

Language Attitudes toward Written Taiwanese

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This survey includes a total of 244 students from Tamkang University and Tamsui College in Taiwan. The students were told to evaluate seven prepared Taibun (Written Taiwanese) reading samples (written in different orthographies) on six characteristic scales. The statistical results reveal that Han character-only orthography received highest rating, Han-Roman mixed received the second highest, and Roman-only script received the lowest. Overall, the students showed positive attitudes toward Taibun. In addition to the orthography factor, students' background also affected their evaluations. The significant factors are: (1) place of residence (Taipei vs. non-Taipei), (2) major (Taiwanese and English vs. Mechanical Engineering vs. Chinese, Japanese, and Public Administration), (3) mother tongue (Taiwanese vs. non-Taiwanese), (4) language ability (Taiwanese vs. non-Taiwanese), (5) national identity (Taiwanese vs. non-Taiwanese), and (6) assertions on national status (independence vs. non-independence). In short, whether or not Taibun will be successfully promoted to a national status, highly depends on people's orthography demands and their attitudes toward written Taiwanese. Moreover, their language ability and national identity also will play an important role while they are making the determinations.

Keywords: Taibun, Romanization, Peh-oe-ji, Han-Lo, orthography, writing

Introduction

Digraphia, as parallel to Ferguson's (1959) idea of diglossia, has been defined by Dale (1980:5) as “the use of two (or more) writing systems for representing a single language,” or by DeFrancis (1984:59) as “the use of two or more different systems of

writing the same language.” This is currently the situation in Taiwan, where the Taiwanese language is written in several different ways.

Cheng (1990:219-237) and Tiu^N (1998:230-241) have pointed out that there are currently three main writing systems for writing Taiwanese. They are: (1) Han character only, which means exclusive use of Hanji, (2) Han-Lo 'Hanji with Roman script,' which means a combination of Hanji with Roman script, and (3) Roman-only, or 'exclusive use of Roman script.' Therefore, the situation of writing in Taiwanese is clearly a case of digraphia. That is, Taiwanese speakers speak in Taiwanese, but write in Hanji, Roman script, or a mixture of Hanji and Roman.

Taiwan is a multilingual and multiethnic society. There are more than twenty native languages in Taiwan, including Hakfa, Taiwanese¹, and indigenous languages (Grimes 1996). In addition, Taiwan has been colonized by several foreign regimes since the seventeenth century. The most recent of these are the Japanese regime (1895-1945) and the Chinese KMT² regime (1945-2000³). According to colonial language policies (Li 1996), the native languages were prohibited in the public domain, and Japanese and Mandarin Chinese were adopted as the only official languages in each colonial period. As a consequence, the native languages in Taiwan are today declining.

Whether vernacular speech eventually will completely shift to Mandarin or be maintained depends largely on language attitudes. In other words, people's language

¹ Taiwanese is also called Taigi, Tai-yu, Holoee, Southern Min, or Min-nan. The broad definition of Taiwanese includes all the indigenous languages, Hakfa, and Holoee. Occasionally, Taiwanese refers to Holoee only.

² KMT or the Chinese Nationalist Party, was formerly a political party in Mainland China prior to 1949. In 1945 KMT took over Taiwan on behalf of Allied Powers after Japan had surrendered. In 1949, the troops of the KMT were completely defeated by the Chinese Communist Party in Mainland China, so the KMT decided to continue to occupy Taiwan as a base to fight against Chinese communist in order to go back to China.

³ KMT has been the alien ruling party since 1945 until 2000, in which year the presidential candidate Shui-bian Chen of Democratic Progressive Party, the native opposition party, was elected as the new president of Taiwan.

attitudes play an important role in Taiwan's language future. However, research on language attitudes in Taiwan is rather scanty. Most research, such as Lu (1988), Feifel (1994), and Wang (1995), focus on spoken Taiwanese, not on written Taiwanese.

The purpose of the present study is to examine readers' responses toward different writing systems of *Taibun* or written Taiwanese. The subjects of this investigation were 244 students of Tamkang University and Tamsui College in Taiwan. Seven reading samples with different writing systems were prepared and subjects were asked to evaluate the characteristics of each sample. The main research questions are: 1) Does a rater evaluate each of the reading samples differently? If so, what factors influence a rater's judgment? 2) Do the raters' own characteristics, such as gender, residence, academic major, national identity and language ability, have effects on their evaluations? In other words, what particular groups of people tend to accept written Taiwanese, and what writing systems do they prefer?

Background

There are currently four primary ethnic groups in Taiwan: indigenous (1.7%), Hakka⁴ (12%), Holo⁵ (73.3%), and Mainlanders⁶ (13%) (Huang 1993:21). Due to the Chinese KMT's monolingual policy, the Taiwanese people are not allowed to speak their vernaculars in public. Moreover, they are forced to learn Mandarin Chinese and to identify themselves as Chinese through the national education system. As Hsiao (1997:307) has pointed out, "the usage of Mandarin as a national language becomes a testimony of the Chineseness of the KMT state;" that is, the Chinese KMT regime is trying to convert the

⁴ Hakka is the name of the ethnic group; Hakfa or Hakka refer to the mother tongue of people of Hakka ethnicity.

⁵ Holo is the name of the ethnic group; Holoee refers to the mother tongue of Holo ethnicity.

⁶ Mainlanders refer to the immigrants who came to Taiwan with the KMT in the 1940s. Mandarin is regarded

Taiwanese into Chinese through Mandarin monolingualism. Consequently, most Taiwanese people are bilingual with their vernacular and the official language. Moreover, research such as Chan (1994) and Young (1989) has revealed that a language shift toward Mandarin is in progress. Huang (1993:160) goes so far as to suggest that the indigenous languages of Taiwan are all endangered.

Owing to the monolingual policy, the decline of vernacular languages in Taiwan has in recent years become increasingly pronounced and apparent. In response, people in Taiwan have protested against the monolingual policy, and have demanded bilingual education in schools. This is the so-called Taiwanese language movement (*Taigibun Untong*) that has arisen since the second half of the 1980s (Hsiau 1997; Erbaugh 1995; Huang 1993). There are two core issues for the Taiwanese language movement. First, the movement wishes to promote spoken Taiwanese in order to maintain people's vernacular speech. Second, the movement aims to promote and standardize written Taiwanese in order to develop Taiwanese (vernacular) literature. Because written Taiwanese is not well standardized and not taught through the national education system, Taiwanese speakers have to write in Modern Written Chinese (MWC) instead of Written Taiwanese (WT). In other words, the written language of the Taiwanese people is separated from their daily colloquial speech; people speak in Taiwanese, but write in MWC. Although more than a hundred orthographies have been proposed by different persons enthusiastic for the standardization of Taibun, most of the designs have probably been accepted and used only by their own designers. Moreover, many of the designs were never applied to practical Taibun writing after they were devised.

These orthographic designs may be divided into two groups based on their graphic

as the mother tongue or lingua franca among Mainlanders.

construction: Han character script and non-Han character script. Non-Han characters may be further subdivided into two types: New phonetic script, such as *Ganbun* designed by Ui-jin Ang, or ready-made phonetic script, which makes use of the present Roman alphabets or *Bopomo* (ㄅ ㄆ ㄇ) to write Taibun. Even if designers use the identical Roman alphabets, they may have different spelling systems, such as *Peh-oe-ji*, *Dai-im*, TLPA, *PS daibuun* and *Kho-kun*.

Because of the wide use of the personal computer and electronic networks in Taiwan since the 1990s, most orthographic designs, which require extra technical support other than regular Mandarin software, are unable to survive. Therefore, the majority of recent Taiwanese writing systems are either in Han characters, Roman alphabet or a mixed system combining Roman and Han.

Taiwanese writing in Hanji-only can be regarded as the High language in digraphia, which is often employed in official situations such as in government documents⁷, the imperial examination system (prior to the 20th century), and traditional temples. Han characters have been used in Han cultural areas such as Taiwan, Japan, Korea, Vietnam and China for more than two thousand years. Writing in Hanji can be divided into two styles based on its historical background: First, there is the so-called “*wenyen*” or classical Han writing prior to the 20th century. This old writing style was not based on colloquial speech, but in a specific classical writing style. Second, there is the “*baihua*” or contemporary vernacular writing in the 20th century. Because writing in classical Han was very difficult to learn and comprehend, the issue of writing in colloquial speech was raised at the end of the 19th century, and became widely accepted by the public in the 20th century (cf. Chen 1996, 1994, 1993; DeFrancis 1990; Norman 1988; Tsao 1999).

Although colloquial writing has been available for a century in the Han cultural areas,

⁷ Prior to the Japanese regime (1895-1945), government documents were written in classical Han writing.

some languages, such as Taiwanese and Cantonese which are not recognized by their governments as official languages, do not fare very well in their colloquial writing. Writing in Taiwanese or Cantonese is neither widespread nor standardized. Moreover, under the situation of nonstandardization, the usage of Han characters may vary from user to user. That is to say, different writers could choose different characters to represent the same word. For example, some Taiwanese lexical items cannot be expressed well in Han characters. According to Cheng (1989: 332), approximately 5% of the Taiwanese morphemes have no appropriate Han characters, and they account for as much as 15% of the total number of characters in a written Taiwanese text. Those 15% purely Taiwanese words are most likely to be written in different Han characters by different writers. Han-Roman mixed writing is proposed by some promoters to solve this problem. That is, Roman script should be adopted for the lexical items which do not have appropriate Han characters, and Han characters should be used elsewhere.

Taiwanese writing in Roman script can be regarded as the Low language in digraphia. The traditional Romanization for Taiwanese is the so-called “*Peh-oe-ji*,” which was developed by missionaries in the second half of the 19th century (Chiung 2000). *Peh-oe-ji* is used mostly by church people, especially those who were not educated in Japanese or Mandarin Chinese. *Peh-oe-ji* is often employed in church worship, private letters, and note taking among the people who do not know Han characters.

The main reason for using Romanization is because of its economy and learnability compared to Han characters, which may require several years to learn to read and write. For instance, a total of 47,035 different Han characters were collected in the *Kangxi Dictionary* (1716). However, an ordinary literate Chinese person knows and uses somewhere between 3,000 and 4,000 Han characters (Norman 1988:72-73). An elementary

school student in Taiwan may know around 2,669 characters⁸ after sixth grade. As Chen has pointed out, the use of traditional Han characters is “to a large extent responsible for the country's high illiteracy and low efficiency, and hence an impediment to the process of modernization” (Chen 1994:367).

However, although Romanization is much more efficient than Han characters, Romanization is not widely accepted by people in Taiwan. Writing in Roman script is regarded as the Low language in digraphia. There are several reasons for this phenomenon:

First, people's preference for Han characters is caused by their internalized socialization. Because Han characters have been adopted as the official orthography for two thousand years, being able to master Han characters well is a symbol of scholarship in the Han cultural areas. Writing in scripts other than Han characters may be regarded as childish writing. For example, when *Tai-oan-hu-siaⁿ Kau-hoe-po*, the first Taiwanese newspaper in Romanization, was published in 1885, the editor and publisher Rev. Thomas Barclay exhorted readers of the newspaper not to “look down at Peh-pe-ji; do not regard it as a childish writing” (Barclay 1885).

Second, misunderstanding of the nature and function of Han characters has enforced people's preference for Han characters. Many people believe that Han characters are ideally suited for the Han language family, which includes the Taiwanese language; they believe that Taiwanese cannot be expressed well without Han characters because Han characters are logographs and each character expresses a distinctive semantic function. In addition, many people believe Lian Heng's (1987) claim that “there are no Taiwanese words which do not have corresponding characters.” However, DeFrancis (1996:40) has pointed out that Han characters are “primarily sound-based and only secondarily semantically oriented.” In

⁸ According to the latest (1995) elementary textbooks compiled by the National Institute for Compilation and Translation, the number of Han characters learned by students at each grade is 328 for first grade, 479 for second grade, 455 for third grade, 529 for fourth grade, 493 for fifth grade, and 385 for sixth grade.

DeFrancis' opinion, it is a myth to regard Han characters as logographic. He even concludes that "the inefficiency of the system stems precisely from its clumsy method of sound representation and the added complication of an even more clumsy system of semantic determinatives" (DeFrancis 1996:40). If Han characters are logographs, the process involved in reading them should be different from phonological or phonetic writings. However, research conducted by Tzeng et al. has pointed out that "the phonological effect in the reading of the Chinese characters is real and its nature seems to be similar to that generated in an alphabetic script" (Tzeng et al. 1992:128). Their research reveals that the reading process of Han characters is similar to that for phonetic writing. In short, there is no evidence to support the view that the Han characters are logographs.

The third reason that Peh-oe-ji is not widespread in Taiwan is because of political factors. Symbolically, Han characters are regarded as a symbol of Chinese culture by Taiwan's ruling Chinese KMT regime. Writing in scripts other than Han characters is forbidden because it is perceived as a challenge to Chinese culture and Chinese nationalism. For example, the Romanized New Testament "*Sin Iok*" was once seized in 1975 because the Romanization Peh-oe-ji was regarded as a challenge to the orthodox status of Han characters.

Since writing in Taiwanese is currently in a chaotic situation, what are readers' reactions to different Taiwanese orthographies? Do they prefer a particular orthography? And what are their attitudes toward Taiwanese writing in general? The investigation described below attempts to answer these questions.

Methodology

The matched-guise technique, which was first developed by Lambert (Lambert et al. 1960, 1975; Lambert 1967) and his associates, is often adopted for research in language

attitudes toward spoken language. However, research in attitudes toward written language vs. spoken language is quite different. Thus, Lambert's matched-guise technique was modified here in order to meet the needs of research on written Taiwanese.

The modified matched-guise for the present research was conducted as follows: seven reading samples (or writing samples) written in different orthographies of *Taibun* were prepared and the subjects were told to rate each reading on six characteristic scales such as interesting, expressive and friendly (see Appendix B). The ratings were based on semantic differential scales, ranging from the lowest 1 to the highest 7. For example, with respect to the characteristic “interesting,” 1 means very boring, 4 means neutral, and 7 means very interesting.

The reading samples were adopted from published articles, and they were revised in orthography to varying degrees to fit our survey needs. The texts of all the reading samples were written in the same narrative style, talking about traditional life in the countryside of Taiwan. The purpose of choosing reading samples that are written in the same style is to minimize the influence of contents on readers. Accordingly, it is assumed that different contents do not substantially affect readers' evaluations. The scores of the reading samples as rated by readers could thus be assumed to reflect the readers' responses to different orthographies. The score is treated as a “reading index” which shows a reader's degree of favor toward a particular reading sample (i.e., toward a particular orthography).

In addition to the modified matched-guise, readers' backgrounds, such as gender, residence, and academic major, were collected through a questionnaire design. Additional self-reported information including political leanings, national identity, mother tongue, and language ability were also requested. The principal goals were to examine how readers' backgrounds may affect their evaluations on reading samples, and to further formulate an equation for predicting scores of reading samples rated by different subjects. This equation

is called the Taibun equation; it predicts and indicates readers' degrees of acceptance of various orthographic designs.

Selection of reading samples

In this research design, there are seven reading samples, named A, B, C, D, E, F, and G (see Appendix A). All were written in Taiwanese (Holoee) except for reading D which was in Hakfa and reading G which was intermediate between Taiwanese and Mandarin. The following are brief descriptions of the different orthographies used:

(1) Han Characters Only: this was used in readings C and G. Reading C was entirely written in colloquial Taiwanese. However, reading G was intermediate between Taiwanese and Mandarin. The style of G is quite similar to the writing style of so-called *Hiong-thou Bun-hak* (Home Village Literature), used since the 1970s. (2) Roman Script Only: Reading B was completely written in *Peh-oe-ji*, the traditional Taiwanese Romanization. (3) Mixed Han and Roman writing: This is used in readings A, D (in Hakfa), and F. Reading A used more Roman script than D and F did. Generally speaking, the spelling of Roman scripts here is the same as Peh-oe-ji, but without tone marks. (4) Han with *bo-po-mo*: Reading E was written in Han characters with bo-po-mo, the National Phonetic Symbols, a special phonetic system used for learning Mandarin in Taiwan.

In order to gain a better understanding of the reading samples, we may analyze the seven readings according to six distinctive features based on orthography and language used in the texts: Han characters, Roman script, Bopomo, Mandarin Chinese, Hakka, and the Ratio of Han to Roman script.

The properties of the distinctive features are binary, either “+,” which means “yes,” or “-,” meaning “no.” Each reading sample can be analyzed as consisting of six features; the combinations of features differ from reading to reading.

The Han feature refers to whether or not Han characters are employed in the writings.

The Roman and Bopomo features indicate whether or not Roman script and Bopomo phonetic symbols are employed in the writing. If Han and Roman are both used (Mixed style) in readings, we need another distinctive feature, the ratio of words in Han characters to words in Roman script, to distinguish between the two mixed writings. The Ratio feature is described as “+” if the proportion of Han characters in the text is greater than half. On the other hand, the Ratio feature is described as “-” if the proportion of Han is less than half. In the reading samples, the proportions of Han characters in readings A and B are less than 50%, so A and B are described as [-Ratio], and the others are [+Ratio].

The Mandarin feature indicates whether or not a reading was written with a grammar and lexicon close to Mandarin Chinese. The Hakka feature indicates whether a reading was written in Hakka or not. Table 1 shows the features of each reading in different combinations.

Table 1. Distinctive features of reading samples

	A	B	C	D	E	F	G
Han	+	-	+	+	+	+	+
Roman	+	+	-	+	-	+	-
Bopomo	-	-	-	-	+	-	-
Mandarin	-	-	-	-	-	-	+
Hakka	-	-	-	+	-	-	-
Ratio	-	-	+	+	+	+	+

Selection of raters

The subjects in my survey were limited to the college students from *Tamkang* University and *Tamsui* Oxford University College⁹, both of which are located in *Tamsui*, a college town half an hour away from Taipei by bus.

⁹ It was renamed Aletheia University in August 1999.

A total of 244 students participated in my survey, 157 female and 87 male. 138 are from Taipei, and 106 are from other places. Because college major was hypothesized to be a factor that could influence readers' evaluations on Taibun writing, the subjects were primarily chosen based on their majors. Most of the subjects were from Tamkang University, and their majors were: Public Administration (46 students), Mechanical Engineering (34), Japanese (21), Chinese (52), English (37), and others (14). Owing to the fact that there is no Taiwanese department at Tamkang University, the students (40) of the Taiwanese Literature Department at Tamsui College¹⁰ were chosen.

Procedure for conducting the research

The survey was conducted in December of 1998. Several classes offered by the departments were borrowed to conduct the survey. In the classes, students were told to evaluate the reading samples based on their first impressions. During the survey, they were not allowed to discuss the questions with each other. Their answers were directly marked on the questionnaire sheets. The purpose of the study, and the languages used in the readings, were not revealed until the students had all handed in their questionnaire sheets. The classes did not take a break until all students had finished the survey.

Data analysis

Several statistical techniques were employed to analyze the research results. They are the t-test, ANOVA (analysis of variance), post hoc comparison, factor analysis, chi-square test, and regression analysis. The significance level was set at 5% to reject the null hypothesis. The software programs adopted for managing the data and conducting statistical analyses were Microsoft Excel 97 and SPSS 8.0.

¹⁰ Up to now (1999), Tamsui College is still the only school in Taiwan that offers a Taiwanese major.

Results and Discussion

Evaluations of the six characteristic scales

Raters rated six characteristic scales for each reading sample. Because we need to use these six characteristic scales as criteria to measure raters' preferences for each reading, it would be better if we could reduce these six scales to fewer categories. To do so, factor analysis was employed using SPSS. The analysis reveals that only one component was extracted from the six scales, and that component accounts for 78.31% of the total variance. This means that we may conclude that there is only one primary factor among the six characteristic scales. In other words, we may employ the combined mean value of the six characteristic scales as an index of a rater on a particular reading sample, instead of using all six individual characteristic values, yielding seven indexes for each rater, one for each reading sample A, B, C, D, E, F, and G. If a rater has an index 5 on reading A, and an index 3 on reading B, it means that the rater evaluates reading A higher than reading B. This index will be called the "reading index." The notion of "reading index" will be used for further comparisons throughout the research.

Different readings show different scores

The results of the one-way ANOVA, reveal that there are significant differences among the seven reading samples at the 5% significance level. In order to specify which pairs of readings are significantly different, paired t-tests were conducted using SPSS. The results show that all pairs (except E-F) are significantly different at the 5% significance level (see Table 2 for the mean score received by each reading sample, ordered from lowest to highest). In other words, we may treat reading E and F as if they have the same rating, while all other readings differ significantly from each other. (The results of post-hoc comparisons presented in section 0 also reveal that raters evaluated the readings as being

significantly different).

Table 2. Mean score received by each reading sample

mean	2.11	3.61	4.42	4.98	5.07	5.28	6.02
	B	A	D	E	F	C	G
Han	-	+	+	+	+	+	+
Roman	+	+	+	-	+	-	-
Bopomo	-	-	-	+	-	-	-
Mandarin	-	-	-	-	-	-	+
Hakka	-	-	+	-	-	-	-
Ratio	-	-	+	+	+	+	+

Based on the statistical results, we can determine the influence of each distinctive feature on the reading. First of all, a reading categorized as [+Han] is evaluated higher than a reading that is [-Han]. For example, there is only one different feature between reading A and B, that is, the Han feature. Given that the evaluations of A and B are significantly different, we may assume that the difference of rating between A and B is affected by the Han feature. Since A has a higher rating than B does, we can conclude further that a reading with [+Han] will be evaluated higher than the other. Second, a reading that is [+Roman] is evaluated lower than a reading that is [-Roman]. A reading that is [+Bopomo] is rated lower than a reading with [-Bopomo]. A reading that is [+Mandarin] is evaluated higher than a reading that is [-Mandarin]. A reading that is [+Hakka] is evaluated lower than a reading with [-Hakka]. Finally, a reading that is [+Ratio] is evaluated higher than a reading that is [-Ratio].

The findings mentioned above are the “surface” factors that may affect raters' evaluations of the seven reading samples. We may go further to see whether or not there

are any “underlying” factors. The statistical technique Factor Analysis was conducted using SPSS. Two factors were extracted from the reading samples after Varimax rotation.

Table 3. Factor loadings on reading samples after rotation

	Factor	
	1	2
G	0.86	-0.12
F	0.78	0.15
C	0.75	0.25
E	0.75	0.16
D	0.54	0.53
B	-0.13	0.88
A	0.34	0.70

Rotated Factor Matrix

Based on the rotated factor matrix, factor 1 covers readings G, F, C, E, and D. This means that if a rater gives a high/low rating to reading G, then s/he will probably also give high/low ratings to readings F, C, E, and D. Because of the fact that readings G, F, C, E, and D were written either partly or entirely in Han characters, and they were given higher ratings than B and A, we may assume that Han characters, which make a reading more “readable” for the Han character-educated subjects, play an important role in factor 1. On the other hand, factor 2 covers readings B and A, which were written with a high proportion of Roman script. We may say that Romanization plays an important role in factor 2. Because most of the subjects were not skilled in Taiwanese Romanization, the use of a high proportion of Roman words made the readings “unreadable” to the subjects. Therefore, B and A got lower ratings than G, F, C, E, and D. The term “readable” means that an orthography which is more recognizable and familiar to a reader will enable the reader to understand the text more easily and clearly than another orthography.

It seems that whether or not a writing system is readable to a particular reader has a great deal of influence on her/his attitude toward the reading. That is, if a particular orthography is more readable to a reader, then s/he is more likely to give a high rating to the reading. We may further assume that there is only one underlying factor based on the findings of factor 1 and factor 2. That is to say, people will give higher ratings to those writing systems which are more “readable” to them. In other words, the ratings of readings are based on the degree of readability to a particular person. Based on this assumption of the underlying factor, we may examine those surface factors mentioned earlier to see whether or not they coincide with the underlying factor.

The surface factors reveal that the [+Han], [+Mandarin] and [+Ratio] features will cause a reading sample to be evaluated higher than [-Han], [-Mandarin] and [-Ratio]. These findings are not surprising. In Taiwan, Mandarin Chinese and Han characters have been taught through the national education system since the occupation of the KMT regime in 1945. Therefore, all the subjects in this experiment, who are under age 30, are more familiar with Mandarin and with Han characters. Because readers are skilled in Mandarin and Han characters, [+Mandarin] and [+Han] features, which made the texts more “readable” to them, were rated higher than the others. Therefore, the surface factors Han, Mandarin, and Ratio coincide with the hypothetical underlying factor. On the other hand, because most of the subjects are not Hakfa speakers (only 19 among the 244 subjects are able to speak Hakfa), the [+Hakka] feature will reduce the ratings of readings. We are more confident of this assumption after comparing the mean scores between Hakka and non-Hakka speakers of reading D (in Hakfa). Table 4 is the result of the unpaired t-test; it reveals that the mean scores of Hakka speakers and non-Hakka speakers are significantly different at the 5% significance level. This means that the [+Hakka] feature will raise the rating of a reading if the readers are able to speak Hakfa. In other words, their

Hakfa-speaking ability made them give high scores to reading D. (The fact that language ability can affect readers' evaluations is further confirmed in section 0)

Table 4. T-test between Hakka and non-Hakka on reading D

	no.	mean	sd.
Hakka	19	5.35	0.80
non-Hakka	225	4.34	1.03

t=5.17 1 tailed p=0.00 < 0.05

As for the Roman feature, even though English is taught to students as a second language from high school on, it does not mean that students are skilled in Taiwanese Romanization. Therefore, the [+Roman] feature, which makes texts more “unreadable,” will reduce the rating of a reading if the readers are not familiar with Romanization.

Regarding the Bopomo feature, although every student is taught Bopomo as a supplementary tool while learning Mandarin, Bopomo is not suitable for representing the Taiwanese languages. In fact, Bopomo becomes a barrier and reduces reading efficiency. Therefore, [+Bopomo] feature can reduce the rating of a reading.

The results reveal that readers showed positive attitudes overall toward Taibun (regardless of different orthographies), with a mean score of 5.15 $((C+D+E+F+G)/5)$ or 4.50 $((A+B+C+D+E+F+G)/7)$. In addition, the survey reveals that people will give higher ratings to those orthographies that are more “readable” to them. Therefore, we may conclude that the different ratings of the seven reading samples are the reflection of their readability to the 244 subjects, who represent Mandarin and Han character-educated college students. Furthermore, we may assume that the acceptability of Taibun, written Taiwanese, is represented by its readability. (Readability is usually affected by various factors, such as language and orthography abilities.) We are then able to predict which

particular systems will be accepted by particular persons. According to the results above, reading G is the most acceptable to the readers. However, the content of G is the least Taiwanese (i.e., the language used is closer to Mandarin than Taiwanese). On the other hand, B has the lowest rating, and is the least acceptable. But the content of B is the most Taiwanese. This result indicates that even though an orthography may be well designed to represent a language, the orthography will not necessarily be accepted more than others. In other words, the users' orthographic backgrounds and social context may play important roles in choosing a new orthography.

Raters' evaluations on writers' backgrounds

Questions 7 to 12 on each reading sample test subjects' reaction to the writer of a particular reading. It was assumed that a particular person will favor a particular writing system. Therefore, the subjects' impressions of the authors reflect their impressions of the corresponding writing systems. In other words, through questions 7 to 12, we can learn readers' expectations concerning the backgrounds of Taibun writers. In the study, the subjects were told to judge the authors' age, gender, political leaning, religion, opinion on national status, and the languages the authors are writing in. The statistical results reveal that readers had little idea regarding the writers' backgrounds. However, if readers associated writers with particular expectations, Taibun writers were mostly regarded as male, with native political leanings, native religions, and native identity.

Subjects were asked their impressions of the authors' age in question 7. The average percentage of subjects on Taibun writer's age category reveals that readers do not associate the Taibun writer with a particular age category.

Subjects were asked their impressions of the authors' gender in question 8. Most subjects (i.e., $19\% + 43\% = 62\%$) did not assign the authors a particular gender. However, if they did assign a gender, most of them associated the author with male (31%), and fewer

with female (7%). The results reveal that readers' association with writers' gender is close to the fact that all the reading were written by males.

In question 9, the subjects' judgments on the authors' political leanings were elicited. The political parties listed on the answer sheet were the KMT, the Democratic Progressive Party (DPP), the Chinese New Party (CNP), the Green Party Taiwan (GPT), and the Taiwan Independence Party (TAIP). Most of the 244 subjects did not associate the authors with particular parties (i.e., 63%). The remaining subjects associated the authors mostly with the DPP (24%), a few with the KMT (8%), the TAIP (3%), the CNP (2%), and the GPT (1%). It seems predictable that more people would associate Taibun writers with DPP, the first native opposition party of influence during the KMT era in Taiwan. Although TAIP¹¹ and GPT¹² also represent native Taiwanese parties, the fact that they have been recently formed (both in 1996) and are still not well recognized by the public may reduce their likelihood of being associated with the Taibun writers. On the other hand, the well-known third major party CNP was not associated with Taibun writers. Its low association with Taibun coincides with the expectation of people in Taiwan that CNP represents Chinese nationalism rather than Taiwanese nationalism.

On question 10, the subjects' judgments on the authors' religion were evaluated. The religions listed on the answer sheet were Buddhism, Taoism, Christianity and Catholicism¹³. Most of the subjects (71%) did not associate the authors with any religion. The rest of the subjects associated the authors mostly either with Buddhism (10%) or Taoism (11%). Christianity and Catholicism only received 7%. The proportion seems reasonable because most Taiwanese believe in the traditional Buddhism and Taoism.

¹¹ The percentage of votes received by TAIP in the national legislative election of 1998 was 1.45%. Other major parties were: KMT 46.43%, DPP 29.56%, and CNP 7.06%.

¹² The percentage of votes received by GPT in the national assembly election of 1996 was 2.97%.

¹³ Although Catholicism is a form of Christianity, they were listed separately because they are regarded as two different religions by the majority of Taiwanese people.

In the experiment, reading B was written in pure *Peh-oe-ji*, the traditional Romanized Taiwanese writing system that was developed by western missionaries. In the case of reading B, more subjects associated the writer with foreign religions (Christianity 11%, Catholicism 8%) than traditional religions (Buddhism 2%, Taoism 3%). We may interpret that this is because Buddhism and Taoism are usually regarded as symbols of Han culture, whereas Christianity and Catholicism are considered to be western, associated with the cultures where Roman scripts were invented.

Question 11 tested subjects' judgments on authors' national identity, that is, whether the authors tend to want to unify with the People's Republic of China, be independent, or maintain Taiwan's current national status. Over half of the 244 subjects (63%) did not associate Taibun writers with any national identity. The rest of the subjects associated the Taibun writers mostly with independence (20%) and maintenance of current status (13%), while only 4% of the subjects associated the writers with unification. In other words, if readers believe there is a connection between a Taibun writer and national identity, then most of them will associate Taibun writers with independence and current status rather than unification. This also coincides with the result mentioned above, that some people connect Taibun writers with Taiwanese political parties (DPP, TAIP, and GPT, total 28%) rather than with the Chinese party CNP (2%). This suggests that people will consider Taibun to be representative of Taiwanese if they believe there is a connection between writing and national identity.

Finally, question 12 tested the subjects' understanding of the languages the authors were expressing. The purpose was to see whether or not the reader realized that a particular article was written in Taiwanese, when the reader faced the article without any advance hint of the language. The results reveal that more than half (72%) of the subjects were able to tell the languages the authors were using in each reading sample, except for B and D.

It is reasonable that most of the subjects (83%) were not able to recognize that reading B was written in Taiwanese. The main reason is because most Taiwanese people are not skilled in Romanization; it may even be said that they do not know there is a Taiwanese Romanization. Fully 21% of subjects considered reading B as either in French or Spanish, higher than the 17% percentage considering B to be in Taiwanese. That suggests that Taiwanese people associate Roman script with foreign languages. According to the survey on religions described before, people may also associate Roman script with foreign religions. In other words, we could say that Roman script is considered by some people to be representative of foreign cultures, and thus associated with foreign languages and foreign religions.

Reading D was written in Hakfa rather than Holo-Taiwanese. The statistical results reveal that 48% of the subjects still considered reading D as Holoee writing. Only 30% (i.e., 73 persons) of the subjects were aware that D was written in Hakfa. We may be curious about which subjects are potentially able to tell Hakfa writing from Holoee writing. Table 5 indicates that 68% (i.e., 13/19) of Hakfa speakers¹⁴ were aware of the Hakfa writing; on the other hand, only 27% of non-Hakfa speakers were aware of this Hakfa writing. A Chi-square test on Table 5 also reveals that the chi-square value 12.65 (after Yates's correction) is substantially larger than the critical value 3.84 (1 degree of freedom) at the 5% significance level. That is to say, Hakfa speakers are really more able to tell Hakfa writing from Holoee, compared with non-Hakfa speakers. The comprehension of Hakfa language led Hakfa speakers to be aware of Hakfa writing. In other words, language ability is an important factor determining whether a person can recognize the language of a

¹⁴ The definitions of Hakfa speakers and Holoee speakers in this section are defined by subjects' language ability only, and do not necessary correlate to their mother tongue or ethnicity. For example, the classification of a Hakfa speaker here was based on subjects' self-report on background questions. The subject was treated as a Hakfa speaker if s/he answered her/his Hakfa speaking ability was equal to or higher than 3, based on a five-point semantic differential scale.

particular writing or not. (The fact that language ability can affect readers' evaluations is further confirmed in section 0). Suppose that there are some Holoee and Hakfa articles in a newspaper or magazine. Most Hakfa speakers might be able to make the distinctions among Hakfa, Holoee, and Mandarin. In contrast, most Holoee speakers might only be able to distinguish Holoee from Mandarin. This is because most Hakfa speakers are able to speak Hakfa, Holoee, and Mandarin. However, Holoee speakers are typically only able to speak Holoee and Mandarin. For instance, based on the 244 subjects, 53% (10/19) of Hakfa speakers possess ability in Hakfa, Holoee, and Mandarin. Only 5% (10/203) of Holo speakers possess the same ability.

Table 5. Classification of subjects for speakers and awareness

(observed)	aware	not aware	total
Hakfa speaker	13	6	19
non-Hakfa speaker	60	165	225
<i>total</i>	73	171	244
12.65 > 3.84 (df=1; after Yates's correction)			p < 0.05

Effects of raters' backgrounds on their evaluations

In previous sections, I examined the evaluations of all raters regardless of background. In this section, I consider whether or not raters' backgrounds may affect their evaluations on the reading samples. In other words, do the raters' own characteristics, such as gender, residence, major, age, mother tongue, language ability, national identity, and assertions on Taiwan's national status, have an effect on their evaluations? In order to answer this question, Tukey's Honest Significant Difference (HSD) tests of General Linear Model (GLM) were conducted using the SPSS program. However, some assumed factors, such as gender and residence, consist of only two groups (i.e., female vs. male; Taipei vs. non-Taipei). Because the post hoc comparisons require more than two groups in a factor,

the gender and residence factors were examined with linear regression, a statistical technique adopted for calculating the Taibun equation in the survey.

Before we determine the significant factors, we need to assume some possible factors so that we can examine whether or not the factors are significant. The assumed factors here are: (1) gender, (2) place of residence, (3) major, (4) age, (5) ethnic identity, (6) mother tongue, (7) language ability, (8) political leanings, (9) national identity, and (10) assertion on Taiwan's national status. The statistical results reveal that gender, age¹⁵, ethnic identity, and political leanings are not significant factors, but the others are significant. The significant factors are described as follows:

(1) Place of residence: Among the subjects, 138 were from Taipei and 106 from other places. The result of regression reveals that there is significant difference between subjects from Taipei and non-Taipei; people from places other than Taipei give higher evaluations to the reading samples than people from Taipei.

(2) Major: There are significant differences among the three groups of major, that is, Taiwanese and English vs. Chinese, Japanese, and Public Administration vs. Mechanical Engineering (groups' evaluations are in descending order).

(3) Mother tongue: The classification of readers' mother tongue was based on readers' self-report on the mother tongue question. There were 152 subjects considering their own mother tongue to be Taiwanese, 15 Hakfa, 58 Mandarin, and 19 others. Those whose mother tongues are native Taiwanese languages (i.e., Taiwanese and Hakfa) evaluate the readings significantly higher than speakers of non-native Taiwanese languages.

(4) Language ability: The classification of readers' language ability was based on

¹⁵ In this investigation, all the subjects were college students. This fact reveals that we have limited age range in this survey. Age might be a significant factor if we have a wider age range of subjects. Further research needs to be conducted to see whether or not age is a significant factor.

readers' self-report on the language ability question. For example, if a reader answered that her/his Hakfa speaking ability is equal to or higher than 3 (based on a 5-point semantic differential scale), then s/he was assigned a Hakfa speaking ability. Among the 244 subjects, 30 were Mandarin monolingual and the others were bilingual or multilingual. The results show that Mandarin-only speakers evaluate the readings significantly lower than non-Mandarin-only speakers.

(5) National identity: The classification was based on readers' self-reports to the identity questions. Among the 244 subjects, 48 persons belong to the Taiwanese-only type, 130 to the Taiwanese-Chinese type, 2 to the Chinese-only type, and 64 to the others. The Taiwanese-only and Taiwanese-Chinese were grouped together as a category Taiwanese, and Chinese-only and others were grouped together as a category non-Taiwanese. The results reveal that Taiwanese rate the readings significantly higher than non-Taiwanese.

(6) Assertion on Taiwan's national status: This classification was based on readers' self-reports to the assertion questions. After calculation, there were 67 persons for independence (TI), 102 for maintaining the current status (MT), 14 for unification with China (UNI), and 61 for others. There is a significant difference between Taiwan independence supporters and non-TI supporters (i.e. MT, UNI, and others). The independence group evaluates the readings significantly higher than the non-TI group.

The Taibun equation for predicting reading scores

After we have examined the influences of orthographic designs and readers' backgrounds, a Taibun equation which can predict a reader's mean score on a particular reading can be formulated based on the significant factors. In order to formulate the Taibun equation, a linear regression was employed using the SPSS software program. All the independent variables were encoded in dummy coding, that is, either as "1," which means "yes", or as "0," which means "no." For example, the residence variable Taipei was

encoded in “1,” and non-Taipei was encoded in “0.”

There are two types of independent variables in the regression analysis. All variables mentioned here are significant. The first type consists of reading samples A, B, C, D, EF, and G. They were treated as 6 independent variables, and encoded in dummy coding. “EF” means that the original E and F were combined, since Tukey's HSD reveals that there is no significant difference between them. Appendix C is the results of Tukey's HSD. It reveals that all reading samples (after E and F were combined) are significantly different from each other.

The second type of independent variable consists of the significant background factors. The factors were treated as seven independent variables. They are: (1) Taipei as a residence, (2) major in Taiwanese or English, (3) major in Mechanical Engineering, (4) native Taiwanese languages (i.e., Taiwanese or Hakfa) as mother tongues, (5) monolingual in Mandarin, (6) Taiwanese identity (i.e., Taiwanese-only, or Taiwanese-Chinese), and (7) assertion of Taiwanese independence. The variables were all encoded in dummy coding.

After the independent variables were decided, the scores already evaluated by the 244 subjects were treated as a dependent variable Y (Y is observed; Y' is predicted) in order to calculate the constant and coefficients. In other words, the data of the 244 subjects were treated as a model to formulate the prediction equation. Table 6 is part of the SPSS output from a linear regression analysis. Reading sample EF was excluded from Table 6 as a criterion to compare with other reading samples. Table 6 reveals that all coefficients of the independent variables are significantly different at the 1% level.

Table 6. SPSS output (coefficients) from a linear regression analysis of the equation data

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1.00 (Constant)	4.78	0.08		62.17	0.000
A	-1.41	0.07	-0.32	-19.68	0.000
B	-2.92	0.07	-0.67	-40.66	0.000
C	0.25	0.07	0.06	3.51	0.000
D	-0.61	0.07	-0.14	-8.51	0.000
G	1.00	0.07	0.23	13.91	0.000
Taipei	-0.13	0.05	-0.04	-2.95	0.003
TB-EN	0.18	0.05	0.06	3.67	0.000
ME	-0.23	0.07	-0.05	-3.46	0.001
NTL	0.23	0.05	0.07	4.58	0.000
M-only	-0.34	0.07	-0.07	-4.82	0.000
T-id	0.15	0.05	0.04	2.96	0.003
TI	0.15	0.05	0.05	3.30	0.001

Based on the results of Table 6, we could formulate our Taibun equation as follows:

$$\begin{aligned}
 Y' = & 4.78 - 1.41 (A) - 2.92 (B) + 0.25 (C) - 0.61 (D) + 0.00 (EF) + 1.00 (G) \\
 & - 0.13 (Taipei) + 0.18 (TB-EN) - 0.23 (ME) + 0.23 (NTL) - 0.34 (M-only) \\
 & + 0.15 (T-id) + 0.15 (TI)
 \end{aligned}$$

Key: A, B, C, D, EF, G refer to the reading sample

Taipei: Taipei as a residence

TB-EN: major in Taiwanese or English

ME: major in Mechanical Engineering

NTL: native Taiwanese languages (i.e., Taiwanese or Hakfa) as mother tongues

M-only: monolingual in Mandarin

T-id: Taiwanese identity (i.e., Taiwanese-only, or Taiwanese-Chinese)

TI: assertion of Taiwanese independence

All the independent variables must be encoded either 1 (yes) or 0 (no) when applied to the Taibun equation. The value of Y' is between the highest 7 and the lowest 1, based on a seven-point semantic differential scale.

The following illustrates how the Taibun equation can apply to predict reading scores. Suppose we want to predict John's score on reading sample A (so, fill out A with "1" and B, C, D, EF, G with "0"). The background information on John is: living in *Kaohsiung* (non-Taipei, so fill out the Taipei variable with "0"); major in English (fill out TB-EN with "1," and ME with "0"); Hakfa as his mother tongue (fill out NTL with "1"); with speaking capability in Hakfa, Taiwanese, and Mandarin (fill out M-only with "0"); with an identity of Taiwanese-only (fill out T-id with "1"); and with an assertion of Taiwanese independence (fill out TI with "1"). Therefore, John's predicted score on reading sample A will be 4.08 (on a scale of 1-7) as follows:

$$\begin{aligned}
 Y' &= 4.78 - 1.41 (1) - 2.92 (0) + 0.25 (0) - 0.61 (0) + 0.00 (0) + 1.00 (0) \\
 &\quad - 0.13 (0) + 0.18 (1) - 0.23 (0) + 0.23 (1) - 0.34 (0) \\
 &\quad + 0.15 (1) + 0.15 (1) \\
 &= 4.78 - 1.41 + 0.18 + 0.23 + 0.15 + 0.15 \\
 &= 4.08
 \end{aligned}$$

Implications

There are three fundamental Taibun writing schemes currently at issue for written Taiwanese. They are Han character-only, Han-Roman mixed, and Roman script-only. The

results of the present investigation reveal that the college students surveyed have positive attitudes toward Taibun overall (regardless of orthography). As for which orthography is preferred, the results reveal that the college students tend to prefer Han-only over Han-Roman and Roman-only. These results reflect the preferences of the Mandarin and Han character-educated college students with regard to written Taiwanese. Since all students in Taiwan have been taught Mandarin and Han characters through the national education system since 1945, these findings imply the potential difficulty of promoting Roman script in a Han character dominated society.

Many factors are generally involved in the choice and shift of orthography. From the perspective of social demand, the increasing use of spoken and written Mandarin by Taiwanese people has reduced the demand for a new orthography. People may not feel the necessity of learning a new orthographic tool, since they have already acquired writing skill in modern standard Chinese. Even so, the readers' positive attitudes toward Taibun indicate that it is still possible for Taibun to be accepted in addition to the existing Mandarin writing.

Thus, what findings of the survey may contribute to the promotion of Taibun? According to the results of the survey, seven factors could affect readers' evaluations of Taibun. They are orthographic design, place of residence, major, mother tongue, language ability, national identity, and national status. Since place of residence and academic major are not controllable factors (because there always will be people living in different places and with different majors), a Taibun promoter may concentrate attention on the other factors, which can be divided into three domains:

(1) Orthographic domain, which refers to the designs of orthography. Even good orthographic designs are not absolutely guaranteed to be accepted by the public. Conversely, the acceptance of orthographies by people does not necessarily mean that the

orthographies were well designed. In this survey, although Roman script was rated lower than Han characters, the economy and easy learnability of Roman script make Romanization still worth consideration. The fact that most of the current Taibun publications are in the Han-Roman mixed scheme instead of Han-only points out that readers may tend to prefer Roman script after they are skilled in Taiwanese Romanization. If the current *Bopomo*, which is taught through the national education system in Taiwan, could be replaced by Romanization, the circumstance of using Romanization would thus most likely increase the possibility of promoting Romanized Taibun. Over time, the Roman script might come into competition with Han characters, or even replace Han characters if Romanization were taught together with Han characters at the time students enter elementary school.

(2) Language domain, which includes the factors of mother tongue and language ability. The survey reveals that people who are able to speak native Taiwanese languages are more likely to give higher ratings to Taibun. This fact points out that the promotion of Taibun should focus on the particular groups who frequently use or are able to use Taiwanese or Hakfa. Moreover, Taibun should be promoted to the Taiwanese public as soon as possible, before people shift entirely to become monolingual in Mandarin Chinese.

(3) Political domain, which covers the factors of national identity and national status. Political transitions can affect the language situation, such as in the case of Vietnam (DeFrancis 1977). In the case of Taiwan, the current ambiguous national status and diversity of national identities mirror people's uncertain determinations on the issue of written Taiwanese. At the same time, people's uncertain determinations on the Taibun issue also reflect the political controversy on national issues of Taiwan. Since Taiwan has been released from the rule of the Chinese KMT in the 2000 presidential election, in which the candidate Shui-bian Chen of the Taiwanese opposition party DDP was elected to form a

new government. The language attitude of the new government will play an important role on current language issues in Taiwan.

Conclusion

The statistical results of this research reveal that the readers' (244 students from *Tamsui* and *Tamkang* Universities) overall attitudes toward written Taiwanese are positive. Further, the results reveal that the readers evaluated the prepared seven reading samples as significantly different (except E vs. F), in a ranking that reflects the preferences of the Mandarin and Han-character educated college students with regard to the orthographies of written Taiwanese. Thus Roman script and *Bopomo* used in Taibun texts received more negative evaluations by the 244 readers; Han characters received the most positive evaluations. The survey indicates that readers will give higher ratings to those orthographies which are more “readable” to them, where readability is determined by readers' language and orthography abilities.

In addition to the orthography factor, the backgrounds of the readers also affect their evaluations. The results of the investigations reveal six factors which can affect readers' evaluations: place of residence (Taipei vs. non-Taipei), academic major (Taiwanese and English vs. Mechanical Engineering vs. Chinese, Japanese, and Public Administration), mother tongue (Taiwanese vs. non-Taiwanese), language ability (Taiwanese vs. non-Taiwanese, or non-Mandarin-only vs. Mandarin-only), the individual's evaluation of her/his national identity (Taiwanese vs. non-Taiwanese), and assertions on Taiwan's preferred national status (independence vs. non-independence). Three factors which do not appear to affect readers' evaluations are gender, age, and political leanings.

In short, whether or not Taibun will be accepted and successfully promoted to a national status depends on people's orthography demands and their attitudes toward written Taiwanese. Moreover, their language ability and national identity also will play an

important role while they are making the determinations. The present investigation implies that although Taiwanese people may not have strong demands for a new orthography, their positive attitudes toward written Taiwanese make the promotion of Taibun writing possible. In addition, particular groups, such as those who are able to speak Taiwanese, and those who identify themselves as Taiwanese, have higher preference for Taibun writing. These groups may be treated as priority targets in the promotion of written Taiwanese.



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Appendix A

Samples of Taibun Readings

Reading A

Se-han 的 si-chun, kui 家伙仔 kah 阿公阿媽 toa 做伙; he 是半 chng-kha 的所在, 因為若講草地, 離車頭 koh 近近 a nia, 騎車 to 免 5 分鐘 leh。He 是 hit 種古早式的厝瓦厝, ...

Reading B

Hit-sī mā kài chhù-bī, iū-kī nā tng tiòh chhit-goèh sī-á, ták-ám nā siūⁿ-tiòh ài khiā kàu kū-chhù tō ē khi ke-bó-phôe, put-sī tō ài kiò hiaⁿ-ko kap góa

Reading C

佇讀小學仔儘前, 全家伙仔攞是蹓咧茲, 茲阮攞給號做「舊厝」(因為這是相對於以後的新厝)。雖然佇我幼稚園讀煞迄冬, 父母因為愛做生理的關係, ...

Reading D

過年炊粿麼還 chhin 記得, 過年定著做甜粿 lau 菜頭粿。甜粿炊好以後硬硬, 放幾隻月 mo 問題。愛食時正切來冷食, 多少像 tu 美國, 切 cheese 共樣。麼有拿來煎, ...

Reading E

阿爸阿母搬來新厝了就開米店做生意。ㄉ一ㄚ ㄉ一ㄚ 有人問我阮厝ㄉ世創啥物? 我若講ㄉ世賣米, 人ㄉㄛㄥ ㄍ一ㄜ ㄥ阮ㄉㄛ開米絞, ㄍㄚ ㄉ一有ㄉ世 世米 ㄉ世, ...

Reading F

有機質肥料 kap 化學肥料到底有啥物無工? Ti chia, 做一個簡單 e 介紹。講到有機肥料, 咱就想著「有機農業、永續性有機農業」, 這個道理真簡單, 咱將作物 e 果實收成, ...

Reading G

阿媽養的雞仔、鴨仔都是正港的土雞、番鴨。日時就放它們去四界跑, 暗時才趕進去雞稠。有時雞母若要生卵, 都會跑去牛車頂、或是柴間仔裡面, 找一個好位, ...

Appendix B
Translations of Reading Questions

1. How do you feel about this reading?
7 6 5 4 3 2 1
friendly unfriendly
2. What percentage of this reading do you understand?
7 6 5 4 3 2 1
100% 0%
3. Do you feel this reading is easy to read?
7 6 5 4 3 2 1
easy difficult
4. Do you feel you like this reading?
7 6 5 4 3 2 1
like it dislike it
5. What's your feeling about the writing style in this reading.
7 6 5 4 3 2 1
interesting boring
6. Do you think this kind of writing expresses author's idea very well?
7 6 5 4 3 2 1
well bad
7. How old would you think the author is?
7. over 60 6. 50-59 5. 40-49 4. 30-39 3. 20-29 2. 10-19 1. Not related
8. What gender do you think the author might be?
4 male 3 female 2 either 1 uncertain
9. What political parties do you feel the author might support?
7 KMT 6 DPP 5 CNP 4 GPT 3 TAIP 2 not related 1 uncertain
10. What religion do you feel the author might be?
7 Buddhism 6 Taoism 5 Christianity 4 Catholicity 3 others 2 not related 1 uncertain
11. What do you think is the author's opinion on national status?
5 unification 4 independence 3 maintain status 2 not related 1 uncertain
12. What language do you feel the author might be trying to express in this reading?
7 Mandarin 6 Taiwanese 5 Hakka 4 indigenes 3 Japanese 2 French or Spanish
1 uncertain

Appendix C
Results of Tukey's HSD on the reading samples

(I) READINGS	(J) READINGS	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
A	B	1.51*	0.09	0.00	1.26	1.75
	C	-1.66*	0.09	0.00	-1.91	-1.42
	D	-0.80*	0.09	0.00	-1.04	-0.56
	EF	-1.41*	0.07	0.00	-1.62	-1.20
	G	-2.41*	0.09	0.00	-2.65	-2.17
B	A	-1.51*	0.09	0.00	-1.75	-1.26
	C	-3.17*	0.09	0.00	-3.41	-2.92
	D	-2.31*	0.09	0.00	-2.55	-2.06
	EF	-2.92*	0.07	0.00	-3.13	-2.71
	G	-3.91*	0.09	0.00	-4.16	-3.67
C	A	1.66*	0.09	0.00	1.42	1.91
	B	3.17*	0.09	0.00	2.92	3.41
	D	0.86*	0.09	0.00	0.62	1.11
	EF	0.25*	0.07	0.01	0.04	0.46
	G	-0.75*	0.09	0.00	-0.99	-0.50
D	A	0.80*	0.09	0.00	0.56	1.04
	B	2.31*	0.09	0.00	2.06	2.55
	C	-0.86*	0.09	0.00	-1.11	-0.62
	EF	-0.61*	0.07	0.00	-0.82	-0.40
	G	-1.61*	0.09	0.00	-1.85	-1.36
EF	A	1.41*	0.07	0.00	1.20	1.62
	B	2.92*	0.07	0.00	2.71	3.13
	C	-0.25*	0.07	0.01	-0.46	-0.04
	D	0.61*	0.07	0.00	0.40	0.82
	G	-1.00*	0.07	0.00	-1.21	-0.79
G	A	2.41*	0.09	0.00	2.17	2.65
	B	3.91*	0.09	0.00	3.67	4.16
	C	0.75*	0.09	0.00	0.50	0.99
	D	1.61*	0.09	0.00	1.36	1.85
	EF	1.00*	0.07	0.00	0.79	1.21

* The mean difference is significant at the .05 level.