A Study on the Mutual Similarity between Japanese and Chinese for Simultaneous Learning

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Abstract

This study investigated the graphic resemblance of Chinese ideograms between Japanese and Chinese by creating a database of 1078 kanji (Chinese ideograms in Japanese) extracted from the two volumes of the Japanese grammar textbook, *Minna no Nihongo* (Second Edition, French version, 2013[I], 2015[II]) used in our faculty. It also applied the levels of language proficiency tests: Japanese-Language Proficiency Test (henceforth JLPT) and Chinese Proficiency Test (henceforth HSK). The aim of establishing the database was (1) to encourage students who study Japanese and Chinese simultaneously to learn kanji and Chinese characters by realizing the commonality and resemblance in shape and, (2) to provide with an elaborated list of Chinese ideograms that are most used in Japanese and Chinese. Firstly, the database showed that the textbook comprehensively covered the number of kanji, which included 100% of the kanji in Levels 4 and 5 of JLPT as well as 70% in Levels 1 and 2 and 60% in Level 3 of HSK. Secondly, it was found that 71% of the ideograms are identical, albeit with slight variations, between the two languages. This high rate of graphic resemblance will clearly help them reduce the fear of interference of learning these two East Asian languages simultaneously. For the further study, however, an analysis of phonetic and semantic resemblance, particularly false friends, should be required.

Keywords: Asian languages, Japanese, Chinese, logographic, simultaneous learning

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Introduction

Japanese and Chinese study programs were initially part of the Department of Mediterranean, Slavonic and Oriental Languages and Literatures at the University of Geneva. In 2011, they became independent after the creation of the Department of East Asian Studies with full programs in Japanese and Chinese studies and a partial program in Korean studies. They are now recognized as some of the most comprehensive East Asian study programs in the French-speaking world.

The Department follows the Bologna system, meaning that the BA curriculum can be completed in three years and the MA curriculum in two additional years. The faculty also accepts Ph.D. students. Although most courses are taught in French, students are expected to have a good command of Japanese and Chinese at the BA advanced level and, more particularly, at the MA level when they start the program. The department provides a full-fledged polyvalent program that enables graduates to explore manifold fields in Japanology and Sinology, from ancient classics to Internet literature[1].

Another characteristic of the programs is that students choose two majors for the bachelor's degree. Many of them take two Asian languages as their primary subjects because of their interest toward East Asian languages. According to a survey of 92 students on the programs conducted in 2012[2], students experienced difficulties in simultaneously learning Japanese and Chinese without any prior knowledge of them, although this has not precluded a number of students from choosing Japanese and Chinese as their main subjects even today (on average, about 20 % of the students choose Japanese and Chinese from 2010 to 2016).

One of the difficulties, for students, in learning these two languages at the same time is the complexity of Chinese ideograms used both in Japanese and Chinese. For example, Chinese ideograms used in Japanese are called kanji and some of them are different in shape, meaning and pronunciation from the simplified Chinese characters. This is because the Japanese method of simplification is different from the one in China (Yoshida, 2014, p.19). This may cause great confusion for the simultaneous learners, particularly complete beginners, and disturbs their learning of ideograms. Therefore, this study aims to support such students' effective learning by building a database which identifies the commonalities and differences between kanji and Chinese characters. The database consists of all 1078 kanji appearing in the two volumes of the Japanese grammar textbook, which the faculty adopts for instruction.

Furthermore, the database also applies the levels of Japanese-Language Proficiency Tests (JLPT in Japanese *Nihongo Nôryoku Shiken*)[3] and Chinese Proficiency Test (HSK in Chinese *Hanyu Shuiping Kaoshi*)[4] in order to meet the current needs of the students who wish to acquire the certificates of these exams. Along with the increase of the candidates, it is considered as necessary to apply the the levels of these tests into our database.

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[1] Berger C., & Obataya Y. (2014), p.150 (partially modified).
[2] Berger C., & Obataya Y. (2014).
[3] The JLPT consists of five levels from JLPT N5, the easiest, to JLPT N1, the most difficult.
[4] The HSK consists of six levels from HSK1, the easiest, to HSK6, the most difficult.

It is hoped that this study may be useful not only for our students, but also for simultaneous Japanese and Chinese learners in non-kanji areas. For instance, it can be effective for beginner Chinese learners who have prior knowledge of Japanese[5].

Previous studies

There are a few existing studies on the similarities between Japanese and Chinese words and characters. Although the overview of the preceding studies is well explained in Yamada (2015) and Yoshida (2015), the latest research is Matsushita et al. (2017). They created an open-access database consisting of more than 10,000 parallel words found in these two languages, available online for anyone to download. The main characteristic of this study is that this database is considered to be the latest and largest in the field of comparative research on Japanese and Chinese languages.

Due to the characteristic of the gigantic database, the data utilized in Matsushita at al. (2017) covers broad types of sources: the data does not focus on the pedagogical sources such as textbooks and language proficiency tests. In this study, I attempted to establish a database by using one of the most popular Japanese language textbooks, *Minna no Nihongo* 1 and 2, for data references. It is widely used by various schools and universities all over the world and has already been translated into 15 languages. Several European universities use Volume 1 for the first-year and Volume 2 for the second-year college curricula. The latest editions were recently published: the first volume of the French version was printed in 2013 and the second volume in 2015. Furthermore, the new evaluation criteria of Japanese and Chinese language proficiency tests, JLPT (renewed in 2010) and HSK (renewed in 2009) are also applied in the database.

Another difference between Matsushita et al. (2017) and this research is the target of data. Whereas the former focuses on "parallel words" in terms of semantic correspondence, the latter highlights "parallel characters" in terms of visual resemblance[6].

Another previous research related to this study is Berger & Obataya (2012; 2014) concerning the survey analysis of 92 students on Japanese and Chinese studies programs including the simultaneous language learning. According to the results, only eleven student participants were complete beginners who had no knowledge of either one of the languages they chose for major subjects. 47% of the participants preferred to focus on only one foreign language. This shows the students' struggle of learning two unfamiliar languages at the same time, although it is almost impossible to solve it due to the pedagogical system of the university in having to select two majors. Considering the results from the previous research, this study aims to create an effective learning material for students who must study Japanese and Chinese simultaneously.

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[5] For this study, the author took the HSK exams and passed HSK 6 – the highest level in China as of 2014.
[6] My database also includes semantic comparison between Japanese and Chinese although it is out of focus in this study.

Points of data analysis

Two points need to be clarified for this study. Firstly, it analyzes only the similarities between kanji (Chinese ideograms in Japanese) and Simplified Chinese characters and does not include Traditional Chinese characters. Although the latter type is still used in Taiwan, the former type of characters has been the official type in the mainland China since 1964. While some Traditional Chinese characters are identical with kanji, they are not included in our database this time because; (1) Simplified Chinese characters are considered as "official" in China and, (2) it is too hard for students in the introductory level to learn Traditional Chinese characters[7].

Secondly, the Japanese textbooks on which the database is based are written in the *Kyôkasho-tai* (literally "textbook style") font. This font is very similar to the kanji taught in the classroom in Japan: kanji in the handwritten form. Handwritten kanji is not always the same as typographical fonts used on the Internet, such as the *Gothic-tai* or *Minchô-tai*.

Creating a Database

The number of kanji from *Minna no Nihongo*, a total of 1078, includes not only the ones in the main sections but also in the section called "Information" at the end of each chapter. This can be compared to the total number of kanji required to acquire for Japanese primary school students (1006) before entering junior high school[8].

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[7] It would be possible to improve the usability of database by adding only the correspondence between Traditional Chinese characters and kanji by categorizing in color for further study.
[8] Cf. the site of JYL (Japanese for Young Learners) Project (http://www.kodomo-kotoba.info/booklet/basicsearch_booklet_04_05.html).

[a] Serial number	[b] CH.	[c] No.	[d] JP Kyôkasho font	[e] On-yomi	[f] Kun-yomi	[g] [JP] Meanings	[h] JLPT level	[i] Similarity Degree Para	[j]	[k] Notes	[l] JP stroke	[m] CH stroke	[n] 511 list	[o]	[p] Pinyin	[q] HSK level	[r] Notes : (1) reason of classification (2) representatif example	[s] Similarity degree Scale	[t] [CH] Meanings
1	1	1	人	ジンh、ニンw	ひと	human beings, people, individuals	JLPTN5	A	1		2	2	○		ren2	HSK1		A	person, Homo sapien, homme, man
2	1	2	先	セン	さき	forward	JLPTN5	A	1		6	6	○		xian1	HSK3		A	first, former, previous
3	1	3	生	セイh、ショウw	いきる、いかす、いける、うまれる、うむ、おう、はえる、はやす、きなま	life, live	JLPTN5	A	1		5	5	○		sheng1	HSK1		A	life, living, lifetime; birth; to be born
4	1	4	学	ガク	まなぶ	study, learn	JLPTN5	A	1		8	8	○		xue2	HSK1		A	learning, knowledge; school
5	1	5	会	カイh、エw	あう	meet	JLPTN4	A	1		6	6	○		hui4	HSK1		C	assemble; meeting
652	17	22	健	ケン	すこやか	healthy, health	JLPTN1	A	4	9th and 10th (JP) / 9th (CH) stroke order	11	10			jian4	HSK3		A	healthy, health
653	23	6	建	ケンh、コンw	たてる、たつ	build	JLPTN4	A	4	7th and 8th (JP) / 7th (CH) stroke order	9	8	○		jian4			A	build, establish, erect, found
654	6	23	庭	テイ	にわ	garden, yard	JLPTN3	A	4	8th and 9th (JP) / 8th (CH) stroke order	10	9	○		ting2			A	court
736	12	23	単	タン		simple, one, single	JLPTN3	B	4		9	8		単	dan1	HSK3		A	single
737	18	18	弾	ダン	ひく、はずむ、たま	bullet, twang	JLPTN1	B	4		12	11		弾	dan4			A	ball; pellet; bullet; bomb; play

Figure 1: Example of the database

The database consists of 20 components, [a] to [t] (see Figure 1), as follows;
[a]: serial numbers (1-1078)
[b]: chapters of *Minna no Nihongo* I (CH.1-25) and II (CH.26-50)
[c]: serial numbers in [b].
[d]: kanji on *Kyôkasho-tai* font.
[e]: *on'yomi* (Chinese reading)[9]
[f]: *kun'yomi* (Japanese reading)[10]
[g]: basic meanings of kanji in English[11]
[h]: JLPT levels[12]
[i]: categories of visual resemblance between kanji and Chinese characters
[j]: sub-categories
[k]: additional information of the sub-categories
[l]: the number of strokes of kanji
[m]: the number of strokes of Chinese character
[n]: kanji from the list in the guideline of Japanese teaching in the public junior high school in China (marked with [○]) and kanji with visual difference (marked with [○*])
[o]: Chinese characters on *Simsun* font
[p]: *Hanyu Pinyin* (Official romanization system) of the Chinese characters

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[9] These Chinese sources of pronunciation of Japanese kanji are described by 'h', 'w', and 't'. 'h' indicates *Kan-on* ('Han sound') ; 'w', *Go-on* ('sound from the Wu region') ; 't', *Tô-on* ('Tang sound').
[10] The column [e] and [f] contain only *Jô-on* and *Jô-kun* (*on-* and *kun*-reading in common use). These reading are determined by reference to a dictionary, *Shin Kango rin* (Second Edition, Taishûkan-shoten, 2011-2012).
[11] For this information, I reference the Jisho.org.website.
[12] For this level, I reference the Jisho.org website.

[q]: HSK levels
[r]: notes on (1) the reason of classification and (2) the representative example
[s]: categories of semantic resemblance between kanji and Chinese characters[13]
[t]: basic meanings of a Chinese character in English[14]

The basic information of kanji and their JLPT levels[15] are included from columns [a] to [h], and [l] in the database whereas the one of Chinese characters is in the columns [m], [o], [p] and [t]. The HSK levels are specified in the column [q] according to the first four levels: HSK 1 to 4. A list established by my colleague, Professor Berger, based on the official Chinese character list of HSK (2013 version) has been used for this study.

Column [n] shows the visual difference between Japanese and Chinese cited from another list, published in the guideline of Japanese teaching in the public junior high school in China[16]. This guideline contains a list of 511 Japanese kanji in common use (pp.63-78). The kanji in this list corresponding to the ones in our database are described by [○] in column [n]. Additionally, this list draws a reader's attention to the cases where the shape of the Japanese kanji and the Chinese character are different. If a kanji is visually different from the Chinese character in the list, it is marked with [○*] in our database.

The columns [r] and [s] indicate a provisional analysis of the semantic similarity between two languages[13]for further study.

[14] For this information, I reference several sites like http://zidian.aies.cn/ (Xinhua cidian), http://www.ichacha.net/ and https://cjjc.weblio.jp/ (Weblio Japanese-Chinese, Chinese - Japanese dictionary).

[15] JLPT has two different lists; a word and a kanji list. For this study, the kanji list was used.

[16] Basic education department of Ministry of Education in China (Eds.). (2002).

Categorization of Kanji According to the Visual Resemblance

The breakdown of the database indicates that the textbooks contain 100% of the kanji in Levels 4 and 5 of JLPT. Looking at HSK levels, it is found that 70% of them in Level 1, 73% in Level 2 and 60% in Level 3 are also included in these textbooks (see Table 1). This clearly proves the effectiveness of the Japanese textbooks for simultaneous learners of Japanese and Chinese who wish to challenge JLPT and HSK exams if they realize the similarities between kanji and Chinese characters.

Table 1: The Number of kanji covered in the textbooks (I and II)

	I+II					I+II		
JLPT N5	79	/79	100%		HSK1	120	/171	70%
JLPT N4	167	/167	100%		HSK2	122	/168	73%
JLPT N3	316	/357	89%		HSK3	176	/296	60%
JLPT N2	243	/367	66%		HSK4	242		
JLPT N1	250	/1232	20%		More	433		
More	23							
	1078							

The whole 1078 kanji in the database have been divided into four categories, that is, A, B, C, and NS (abbreviation of "Not Similar") (see Table 2). Category A signifies that a kanji is completely identical to a Chinese character whereas Category B represents the identification with slight variations. In Category C, a kanji and a Chinese character are significantly different in shape, although there are some patterns to recognizing the commonality between them. The last category, NS, has no resemblance.

Table 2: Four categories of kanji in the database

A : Identic	657
B : Identic (with slight variations)	113
C : Identifiable	224
NS : Quite different	84
	1078

Category A (657 kanji: 61% of the total number of kanji in the database)

In Category A, consisting of four sub-categories, there are 657 kanji that shared resemblance with Chinese characters, corresponding to 61% of this database. Among them, 17 Chinese characters had the same shape, although the number of strokes in each differed. The representative parts of characters are the radical "*kozatohen* (阝)" (a "small village" radical on the left) (A2) and the radical "*ôzato* (阝)" (a "large village" radical on the right) (A3). These radicals are written by three strokes in Japan but two strokes in China. The sub-category A4 groups some other cases such as "庭" (*niwa,* meaning 'a garden'), "姉" (*ane,* meaning 'an older sister') and "臣" (*shin,* meaning 'a servant').

Category B (113 kanji: 10% of the total number of kanji in the database)

113 kanji classified into Category B are mostly the same in shape with slight variations. This category has five sub-categories (B1-5). B1 includes eight kanji whose parts are different between Japanese and Chinese. For example, Figure 2 shows the different direction of one stroke in a radical called "*takekanmuri*", a "bamboo" radical.

Figure 2: B1 (8 kanji)

Figure 3 shows B2 containing 44 kanji. Here, even if the number of strokes is the same, the shape is slightly different. For instance, the central vertical line of the eleventh kanji exceeds downward in Chinese.

Figure 3: B2 (extract of 44 kanji)

In B3, including five kanji, the beginning of a stroke order is different (see Figure 4). The first stroke of the first kanji starts from left to right whereas the stroke order of the same character in Chinese is right to left.

JP		description				CH	
所	JLPT N3	biginning point of 1st stroke	8	8	o*	所	HSK2
反	JLPT N3	biginning point of 1st stroke	4	4	o*	反	HSK4
板	JLPT N2	biginning point of 5th stroke	8	8	o*	板	HSK3
返	JLPT N3	biginning point of 1st stroke	7	7	o*	返	HSK3
阪	Jōyō kanji	biginning point of 4th (JP) / 3rd (CH) stroke	7	6		阪	

Figure 4: B3 (5 kanji)

The rest of the kanji in Category B were classified into the sub-categories of B4 and 5 according to the number of strokes. B4 groups the kanji whose number of strokes is more than the one in Chinese characters. For instance, in the Figure 5, one dot is less in the Chinese counterpart.

JP		description				CH	
決	JLPT N3	one dot less	7	6	o*	決	HSK3
減	JLPT N2	one dot less	12	11		減	HSK4
涼	JLPT N2	one dot less	11	10	o*	涼	HSK4
沖	JLPT N1	one dot less	7	6		沖	
単	JLPT N3	one dot less	9	8		単	HSK3
弾	JLPT N1	one dot less	12	11		弾	
禅	JLPT N1	one dot less	13	12		禅	
帯	JLPT N2	one line less	10	9		帯	HSK3
変	JLPT N3	one line less	9	8	o*	変	HSK3
残	JLPT N3	one line less	10	9	o*	残	

Figure 5: B4 (extract of 31 kanji)

The sub-category B5, on the contrary, includes the kanji whose number of strokes is less than in Chinese characters. For instance, in the third pair of counterparts in Figure 6, one more dot on the upper right is added in the Chinese character.

JP		description				CH	
突	JLPT N3	one dot more	8	9		突	HSK3
戻	JLPT N3	one dot more	7	8	o*	戻	
抜	JLPT N3	one dot more	7	8		抜	
器	JLPT N1	one dot more	15	16		器	
海	JLPT N4	one line = two dots	9	10	o*	海	HSK4
毎	JLPT N5	one line = two dots	6	7	o*	毎	HSK2
梅	JLPT N1	one line = two dots	10	11		梅	
増	JLPT N3		14	15		増	HSK4
黒	JLPT N1	Simplified in Japan, not in Mainland China	11	12	o*	黒	HSK2
収	JLPT N3		4	6		収	HSK4
強	JLPT N4		11	12	o*	強	

Figure 6 : B5 (extract of 17 kanji)

Category B accounts for 10% of the database. This means that the total number of kanji in Categories A and B occupy 71% of the whole. The similarity observed in these two categories would be easy for beginners from non-kanji using countries to recognize, even if they have no previous experience of learning Chinese ideograms. Such dominance of visual resemblance between kanji and Chinese characters surely helps them study Chinese ideograms without confusion when learning two languages simultaneously.

Category C (224 kanji: 21% of the total number of kanji in the database)

Category C contains mainly 15 classifications of Simplified Chinese characters that have significant differences from Japanese kanji. Even if they are quite different in shape, when one understands certain patterns of simplification in Chinese characters, it is immediately visible that the pairs of characters are in the relation of a variant. Since this category occupies 21% of the database, it would be important to thoroughly teach the frequently occurring patterns of simplification; that is, 12 patterns from sub-categories C1 to C12.

C1 (see Figure 7) and C2 (see Figure 8) feature Simplified Chinese characters that are made by omitting a part (or parts) of an original character. C2 is a special case of C1 where one Chinese character includes the meaning of plural Japanese kanji by simplification[17].

JP						CH			JP						CH	
電	JLPT N5	a part	13	5	○*	电	HSK1		雲	JLPT N2	a part	12	4	○*	云	HSK3
気	JLPT N5	a part	6	4	○*	气	HSK1		業	JLPT N4	a part	13	5	○*	业	HSK3
飛	JLPT N4	a part	9	3	○*	飞	HSK1		掃	JLPT N2	a part	11	6	○*	扫	HSK3
開	JLPT N4	a part	12	4	○*	开	HSK1		関	JLPT N3	a part	14	6	○*	关	HSK3
児	JLPT N2	a part	7	2		儿	HSK1		雑	JLPT N3	a part	14	6	○*	杂	HSK4
係	JLPT N3	a part	9	7		系	HSK1 / 4		親	JLPT N4	a part, font [type 新/亲]	16	9	○*	亲	HSK4
準	JLPT N2	a part, radical different	13	10		准	HSK2		広	JLPT N4	a part	5	3	○*	广	HSK4
陽	JLPT N3	a part	12	6		阳	HSK2									

Figure 7: C1 (extract of 28 kanji)

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[17] I added in this fig. two kanji (6th and 8th) classified in other categories to highlight the ambiguity of Chinese characters in this sub-category.

JP						CH		
乾	JLPT N2	a part, unification	11	3		干	HSK3/4	CH contains the meaning of 「幹」(JP)
幹	JLPT N1	a part, unification	13	3		干	HSK1/4	CH contains the meaning of 「乾」(JP).
復	JLPT N2	a part, unification	12	9		复	HSK3	CH contains the meaning of 「複」(JP).
複	JLPT N2	a part, unification	14	9		复	HSK4	CH contains the meaning of 「復」(JP).
髪	JLPT N3	a part, unification	14	5	ひ*	发	HSK3/4	CH contains also the meaning of 「発」(JP).
発	JLPT N4	[classé en NS]	9	5	ひ*	发	HSK4/3	CH contains also the meaning of 「髪」(JP).
週	JLPT N4	a part, unification	11	8	ひ*	周	HSK4	CH contains the meaning of 「周」(JP).
周	JLPT N2	[classé en A1]	8	8		周	HSK4	CH contains the meaning of 「週」(JP).
製	JLPT N1	a part, unification	14	8		制	HSK4	CH contains also the meaning of 「制」.

Figure 8: C2 (7 kanji)

From C3 to C12 (see Figures 9 and 10), there are cases where only a radical or a fragment of a character is simplified and categorized by the same type, like "*itohen* (糸) (a 'thread' radical on the left in C3)", "*kai* or *kaihen* (貝) (a 'shell' radical in C4) ", "*ôgai* (頁) (a 'big shell' radical in C5) " or "*gonben* (言) (a 'speak' radical on the left in C6) ".

Figure 9: C3-C12 (extract of 118 kanji; C3 = 26, C4 = 25, C5 = 7, C6 = 22, C7 = 9, C8 = 8, C9 = 7, C10 = 5, C11 = 5, C12 = 4 kanji)

C13 includes other patterns that cannot be organized into any of the other sub-categories (see Figure 10). I extracted cases with the same number of strokes for both Japanese and Chinese characters for C14, and for C15, instances where the number of strokes in Japanese are less than Chinese (see Figure 11). Due to simplification, Chinese characters usually use fewer strokes than most Japanese kanji. However, in the six characters in C15, Chinese characters feature more strokes than their Japanese counterparts.

Figure 10: C13 (extract of 58 kanji)

Figure 11: C14 (5 kanji) and C15 (6 kanji)

Category NS (80 kanji: 7% of the total number of kanji in the database)

Category NS, consisting of seven sub-categories, contains two Japanese original characters (NS1, see Figure 12). In this category, there are numerous cases of differences between Japanese kanji and Chinese characters, like in the sub-category NS2 (Figure 12), making it difficult for beginners to detect variant relation at a glance. Some characters could be paired (NS4, see Figure 13 at the right column) but it was difficult to find other effective types of pairs. Therefore, they were classified by the difference in the number of strokes (NS3, see Figure 13 at the left column).

NS1 (2)

| 込 | JLPT N3 | Japanese original character [国字/日造汉字] | 5 | 5 | ○ | | |
| 働 | JLPT N3 | Japanese original character [国字/日造汉字] | 13 | 6 | | | |

NS2 (3)

習	JLPT N4	a part	11	3	○*	习	HSK1
務	JLPT N3	a part	11	5		务	HSK2
術	JLPT N3	a part	11	5		术	HSK4

Figure 12: NS 1 and 2

15 strokes more

Kanji	JLPT					Chinese	HSK
議	JLPT N3	diff. 15	20	5		议	HSK3
護	JLPT N1	diff. 13	20	7		护	HSK3
識	JLPT N2	diff. 12	19	7		识	HSK4/2
億	JLPT N2	diff. 12	15	3	o*	亿	HSK4
頭	JLPT N3	diff. 11	16	5	o*	头	HSK3
優	JLPT N3	diff. 11	17	6	o*	优	HSK4
機	JLPT N3	diff. 10	16	6	o*	机	HSK1
認	JLPT N1	diff. 10	14	4		认	HSK1
興	JLPT N1	diff. 10	16	6		兴	HSK1/4
歴	JLPT N2	diff. 10	14	4	o*	历	HSK3

Kanji	JLPT					Chinese	HSK
買	JLPT N4		12	6	o*	买	HSK1
売	JLPT N4		7	8		卖	HSK2
読	JLPT N5	言/	14	10	o*	读	HSK1
続	JLPT N3	糸/	13	11	o*	续	HSK4

Kanji	JLPT					Chinese	HSK
農	JLPT N2		13	6		农	HSK4
濃	JLPT N2		16	9	o*	浓	

Kanji	JLPT					Chinese	HSK
園	JLPT N3	袁/元	13	7	o*	园	HSK3
遠	JLPT N3	袁/元	13	7	o*	远	HSK2

Figure 13: NS3 and 4 (extract of 29 kanji)

Pedagogical effectiveness of the database by using the levels of JLPT and HSK

This study also applied the levels of two language proficiency tests, JLPT and HSK. The purpose of this application was to identify the order of priority of each character for supporting students' effective learning of Chinese ideograms that frequently appear in both Japanese and Chinese as well as for the preparation of these exams. In Figure 14, characters are organized in order of priority by using (1) HSK levels, (2) JLPT levels, and (3) a kanji list established in the guidelines for Japanese teaching in Chinese public junior high schools[18]. When choosing representative examples, I omitted Chinese ideograms whose levels of difficulty are higher than Level 4 of HSK for pedagogical reason. This means that the characters at a higher position in this figure are more frequent thus, more important for students in learning these two languages. This makes it more efficient for them to learn two types of Chinese ideograms (kanji and Chinese characters) from the list in a top-to-bottom order. It also encourages them to effectively and practically learn Chinese ideograms for the exams due to the fact that the list is ordered according to the JLPT and HSK levels.

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[18] Cf. previous note 11.

時	JLPT N5 (2)	10	7 (3)	o*	时	HSK1 (1)	風	JLPT N4	9	4	o*	风	HSK3
漢	JLPT N4	13	5	o*	汉	HSK1	種	JLPT N3	14	9		种	HSK3
愛	JLPT N3	13	10	o*	爱	HSK1	選	JLPT N3	15	9	o*	选	HSK3
様	JLPT N3	14	10		样	HSK1	郵	JLPT N2	11	7	o*	邮	HSK3
師	JLPT N3	10	6		师	HSK1	焼	JLPT N2	12	10		烧	HSK3
熱	JLPT N3	15	10	o*	热	HSK1	傘	JLPT N1	12	6	o*	伞	HSK3
魚	JLPT N4	11	8	o*	鱼	HSK2							
報	JLPT N3	12	7		报	HSK2							

済	JLPT N3	11	9	o*	济	HSK4
約	JLPT N3	9	6	o*	约	HSK4
過	JLPT N3	12	6		过	HSK4
積	JLPT N3	16	10		积	HSK4
際	JLPT N3	14	7		际	HSK4
適	JLPT N3	14	9		适	HSK4
並	JLPT N2	8	6	o*	并	HSK4
橋	JLPT N2	16	10	o*	桥	HSK4
芸	JLPT N2	7	4		艺	HSK4
専	JLPT N2	9	4		专	HSK4
養	JLPT N1	15	9		养	HSK4

	Low ←		→ High
Japanese : JLPT	5 4 3	2	1
Chinese: HSK	1 2 3	4	5 6

Figure 14 : A list of kanji in order of priority for learning

Conclusion

To conclude, this study established a database by applying JLPT and HSK levels to successfully create a compact study material that students can use for efficient and effective learning of Chinese and Japanese simultaneously. A series of patterns extracted from the database would be easy to remember, one page at a time. It also makes learners less afraid of confusing kanji and Chinese characters by providing them with a detailed list of Chinese ideograms that are common to both languages.

This study should be supported by further analysis of semantic and phonetic resemblance (especially, analysis of false friends). Although I have already conducted a provisional analysis in this aspect with this database, it is found that the semantic domain is more complex than the formal domain. It is, therefore, necessary to further enhance the accuracy of the classification method that is based on similarity.

Apart from the initial goal of supporting our students, the database may be beneficial for other types of language learners, such as students who are complete beginners in Chinese with some knowledge of Japanese language. It could also pave the way to the creation of a handbook about the Chinese ideograms that are most frequently used in both Japanese and Chinese.

Although it has been proven that the database in this study could be the useful material for students who learn two different East Asian languages simultaneously, it is still necessary to reconsider the role of language teachers in this Internet era of accelerated change. In cyberspace, we have access to comprehensive information, such as the database of kanji and Chinese characters introduced in this paper. Facing information overload, however; it may be difficult to identify the useful and important data in relation to the purposes of learning these languages. The role of teachers,

therefore, should be to help students obtain the useful data extracted from gigantic data and to instruct them on how to practically and effectively use it in their learning.

Acknowledgement

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