng* 明 (see usage)	*hoat-bêng* 發明 'to invent'

European words	**Simpl.**	**Tw**	**Usage**
ON *vinr* (= *vin*) 'friend'	*vin-*	*pêng* 朋 'friend'	*pêng-iú* 朋友 'friend'
ON *tindr* 'mountain peak'	*tindr*	*téng* 頂 'peak, top'	*soa^{n}-téng* 山頂 'mountain-peak'
ON *vinna* 'to win'	*vinn-*	*êng* 贏 'to win, obtain'	*êng-tek* 贏得 'to win, obtain'
ON *tvinna* 'to double'	**tinn-*	*têng* 重 'double, repeat'	*siang-têng* 雙重 'double'
ON *grind* 'lattice- work door or gate'	*grind*	*keng* 荊 (see usage)	*keng-hui* 荊扉¶ 'lattice-work door'
OE *grindan* 'to grind'	*grind-*	*géng* 研 'to grind'	*géng bí* 研米¶ 'to grind rice'

¶ Special notes:

(1) Item 8: ON *grind* 'lattice-work door or gate' > Tw *keng* 荊 as used in *keng-hui* 荊扉 'lattice-work door'. Its usage can be seen in the poem 渭川田家 "*Ūi-chhoan Tiân Ka*" by Ông Î 王維 of the Tang Dynasty, "野老念牧童, 倚仗候荊扉 *Iá ló liām bók-tông, í tiōng hō· keng-hui*" 'An old country man was thinking of his shepherd boy, he leaned on his staff, waiting at the lattice-work door.'

(2) Item 9: OE *grindan* (> E *grind*) is a word unique to English as there are no Germanic cognates (D3-13, p. 414). We can call it a "signature word" of English. That there is a word in Taiwanese that can be derived from a signature word of English through a PSC is amazing by itself, because it shows the correspondence is *regular*.

2.14 Betrothal (2) – vernacular Tw *sàng-tiā^{n}* 送訂

L *spondēre* 'promise' (> L *sponsus*, *-a* 'betrothed') > **spond-* > Tw *sòng* (*l.*) 送 > Tw *sàng* (*v.*) 送 as in *sàng-tiā^{n}* 送訂 (or 送定) 'betrothal', with *tiā^{n}* 訂 deriving from the *tēng* 定 of *bûn-tēng* 文定 (**2.13**). There is an internal interchange between Taiwanese (*l.*) *-eng* and (*v.*) *-ia^{n}*.

2.15 Marriage (1) – Tw *kiat-hun* 結婚

ON *giptung* means 'woman's marriage' while *giptamāl* means 'marriage, of either party'. From these two words, we see that *gipt-* is the likely etymon for the first element of Tw *kiat-hun* 'marriage'. It

involves (1) devoicing of *g-* to *k-*; (2) simplification of the final *-pt* to *-t*; and (3) diphthongization of *i* to *ia* (Amoy spelling, but it is pronounced *ie* in Taiwan). The first two changes are a fairly universal phenomena, whereas the last one is common in Taiwanese. Examples of the sound change of *i* to *ia* are:

(1) *sím-míh* = *siám-míh* 甚麼 'what?'

(2) Buddhist term *nirvana* > **nirv-van-* > Tw *liap-poân* 涅槃

(3) ON *lím* 'mortar, lime, glue' > Tw *liâm* 黏 'glue'

(4) ON *tími*, OE *tima* 'time' > **tim-* > Tw *tiám* 點 'hour', *e.g.*, *káu-tiám* 九點 'nine hour (= o'clock)'

(5) OHG *kind* 'child' > **kin-* > Tw *kiá*^{n} 囝 'child'

The second element *hun* 婚 of Tw *kiat-hun* 結婚 may be derived from L *nūbere*, originally 'to be married to' but later expanded to include both parties, 'to marry'. It involves the Latin initial *n-* changing to Tw *h-* and the *-b* final of *nūb-* to *-n*. The following table lists a few examples of *nub-* / *numb-* / *num-* to Tw *hun*:

Correspondence between European *nub-/numb-/num-* to Taiwanese *hun*

European words	**Simplif.**	**Taiwanese**	**Usages**
L *nūbere* 'to marry'	*nūb-*	*hun* 婚	
L *nūbēs* 'cloud'	*nūb-*	*hûn* 雲 'cloud'	
OE *numen* 'taken' > *numb* 'loss of sensation'	*num-*	*hūn* 昏 'faint, loss of consciousness'	*hūn-tó* 昏倒, id.
L *nummus* 'a coin, money'	*num-*	*hun* 分 'a coin of small denomination'	*hun-bûn* 分文, id.
L *numerus* 'a number'	*num-*	*hun* 分 'a number'	*hun-sò·*分數, id.

Strictly speaking, European *ub-* / *umb-* / *um-* should have become **-um* in Taiwanese. However, because Taiwanese lacks the *um* sound, this is substituted with the *un* sound (or, there may have been

a merger of *um* with *un* in the past). Thus, ON *húm* 'twilight, dusk' became Tw *hun* 昏 'twilight, dusk'; the latter is more commonly expressed as *hông-hun* 黃昏 nowadays.

Thus, we can see that Tw *kiat-hun* 結婚 is composed of two elements derived from ON *giptung* and L *nūbere*, both connote 'marriage'.

2.16 Marriage (2) – Tw *hun-in* 婚姻

The second element *in* 姻 of Tw *hun-in* 婚姻 'marriage' may be derived from L *innūbō* 'to marry into, connect oneself with by marriage'. Incidentally, for the latter definition, we have *in-chhin* 姻親 that means 'a kin (*chhin* 親) by marriage'.

L *innūbō* > (OR-1) > **in-* > Tw *in* 姻 'marry into, related by marriage'.

The element *in* 姻 'marry into' is then combined with *hun* 婚 'marry' to form a pleonastic compound (of two synonyms deriving from L *nūbō* - *innūbō*) *hun-in* 婚姻 'marriage'.

2.17 Taking a wife – Tw *chhōa-bó·* (G1W)

We have seen that Tw *bó·* means 'wife' and can be derived from L *mulier* (> It *moglie*). The first element *chhōa* of *chhōa-bó·* can be correlated with Go. *trauan*, G *trauen*, and Du *trouwen* 'marry', ultimately derived from the word for 'trust'. Therefore, Tw *chhōa-bó·* means 'marrying a wife'.

2.18 Taking a husband – Tw *kè* 嫁

ON *gipta* means 'to give a woman in marriage', and the reflexive verb derived from it, *giptask*, means 'to take a husband'. Tw *kè* 嫁 corresponds to *gipt-* of both *gipta* and *giptask* since it is used when a parent gives his/her daughter in marriage as well as when a woman marries a man. The correspondence involves three changes: (1) devoicing of *g-* to *k-*; (2) changing *i* to *e,* which is fairly common throughout languages, *Cf.* French *restaurant* vs. It *ristaurante*; (3) loss of the final stop cluster *-pt*, which leaves a mark as a third tone in *kè* 嫁. Thus,

ON *gipta* / *giptask* > *gipt-* > Tw *kè* 嫁.

What is interesting about the Tw *kè* 嫁 is that, if the derivation above is proven right, it may provide some hint about when at least some of the Old Norse lexicon may have wandered to Asia. The reasoning is as follows. Modern Danish *gifte sig* and Swedish *gifta sig* both are derived from ON *giptask* and mean 'to marry' [or more correctly 'to get married (reflexive)'], but they make no distinction between 'take a wife' and 'take a husband'. In contrast, Tw *kè* 嫁 stays true to the original Old Norse meaning of the woman 'given in marriage'. It means that, some time after ON *gipta* / *giptask* had spread to Asia, an innovation occurred in Scandinavia to apply the word to either party. When the chronology of the innovation is revealed in the future, it will give the latest limit of time for the spread of Old Norse words to Asia. Although OE *giftian* (a cognate of ON *gipta*) in passive voice means 'be given in marriage' of the woman, but the English lineage was broken by the Norman Conquest of 1066 so that modern English is left with no heir to *giftian*. Thus, the English line cannot be of any help in this regard.

2.19 Love (1) – Tw *ài* 愛

ON *ást* (sg.) means 'love, affection', and *ástir* (pl.) 'love between man and woman, especially between man and wife'. Its correspondent in Taiwanese is *ài* 愛 'love'.

Many Old Norse words containing *a* (long or short), especially *a* followed by a consonant (*aC*), corresponds to *ai* in Taiwanese. This *a* ↔ *ai* correspondence will be discussed in Part II of this series as it bears on the relative chronology of migration of Germanic lexicon to Asia.

2.20 Love (2) – Tw *un* 恩

ON *unna* 'to love' / *unnast* (recipr.) 'to love one another' > **unn*- > Tw *un* 恩 'love'.

In Taiwanese usage *un* 恩 usually forms a pleonastic compound with *ài* 愛 to give *un-ài* 恩愛 'love'. A good phrase to use to bless the newlyweds on the occasion of their wedding is *Un-ài chi̍t-sì-lâng* 恩愛一世人 'In love for the whole life'. Similarly in Old Norse, the two synonyms *unna* and *ást* also went together pleonastically to form ON *unnasti* (m.) 'lover' and *unnasta* (f.) 'sweetheart, mistress'.

2.21 Love (3) – Tw *ài-bō·* 愛慕

L *amor* 'love' / *amō* (< *amāre*) 'to love' > Tw *ài-bō·* 愛慕 'love / to love'

From Latin to Taiwanese, the L *-m-* underwent denasalization to *-b-*. The change of the initial L *a-* to Tw *ài-* may have been influenced by the ON-to-Tw sound change (**2.19**).

2.22 Love (4) – Tw *loān-ài* 戀愛

OE *lufian* 'to love' > (elision of medial *-f-*) > **luian* > Tw *loān* 戀 (MSM *liàn*)

It is well known that Old Chinese lacked the [f] sound, a fact that was discovered by 錢大昕 Qián Dàsīn in the mid-eighteenth century, and his theory has been known as 古無輕唇音 (in early times there were no labiodental sounds). With the assumption that OE *lufian* was loaned into Proto-Holó, the medial *f* was elided when it was adopted, resulting in an intermediate stage **luian*. In the Holó branch of Sinitic, the (presumed glide) *i* was lost, ending up as Tw *loān* 戀 (Amoy spelling; pronounced *luān* in Taiwan). In the Mandarin branch, it was the *u* that was deleted instead, leading to MSM *liàn* 戀. We can call this phenomenon "alternative splicing."

Tw *loān* 戀 often goes with a synonym of Old Norse origin, *ài* 愛 'love' (**2.19**), to form the compound *loān-ài* 戀愛 'to fall/be in love'.

2.23 Prostitution – Tw *hoa-liú* 花柳

ON *hóra* as a verb means 'to commit adultery' (stem: *hór-*) and as a substantive (f.) 'whore, harlot'. Therefore, the verb *hóra* also means 'to take a prostitute', and through a PSC of *-or* / *-ol* > *-oa*, the corresponding Taiwanese word is *hoa* 'to take a prostitute'.

L *lustror* means 'to frequent brothels', which is derived from *lustri* (*pl.* of *lustrum*) 'brothels'. The first syllable of *lustror*, with infix of the glide *i*, gives rise to Tw *liú* 'to frequent brothels'.

Both Tw *hoa* and Tw *liú*, as they stand alone, have no directly related sinographs with which they are written, but the literati euphemistically borrowed 花 (*hoa*) 'flower' and 柳 (*liú*) 'willow', respectively, to write them. Thus, 花街柳巷 *hoa-ke-liú-hāng* (*lit.* flower streets, willow alleys) connotes 'the red-light district', and 尋花問柳 *sûn-hoa-būn-liú* (*lit.* searching for flowers, inquiring about willows) means 'to frequent brothels'.

During Japan's Meiji Era when Western literature and science were translated *en masse* into

Japanese, *hoa* 花 and *liú* 柳 were used to translate the venereal (sexually transmitted) diseases, *karyūbyō* 花柳病, which was adopted in Taiwan during the Japanese Era as Tw *hoa-liú-pī^{n}* (*-pē^{n}*). This term has now been supplanted by a more direct term Tw *sèng-pī^{n}* (*-pē^{n}*) 性病 (Jpn *seibyō*) 'sexual disease'.

2.24 Love (5) – Tw *sioh* 惜

Gk στοργή 'love, affection, of parents and children' and the verb στέργω 'to love, of the mutual love of parents and children' form a pair with the vowels being mutually transposed and the medial short vowels changing to long in the final position, ο > ω, έ > ή. Both words find corresponding words in Taiwanese.

> Gk στοργή > **storg-* > (*-g* > *-h*) > **storh* > **siorh* > Tw *sioh* 惜 'love from parents to children'.

A very popular Taiwanese lullaby begins with these two stanzas, with the first stanza rhyming in *-un* and the second *-ioh*:

> *I^{n}-á, i^{n}-- i^{n} khùn, chít-mî tōa chít-chhùn*; 嬰啊, 嬰- -嬰 睏, 一暝大一寸
> *I^{n}-á, i^{n}-- i^{n} sioh, chít-mî tōa chít-chhioh* 嬰啊, 嬰- -嬰 惜, 一暝大一尺
>
> Baby-a, baby-baby sleep, grow an inch each night;
> Baby-a, baby-baby loved, grow a foot each night.

Modern research has shown that the release of growth hormone from the pituitary gland reaches its peak in the middle of night, as the release is governed by the circadian rhythm inherent in the physiology of our bodies. Although the hymn takes poetic license concerning natural growth, it seems to bear at least a grain of scientific truth in the nightly peak release of the growth hormone.

2.25 Love (6) – Tw *thióng* 寵

Gk στοργή > **storg-* > **torg* > Tw *thióng* 寵 'to love and show affection' with the sound change of *-org* / *-orc* > *-ong* as shown in the table below.

PSC of *-org* / *-orc* > *-ong*

European words	**Simpl.**	**Taiwanese words**	**Usage**
Gk στοργή 'love betw. parent and children'	****torg***-	***thióng*** 寵	*thióng-ài* 寵愛 'love and affection'
ON *torg* 'market'	***torg***	***tiông*** (*l.*) / *tiû*^{n} (*v.*) 場	*chhī-tiû*^{n} 市場 'market'
ON *sorg* 'sorrow' OHG *sorga* id. OE *sorh* id.	***sorg***	***siong*** 傷 'sorrow'	*iu-siong* 憂傷 'sorrow' *siong-sim* 傷心 'sadness' *pi-siong* 悲傷 'sorrow' *ai-siong* 哀傷 'sorrow'
ON *borg* 'a small dome-shaped hill' OE *beorg* 'a hill'	***borg***	***kong*** 岡 'a hill' (with *b-* > *k-*)	*soa*^{n}*-kong* 山岡 'a hill' *kong-lêng* 岡陵 'a hill'
OE *beorg* 'a burial mound'	****borg***	***bōng*** (*v.*) 墓 'grave'	*hûn-bōng* 墳墓 'grave' *bōng-tē* 墓地 'grave-site'
OE *forgietan* 'forget'	****forg***-	***bông*** 忘 'forget' (with *f-* > *b-*)	*bông-sîn* 忘神 'absent-minded'
Gk Γοργών 'Gorgon' (> L *Gorgōn-*) from Greek mythology	****gorg***-	***gông*** (G1W) 'stunned, astonished'	*gông-khì* 'dumbfounded' *gông-ngiáh* 'stunned, astonished'

European words	**Simpl.**	**Taiwanese words**	**Usage**
Rom **torca* 'torch' > OFr *torche* > E *torch*	***torc-***	***tông*** 烽 'flame' (def. in 玉篇 *Giok Phian*)	*tông* 烽 (*arch.*) has been replaced by *hóe-pá* 火把
ON *mjörkvi* 'dense fog'	***mörk-***	***bông*** 茫 'foggy' (denasal. *m-* > *b-*)	*bū bông-bông* 霧茫茫 'dense fog'
ON *hörgr* 'heathen shrine, temple'	***hörg-***	***kiong*** 宮 'temple, palace' (PSC: *h-* > *k-*)	*Chí-lâm-kiong* 指南宮 *Tang-liông-kiong* 東隆宮

¶ Note on Item 7: Gk Γοργών (originally Γοργώ) is the Grim One in Greek mythology known as Medusa. Her snaky head was fixed on the aegis of Athena, and all who looked on it became stone instantly. It is likely that it was this effect of 'suddenly turning into stone' that was picked up by Proto-Holó from Gk Γοργών (>**gorg-*) as *gông* (G1W) 'be stunned, astonished'. An example can be found in Luke 8:56, which describes that, after Jesus saved the life of Jairus' daughter, "Her parents were astonished." It is translated into Taiwanese as, "*I ê pē-bú gông-ngiáh* 伊的父母卬愕." (Parenthetically, *ngiáh* is a derivative of *gông*; some people pronounce *gông-ngiáh* as denasalized *gông-giáh*.) A variant form of *gông* is *gāng* so that *gōng-khì* 'be dumbfounded' is pronounced *gāng-khì*.

Tw *thióng* 寵 is used mostly in literature. For example, the Tang poet 白居易 Pe̍k Ku-ī^{n} has in his long poem 長恨歌 *Tiông Hūn Ko* this verse, 三千寵愛在一身 *Sam chhian thióng-ài chāi it sin*, 'Of the three thousand consorts, (royal) love and affection falls on one person'.

2.26 Love (7) – Tw *thià*^{n} 疼

Gk στέργω > *sterg-* > **terg-* > **theng* (> MSM *téng* 疼 'love') > Tw *thià*^{n} 疼

In **2.25** above, we see *torg* > *thióng* (the glide *i* is an infix); therefore, by analogy, we expect that from **terg* we should obtain **theng* (or **teng*). This is indeed the case with Tw *théng* (G1W) 'spoil, indulge'. A dependent morpheme, it is only used together with *sēng* (**2.27** below) to form a compound *théng-sēng* (G1W) 'to spoil, indulge'. In everyday speech, its derivative, *thià*^{n} 疼, is used, which means 'to love dearly' without the connotation of 'spoil, indulge'.

The following table shows some examples of the correspondence between European *-erg* and Taiwanese *-eng*.

Correspondence between European *-erg* / *-erk* and Taiwanese *-eng*

European words	**Simpl.**	**Taiwanese words**	**Usage**
Gk στέργω 'love'	**terg-*	*théng* (G1W) 'spoil'	*théng-sēng* (G1W) 'spoil'
Gk στέργω 'love'	**serg-*	*sēng* (G1W) 'spoil'	*théng-sēng* (G1W) 'spoil'
L *tergeō*, *tergō* 'to clean, cleanse'	*terg-*	*têng* 澄 'clear' *chheng* 清 'cleanse'	*têng-chheng* 澄清 'clear'
ON *sterkr* 'strong, stark'	**terk-*	*tēng* (G1W, [硬]) 'strong, hard'	*tēng-khak* [硬] 殼 'hard shell'
L *percoquō* 'to heat thoroughly'	**perc-*	*pheng* 烹 'to boil, cook'	*pheng-jīn* 烹飪 'cooking'
L *percusō* 'to rove about'	**perc-*	*phèng* 騁 'to gallop a horse'	*phèng-tî* 騁馳 'to gallop, run'
Gk περκνός 'name of an eagle' (*Iliad*)	**perk-*	*phêng* 鵬 'a giant bird'	*tāi-phêng-chiáu* 大鵬鳥 'a legendary giant bird' (from 莊子 *Chong-chú*) *lêng-liōng* 能量 'amount of energy'
Gk ἐνέργεια 'energy' (> aphet. > *νέργεια)	νέργ-	*lêng* 能 'energy, capability' (denasalization: *n-* > *l-*)	

2.27 Spoil a child – Tw *sēng* (G1W)

From Gk στέργω 'to love (of the mutual love of parents and children)' can be derived Tw *sēng* (G1W) with the meaning of 'to spoil a child, to indulge one's inferior too much'. The derivation is as follows:

Gk στέργω > *sterg-* > **serg-* > Tw *sēng*.

There is a well-known saying in Taiwanese (borrowing 竉 to write *sēng*):

Sēng ti giâ chàu, sēng kiáⁿ put-hàu [竉] 豬舉灶; [竉] 子不孝
'A spoiled pig will burrow under the stove; a spoiled child will become unfilial.'

2.28 Death (1) – Tw *sí* 死

From the old Germanic words, OE *swylt* 'death', Go. (*ga*)*swiltan* (stem: *swilt-*) 'die', OE *sweltan* (stem: *swelt-*) 'die', we see the word root is *swilt-*. By simplification of the initial cluster and loss of the final cluster, we obtain:

Gmc *swilt-* > **silt-* > **si-* > Tw *sí* 死 'die', 'death'.

2.29 Death (2) – Tw *sit* 失

If the same Germanic root **swilt-* underwent simplification of the initial and final clusters, we obtain Tw *sit* instead:

Gmc **swilt-* > **silt-* > Tw *sit* 失 'die', 'death'.

Tw *sit* 失 is used in compounds such as *sí-sit* 死失, *sòng-sit* 喪失 and *sit-sòng* 失喪, all of which mean 'die, death'. The word *sit* 失 has another meaning, 'loss' as opposed to 'win'. This meaning comes from ON *svipta* (stem: *svipt-*) 'loss' through similar changes: *svipt-* > **sipt-* > Tw *sit* 失 'loss'. Thus, the same word with slightly different meanings may have been the result of the convergence of two separate etymological paths.

2.30 Death (3) – Tw *sòng* 喪

Gk θάνατος 'death' > **sán*(*a*)*t-* > **sánt-* > (*a* to *o* change) > Tw *sòng* 喪 'death'.

Taiwanese lacks the [θ] sound, therefore, Greek θ or Germanic þ in loanwords is converted into either *t* or *s* in Taiwanese. Thus, the θ- initial in Gk θάνατος becomes *s-* in Tw *sòng*. Furthermore, another sound change is at play here. When *n* is followed by a stop such as *p, k, t*, and *g*, the cluster usually becomes *ng* (= ŋ) in Taiwanese. Thus, **sánt-* becomes *sòng* 喪 (with *a* to *o* change).

Tw *sòng* 喪 often combines with *sit* 失 (**2.29**) to form pleonastic compounds *sòng-sit* 喪失 and *sit-sòng* 失喪 'die, death' (see above). A family that has a member who has just passed away is called a *sòng-ka* 喪家, and a funeral service is called *song-sū* 喪事.

2.31 Death (4) – Tw *bông* 亡

L *mors*, *mortis* 'death', *mortuus* 'dead' are the source for all Romance words about 'death, dead', such as It *morto*, Fr *mort*, Sp *muerto*, and Rum *mort*. They are also the source for Germanic words about 'murder', such as OE *morþor*, OHG *mord*, Goth *maurþr*, and ON *morð* 'murder'. The ON *morð*, together with the enclitic neuter definite article *-it*, forming *morðit* 'murder-the', is the source of Tw *bô͘-chhì* 謀刺 'murder' (with denasalization of *m-* and loss of the final *-t*).

Thus, L *mortuus* 'dead' > **mort-* > (denasal.) > Tw *bông* 亡 'die, death'.

Tw *bông* 亡 also goes with *sí* 死 (**2.28**) to form a compound, *sí- bông* 死亡 'death'.

2.32 Death (5) – literary Tw *sè* 逝

OHG *sterban* (> G *sterben*) 'to die' > **sterb-* > **ser-* > Tw *sè* 逝 'death'.

Originally *sè* 逝 bore the meaning of 'go away, pass on, leave'. In formal writing it combines with *sè* 世 'the world' to form the compound *sè-sè* 逝世 with the meaning of 'leaving the world'.

2.33 Give notice of death – Tw *hù-bûn* 訃聞

L *fūnus* 'death, funeral' > *fūn-* > (denasalization) > **hu-* > Tw *hù* 訃

In Taiwanese, *hù-im* 訃音 is a notice of death, usually delivered in person by a family member. The *im* 音 in *hù-im* 訃音 means *im-sìn* 音信 'letter, news'. Therefore, *hù-im* 訃音 means 'letter/news of a death, obituary'. *Hù-im* 訃音 is also written as *hù-bûn* 訃文 as well as *hù-bûn* 訃聞. In the body of such a notice, separated from the text, is a large, single character 聞 (Fig. 52). This word conveys multiple meanings, usually interpreted as 'hear, let it be heard, let it be known, news'. Here it has dual

meanings: (1) a 'notice of death' as in *hù-bûn* 訃聞,; and (2) a 'notice of mourning'. They are derived as follows:

(1) L *fūnus* > *fūn-* > **hun* > Tw *bûn* 聞 'a death notice, funeral, obituary' (with *h-* > *b-*).

(2) OE *murnan* 'to mourn' > **murn-* > **mung* > **bung* > Tw *bûn* 聞 'notice of mourning'.

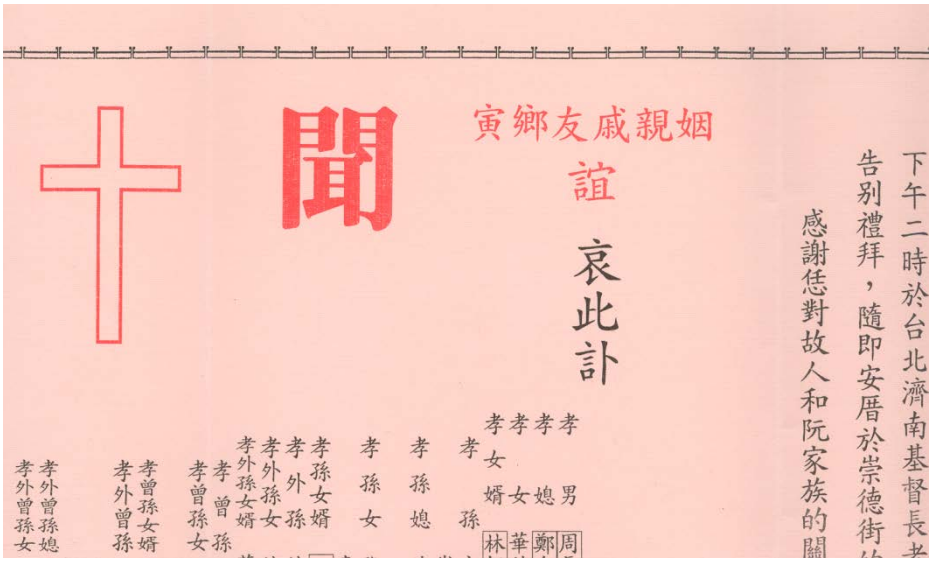


Fig 52. A notice of death bearing a large graph 聞 *bûn* conveying news for mourning.
(From a partial scanning of a death notice. C.H. Wu)

For the second derivation, it is expected that, in analogy to **PSC-1** (*-orn* > *-ong*), OE *murn-* would have yielded **bung* through denasalization. Howewver, Taiwanese phonology does not have the *-ung* sound, therefore, it is substituted with *-un* (perhaps, there may have been a merger of *-ung* with *-un* in the past). The end-result of the derivation is *bûn* 聞.

2.34 Coffin – Tw *koa^{n}-chhâ* 棺材

L *sarcophagus* 'coffin' > *sarco-* > (transposition) > **carso-* > Tw *koa^{n}* (*v.*) 棺;

L *sarcophagus* (*id.*) > *sar-* > S-T spectrum > *chhâ* 材 (graph borrowed for sound).

2.35 Bury – (*v.*) Tw *tâi* (G1W)

Gk τάφος 'a burial' > *taph-* > (PSC: *-aC* > *-ai*) > Tw *tâi* (G1W) 'bury'

2.36 Grave (1) – Tw *hûn-bōng* 墳墓

Tw *hûn-bōng* 墳墓 'grave' is a pleonastic compound of two synonyms. The first element *hûn* 墳 'grave' has a few possible sources.

(1) L *fūnus* 'a burial' > *fūn-* > Tw *hûn* 墳 'grave';

(2) L *humâre* 'to bury' > *hum-* > Tw *hûn* 墳 *id.*;

(3) L *sepulcrum* 'grave' > (aphet.) > **pulcr-* > Tw *hûn* 墳 *id.* (*Cf.* L *pulvis* 'powder' > **pulv-* > Tw *hún* 粉 'powder');

(4) ON *haugr* 'sepulchral mound' > (*au* > *u*) > **hugr* > (*-gr* > *-n*) > Tw *hûn* 墳.

So far, it has not been possible to determine which one is the most likely source.

The second element, *bōng* 墓 'grave, sepulchral mound' has two possible sources:

(1) L *monumentum* 'monument' (> Rum *mormînt* 'grave') > *mon-* (or *morm-*) > Tw *bōng* 墓 'grave';

(2) OE *beorg* 'a burial mound' may give rise to Tw *bōng* 墓 through the PSC of *-org* > *-ong* as shown in the table under **CV-2.25:** OE *beorg* > **borg* > *bōng* 墓 'grave'.

2.37 Grave (2) – Tw *thióng* 冢, 塚

The graph 冢 was the original for 'tomb', and a late-appearing graph 塚 succeeded the first one. It generally connotes 'a tall burial mound'. Its usage can be found in Tw *kó·-thióng* 古塚 'old burial mound', *hong-thióng* 荒塚 'a deserted tumulus', and *i-koan-thióng* 衣冠塚 'a memorial mound of the deceased's clothes'.

Both E *tomb* and Tw *thióng* 冢, 塚 'tomb' come from the same source:

L *tumulus* 'mound, burial mound' > Gk τύμβος 'burial mound' > Late L *tumba* > Rom **tomba* > It *tomba* 'tomb', F *tombe* (*tombeau*) 'tomb' > E *tomb*.

From Rom **tomba* > *tom-* > (*-om* > *-ong*) > Tw *thióng* 冢, 塚 'tomb'

2.38 Grave (3) – Tw *hiát* 穴

Tw *hiát* 穴 is commonly used in *tōng-hiát* 洞穴 'cave' or *hiát-tō* 穴道 'tunnel'. The latter is borrowed for use in acupuncture theory to mean 'the meridian'. *Hiát* 穴 is also used in Tw *bōng-hiát* 墓穴 'grave, coffin pit'. *Hiát* 穴 is mentioned in one of the most recited poems of the Tang Dynasty, *Khián pi hoâi* 遣悲懷 by Goân Chín 元稹, which has this poignant verse that breaks our hearts:

> 同穴窅冥何所望？ *Tông hiát iáu bêng hô só· bōng?*
>
> (Even if husband and wife are) buried together in the same grave, which is empty and murky, what hope is there to expect from it?

Tw *hiát* 穴 can be derived from OHG *grab* 'grave' (cognate to ON *gröf* and OE *græf*) with two changes: *gr-* > *h-* and *-b* > *-t*:

> OHG *grab* 'grave' > **hab* > Tw *hiát* 穴 'grave'.

2.39 Imperial tomb (mausoleum) – Tw *lêng* 陵

The grave for emperors, equivalent to mausoleums in the West, is called *lêng* 陵. Examples of *lêng* 陵 'imperial tombs' are: *Khian-lêng* (MSM *Qiánléng*) 乾陵 of Emperor Gāozōng of Tang Dynasty (Fig. 46) and *Bō·-lêng* (MSM *Màoléng*) 茂陵 of Emperor Wǔ of Han Dynasty.

Tw *lêng* 陵 can be derived from Gk νεκρών 'a burial place' through two sound changes: (1) denasalization of *n-* > *l-*; and (2) *-kr* (> *-rk*) > *-ng*. Thus,

> Gk νεκρών > *nekr-* (νεκρ-) > **lekr-* > (transpos.) > **lerk* > Tw *lêng* 陵 'imperial tomb'

Fig. 46. *Qiánlíng* 乾陵, the imperial tomb of Emperor Gāozōng of the Tang Dynasty. (Photo from commons.wikimedia.org)

CV-3. PERSONAL PRONOUNS

3.1 I (1) – (*v.*) Tw *góa*, (*l.*) *ngó·* 我

L *egō* / Gk *ἐγώ* 'I' > (aphetic) **gō-* > (*v.*) Tw *góa* 我 'I' (with PSC of *-ō* > *-oa*).

L *egō* / Gk *ἐγώ* 'I' > (aphetic) **gō-* > (nasalization) > (*l.*) Tw *ngó·* 我 'I'.

3.2 I (2) – Old Chinese 台, pronounced in Taiwanese as *î*

Gmc **eha* > OE *ić* (> E *I*), Goth, OS *ik*, OHG *ih* (> G *ich*), ON *ek* > (loss of final stop *-k*) > Tw *î* 台 (exact Old Chinese pronunciation uncertain; MSM *yí*).

Example of 台 in Old Chinese: 以輔台德 *í hú î tek* 'so as to support my moral force' (書經 *Su Keng*), here *i* 台 is in the genitive case 'my'.

3.3 I (3) – MSM *yò* / Tw *ió*

L *egō* / Gk *ἐγώ* 'I' (> It *io*, Sp *yo*) > in roll-calls, MSM *yò* / Tw *ió* 'I'.

In roll-calls in classes or in the military, when your name is called, you respond by answering, "*Ió!*" It means 'Me!' This way of response was introduced by the Nationalist Chinese after 1949.

3.4 You (1) – Tw *lú* 汝

OHG *dū* nom. 'you' [other Gmc, OE *þū*, ON *þú*, etc] > Tw *lú* 汝 'you'.

The second tone in Tw *lú* 汝 is most likely a reflection of the long vowel *ū*. Taiwanese lacks the [d] sound, and so when European words with a *d-* (or *þ-*) initial came into its lexicon, the *d-* (or *þ-*) is substituted with an *l-* in most cases. The table below shows the correspondence between European *d-* / *þ-* and Tw *l-*.

3.5 You (2) – Tw *lí* 你

OHG *dih* acc. 'you' [other Gmc, OE *þec*, ON *þik*, etc] > Tw *lí* 你 'you'.

Again, this is based on the PSC of European *d-* / *þ-* and Tw *l-* (see table below).

Correspondence between European *d-* / *þ-* and Tw *l-*

European words	**Simplif.**	**Taiwanese words**	**Usage**
IE *<u>dhugh</u>ətēr 'daughter'	**du-*	*lú* 女 'daughter', now 'woman' also	*lú-hâi* 女孩 'girl'
OHG *dū* 'you' OE *þū*, ON *þú*	*du* *þu*	*lú* 汝 'you'	*lú-téng* 汝等 'you all'
OHG *dih* 'you' OE *þec*, *þeh*, *þē* ON *þik*	*dih* *þeh* *þik*	*lí* 你 'you'	
L *dūrus* 'hard'	*dūr-*	*lūn* 韌 'tough'	*lūn-kiuh-kiuh* (G1W) 'tough to chew'
OE *dūn* 'open expanse of high ground'	*dūn*	*lūn* 崙 'small hill'	*Tiong-lūn* 中崙 a place-name in Taipei, meaning 'middle of high ground'
Gallo-Rom **domniōnem* 'dungeon'	**domn-*	*lông* 籠 'prison' [*-om*(*n*) > *-ong*]	*siû-lông* 囚籠 'prison'
MedL *duellum* 'duel'	**due*	*lûi* 擂 'duel'	*lûi-tâi* 擂台 'dueling stage'
OE *þunor* 'thunder'	**þun-*	*lûi* 雷 'thunder' (by PSC: *-un* > *-ui*)	*tân-lûi* 陳雷 'thunder rumbles'

3.6 He / she – Tw *i* 伊

OE *he, hē*; OFris *hi*, *he*; OS *hi*, *he*, *hie* > **hi* > (muting of *h*-) > Tw *i* 伊 'he, she'

Tw *i* 伊 is used for the third person. The Taiwanese do not have the concept of a separate gender term for the singular third person, like 'he' and 'she'. Some Taiwanese who immigrate to English-speaking countries have to struggle for months or even years to hammer in the concept of separate pronouns for 'he' and 'she'.

3.7 We, you (*pl.*), they – Taiwanese pleural pronouns formed by adding an *-n* to their singular forms:

	Singular	**Plural** (= **Singular** + ***-n***)
First person	*góa* 我 'I'	*goán* (*dial. gún*) 阮 'we' (exclusive); *lán* 咱 'we' (inclusive)
Second person	*lí* 你 'you'	*lín* (G1W) 'you'
Third person	*i* 伊 'he, she'	*in* (G1W) 'they'

The Taiwanese plural personal pronouns are formed by crasis of their singular counterparts with the morphosyllable *men* (similar to MSM *men* 們):

góa + (*me*)*n* = *goán* 阮 'we' (exclusive)

lí + (*me*)*n* = *lín* (G1W) 'you' *pl.*

i + (*me*)*n* = *in* (G1W) 'they'

This kind of formation is thought to be modeled after the Germanic fashion of suffixing the morpheme *-men* to indicate a plural number of certain people. For example,

ON *kaupmaðr* (*sg.*) 'merchant' > *kaup<u>menn</u>* (*pl.*) 'merchants';

ON *Englismaðr* (*sg.*) 'Englishman' > *Englis<u>menn</u>* (*pl.*) 'Englishmen';

ON *svikamaðr* (*sg.*) 'traitor' > *svika<u>menn</u>* (*pl.*) 'traitors'.

ON *sagnamaðr* (*sg.*) 'historian' > *sagna<u>menn</u>* (*pl.*) 'historians'

Thus, *menn* may have been thought to function as a dependent morpheme with the meaning of 'multiple people' and was borrowed to make the plural pronouns.

Normally English 'we' may or may not include the person spoken to. Only in sentences like "*Let us go fishing*" does the 'us' include the person spoken to. In contrast, Taiwanese has two kinds of 'we', the exclusive and inclusive 'we':

(1) Exclusive 'we' *goán* (dial. *gún*) 阮, the person spoken to is not included in 'we'.

Example: *Á-pa, goán beh khí tiò hî* 阿爸, 阮欲去釣魚 'Dad, we are going fishing.'

(Father is not invited to go fishing with us.)

(2) Inclusive 'we' *lán* 咱, the person spoken to is included in 'we'. *Lán* is formed by crasis of two words, *lí* 你 'you' (the person spoken to) and *goán* 阮 'we':

l(*í*) + (*go*)*án* = *lán* 咱 'inclusive *we*'

Example: *Á-pa, lán lâi khí tiò hî* 阿爸, 咱來去釣魚 'Dad, let's go fishing.'

(Father is asked to join us to go fishing.)

3.8 Indefinite pronoun – (*v.*) Tw *lâng* 郎 (but is popularly written as 人)

The indefinite pronoun in Taiwanese, similar to E *one*, *you*, *someone*, G *man*, and F *on*, is *lâng* 人. This may be derived from Gmc *man* similar to that for **CV-1.1b** Man (in general):

Gmc *man* 'man' > (transpos.) > **nam* > (denasal.) > **lam* > (*-am* > *-ang*) > Tw *lâng* 郎 [人].

The pleural indefinite pronoun is the reduplicated form: *lâng-lâng* 人人 'men, people, everyone'. The Taiwanese expression for 'people must follow traffic regulations' is *lâng-lâng pit-su chun-siú kau-thong kui-chek* 人人必須遵守交通規則.

CV-4. NUMERALS

4.1 One – Tw (*l.*) *it*, (*v.*) *chi̍t* 一

The Old Norse word for 'one' has three forms for three genders: *einn* (m.), *ein* (f.), *eitt* (n.). The nasal finals (*-nn*, *-n*) in the masculine and feminine forms can be related to the neuter form (*-t*) via homorganic densasalization. Through the PSC of *ei* > *i* (see **CV-1.52** above) Tw (*l.*) *it* 'one' corresponds to the neuter form *eitt* 'one'. Similarly Tw *it* also corresponds to OHG *ein* 'one' through denasalization. Because of *e*/*i* exchange, Tw *it* can also be related to OS *ēn* and OFris *ēn* as well.

L *singulus* means 'single, only one'. From the first syllable *sing-* one can derive **chik-* through the S-T spectrum rule (*s-* > *ch-*) and the PSC of *-ng* > *-k*. At some stage of Proto-Holó the final stop *k* was turned into *t* through a change similar to the tautomerism of -e*k* > -i*t*, as evidenced by some examples shown in the table below.

Therefore, L *singulus* 'single one' > *sing-* > **chik* > Tw (*v.*) *chi̍t* 一 'one'.

Examples of tautomerism of *ek* > *it*

Sinograph	*-ek*	*-it*
益	*ek*	*it*
逸	*e̍k*	*i̍t*
直	*te̍k*	*ti̍t*
秩	*te̍k*	*ti̍t*
植	*se̍k*	*si̍t*

4.2 Two – Tw (*l.*) *jī*, 二; (*l.*) *lióng* / (*v.*) *nn̄g* 兩; *tùi* 對 'pair'

According to the *Liông-ji̍t-kui-nî-soat* (娘日歸泥說) theory of Zhāng Tàiyán 章太炎 (see also **CV-2.7** above), Tw *jī* 二 'two' should have been derived from a hypothesized **ni-* (see table below). In fact,

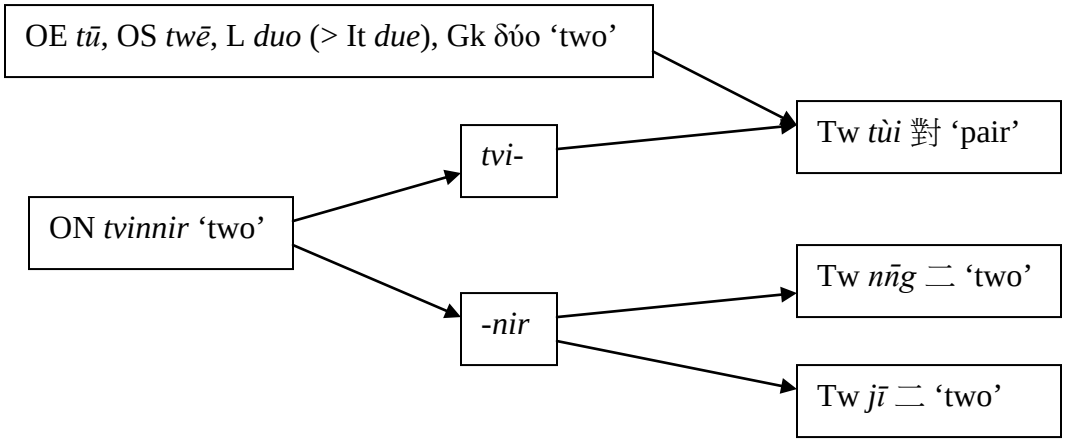
Japanese pronunciation of 二 'two' is *ni*. The seventh tone of Tw *jī* suggests that there may have been a consonant final that seemed to have been lost.

Tw		**Jpn.**	**European words**	**Sound change and note**
兒 *jî* 'child'	**nî*	*ji*, *ni*	OE *cniht* 'boy'	OR-2 > **niht*
乳 *jú* (*l.*) 'milk'	**nu*	*nyū*	L *nutrire* 'to suckle'	First syll. *nu-*
乳 *ni* (*v.*) 'milk'	**ni*		ON *nyt* 'milk'	Loss of final *-t*.
肉 *jiok* 'meat, flesh'	**niok*	*niku*	ON *kjöt* 'meat'	Transpos. *kjöt* > **tjök*; Homorg. nasal. > **niok*
日 *jit* 'day, sun'	**nit*	*nitsi*	OE *niht* 'night'	Gmc used 'night' for counting days.
二 *jī*, *nn̄g* 兩	**ni-*	*ni*	ON *tvennir* / *tvinnir*	Second syll. *-nir* > **ni*

The usual Old Norse word for 'two', *tveir*, has three genders and is declinable. Its related word *tvennir* (*tvinnir*), also declinable, means (1) 'twin, two of the same kind, pair'; and (2) 'two, two different things', for example, ON *nú ferr tvennum sögunum fram* 'two tales running parallel'. Thus, it is possible that the second syllable of *tvennir* (*tvinnir*), **nir*, may be the source of **ni-* and the loss of the final *-r* may have manifested itself in the seventh tone in the eventual Tw *jī*.

The ON (second syllable) **-nir* may also be the source of Tw (*v.*) *nn̄g* 兩 as a result of the PSC of *-r* > *-ng*. The literal reading of the sinograph 兩 'two' is *lióng*. A famous seven-syllable quatrain poem by Tō· Hú 杜甫 (written in 764 CE) has 兩 in the opening line: *Lióng kô hông-lê bêng chhùi-liú* 兩個黃鸝鳴翠柳 'Two golden orioles are singing among the verdant willows.'

The first syllable of ON *tvennr* (*tvinnr*), *tve-* (*tvi-*), as well as the neuter form for 'two' in OE *tū*, OS *twē*, L *duo*, and Gk δύο, may be the source of Tw *tùi* 對, originally meaning 'two' but now only connoting 'pair'.



4.4 Three – Tw (*v.*) *sa*^{n}, (*l.*) *sam* 三

OS *thria* (m.), OFris *thriā* (f.), ON *þriár* (f.), and Goth *þria* (f.), all 'three', find their correspondence in Tw *sa*^{n} 三 'three'. The sound changes involve (1) the Gmc thorn þ becomes the sibilant s as Taiwanese lacks the [θ] sound; and (2) loss of the glide *i*. The Taiwanese literary reading of 三 is *sam*, which is in contrast to MSM *san* and Jpn *san*. The form with *-m* is believed to be the result of an irregular sound change. There is a precedent for it: the modern G *Turm* 'tower' is said to be due to an irregular sound change from MHG *turn* (D3-19, p. 842).

4.4 Four – Tw (*v.*) *sì*, (*l.*) *sù* 四

OHG *fier* (f.), OS *fiwar* (> *fi-*), and Goth *fidwōr* (> *fid-*) 'four' > **hi-* > **hsi-* > Tw (*v.*) *sì* 四 'four'

OE *fēower*, OFris *ftūwer* (m.), *fiōr* (f.), OS *fiuwar* (f.), *fiori* (n.), OHG *fior* (m.), and ON *fjórir* (m.), *fjórar* (f.), *fiogor* (n.) > *feo-* / *fiu-* / *fio-* > **hsiu* > Tw (*l.*) *sù* 四

4.5 Five – Tw (*v.*) *gō·* 五

OHG *fimf* (m.), *finf* (f.), ON *fimm*, Goth *fimf* 'five' (*Cf.* L *quinque*, Gk πέντε) > **him-* / **hin-* > (Tripartite relationship) > **ho* / **ho·* > Tw (*v.*) *gō·* 五 'five'

The literary reading of 五 is *ngō·*, a nasalized form of the vernacular *gō·*.

4.6 Six – Tw (*v.*) *lák*, (*l.*) *liók* 六

It is well established that PIE **(s)wex* 'six' > Gk *hexa*, L *sex*, and all Gmc, *e.g.*, ON *sex*, 'six'. It is also known that PIE **wex* gives rise to a Greek dialectal *wex* 'six'. Through a PSC of *w-* > *t-* / *l-*, we obtain in stage I, PIE **wex* > **lex* > Proto-Holó **lek*.

There is an internal Taiwanese pattern of sound change, *ek* > *ak* > *iok*. Thus in stage II, we obtain, Proto-Holó **lek* > Tw (*v.*) *lák* > Tw (*l.*) *liók* 六 'six'.

4.7 Seven – Tw (*v.* and *l.*) *chhit* 七

Comparing the Germanic OS *sibun*, OHG *sibun*, and Goth *sibun* with L *septem* and Gk ἑπτά (*heptá*), we can discern that there was probably a medial *t* that was lost from the Germanic. This medial *t* was retained in the Proto-Holó **sipt-* for 'seven'.

Through the S-T Spectrum rule (see **OR-6**) and assimilation of the final *p* into *t*, we arrive at **sipt-* > **chhipt* > Tw *chhit* 七 'seven'.

4.8 Eight – Tw (*l.*) *pat* / (*v.*) *peh*, *poeh* 八

From the old Germanic words for 'eight', OE *ahta*, OFris *achta*, OS *ahto*, OHG *ahto*, ON *átta*, and Goth *ahtau*, we obtain the first syllable *at-*. At the time of Proto-Holó receiving this word, it may have been thought to have a throaty sound **hat*. As evidence, the corresponding Japanese pronunciation of 八 'eight' is *hatsi*.

There is a regular PSC between Jpn *h-* and Tw *p-* in sinograph pronunciation (see the table below). The pronunciation of 八 'eight' also falls into this pattern: Jpn *hatsi* corresponds with Tw (*l.*) *pat* / (*v.*) *peh* (north. accent), *poeh* (south. accent).

Sinographs	**Japanese *h-***	**Taiwanese *p-***
百 'hundred'	*hyaku*	(*l.*) *pek*, (*v.*) *pah*
北海道 (Northern main island of Japan)	*Hokaido*	*Pak-hái-tō*

Sinographs	**Japanese *h-***	**Taiwanese *p-***
幣 'money'	*he*	*pè*
白 'white'	*haku*	(*l.*) *pe̍k*, (*v.*) *pe̍h*
八 'eight'	*hatsi*	(*l.*) *pat* (*v.*) *peh* (northern accent) (*v.*) *poeh* (southern accent)

Thus, the correspondence between Germanic word for 'eight' and its Taiwanese counterpart can be summarized as follows (see **4.14** for an alternative etymology):

Gmc *aht-* / *att-* > (prefixed with *h-*) > **hat-* (> Jpn *hatsi*) > Tw *pat* / *peh, poeh* 八.

4.9 Nine – Tw (*l.*) *kiú* / (*v.*) *káu* 九

In **PSC-5** it is shown that the European initial *n-* corresponds to Taiwanese *k-*. Therefore, through **PSC-5**, the literary Taiwanese word for number 9, *kiú*, corresponds to ON *níu* 'nine' (see Item 25 in the table for **PSC-5**). The vernacular form is *káu*, which is related to (*l.*) *kíu* through a PSC of Taiwanese internal correspondence between the (*l.*) Tw *-(i)u* and (*v.*) Tw *-au*, examples of which are shown in the table below:

Sinograph	**(*l.*) Tw *-(i)u***	**(*v.*) Tw *-(i)au***	**European words**
劉 (a surname)	*liû*	*lâu*	
留 'to remain'	*liû*	*lâu*	
流 'to flow'	*liû*	*lâu*	Gk ῥέω 'to flow'
皺 'wrinkle'	*chhiù*	*jiàu* / *jiâu*	ON *hrukka* 'wrinkle'
九 'nine'	*kiú*	*káu*	ON *níu* 'nine'

Thus, ON *níu* 'nine' > (**PSC-5:** *n-* > *k-*) > (*l.*) Tw *kiú* 九 > (*v.*) Tw *káu* 'nine'

4.10 Ten – Tw (*l.*) *si̍p* / (*v.*) *cha̍p* 十

The Old Norse word for the number 10 is *tíu*. Through the pattern of S-T spectrum, *tíu* may develop into **siu*. With "slurring" of the initial **s-* we arrive at Japanese *jiu* for 'ten'.

With the intermediate **siu*, through a pattern of interchanges between synonyms having the *-(i)u* and *-ip* finals, we arrive at Tw (*l.*) *si̍p* 十 'ten'. A few examples of the pattern are shown in the table below:

European words	**Simpl.**	**Tw *-ip* : Usage**	**Tw *-(i)u* : Usage**
ON *skript* 'writing', L *scrībō* 'to write'	**sipt-* **sīb-*	*si̍p* 習 : *si̍p-jī* 習字 'practice writing'	*siu* 修 : *siu-su* 修書 'write a letter'
ON *skipa* 'arrange'	**sip-*	*si̍p* 拾 : *siu-si̍p* 收拾 'collect and arrange'	*siu* 收 : *siu-si̍p* 收拾 'collect and arrange'
ON *skip* 'ship'	**sip*	*chhip* 艓 'to row a boat' (*s-* > *chh-*)	*siú* 艏 (arch.), *chiu* 舟 'ship, boat' (*s-* > *ch-*)
ON *svipta* 'loss'	**sipt-*	*sit* 失 'loss, failure'	*su* 輸 'loss'
medL *studiāre* 'study	**su-*	*si̍p* 習 : *ha̍k-si̍p* 學習 'to study, learn'	*siu* 修 : *chū-siu* 自修 'self study'
ON *tíu* 'ten'	*tíu* > **siu*	*si̍p* (*l.*) 十 'ten'	Jpn *jiu* 'ten'

Once we have arrived at the (*l.*) Tw *si̍p* 十 'ten' from ON *tíu*, the (*v.*) Tw *cha̍p* is only a step away, and this step involves "reduplication with *i* > *a* vowel alternation".

The following table shows examples of the reduplication in Taiwanese pairs of *ip* – *ap* and *it* – *at* alternations.

Sinograph	***l.* Tw**	***v.* Tw**	**Sound changes**
及 'and'	*kip̍*	*kap*	
霎 'drizzling rain'	*sip*	*sap*	
十 'ten'	*sip̍*	*cha̍p*	*s-* > *ch-* (S-T spectrum)
密 'secret, tight'	*bit̍*	*ba̍t*	
實 'solid, full, true'	*sit̍*	*cha̍t*	*s-* > *ch-* (S-T spectrum)
漆, 擦 'to paint'; 擦 'to erase'	*chhit*	*chhat*	
值 'value, worth'	*tit̍*	*tat̍*	

This kind of reduplication is well known in English: splish-splash, wishy-washy, flim-flam, tittle-tattle, knick-knack, chit-chat, zig-zag, pitter-patter, dilly-dally, riff-raff; and in French such words as *comsi-comsa*, *bric-à-brac*, and many others.

Thus, from ON *tíu* 'ten', we are able to derive two Taiwanese morphosyllables, (*l.*) *sip̍* 十 (or 拾 for writing on checks to prevent alteration) and (*v.*) *cha̍p*, and a Japanese one, *jiu*, all connoting 'ten'.

4.11 Ten – Related Taiwanese word (1): *chiu* 週

A Taiwanese word related to Jpn *jiu* 'ten' and ultimately to ON *tíu* 'ten' is *chiu* 週 with the meaning of 'based on ten'. Tw *chiu-sek* 週息 is a way of 'calculating annual interest rate based on a year being comprised of 10 months (instead of 12 months)'. With ten being a full number, Tw *chiu-choân* 週全 (*lit.* ten-complete) means 'all is in order, complete, perfect all around', which is the same as another expression, *sip̍-choân-sip̍-bí* 十全十美 'maximum completeness (and) maximum beautifulness (with 10 representing the maximum)'.

4.12 Ten – Related Taiwanese word (2): *sûn* 旬

Another morphosyllable *sûn* 旬 is also used to represent 'ten'. The original usages were *sûn-jit* 旬日 'ten days' and *sûn-nî* 旬年 'ten years'. Displacement has taken place over time so that the units of time, *jit* 日 'day' and *nî* 年 'year', were lost so that *sûn* 旬 alone may represent '10 days' or '10 years'. Thus, a month (30 days) can be divided into three periods of ten days: *siōng-sûn* 上旬, *tiong-sûn* 中旬, and *ē-sûn* 下旬 (the upper, middle, and lower ten-day period, respectively). And Tw *chhit-sûn lāu-a-kong* 七旬老阿公 '70-year-old grand-father' and *pat-sûn si^{n}-jı̍t tōa-khèng* 八旬生日大慶 'eightieth birthday grand celebration' are examples of *sûn* 旬 representing 'ten years' due to the loss of *nî* 年 from *sûn-nî* 旬年 by displacement. The question now is, what is the origin of *sûn* 旬?

The reconstructed Germanic word for 'ten' is **tehun* (D3-19, p. 905; D3-13 p. 404), which is based on words from various branches: OE *tīn*, OFris *tiān* / *tēne* / *tīne*, OHG *zehan*, OS *tehan*, Goth *taihun*, and ON *tíu*. Of all the Germanic reflexes, ON *tíu* is the only one that has lost the nasal final *-n*. We can reconstruct a Proto-Norse word still having the nasal final as **tíun*. From this and by way of the S-T spectrum, we obtain **tíun* > **siun*, the latter giving rise to Tw *sûn* 旬 'ten'. This is diagrammatically shown below:

Gmc **tehun* > ---- > Proto-Norse **tíun* > (S-T spectrum) > **siun* > Tw *sûn* 旬.

4.13 Ten – Related Taiwanese word (3): *tiát* 秩

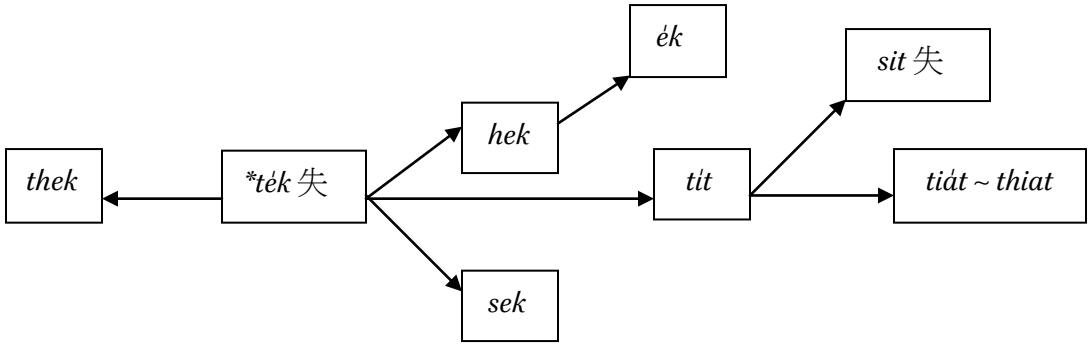
Tw *tiát* 秩 means 'ten', especially 'a decade (of age)'. It is a polite term used in formal celebrations of birthday for someone who has attained a high age. For example, *pat-tiát hôa-tàn* 八秩華誕 means 'the eighth decade jubilee birthday'.

The quest for the origin of *tiát* 秩 took the approach of internal reconstruction of historical linguistics (Lehmann 1992 pp. 162–174) and data mining from Taiwanese dictionaries to build a database so that reconstruction can be conducted.

Pronunciation of sinographs bearing the 失 phonophore

	Graph	*-it*	*-iat*	*-ut*	*-ek*	**Reconstruction**
1	失	*sit*				*sit* (< **tít* < **ték*)
2	秩		*tiát*			*tiát* (< **tít* < **ték*)
3	跌		*tiát*			*tiát* (< **tít* < **ték*)
4	詄		*tiát*			*tiát* (< **tít* < **ték*)
5	胅		*tiát*			*tiát* (< **tít* < **ték*)
6	跌		*tiát*			*tiát* (< **tít* < **ték*)
7	昳		*tiát*			*tiát* (< **tít* < **ték*)
8	鉄		*tiát*, *thiát*			*thiát* ~ *tiát* (< **tít* < **ték*)
9	紩		*tiát*, *thiat*			*thiát* ~ *tiát* (< **tít* < **ték*)
10	迭		*tiát*		*ék*	*ék* < **hek* < **ték* > **tít* > *tiát*
11	軼		*iát*, *tiát*		*ék*	*ék* < **hek* < **ték* > **tít* > *tiát* > *iát*
12	佚		*tiát*		*ék*	*ék* < **hek* < **ték* > **tít* > *tiát*
13	泆		*tiát*		*ék*	*ék* < **hek* < **ték* > **tít* > *tiát*
14	帙	*tít*	*tiát*		*ék*	*ék* < **hek* < **ték* > *tít* > *tiát*
15	怏		*thiát*	*tút*		*tút* < **tít* > *tiát*
16	袟	*tít*	*tiát*			*tiát* < *tít* (< **ték*)
17	抶				*sek*, *thek*	*sek* < **ték* > *thek*
18	眱		*tiát*		*hek*, *thek*	*hek* < **ték* > *thek*; **ték* > **tít* > *tiát*

Sinographs having 失 as the phonophore, including archaic and obsolete ones, are gathered and their pronunciations compared in the table above. There are a total of 18 graphs, including the original 失 (*sit*) which serves as the phonophore for the remaining 17. For most of them each single graph has multiple pronunciations. Even so, the graphs' various pronunciations can be grouped into just a few: *sit*, *tít*, *tiát*, *thiat*, *tút*, *thek*, *sek*, *hek*, and *ék*. And since we already know some rules of sound exchanges, the various pronunciations of each graph can be linked. Therefore, we can reconstruct the derivation for each graph into a chain of sound changes (see also the Reconstruction column above as well as the diagram below).



(1) It is ironic that the graph 失 has an initial *s-* whereas all of the graphs bearing 失 have the *t-* (or *th-*) initial. We know that there is an interchange of *s-* and *t-* in Taiwanese (see S-T Spectrum, **OR-6**), and that two archaic graphs, 帙 (#14) and 袟 (#16), also have *tít* in their pronunciations, so it can be safely assumed that 失 at one stage may have been pronounced as **tít*, but after conversion to *sit*, **tít* has been lost. Therefore, the derivation of 失 may be reconstructed as **tít* > *sit*. However, **tít* might not be the original form for 失. As we can see from the table, the *-iat* forms are the most frequent with 16 out of 18, suggesting that they are the most stable ones (*i.e.*, not liable to further changes). The next most frequent are the *-ek* forms with 8 out of 16, including 2 graphs (#17 and #18) sharing 3 *-ek* forms, whereas the *-it* forms are the least frequent with 3 out of 18. The *-ut* form #15 (1/18) is probably a dialectal variant of the *-it* form. We have seen that there is tautomerism between *-ek* and *-it* (see Table in **4.1**), so it is possible that the *-it* forms are merely transient forms in a chain of sound changes from **ték* > **tít* > *tiát*. Thus, the common denominator for all the graphs in the table is **ték*, which most likely may have been the original form of 失 as the phonophore for all other graphs.

(2) Next is a group of 6 graphs (#2–7) where each has the single pronunciation of *tiát*. Among these, 秩 is the focus of our attention for we want to search for its origin, which will become clear after we go through the remainder of the graphs.

(3) 鉄 (#8) and 絏 (#9) each has two variant forms of pronunciation, *tiát* and *thiát*. The aspirated *th-* (IPA t^h) and non-aspirated *t-* are separate phonemes in Modern Taiwanese. However, there

is ample evidence indicating that in Proto-Holó they were not well differentiated allophones. Thus, each gragh has the two variant forms.

(4) #17 抶 and #18 眱 are very interesting in that both have *thek* but lack the *tít* form. Because they are archaic and obsolete (*i.e.*, fossils), their *thek* form can be assumed to be an ancient form. #17 抶 has the *sek* form, and as we have seen that there is an S-T exchange, *sek* can be a derivative of **ték*. Furthermore, because of the fact that *t-* and *th-* were not well differentiated in Proto-Holó, the *thek* form can also be derived from **ték*. Thus, for #17 抶 we can derive *sek* < **ték* > *thek*.

(5) #18 眱 has an additional *hek* form. Because there is an H-T exchange in Taiwanese (data not shown), we can derive *hek* from **ték*. Thus, for the derivation of #18 眱 we have *hek* < **ték* > *thek*.

(6) From #10 to #14 a group of five graphs have an *ék* form. Because the initial *h-* in Taiwanese tends to become silent (similar to Romance languages), *ék* likely has its source in **hek*. Coupled with #18 we can further see that **ték* > **hek* > *ék*.

(7) #16 袟 is also a fossil, which has two forms, *tít* and *tiát*, but unlike #17 and #18 it has no *-ek* forms. There is in Taiwanese a sound change of *-i* to *-ia*, so we can formulate the two forms as *tít* > *tiát*. Owing to the tautomerism of *ek* to *it* as discussed above (and in **4.1**), *tít* is likely a derivative of **ték*, and therefore the two forms of #16 袟 seem to result from **ték* > *tít* > *tiát*.

(8) #14 帙 is another fossil which, in addition to the two forms of #16 袟, has the *ék* form. Based on the H-T exchange (**ték* > *hek*) and subsequent muting of *h-* (*hek* > *ék*), we can link up all three forms as follows: *ék* < **hek* < **ték* > *tít* > *tiát*.

(9) Now it has become clear that 秩 *tiát* (#2), the focus of our interest, along with five others in this group (#3 - #7), can be derived thus: **ték* > **tít* > *tiát* 秩.

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Summary of the sound changes of 失 bearing graphs.

The reconstruction of the chain of sound changes is made possible by data-mining of old graphs from dictionaries and by the discovery of fossil graphs which fill the gaps left by the links missing from the chain. Thus, the reconstruction of the chain of sound changes is quite

similar to the way in which paleontologists visualize a chain of events in evolution, where discovery of such missing links makes it possible to complete the chain.

The original 失 may have been **ték*, and after serving as the phonophore for other graphs, it underwent changes to **tit* and then *sit* where it stays today. #16 秩 underwent a similar change to *tít* as 失, but it took a further step to *tiát* (**ték* > *tít* > *tiát*), then the original **ték* disappeared too. The two archaic and obsolete graphs, #17 抶 and #18 昳, are the most interesting in that they appeared closest to the original **ték*, but after they had each undergone changes to *sek*, *hek*, and *thek*, they were left at the wayside and became fossilized. #18 昳 has an additional *tiát* form, suggesting that it may have gone through the intermediate *tít* to reach *tiát*, but the intermediate was so transient, there is not a trace of it. Another fossil, #14 帙, reveals the complete chain of sound changes, except for the loss of the *t-* initial from **ték*. **Sixteen out of 18 graphs have the *tiát* form, suggesting that it is the most stable end-product.** Thus, in conclusion, 秩 is pronounced *tiát* today because it is the most stable form, but its ancient form may have been **ték*.

In support of the original **ték* for 失, there is a compound *ték-sit* 謫失 'say something that inadvertently offends or hurts someone', which is composed of two closely-related graphs *ték* 謫 'to blame, find fault' and *sit* 失 as in *sit-kèng* 失敬 'disrespect' and *sit-lé* 失禮 'disregard propriety'. It is possible that *ték* 謫 may be the twin graph of *sit* 失 and may have been the one that retains the original pronunciation of 失 **ték*.

The proposed **ték* for the 失 series may be checked by using 軼 (#11) as a test. 軼 (*ék*, *tiát*, *iát*) is defined as (1) 'rush by, hurry on, pass along' (D2-4, p. 260; D2-8, p. 1059); and (2) 'to make a surprise attack' as in *chhim-iát* 侵軼 'to seize, surprise' (D2-7, p. 455). From L *dēcurrere* 'to run down, hasten down', we obtain: *dēcurrere* > * *dēc-* > **ték* > *ék*, *tiát*, *iát* 軼 (definition 1). From L *dēcursiō* 'a raid, descent', we obtain: *dēcursiō* > *dēc-* > **ték* > *ék*, *tiát*, *iát* 軼 (definition 2). Thus, the proposed **ték* for the 失 series has stood a test without fail.

Parenthetically, Karlgren (D2-4, pp. 259–260) proposes the voiced *d-* as the initial for the 失 series. However, Modern Taiwanese does not have the *d-* sound; if it did in Proto-Holó, it must have merged with the voiceless *t-*.

With the ancient form of 秩 **ték* in place, we can now search for its origin.

Fig. 47. A composite brush work by several artists honoring 錢大鈞 on his eightieth birthday. The graphs 八秩華誕 can be seen on the first line (from right) of the colophon at left. (From auction.artron.net)

The origin of *tiát* 秩 with the meaning of 'ten, decade' is from Greek-Latin. Gk δέκα 'ten', δεκάς 'a group of ten, decad'; L *decem* 'ten', *decas*, *decad-* 'a group or series of ten' (> E *decade*) > **dek-* > *tiát* 秩.

Thus, retracing the development of 秩 from its current *tiát* back to its origin **dek-*, enables us to make a seamless connection with its European counterpart.

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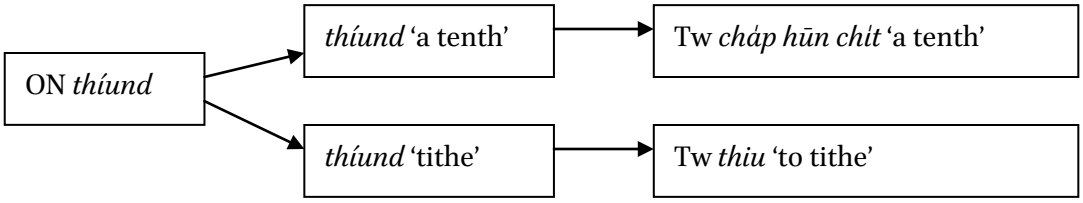
4.14 Tithe (a special word related to 'ten') – Tw *thiu* 抽

E *tithe* means 'a tenth portion of annual produce or income paid to the Church'. It is derived from OE *tēoþa*. In Old Norse, a tenth part is called *tíund*. This word also means 'tithe'.

In Taiwanese, a tenth part is called *cháp hūn chi it* 十分之一 (*lit.* ten parts POSS. PART. one) 'one of ten parts'. In vernacular speech the POSS. PART. is dropped so it becomes *cháp hūn chít* 十分一, with 一 'one' expressed by (*v.*) *chít* instead of (*l.*) *it*. What is interesting is the verb used together with it, that is, *thiu* 抽. *Thiu cháp hūn chít* 抽十分一 means 'to tithe one tenth'. In Hebrews 7:2 of the Bible, where it mentions Abraham gave to Melchizedek a tenth of everything he got, the Taiwanese version has "*it-chhè só· tit-tio̍h ê*, *thiu cháp hūn chít* 一切所得著的, 抽十分一. (Barclay added the underlined

words meaning 'so obtained')" Compare it with the Icelandic version that has *tíund af öllu* 'a tenth of all'. We see that ON *tíund* 'tithe' is, through denasalization, related to Tw *thiu* 抽 (*tíund* > *thiu* 抽). The relationship between ON *tíund* and Tw *thiu* is illustrated in the diagram below:



The significance of this correspondence should not escape our attention. To tithe a tenth part of produce to the church is a Judeo-Christian tradition. Finding a Germanic word for 'tithe' in Asia whose reflex exists as Tw *thiu* 抽 would mean that the migrating people(s) who brought this word to Asia may have been Christians. Bishop Ulfilas, a fourth-century Goth of Cappadocian Greek descent and well versed in Greek and Latin, had translated the Bible into Gothic. The Goths were living in the Steppe Land in what is now the northern coast of the Black Sea in Ukraine and Southern Russia, the western terminus of the Silk Road. Living alongside the Goths were other Germanic peoples as well as Greeks of the Greek-colonial Bosporan Kingdom, which was centered around the Kerch Strait between the Black Sea and the Sea of Azov. All these exciting historical peoples who may have been involved in transmitting Western cultures and languages to Asia will be discussed in Part II of this series.

4.15 Hundred – Tw (*l.*) *pek* / (*v.*) *pah* 百

The correspondence between Tw (*l.*) *pek* / (*v.*) *pah* 百 'hundred' and European words can be discerned rather straightforwardly if we introduce their counterpart in Tocharian A. The correspondence will become even more obvious if we also include the European and Tocharian A cognates for 'eight'. Finally, if we insert Sino-Japanese numerals between Tocharian A and Taiwanese, the correspondence will become very clear. The table below lists the numbers 8 and 100 from OE, L, Gk, Toch A (Tocharian A), Jpn, and Tw.

Numeral	**OE**	**L**	**Gk**	**Toch A**	**Jpn**	**Tw (*l.*) / (*v.*)**
Hundred	*hundred*	*centum*	*hekatón*	*känt*	*hyaku*	*pek* / *pah* 百
Eight	*ahta*, *ehta*	*octō*	*októ*	*okät*	*hatsi*	*pat* / *peh* (*poeh*) 八

For better visualization of the correspondence of the segments among various languages, the segments occupying the same phonemically functional positions are shown with color-coded letters. They are aligned in the figure below.

Langs.	'100'	'8'
OE	**h-undred**	**ah-ta**
L	**c-entum**	**oc-tō**
Gk	**hek-a-tón**	**ok-tó**
Toch A	**k-änt**	**okät**
Jpn	**hyak-u**	**hatsi**
Tw (*l.*)	**p-ek**	**pat**
Tw (*v.*)	**p-ah**	**peh**

The alignment method is exactly the same as the multiple sequence alignment analysis used in molecular biology for deducing the structure-function relationship of proteins. For ease of alignment, a gap is created, as indicated by a hyphen, to accommodate an extra segment in one of the morphemes, such as the glide *-y-* in Jpn *hyaku* (if the *Go-on* Jpn *haku* is used, the gap will not be necessary, but the *Kan-on* Jpn *hyaku* is by far the most commonly used) and the inter-consonantal *a* (or *ä*) in Toch A, Jpn, and Tw for number '8'. We now discuss their correspondence.

(1) A few extra components need to be excluded from consideration. The *-red* in OE *hundred* is an added morpheme meaning 'reckoning, number' and corresponds to L *ratio*. The initial *he-* in Gk *hekatón* is derived from IE **sém* 'one' (Pokorny, p. 192). The final vowels *u* and *i* in Jpn

hyaku and *hatsi*, respectively, are due to Japanese adaptation of stop-finals from sinographs 百 and 八. All these are excluded from the comparison.

(2) In both '100' and '8', the velar *k*- (L *c*-), color-coded in blue, in Latin, Greek and Tocharian A corresponds to *h*- (also in blue) in Old English by Grimm's Law. It also corresponds to *h*- in the Sino-Japanese pronunciation of 百 and 八, *hyaku* and *hatsi*, respectively. As we have seen, Jpn *h*- corresponds to Tw *p*- (see Table in **CV-4.8**). Therefore, the initial *p*- of Tw *pek* (*l.*) / *pah* (*v.*) for '100' and *pat* (*l.*) / *peh* (*v.*) for '8' ultimately correspond to Germanic *h*-. It suggests that when the numbers 8 and 100 came to Asia, the numbers had the initial *h*- and they were the forms loaned to Japanese. Later the *h*- was converted to *p*- in Taiwanese. Note the regularity of the vertical sequence of *h-c-k-k-h-p-p* (marked in blue) for both '100' and '8'.

(3) The medial/final (colored in red) *-nd* in Germanic OE and *-nt* in Latin and Tocharian A are denasalized to *-t* in Greek but to *-k* in Sino-Japanese and Taiwanese. The reason for the change to the velar *k* may be explained if we assume that the final *-nd* (*-nt*) may have first gone through assimilation to *-n*, followed by the *-n* to *-k* denasalization we have seen in **PSC-5**.

(4) Thus, Tw *pek* (*l.*) / *pah* (*v.*) 百 'hundred' conforms to the pattern observed in Indo-European words for '100'. In this regard, Modern Taiwanese is somehow associated with the Indo-European language family and especially the *centum* sub-family. The late Professor Tsung-tung Chang stated in his landmark paper (1988) that "Germanic and Chinese belong to the group of so-called *centum* languages." However, the question of how L *centum* is connected with Chinese 百 [Middle Chinese: pɐk] (D2-9, p. 154), which is a crucial question, was not addressed in the paper. Two years before his passing, I met him for the first and only time at his office in Frankfurt, Germany, and, although I had read his papers a few times beforehand, I forgot to ask him how he made the connection between *centum* and *pek* (*l.*) / *pah* (*v.*) 百. I regret it to this day.

(5) The *-t* (color-coded brown) of words for '8' in OE, L, Gk, and Toch A shows up as *-tsi* in Jpn *hatsi* 'eight' and *-t* in Tw *pat* (*l.*) or *-h* in *peh*, *poeh* (*v.*). The latter with the final *-h* are the weakened forms of *pat* 八 (*l.*).

(6) Tocharian A *okät* 'eight' has an inter-consonantal vowel (*-ä-*) which is absent from other European cognates. It is also absent from the cognate of its sister language Tocharian B *okt*.

However, the vowel shows up in Jpn *hatsi* and Tw *pat* / *peh*. The origin of this vowel is a mystery. It is not included in the reconstructed PIE **oktō*, and in all IE languages the only one with an inter-consonantal vowel is Albanian *tetë*. However, Pokorny proposed this to be derived from the suffixed zero-grade form **oktō-t-* (Pokorny, p. 775). Therefore, we do not know whether Tw *pat* / *peh* and Jpn *hatsi* were actually derived from Toch A, or from a variant form which happened to have a vowel similar to that of Toch A. An alternative derivation of Tw *pat* / *peh* from Germanic, *e.g.*, OHG, OS *ahto*, ON *átta*, and OE *ahta*, is proposed in **CV-4.8**.

4.16 Thousand – Tw *chhian* 千

The Greek word for the number 'one thousand' is χιλιάς, but the form most commonly encountered is χιλιάδες, such as in δώδεκα χιλιάδες 'twelve thousands' (*e.g.*, Bible, Revelation 7:5). Tw *chhian* 千 'thousand' may be derived from χιλιάδες as follows:

χιλιάδες > χιλιάδ- > (homorg. nasal. of *-d*) > **chilian* > (elision of med. *-l-*) > **chian* > (affrication of χ) > Tw *chhian* 千.

4.17 Ten thousand - Tw *bān* 萬

Tw *bān* 萬 'ten thousand' may be the result of the convergence of two possible sources.

(1) The Greek word for the number 10,000 is μυριάς; by analogy with the derivation for Tw *chhian* 千 from Gk χιλιάς (see **4.16**), we obtain: μυριάδες > *μυριάδ- > **mian*. By denasalization of *m-* to *b-*, we reach **biān*.

(2) Nomads in the Eastern Steppelands used a term that is related to the number 10,000. The first known leader and apparent founder of the Hsiung-nu (匈奴) empire around 200 BCE was T'ou-man 頭曼 (Liu, p. 53; Grousset, p. 27; Beckwith, pp. 71–72), the title designating a 'leader of 10,000'. Eight centuries later, there emerged in the same steppelands a new nomadic people, the Eastern Türk (突厥) whose leader's name was T'u-men 土門, also indicating a 'leader of 10,000' (Lin, p. 70; Beckwith, p. 387). In addition, the Tocharian B word for the number 10,000 is *tmāne* (or *tumane*), obviously an areal word of the northern steppeland. Tw *bān* 萬 may be derived from Toch B *tmāne* and Gk μυριάδες in either of two ways:

- Toch B *tmāne* > **tmān-* > (under the influence of **mian*) > **man* > *bān* 萬
- Gk μυριάδες > *μυριάδ- > **mian* > (under the influence of **tmān*) > **man* > *bān* 萬

4.18 Hundred thousand - Tw *ek* 億

The old Chinese counting system was decimal; each decimal unit was represented by a word. Thus, an *ek* 億 amounted to 100,000 (or 10^5). Since a *bān* 萬 is 10,000 (or 10^4), an *ek* 億 = 10 *bān* 萬. In today's counting system, an *ek* 億 is equal to 100,000,000 (or 10^8), that is, one 萬萬 ($10^4 \times 10^4$).

In Ancient Greek 100,000 (or 10^5) is called δεκάκις μυριοι; the first syllable of the first element is δεκ-. As we have seen in the 失 series, **dek* (similar to **tek*) may lose the initial *d-* to give *ek*. Thus, Tw *ek* 億 may be derived from Gk δεκάκις μυριοι in the following way:

Gk δεκάκις μυριοι > *δεκ- > Tw *ek* 億.

4.19 Million - Tw *tiāu* 兆

According to the old counting system, a *tiāu* 兆 was 'a million', 1,000,000 (or 10^6). This amounted to 10×*ek* 億 in the old days. [In today's system, a *tiāu* 兆 is 10,000×*ek* 億 (or $10^4 \times 10^4 \times 10^4$)]. It *mille* 'thousand' is derived from L *mille* 'thousand' whereas It *milione* (Old It *millione*) 'million' is also from the same L *mille* but with an implied meaning of 'a gross thousand'. Similarly, E *million* came ultimately from L *mille*. Since a *tiāu* 兆 is a million (in the old system) which means a thousand thousands, therefore, *tiāu* 兆 is also a 'gross thousand'. Because Proto-Holó had already adopted Gk χιλιάς for the number 'thousand', it therefore borrowed the Germanic word for 'thousand' to write *tiāu* 兆, the 'gross thousand'. Parenthetically, this fact suggests that the Greek word came to Asia before the Germanic one.

The Proto-Germanic word for 'thousand' is **þūsundi*, from which sprang OE *þūsend*, OFris *thūsend*, OS *thūsundig*, OHG *thūsunt*, *dusunt*, Goth *þūsundi*, and ON *þúsund*, *þúshund-rað*. For derivation of Tw *tiāu* 兆, two sound changes were involved. First, Taiwanese does not have the [θ] sound; it is converted to either [s] or [t]. Second, there is a sound change of *u* to *au*. Thus, Gmc **þūsundi* > **þū-* > **tu-* > Tw *tiāu* 兆 (with an infix of the glide *-i-*). These two sound changes happen to parallel the changes of Gmc **þūsundi* > OHG *thūsunt* > Modern German *tausend*.

We now summarize the derivation for Taiwanese words for high numbers in the table below:

Derivation of Taiwanese words for number units higher than one hundred

Graph	**Old unit**	**New unit**	**Etymon**	**Simplication**	**Tw**
千	10^3	10^3	Gk χιλιάδες	*χιλιάδ- > **chiad-*	*Chhian*
萬	10^4	10^4	Gk μυριάδες Toch B *tmāne*	*μυριάδ- > **miad-* **tmān-* > *man-*	*bān*
億	10^5	10^8	Gk δεκάκις μυριοι	*δεκ- > **dek-*	*ek*
兆	10^6	10^{12}	Gmc **þūsundi*	**þū-* > **tiu-*	*tiāu*

DISCUSSION

The results of this study show that, through a modern technique borrowed from molecular biology, Taiwanese words have surprisingly been found to match those from Germanic, Latin, Greek, and Romance in regular patterns of sound correspondence. Furthermore, some of the patterns have been subjected to tests and they have withstood the tests without fail. Many of the patterns demonstrate their predictive power by leading us to new matches. Therefore, these patterns may be considered rules of sound changes from ancient European languages to Taiwanese.

The cross-disciplinary approach such as applied here is not new as far as the development of historical linguistics is concerned. Lehmann in reviewing the development of this field cited the borrowing of comparative anatomy for initiating meaningful methodology in historical linguistics (Lehmann 1993, *p.* 24):

> No satisfactory historical linguistic study was carried out before the beginning of the nineteenth century, and accordingly linguists had to develop appropriate methods for the new field. Like other new sciences, historical linguistics then looked to those that had developed useful methods. The greatest help came from comparative anatomy.
>
> Bopp … applied such comparison to verb forms after his period of study in Paris. The methods developed in anatomy could be readily transferred to the research on early languages.

If the technique of multiple sequence alignment analysis can help reveal sound correspondences between Taiwanese and European lexicons, perhaps it may be useful for other language comparisons as well.

CONCLUSIONS

In this study, we have presented six operational rules that help to simplify detection of the correspondences and nine major patterns of sound correspondence, with a host of other PSCs scattered throughout the text. In total more than 80 PSCs have been found but not all are reported in this paper. The *regularity* of the sound correspondences that can be grouped into patterns clearly demonstrates beyond doubt that the matches are not due to random chances.

To strengthen the argument against random coincidence, five cases of shared aberrancy in lexical usage are presented, which in the view of historical linguists is of great significance as they indicate either kinship between languages or mass borrowing from one to the other. The case of shared aberrancy for linguistic kinship is akin to gene mutation in genetics. For example, Queen Victoria of England is known to carry a mutated gene for hemophilia. From her it spread through the Royal Houses of Europe as monarchs arranged marriages to consolidate political alliances. Thus, when an aberrancy existing in one language is also detected in another, it strongly suggests kinship as a possibility. For the effect of mass borrowing on shared aberrancy, we can look to English which borrowed heavily from French after the Norman Conquest of 1066 so that sixty percent of the Old English vocabulary was displaced by French. Naturally, peculiarities in French were carried over into English the borrower. Thus, OF (*h*)*onor* and OF (*h*)*oneste* were borrowed into English to become *honor* and *honest*, with the silent *h*- mimicking French.

Language and culture are two sides of the same "coin". Since there is similarity between the lexicons, one may predict similarity in culture as well. However, because there is a large time gap as well as a vast distance in space between the ancient Germanic, Latin, Greek, and Romance languages and modern Taiwanese, what similarities there were may have been washed away by time or

interrupted by distance. Fortunately, we have found similarities preserved in Taiwanese in the use of favorite place-names, fairy tales, the burning of the king's ships, a tour of the domain by goddesses, reference to the thunder-god, the special bonds between maternal uncles and their newphews/nieces, the rite of memorial for the deceased on the seventh day after death, and road-side shrines. In addition, two genetic diseases that are of Germanic origin have also been found in Taiwan, which strongly suggests that some Germanic ethnic group(s) may have brought not only language and culture but also genes (the mutated as well as the healthy ones) to Asia.

SUBSEQUENT PAPER

In Part II of this series (in preparation), more PSCs will be presented, among which are a special PSC nicknamed the "Tripartite" PSC, a PSC of the elision of medial *-l-*, and a PSC pertaining to homorganic nasalization, which are referred to in this paper but not discussed. Words of prestige and politeness that point to European etymological origins will be presented to support a model of European people(s) possibly migrating to Asia and occupying the upper echelons of the Asian society. In addition, there are Taiwanese words that find no cognates in Sinitic (but show correspondence to European lexicons), which are called "Signature Taiwanese" words, and these will be presented.

Three categories of the Taiwanese core vocabulary (**CV**) that show correspondences to European lexicons will be presented: (1) names of food and meals; (2) parts of the human anatomy; and (3) prominent features of the physical world such as mountains, rivers, woods, fauna and flora. Even more interesting is that, for the first item, there are clear references in historical pharmacopeias and herbals that indicate some of the popular vegetables were introduced from the West.

When faced with the abundant data of Taiwanese words corresponding to European lexicons in regular patterns, questions naturally arise as to how the European lexicons got into Holó. When did the contact occur? And where did it happen? To address these important questions, the following topics will be presented in Part II: (1) candidate European people(s) who may have migrated to Asia, (2) the time of their migration based on relative chronology as gleaned from some lexical innovations, and (3) a possible route of migration based on some historical records.

* * *

The present study introduces the technique of multiple sequence alignment analysis commonly used in molecular biology, and shows that, when applied to lexical analysis, it is a very powerful tool in comparative linguistics. Using it has allowed us to link the Taiwanese lexicon to those of ancient European languages. Admittedly this last result has never been in anyone's imagination. Much has been achieved with just one language, my mother tongue Taiwanese. How much more remains to be

discovered in other languages is beyond our fathoming. Isaac Newton knew this same feeling and expressed it eloquently in the following words three centuries ago:

> I seem to have been only like a boy playing on the sea-shore, and diverting myself in now and then finding a smoother pebble or a prettier shell than ordinary, while the great ocean of truth lay all undiscovered before me.

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DICTIONARIES AND OTHER RESOURCES FOR THE LANGUAGES UNDER DISCUSSION

1. Taiwanese and Southern Min (the latter represented by Amoy/Xiamen)
2. Sinitic in General and Some Selected Topolects
3. Germanic Languages
4. Latin, Greek, Romance Languages
5. Indo-European Linguistics

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