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

Part I

by
Chau H. Wu
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Patterns of Sound Correspondence between Taiwanese and Germanic/Latin/Greek/Romance Lexicons

Part I

Chau H. Wu

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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'] 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 superamilies 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-bùn 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 (吳音) 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

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Language Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Du</td>
<td>Modern Dutch</td>
</tr>
<tr>
<td>E</td>
<td>Modern English</td>
</tr>
<tr>
<td>F</td>
<td>Modern French</td>
</tr>
<tr>
<td>G</td>
<td>New High German</td>
</tr>
<tr>
<td>Gk</td>
<td>Classical/koine Greek</td>
</tr>
<tr>
<td>Gmc</td>
<td>Germanic</td>
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<tr>
<td>It</td>
<td>Modern Italian</td>
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<tr>
<td>Jpn</td>
<td>Japanese</td>
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<tr>
<td>L</td>
<td>Latin</td>
</tr>
<tr>
<td>MC</td>
<td>Middle Chinese</td>
</tr>
<tr>
<td>MSM</td>
<td>Modern Standard Mandarin</td>
</tr>
<tr>
<td>OC</td>
<td>Old Chinese</td>
</tr>
<tr>
<td>OE</td>
<td>Old English</td>
</tr>
<tr>
<td>OF</td>
<td>Old French</td>
</tr>
<tr>
<td>OFris</td>
<td>Old Frisian</td>
</tr>
<tr>
<td>OHG</td>
<td>Old High German</td>
</tr>
<tr>
<td>ON</td>
<td>Old Norse</td>
</tr>
<tr>
<td>OS</td>
<td>Old Saxon</td>
</tr>
<tr>
<td>PIE</td>
<td>Proto-Indo-European</td>
</tr>
<tr>
<td>Rom</td>
<td>Romance (Vulgar Latin)</td>
</tr>
<tr>
<td>Rum</td>
<td>Modern Rumanian</td>
</tr>
</tbody>
</table>
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 蠟 ‘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 蠟 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 > fungus > It fungo. Tw hiu'-ko·香菇 ‘mushroom’ can be derived in the same way: L acc. fungum > fungus > *fung > (f > h-) > Tw hiu'-ko· (with g > k-)香菇 ‘mushroom’.
D I C T I O N A R I E S

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 厦门) and Tiō-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.
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, aⁿ = [ã], iⁿ = [ɨ], and so on.
Pronunciation of the Pē-ōe-jī (POJ) letters

<table>
<thead>
<tr>
<th>POJ</th>
<th>IPA</th>
<th>Similar to</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>[a]</td>
<td>a in far</td>
<td>pa 父 'father' (Cf. L pater id.)</td>
</tr>
<tr>
<td>i</td>
<td>[i]</td>
<td>i in machine</td>
<td>ià 爵 'high official' (Cf. ON jarl 'earl')</td>
</tr>
<tr>
<td>u</td>
<td>[u]</td>
<td>u in flu</td>
<td>ü雨 ‘rain' (Cf. ON úr 'drizzling rain')</td>
</tr>
<tr>
<td>e</td>
<td>[ɛ]</td>
<td>e in grey</td>
<td>è 翟 'descendant' (Cf. E heir)</td>
</tr>
<tr>
<td>o</td>
<td>[ɔ]</td>
<td>o in note</td>
<td>ò 澳 'river mouth' (Cf. ON óss, L östüum id.)</td>
</tr>
<tr>
<td>o·</td>
<td>[ɔ]</td>
<td>o in horse</td>
<td>kho 呼 ‘call (animals)' (Cf. E call)</td>
</tr>
<tr>
<td>b</td>
<td>[b]</td>
<td>b in bee</td>
<td>bi 米 ‘rice' (Cf. ON bygg 'the cultivated crop')</td>
</tr>
<tr>
<td>p</td>
<td>[p]</td>
<td>p in spy</td>
<td>pín (G1W) ‘pin; to pin up' (Cf. E pin)</td>
</tr>
<tr>
<td>ph</td>
<td>[pʰ]</td>
<td>p in pea</td>
<td>phe (G1W) ‘letter' (Cf. ON bréf ‘letter’)</td>
</tr>
<tr>
<td>t</td>
<td>[t]</td>
<td>t in stay</td>
<td>tē 地 ‘land' (Cf. L terra ‘land')</td>
</tr>
<tr>
<td>th</td>
<td>[tʰ]</td>
<td>t in tea</td>
<td>thoa 拖 ‘tow, drag' (Cf. E tow)</td>
</tr>
<tr>
<td>g</td>
<td>[ɡ]</td>
<td>g in geese</td>
<td>gô 鵝 ‘goose' (Cf. OE gōs id.)</td>
</tr>
<tr>
<td>k</td>
<td>[k]</td>
<td>k in sky</td>
<td>ka 家 ‘home, house' (Cf. L casa ‘home, cottage')</td>
</tr>
<tr>
<td>kh</td>
<td>[kʰ]</td>
<td>k in key</td>
<td>khu 曲 ‘curved, bent' (Cf. L curvus ‘curved')</td>
</tr>
<tr>
<td>ch</td>
<td>[ts]</td>
<td>g in genius</td>
<td>cheng 精 'smart' (Cf. L genius ‘genius')</td>
</tr>
<tr>
<td>chh</td>
<td>[tsʰ]</td>
<td>ch in cheese</td>
<td>chhi 餵 ‘to feed' (Cf. L cibō id.)</td>
</tr>
<tr>
<td>s</td>
<td>[s]</td>
<td>s in sea</td>
<td>sì 是 ‘yes' (Cf. It sì, Sp sí id.)</td>
</tr>
</tbody>
</table>
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</tr>
</thead>
<tbody>
<tr>
<td>h</td>
<td>[h]</td>
<td>h in he</td>
<td>hêng 刑 ‘to punish’ (Cf. ON hegnia id.)</td>
</tr>
<tr>
<td>j</td>
<td>[z]</td>
<td>j in jeep</td>
<td>jiù-tō 柔道 ‘judo’ (Cf. L luctō ‘to wrestle’)</td>
</tr>
<tr>
<td>l</td>
<td>[l]</td>
<td>l in leek</td>
<td>la 拉 ‘to pull, draw’ (Cf. L laciō ‘to draw gently’)</td>
</tr>
<tr>
<td>m</td>
<td>[m]</td>
<td>m in me</td>
<td>má 馬 ‘horse’ (Cf. ON marr ‘horse, steed’)</td>
</tr>
<tr>
<td>n</td>
<td>[n]</td>
<td>n in need</td>
<td>ná 拿 ‘to get hold of’ (Cf. ON ná id.)</td>
</tr>
<tr>
<td>ng</td>
<td>[ŋ]</td>
<td>ng in singer</td>
<td>ngō·悟 ‘to begin to know’ (Cf. L gnōscō id.)</td>
</tr>
<tr>
<td>-h</td>
<td>[ʔ]</td>
<td></td>
<td>nih (GrW) ‘to blink’ (Cf. L nictare id.)</td>
</tr>
</tbody>
</table>

1 Both m and ng can also function as syllabic consonants in vernacular Taiwanese; for example, m̂ (梅) means ‘plum, prune’ and ŋ (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.
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Chau H. Wu, “Patterns of Sound Correspondence between Taiwanese and Germanic/Latin/Greek/Romance Lexicons,” Part I, Sino-Platonic Papers, 262 (August 2016)

PSC-2: \(-aumr > -oan\)

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

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

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

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

PSC-5: \(n > k\)-

PSC-6: ON \(sC_1alC_2\)… (or \(sC_1\á\lC_2\)…) > Tw \(C_1iau\) (Where \(C_1\) and \(C_2\) Are Consonants)

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2. Sinitic in General and Some Selected Topolects
3. Germanic Languages
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</tbody>
</table>
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:

<table>
<thead>
<tr>
<th>European words</th>
<th>OR-1</th>
<th>Taiwanese words</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON <em>ostra</em> 'oyster', L <em>ostrea</em></td>
<td>o-</td>
<td>ㄝ 蠔 (蚵) 'oyster'</td>
<td>(v.) ㄝ-ㄚ 'oyster'</td>
</tr>
<tr>
<td>ON óss, L <em>östium</em></td>
<td>ㄧ-</td>
<td>ㄝ 澳 'river mouth, harbor'</td>
<td>Lâm-ㄧ 南澳 place-name meaning 'South Harbor'</td>
</tr>
<tr>
<td>ON <em>konungr</em> 'king'</td>
<td>kon-</td>
<td>ㄝ 公 'king'</td>
<td>Chin-bùn-kong 春文公 (a king of the Spring-Autumn period)</td>
</tr>
<tr>
<td>OE <em>hnutu</em> 'nut'† (<em>hnutu</em> &gt; *hnut- &gt; E <em>nut</em>)</td>
<td>hnut-</td>
<td>hùt 核 'nut'</td>
<td>thô-ㄚ-hùt 桃仔核 'the nut inside a peach'</td>
</tr>
<tr>
<td>L <em>pardus</em> 'leopard'</td>
<td>pard-</td>
<td>pà 豹 'leopard' (loss of rd &gt; 3rd tone)</td>
<td>seh-pà 雪豹 'snow leopard'</td>
</tr>
<tr>
<td>Gk <em>χροκόδειλος</em>, L <em>crocodilus</em> 'crocodile'</td>
<td>croc-</td>
<td>khok 鱷 'crocodile'</td>
<td>khok-ㄧ 鱷魚 'crocodile'</td>
</tr>
<tr>
<td>Gk <em>τοξικόν</em> 'poison', L <em>toxicus</em> 'toxic'</td>
<td>tox-</td>
<td>tòk 毒 'poison, toxic'</td>
<td>tòk-phín 毒品 'poison, poisonous substance'</td>
</tr>
</tbody>
</table>

† Note on Item 4: English *nut* and Tw *hùt* 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 \(\rightarrow\) doc
- brassiere \(\rightarrow\) bra
- mathematics \(\rightarrow\) math
- gymnasium \(\rightarrow\) gym
- representative \(\rightarrow\) rep
- canister \(\rightarrow\) can
- fanatic \(\rightarrow\) fan
- professional \(\rightarrow\) pro
- synchrony \(\rightarrow\) sync
- crocodile \(\rightarrow\) croc ( Cf. Tw \textit{khok-hi 鱷魚}, 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:
<table>
<thead>
<tr>
<th>European words</th>
<th>Simpl.</th>
<th>Taiwanese</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gmc *dédiz 'deed, affair'</td>
<td>*dédī-</td>
<td>tài-chi (G1W, [事情]) 'deed, affair, matter'</td>
<td>with affric. of the 2nd -d- of (E deed)</td>
</tr>
<tr>
<td>ON saksókn 'lawsuit'</td>
<td>saksókn</td>
<td>sò·siōng 訴訟 'lawsuit'</td>
<td>with -kn &gt; -ng</td>
</tr>
<tr>
<td>ON orð-lof 'praise'</td>
<td>orð-lo-</td>
<td>Tw o-ló (G1W) 'praise'</td>
<td></td>
</tr>
<tr>
<td>ON teina 'basket made of twigs'</td>
<td>teina</td>
<td>tîn-nâ 藤籃 'wicker-type basket'</td>
<td>with ei &gt; i (see CV-1.52 below)</td>
</tr>
<tr>
<td>ON klumba 'club'</td>
<td>*kumba</td>
<td>kùn-pá 棍把 'club'</td>
<td>Tw has no -um sound, thus: *-um &gt; -un.</td>
</tr>
<tr>
<td>ON tálman 'hindering'</td>
<td>tálman</td>
<td>tài-bān 怠慢 'hindering, loitering'</td>
<td>Sound change: á / a &gt; ai</td>
</tr>
<tr>
<td>Gk δάπανος 'lavish, extravagant'</td>
<td>dápan-</td>
<td>tōa-pān (G1W) 'lavish, unstinting, extravagant'</td>
<td>infix with -o-; Tw has no [d] sound: d- &gt; t-.</td>
</tr>
<tr>
<td>ON fúlna 'to become stinking'</td>
<td>fúlna</td>
<td>hiú-nōa 腐爛 'to decay'; hú-nōa 腐爛 'to decay'</td>
<td></td>
</tr>
<tr>
<td>ON amma 'grandma'</td>
<td>amma</td>
<td>a-má 阿嬤 'grandma'</td>
<td>-mm- &gt; -m-</td>
</tr>
<tr>
<td>ON kanna 'can'</td>
<td>kanna</td>
<td>kan-á 瓶仔 'can, bottle'</td>
<td>-nn- &gt; -n-</td>
</tr>
<tr>
<td>ON hamarr 'hammer'</td>
<td>hama-</td>
<td>ham-á (G1W) 'hammer'</td>
<td>-rr &gt; -Ø (see CS-5 below)</td>
</tr>
<tr>
<td>OE āfnung 'evening'</td>
<td>āfnung</td>
<td>ē-hng 'evening'</td>
<td>f- &gt; h-</td>
</tr>
</tbody>
</table>
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 [nil], knock [nɔk], knife [naɪf], 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.

<table>
<thead>
<tr>
<th>European words</th>
<th>Simplif.</th>
<th>Taiwanese words</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gk κλάω 'to weep, lament, wail'</td>
<td>*κάω</td>
<td>khàu (v.) 哭 ‘to weep, cry’</td>
</tr>
<tr>
<td>Gk κνάω 'to scrape'</td>
<td>*κάω</td>
<td>khaʊ (G1W) ‘to scrape’</td>
</tr>
<tr>
<td>Gk σταυρόω 'to fence with pales' is the root for L instaurō ‘to set up’</td>
<td>*taur-</td>
<td>tâu (G1W) [拼湊] ‘set up’, 3rd tone reflects loss of -r.</td>
</tr>
<tr>
<td>Gk κλάω ‘to break, break off’</td>
<td>*κάω</td>
<td>kiāu 撟 [撬] id., e.g.: kiāu-khui 撞開 ‘break open’</td>
</tr>
<tr>
<td>Gk πνίγω ‘to strangle’</td>
<td>*nig-</td>
<td>nǐh 捏 [勒死] ‘to strangle’ (with PSC: -g &gt; -h)</td>
</tr>
<tr>
<td>OE stingan, ON stīnega ‘to sting’</td>
<td>*ting-</td>
<td>tèng 叮 ‘to sting’ (Tw has no *ting, it is written tèng.)</td>
</tr>
<tr>
<td>European words</td>
<td>Simplif.</td>
<td>Taiwanese words</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>----------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>OHG <em>stam</em> ‘tree trunk’ &gt; G <em>Stamm</em> ‘stem, trunk’</td>
<td><em>sam</em></td>
<td><em>sam</em> 杉 ‘tree trunk, lumber’</td>
</tr>
<tr>
<td>OFris <em>splīta</em> ‘split’ &gt; <em>plīta</em> &gt;</td>
<td><em>pīt</em></td>
<td><em>pīt</em> 剪 ‘split, crack’, <em>līt</em> 裂 ‘split, crack’</td>
</tr>
<tr>
<td>OE <em>cnocian</em>, ON <em>knoka</em> ‘knock’</td>
<td><em>kok</em></td>
<td><em>khò·</em> 扣 / 叩 ‘knock’ (Note 1)</td>
</tr>
<tr>
<td>Gk <em>crokódeilos</em>, L <em>crocodile</em>, ‘crocodile’</td>
<td><em>cok</em></td>
<td><em>khok</em> 鳄 : <em>khok-hî</em> 鱷魚, ‘crocodile’</td>
</tr>
<tr>
<td>Gk <em>stómacos</em>, L <em>stomachus</em>, ‘stomach’</td>
<td><em>to</em></td>
<td><em>tō·</em> 肚 ‘stomach’ : <em>tî-tō·</em> 豬肚 ‘pig maw’</td>
</tr>
<tr>
<td>Kroraina ‘an ancient Eastern Central Asian state’</td>
<td><em>ro</em></td>
<td>Lô-lân 樓蘭 Kroraina (Note 2)</td>
</tr>
</tbody>
</table>

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·-mn̂ g* (khà-mn̂ g) ‘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 Pê-ōe-jî 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.

<table>
<thead>
<tr>
<th>Infix</th>
<th>Sinograph</th>
<th>-i-</th>
<th>-a-</th>
<th>-e-</th>
<th>-o-</th>
<th>-u-</th>
<th>European correspondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>u</td>
<td>櫃 ‘chest’</td>
<td>kūi</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>L cista, Gk κίστη ‘chest’</td>
</tr>
<tr>
<td>u</td>
<td>規 ‘guide, rule’</td>
<td>kui</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>It guida ‘guide’</td>
</tr>
<tr>
<td>u</td>
<td>雷 ‘thunder’</td>
<td>lūi</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ON reiðar ‘thunder’ (-ei &gt; -i)</td>
</tr>
<tr>
<td>o</td>
<td>罐 ‘can’</td>
<td>koàn</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OHG, ON kann ‘can’</td>
</tr>
<tr>
<td>o</td>
<td>盤 ‘pan, plate’</td>
<td>poàn</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OE panne ‘pan’</td>
</tr>
<tr>
<td>o</td>
<td>歡 ‘to rejoice’</td>
<td>hoan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ON fagna ‘rejoice in a thing’</td>
</tr>
<tr>
<td>o</td>
<td>地 ‘earth’</td>
<td>tōe</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>L terra ‘earth’</td>
</tr>
<tr>
<td>o</td>
<td>背 ‘to bear’</td>
<td>pōe</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>L ferō, Gk φέρω ‘to bear’</td>
</tr>
<tr>
<td>o</td>
<td>雞 ‘chicken’</td>
<td>koe</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>L gall-us ‘cock’, -ina ‘hen’</td>
</tr>
<tr>
<td>i</td>
<td>鵝 (v.) ‘goose’</td>
<td>già</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ON gás ‘goose’ (loss of -s)</td>
</tr>
<tr>
<td>i</td>
<td>挟 ‘to seize’</td>
<td>kiap</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>L capere ‘to seize’</td>
</tr>
</tbody>
</table>
### Infix Sinograph -i- -a- -e- -o- -u- European correspondents

<table>
<thead>
<tr>
<th>Infix</th>
<th>Sinograph</th>
<th>-i-</th>
<th>-a-</th>
<th>-e-</th>
<th>-o-</th>
<th>-u-</th>
<th>European correspondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>領 (v.) ‘to get’</td>
<td>niá</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ON ná ‘to get, obtain’</td>
</tr>
<tr>
<td>i</td>
<td>叫 ‘call’</td>
<td>kiò</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>PIE *gol- ‘call’ (the 3rd tone of kiò reflects loss of -l.)</td>
</tr>
<tr>
<td>i</td>
<td>尿 ‘urine’</td>
<td>jiò</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>L lötium ‘urine’ (*liō &gt; jiō)</td>
</tr>
<tr>
<td>i</td>
<td>轎 ‘palanquin’</td>
<td>kiō</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ON skjótr ‘vehicle’</td>
</tr>
<tr>
<td>i</td>
<td>柳 ‘willow’</td>
<td>liú</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Gk λύγος ‘willow-like tree’</td>
</tr>
<tr>
<td>i</td>
<td>球 ‘ball’</td>
<td>kiú</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>G Kugel ‘ball’</td>
</tr>
<tr>
<td>i</td>
<td>朽 ‘to rot’</td>
<td>hiú</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ON fína ‘to rot, decay’</td>
</tr>
<tr>
<td></td>
<td>as in 朽爛 húi-nōa</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i</td>
<td>娘 ‘a lady’</td>
<td>niú</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>L nurus ‘a young woman’</td>
</tr>
</tbody>
</table>

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:
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.

<table>
<thead>
<tr>
<th>Sinograph</th>
<th>Vernacular Tw</th>
<th>Literary Tw</th>
<th>European words</th>
</tr>
</thead>
<tbody>
<tr>
<td>氣 ‘breath, air’</td>
<td>khùi : 喘氣 chhoán-khùi</td>
<td></td>
<td>Gk πνεύμα ‘breath, a wind’ &gt; *νεῦ-</td>
</tr>
<tr>
<td></td>
<td>‘breathing, panting’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>肺 ‘the lung’</td>
<td></td>
<td>hùi : 肺腑之言 hùi-hú-chí-giân ‘confidential words’</td>
<td>Gk πνεύµων, Attic πλεύµων ‘the lungs’ &gt; *πεύ-</td>
</tr>
<tr>
<td></td>
<td>hi : 肺炎 hi-iam</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>‘pneumonia’</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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 īn-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-siaⁿ* rhyme 隱聲韻: open morphosyllables ending in a vowel
- Class B: *Iông-siaⁿ* rhyme 陽聲韻: nasal morphosyllables ending in -n, -m, -ng, or a nasalized vowel (Vⁿ)
- Class C: *Jìp-siaⁿ* rhyme 入聲韻: closed morphosyllables with a -p/-t/-k/-h final

Examples of Taiwanese words in the three classes

<table>
<thead>
<tr>
<th>Class</th>
<th>Final</th>
<th>Taiwanese words</th>
<th>European corresponding words</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>-a</td>
<td>家 ka ‘house, home’</td>
<td>L <em>casa</em> ‘house, hut’</td>
</tr>
<tr>
<td>A</td>
<td>-u</td>
<td>府 hú ‘house, office’</td>
<td>ON hús ‘house’</td>
</tr>
<tr>
<td>A</td>
<td>-u</td>
<td>哭 (v.) khâu ‘to weep, cry’</td>
<td>(Attic) Gk κλάω ‘to weep, wail’</td>
</tr>
<tr>
<td>B</td>
<td>-n</td>
<td>竹 kan ‘a cane’</td>
<td>L <em>canna</em> ‘a cane’</td>
</tr>
<tr>
<td>B</td>
<td>-ng</td>
<td>(G1W) leng ‘milk’</td>
<td>L lactes (&gt; It latte) ‘milk’</td>
</tr>
<tr>
<td>B</td>
<td>-m</td>
<td>杉 sam ‘tree trunk, lumber’</td>
<td>OHG stam ‘stem, tree trunk’</td>
</tr>
<tr>
<td>B</td>
<td>-aⁿ</td>
<td>行 (v.) kiâⁿ ‘walk, go’</td>
<td>ON <em>gang</em> (f.), <em>gangr</em> (m.) ‘walking’</td>
</tr>
<tr>
<td>C</td>
<td>-p</td>
<td>協 hiáp ‘assistance’</td>
<td>ON hjålp ‘help’</td>
</tr>
<tr>
<td>C</td>
<td>-t</td>
<td>法 hoat ‘law’</td>
<td>L <em>fas</em> ‘law, lawful’ (with -<em>s &gt; -t</em>)</td>
</tr>
<tr>
<td>C</td>
<td>-k</td>
<td>穀 kok ‘grain’</td>
<td>Gk χόκκος ‘a grain, seed’</td>
</tr>
<tr>
<td>C</td>
<td>-k</td>
<td>毒 tôk ‘poison, poisonous’</td>
<td>Gk τοξικόν ‘poison’, L <em>toxicus</em> ‘toxic’</td>
</tr>
<tr>
<td>C</td>
<td>-h</td>
<td>活 (v.) oáh ‘to live’</td>
<td>OE <em>fœorh</em> ‘life’</td>
</tr>
</tbody>
</table>

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 tök 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 tök 毒 ‘poison’.

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

<table>
<thead>
<tr>
<th>Meaning</th>
<th>Old Norse</th>
<th>Old English</th>
<th>Taiwanese</th>
</tr>
</thead>
<tbody>
<tr>
<td>fish</td>
<td>fiskr</td>
<td>fisć</td>
<td>hî 魚 (v.)</td>
</tr>
<tr>
<td>dish</td>
<td>diskr</td>
<td>disć</td>
<td>tî 碟 (v.)</td>
</tr>
</tbody>
</table>

Taiwanese phonology does not have finals like those of ON -skr or OE -sc. 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 (GiW) ‘plate’ which corresponds to It piatta ‘plate’; and (2) pôa "-á 盤仔 ‘pan’ which corresponds to OE pannæ, OS panna, and OHG pfanne ‘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:

<table>
<thead>
<tr>
<th>Old Norse words</th>
<th>Taiwanese words</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>fors</em> ‘vehemence, wrath’</td>
<td>phók 暴 ‘vehement, tyrannical’, Example: phók-kun 暴君 ‘tyrannical ruler’</td>
</tr>
<tr>
<td><em>fors</em> ‘waterfall’</td>
<td>phók瀑 ‘waterfall’ †, Example: phók-pó·瀑布 ‘waterfall’ †</td>
</tr>
</tbody>
</table>

† In the name of a waterfall, phók瀑 is used alone, e.g., lông-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.

<table>
<thead>
<tr>
<th>Pokorny</th>
<th>PIE</th>
<th>Old Norse words</th>
<th>Taiwanese words</th>
</tr>
</thead>
<tbody>
<tr>
<td>480</td>
<td>*gwet- ‘to say, speak’</td>
<td>kviðr ‘saying, word’</td>
<td>ǖ  jsonify ‘speak, saying’</td>
</tr>
<tr>
<td>481</td>
<td>*gwet- ‘bowel’ ‡</td>
<td>kviðr ‘belly, abdomen’</td>
<td>ǖ  胃 ‘stomach’</td>
</tr>
</tbody>
</table>

Chau H. Wu, “Patterns of Sound Correspondence between Taiwanese and Germanic/Latin/Greek/Romance Lexicons,” Part I, *Sino-Platonic Papers*, 262 (August 2016)

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 simplification 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.

![Diagram showing correspondence of homophone pairs](image)
It is clear that, whatever the probability there is for a single match by random chance, say, between Lang-A X, and Lang-B Y, 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 吠 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

<table>
<thead>
<tr>
<th>ON words</th>
<th>Simpl.</th>
<th>Tw words</th>
<th>Examples (Notes in parenthesis)</th>
</tr>
</thead>
<tbody>
<tr>
<td>sinn ‘time’</td>
<td>sinn</td>
<td>sí 時 ‘time’</td>
<td>sì-kan 時間 ‘time’</td>
</tr>
<tr>
<td>skinn ‘skin’</td>
<td>*kinn</td>
<td>ki 肌 ‘skin’</td>
<td>ki-hu 肌膚 ‘skin’, pleonastic with hu 廩 (ON húđ ‘hide’ &gt; hu 廩 ‘skin’)</td>
</tr>
<tr>
<td>skrin ‘shrine’</td>
<td>*sín</td>
<td>sī 寺 ‘shrine’</td>
<td>(skrín &gt; OR-2 &gt; *srín &gt; OR-2 &gt; *sín)</td>
</tr>
<tr>
<td>kyn ‘wonder, marvel’</td>
<td>kyn</td>
<td>kì 奇 ‘wonder, marvel’</td>
<td>kì-koan 奇觀 ‘sight of wonderment’</td>
</tr>
<tr>
<td>horn ‘horn’</td>
<td>horn</td>
<td>hō 号 ‘horn’</td>
<td>hō-kak 號角 ‘horn, trumpet’</td>
</tr>
<tr>
<td>sumar ‘summer’</td>
<td>sum-</td>
<td>sú 暑 ‘summer’</td>
<td>sú-ká 暑假 ‘summer vacation’</td>
</tr>
<tr>
<td>matr ‘meat’</td>
<td>matr</td>
<td>bah (G1W) ‘meat’</td>
<td>ti-bah (G1W) ‘pork’</td>
</tr>
<tr>
<td>rim ‘rail in a’</td>
<td>rim</td>
<td>lì 隔 ‘rail in a’</td>
<td>lì-pa 隔笆 ‘fence, paling’, combined</td>
</tr>
<tr>
<td>ON words</td>
<td>Simpl.</td>
<td>Tw words</td>
<td>Examples (Notes in parenthesis)</td>
</tr>
<tr>
<td>----------</td>
<td>--------</td>
<td>----------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>paling’</td>
<td>paling’</td>
<td></td>
<td>with pa 笠 (&lt; L pālus ‘a pale, stake’)</td>
</tr>
<tr>
<td>sunr ‘son’</td>
<td>sunr</td>
<td>chú § 子 ‘son’</td>
<td>chú-lú 子女 ‘son and daughter’</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>§ (See OR-6: S-T spectrum, below)</td>
</tr>
<tr>
<td>naem ‘study, learning’</td>
<td>liám ¥ 喃 ‘read, study’</td>
<td>liám-chu 喃書 ‘read out loud, study’</td>
<td></td>
</tr>
<tr>
<td>níð ‘derision’</td>
<td>níð</td>
<td>ki 譏 ‘derision’</td>
<td>(See PSC-5: n- &gt; k-)</td>
</tr>
<tr>
<td>níu ‘nine’</td>
<td>níu</td>
<td>kiúa 九 ‘nine’</td>
<td>(See PSC-5: n- &gt; k-)</td>
</tr>
</tbody>
</table>

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 bî 味 ‘smell’
3. Word-initial n- > k- / h-, e.g., ON níu ‘nine’ > Tw kiúa 九 id.
4. Word-initial cluster hn- > h-; kn- > k-, e.g., OE hnutu ‘nut’ > Tw hût 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:

<table>
<thead>
<tr>
<th>Pronunciations of various sinographs with the phonophore of 者</th>
<th>su</th>
<th>ju</th>
<th>chu</th>
<th>chhu</th>
<th>tu</th>
</tr>
</thead>
<tbody>
<tr>
<td>暑 sú ‘summer’</td>
<td>--</td>
<td>--</td>
<td>豬 chu ‘pig’</td>
<td>--</td>
<td>豬 tu ‘pig’</td>
</tr>
<tr>
<td>緒 sū ‘summary’</td>
<td>--</td>
<td>--</td>
<td>請 chu ‘many, some’</td>
<td>--</td>
<td>著 tū ‘write, publish’</td>
</tr>
<tr>
<td>署 sū ‘administration’</td>
<td>--</td>
<td>--</td>
<td>煮 chú ‘cooking’</td>
<td>--</td>
<td>燹 tū ‘chopstick’</td>
</tr>
<tr>
<td>曙 sū ‘daybreak light’</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>燹 tū ‘store, save’</td>
</tr>
</tbody>
</table>

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-giàn) or 緒論 (Tw sū-lūn), in which the 緒 sū corresponds to L *summa* ‘summary’ through denasalization:

L *summa* ‘summary’ > *su* > (denasalization) > 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 straightforward 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 scien- 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 sci- > *sī- > Tw ti 知 (MSM zhī) ‘know’. Interestingly, Rumanian has ștī with the t appearing between ș- 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.
Note the stated directionality of from \( s \)- to \( t \)-. The opposite direction, of from \( t \)- to \( s \)-, is well documented, as in E \textit{water} > G \textit{Wasser}, E \textit{better} > G \textit{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 \( siong \) / \( thong \) / \( tông \), 拭 \( sek \) / \( thek \), 單 \( siân \) / \( tan \), 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 > 眠 \( sûi \) / 錘 \( thûi \), 盾 > 遁 \( tûn \) / 循 \( sûn \), 是 > 钥 \( sî \) / 题 \( tê \), 屯 > 純 \( sûn \) / 鈍 \( tûn \), 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 \textit{sus} ‘pig’ was borrowed into Old Chinese as well as Proto-Holó, it may have the form of *su- initially. In fact, the 兀 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 \textit{síd} is an adverb meaning ‘late’. The Taiwanese correspondent is \( tî \) 遲 ‘late’. The two words can be correlated through the S-T Spectrum: \textit{síd} > *\textit{sí}- > Tw \( tî \) 遲. Notice that the phonophore for the graph 遲 \( tî \) is 犀 ‘rhinoceros’, which is pronounced \( se \) in Taiwanese (\textit{xî} in MSM). This fact suggests that 遲 originally may have been pronounced as *\textit{sî} which later changed to \( tî \). Thus, we can reconstruct the chain of events as: ON \textit{síd} > *\textit{sí}- > Proto-Holó *\textit{sî} 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 sC₁alC₂... (or sC₁álC₂...) > Tw C₁iau (Where C₁ and C₂ Are Consonants)
- **PSC-7**: L im- > Tw im
- **PSC-8**: Loss of word-final -s
- **PSC-9**: OE -ea- > Tw -ia-
1.1  **ON fōrn > Tw hōng 奉 (f- > h-)**

ON *fōrn* '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 *fōrn* and is usually combined with a synonym *hiàn 獻* ‘offering’ to form *hōng-hiàn 奉獻* ‘offering’ (Fig. 1).

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

1(SN-1).1. OHG spentōn ‘to donate’ > Tw hiån 獻 ‘to offer, donate’

1(SN-1).2. L suspendere ‘to suspend’ > (apheresis) *spen- > Tw hiån 懸 ‘to suspend’

1(SN-1).3. L expendere ‘to spend’ > (aphesis of ek-) *spen- > Tw hiån 現, which in this case means ‘spendable’ as in hiån-kîm 現金 ‘spendable cash’

1(SN-1).4. It sensierato ‘carefree’ > Tw hán 閒 (alternatively 閒, and in older texts間) ‘carefree, leisure’

1(SN-1).5. It svenire ‘to faint’ > Tw hiån 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. *hiån (ignoring the tone). If PSC-1(SN-1) is valid, both the foreign word with the fen- initial and the Taiwanese word *hiån should match in meaning. Indeed, one is found which is given below as 1(SN-1).Test-1:

1(SN-1).Test-1. L fenestra ‘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-jiån. The fifth line of the poem reads, “開軒面場圃 Khai hian biān tiông phô’ (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 finestra (§ 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. 軒 (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 lō-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-hiān-hiān 看現現 ‘wide open for all to see’.

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1(SN-1). Test-3. OE openian (verb stem open-) , OFris epenia (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 pénicillus ‘paint brush’ > pën- > Tw hân 翰, of which the original meaning was ‘pheasant/phoenix with red feathers’, later changing to ‘writing brush’, as in hân-bèk 翰墨 ‘brush and ink’.

1(SN-1). Test-5. L pénuria ( > E penury) ‘indigence, want, dearth’; Gk πένης (pénes) ‘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 chremátōn) denotes ‘poor in money’. Note that another word Tw pîn 貧 ‘poor’ can also be derived from L pénuria (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 hîan 献 matches G spenden (Figs. 1 and 2).
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 > i 以), corresponds to Tw. i-óng 往以 ‘in times past’.

1.3a ON horn > Tw hông 夹

ON horn ‘horn (of an animal)’ is a noun; when it is adopted into Taiwanese, it becomes the verb hông 夹 ‘(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):
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-lōh 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* 角 ‘grain’.

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

Gk *kókkos* ‘grain, seed’ > (OR-1) *kók-* > Tw *kok* 角 ‘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-hó-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" sì-kak chiú lài” ‘First bring over four horns of booze.’

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1.3b  **ON horn > Tw hông 簫**

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

1.3c  **ON horn > Tw kong 觀 (觥)**

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* 觀 with a lesser-known variant *kong* 觀, both of which have 角 ‘horn’ semantophore and connote ‘drinking horn’. The word *kong* 觀 is preserved in a set phrase *kong-tiû-kau-chhò* 觀籌交錯, describing the aftermath of a happy, raucous, game-filled banquet in which drinking horns (*kong* 觀) and chips for wine games (*tiû* 籐) 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).
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 *cornǔcōpia* > *cornu* > Tw *hong* 豐

*L cornǔcōpia* 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 *cornǔcōpia* the first syllable *cornu*-, 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 tōe-mǐh móa-móa* 器具裝物滿滿 ‘vessel filled with stuff fully’, marvelously echoing in imagery the definition for L *cornǔcōpia* in the West.

1.4a  
L *cornǔcōpia* > *cornu* > Tw *hong-hù* 豐富 ‘abundant’

With the $n$- to $h$- correspondence, the first two syllables *cornu*- of L *cornǔcōpia* can be related to Tw *hong-hù* 豐富 ‘abundant’.
1.5  **L cornū > corn- > Tw kiong**  pożycz

Another definition of L cornū is 'bow'; Tw kiong '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], [tʰ] 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 chhi 刺 which can be related to G Stich 'prick' (the third tone of chhi 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 pollr 'fir-tree' following a PSC of -ollr > -ong, but it involves a semantic shift from 'fir-tree' to 'pine-tree'.

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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-lô·* / (v.) *hang-lô·* 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.
L. *fornix* > 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*—initial 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* 拱, *kióng* 拱, and *kióng* 珑; 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.

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* > *-o̍k*) to arrive at *siók* 俗.

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

L. *fornicatiō* > 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. Liù 流, the second morphosyllable of hong-liù, literally meaning 'flow', is borrowed to transliterate L lustror ‘to frequent brothels’, the liù 流 being arrived at through the following changes:

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

1.12 OHG hornuz, OS hornut > 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 bit-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-bô· 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 bi-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
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(First Rhapsody on the Red Cliff), “Bōng bí-jìn 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 煒

ON morna (stem morn-) means ‘to become morning, to dawn’. Again through denasalization, we see its correspondence with Tw bông 煹 ‘dim daylight’, such as bông-lông 煢曚 ‘the dim light of early dawn’ (D2-7, p. 624) and in the set phrase sîn-hun-bông-éng 晨昏朦影 ‘dim light in the dawn and dusk’. 
1.15 **ON norn > Tw lông** \弄

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 lông \弄.

The correspondence of ON norn to Tw lông \弄 involves denasalization of [n] to [l]. MSM retains both nasal and denasalized pronunciations nòng \弄 and lòng \弄 for \弄. Tw. lông \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 lông-jìn 造化弄人 ‘The Creator plays tricks with a person’; (2) miā-ūn chok-lông 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 lông \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 hōe-ōng 火旺 'the blazing up of a fire' to ōng-sēng 旺盛 'prosperous'.

1.17 **L adōrnō > Tw chong** 裝, 妝, 飾

L adōrnō 'to adorn' (after apthesis to *dōrnō and palatalization of the initial d- to Tw ch-) corresponds to Tw chong. Three sinographs 裝, 妝, and 飾 have the same sound and meaning. Hōa-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 *bólga* ‘to swell, become swollen’ which corresponds to Tw *phòng* 彫 ‘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. *ürnberg* > Tw *hông* 潭

L. *ürnberg* ‘to decorate, adorn’ gives rise to E *ornament*. Tw *hông* 潭, 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 *hō* 喉 (*l.; v. ău*) ‘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-pék, advises us that, *chit-chhün kong-im chit-chhün kim* 一寸光陰一寸金 ‘an inch of time is worth an inch of gold.’

Incidentally, the second element *im* 隱 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* 隱.
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-tū 團隊 ‘a team’, thoân-khê 團契 ‘association, fellowship’, thoân-oân 團員 ‘team member’, and thoân-kiat 團結 ‘solidarity’. In modern Taiwanese /t/ and /th/ (= [th]) 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 chhohan ||

ON straumr is ‘a stream, river’ (cognate with OE strēam and OHG stroum), which corresponds to Tw chhohan || ‘a stream, river’. Tw hô-chhohan 河川 is a compound meaning ‘river, stream’. The Church Romanization <chh> represents the phoneme [ʃ] /ʃ/, realized as either [tsʰ] before central and back vowels or [tsʰy] 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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2(SN-1).1 OHG strō ‘straw’ (> G Stroh ‘straw’) > Tw chhő (l.)/chhhâu (v.) 草 ‘straw, grass’. Straw hat in German is Strohhut (Fig. 12) and in Taiwanese chhhâu-bô 草帽. Both Tw chhó-li 草履 and chhâu-ê 草鞋 mean ‘shoes or sandals made of straws’.

2(SN-1).2 Gk στρώμα (stroma) ‘bed’ / L. stroma ‘mattress’ > (OR-1) strom- > Tw chhông 床 (牀) ‘bed’ with PSC -om > -ong (data not shown).

2(SN-1).3 OE strewian / OHG strewen ‘strew’ > (stem) strew- > Tw chhu (GrW). The original meaning of Tw chhu is ‘to strew’ as in chhu-chhâu (chhu-草) ‘to strew straw on the floor’, which then extends to ‘to spread’ as in chhu-thân-á (chhu-氈仔) ‘to spread a blanket’.
2(SN-1).4 L strepitare > It. strepitare ‘to yell and shout’ > (OR-1) *strep- > Tw. chheh (GiW) ‘to yell and shout’ (with the final -p > -h).

2(SN-1).5ON stródr ‘stubborn’ > Tw chhi 持 ‘to persevere’ as in kian-chhi 堅持 ‘to persevere, insist, hold out’; chhi-siok 持續 ‘to continue, go on’; pó-chhi 保持 ‘to maintain, preserve’; chhi-siú 持守 ‘to hold on’; and chhi-chí-i-hêng 持之以恒 ‘holding it (persevering) to the end’. Incidentally, through other PSCs, ON stródr ‘stubborn’ corresponds to two Tw doublets, thih and khí, which are recombined to form thih-khí (GiW) ‘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 (GiW) 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(ŋ)ng > Tw chhng (GiW).
- 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.
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-iā 幻影 ‘illusory, phantom’.
PSC - 2 (SN - 2) :  \( dr - \rightarrow h - \)

2(SN-2).1 OFris \( drām \) ‘dream’ \( \rightarrow \) Tw \( hām \) (G1W) ‘dream’ as in \( hām-bīn \) (G1W) ‘dream’.

2(SN-2).2 OE \( drēam \) ‘joy, delight’ \( \rightarrow \) Tw \( him \) 欣 (忻) ‘joy, delight’ as in \( him-hī \) 欣喜 ‘to rejoice, be pleased’.

2(SN-2).3 ON \( drótna \) ‘to rule, govern’ \( \rightarrow \) Tw \( hong \) 封 ‘to appoint someone to govern’, as in \( hong-hō \) 封侯 ‘to appoint someone as governor’.

2(SN-2).4 ON \( drúpa \) (stem \( drúp-\)) ‘to hang the head low (e.g., for sorrow)’ \( \rightarrow \) Tw \( hú \) 俯 ‘to hang the head low’, as in \( hú-siū \) 俯首 ‘hang the head low’.

2(SN-2).5
ON \( draga \) (stem \( drag-\)) ‘to launch (a ship)’ \( \rightarrow \) Tw \( hā \) 下, used only in the special situation of launching a ship: ON \( draga \) fram skip ‘to launch a ship’ corresponding to Tw \( hā-chūi-lé \) 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 \( drótna \) ‘to rule, govern’ \( \rightarrow \) Tw \( thóng \) 統 as in \( thóng-gū \) 統御 ‘to govern the whole country’; and ON \( draga \) ‘to draw, drag, pull’ \( \rightarrow \) Tw \( thoa \) 拖 ‘to pull, drag’.

2.4 ON gaumr \( \rightarrow \) 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 chūn-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. *gladius* ‘sword’ > *glad-* > Tw hài 槍 ‘weapon’, as in *kun-hài 軍械 ‘military weapon’ (with a PSC of -aC [C is a consonant] to -ai).

- **2(SN-3).2** ON glepja ‘to confuse one, to confound’ > Tw hék 惑, ‘to confuse, confound’, as in bê-hék 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 *glæa* ‘to glow, glisten’; *gloesiligr* ‘splendid’ > Tw hòa 華 ‘splendor’, as in éng-hòa 獨華 ‘glory, splendor’.

- **2(SN-3).4** Gk γλυός (*gloiós*) ‘glue’ > Tw hōː (l.) / kōː (v.) 糊 ‘glue’

- **2(SN-3).5** Gk γλωχίν (*glōchín*) ‘any projecting point; the point of an arrow’ > glōch- > Tw hong 鋒 ‘a sharp point; the tip of a lance or bayonet’ (through a PSC of -okh > -ong).
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:

2(SN-4).1 L rūs ‘the country, as opposed to the town' > rū- > Tw. hu 墟 ‘the country', as in hu-lōk 墟落 ‘village'. Óng 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 Õi-chhoan Tiân Ka 渭川田家, “Siā kong chiàu hu-lōk 斜光照墟落” ‘The slanting sun-rays shine on the village'. Incidentally, the lōk 落 of hu-lōk 墟落 may also be derived from L rūs through a PSC of -us > -ok (L rūs > Tw lōk 落).

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

2(SN-4).3 ON rött ‘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 ruîna ‘ruin' (used mostly in pleural ruînae ‘ruins') > (denasalization) > *ruî- > Tw hūi 廢 ‘abandoned, ruined' as in hūi-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.

2.7 ON aumr > Tw boán 懷
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 懷 ‘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 懷 has a second pronunciation of būn, which is the same as 悽 būn, and the latter has completely taken over the former, as in the set phrase 悽悶不樂 būn-būn-put-lòk ‘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.
P S C - 3 : - an g r > -(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“ 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” 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:

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

3(SN-1).1 L rōs ‘dew’ > Tw lō· 露 ‘dew’, such as in lō·-chúi 露水 ‘dew drop’ and tiau-lō· 朝露 ‘morning dew’.
3(SN-1).2 ON rođa ‘road’ > rođ- > Tw lō· 路 ‘road’.
3(SN-1).3 *rēs* ‘a matter of business’ > *rē-* > Tw *lǐ* 理, as in *seng-lǐ* 生理 (> MSM *shēngi* 生意) ‘business’.

3(SN-1).4 *rēs* ‘reason’ > *rē-* > Tw *lǐ* 理, as in *lǐ-iû* 理由 ‘reason’.

3(SN-1).5 *rītus* ‘ritual, ceremony’ > *rī-* > Tw *lé* 礼 ‘rite, ritual’.

3(SN-1).6 ON *ristill* ‘ploughshare’ > *rī-* > Tw *lē* 犁 ‘plough’.

3(SN-1).7 ON *regn* ‘rain’ > (-*gn* > -*ng*) > Tw *lēng* 零 (archaic) ‘drizzling rain’, as in a poem entitled *Tong San* 東山, in the classic *Si Keng* 詩經 ‘Book of Odes’, *Shēng* (Tw *Pin-hong*) ‘Poems of the State of Pin’, “*Lēng ú kî bông* 零雨其濛 (The drizzling rain is so misty).” Today *lēng* 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 *rēgn*um ‘kingly government, royal power’ (> E. *reign*) > Tw *lēng* 領. The word *lēng* 領 is usually used in combination with a related or synonymous word to denote ‘a director, leader, king or president’. Examples are as follows: *lēng-siû* 領袖 ‘a leader, chief’; *siú-lēng* 首領 ‘a leader, chieftain’; *lēng-tō* 領導 ‘to lead, to direct’; *lēng-tō-chiá* 領導者 ‘a leader, director’; and *tāi-thóng-lēng* 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 *lēng* 領 element are *lēng-hék* 領域 ‘territory, domain’; *lēng-thó* 領土 ‘territory, domain’; *lēng-khong* 領空 ‘sovereign airspace’; *lēng-hái* 領海 ‘territorial waters’; and *lēng-thó-koân* 領土權 ‘territorial rights’.
Fig. 14. Cover of a 2-CD set of President Obama’s Inaugural Speech published in Japan.

3.3 **ON rangr > Tw oan 彎**

ON *rangr* has a second meaning, ‘crooked, wry’, as opposed to *rētr* ‘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 săn (GrW)**

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 *săn (GrW)* ‘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).
ON *sam-gangr* > Tw *saⁿ-kån* (sio-kån) (GtW)

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 *saⁿ-kian* 相行 ‘going together’ (especially during courtship) and *saⁿ-kàn* (sio-kàn) ‘intercourse’, respectively. Here the second meaning fits the PSC. Normally, *saⁿ-kàn* (sio-kàn) is a taboo word, which is substituted with euphemistic words such as *khün-chò-hòe* 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).

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

3(SN-2).1 ON *gunnr* ‘war, battle’ > Tw *kun* 軍 ‘military’.

3(SN-2).2 ON *gan* ‘frenzy’ > Tw *kán* (l.) / *kóaⁿ* (v.) 趕 ‘frenzy, hurry’.

3(SN-2).3 ON *gap* ‘gap in a mountain range’ > Tw *kiap* 峽 ‘gap in a mountain range’.

3(SN-2).4 ON *gata* ‘street’ > Tw *keto* 街道 ‘street’ (Fig. 15).

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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 *gallus* ‘a cock’ / *gallina* ‘a hen’ > *ga-* > Tw *ke* 雞 ‘chicken’.

3(SN-2).6 OE *giefan* (ON *gefa*) ‘to give’ > Tw *kip* 給 ‘to give, supply’.

3(SN-2).7 L *gaudeō* ‘to rejoice’ > Tw *ko* 高 as in *ko-hêng* 高興 ‘to rejoice’.

3(SN-2).8 ON *gegnum* ‘through’ > *gegn- > Tw *keng* 經 as in *keng-kòe* 經過 ‘through’ (with -gn > -ng, see CV-2.1 Pregnant).

3(SN-2).9 ON *ganga* ‘walking’ > *gang- > Tw *kiâ* (行) ‘walking’.

3(SN-2).10 L *gigās*, *gigant-* ‘giant size’ > *gig- > Tw *ki* 巨 / 鉅 ‘giant size’

3(SN-2).11 Rom *guttāria* (> Sp *gotera*, OF *gotiere*) ‘gutter’ > *gu- > Tw *kau* 溝 ‘gutter’. The correspondence involves a PSC of -u > -au.

3.6 ON *vangr* > Tw *pán* 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 *nirvāṇa* which is transliterated in Taiwanese as liap-poân 涅槃 where -van- is rendered as poân 檔. 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 *vinr* ‘friend’ > Tw *pêng* 朋 as in *pêng-iú* 朋友 ‘friend’.

3(SN-3).2 ON *vōlr* ‘staff’ > Tw *pio* (v.) 標 as in *pio-kan* 標竿 ‘staff’.

3(SN-3).3 ON *vān* ‘hope, expectation’ > Tw *phàn* 盼 ‘hope, expectation’.

3(SN-3).4 ON *varp* ‘casting, throwing, of a net’ > Tw *pha* (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 chūn ê chià n pêng (拋網在船的正旁)."

3(SN-3).5 ON venda (stem: vend-) ‘to change, alter’ > Tw piàn 變 ‘to change, alter’. (Cf. PSC-1(SN-1): spen- > h(i)an.)

3.7 ON krangr > Tw koan 瘟 (archaic), loán 軟 (variant form: 軟)

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 alternative splicing into two Taiwanese doublets with initials of k- and l- (with the r-replaced by l-):

\[
\text{ON krangr ‘weak’} \quad \text{---} \quad \begin{cases} 
*\text{kangr} > \text{Tw koan 瘟 (arch.)} \\
*\text{rangr} > \text{Tw loán 軟 (軟)}
\end{cases}
\]

Two words are found that have the proper initials and that correspond to the meaning of the Old Norse word. Koan 瘟 ‘weak, lack of energy’ is an archaic word and no longer in use. The word in currency is loán 軟 (軟) ‘weak, soft, pliable’ which is commonly combined with a synonym jiók 弱 to form a compound loán-jiók 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 瘟 would not have been found.
PSC - 4: \(-ang(u)\) or \(-ang\)ar \(-\) \((i/o)\)an

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

4.1 \(L\)angor \(\rightarrow\) Tw ân (GiW)

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 \(jîn\)緊 for 'tight'). The following are a few examples of its usage:

- pâk-ân 'tie tightly'
- kat-ân 'tie a tight knot'
- ân-tok-tok 'very tight'
- phê-pi"-hô-ân 'make your skin tight, (metaphor) be ready for a whipping'
- chi"-koan ân (lit.) 'money-gate (is) tight' = 'cash flow is tight'
- sim-koa"-thâu kám-kak ân-ân 'the heart feels a little tight'

4.2 \(L\)clangor \(\rightarrow\) Tw khian 鏘

\(L\)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 \(khian\) 鏘 means 'the sound of metals or stones being struck'. It is preserved in an idiomatic expression \(khian-chhiong-iú-seng\) 鏘鏘有聲 '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 \(L\)anguor \(\rightarrow\) Tw lân 懶

\(L\)anguor 'faintness, weariness, feebleness' together with the related verb \(languère\) '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 \textit{L. plangor} > Tw \textit{pän} 搏 (arch.)

\textit{L. plangor} means ‘striking or beating, accompanied with noise’. The Taiwanese correspondent \textit{pän} 搏 ‘striking, beating’, listed in Kangxi (D2-3) and Campbell (D1-2), is obsolete now.

4.5 \textit{OHG swangar} > Tw \textit{biăn} 娩, \textit{sän} 産

\textit{OHG swangar} means ‘pregnant’ which developed into G \textit{schwanger} ‘pregnant’ and \textit{Schwangerschaft} ‘pregnancy’ (Fig. 16). \textit{OHG swangar} has an initial cluster \textit{sw-}, which can be declustered into \textit{s-} and \textit{w-}, producing two Taiwanese doublets. With \textit{s-} as the initial, the Taiwanese corresponding word is \textit{sän} 産 ‘childbirth, produce’. Because German /\textit{w/} usually corresponds to Taiwanese /\textit{b/}, the second correspondent is \textit{biăn} 娩 ‘childbirth’ (with an infix of \textit{i}). Tw \textit{biăn} 娩 is normally used in compounds such as \textit{hun-biăn} 分娩 ‘to give birth’. Although these words show a slight shift of meaning from that of \textit{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)](image-url)
It should be noted that the sinograph 娼 has two other pronunciations (see the table below), neither of which corresponds to OHG *swangar. Tw boán 娉 means ‘complaisant, agreeable’ and as such it is mentioned in 禮記 Lé Kì, “oán-boán theng-chiông 娉婉聽從” ‘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 娼 ‘childbirth’. In a commentary on a rhapsody by the prodigious scientist-poet 張衡 Tiun Hêng of Han Dynasty, reference is made to būn 娉 in this meaning when it says “the people of Chē (Qí, in modern Shandong) call ‘childbirth’ būn 娉 (齊人謂生子曰娩).” It is interesting to note that both būn 娉 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 娬 deriving from OHG swangar.

<table>
<thead>
<tr>
<th>Taiwanese</th>
<th>MSM</th>
<th>Meaning</th>
<th>Correspondence</th>
<th>Earliest citation sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>娉 boán</td>
<td>wăn</td>
<td>compliant</td>
<td></td>
<td>Lĕ 禮記</td>
</tr>
<tr>
<td>娉 būn</td>
<td>wĕn</td>
<td>childbirth</td>
<td>ON burðr</td>
<td>Commentary to Wénxuān 文選注</td>
</tr>
<tr>
<td>娬 biáñ</td>
<td>miān</td>
<td>childbirth</td>
<td>OHG swangar</td>
<td>Zhèngyün 正韻</td>
</tr>
</tbody>
</table>

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-kì 產期 ‘due date’, sán-ká 產假 ‘maternity leave’, sán-păng 產房 ‘delivery room’, sán-pō 產婆 ‘midwife’, liū-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 磬, sàn 散], san 婰; boân 蹣, san 蹣

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 磬, sàn 散, san (sian) 婰, boân 蹣, and san 蹣, 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 姗 ‘slowly, tardily’ is used in a set phrase san-san-lâi-tî 姗姗來遲 ‘walk slowly and come tardily’, which is attested in 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 姗姗其來遲 (Fig. 17, arrow).

Fig. 17. Text of 漢書 where san-san-kî-lâi-tî 姗姗其來遲 is shown.
The fourth and fifth words, boân 蹣 and san 蹶, 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· Tiāt (1039–1112 AD):

兩足幾蹣跚 Lióng chiok ki boân-san

‘My two feet walking almost clumsily’

4.6b OE swangor > Tw sīān (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 sīān (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’.

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 姗, boân 蹣, san 蹶, sīān (G1W), bān 慢, biān 娩, and sán 産. 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 4.6a) 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.
There is a pattern of sound correspondence between European *n-* initial and Taiwanese *k*-. Examples of the correspondence are shown in the table below.

<table>
<thead>
<tr>
<th>European words</th>
<th>Simpl.</th>
<th>Taiwanese words</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>L nārrō ‘narrate’</td>
<td>nā(r)-</td>
<td>kāng 講 (-r &gt; -ng)</td>
<td>kāng-sū 講述 ‘narrate’</td>
</tr>
<tr>
<td>L nāvis ‘a ship’</td>
<td>nāv-</td>
<td>kām 艦 (-v &gt; -m: homorg. nasaliz.)</td>
<td>kun-kām 軍艦 ‘a battle ship’</td>
</tr>
<tr>
<td>Late L. nōnnus (&gt; It nonno ‘grandfather’)</td>
<td>non(n)-</td>
<td>kōng 公 (see usage)</td>
<td>á-kōng 阿公 ‘grandfather’</td>
</tr>
<tr>
<td>(Cf. G nun) ‘now’</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gk νῦν, L nunc, num</td>
<td>nun-</td>
<td>kim 今 (PSC: -un &gt; -im)</td>
<td>hiān-kim 現今 ‘now’</td>
</tr>
<tr>
<td>L nōtitia ‘a notice, a being known’</td>
<td>nō-</td>
<td>kō 告 ‘to notify’</td>
<td>kōng-kō 公告 ‘public notice’</td>
</tr>
<tr>
<td>OHG noh (&gt; G noch) ‘still’</td>
<td>noh</td>
<td>kōh (G1W) ‘still, more’</td>
<td>kōh gō· lí (lit. still 5 miles) ‘5 more miles’</td>
</tr>
<tr>
<td>L nātiō(n-) ‘race’ (&gt; E nation)</td>
<td>nā-</td>
<td>ka 家 (see usage)</td>
<td>kok-ka 國家 ‘nation’ (書經 “立政”: 相我國家)</td>
</tr>
<tr>
<td>ON nagl ‘nail’</td>
<td>nagl</td>
<td>kā 甲 (see usage)</td>
<td>chéng-kā 指甲 ‘nail’</td>
</tr>
<tr>
<td>OHG, OS nagan OS knagan, gnagan ‘gnaw, gnash’</td>
<td>nag-</td>
<td>kā 咬 ‘to bite’ (loss of -g &gt; 7th tone)</td>
<td>kā-gē 咬牙 ‘gnashing of the teeth’</td>
</tr>
</tbody>
</table>
### European words, Simpl., Taiwanese words, Usage

<table>
<thead>
<tr>
<th>European words</th>
<th>Simpl.</th>
<th>Taiwanese words</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON neðri, OFris nethera, OE niþera</td>
<td>neth-</td>
<td>kē (低) ‘low’ (loss of -th &gt; 7th tone)</td>
<td>kē-im (低音) ‘low pitch’; kē-un (低温) ‘low temperature’</td>
</tr>
<tr>
<td>OE ner (OE nēar), ON nær ‘near’</td>
<td>ner</td>
<td>kīn 近 ‘near’</td>
<td>kīn-chêng 近前 ‘draw near’</td>
</tr>
<tr>
<td>ON nóg, í nóg ‘enough’</td>
<td>nóg</td>
<td>(l.) kò́, (v.) kâu 夠 ‘enough’ (loss of -g &gt; 3rd tone)</td>
<td>(l.) iū-kò́, (v.) ū-kâú 有夠 ‘enough’</td>
</tr>
<tr>
<td>ON nīða (stem nīð-)</td>
<td>nī-</td>
<td>ki 譏 ‘deride’</td>
<td></td>
</tr>
<tr>
<td>ON nīð + -it &gt; nīdit</td>
<td>nīdit</td>
<td>ki-chhî 譏刺 ‘derision’</td>
<td>(Note: ON -it, enclitic def. article for neuter noun)</td>
</tr>
<tr>
<td>ON nālgast ‘come near to, come by, get’</td>
<td>nāl-</td>
<td>kàu (到) (-l &gt; -u)</td>
<td>kàu-ū̀ 到位 ‘arrive at destination’</td>
</tr>
<tr>
<td>ON nár ‘corpse, dead man’</td>
<td>nár</td>
<td>*kiang &gt; kiong 僵 ‘corpse, dead man’ (with -r &gt; -ng)</td>
<td>kiong-si 僵屍 ‘corpse, dead man’</td>
</tr>
<tr>
<td>ON nefnd ‘a levy or contribution’</td>
<td>nefnd</td>
<td>koan 捐 ‘levy, tax, donation’(PSC:-en, -end, -efnd &gt; -oan)</td>
<td>sòe-koan 稅捐 ‘levy, tax’</td>
</tr>
<tr>
<td>ON nīta (stem nīt-) ‘deny, refuse’</td>
<td>nīt-</td>
<td>kī 譏 ‘deny, refuse’</td>
<td>kī-choát 拒絕 ‘refuse, reject’ (loss of t &gt; 7th tone)</td>
</tr>
<tr>
<td>European words</td>
<td>Simpl.</td>
<td>Taiwanese words</td>
<td>Usage</td>
</tr>
<tr>
<td>----------------</td>
<td>--------</td>
<td>-----------------</td>
<td>-------</td>
</tr>
<tr>
<td>ON <em>neinn</em> ‘any, any one, anybody’</td>
<td>nein-</td>
<td>(v.) <em>ki</em>, (l.) <em>kiàn</em> 見</td>
<td><em>ki</em>-nà 見若 ‘any’ (見若 is phonetic writing.)</td>
</tr>
<tr>
<td>ON <em>nú</em> ‘now’</td>
<td>nú</td>
<td><em>kú</em> (G1W) ‘now’</td>
<td><em>chit-kú</em> (G1W) ‘right now’</td>
</tr>
<tr>
<td>OHG <em>naht</em> ‘night’ (G &gt; G <em>Nacht</em>)</td>
<td><em>naht</em></td>
<td><em>kang</em> (G1W) orig.</td>
<td>*Chít lé-pài hioh-khiûn sî- <em>kang</em> 此禮拜休眠四 <em>kang</em>, ‘night’, adapted for ‘day’ (see SA-2) ‘This week has 4 days off’</td>
</tr>
<tr>
<td>L. nervus, Gk νεῦρον</td>
<td>nerv-/</td>
<td><em>kin / kun</em> 筋 ‘sinew,’</td>
<td><em>kin-mé̍h</em> 筋脈 ‘sinew’</td>
</tr>
<tr>
<td>‘sinew, tendon’</td>
<td>neur-</td>
<td>tendon’</td>
<td></td>
</tr>
<tr>
<td>Gk νέμω ‘to deal out, pass, manage’</td>
<td>ném-</td>
<td><em>keng</em> 經 ‘manage’</td>
<td><em>keng-èng</em> 經營 ‘manage’ (PSC: -em &gt; -eng) (ON önn ‘business &gt; 營 èng)</td>
</tr>
<tr>
<td>Gk νοσέω ‘to be sick’ Gk νοσός ‘sickness’</td>
<td>nos-</td>
<td>kò· 病 ‘chronically’</td>
<td>kò·-chếk 病疾 ‘chronic illness’</td>
</tr>
<tr>
<td>Gk ναός ‘temple’</td>
<td>nao-</td>
<td><em>kau</em> 郊 ‘place of worship’</td>
<td><em>làm-kau</em> 南郊¹ ‘the place for worshipping the heavens on winter solstice’ <em>kau-biâu /-biō</em> 郊廟² ‘temple for worship’</td>
</tr>
<tr>
<td>ON <em>núu</em> ‘nine’</td>
<td>núu</td>
<td>(l.) <em>kiú</em> 九 ‘nine’</td>
<td><em>kiú-siáu</em> 九霄 ‘cloud nine’</td>
</tr>
</tbody>
</table>

¹ Lâm-kau 南郊：Sú Kí 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].’

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* 英, 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* 絹英 where Sino-Japanese 英 *saya* is also read *kyō* that corresponds to Tw *kiap*.

Fig. 19A. A snack made from snap peas.  
Fig. 19B. Snap peas (*Kinusaya* 絹英) from Hyōgo 兵庫 of Japan.
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 \(sC_1\) is simplified to \(C_1\) (OR-2); (2) a glide \(-i\) is inserted after the new initial \(C_1\) (OR-3); (3) the medial (or final) \(-l\) is changed to \(-u\); and (4) the final consonant \(C_2\) 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 \textit{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.

<table>
<thead>
<tr>
<th>Old Norse</th>
<th>Gloss</th>
<th>Taiwanese</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>sC\textsubscript{1}aC\textsubscript{2}..</td>
<td>C\textsubscript{1}iau</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Typical:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sk-áli</td>
<td>hall, room</td>
<td>kiau</td>
<td>喬 tall mansion</td>
</tr>
<tr>
<td>sk-all</td>
<td>noise</td>
<td>kiàu</td>
<td>噗 loud noise</td>
</tr>
<tr>
<td>sk-álp</td>
<td>idle talk</td>
<td>kiáu</td>
<td>謨 idle talk</td>
</tr>
<tr>
<td>spjald</td>
<td>tablet, square</td>
<td>piau</td>
<td>標 tablet, label</td>
</tr>
<tr>
<td>spjall</td>
<td>saying, tale</td>
<td>píáu</td>
<td>表 expressing, saying</td>
</tr>
<tr>
<td>spjalla</td>
<td>to destroy</td>
<td>píáu</td>
<td>標 to hit</td>
</tr>
<tr>
<td>sm-alr</td>
<td>small, little</td>
<td>biáu</td>
<td>渺 small, little</td>
</tr>
<tr>
<td>st-allr</td>
<td>animal stall</td>
<td>tiáu \textsuperscript{(GiW)}</td>
<td>animal stall</td>
</tr>
<tr>
<td>st-allra</td>
<td>to stall, falter</td>
<td>tiáu \textsuperscript{(GiW)}</td>
<td>to get stuck</td>
</tr>
<tr>
<td>Atypical:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sk-álm</td>
<td>short sword</td>
<td>kiám</td>
<td>劍 double-edged sword</td>
</tr>
<tr>
<td>sk-ál</td>
<td>bowl</td>
<td>au</td>
<td>餜 small bowl</td>
</tr>
<tr>
<td>sk-álpr</td>
<td>scabbard, sheath</td>
<td>siàu</td>
<td>鞘 scabbard, sheath</td>
</tr>
<tr>
<td>sm-alr</td>
<td>small, little</td>
<td>siáu</td>
<td>小 small, little</td>
</tr>
</tbody>
</table>
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 hi 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渺 (with denasalization) and with the atypical Tw siáu小, both connoting ‘small, little’. The two doublets then recombine to form a pleonastic biáu-siáu渺小, emphasizing ‘very small’:

Chang was the first to report the derivation for biáu-siáu渺小 (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.
P S C - 7 :  \( L \ im- \rightarrow TW \ im \)

The first syllable \( im- \) of the following Latin words becomes Taiwanese morphosyllables.

### Examples of PSC-7: L \( im- \rightarrow \) Tw \( im \)

<table>
<thead>
<tr>
<th>L/VL words</th>
<th>Simplif.</th>
<th>Tw words / Usages</th>
</tr>
</thead>
<tbody>
<tr>
<td>imbibō 'to imbibe, drink in'</td>
<td>im-</td>
<td>( im ) 飲 (l.) ‘to drink’ ( im-liāu ) 飲料 ‘beverage’</td>
</tr>
<tr>
<td>immergō 'to immerse'</td>
<td>im-</td>
<td>( im ) 淹 ‘to immerse’ ( im-chúi ) 淹水 ‘flooding’</td>
</tr>
<tr>
<td>imbuō 'to steep, saturate, soak'</td>
<td>im-</td>
<td>( im ) 醃 / 蔘 ‘to pickle’ (Footnote) ( im-koe ) 蔘瓜 ‘pickled dills’</td>
</tr>
<tr>
<td>imber 'a shower of rain, heavy rain'</td>
<td>im-</td>
<td>( im ) 霆 ‘a long rain’ ( im-ü ) 霆雨 ‘a long rain’</td>
</tr>
<tr>
<td>immoror 'to stay in/on/at, dwell upon'</td>
<td>im-</td>
<td>( im ) 淫 ‘to dip into, absorb’ ( chim-im ) 淫淫 ‘to dwell upon’</td>
</tr>
<tr>
<td>ipleō 'to fill up'</td>
<td>im-</td>
<td>( im ) 淫 ‘to overfill’</td>
</tr>
<tr>
<td>impudīcus 'unchaste, immodest, lewd'</td>
<td>im-</td>
<td>( im ) 淫 ‘unchaste, lewd’ ( im-loān ) 淫亂 ‘lewd, lecherous’</td>
</tr>
<tr>
<td>VL imne / ymne 'hymn'</td>
<td>im- /ym-</td>
<td>( im ) 音 ‘music, sound’ ( im-gāk ) 音樂 ‘music’</td>
</tr>
</tbody>
</table>

Fn: Both 醃 and 蔘 are borrowed to write \( im \) ‘to pickle’. The first sinograph 醃 is borrowed for its meaning whereas the second 蔘 is for its sound. Today 蔘 is more often seen. Fig. 20 shows a small bottle of pickled dills 蔘瓜 \( im-koe \).
Fig. 20. Pickled dills ˇım-koe 蔘瓜 produced by a Taiwanese food company.
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-bâh chiū”-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* (l.)

OHG *gans* 'goose' is also a cognate of OE *gōs*. Tw *gān* (l.) can be derived from it with the loss of -s. OHG *gans* refers to both the domesticated and wild 'goose' whereas Tw *gān* (l.) 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* (l.) connotes 'migratory birds that fly in I or V formations.' (Photo by C.H. Wu)](image)

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

ON *hūs* 'house' and its cognates correspond to Tw *hú* (l.). *Hú* (l.) 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* (l.) also maintains the original -u- sound but has lost the final -s.
8.5 ON díś > Tw chí 姊 (Northern Taiwan) / ché (Southern Taiwan)

ON díś 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 rōś > Tw lō·露

L rōś 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, phi-jù tiâu-lō· 人生幾何,譬如朝露 (What is life? It is like the morning dew.)

8.7 L réś > Tw lí 理

L réś 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’.

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)
8.8 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 $siō-ko·$小姑 ‘husband’s younger sister’. Children also call ‘father's sister’ $ko·$姑.

8.10 Gk τοξικόν (toxikón) / L toxicum > Tw $tōk$ 毒

Gk τοξικόν (tóxon) connotes ‘bow’, and thus the archery society of England used to be named The Royal Toxophilite Society. $Tōxα$ (tóxa), the plural of τοξικόν, 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 $tōk$ 毒 ‘poison’. Examples of its usages are: $tōk-îöh$ 毒藥 ‘poison’, $tōk-phîn$ 毒品 ‘poisonous substance’ (now referring mostly to narcotics, addictive substances, stimulants, and hallucinogens), $tiòng-tōk$ 中毒 ‘intoxication’, $kái-tōk$ 解毒 ‘detoxication’, $tōk-bût-hák$ 毒物學 ‘toxicology’, and $tōk-sò-hák$ 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’ (GrW, [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.

8.13 OHG lahs (> G Lachs) > Tw láh 鯖 / 鯖

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.
Chau H. Wu, “Patterns of Sound Correspondence between Taiwanese and Germanic/Latin/Greek/Romance Lexicons,” Part I, Sino-Platonic Papers, 262 (August 2016)

Fig. 25. Smoked salmon. Fig. 26. The ka-lâh 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 losósî, Lithuanian lašišà, Latvian lasis, and Old Prussian lasasso. The PIE word has been reconstructed to be *loksos. 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-lâh 嘉鱲 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, jî ka-lâh, sa” chhiong, si bé-ka 一鮸, 二
Chau H. Wu, “Patterns of Sound Correspondence between Taiwanese and Germanic/Latin/Greek/Romance Lexicons,” Part I, Sino-Platonic Papers, 262 (August 2016)

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-lâh (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-lâh 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 lâu-kau ‘disengaged, loose’. This is similar to the reduplication seen between L lacte ‘milk’ and Gk gálaktos (γάλακτος) ‘milk’. Therefore, we can derive ka-lâh from OHG lahs as follows:

OHG lahs > PSC-8 > lah- > reduplication > "kah-lah > dissimilation > ka-lâh

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 ī 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.

<table>
<thead>
<tr>
<th>Old English</th>
<th>Gloss</th>
<th>Taiwanese</th>
<th>Gloss</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>-ea-</td>
<td>-ia-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cēap</td>
<td>business, market</td>
<td>giàp 業</td>
<td>business</td>
<td></td>
</tr>
<tr>
<td>lēaf</td>
<td>a leaf of a tree</td>
<td>iàp 葉</td>
<td>a leaf of a tree</td>
<td></td>
</tr>
<tr>
<td>lēaf</td>
<td>a leaf of a book</td>
<td>iàp 頁</td>
<td>(l.) a leaf of a book</td>
<td></td>
</tr>
<tr>
<td>lēaf</td>
<td>a leaf of a book</td>
<td>iâh 頁</td>
<td>(v.) a leaf of a book</td>
<td></td>
</tr>
<tr>
<td>lēad</td>
<td>lead (metal)</td>
<td>iân 鉛</td>
<td>lead (metal)</td>
<td></td>
</tr>
<tr>
<td>sćearp</td>
<td>sharp pointed</td>
<td>chiam 尖</td>
<td>sharp pointed</td>
<td></td>
</tr>
<tr>
<td>sćearp</td>
<td>pungent</td>
<td>hiâm (G1W)</td>
<td>pungent</td>
<td></td>
</tr>
<tr>
<td>sćearp</td>
<td>sharp to the taste</td>
<td>siâp 濁</td>
<td>sharp to the taste</td>
<td></td>
</tr>
<tr>
<td>sćeaf-an</td>
<td>shave</td>
<td>siah 削</td>
<td>(v.) shave</td>
<td></td>
</tr>
<tr>
<td>sceatt</td>
<td>money</td>
<td>chiân 錢</td>
<td>money</td>
<td></td>
</tr>
<tr>
<td>sceald</td>
<td>shallow</td>
<td>chhiân 淺</td>
<td>shallow</td>
<td></td>
</tr>
<tr>
<td>steall</td>
<td>stall for animals</td>
<td>chian 殖</td>
<td>stall for sheep/goats</td>
<td></td>
</tr>
<tr>
<td>ceafl</td>
<td>cheek</td>
<td>kiap 煞</td>
<td>cheek</td>
<td></td>
</tr>
</tbody>
</table>

9.1 OE cēap > Tw giàp 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 chhi 市 ‘market’ (as in chhi-tiū 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 giá̍p 業 ‘business’ as in siong-giá̍p 商業 ‘commerce’, kang-giá̍p 工業 ‘industry’, and chit-giá̍p 職業 ‘job, occupation’.

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

9.2 OE lēaf > Tw iá̍p 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 iá̍p 葉 agrees with the finding from a totally different approach, the historical phonology of Sinitic, known as 聲韻學 (MSM Shēngyùnxué). In discussing the origin of the i initial (as in iá̍p 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 (Ἄλεξανδρεια), the name of many cities founded by Alexander the Great in Central Asia and India, as 烏弋山離 (Tw O·é-k-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 iá̍p 葉 ‘leaf (leaves) of a tree’. This is the literary reading of 葉; the vernacular reading is hióh 葉, which can be derived from L folium ‘leaf’ (folium > fol- > *hol- > hióh).

9.3 OE lēaf > Tw iá̍p (l.) 頁

9.4 OE lēaf > Tw iá̍h (v.) 頁

OE lēaf also connotes ‘a leaf of a book’, and similar to 9.2, we obtain Tw iá̍p 頁 ‘a leaf of a book’. This is the literary reading of 頁 (9.3); the vernacular reading is iá̍h 頁 (9.4), which is a “weakened” form of the literary iá̍p (l. iá̍p > v. iá̍h).
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 sćearp > Tw chiamp 尖
OE sćearp ‘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, sćearp corresponds to chiam 尖.

9.7 OE sćearp > Tw hiam (G1W)
OE sćearp 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 sć- in OE sćearp 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 sćearp.

9.8 OE sćearp > Tw siap 潑
OE sćearp has another meaning, ‘sharp to the taste’. Its corresponding Tw siap 潑 means ‘tart’. It is interesting to note that from OE sćearp Taiwanese derives two doublets, hiam ‘spicy’ and siap ‘tart’.

9.9 OE sćeafan > Tw siah (v.) 剃
OE sćeafan is a verb (stem sćeaf-) meaning ‘to shave’. The stem final -f turns into -h in Taiwanese. Thus, OE sćeafan corresponds to vernacular Tw siah 剃 ‘to shave’.

9.10 OE sceatt > Tw chiån 錢
OE sceatt means ‘money’. Its correspondent in literary Taiwanese is chiån 錢 ‘money’. The -tt in OE sceatt underwent homorganic nasalization to -n in Tw chiån.
9.11 OE *sceald* > Tw *chhián* 浅

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

9.12 OE *steall* > Tw *chian* 蒨 (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* 蒨 '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 *ceaf* > Tw *kiap* 頰

OE *ceaf* 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 – *gooder – *goodest*. 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 Bjönn 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’

Jît-pûn koán Tâi-oân ū gô-cháp tang 日本管台灣有五十冬
‘Japan ruled Taiwan for fifty winters (= years).’

Thák sió-hák ài lâk tang 讀小學要六冬
‘Elementary school requires six winters (= years) of study.’

Góa ú ko-hiat-ap ì-keng tang-pòa” 我有高血壓已經冬半
‘I have had high blood pressure already for [a] winter and half (= year and half).’
Chau H. Wu, “Patterns of Sound Correspondence between Taiwanese and Germanic/Latin/Greek/Romance Lexicons,” Part I, *Sino-Platonic Papers*, 262 (August 2016)

*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.’

*Chit tang kòe liáu koh chit tang.* 一冬過了又一冬
‘Passing one winter after another winter (= passing one year after another).’

![Fig. 27](image-url)

*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 Gallicum*, 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, *tiú 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* 暗 (*< ON myrk* ‘dark’), *iā* 夜 (*< ON natt* ‘night’), *àm* 暗 (*Cf. G Abend* ‘evening’), and *e-hng* (*Cf. OE Æfnung* ‘evening’). This use of Tw *kang* is a special usage of ‘night’. Examples of ‘*kang*’ for counting ‘days’ are as follows:

*Koh sa*” *kang chiū kē-nî* (隔三 *kang* 就過年)

‘three more days (*lit.* nights) then New Year’

*Tāk-kang* (G1W)

‘every day’ (*lit.* ‘every night’)

*I jîp-i” 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’ *jît* 日 can also
be traced to the Germanic word for 'night'. According to Liông-jít-kuí-nî-soat (娘日歸泥說) theory of Zhāng Tàiyán 章太炎 (see CV-4.2), Tw jit 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" jit lài, bô ràng lài pò-miâ 三日來無人來報名
‘For three days no one has come to register.’

Tē sa" jit là-so· koh-oāh 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" / chht") 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 Pék, 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 *péh* 白 ‘white’ to express the idea of “covering polar opposites, all over the place, totally”:

*chhe"-thui-péh-thui* 青推白推

‘push things all around forcefully’

*chhe"-liap-péh-liap* 青捏白捏

‘make up a story totally out of thin air’
Chau H. Wu, "Patterns of Sound Correspondence between Taiwanese and Germanic/Latin/Greek/Romance Lexicons," Part I, Sino-Platonic Papers, 262 (August 2016)

chheⁿ-pōng-pēh-pōng 青碰白碰
‘come up suddenly — out of the blue’

chheⁿ-ioh-pēh-ioh 青臆白臆
‘guess half-heartedly and with total disregard’

chheⁿ-pōng-pēh-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-po·-sun* (lit. male-*sun*) can mean either a ‘grandson’ or ‘nephew’, and *cha-bó·-sun* (lit. female-*sun*) a ‘granddaughter’ 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 *nepotǎ* 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 *suna sunu* ‘son’s son’

‘Granddaughter’
OE *suna 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 *suna sunu* (*suna 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. W O R D F O R ‘B O N E’

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 fōtleggr 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 knocher 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’):

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>“Look at my hands and my feet. It is myself! Touch me and see; a ghost does not have flesh</td>
</tr>
<tr>
<td>(NIV)</td>
<td>and bones, as you see I have.”</td>
</tr>
<tr>
<td>Luther’s</td>
<td>“Fühlet mich an und sehet; denn ein Geist hat nicht Fleisch und Bein, wie ihr sehet, daß ich habe.”</td>
</tr>
<tr>
<td>Modern</td>
<td>“Seht meine Hände und meine Füße, ich bin’s selber. Fasst mich an und seht; denn ein</td>
</tr>
<tr>
<td>German</td>
<td>Geist hat nicht Fleisch und Knochen, wie ihr seht, dass ich sie habe.”</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Language</th>
<th>‘Bone’</th>
<th>‘Leg’</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>bone</td>
<td>leg</td>
</tr>
<tr>
<td>Icelandic</td>
<td>bein</td>
<td>fôtlæggur, leggur</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Language</th>
<th>‘Bone’</th>
<th>‘Leg’</th>
</tr>
</thead>
<tbody>
<tr>
<td>German</td>
<td>Knochen</td>
<td>Bein</td>
</tr>
<tr>
<td>Danish</td>
<td><em>ben, knogle</em></td>
<td><em>ben, kolle, lår</em></td>
</tr>
<tr>
<td>Norwegian</td>
<td><em>ben</em></td>
<td><em>ben, lår</em></td>
</tr>
<tr>
<td>Swedish</td>
<td><em>ben</em></td>
<td><em>ben, fot</em></td>
</tr>
</tbody>
</table>

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-*.

<table>
<thead>
<tr>
<th>European words</th>
<th>Simplif.</th>
<th>Taiwanese words</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gmc *baina- &gt; OE bān ‘bone’</td>
<td>*bai-hái (also kái) 骸 ‘bone, skeleton, shank’ e.g., chán-hái 殘骸 ‘skeletal remains’</td>
<td></td>
</tr>
<tr>
<td>OE bān ‘bone’</td>
<td>bān</td>
<td>hàn (also kàn) 掰 ‘leg, shank, skeleton’</td>
</tr>
<tr>
<td>Gk βήξ ‘a cough’</td>
<td>bêx</td>
<td>hái (also khek) 咳 ‘cough’</td>
</tr>
<tr>
<td>Old It *banca ‘moneychanger’s table’ &gt; bank</td>
<td>hâng 行 as in gîn-hâng 銀行 ‘bank’</td>
<td></td>
</tr>
<tr>
<td>E bank</td>
<td>bar-hoan 番 (also bân 蠻) ‘uncivilized’</td>
<td></td>
</tr>
<tr>
<td>L. *barbarus ‘foreign’</td>
<td>bar-hā 夏 ‘a great hall, a big house’ (Loss of -s is reflected in the 7th tone.)</td>
<td></td>
</tr>
<tr>
<td>L. *basílica ‘a public building with halls and porticoes’</td>
<td>bas-hā 夏 as in Tâi-hâ 大夏 ‘Bactria’ (Loss of -ct is reflected in the 7th tone.)</td>
<td></td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>European words</th>
<th>Simplif.</th>
<th>Taiwanese words</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kabul ‘a city in Central Asia’ (now in Afghanistan)</td>
<td>kabul</td>
<td>Ko-hù 高附 Kabul (loss of -l reflected in the 3rd tone; vowel change -a &gt; -o)</td>
</tr>
<tr>
<td>L boō (boāre) ‘cry aloud’</td>
<td>bo-</td>
<td>ho- 呼 ‘cry aloud’</td>
</tr>
<tr>
<td>ON ban ‘ban, limit’</td>
<td>ban</td>
<td>hăn 限 as in hăn-chè 限制 ‘limit, ban’</td>
</tr>
<tr>
<td>L balteus ‘a girdle, belt’</td>
<td>bal-</td>
<td>hâ 縮 ‘to girdle’</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>European words</th>
<th>Simplif.</th>
<th>Taiwanese</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON böda ‘wait for, abide’</td>
<td>bö &gt; *bî-</td>
<td>ㄆ 期 as in ㄆ- thāi 期待 ‘wait for, expect’</td>
</tr>
<tr>
<td>ON bægir ‘shoulders’</td>
<td>*bægr</td>
<td>keng 肩 ‘shoulder’</td>
</tr>
<tr>
<td>ON barn ‘child’</td>
<td>barn</td>
<td>kiá” (ká”) 囝 ‘child’</td>
</tr>
<tr>
<td>ON barna- ‘children’s’</td>
<td>barna</td>
<td>kana- (G1W) : kana-sun ‘great-grandson’</td>
</tr>
<tr>
<td>ON bifast ‘shake, tremble’</td>
<td>bif-</td>
<td>khî (G1W): khî-khî-chùn ‘shake, tremble’</td>
</tr>
<tr>
<td>ON beina ‘stretch out’</td>
<td>bein</td>
<td>keng 更 : keng-tiú” 更張 ‘stretch out’</td>
</tr>
<tr>
<td>ON blunda ‘shut the eyes’</td>
<td>*bund-</td>
<td>khùn 睡 ‘shut the eyes, take a nap, sleep’</td>
</tr>
<tr>
<td>ON brú ‘bridge’</td>
<td>*bú</td>
<td>kiô, kiâu 橋 ‘bridge’ (PSC: u &gt; o &gt; au)</td>
</tr>
<tr>
<td>ON bú ‘household, house’</td>
<td>bú</td>
<td>ku 居 ‘house, to stay’</td>
</tr>
<tr>
<td>European words</td>
<td>Simplif.</td>
<td>Taiwanese</td>
</tr>
<tr>
<td>----------------</td>
<td>----------</td>
<td>-----------</td>
</tr>
<tr>
<td>ON boða ‘announce’</td>
<td>boð</td>
<td>kò 告‘announce’: kong-kò 公告 ‘public announcement’</td>
</tr>
<tr>
<td>ON bróðir ‘brother’</td>
<td>*bróð-</td>
<td>ko 哥‘older brother’</td>
</tr>
<tr>
<td>Gmc *bund- &gt;</td>
<td>*bund-</td>
<td>khún 捆, 绑 ‘bundle’</td>
</tr>
<tr>
<td>E bundle, G Bündel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OHG bitten (&gt; G bitten),</td>
<td>*bitt-</td>
<td>kǐ 祈: kǐ-kiû 祈求 ‘bid: ask someone for something’</td>
</tr>
<tr>
<td>OE biddan, ON biðja</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OE bān ‘bone’</td>
<td>bān</td>
<td>kàn (also hān) 骼 ‘bone, leg, shank’</td>
</tr>
<tr>
<td>Gmc *baina-</td>
<td>*bain-</td>
<td>kai (also hài) 骼 ‘bone, skeleton, shank’</td>
</tr>
</tbody>
</table>

From Gmc *baina- ‘bone’ and through b- > h- and through denasalization, we obtain *bain- > hâi 骼 which has dual meanings: (1) ‘bone’ as in kut-hâi 骼骨 (reverse in MSM, 骼骨) ‘bone, skeleton’ and chân-hâi 殘骸 ‘skeletal remains’; and (2) ‘leg, shank’, as Shuowun 説文 says, “骸, 腱也 Hâi, kèng ià” ‘Hâi, that is leg/shank.’ Parenthetically, the 腱 kèng can be derived from Gk κνήμη ‘the part between the knee and ankle’ (knéme > *kém- > Tw kèng 腱 ‘leg’). Similarly, as OE bān is derived from Gmc *baina- ‘bone’, we can derive from the same etymon Tw hân / kàn 骼 with the same dual meanings of ‘leg, shank’ and ‘skeleton’ of the Germanic.

<table>
<thead>
<tr>
<th>Language</th>
<th>‘Bone’</th>
<th>‘Leg’</th>
</tr>
</thead>
<tbody>
<tr>
<td>OHG</td>
<td>bein</td>
<td>bein</td>
</tr>
<tr>
<td>ON</td>
<td>bein</td>
<td>bein</td>
</tr>
<tr>
<td>Sinitic / Proto-Holó 骼, 骼, 骼, 骼</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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 pronunciations, MSM inherits the duality: (1) MSM 滑 gŭ as in gŭjí 滑稽, meaning ‘double speak’, which is a vestige from ancient literature (Modern 滑稽 is pronounced huájí 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 gŭjí 滑稽 ‘double speak’.

The second derivation is 獞 ‘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 獞 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 kút, and 獞 kút, 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).

<table>
<thead>
<tr>
<th></th>
<th>Middle Chinese</th>
<th>Tw</th>
<th>MSM</th>
<th>Japanese</th>
</tr>
</thead>
<tbody>
<tr>
<td>骨 kut</td>
<td>*hat</td>
<td>kut</td>
<td>gu</td>
<td>*huat</td>
</tr>
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<td>滑 kut</td>
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<td>獞 kut</td>
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<td></td>
<td>*hat</td>
<td>*huat</td>
<td>kút</td>
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</tbody>
</table>
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 骼 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’ 骼 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 獭. As evidence we see that Sino-Japanese 滑 and 獍 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 hài 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 獴 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 gŭ (following the loss of the final -t in late Song). Because Proto-Holó was not exposed to the “red” pathway, both derivatives 滑 and 獴 are pronounced simply as kut. In contrast, because MSM had already followed the “red” pathway, both MSM 滑 and 獴 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 gŭji 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 説文, i.e., the Eastern Han dynasty.
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, \textit{bœr} and \textit{tún}. Surprisingly, their corresponding words in Taiwanese are also the most favored words for place-names in Taiwan.

(1) ON \textit{bœr} \textgreater{} Tw \textit{po·}埔.

The ON \textit{bœr} ‘farmstead, town’ is the most favored word of the Norse people in forming their place-names, and it appears as \textit{bo}, \textit{bö}, \textit{by}, \textit{bø} in present-day Scandinavia, \textit{bær} in Iceland and \textit{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 Øvrebø 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 \textit{po·}埔 ‘farmstead, village’; local town names in Taiwan with \textit{po·}埔 are numberless, \textit{e.g.}, Tang-po·東埔 ‘East Farmstead’, Sai-po·西埔 ‘West Farmstead’, Lám-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, \textit{po·}埔 resembles strikingly the ON \textit{bœr} ‘town’. Cleasby and Vigfusson (D3-4, p. 92) state that, “wherever the Scandinavian tribes settled, the name \textit{by} or \textit{bō} 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 baer ‘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 baer-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 *tún*, OE *tūn* ‘town’ > Tw *tūn* 屯 ‘town’.

The ON *tún* 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, Havitun, 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.

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

**Fig. 31. A sign welcoming visitors to Barrington, Illinois. (Photo by C. H. Wu)**
In Taiwan 屯 tún is the second most popular place-name element after po 埤. 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. tún (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 fairy 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, Hó·ko·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 ŌNG-CHÜN 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,

"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 Lí Zhoū 濰州 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 Õng-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 Bèk 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 轳 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)sdaeg, 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 Mjölnir ‘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: 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 teng 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.
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 bín-māu chhin-chhiü" $sih$-$nà$" (伊的面貌親像[閃電]).
CS-6. SPECIAL BONDS TO MATERNAL UNCLE

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 Iliad 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) Thiⁿ-téng Thiⁿ-kong, tōe-ē bū-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* / 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)](image)

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-sùn* 頭旬 ‘the first seven-day period’. It can be shown that Tw *sùn* 句 corresponds to ON *sjaund* through an -*aun(d) > -un* sound change. Here 句 is borrowed to write *sùn*;
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 sùn 旬 in thâu-sùn 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-sùn 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 sùn retaining the required seven days and the remaining five sùn 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 Óláþ 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-görd* 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)](image)

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.
Chau H. Wu, “Patterns of Sound Correspondence between Taiwanese and Germanic/Latin/Greek/Romance Lexicons,” Part I, *Sino-Platonic Papers*, 262 (August 2016)

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 transthyretin 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 stanches 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 ḫu 夫
L hūmanus ‘human, person’ > hū- > Tw ḫu 夫 ‘man’.

1.1b Man (in general) — (v.) Tw lâng (GiW) [often written 人]
Gmc man ‘man’ > (transpos.) > *nam > (denasal.) > *lam > (PSC: -am > -ang) > Tw lâng (GiW) [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-sî” 百姓
L plēbī (plēbis or plēbei) scītum connotes ‘the populace, common people, the masses’. From the simplified form *plēb-scît-, we derive Tw peh-sî” 百姓 ‘the populace, common people, the masses’ (in contrast to the ruling class).

1.3b Populace (common people) — Tw lāu-peh-sî” 老百姓
From Gk λᾶξ (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-sî” (1.3a above) to form a pleonastic compound lāu-peh-sî” 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-i lông-kun 如意郎君 ‘a gentleman of heart’s desire’; Hô-jít kun chài lâi? 何日君再來? ‘What day wilt thou return?’ is the title of a popular Chinese as well as Taiwanese song; Kun ka chái hō-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-gien chóa̍ t-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 姫 (l., arch.)
Gk γυνή (guné > gyné from which is derived E gynecology) ‘woman’ > *γυ- > Tw ki 姫 ‘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) > *fũ; *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)](image-url)
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 marito ‘husband’ pairing with moglie ‘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 *dǣdiz- (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 Chiangchü-Choânchü (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 ú piāt’ meaning ‘between man and woman there are differences,’ there hu-hū 夫婦 meant only ‘man and woman’, not ‘husband and wife’.

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1.15 Wife, woman – Tw ʔū妇 (l.) ‘wife, woman’

L spusa (> It sposa) ‘bride, wife’ > *spu- > Tw ʔū妇 ‘wife’ as in ʔu-ʔū 夫婦 ‘husband-wife’ (see 1.14 above).

1.16 Wife, woman – Tw pū (v.), ʔū (l.) 婦 ‘wife, woman’

ON brúðr, OHG brūt, OS brūd, Goth brūþs ‘bride’ > *bru- > Tw pū (v.), ʔū (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 ʔū (l.) 婦 are used for compound words meaning ‘daughter-in-law’: sek-ʔū 媳婦 (l.) and sim-pū 新婦 (v).

1.17 Daughter-in-law – Tw sek 媳 as in sek-ʔū 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 *swegrö 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 ʔū 婦 (see 1.11 and 1.15) to form sek-ʔū 媳婦 ‘daughter-in-law’.

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

Gk νυμφη originally ‘bride’ but later ‘daughter-in-law’ > *nym- > *him > *hsim- > Tw sim (GtW), 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 νυμφη ‘bride’ took on the meaning of ‘daughter-in-law’ and replaced the original word νυός, as evident in the Septuagint and New Testament (D5-1, p. 125). For example, the verse of Matthew 10:35 has νυμφην for ‘daughter-in-law’ (McReynolds [D4-4], p. 37). Gk νυμ- (*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 παις ‘child’ > (loss of final -s) *pai > (p- > h-) > Tw hâi 孩 ‘child’.

1.24 Child – Tw giná 囝仔 (disyllabic word) ‘child, youngster’

IE *gena- ‘to procreate’ > L gnatus ‘son’ / gnata ‘daughter’ > *gna- > Tw giná (G1W, disyllabic word) ‘child’.
1.25 Child – Tw kiá” (GrW) ‘child, youngster’
L gnatus ‘son’ / gnata ‘daughter’ > *gna- > Tw kiá” ‘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 filio (> It figlio) ‘son’ > (elision of medial -l- and preceding vowel) > Tw hō· (l.) / hāu (v.)後.
Alternatively, Gk ὦς ‘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.) hēredem (nom. hēres) ‘heir or heiress’ (later > hērem) developed into OF heir, eir and the F heir which was in turn loaned to E heir.

L hēredem 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:
1.30 The young (or youngster) – Tw $iù$ 幼


1.31 The young (or youngster) – Tw chî 幼 (v.); tî 稚 (l.)

OE *cild* (cept) ‘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 chî 幼 (v.) with the nasalization deriving from OE -ld. Chî 幼 is usually combined with $iù$ 幼 ‘young’ (see 1.30) to form $iù$-chî 幼稚 (v.) ‘young and tender’. By Middle Chinese times, chî 幼 (v.) had undergone denasalization to *chî. By the time the sinograph 稚 was used to write it, the pronunciation of 稚, originally tî, had also undergone palatalization to something like MSM chih (zhî). The Taiwanese reading of 稚 tî is that of pre-palatalization. Thus, ‘kindergarten’ is translated as $iù$-tî-hîng 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-po· ‘male’ or cha-bó· ‘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

<table>
<thead>
<tr>
<th>English</th>
<th>Old English</th>
<th>Old Norse</th>
<th>Taiwanese</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>iċ</td>
<td>ek (&lt; *eka &lt; *egō)</td>
<td>góa 我 (&lt; egō, ἐγώ)</td>
</tr>
<tr>
<td>son</td>
<td>sunu</td>
<td>sunr, sohr, konr</td>
<td>chú 子, kiā” (G1W)</td>
</tr>
<tr>
<td>grandchild</td>
<td>suna sunu</td>
<td>sonar-sonr ‘son’s son’</td>
<td>sun 孫</td>
</tr>
<tr>
<td></td>
<td></td>
<td>‘son’s son’</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>barna-börn ‘children’s children’</td>
<td></td>
</tr>
<tr>
<td>great-</td>
<td></td>
<td>**(barna-barna-börn)</td>
<td>kana-sun</td>
</tr>
<tr>
<td>grandchild</td>
<td></td>
<td>‘children’s children’s children’</td>
<td></td>
</tr>
<tr>
<td>great-great-</td>
<td></td>
<td>**(barna-barna-barna-börn)</td>
<td>kana-kana-sun</td>
</tr>
<tr>
<td>grandchild</td>
<td></td>
<td>‘great-grandchild’</td>
<td></td>
</tr>
</tbody>
</table>

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 (zēngzŭ) and 曾曾祖 (zēngzēngzŭ). 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" (v.) 兄
Lfrater ‘brother’ > fra- > (metathesis) > *far- > Tw hia" (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" (v.) and -eng (l) is regular.

1.36 Older brother – Tw ko (l) 哥
OE brōþor, ON bróðir, OS brōþar, Got brōþar ‘brother’ > bro- > (b- | br- > k-) > Tw ko 哥 ‘older brother’.

Tw hia" 兄 and ko 哥 can be combined to form hia"-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-sian 阳去声) 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 [?]: del- > *deh > tē (l) / tī (v.) 弟.

1.38 Older sister – Tw chí (l) / ché (v.) 姊
ON dís ‘sister’ > (loss of final -s) > dì- > (palatalization) > Tw chí (l) / ché (v.) 姊 ‘older sister’.

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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

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

<table>
<thead>
<tr>
<th>European languages</th>
<th>Taiwanese (vernacular)</th>
</tr>
</thead>
<tbody>
<tr>
<td>L patruus ‘father’s brother’ &gt; patr- peh 伯 ‘father’s older brother’</td>
<td></td>
</tr>
<tr>
<td>ON matr ‘meat, food’</td>
<td>bah (G1W) ‘meat’</td>
</tr>
<tr>
<td>ON þvátr ‘wash, washing’</td>
<td>seh 刷 ‘wash, cleanse, a brush’ (involving þv- &gt; *þ- &gt; Tw s-)</td>
</tr>
<tr>
<td>ON sáttr ‘reconciled, at peace’</td>
<td>soah 煞 ‘reconciled, let drop a quarrel’</td>
</tr>
</tbody>
</table>
1.41 Father’s younger brother – Tw siok (l.) / chek (v.) 叔

Gk ὁδιός ‘father’s or mother’s brother’ [ > Late L. thyos > 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).

<table>
<thead>
<tr>
<th>Etymon (L)</th>
<th>Taiwanese</th>
</tr>
</thead>
<tbody>
<tr>
<td>L. glös ‘husband’s sister’</td>
<td>glō-ko·姑 ‘husband’s sister, father’s sister’</td>
</tr>
<tr>
<td>Gk γλοιός ‘glue’</td>
<td>glo-κό·糊 ‘glue’</td>
</tr>
<tr>
<td>L. glória ‘glory’</td>
<td>glor-κό congratulate in kong-eng 光榮 ‘glory’</td>
</tr>
<tr>
<td>Gk γλίκος ‘glutinous, sticky’</td>
<td>gli-κί·羹 a thick soup made with any kind of stock and thickened with starch powder</td>
</tr>
<tr>
<td>ON glap ‘beguilement, seduction’</td>
<td>glap-κοάι 拐 ‘beguilement, seduction’ (involving sound change of -ap &gt; -ai)</td>
</tr>
<tr>
<td>L. gladius ‘a sword’</td>
<td>glad-κò·械 (v.) 械 ‘weapon’, the loss of -d is reflected in the 3rd tone (去聲) of κò·. Note: 械 (l.) is kài.</td>
</tr>
<tr>
<td>ON glaðr ‘glad’</td>
<td>glad-κοάï 快 as in khoài- lòng 快樂 ‘glad’ (involving sound change of -að &gt; -ai)</td>
</tr>
<tr>
<td>ON gljúfr ‘rocky ravine’</td>
<td>glju-κhiu 丘 as in khìu-hok 丘壑 ‘ravine’</td>
</tr>
</tbody>
</table>
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 > *γαλοῦ- > *γοῦ- > 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 (iòng-khì-sia’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-mí (阿姆)
L amita ‘paternal aunt’ > am- > Tw a-mí (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”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” and ta-ke, respectively
The vernacular Taiwanese terms for husband’s father and mother, ta-koa” 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 ἀττα ‘father’ (to which Tw å-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" (data not shown), we obtain Tw ta-koa" ‘husband’s father’.

1. Acca (name of a Roman goddess) / Gk Akkô (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", Taiwanese adds a prefix t- to form ta-ke ‘husband’s mother’.

1.47 Wife’s father and mother – Tw (l.) gâk-hû 岳父, gâk-bû 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 gâk 岳

The morpheme gâk 岳 is then added as a prefix to hû 父 ‘father’ or bû 母 ‘mother’ to make gâk-hû 岳父 ‘father-in-law’ and gâk-bû 岳母 ‘mother-in-law’, respectively.

1.48 Wife’s father and mother – Tw (v.) tiûn-lâng 丈人, tiûn-mí 丈姆, respectively

L dominus ‘the master of a house, household or family’ > dom- > [PSC: -om > -iu” (v.,)] > tiûn 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- > tiûn 丈, to which is added mí 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 tit 姊 (l.)

Gk αδελφίδους ‘nephew’ > (aphetic) *δελφιδ- > (elision of medial -λ- and -φ-) > *did- > Tw tit 姊 (l.).

Because Gk αδελφίδη ‘niece’ also gives rise to the same Tw tit 姊, 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 tit-á 姊仔 or tit-lú 姊女, respectively. Both terms are used mostly in formal occasions. For the vernacular version, see below (1.50).
Brother's child – Tw sun (GrW)

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 nepoatǎ '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.

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 wealth / walh 'foreigner, foreign' by the well-known PSC of w- > g- (Cf. warranty vs. guarantee; war vs. guerre).
Tw ㄍㄜ-seng 外甥 generally means 'nephew (of the maternal family)’. To specify 'niece' 女 'girl' is added to form ㄍㄜ-seng-ㄆㄨ 女甥女.

1.52  Mother’s sister’s husband – Tw ㄆㄜ-ㄕㄨ ‘姨丈

OHG *eidum 'sister’s husband' > *ei-dum > Tw ㄆㄜ-ㄕㄨ ‘mother’s sister’s husband’

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

<table>
<thead>
<tr>
<th>European words</th>
<th>Taiwanese words</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON eitt ‘one’ (neuter form)</td>
<td>Tw it ‘one’</td>
</tr>
<tr>
<td>ON feitr ‘fat’</td>
<td>Tw hūi (l.) / pûi (v.) 肥 ‘fat, fatty’</td>
</tr>
<tr>
<td>ON geigr ‘danger’</td>
<td>Tw gûi 危 ‘danger’</td>
</tr>
<tr>
<td>ON teina ‘basket made of twigs’</td>
<td>Tw tûná 藤籃 ‘basket made of vines’</td>
</tr>
<tr>
<td>ON veikr ‘weak’</td>
<td>Tw pûi 疲 ‘weak, tired’</td>
</tr>
<tr>
<td>ON veill ‘ailing, diseased’</td>
<td>Tw pû 病 ‘ailing, diseased’</td>
</tr>
<tr>
<td>ON veisa ‘pool or pond of stagnant water’</td>
<td>Tw pû 埤 ‘man-made pond’</td>
</tr>
</tbody>
</table>

The ei > i correspondence is also attested in Old Chinese (OC). Gk εἰρήνη (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-ki 史記 ‘Records of the Grand Historian’, Chapter on In pûn-kì 殷本記 ‘Chronicles of the In (Shang) Dynasty', paragraph 13: Peh-sî 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 εἰρήνη 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.
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 Θυατείρα, 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", 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 sín-hun bông-éng 晨昏矇影 ‘dim light in the dawn and dusk’ as discussed above. In vernacular Taiwanese, -un underwent a further change to become iu" so that dum > tiū" 丈.

Because the tiū" 丈 of i-tiū" 姨丈 can also be derived from L dominus ‘master of the family, household’ (see 1.48), the tiū" 丈 may be viewed as a result of the merger of L. dom- and OHG -dum (of eidum). Consequently, the tiū" 丈 became an independent morpheme connoting ‘master of the household’ so that i-tiū" 姨丈 is interpreted as ‘the master of mother's sister's household’, creating i 姨
(with the `tiū"丈` detached from `i-tiū"姨丈`) to simply mean ‘mother’s sister’. Furthermore, `tiū"丈` can be attached to `ko·姑` ‘father’s sister’ (see 1.42) to form `ko~tiū"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):

\[
\text{Gk νύμφη} \rightarrow *\text{nym-} \rightarrow *\text{kym} > \text{Tw} \ kīm妗 \text{ ‘wife of mother’s brother’}
\]

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-`:

\[
\text{Gk νύμφη} \rightarrow *\text{nym-} \rightarrow *\text{kym} > \text{Tw} \ chím嬸 \text{ ‘wife of father’s younger brother’}
\]

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.
Stepfather, stepmother – (L) Tw kè-hú 繼父, kè-bú 繼母, respectively

In literary or formal Taiwanese 'stepfather' and 'stepmother' are called kè-hú 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 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 / stjúpmōdir and OHG stiußfater / stiußmuotar). Since E step here originally was stēop (cognate with ON stjúp and OHG stiu), it is difficult to derive kè from it. Instead, OE stēop gives rise to Tw sīók 繼 through the sound correspondence of -eop / -iup > - iok. Sīók 繼 is used in a term for ‘remarriage’ (see below).

Remarriage of a widower – Tw sīók-hiân 繼絃

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. Sīók 繼 (see 1.56 above) and hiân 絃 are combined to form sīók-hiân 繼絃, 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”-kiá” / pī”-kiá” (G1W – some write 病囝) ‘pregnant’

L praegnāns > later L pregnāns ‘pregnant’ > pregn- + gna- > Tw pē”-kiá” ‘pregnant (with) child’.

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

The pē” of pē”-kiá” 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” (or pī”).

<table>
<thead>
<tr>
<th>European words</th>
<th>Simplification</th>
<th>Taiwanese words</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON hegna ‘to punish’</td>
<td>hegn-</td>
<td>hēng 刑 ‘to punish’</td>
</tr>
<tr>
<td>Gk ἀγνός ‘a willow-like tree’</td>
<td>ágn-</td>
<td>iòng 楊 ‘a willow-like tree’</td>
</tr>
<tr>
<td>(MSM yáng; Jpn yanagi)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ON regn ‘rain’</td>
<td>regn</td>
<td>lēng 零 (arch.) ‘drizzling rain’</td>
</tr>
<tr>
<td>L régnum ‘kingly, royal power’</td>
<td>régn-</td>
<td>lēng 領 ‘to lead, leader’</td>
</tr>
<tr>
<td>(Jpn 大統領 ‘president’)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OE þegn ‘thane’</td>
<td>þegn (þ- &gt; t-)</td>
<td>teng 丁 as in peng-teng 兵丁 ‘soldier’</td>
</tr>
<tr>
<td>ON gegnum ‘through’</td>
<td>gegn-</td>
<td>keng 経 ‘through’</td>
</tr>
<tr>
<td>ON í gegnum ‘through’</td>
<td>í keng 已經 ‘through, already’</td>
<td></td>
</tr>
<tr>
<td>ON bolgna ‘to swell, become</td>
<td>bolgn-</td>
<td>phòng 彪 ‘to swell, become swollen’</td>
</tr>
<tr>
<td>swollen’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OE gnagan (&gt; E gnaw)</td>
<td>gnag-</td>
<td>ngáu 鼓 (arch.) ‘gnaw’</td>
</tr>
<tr>
<td>ON megn ‘strong, mighty’</td>
<td>megn</td>
<td>bēng 猛 ‘strong, mighty’</td>
</tr>
</tbody>
</table>
Chau H. Wu, “Patterns of Sound Correspondence between Taiwanese and Germanic/Latin/Greek/Romance Lexicons,” Part I, Sino-Platonic Papers, 262 (August 2016)

<table>
<thead>
<tr>
<th>European words</th>
<th>Simplification</th>
<th>Taiwanese words</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gk ἁγνοέω ‘not to perceive or not to know’</td>
<td>agn-</td>
<td>iòng 佯 ‘pretend not to know’ (MSM佯)</td>
</tr>
<tr>
<td>Gk ἁγνός ‘full of religious awe’</td>
<td>hagno-</td>
<td>hâng-ngó· (GiW) ‘full of religious awe’ (Note 1)</td>
</tr>
<tr>
<td>L gwōscō ‘to begin to know’</td>
<td>gwō-</td>
<td>ngód悟 as in tín-ngó·頓悟 ‘suddenly begin to know’</td>
</tr>
<tr>
<td>ON tign ‘honor’; tignast ‘to be exalted, glorified’</td>
<td>tign</td>
<td>téng 頂 as in téng-téng tōa-miâ 頂頂大名 ‘famous’</td>
</tr>
<tr>
<td>ON tigna ‘to worship’</td>
<td>tign-</td>
<td>téng 頂 as in téng-lé bō·pài 頂禮膜拜 ‘to worship’</td>
</tr>
<tr>
<td>ON togna ‘to be stretched’</td>
<td>togn-</td>
<td>tông 張 as in không-tông 擴張 ‘to expand, be stretched’</td>
</tr>
<tr>
<td>ON veign ‘strong beverage, drink’</td>
<td>veign</td>
<td>bêng 醜 ‘alcoholic drink’ as in phín-bêng 品醜 ‘wine tasting’</td>
</tr>
</tbody>
</table>

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·bûn ke̍k 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 ú-sin 有身

Tw ú-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 Tâi-ngá 大雅 – Tâi-bêng 大明 of the Odes, a poem says, “Tâi-jîn iú-sin, seng chhú Bûn-ông 大任有身，生此文王” “Tâi-jîn (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 ú-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):

\[
\text{ON þunguð} \to *\text{pun-} > *\text{sun-} > (u/i exchange) > Tw sin 身
\]

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,

\[
\text{PIE } *\text{sunk-} ‘pregnant’ \to *\text{sun-} > (u/i exchange) > Tw sin 身 as in ū-sin 有身 ‘pregnant’.
\]

2.3 Pregnant – (L) Tw hoâi-īn 懷孕

L grávida ‘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:

\[
\text{L inciēns ‘pregnant’} \to \text{Rom incincta} \to *\text{in-} \to Tw īn 孕 ‘pregnant’.
\]

Thus, Tw hoâi-īn is a pleonastic combination of two synonyms, grávida and inciēns.
2.4 To be born (1) – Tw sán 産; seng (L.) / si” (v.) 生

L nāscor ‘to be born’ > nās- > (transposition) > *sān- > Tw sán 産 ‘to be born’.

Alternatively, Tw sán 産 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 seng 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’.

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)
2.5 Birthing, labor – Tw hun-bián 分娩

Tw hun-bián 分娩 ‘birthing, labor’ can be derived from ON burdr and OHG swangar, respectively. See PSC-4.5 above.

2.5 Infant – Tw i” (v.) / eng (l.) 嬰

L. *infans ‘infant’ > *in- > Tw i” (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” is usually combined with Tw âng 紅 (v.) ‘red/redness’ to form another word for ‘baby’, âng-i” 紅嬰. There are two reasons for calling a baby âng-i” 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” 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” 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 Catalanian 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

<table>
<thead>
<tr>
<th>ON words</th>
<th>Taiwanese words</th>
<th>MSM words (Wade-Giles)</th>
</tr>
</thead>
<tbody>
<tr>
<td>jóð ‘baby’</td>
<td>siá/siáu 小 in</td>
<td>hsiáu 小 in compds. such as hsiáuer 小儿</td>
</tr>
<tr>
<td></td>
<td>compds. See 2.6</td>
<td>‘baby’</td>
</tr>
<tr>
<td>jafn ‘equal, the same’</td>
<td>siáng/siáŋ 相 id.</td>
<td>hsiánɡ 相 as used in: hsiánɡ-thóng 相同 ‘the same’</td>
</tr>
<tr>
<td>sam-jafn ‘equal to’</td>
<td>sa’-siáŋ 相像</td>
<td>hsiánɡ-hsiánɡ 相像 id.</td>
</tr>
<tr>
<td></td>
<td>‘similar, the same’</td>
<td></td>
</tr>
<tr>
<td>jafnan ‘constantly’</td>
<td>siáng-siáŋ 常常</td>
<td>‘constantly’</td>
</tr>
<tr>
<td>jarl ‘noble man, earl’</td>
<td>siáng/siáŋ 相</td>
<td>hsiánɡ 相 id. (chái-hsiánɡ 宰相 ‘premier’)</td>
</tr>
<tr>
<td></td>
<td>‘minister to king’</td>
<td></td>
</tr>
<tr>
<td>fjarg ‘heathen god’ (*jarg)</td>
<td>siá 邪 ‘heathen’</td>
<td>hsié 邪 ‘heathen’</td>
</tr>
<tr>
<td>jarna ‘to mount a jewel with iron’</td>
<td>sióŋ 鑲 ‘to mount with metal’</td>
<td>hsiánɡ 鑲 id.</td>
</tr>
<tr>
<td>jöstr ‘yeast’ (*jö-)</td>
<td></td>
<td>hsiáu 酵 as in hsiáumû 酵母 ‘yeast’ [by PSC: o ↔ au]</td>
</tr>
<tr>
<td>björn ‘the bear’ (*jörn)</td>
<td></td>
<td>hsiánɡ 熊 ‘the bear’</td>
</tr>
</tbody>
</table>

---

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 liông) and j- of 日 (Tw jît) in Middle Chinese came from the initial n- of 泥 (Tw nî) of Old Chinese (see 4.2 below), and also on the MSM pronunciation of allied morphosyllables 倪 nî, 露 nî, and 輕 nî, 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 > *nì > (denasal.) > *lì > (palatal.) > Tw ji 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.) / tông (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 ji-tông 兒童 'child', hái-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 oāh 活

OE feorh 'life' > *huorh > *huoh (> MSM huó 活 'to live') > *hoah > (muting of h-) > (v.) Tw oāh 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 hi 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 spenden > Tw hiàn 獻), thus, OHG spil > *hil > Tw hi 戲 'to play'; the loss of the final -l is reflected in the third tone, hi. Like G Spiel / spielen, Tw hi 戲 is used in iû- hi 遊戲 'to play' and hi-kek 戲劇 'drama, play'.

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2.10 Labor, toil, work (1) – (v.) Tw tiöh-bôa (G1W – [著磨])

Life is not all play; it certainly also involves labor and toil. The Taiwanese word for 'labor and toil',
tiöh-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 (hök-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 (tiöh-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 chiâh lí ê chiû tiöh-bôa só· tît-tiöh--ê 你欲貪你的手著磨所得著的” (Bar). The
derivation of tiöh-bôa is as follows:

OE deorfan 'to labor, toil' > deorf- > (d- > t-) > Tw tiôh (in tiöh-bôa)

Gk μῶλος 'to toil' > *mol- > *môa > (denasal.) > Tw bôa (in tiöh-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 tiôh-bôa is a pleonastic compound of two synonyms separately from Germanic and Greek sources.

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 tiôh thoa, chò lâng tiôh bôa 做牛著拖, 做人著磨 ‘A buffalo must drag (the plough) and a man must toil’. The first 著 tiôh means ‘must’ and is related to It dovere ‘must’ (It dovere > *dov- > Tw tiôh ‘must’). The second 著 tiôh is part of the pleonastic tiôh-bôa 著磨 ‘toil’ but at the same time echoes the first 著 tiôh ‘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:
Chau H. Wu, “Patterns of Sound Correspondence between Taiwanese and Germanic/Latin/Greek/Romance Lexicons,” Part I, Sino-Platonic Papers, 262 (August 2016)

göra (D3-4, p. 223), göra (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 pià” (G1W – [拼])
Gk πένομαι ‘to toil, labor, work’ > *pén- > *pian > Tw pià” (G1W – [拼])

Besides (1) ‘labor and toil’, vernacular Tw pià” has two other homophones having the meanings of (2) ‘to clean up, tidy up’ (e.g., pià” pàng-keng 拼房間 ‘to clean up the room’) and (3) ‘to compete’ (e.g., pià”-kè 拼價 ‘to compete in prices’). Nowadays, all three words (lexemes) are written with the same sinograph 拼.

Usage of pià” ‘to labor, toil, work’ includes pià”-than-chiá” 拼賺錢 ‘work to earn money’, pià”-thâu-lō· 拼頭路 ‘work for a job’, and ài-pià” chiah öe-ìå” 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 pià”. 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 rött (n). Although the masculine rór fits the prediction, it is the neuter form rött 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 — ‘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, wanting* was borrowed from ON *vant, vanr (m) 'lacking, missing'; and E scant 'stinted in measure, limited in extent or amount' was from ON skammt, the neuter form of skammr (m) 'short, brief'.

The second element of khùn 睡 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-/

ON blunda 'to shut the eyes' > (bl- > kh-) > Tw khùn 睡 'to sleep'

Thus, the pleonastic compound hioh-khùn 睡睡 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-hi 文定之喜 'The happiness of betrothal'.
The conversion from *mundrinn* to *bûn-têng* 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.

<table>
<thead>
<tr>
<th>European words</th>
<th>Simpl.</th>
<th>Tw</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON <em>vin</em> ‘meadow’</td>
<td><em>vin</em></td>
<td><em>phêng</em> 坪 ‘meadow’</td>
<td><em>chháu-phêng</em> 草坪 ‘grass meadow’</td>
</tr>
<tr>
<td>ON <em>minna</em> ‘to remember’</td>
<td><em>minn-</em></td>
<td><em>bêng</em> 鉑 ‘to remember’</td>
<td><em>bêng-ki</em> 銘記 ‘to remember’</td>
</tr>
<tr>
<td>ON <em>finna</em> ‘to find, discover, invent’</td>
<td><em>finn-</em></td>
<td><em>bêng</em> 明 (see usage)</td>
<td><em>hoat-bêng</em> 發明 ‘to invent’</td>
</tr>
</tbody>
</table>
### European words

<table>
<thead>
<tr>
<th>European words</th>
<th>Simpl.</th>
<th>Tw</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON vinr (= vin) 'friend'</td>
<td>vin-</td>
<td>pêng 朋 'friend'</td>
<td>pêng-tú 朋友 ‘friend’</td>
</tr>
<tr>
<td>ON tindr ‘mountain peak’</td>
<td>tindr</td>
<td>téng 頂 ‘peak, top’</td>
<td>soa&quot;-téng 山頂 ‘mountain-peak’</td>
</tr>
<tr>
<td>ON vinna ‘to win’</td>
<td>vinn-</td>
<td>êng 贏 ‘to win, obtain’</td>
<td>êng-tek 贏得 ‘to win, obtain’</td>
</tr>
<tr>
<td>ON tvinna ‘to double’</td>
<td>*tinn-</td>
<td>téng 重 ‘double, repeat’</td>
<td>siang-têng 雙重 ‘double’</td>
</tr>
<tr>
<td>ON grind ‘lattice-work’</td>
<td>grind</td>
<td>keng 荊 (see usage)</td>
<td>keng-hui 荊扉 <em>lattice-work door or gate</em></td>
</tr>
<tr>
<td>OE grindan ‘to grind’</td>
<td>grind-</td>
<td>géng 研 ‘to grind’</td>
<td>géng bí 研米 <em>to grind rice</em></td>
</tr>
</tbody>
</table>

*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 “Üi-chhoan Tiân Ka” by Ông Î 王維 of the Tang Dynasty, "野老念牧童, 倚仗候荊扉 Iá ló liâm bôk-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-tiāⁿ 送訂

L spondère ‘promise’ (＞L sponsus, -a ‘betrothed’) > *spond- > Tw sòng (l) 送 > Tw sàng (v.) 送 as in sàng-tiāⁿ 送訂 (or 送定) ‘betrothal’, with tiāⁿ 訂 deriving from the téng 定 of bûn-têng 文定 (2.13). There is an internal interchange between Taiwanese (l) -eng and (v.) -ia”.

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
involve (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-mīh = siám-mīh 甚麼 ‘what?’
(2) Buddhist term nirvana > *nirv-van- > Tw liap-poân 涅槃
(3) ON lîm ‘mortar, lime, glue’ > Tw liâm 黏 ‘glue’
(4) ON tîmî, OE tîma ‘time’ > *tim- > Tw tiâm 點 ‘hour’, e.g., kâu-tiâm 九點 ‘nine hour (= o’clock)’
(5) OHG kind ‘child’ > *kin- > Tw kiá 囉 ‘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:

<table>
<thead>
<tr>
<th>European words</th>
<th>Simplif.</th>
<th>Taiwanese</th>
<th>Usages</th>
</tr>
</thead>
<tbody>
<tr>
<td>L nūbere ‘to marry’</td>
<td>nūb-</td>
<td>hun 婚</td>
<td>id.</td>
</tr>
<tr>
<td>L nūbēs ‘cloud’</td>
<td>nūb-</td>
<td>hun 雲 ‘cloud’</td>
<td>id.</td>
</tr>
<tr>
<td>OE numen ‘taken’ &gt; numb ‘loss of sensation’</td>
<td>num-</td>
<td>hūn 昏 ‘faint, loss of consciousness’</td>
<td>hūn-tó 昏倒, id.</td>
</tr>
<tr>
<td>L nummus ‘a coin, money’</td>
<td>num-</td>
<td>hun 分 ‘a coin of small denomination’</td>
<td>hun-bùn 分文, id.</td>
</tr>
<tr>
<td>L numerus ‘a number’</td>
<td>num-</td>
<td>hun 分 ‘a number’</td>
<td>hun-sò 分數, id.</td>
</tr>
</tbody>
</table>

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 *hònghun* 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 chít-sí-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 Dàxīn 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 lustrum (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 sūn-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, *karyûbyō* 花柳病, which was adopted in Taiwan during the Japanese Era as Tw *hoa-liú-pī* ( -.pê -). This term has now been supplanted by a more direct term Tw *sèng-pī* ( -pê -) 性病 (Jpn *seibyō*) 'sexual disease'.

### 2.24 Love (5) – Tw *sioh* 惜

Greek *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, o > ω, ē > ή. Both words find corresponding words in Taiwanese.

Gk *στοργή* > *storg-* > (-g > -h) > *storrh* > *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:

1. *-á, i"-- i" khùn, chît-mî tôa chît-chhùn.* 嬰啊, 嬰-- 嬰 睏,一暝大一寸
2. *-á, i"-- i" sioh, chît-mî tôa chît-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.

<table>
<thead>
<tr>
<th>European words</th>
<th>Simpl.</th>
<th>Taiwanese words</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gk στοργή ‘love betw. parent and children’</td>
<td>*torg-</td>
<td>thiòng 寵</td>
<td>thiòng-ài 寵愛 ‘love and affection’</td>
</tr>
<tr>
<td>ON torg ‘market’</td>
<td>torg</td>
<td>tiòng (l) / tiùⁿ (v) 場</td>
<td>chhi-tiùⁿ 市場 ‘market’</td>
</tr>
<tr>
<td>ON sorg ‘sorrow’</td>
<td>sorg</td>
<td>siong 傷 ‘sorrow’</td>
<td>iu-siong 傷傷 ‘sorrow’</td>
</tr>
<tr>
<td>OHG sorga id.</td>
<td></td>
<td></td>
<td>siong-sim 傷心 ‘sadness’</td>
</tr>
<tr>
<td>OE sorh id.</td>
<td></td>
<td></td>
<td>pi-siong 悲傷 ‘sorrow’</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ai-siong 哀傷 ‘sorrow’</td>
</tr>
<tr>
<td>ON borg ‘a small dome-shaped hill’</td>
<td>borg</td>
<td>kong 岡 ‘a hill’</td>
<td>soaⁿ-kong 山岡 ‘a hill’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(with b- &gt; k-)</td>
<td>kong-lêng 岡陵 ‘a hill’</td>
</tr>
<tr>
<td>OE beorg ‘a hill’</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OE beorg ‘a burial mound’</td>
<td>*borg</td>
<td>bông (v.) 墓 ‘grave’</td>
<td>hún-bông 墳墓 ‘grave’</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>bông-tê 墳地 ‘grave-site’</td>
</tr>
<tr>
<td>OE forgietan ‘forget’</td>
<td>*forg-</td>
<td>bông 忘 ‘forget’</td>
<td>bông-sîn 忘神 ‘absent-minded’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(with f- &gt; b-)</td>
<td></td>
</tr>
<tr>
<td>Gk Γοργών ‘Gorgon’ (&gt; L Gorgōn-) from Greek mythology</td>
<td>*gorg-</td>
<td>gông (GrW) ‘stunned, astonished’</td>
<td>gông-khi ‘dumbfounded’</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>gông-ŋiâh ‘stunned, astonished’</td>
</tr>
</tbody>
</table>
Chau H. Wu, “Patterns of Sound Correspondence between Taiwanese and Germanic/Latin/Greek/Romance Lexicons,” Part I, Sino-Platonic Papers, 262 (August 2016)

<table>
<thead>
<tr>
<th>European words</th>
<th>Simpl.</th>
<th>Taiwanese words</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rom *torca ‘torch’ &gt; OFr</td>
<td>*torc-</td>
<td>tông 紊 ‘flame’ (def. in 玉 篇 Giok Phian)</td>
<td>tông 紊 (arch.) has been replaced by hőe-pá 火把</td>
</tr>
<tr>
<td>torche &gt; E torch</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ON mjörkvi ‘dense fog’</td>
<td>mörk-</td>
<td>bông 茫 ‘foggy’ (denasal. m- &gt; b-)</td>
<td>bũ bông-bông 霧茫茫 ‘dense fog’</td>
</tr>
<tr>
<td>ON hörgr ‘heathen shrine, temple’</td>
<td>hörg- kiong 宮 ‘temple, palace’</td>
<td>Chí-lâm-kiong 指南宮</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

¶ 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 (GrW) ‘be stunned, astonished’. An example can be found in Luke 8:36, 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-ngia̍h 伊的父母卬愕.” (Parenthetically, ngia̍h is a derivative of gông; some people pronounce gông-ngia̍h as denasalized gông-giáh.) A variant form of gông is gāng so that gông-khi ‘be dumbfounded’ is pronounced gāng-khi.

Tw thióng 龍 is used mostly in literature. For example, the Tang poet 白居易 Pek Ku-iⁿ 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 sīn, ‘Of the three thousand consorts, (royal) love and affection falls on one person’.

2.26 Love (7) – Tw thìà” 疼

Gk στέργω > sterg- > *terg- > *theng (> MSM téng 疼 ‘love’) > Tw thìà” 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 thém (GrW) ‘spoil, indulge’. A dependent morpheme, it is only used together with sēng (2.27 below) to form a compound thém-sēng (GrW) ‘to spoil, indulge’. In everyday speech, its derivative, thìà” 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.

187
Correspondence between European -erg / -erk and Taiwanese -eng

<table>
<thead>
<tr>
<th>European words</th>
<th>Simpl.</th>
<th>Taiwanese words</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gk στέργω 'love'</td>
<td>*terg-</td>
<td>théng (G1W) 'spoil'</td>
<td>théng-sēng (G1W) 'spoil'</td>
</tr>
<tr>
<td>Gk στέργω 'love'</td>
<td>*serg-</td>
<td>sēng (G1W) 'spoil'</td>
<td>théng-sēng (G1W) 'spoil'</td>
</tr>
<tr>
<td>L. tergeo, tergō 'to clean, cleanse'</td>
<td>*terg-</td>
<td>têng 澄 'clear'</td>
<td>têng-chheng 澄清 ‘clear’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>chheng 清 'cleanse'</td>
<td></td>
</tr>
<tr>
<td>ON sterkr 'strong, stark'</td>
<td>*terk-</td>
<td>tēng (G1W, [硬]) 'strong, hard'</td>
<td>tēng-khak [硬] 殼 ‘hard shell’</td>
</tr>
<tr>
<td>L. percoquō 'to heat thoroughly'</td>
<td>*perc-</td>
<td>pheng 烹 ‘to boil, cook’</td>
<td>pheng-jīn 烹飪 ‘cooking’</td>
</tr>
<tr>
<td>L. percusō 'to rove about'</td>
<td>*perc-</td>
<td>phèng 騎 ‘to gallop a horse’</td>
<td>phèng-tī 騎馳 ‘to gallop, run’</td>
</tr>
<tr>
<td>Gk περκνός 'name of an eagle' (Iliad)</td>
<td>*perk-</td>
<td>phèng 騎 ‘a giant bird’</td>
<td>tāi-phèng-chiáu 大鵬鳥 ‘a legendary giant bird’ (from 莊子 Chong-chú)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>lêng 能 ‘energy, capability’</td>
<td>lêng-liōng 能量 ‘amount of energy’</td>
</tr>
</tbody>
</table>

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 龍 to write sēng):

Sēng ti giâ chàu, sēng kiá" put-hàu [龍] 豬舉灶; [龍] 子不孝
‘A spoiled pig will burrow under the stove; a spoiled child will become unfilial.’

2.28 Death (1) – Tw sì 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- > *sì- > Tw sì 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 sì-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 (= η) 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 bô·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 sì 死 (2.28) to form a compound, sì-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-bùn 訃聞

L fānus ‘death, funeral’ > fûn- > (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-sin 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-bùn 訃文 as well as hù-bùn 訃聞. In the body of such a notice, separated from the text, is a large, single character 達 (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 
\[\text{hú-bûn} \text{ 訊聞}\] , and (2) a ‘notice of mourning’. They are derived as follows:

(1) \(\text{L} \text{fūnus} > \text{fūn-} > *\text{hun} > \text{Tw} \text{bûn 聽} \) ‘a death notice, funeral, obituary’ (with \(h \rightarrow b\)).

(2) \(\text{OE} \text{murnan ‘to mourn’} > *\text{murn-} > *\text{mung} > *\text{bung} > \text{Tw} \text{bûn 聽} \) ‘notice of mourning’.

Fig. 52. A notice of death bearing a large graph \(\text{bûn} \) 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 \(\text{PSC-1 (} -\text{orn} > -\text{ong})\), OE \(\text{murn-}\) would have yielded \(*\text{bung} \) through denasalization. Howewver, Taiwanese phonology does not have the \(-\text{ung} \) sound, therefore, it is substituted with \(-\text{un} \) (perhaps, there may have been a merger of \(-\text{ung} \) with \(-\text{un} \) in the past). The end-result of the derivation is \(\text{bûn 聽} \).

2.34 Coffin – Tw \(\text{koā”-chhâ} \) 棺材

\(\text{L sarcophagus ‘coffin’} > \text{sarco-} > \) (transposition) > \(*\text{carso-} > \text{Tw} \text{koā” (v.) 棺};\)

\(\text{L sarcophagus (id.)} > \text{sar-} > \text{S-T spectrum} > \text{chhâ 材} \) (graph borrowed for sound).
2.35 Bury – (v.) Tw tài (GrW)

Gk τάφος ‘a burial’ > taph- > (PSC: -aC > -ai) > Tw tài (GrW) ‘bury’

2.36 Grave (1) – Tw hûn-bông 墳墓

Tw hûn-bông 墳墓 ‘grave’ is a pleonastic compound of two synonyms. The first element hûn 墳 ‘grave’ has a few possible sources.

(1) L fûnus ‘a burial’ > fûn- > Tw hûn 墳 ‘grave’;
(2) L humâre ‘to bury’ > hum- > Tw hûn 墳 id. (Cf. L pulvis ‘powder’ > *pulv- > Tw hûn 粉 ‘powder’);
(3) L sepulcrum ‘grave’ > (aphet.) > *pulcr- > Tw hûn 墳 id. (Cf. L pulvis ‘powder’ > *pulv- > Tw hûn 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, bông 墳 ‘grave, sepulchral mound’ has two possible sources:

(1) L monumentum ‘monument’ (> Rum mormînt ‘grave’) > mon- (or morm-) > Tw bông 墳 ‘grave’;
(2) OE beorg ‘a burial mound’ may give rise to Tw bông 墳 through the PSC of -org > -ong as shown in the table under CV-2.25: OE beorg > *borg > bông 墳 ‘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 hiàt 穴

Tw hiàt 穴 is commonly used in tông-hiàt 洞穴 ‘cave' or hiàt-tô 穴道 ‘tunnel'. The latter is borrowed for use in acupuncture theory to mean ‘the meridian'. Hiàt 穴 is also used in Tw bông-hiàt 墓穴 ‘grave, coffin pit'. Hiàt 穴 is mentioned in one of the most recited poems of the Tang Dynasty, Khián pi hoài 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 hiàt iáu bèng 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 hiàt 穴 can be derived from OHG grab ‘grave' (cognate to ON gröf and OE grœf) with two changes:
gr- > h- and -b > -t:

OHG grab ‘grave' > *hab > Tw hiàt 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 Găoţông of Tang Dynasty (Fig. 46) and Bô-lêng (MSM Mào léng) 茂陵 of Emperor Wŭ 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. Qiánléng 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 egó / Gk éýw 'I' > (aphetic) *gō- > (v.) Tw góa 我 'I' (with PSC of -ō > -oa).

L egó / Gk éýw 'I' > (aphetic) *gō- > (nasalization) > (l.) Tw ngó·我 'I'.

3.2 I (2) - Old Chinese 台, pronounced in Taiwanese as î

Gmc *eha > OE ìc (> E I), Goth, OS ìk, OHG ih (> G ich), ON ek > (loss of final stop -k) > Tw î 台 (exact Old Chinese pronunciation uncertain; MSM yî).

Example of 台 in Old Chinese: 以輔台德 î hú î tek 'so as to support my moral force' (書經 Su Keng), here î 台 is in the genitive case 'my'.

3.3 I (3) - MSM yò / Tw íó

L egó / Gk éýw 'I' > (It io, Sp yo) > in roll-calls, MSM yò / Tw íó 'I'.

In roll-calls in classes or in the military, when your name is called, you respond by answering, "Íó!" It means 'Me!' This way of response was introduced by the Nationalist Chinese after 1949.

3.4 You (1) - Tw lú 汝

OHG ðú nom. 'you' [other Gmc, OE ðū, ON þú, etc] > Tw lú 汝 'you'.

The second tone in Tw lú 汝 is most likely a reflection of the long vowel û. 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 ŋ- in most cases. The table below shows the correspondence between European d- / þ- and Tw ñ-.

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 \( d- \) / \( p- \) and Tw \( l- \) (see table below).

<table>
<thead>
<tr>
<th>European words</th>
<th>Simplif.</th>
<th>Taiwanese words</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>IE *dhughǝtēr</td>
<td>*du-</td>
<td>lú 女 ‘daughter’,</td>
<td>lú-hâi 女孩 ‘girl’</td>
</tr>
<tr>
<td>‘daughter’</td>
<td></td>
<td>now ‘woman’ also</td>
<td></td>
</tr>
<tr>
<td>OHG dü ‘you’</td>
<td>du</td>
<td>lú 汝 ‘you’</td>
<td>lú-téng 汝等 ‘you all’</td>
</tr>
<tr>
<td>OE þū, ON þū</td>
<td>þu</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OHG dih ‘you’</td>
<td>dih</td>
<td>lǐ 你 ‘you’</td>
<td></td>
</tr>
<tr>
<td>OE þec, þeh, þē</td>
<td>þeh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ON þik</td>
<td>þik</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L dārus ‘hard’</td>
<td>dâ-</td>
<td>lūn 韌 ‘tough’</td>
<td>lūn-kiuh-kiuh (GiW) ‘tough to chew’</td>
</tr>
<tr>
<td>OE dān ‘open expanse of high ground’</td>
<td>dān</td>
<td>lūn 崙 ‘small hill’</td>
<td>Tiong-lūn 中崙 a place-name in Taipei, meaning ‘middle of high ground’</td>
</tr>
<tr>
<td>Gallo-Rom *domniōnem</td>
<td>[-om(n) &gt; -ong]</td>
<td>lông 籠 ‘prison’</td>
<td>siū-lông 囚籠 ‘prison’</td>
</tr>
<tr>
<td>‘dungeon’</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MedL duellum ‘duel’</td>
<td>*due</td>
<td>lúi 擂 ‘duel’</td>
<td>lúi-tâi 擂台 ‘dueling stage’</td>
</tr>
<tr>
<td>OE þunor ‘thunder’</td>
<td>*pun-</td>
<td>lúi 雷 ‘thunder’ (by PSC: -un &gt; -ui)</td>
<td>tàn-lúi 陳雷 ‘thunder rumbles’</td>
</tr>
</tbody>
</table>
3.6 He / she – Tw 伊

OE he, hē; OFris hi, he; OS hi, he, hie > *hi > (muting of h-) > Tw 伊 ‘he, she’

Tw 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:

<table>
<thead>
<tr>
<th></th>
<th>Singular</th>
<th>Plural (= Singular + -n)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First person</strong></td>
<td>góa 我 ‘I’</td>
<td>goán (dialect. gúnn) 阮 ‘we’ (exclusive); lán 咱 ‘we’ (inclusive)</td>
</tr>
<tr>
<td><strong>Second person</strong></td>
<td>lí 你 ‘you’</td>
<td>lín (G1W) ‘you’</td>
</tr>
<tr>
<td><strong>Third person</strong></td>
<td>伊 he, she’</td>
<td>in (G1W) ‘they’</td>
</tr>
</tbody>
</table>

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' > kaupmenn (pl.) 'merchants';

ON Englismaðr (sg.) 'Englishman' > Englismenn (pl.) 'Englishmen';

ON svikamaðr (sg.) 'traitor' > svikamenn (pl.) 'traitors'.

ON sagnamaðr (sg.) 'historian' > sagnamenn (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. gün) 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(i) + (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-siū kau-thong kui-chek 人人必須遵守交通規則.
CV - 4. NUMERALS

4.1 One – Tw (l.) it, (v.) chít —

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 densalization. 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 *chík- 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 -ek > -it, as evidenced by some examples shown in the table below.

Therefore, L singulus ‘single one’ > sing- > *chík > Tw (v.) chít — ‘one’.

<table>
<thead>
<tr>
<th>Sinograph</th>
<th>-ek</th>
<th>-it</th>
</tr>
</thead>
<tbody>
<tr>
<td>益</td>
<td>ek</td>
<td>it</td>
</tr>
<tr>
<td>逸</td>
<td>ék</td>
<td>it</td>
</tr>
<tr>
<td>直</td>
<td>ték</td>
<td>tit</td>
</tr>
<tr>
<td>秩</td>
<td>ték</td>
<td>tit</td>
</tr>
<tr>
<td>植</td>
<td>sék</td>
<td>sit</td>
</tr>
</tbody>
</table>

4.2 Two – Tw (l.) jī, (v.) liōng / (v.) nīng 兩; tùi 對 ‘pair’

According to the Liōng-jīt-kui-nī-soat (娘日歸泥說) theory of Zhāng Tàiyán 章太炎 (see also CV-2.7 above), Tw jī 兩 ‘two’ should have been derived from a hypothesized *nī- (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.

<table>
<thead>
<tr>
<th>Tw</th>
<th>Jpn.</th>
<th>European words</th>
<th>Sound change and note</th>
</tr>
</thead>
<tbody>
<tr>
<td>兒 ji ‘child’</td>
<td>*nǐ</td>
<td>ji, ni</td>
<td>OE cnih’t ‘boy’</td>
</tr>
<tr>
<td>乳 jú (L) ‘milk’</td>
<td>*nu</td>
<td>nyū</td>
<td>L nutrire ‘to suckle’</td>
</tr>
<tr>
<td>乳 ni (v.) ‘milk’</td>
<td>*ni</td>
<td></td>
<td>ON nyt ‘milk’</td>
</tr>
<tr>
<td>肉 jiok ‘meat, flesh’</td>
<td>*niok</td>
<td>niku</td>
<td>ON kjôt ‘meat’</td>
</tr>
<tr>
<td>日 jit ‘day, sun’</td>
<td>*nit</td>
<td>nitsi</td>
<td>OE niht ‘night’</td>
</tr>
<tr>
<td>二 jī, nǐng 两</td>
<td>*nǐ-</td>
<td>ni</td>
<td>ON tvennir / tvinnir</td>
</tr>
</tbody>
</table>

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 sōgunum fram ‘two tales running parallel’. Thus, it is possible that the second syllable of tvennir (tvinnir), *nîr, may be the source of *nî- and the loss of the final -r may have manifested itself in the seventh tone in the eventual Tw jī.

The ON (second syllable) *-nîr may also be the source of Tw (v.) nng 兩 as a result of the PSC of -r > -ng. The literal reading of the sinograph 兩 ‘two’ is liόng. A famous seven-syllable quatrain poem by Tô· Hú 杜甫 (written in 764 CE) has 兩 in the opening line: Liόng kô hông-lê bèng 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 tù 对, originally meaning ‘two’ but now only connoting ‘pair’.
Three – Tw (v.) saⁿ, (l.) sam ☰

OS thria (m.), OFris thriā (f.), ON þríár (f.), and Goth þria (f.), all ‘three’, find their correspondence in Tw saⁿ ☰ ‘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 ☣ 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).

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 feower, OFris fiāwer (m.), fiōr (f), OS fiuwar (f.), fiori (n.), OHG fior (m.), and ON fjórir (m.), fjórar (f.), fiogor (n.) > feo- / fiu- / fio- > *hsi > Tw (l.) sù 四

Five – Tw (v.) gō· 五

OHG fimf (m.), finf (f.), ON fimm, Goth fimf ‘five’ (Cf. L quīnque, Gk πέντε ) > *hīm- / *hīn- > (Tripartite relationship) > *ho / *ho· > Tw (v.) gō· 五 ‘five’

The literary reading of ☢ 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 achtā, 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).

<table>
<thead>
<tr>
<th>Sinographs</th>
<th>Japanese h-</th>
<th>Taiwanese p-</th>
</tr>
</thead>
<tbody>
<tr>
<td>百 ‘hundred’</td>
<td>hyaku</td>
<td>(l) pek, (v) pah</td>
</tr>
<tr>
<td>北海道 (Northern main island of Japan)</td>
<td>Hokaido</td>
<td>Pak-hái-tō</td>
</tr>
</tbody>
</table>
Thus, the correspondence between Germanic word for ‘eight’ and its Taiwanese counterpart can be summarized as follows (see 4.14 for an alternative etymology):

\[ \text{Gmc aht- / att-} > (\text{prefixed with} \ h-) > *\text{hat-} (> \text{Jpn hatsi}) > \text{Tw pat / peh, poeh /八.} \]

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 niú ‘nine’ (see Item 25 in the table for PSC-5). The vernacular form is káu, which is related to (l.) kiú 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:

<table>
<thead>
<tr>
<th>Sinograph</th>
<th>(l.) Tw -(i)u</th>
<th>(v.) Tw -(i)au</th>
<th>European words</th>
</tr>
</thead>
<tbody>
<tr>
<td>劉 (a surname)</td>
<td>liù</td>
<td>lāu</td>
<td></td>
</tr>
<tr>
<td>留 ‘to remain’</td>
<td>liù</td>
<td>lāu</td>
<td></td>
</tr>
<tr>
<td>流 ‘to flow’</td>
<td>liù</td>
<td>lāu</td>
<td>Gk ḫέω ‘to flow’</td>
</tr>
<tr>
<td>皺 ‘wrinkle’</td>
<td>chhìù</td>
<td>jiàu / jiāu</td>
<td>ON hrukka ‘wrinkle’</td>
</tr>
<tr>
<td>九 ‘nine’</td>
<td>kiú</td>
<td>káu</td>
<td>ON niú ‘nine’</td>
</tr>
</tbody>
</table>
Thus, ON níu ‘nine’ > (PSC-5: n- > k-) > (l) Tw kiú > (v) Tw káu ‘nine’

4.10 Ten – Tw (l) sip / (v.) cháp +)

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) sip ʻten’. A few examples of the pattern are shown in the table below:

<table>
<thead>
<tr>
<th>European words</th>
<th>Simpl.</th>
<th>Tw -ip : Usage</th>
<th>Tw -(i)u : Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON skript ‘writing’, L scribō ‘to write’</td>
<td>*sipt-</td>
<td>sip 習 : sip-fi 習字</td>
<td>siu 修 : siu-su 修書 ‘write a letter’</td>
</tr>
<tr>
<td>ON skipa ‘arrange’</td>
<td>*sib-</td>
<td>‘practice writing’</td>
<td></td>
</tr>
<tr>
<td>ON skip ‘ship’</td>
<td>*sip-</td>
<td>sip 拾 : siu-sip 收拾 ‘collect and arrange’</td>
<td>siu 收 : siu-sip 收拾 ‘collect and arrange’</td>
</tr>
<tr>
<td>ON svipta ‘loss’</td>
<td>*sipt-</td>
<td>sít 失 ‘loss, failure’</td>
<td>su 輸 ‘loss’</td>
</tr>
<tr>
<td>medL studiāre ‘study’</td>
<td>*su-</td>
<td>sip 習 : hák-sip 學習 ‘to study, learn’</td>
<td>siu 修 : chū-siu 自修 ‘self study’</td>
</tr>
<tr>
<td>ON tíu ‘ten’</td>
<td>tíu &gt; *siu</td>
<td>sip (l) ʻten’</td>
<td>Jpn jiu ‘ten’</td>
</tr>
</tbody>
</table>

Once we have arrived at the (l) Tw sip ʻten’ from ON tíu, the (v.) Tw cháp 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.
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 tüu ‘ten’, we are able to derive two Taiwanese morphosyllables, (l.) sip 十 (or 拾 for writing on checks to prevent alteration) and (v.) cháp, and a Japanese one, jiū, all connoting ‘ten’.

### 4.11 Ten – Related Taiwanese word (1): chiu 週

A Taiwanese word related to Jpn jiū ‘ten’ and ultimately to ON tüu ‘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-chóan 週全 (lit. ten-complete) means ‘all is in order, complete, perfect all around’, which is the same as another expression, sip-chóan-sip-bí 十全十美 ‘maximum completeness (and) maximum beautifulness (with 10 representing the maximum)’.

<table>
<thead>
<tr>
<th>Sinograph</th>
<th>l. Tw</th>
<th>v. Tw</th>
<th>Sound changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>及 ‘and’</td>
<td>kíp</td>
<td>kap</td>
<td></td>
</tr>
<tr>
<td>霏 ‘drizzling rain’</td>
<td>sip</td>
<td>sap</td>
<td></td>
</tr>
<tr>
<td>十 ‘ten’</td>
<td>sip</td>
<td>cháp</td>
<td>s- &gt; ch- (S-T spectrum)</td>
</tr>
<tr>
<td>密 ‘secret, tight’</td>
<td>bit</td>
<td>bát</td>
<td></td>
</tr>
<tr>
<td>實 ‘solid, full, true’</td>
<td>sit</td>
<td>chát</td>
<td>s- &gt; ch- (S-T spectrum)</td>
</tr>
<tr>
<td>漆,擦 ‘to paint;擦 ‘to erase’</td>
<td>chhit</td>
<td>chhat</td>
<td></td>
</tr>
<tr>
<td>值 ‘value, worth’</td>
<td>tit</td>
<td>tát</td>
<td></td>
</tr>
</tbody>
</table>
4.12 Ten – Related Taiwanese word (2): sùn 句

Another morphosyllable sùn 句 is also used to represent ‘ten’. The original usages were sùn-jīt 句日 ‘ten days’ and sùn-nî 句年 ‘ten years’. Displacement has taken place over time so that the units of time, jīt 日 ‘day’ and nî 年 ‘year’, were lost so that sùn 句 alone may represent ‘10 days’ or ‘10 years’. Thus, a month (30 days) can be divided into three periods of ten days: siōng-sùn 上旬, tiong-sùn 中旬, and ē-sùn 下旬 (the upper, middle, and lower ten-day period, respectively). And Tw chhit-sùn lâu-a-kong 旬老阿公 ‘70-year-old grand-father’ and pat-sùn sî-jīt tōa-khèng 八旬生日大慶 ‘eightieth birthday grand celebration’ are examples of sùn 句 representing ‘ten years’ due to the loss of nî 年 from sùn-nî 句年 by displacement. The question now is, what is the origin of sùn 句?

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 tehun, Goth taihun, and ON tīu. Of all the Germanic reflexes, ON tīu is the only one that has lost the nasal final -n. We can reconstruct a Proto-Norse word still having the nasal final as *túun. From this and by way of the S-T spectrum, we obtain *túun > *siun, the latter giving rise to Tw sùn 句 ‘ten’. This is diagrammatically shown below:

Gmc *tehun > ---- > Proto-Norse *túun > (S-T spectrum) > *siun > Tw sùn 句.

4.13 Ten – Related Taiwanese word (3): tìat 秩

Tw tìat 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-tìat hōa-tàn 八秩華誕 means ‘the eighth decade jubilee birthday’.

The quest for the origin of tìat 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.
Chau H. Wu, “Patterns of Sound Correspondence between Taiwanese and Germanic/Latin/Greek/Romance Lexicons,” Part I, Sino-Platonic Papers, 262 (August 2016)

Pronunciation of sinographs bearing the 失 phonophore

<table>
<thead>
<tr>
<th>Graph</th>
<th>-it</th>
<th>-iat</th>
<th>-ut</th>
<th>-ek</th>
<th>Reconstruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 失</td>
<td>sit</td>
<td></td>
<td></td>
<td></td>
<td>sit (&lt; *tit &lt; *ték)</td>
</tr>
<tr>
<td>2 秩</td>
<td>tiåt</td>
<td></td>
<td></td>
<td></td>
<td>tiåt (&lt; *tit &lt; *ték)</td>
</tr>
<tr>
<td>3 跌</td>
<td>tiåt</td>
<td></td>
<td></td>
<td></td>
<td>tiåt (&lt; *tit &lt; *ték)</td>
</tr>
<tr>
<td>4 跽</td>
<td>tiåt</td>
<td></td>
<td></td>
<td></td>
<td>tiåt (&lt; *tit &lt; *ték)</td>
</tr>
<tr>
<td>5 跠</td>
<td>tiåt</td>
<td></td>
<td></td>
<td></td>
<td>tiåt (&lt; *tit &lt; *ték)</td>
</tr>
<tr>
<td>6 跖</td>
<td>tiåt</td>
<td></td>
<td></td>
<td></td>
<td>tiåt (&lt; *tit &lt; *ték)</td>
</tr>
<tr>
<td>7 距</td>
<td>tiåt</td>
<td></td>
<td></td>
<td></td>
<td>tiåt (&lt; *tit &lt; *ték)</td>
</tr>
<tr>
<td>8 鉄</td>
<td>tiåt, thiåt</td>
<td></td>
<td></td>
<td></td>
<td>thiåt – tiåt (&lt; *tit &lt; *ték)</td>
</tr>
<tr>
<td>9 纨</td>
<td>tiåt, thiåt</td>
<td></td>
<td></td>
<td></td>
<td>thiåt – tiåt (&lt; *tit &lt; *ték)</td>
</tr>
<tr>
<td>10 缤</td>
<td>tiåt</td>
<td>ék</td>
<td></td>
<td></td>
<td>ék &lt; *hek &lt; *ték &gt; *tit &gt; tiåt</td>
</tr>
<tr>
<td>11 急</td>
<td>iåt, tiåt</td>
<td>ék</td>
<td></td>
<td></td>
<td>ék &lt; *hek &lt; *ték &gt; *tit &gt; tiåt</td>
</tr>
<tr>
<td>12 佚</td>
<td>tiåt</td>
<td>ék</td>
<td></td>
<td></td>
<td>ék &lt; *hek &lt; *ték &gt; *tit &gt; tiåt</td>
</tr>
<tr>
<td>13 沗</td>
<td>tiåt</td>
<td>ék</td>
<td></td>
<td></td>
<td>ék &lt; *hek &lt; *ték &gt; *tit &gt; tiåt</td>
</tr>
<tr>
<td>14 彛</td>
<td>tit</td>
<td>tiåt</td>
<td>ék</td>
<td></td>
<td>ék &lt; *hek &lt; *ték &gt; *tit &gt; tiåt</td>
</tr>
<tr>
<td>15 快</td>
<td>thiåt</td>
<td>tut</td>
<td></td>
<td></td>
<td>tut &lt; *tit &gt; tiåt</td>
</tr>
<tr>
<td>16 繏</td>
<td>tit</td>
<td>tiåt</td>
<td></td>
<td></td>
<td>tiåt &lt; tit (&lt; *ték)</td>
</tr>
<tr>
<td>17 拽</td>
<td>sek, thek</td>
<td></td>
<td></td>
<td></td>
<td>sek &lt; *ték &gt; thek</td>
</tr>
<tr>
<td>18 睛</td>
<td>tiåt</td>
<td>hek, thek</td>
<td></td>
<td></td>
<td>hek &lt; *ték &gt; thek; *ték &gt; *tit &gt; tiåt</td>
</tr>
</tbody>
</table>

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, tit, tiåt, thiåt, tut, 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, 帛 (#14) and 矣 (#16), also have tit in their pronunciations, so it can be safely assumed that 失 at one stage may have been pronounced as *tilt, but after conversion to sit, *tilt has been lost. Therefore, the derivation of 失 may be reconstructed as *tilt > sit. However, *tilt 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 *tek > *tit > tiat. Thus, the common denominator for all the graphs in the table is *tek, 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 tiat. 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 紘 (#9) each has two variant forms of pronunciation, tiat and thiát. The aspirated th- (IPA tʰ) 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 彸 and #18 畹 are very interesting in that both have thek but lack the tit form. Because they are archaic and obsolete (i.e., fossils), their thek form can be assumed to be an ancient form. #17 彸 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 彸 we can derive sek < *ték < thek.

(5) #18 畹 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 畹 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 彴 is also a fossil, which has two forms, tit and tiat, 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 tit > tiat. Owing to the tautomerism of ek to it as discussed above (and in 4.1), tit is likely a derivative of *ték, and therefore the two forms of #16 彴 seem to result from *ték > tit > tiat.

(8) #14 彴 is another fossil which, in addition to the two forms of #16 彴, 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 > tit > tiat.

(9) Now it has become clear that 彵 tiat (#2), the focus of our interest, along with five others in this group (#3 - #7), can be derived thus: *ték > *tit > tiat 彵.

Summary of the sound changes of 彵 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 白 underwent a similar change to tit as 失, but it took a further step to tiát (*ték > tit > tiát), then the original *ték disappeared too. The two archaic and obsolete graphs, #17 白 and #18 白, 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 白 has an additional tiát form, suggesting that it may have gone through the intermediate tit to reach tiát, but the intermediate was so transient, there is not a trace of it. Another fossil, #14 白, 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 諷失 ‘say something that inadvertently offends or hurts someone’, which is composed of two closely-related graphs ték 諷 ‘to blame, find fault’ and sit 失 as in sit-kēng 失敬 ‘disrespect’ and sit-kèng 失禮 ‘disregard propriety’. It is possible that ték 諷 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 dēcurretē ‘to run down, hasten down’, we obtain: dēcurretē > *dē- > *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.
The origin of *tiât 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- > tiât.

Thus, retracing the development of 秩 from its current tiât back to its origin *dek-, enables us to make a seamless connection with its European counterpart.

4.14 Tithe (a special word related to ‘ten’) – Tw thiu 抽

*Tithe means ‘a tenth portion of annual produce or income paid to the Church’. It is derived from OE tēopa. In Old Norse, a tenth part is called túund. 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 chi 十分一, with — ‘one’ expressed by (v.) chit instead of (l.) it. What is interesting is the verb used together with it, that is, thiu 抽. Thiu *cháp hūn chi 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-tiôh ê, thiu *cháp hūn chi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.
Chau H. Wu, “Patterns of Sound Correspondence between Taiwanese and Germanic/Latin/Greek/Romance Lexicons,” Part I, Sino-Platonic Papers, 262 (August 2016)

<table>
<thead>
<tr>
<th>Numeral</th>
<th>OE</th>
<th>L</th>
<th>Gk</th>
<th>Toch A</th>
<th>Jpn</th>
<th>Tw (l.) / (v.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hundred</td>
<td>hundred</td>
<td>centum</td>
<td>hekatón</td>
<td>känt</td>
<td>hyaku</td>
<td>pek / pah</td>
</tr>
<tr>
<td>Eight</td>
<td>ahta, ehta</td>
<td>octō</td>
<td>oktō</td>
<td>okät</td>
<td>hatsi</td>
<td>pat / peh (poeh)</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Langs.</th>
<th>‘100’</th>
<th>‘8’</th>
</tr>
</thead>
<tbody>
<tr>
<td>OE</td>
<td>h-undred</td>
<td>ah-ta</td>
</tr>
<tr>
<td>L</td>
<td>c-entum</td>
<td>oc-tō</td>
</tr>
<tr>
<td>Gk</td>
<td>hek-a-tón</td>
<td>ok-tō</td>
</tr>
<tr>
<td>Toch A</td>
<td>k-ánt</td>
<td>okät</td>
</tr>
<tr>
<td>Jpn</td>
<td>hyak-u</td>
<td>hatsi</td>
</tr>
<tr>
<td>Tw (l.)</td>
<td>p-ek</td>
<td>pat</td>
</tr>
<tr>
<td>Tw (v.)</td>
<td>p-ah</td>
<td>peh</td>
</tr>
</tbody>
</table>

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: pek] (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 /薌 (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 tetē. 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:

\[
\chi\text{i}l\text{i}a\text{d}e\text{s} > \chi\text{i}l\text{i}a\text{d}- > (\text{homorg. nasal. of } -d) > *\text{ch}i\text{li}an > (\text{elision of med. } -l-) > *\text{ch}i\text{an} > (\text{affrication of } \chi) > \text{Tw } chhian 千.
\]

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 头曼 (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 \textit{tmāne} > *\textit{tmān} - (under the influence of *\textit{mian}) > *\textit{man} > bān 萬

Gk \textit{μυριάδες} > *\textit{μυριάδ} > *\textit{mian} - (under the influence of *\textit{tmān}) > *\textit{man} > bān 萬

4.18 Hundred thousand - Tw \textit{ek} 億

The old Chinese counting system was decimal; each decimal unit was represented by a word. Thus, an \textit{ek} 億 amounted to 100,000 (or $10^5$). Since a bān 萬 is 10,000 (or $10^4$), an \textit{ek} 億 = 10 bān 萬. In today's counting system, an \textit{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, *\textit{dek} (similar to *\textit{tek}) may lose the initial d- to give \textit{ek}. Thus, Tw \textit{ek} 億 may be derived from Gk δεκάκις μυριοι in the following way:

Gk δεκάκις μυριοι > *δεκ- > Tw \textit{ek} 億.

4.19 Million - Tw \textit{tiāu} 兆

According to the old counting system, a \textit{tiāu} 兆 was ‘a million’, 1,000,000 (or $10^6$). This amounted to $10 \times \textit{ek}$ 億 in the old days. [In today’s system, a \textit{tiāu} 兆 is 10,000×\textit{ek} 億 (or $10^4 \times 10^4 \times 10^4$)]. It \textit{mille} ‘thousand’ is derived from L \textit{mille} ‘thousand’ whereas It \textit{milione} (Old It \textit{millione}) ‘million’ is also from the same L \textit{mille} but with an implied meaning of ‘a gross thousand’. Similarly, E \textit{million} came ultimately from L \textit{mille}. Since a \textit{tiāu} 兆 is a million (in the old system) which means a thousand thousands, therefore, \textit{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 \textit{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 *\textit{þūsundy}, from which sprang OE \textit{þūsend}, OFris \textit{thūsend}, OS \textit{thūsundig}, OHG \textit{þūsunt}, \textit{dusunt}, Goth \textit{þūsundi}, and ON \textit{þūsund}, \textit{þūshund-rað}. For derivation of Tw \textit{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 *\textit{þūsundi} > *\textit{pū-} > *\textit{tu} > Tw \textit{tiāu} 兆 (with an infix of the glide -i-). These two sound changes happen to parallel the changes of Gmc *\textit{þūsundi} > OHG \textit{þūsunt} > Modern German \textit{tausend}.
We now summarize the derivation for Taiwanese words for high numbers in the table below:

<table>
<thead>
<tr>
<th>Graph</th>
<th>Old unit</th>
<th>New unit</th>
<th>Etymon</th>
<th>Simplication</th>
<th>Tw</th>
</tr>
</thead>
<tbody>
<tr>
<td>千</td>
<td>10³</td>
<td>10³</td>
<td>Gk χιλιάδες</td>
<td>*χιλιάδ- &gt; *chiad-</td>
<td>Chhian</td>
</tr>
<tr>
<td>萬</td>
<td>10⁴</td>
<td>10⁴</td>
<td>Gk μυριάδες</td>
<td>*μυριάδ- &gt; *miad-</td>
<td>bān</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Toch B tmāne</td>
<td>*tmān- &gt; man-</td>
<td></td>
</tr>
<tr>
<td>億</td>
<td>10⁵</td>
<td>10⁸</td>
<td>Gk δεκάκις μυριοι</td>
<td>*δεκ- &gt; *dek-</td>
<td>ek</td>
</tr>
<tr>
<td>兆</td>
<td>10⁶</td>
<td>10¹²</td>
<td>Gmc *þūsundi</td>
<td>*þū- &gt; *tiu-</td>
<td>tiāu</td>
</tr>
</tbody>
</table>
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.
ACKNOWLEDGMENTS

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2. Sinitic in General and Some Selected Topolects
3. Germanic Languages
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Chau H. Wu, “Patterns of Sound Correspondence between Taiwanese and Germanic/Latin/Greek/Romance Lexicons,” Part I, *Sino-Platonic Papers*, 262 (August 2016)

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