Article

A Re-evaluation of Kanji Textbooks for Learners of Japanese as a Second Language

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Abstract

As perhaps one of the most difficult areas of Japanese as a second language (JSL), kanji pose a number of problems for the foreign learner. A glance through a small sample of JSL kanji textbooks will reveal the wide range of kanji learning methodologies used to overcome these difficulties. These methods are, on close analysis, often based on inaccurate or over-generalised assumptions on kanji, which can be traced back to the central belief that kanji are essentially a logographic script.

Naturally, there are differences in learners and their environments which must be considered when creating JSL kanji learning materials, though psycholinguistic research has shown that most kanji cognition and production processes are essentially universal. It is therefore possible that a re-evaluation of kanji texts and learning materials used by native speakers may yield ideas which could facilitate JSL kanji learning in both the introduction and application areas, and duly enhance the learner's kanji competence. As with all other linguistic representations, kanji do not exist in a vacuum; they only assume their phonological and semantic qualities when they occur in context. It is therefore only logical to study them with consideration of this fact, along with an understanding of their multi-faceted and complex nature. Stripping kanji of context or any of their equally important representations may adversely affect JSL learners' cognitive structure to a greater degree than it eases their learning burden. The principles inherent in the Communicative Kanji Teaching approach seem to best address these concerns, and their application into JSL kanji texts would seem to be both practical and worthwhile.

Conventions

All Romanised Japanese words are spelt according to the Hepburn system, and long vowels are indicated by a doubling of the vowel, eg. aa, *ii, uu, ee, oo*. Upper case is used throughout to denote *kun* (*Japanese*) readings, while *on* (Chinese) readings are written in lower case. Unless indicated, all translations of Japanese text are my own.

Introduction

Despite a number of recent advances in the development of teaching methods and materials, the acquisition of a native-like mastery of kanji remains the final, sometimes insurmountable hurdle for foreign students of Japanese. Especially at the intermediate to advanced levels, the amount of kanji knowledge accumulated by a learner goes a long way in determining the depth and capacity of the student's future learning, and their potential

ability to comprehend and produce native-level Japanese texts.

There is a remarkably wide range of instructional kanji textbooks specifically written for foreign learners, based upon an equally wide range of methodologies. Texts are vital parts of the learner's development, since often the learner will spend much of their studying time on kanji autonomously. However, if a learner is to use a text to teach themselves kanji, how do they choose from such a variety of instructional methods? Are any of these methods 'better' than the others? If so, in what way are they superior? What makes a good kanji textbook? Is it really necessary to teach kanji to foreigners (studying *nihongo*) differently to the way in which it is taught to Japanese (studying *kokugo*)?

While there is a great deal of research on both psycholinguistic models of kanji cognition and kanji instruction methodologies, there is, however, a distinct lack of literature specifically addressing kanji textbooks. This paper will attempt to evaluate a selection of popular JSL kanji texts using a number of criteria based on the inherent features of kanji and related psycholinguistic phenomena, and propose a number of suggestions that might improve the pedagogic quality and scope of JSL kanji texts.

Chapter 1 provides a basic overview of the nature of kanji and a description of some of the features of Japanese orthography especially relevant to this paper. Chapter 2 constitutes the textbook analysis, an examination of several textbooks from both native Japanese and JSL sources, and a catalogue of the features of these texts with respect to the characteristics of kanji outlined in the first chapter.

Chapter 3 discusses the findings in the texts, lists possible assumptions behind various features of the texts and summarises the validity of these assumptions based on current psycholinguistic kanji processing theory. The report then proposes various ways in which the techniques, strategies and methods found in native Japanese texts might positively influence the design of JSL texts to aid both the memorisation and production of kanji, and give the learner a more comprehensive kanji competence[1].

Naturally, whenever L1 and L2 learning are compared there are a number of incontrovertible factors which must be taken into account. In the case of kanji learning, major differences across the native speaker (L1)/foreign learner (L2) divide exist in linguistic background/environment, time spent on learning, motivation, and goals. Furthermore, as with any textbook analysis and appraisal, although it is possible to speculate on the various ways a textbook may be used, it is difficult to ascertain exactly how a single textbook will be drawn upon by the learner, especially in the autonomous learning context in which many JSL kanji texts are used. In order to discount as much of these considerations as possible, this paper will assume that the learner is fully motivated to learn as many kanji, readings and meanings to as close a native proficiency as possible, and plans to study for an extended period of time. What will be assessed in this paper is a

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1)   The term *competence* itself is still used to in a variety of ways by applied linguists, and there is some confusion as to what the term refers. In this paper, 'competence' will be used to describe the ability to actively recognise and produce native-like forms (in this instance, kanji characters and compounds) within an authentic-like context (such as writing a letter or reading a newspaper advertisement), rather than the skills cultivated in traditional 'passive' kanji teaching (such as filling in a reading for a isolated kanji on a context-less test paper.)

textbook's potential for use, particularly in the context of autonomous learning.

Chapter 1:   The Nature of Kanji

The argument for JSL kanji instruction methods distinct from those used by native speakers/readers of Japanese is based primarily on fundamental differences between the learners and their environments, and the differences between the Japanese writing system and other orthographies, about which much has already been written (Taylor 1995, Kess & Miyamoto 1999, Backhouse 1993, amongst others). Much of the existing literature has tended to focus on the attributes of the learner, sometimes at the expense of the linguistic item under instruction (i.e. the kanji itself). As a result, many of the features of kanji which are constant across the native speaker/foreign learner divide, not to mention concepts of the universality of language itself, are given little attention in JSL research.

Though there are a number of features unique to the Japanese writing system, here I would like to introduce but a few of the characteristics of kanji relevant to this discussion.

As is well documented (Seeley 1984, Taylor 1995b), the Japanese language did not have a written form until Chinese characters were introduced to Japan in the fourth or fifth century. Although the two languages are grammatically and phonologically quite distinct, the orthographic form, meaning, and pronunciation of Chinese characters was retained when introduced for use as the Japanese writing system, bar a few important adjustments. Kanji originally used in monosyllabic, tonal Chinese were sometimes unsuitable for writing polysyllabic, highly inflected Japanese, and so additional syllaburies (*kana*) were developed to represent inflections and other grammatical items. Although kana were derived from kanji forms, they represent only sound, unlike kanji which, it is claimed, also carry meaning. All of the Japanese language can theoretically be written in kana, though in modern Japanese most lexical words are written in kanji, while inflections and other grammatical items are written in hiragana. Katakana, an angular phonetic syllabury, is today reserved for onomatopoeia and words of foreign origin. In addition, Romanised letters (*roomaji*) and Arabic numerals are increasingly found in Japanese text, as the following example shows. The fact that Japanese orthography simultaneously employs so-called logographic (*kanji*) and phonetic (*kana*) script marks it as unique among written languages, and attracts it much attention in the field of psycholinguistic research.

Figure 1:   Example of mixed *kanji* (K), *hiragana* (H) *katakana* (k), and *roomaji* (R) text

鶏肉 と ベーコン は 1.5cm の 角 に 切 る
KK H k k k k H AARR H K H K H
toriniku to beekon wa 1.5cm no kaku ni kiru

(cut chicken and bacon into 1.5 cm cubes)

(Taylor, 1995b :331)

1.1   Multiplicity of readings

The feature that sets Japanese kanji apart from other Chinese-character using languages, and the one which most daunts learners, is the numerous readings given to each character. The memorisation of multiple phonologically-distinct readings is widely believed to constitute the most difficult aspect of kanji learning (Seeley 1984, Taylor 1995). When the Japanese language adopted the Chinese writing system, it also incorporated the same basic Chinese pronunciation for many of the characters, which meant that a single character could have at least two readings; an *on'yomi* (on-reading, an adjusted version of the Chinese pronunciation) and a *kun'yomi* (kun-reading, the pronunciation of native Japanese origin, said to represent the character's meaning). Although the majority of kanji have one *on* and one *kun* reading, some kanji have only an *on*-reading (hinting that it is a concept introduced to Japan at the same time as the kanji which represented it) or only a *kun*-reading (a reading unique to Japan). Paradis (1984:5) likens the on/kun distinction to that of English, which features near-synonymous words of Anglo-Saxon and Romance or Greek origin (e.g. *chest* vs. *thorax*). Furthermore, since kanji were imported into Japan over an extended period of time, during which the original Chinese pronunciation changed many times, a single kanji in Japanese may have up to four or five different *on*-readings. Add to this the multiple *kun*-readings assigned to characters to express different nuances on a semantic theme, and the result is that most Japanese kanji are homographs, with anywhere between 2 and 23 different readings (i.e. up to 23 different morphemes are represented by the same kanji). (Paradis, 1984:6)

Table 1: Types of kanji compounds

(after Paradis 1984:16)

1. Single character words			
猫	*NEKO*	'cat'	(kun)
駅	*eki*	'train station'	(on)
2. Semantically transparent with a regular pronunciation			
大学	*daigaku*	'university'	(on-on)
手紙	*TEGAMI*	'letter'	(kun-kun)
場所	*BAsho*	'place'	(kun-on) (*yutoo-yomi*)
台所	*daiDOKORO*	'kitchen'	(on-kun) (*juubako-yomi*)
1. Semantically transparent with an arbitrary pronunciation (jukuji-kun)			
時雨	*shigure*	'drizzle'	(*lit.* 'time' + 'rain')
海人	*ama*	'diver'	(*lit.* 'sea' + 'person')
1. Semantically arbitrary with an arbitrary pronunciation (jukuji-kun)			
大和	*yamato*	'ancient Japan'	(*lit.* 'big' + 'peace')
2. Semantically arbitrary with a regular pronunciation (ateji)			
出鱈目	*detarame*	'nonsense'	(*lit.* 'come out' + cod + eye)
兎に角	*tonikaku*	'anyway'	(*lit.* 'rabbit' + 'cube')

In general, kanji occurring singly or as the stem of a word are given their *kun*-reading (e.g. the character 海 by itself is read in *kun* as /*umi*/ 'sea'), and kanji occurring as part of a compound are given the *on* pronunciation (e.g. the 海 in the compound 海岸 is read in *on* as /*kai*(*gan*)/ 'coast') although there are numerous exceptions to this rule (see Table 1 below). Such exceptions have to be learned discretely, so as to prevent misreadings such as /*daisho*/ for the compound 台所 (/*daidokoro*/, kitchen). In addition, there are a number of kanji with a specialised reading which cannot be guessed from the regular *on*/*kun* readings. *Jukujikun* are kanji given an arbitrary reading which may or may not be semantically obvious, while *ateji* are kanji which have a regular *on/kun* reading but a meaning inexplicable from the orthographic form. (Paradis 1985:16) Of course, such specialised readings are relatively few, although their use in frequently used kanji such as 大人 (/*otona*/, adult) and 明日 (/*ashita*/, tomorrow) is enough to warrant their inclusion in JSL kanji curriculum.

1.2 Abundance of homophones, homographs, and synonyms

The adoption of Chinese characters into Japanese presented another major complication. Unlike Chinese, Japanese is not a tonal language, so morphemes which could be distinguished in spoken Chinese from their differences in tonal qualities, were all assimilated as one indistinguishable morpheme in Japanese[2]. As a result, modern Japanese features countless homophones (according to Kess & Miyamoto (1999:32), some 36% of spoken Japanese constitute homophonic words) occurring both at the single character-level and the compound level (the morpheme /*sei*/ has no less than 47 kanji which can be assigned to it, while the word /*seikou*/ has 21 possible different kanji depictions.) Given the vast number of lexical items which correspond to a single phonological form, it is not surprising that in Japanese, context is essential for determining the correct implication. It is not uncommon, however, for misunderstandings to arise even among native speakers, and even when context is supplied. Takashima (2001:8) writes of a recent report in the media where a Junior High School principal dismissed the crisis of escalating violence among teens as a 仮定の問題 *katei no mondai*, a 'temporary problem.' However, the same principal was quoted directly in a newspaper article as describing the situation as a 家庭の問題 *katei no mondai* 'domestic problem.' This is a logical misinterpretation, since both versions were valid based on the context, and the pronunciation of both words is identical right down to the intonation[3]. Native speakers use a number of strategies to overcome this difficulty. Paradis reports that Japanese will often mentally visualise a kanji to clarify an ambiguous form, or ask an interlocutor which kanji is meant when a homophone is used in conversation (1984:14). Another

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2) For example, the Chinese readings for the characters 馬、麻、and 間 are all phonologically distinct, whereas in Japanese the *on*-readings for the same three characters are all pronounced identically as /*ma*/.

3) The extent of this problem in contemporary Japanese is underlined by the fact that there are still two more possible '*katei no mondai*' interpretations; either 過程の問題 'a process problem' , or 課程の問題 , 'a curriculum problem.'

consequence of the adoption of Chinese phonology is that many lexical items in Japanese have two semi-homographic forms, one native Japanese (*wago*), one adopted Chinese (*kango*), with an identical or analogous meaning. For example, both 惑う '*madoo*' and 当惑する'*toowaku suru*' mean 'to be perplexed', share the character 惑 , and can be used interchangeably, although the latter (*kango*) version carries nuances of erudition and formality. There are also a great many non-homographic synonyms, such as 完遂'*kansui*' and 達成'*tassei*' which both mean 'achievement'. Less common, but nevertheless essential for text comprehension, are homographs such as 生物 , which can be read as *seibutsu* 'organism', or *namamono*, 'raw item'. Unsurprisingly, context is especially vital for determining the intended meaning of these words.

1.3   Tripartite sound, form, meaning representation

The third, and perhaps most contentious topic is one which concerns Chinese characters in every language in which they are used that of semantics. Japanese orthography is cited as unique in that it employs both logographic (*kanji*) and phonetic (*kana*) scripts (Kess & Miyamoto 1999: 9).

As a point of comparison, the smallest unit in written English - the letter- has two representations: the orthographic form (the written form 'e') and the phonetic (the sound /i:/). Logographic scripts such as kanji, however, are said to have a third, semantic dimension- in that each grapheme represents a sound and a meaning simultaneously (see Figure 1 below). For example, whereas the English grapheme 'e' does not carry any meaning in and of itself, the kanji grapheme 絵 possesses an orthographic (written) form, a phonological form (the pronunciation /e/) and a semantic form (its 'meaning' : 'picture'). A consequence of this tripartite structure, and the multitude of homophones, homonyms, synonyms and antonyms that kanji-based vocabulary retains, is that the associative links between kanji and their vocabulary are considerably more complex than those in a phonetic alphabet, as witnessed in the dense concept maps drawn up by Tamaoka (1995) and others. What this means for JSL pedagogy is that kanji education should, whenever possible, provide opportunities for learners to strengthen the associations between kanji and vocabulary, either through explicit teaching or awareness-raising exercises.

The exact typographic classification of kanji is a still uncertain matter. Kanji are classified in the literature variously as *pictographs* (linguistic symbols representing objects), *ideographs* (representing ideas), *logographs* (words), or *morphographs* (morphemes) (Matsunaga, 1996:24). Many of these definitions have arisen in accord with the belief that kanji symbolise meaning *independent of sound*, a conception which, according to Matsunaga, 'has been falsified as a myth both linguistically and psycholinguistically' (1993:50). Some theorists (Matsunaga 1993, Paradis 1984:1, Miller 1986) have correctly argued for terms such as 'morphograph' or 'morphosyllabic' to better describe the nature of kanji, which, after all, do not represent a concept or thing but rather a 'morpheme in the language- nothing more and nothing less' (Miller 1986:17). Perhaps the disagreement over the essential nature of kanji reflected in the diverse range of kanji learning methods and strategies produced for the JSL learner is a result of this slightly

confused terminology. It is also important to remember that not all kanji are of the same type[4], and knowledge of which category a kanji belongs to is, as the key to its analysis, a useful guide for the learner.

Chapter 2:   JSL Kanji Textbook analysis

2.1   Introducing the texts

Given the limited time allocated to kanji study in the classroom, it is often the case that kanji are studied autonomously by the student out of classroom environment. A kanji textbook is therefore an especially vital tool for the JSL learner. A wide variety of kanji texts and other learning materials are available. This section is an overview of the format and content of a selection of popular JSL kanji texts.

Kenneth G. Henshall's *Guide to Remembering Japanese Characters* (henceforth *Henshall*) is a detailed and comprehensive text for JSL learners, which takes the learner through the almost 2,000 characters of the *jooyoo* kanji. Its method relies on a breaking down of each kanji into its basic radical elements, and a detailed historical description of how each element acquired its meaning. Purely instructional in nature, it contains no exercises for the learner to try out their knowledge, but does include a detailed introduction to important aspects of kanji and an extensive index, through which a kanji can be referenced by reading or stroke number.

James W. Heisig's method, outlined in his book *Remembering the Kanji: A Complete Course on How Not to Forget the Meaning and Writing of Japanese Characters* (henceforth *Heisig*) is a unique and highly-acclaimed method. Like *Henshall*, it is a mnemonics-based approach, but one that relies on memorable visual imagery rather than

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4)   Since kanji were first brought to Japan, they have been classified according to a taxonomy which is still used today (especially in kanji instruction), although there are a number of kanji which fit into more than one category. The first category, **Pictographs** (*Shookei Moji*) are often the first characters taught to both L1 and L2 learners, since they graphically resemble the physical object they represent in writing (e.g. 川 /kawa/ 'river'). **Signs** or **Symbols** (*Shiji Moji*) are also graphically simple, but are used to express abstract concepts such as location and time (such as 上 /ue/ 'above'). **Ideographs** (*Kaii Moji*) are a semantically straightforward combination of two or more of the first two types, although sometimes they might be quite stylised. By far the most common type of kanji (said to constitute around 80% of the *jooyoo* (official use) kanji, the **Phonetic-Ideograph** or **Semasio-Phonetic** (*Keisei Moji*) characters are, as the name suggests, a combination of an element which provides the kanji's semantic sense with one which indicates its pronunciation. The final two categories, **Borrowed meaning/pronuciation** (*Tenchuu Moji*) and **Phonetically borrowed** (*Kashaku Moji*) are rather vague and often confused with one another, though the former is used to refer essentially to kanji whose meanings and/or pronunciation has changed as a result of borrowing (e.g. 占 /sen/, which originally meant 'divination' but also came to mean 'occupy') while the latter is the term used to describe kanji used for phonetic purposes only, such as the 倫敦 used to denote /rondon/ 'London' in a type of 'kanji alphabet' (Henshall, 1977: xix).

Table 2:   Instructional features of the four JSL texts

	Order/ grouping	Stroke Order	Number	Radical	Etymology	Meaning	Examples
Henshall	Japan MOE	×	○	×	○	○	○
Heisig *(Book 1)*	Unique	○	×	×	×	○	×
Basic Kanji *(Kano)*	Unique	○	○	○ (some)	○ (some)	○	○
Kanji In Context *(Nishiguchi)*	Unique	×	○	×	×	×	○ (many)

etymological analysis to help learners overcome the complexity of kanji. The stated aim of the text is to 'provide the student of Japanese with a simple method for correlating the writing and meaning of Japanese characters in such a way as to make them both easy to remember' (1986:5). This is achieved through imaginative memory, creating fantastical images which are used 'to shock the mind's eye, to disgust it, to enchant or entertain it in any way possible so as to brand it with an image intimately associated with the meaning' (p.9).

Koichi Nishiguchi and Tamaki Kono's *Kanji in context* (henceforth *Nishiguchi*) is an upper-intermediate level text produced by the Inter-University Centre for Japanese language Studies. A system in two parts, it consists of a reference book and a pair of separate workbooks. It covers all of the kanji (and more importantly, kanji-based vocabulary) required for Level 1 of the Japanese Proficiency Test. Most of the work required of the learner is simple memorisation: kanji-based vocabulary is presented in various styles (example sentences, synonym/antonym groupings), but always with a context to which it can be anchored. An extensive index allows the learner to reference a kanji by number, on/kun reading, radical, and uniquely among the sampled texts, the vocabulary in which it is found.

Basic Kanji Book by Chieko Kano et al. (henceforth *Kano*) is the first in a series of books which introduce all aspects of kanji thoroughly and use a number of semi-authentic texts such as menus, maps and letters to familiarise the student with approximately 500 kanji and their various usages. Each unit consists of an introduction of 10-12 characters, followed by basic reading and writing exercises, a short reading exercise, and finally an opportunity to use their kanji knowledge to complete a task, such as choosing an apartment, reading a map, and so on.

2.2   Instruction of Kanji

Since the content of most kanji textbooks can be divided into two distinct areas; how the various representations of a kanji are presented to and remembered by a learner (*instruction*), and the various tasks requiring kanji knowledge for successful completion (*exercises*), the following analysis assumes the same composition. It should be noted that

Henshall and *Heisig* are primarily instructional texts, presenting no exercises for the learner to complete, while *Kano* and *Nishiguch*i attempt to cover both spheres.

2.2.1   Introduction order/grouping criteria

The order in which material is presented to learners is a decisive factor in any L2 syllabus, but one might assume it to be especially so in the case of kanji (Hatasa, 1989:14), which by their 'building-block' nature are more comprehensible if the structurally simpler glyphs (which often make up part of more complex characters) are presented earlier than compound forms. Aside from this, there are other considerations; many quite orthographically complex and difficult to remember kanji are used far more frequently in written Japanese than simpler and more-easily remembered forms. Similarly, the unique shape of a particular kanji often makes it more easily remembered than simple though mutually similar characters.

Kanji education in Japan follows a standardised order set by the Ministry of Education, which reflects a balance of the above concerns. In general, the order of introduction negotiates the concerns of simplicity, distinctiveness, and frequency of use, and almost every textbook produced for native Japanese learners adheres to this order. Among JSL kanji texts and teaching aids, however, there is little uniformity with regards the order of kanji introduction.

Henshall presents each of the 1,945 *jooyoo* kanji in exactly the same order as they are taught to Japanese school children. *Nishiguchi* and *Kano* present kanji in their own unique order, usually to emphasise various connections between form, meaning, and related vocabulary, though their orders are roughly parallel with the MOE order. Kano (1994:44) believes that the order in which kanji are presented to the adult learner does not need to be strictly fixed, and this is reflected in the text she helped produce- *Basic Kanji Book* introduces kanji in roughly organised groupings aligning with kanji type ('*Pictographs*'), or word type (*Adjectives*). Kanji with common attributes are grouped together, and exercises following the introduction of kanji are usually designed to highlight and strengthen connections between such kanji.

Studying kanji with *Heisig*, however, a learner is completely restricted to this particular order; since kanji are grouped by 'primitive' (*Heisig's* term for the components from which kanji are built), to which he assigns each an English keyword. The basis of memorising a kanji is associating the English keyword with an often vivid or obscure mnemonic which also hints at the meaning of the kanji. Since most kanji with the same primitive are introduced simultaneously, extremely complex and obscure kanji such as 髄 (*zui*, bone marrow) are often found earlier in the course than simpler, more common characters such as 部 (*bu*, part).

2.2.2   Stroke order/number

Although knowing the number of strokes of a character and the order in which they are written is emphasised to a far greater extent in native Japanese education than it is in JSL kanji instruction, it is still an 'absolute necessity for learners of written Japanese' (Backhouse 1993:55), since to be able use a kanji dictionary a learner must know how

many strokes a kanji or its radical contains. Knowledge of stroke order is considered essential for Japanese learners since it is traditionally thought to encourage good penmanship, and is considered essential for associated areas such as calligraphy. In a more practical sense, knowing the total number of strokes has two functions; it allows the learner (especially those who have not witnessed the physical action of the drawing of the character, as is the case with many autonomous learners) to judge whether a succession of strokes is made up of one stroke or two, and once again it is a means of referencing an unknown kanji in a dictionary.

However, whether or not to teach stroke order is a subject that often polarises JSL materials writers and teachers. This schism is reflected in the texts; while most of them list the total number of strokes in each character, of the four texts only *kano* shows a stroke-by-stroke order of each new glyph. *Heisig* shows the stoke order for each new primitive, though the order in which the primitives are combined to from a complete character is not shown.

2.2.3   Radical

As the components from which kanji are built, radicals (*bushu*) play an important role in kanji education. The vast majority (between 80-85%) of kanji are of the *keisei* type, which consist of radicals on the left side (*hen*), sometimes containing phonetic information (hints as to the character's pronunciation), while those on the right side (*tsukuri*) may contain semantic information (hints as to the denotation). The most obvious benefit of this is that readers can guess at the pronunciation or the meaning of an unknown kanji simply by matching the orthographic form of the radical with previously-learned radical.

Moreover, knowing the radical (or at least being able to guess the radical) of an unknown kanji means a learner can efficiently use a kanji dictionary, (which is an unquestionably important skill for foreign learners, who come across unknown kanji far more frequently than do native Japanese). This strategy might seem straightforward for simpler kanji, but as Hatasa (1989:15) points out, becomes more challenging when a single complex character offers several equally possible radicals, such as 鐘 (*kane*, 'bell') which offers three: 金 , 立 , and 里 .

Nevertheless, radicals are sometimes a maligned area in JSL kanji learning because either the teacher deems it an unnecessary waste of time or the method does not rely on a radical-based approach. In spite of this, a survey conducted by Okita (1995) showed that

Table 3: Examples of kanji with phonemic and semantic radicals

(after Paradis, 1985: 11)

Phonemic radical 青 *sei*	Semantic radical 木 '*kihen*' (wood)
静 /sei/ 'quiet'	樹 /ju/ timber tree
精 sei/ 'refine'	杉 /sugi/ Japanese cedar
清 /sei/ 'clear', 'pure'	机 /TSUKUE/ desk
晴 /sei/ 'fine weather'	棒 /BOO/ stick, rod
請 /sei/ 'petition'	枕 /MAKURA/ pillow

the majority of JSL learners (especially those with kanji leaning experience) actually believed that knowledge of radicals would enhance kanji learning, suggesting to the author the necessity of systematic radical instruction (1997:74).

Be that as it may, a look at many JSL texts shows considerable disparity in this area. *Henshall* only refers to components within the etymological description, and the 'official' radical for each character is never clearly stated. Although Heisig's method is centred around a component-based approach, radicals are only sometimes used in their natural sense to trigger semantic associations. In both of these texts only the semantic aspect of the radical is shown, and the clues embedded in the phonological element are not shown. *Kano* shows radicals only in a special '*Radicals*' unit which comes toward the end of the text, and even then only for a limited number of *kaii*/*keisei* characters, while *Nishiguchi* does not present any radical information at all.

These methods contrast sharply with Japanese texts for native learners, which usually include a description of the radical for each newly introduced graph, even if the kanji are not grouped by common radical. At the lower (elementary school) level, extra information in the form of text or pictures helps to stress the important phonetic or semantic associations found in each radical. What this means is that while it is certainly worthwhile for a learner to be aware of the role of radicals, applicable kanji are limited. Selective teaching—choosing the most relevant kanji and radicals for instruction—is the key to this approach.

2.2.4   Meaning

Aside from *Nishiguchi*, all of the sampled texts provided an English meaning for each new kanji (and in the case of *Henshall* and *Kano*, the meanings of a number of representative compounds).

Heisig's method is based around attaching a written Japanese form to a visualised image, and as a result association with an English concept (conscious or otherwise) is unavoidable. Far from the generalised meanings given in the other three texts, the English keyword is often as specific as possible, in order to trigger 'visual memory' for greater rates of recall.

Henshall's introduction states that 'it is a serious error to assume that each word in Japanese corresponds exactly to a word in English, and the same applies to characters and their compounds' (p.xxiv), hinting that his text's deliberately generalised English meanings are given more as a conceptual guide than any authoritative semantic anchor. Even if an English meaning is given to aid as a mnemonic device only, there is always the danger that a learner will assume, consciously or unconsciously, a link between the two. Given the often impreciseness of cross-language equivalents, and the possibility for over- or under-generalisation, it might be thought that a kanji instruction guide should give as general an explanation as possible, so as to guard against misreading or misuse, if it is to give one at all.

2.2.5   Readings

Strangely, for a method which claims to be 'a complete course' *Heisig*'s core book

completely omits a major area of a kanji's representation- that of the phonological form. The result is that a learner using this book will only have a link between a character's orthographic form and its meaning (and even then the real Japanese meaning may be obfuscated by the more memorable English mnemonic). Furthermore, if a learner wants to be able to pronounce a kanji (rather than simply decipher it), they must learn the reading disjointedly, in a separate volume, and then only one at a time.

Henshall, on the other hand, introduces all the possible readings of each new kanji, and provides a number of relevant examples for each. *Kano* and *Nishiguchi* also provide every reading, (including commonly used *ateji* and *jukujikun*) required of their respective levels; *Kano* covers enough for the Basic to Intermediate kanji reader, while *Nishiguchi*, aimed for the advanced learner, supplies even quite obscure readings.

2.2.6 Etymology

The importance of knowing a character's historical origins and derivations is a contentious issue. Since there have been changes over time not only in the written language itself but in the society it describes, there are a number of kanji for which etymological explanation might cause more confusion than clarification. For example, the kanji 枕 (*makura*, pillow) contains the semantic radical 木 *kihen*, which is often used in the kanji names of items made from wood (see Table 2, above), such as 机 *tsukue*, desk. This may have made sense when pillows were made of wood, but is now semantically opaque (Kess & Miyamoto, 1999:40). Furthermore, as pointed out by Miller (1986:25), the genuine origin of many graphs have been lost over time, and the authenticity of many explanations cannot be guaranteed. Teaching the meaning of kanji through etymology ('dangerous medicine' according to Miller (1986:25) therefore requires a thorough knowledge of extra-linguistic issues (such as the learner's background) and is at best only a help for certain kanji. Though little research exists on whether this knowledge actually supports kanji comprehension, we might speculate that knowing the origin of either the radicals or the entire kanji itself may be helpful (especially for pictographs) in that it allows the learner to create personal mnemonic devices, though only if they are so inclined.

Henshall is characterised by its exhaustive etymological descriptions, which, while for some learners provides interesting and motivating access to kanji, is found by others to be too wordy and daunting. *Heisig* gives some history of the origin and development of certain characters, but these descriptions are often indistinguishable from the author's own unique stories behind each form. *Kano* provides a reliable balance, only expounding on a character's etymology where it is appropriate or helpful to the learner, in the vein of most native Japanese texts.

2.2.7 Mnemonics

As the core memorisation device for both *Henshall* and *Heisig*, mnemonics are a popular choice for JSL kanji textbook writers since they are different enough from traditional rote learning methods to keep the learner interested, and by their very nature, (i.e. an associative phrase or story by which to connect a character's form and meaning) seem to encourage the semantic trait of kanji.

Henshall provides a mnemonic for each of the 1,945 *jooyoo* kanji. Using the radical names and meanings borrowed from the original Japanese, he provides a unique mnemonic phrase which illustrates the meaning of the character as a whole. For example, the character 部 (/*bu*/, 'part', 'section' or 'clan') made up of the radicals 立 (meaning 'stand'), 口 ('mouth') and ('village') is given the mnemonic phrase CLAN STANDS OPEN MOUTHED IN PART OF VILLAGE, which contains the names of all three constituent radicals as well as two possible meanings of the kanji.

Heisig provides the following rationale for his approach, which he optimistically calls *divide and conquer*. 'Remembering the meaning and the writing of the kanji—perhaps the single most difficult barrier to learning Japanese—can be greatly simplified if the two are isolated and studied apart from everything else' (1987:5). His method breaks complex kanji into elements called primitives, some of which align with real radicals, while others (such as *muzzle* below) are unique configurations, often with bizarre names quite removed from their actual names/meanings. Furthermore, the character 部 is introduced quite late in the text, after the learner is supposedly familiar enough with the method to create their own mnemonic from the names given to 'muzzle' and 'city walls', which have been previously introduced and it is hoped, remembered.

2.3   Exercises

2.3.1   Reading/writing (Kanji → hiragana/ Hiragana → kanji)

Perhaps the most basic exercise in both Japanese and JSL kanji are those which require the learner to write the kanji for an underlined word or words (given the hiragana) or the reading in kana (given the kanji). Many kanji tests also follow this pattern. Such exercises are popular perhaps because they are simple for the teacher/writer to compose and straightforward for the learners to follow, and cover what is thought to be the core kanji skills. Most of the exercises in both *Kano* and *Nishiguchi* are of this type, though while basic-level *Kano* contains a good balance of both kanji reading and writing tasks, *Nishiguchi*'s exercises are almost exclusively of the reading type.

Figure 2:   Examples of reading/writing exercises

a. Write the reading (in hiragana) for the underlined kanji
駅の前に新しいアパートがあります。
Eki no mae ni atarashii apaato ga arimasu
(There is a new apartment building in front of the station)

(Kano et al, 1989: 172)

b. Write the underlined words in kanji.
あかいかみにあおいペンでてがみをかきます
akai kami ni aoi pen de tegami o kakimasu.
(Write a letter in blue pen on red paper)

(Tanaka 2002: 13)

2.3.2   Stroke order/number

Unsurprisingly, neither *Kano* nor *Nishiguchi* offer any exercises requiring knowledge of stroke order or number. On the other hand, while not all Japanese texts show the stroke order of each new kanji explicitly, many include exercises which focus on knowledge of stroke order and number. The most common format for these is one in which character is shown with one of its strokes highlighted in a different colour, or written in a bolder type, as shown in Figure 3 below. The learner is asked to state which number stroke the bolder stroke represents, or the total number of strokes in the character. These tasks may seem straightforward, but for kanji which include often mistaken strokes such as 建 (ken/TATE) or 譲 (jyou/YUZUru), it might be considered a worthwhile strategy-building exercise.

Figure 3:   Example of stroke counting exercise

(Bold Stroke)   a. 非   b. 飽   (Total number of strokes)   c. 貧   d. 擁

<div align="right">(Kanken Bunoobetsu Mondaishuu, 1997:45)</div>

2.3.3   Radical Exercises

Of the surveyed texts, only *Kano* contained any radical-based exercises and only then in a limited amount, in a unit especially devoted to radical study toward the end of the book. Many Japanese texts feature radical exercises, including choosing the correct radical from a bank of four options (as seen in Figure 4) or arranging two simple kanji as radicals to create whole kanji.

Figure 4:   Example of a radical identification excercisee

覧   a. 見   b. 又   c. 臣   d. 八

<div align="right">(from *Kanji Nooryoku Kentei*- Sample Questions for Level 3, 1999)</div>

Since a learner does not need any exceptional linguistic knowledge to complete the exercise, these types of exercises, along with the stroke-counting exercises described above, might be straightforwardly incorporated into a JSL text.

2.3.4 Semantic exercises

Each unit in *Nishiguchi* contains reading exercises, in which underlined kanji to be pronounced by the learner are presented not only in sentences, but also in lists of words with related meanings and synonym/antonym pairings. While this type of format is not found in any of the other JSL texts surveyed, it is common in Japanese texts, which routinely point out associations between new kanji and previously learned forms. Presenting the material in this way helps strengthen associative bonds between kanji, and may be especially useful for JSL learners who may not notice the link due to cultural differences.

Figure 5:   Example of semantic pairing (antonyms)

天災　↔　人災
tensai　↔　*jinsai*
'natural disaster'　　'man-made disaster'

<div align="right">(Nishiguchi & Kono 1994: 136)</div>

Chapter 3:   Observations & Proposals

3.1   Assumptions on kanji learning and related cognitive research

Now that we have seen a number of JSL kanji texts, we might look at the beliefs that were used to create them, along with a review of some cognitive research on each.

The belief that native Japanese kanji learning methods and JSL kanji learning methods are two separate spheres is still a dominant one and evident in much JSL research literature. (Takebe 1986, Sisk-Noguchi 1995 amongst others) Based on the inevitable differences in learners (Japanese proficiency, age, environment, motivation, time spent learning) as well as the difficulties outlined in Chapter 1, it is responsible for the idea that JSL learners (especially those from a non-logographic script background) require radically different methods from native Japanese in order to learn kanji effectively. However, an inherent danger in subscribing to this belief too explicitly is that methods and strategies used by native Japanese learners to conquer kanji are often indiscriminately and prematurely dismissed as being unsuitable for foreign learners. The belief manifests itself as a number of assumptions about kanji learning, which can be summarised as the following.

Assumption 1.   JSL learners perceive kanji in fundamentally different ways to native learners of Japanese, who have more developed cognitive skills to handle logographic scripts.
As the basis from which most of the assumptions about kanji teaching to JSL learners emanates, this belief stands largely unchallenged (Kaiho 1990, Sisk-Noguchi 1995). Traditionally, studies on L1/L2 kanji cognition have divided learners into two groups: 'kanji-habituated' (including learners with Chinese characters in their L1 orthographic system), and 'non-kanji-habituated'. If we consider again the tripartite nature of kanji, however, we realise that 'kanji habituated' learners only have an advantage over non-habituated learners in some areas (i.e. they already know how to write a character, and sometimes its meaning and lexical category). Some theorists (Takebe 1989, Tamamura 1979) have even posited that kanji-habituated readers perceive kanji in different ways than phonetic alphabet-habituated learners, given that their respective orthographies are so completely different. A review of cognitive research by Flores d'Arcais dismissed the idea, showing that there was 'no clear evidence supporting the hypothesis that reading a word written in a logographic writing system involves processes different from those

involved in reading a word in an alphabetic system' (1992:37).

While it is inevitable that a learner's L1 structure (including its orthography) has a profound effect on their L2 learning, it does not mean that L1 methods and strategies should be completely ignored. Careful appraisal and utilisation of these, where appropriate, may have constructive effects on L2 learner's kanji reading and learning competence. Indeed, cognitive research in the area of L1/L2 differences has shown that while the learner's L1 is a factor, it should have different pedagogical consequences than it actually does.

In a study classifying learner errors, Tamaoka (1988) found that the types of errors made by native and non-native kanji users differed considerably. Native Japanese made primarily phonologically-based errors (e.g. confusing homophones) followed by orthographic and semantic errors. Non-natives, on the other hand, made mostly orthographic errors, followed by semantic and phonological. Crucially, however, Tamaoka found that as the non-native learner's proficiency level increased, their error proportions grew more native-like, which led him to conclude that errors which occur in kanji writing depend more on level than background. This may suggest that rather than focus on the learner's background and base a text's methodology around L1/L2 differences, a materials writer might better invest their time carefully composing a text to meet the needs of a learner's specific level.

Flaherty (1996) tested and compared the visual memory skills of both kanji-literate Japanese and kanji-illiterate Caucasians and found that kanji experience did not influence the skills. Another study by Flaherty (1997) showed that individual differences such temporary memory for phonological stimuli and the ability to process abstract patterns were more influential in kanji recognition than were learners' ethnicity or background.

Though most research suggests that kanji comprehension and production processes are less dependent on the learners' L1 than previously thought, recent studies by Mori (1998) and Koda (1995) have shown that native learners use a wider variety of strategies than do JSL learners. This inevitably brings up the following issues: *Are the ways in which JSL and Japanese kanji texts differ a reflection of these differences*, and more importantly, *Are these strategies teachable to those who do not use them or are not aware of them?*

Assumption 2.   Kanji are pictures, not writing.

According to Takebe, when teaching kanji to the JSL learner, the teacher must stress that the characters are in fact 'pictures telling a story' (1986:7). The mnemonically and etymologically based methods proposed by *Heisig* and *Henshall* may be (intentionally or otherwise) manifestations of this view. However, since only about 12% of all kanji fall into the true pictograph category, it would seem there is a limit to the number of characters which can be taught in this way, and theorists such as Ito (1986) and Kaiser (1995) have warned against too much pictorial-based kanji teaching. Of course, learners have the freedom to construct their own individual strategies for remembering form, sound and meaning but again it is the function of kanji that must be taught, since learners find it harder to make inferences about how a kanji is to be used than how a kanji can be remembered. Similarly, providing etymological explanations for kanji may be useful for a

number of kanji with transparent links between origin and modern form, sound and meaning, but this only serves to confuse the learner when dealing with more obscure kanji.

Assumption 3.   Each kanji has its own meaning.

The natural progression from the above assumption is that each kanji has its own distinct 'meaning'. Certainly the tradition in JSL textbooks of assigning an English equivalent to each kanji is a result of this view, and methods in which the learner remembers a kanji by anchoring it to an L1 image are common. However, as we have seen, whether this is a valid conception of kanji is still uncertain.

As Backhouse points out, 'the meaning of a kanji is often a somewhat vague notion. Kanji represent morphemes (i.e. readings) and strictly speaking it is morphemes which have no meanings; the 'meaning of a kanji' amounts to no more and no less than the meanings of the various morphemes which it represents' (1993:50). Taking the character 生 as an extreme example, he points to its twelve readings (two *on*, ten *kun*) and the array of meanings it can represent: 'life', 'to live', 'to be born', 'to give birth', 'to grow', and 'raw'. Assigning one meaning to this character fails to alert the learner to the multiple possible connotations, and may only invite misinterpretation when kanji are later read in context.

Henderson finds this assumption tenuous, stating that there is no one-to one correspondence between characters and meanings (1982:19). Miller attributes this assumption as being 'a result of confused terminology which labels kanji a logographic script' (1986:19). While it may be inaccurate to assume that this is the reason why all of the reviewed texts (save *Nishiguchi*) supplied an English meaning, it would be not unrealistic to speculate that if kanji indeed represent morphemes of the Japanese language, and not concepts of the world) then if meaning is to be supplied it should be as generalised as possible to facilitate connections with the sometimes varied connotations a single character can assume. Assigning one English meaning to encapsulate all of these concepts is not only restrictive but also illogical (given that kanji never occur in a vacuum), and because of this, it would seem teaching the meaning of the kanji only when it is used as vocabulary is a far more rational approach.

Assumption 4.   Since kanji directly represent meaning, they can be accessed without phonology.

As an adjunct to the above assumptions, it has been suggested (Takebe 1989, amongst others) that kanji can be processed without the use of a phonetic representation. Kinoshita (1998) claimed, based on personal experience, that it is possible to read Japanese script without relying on internal phonological representation. While her experience may be shared by many (even non-native) readers of Japanese, cognitive research seems to show that phonological factors are vital, especially in the maintenance and processing of information in working memory. A study by Wydell, Patterson and Humphreys (1993) investigated reaction times to kanji homophones and non-homophones, and found that phonology does exert an influence on kanji recognition. They concluded that kanji reading is a parallel process, i.e., access to a kanji's semantic element is probably simultaneously

via both orthographic and phonological representations. Koda (1997), investigating the cognitive consequences of L1 and L2 orthographies, found that phonological interference when a subject is reading kanji impaired short term memory (STM) recall performances. This indicates that, while strategies differ across the habituated/non-habituated divide, phonological codes are used in all STM encoding processes, regardless of the learner's background.

While it is true that only around a third of Japanese kanji possess a phonetic radical, by omitting any information on the phonetic aspect of radicals in their texts, *Heisig* and *Henshall* are ignoring the role that these radicals play in the processes of both reading and writing kanji, and needlessly handicapping learners, in that a useful strategy that might be easily taught is squandered.

Matsunaga's study of the role of kanji knowledge transfer in JSL proved that even kanji-habituated learners have to develop 'a solid oral proficiency and the ability to decode kanji words via Japanese sounds' (1999:87). Even at the compound level, research on the influence of context on non-habituated learner's kanji comprehension proved that a relationship exists between a compound's sound and its meaning. Further research (Saito 1998) proves they are both equally important: given this fact, studying kanji without phonetics (as is instructed by *Heisig*), could not be conducive to full kanji proficiency. No research currently exists proving that learning the semantic and phonological forms separately aids kanji memorisation, and according to most cognitive research (learning all three representations simultaneously would provide far more benefits (in that the cognitive bonds between all representations are equally strong) than the inconveniences of time for the learner. *Nishiguchi*'s introduction correctly states that 'the three elements of kanji are organically intertwined within the kanji, and a proper knowledge of them will not only bring a dramatic increase in the speed at which new kanji and vocabulary are digested, but will also foster the ability to infer the meaning of previously unencountered kanji and vocabulary' (1994:21).

Assumption 5.   Given the language handicap, JSL learners need simpler structures than native learners.

Many academics (Coulmas 1993:240, Matsumoto 2003:79, Shimizu 1997:56 Henderson 1982, Thompson 1997, Gutch 1998) have noted the importance of context in determining the correct reading and meaning of a given orthographic form in Japanese. Nevertheless, most textbooks, under the assumption that JSL learners have limited time and linguistic resources, sacrifice most of the detail in their examples, focussing on the kanji or reading itself, which results in the loss of vital contextual information required for kanji interpretation.

The ostensible simplicity of reading and writing exercises of the type shown in Figure 2 disguises several possible drawbacks of relying solely on this type of task. A learner does not have to know the meaning of the kanji to be able to read or write it- in fact, a learner cramming kanji for a weekly kanji test will pay far more attention to what they know will be asked of them, i.e. the orthographic and phonetic aspects, rather than the semantic aspect of a character, with the result that many learners' competence may be

biased towards those areas. However, it is not impossible to include semantic aspects into such exercises, as is evident in kanji learning materials used by Japanese elementary school children. These are of a similar level of linguistic difficulty to JSL learners, yet are able to facilitate reading by establishing clear and familiar context, as seen in the following examples.

Figure 6:   Examples of context-rich reading exercises

a. 廊下は静かにあるきましょう．
    (*rooka o shizuka ni arukimashoo.*)
    Walk quietly down the hallway.
<div align="right">(source: Kanji Nooryoku Kentei- Sample Questions for Level 5, 1999)</div>
b. 学校でウサギとにわとりを飼育する．
    (*gakkoo de usagi to niwatori o shiiku suru.*)
    (We) keep rabbits and chickens at school.
<div align="right">(Kumon: 1990:14)</div>

The target answer of exercise (a) is *rooka* (hallway), and the complete sentence reads *rooka o shizuka ni arukimashoo* (walk quietly in the hallway). Given that the entire phrase is commonly encountered (in schools, office buildings, etc.) the context supplied by ⋯⋯ *o shizuka ni arukimashoo* might trigger associations in the learner's schema. Based on their knowledge of the world, a learner would know that there are only a limited number of things through which one must walk quietly, and a hallway is one of them, so the Japanese word for hallway (*rooka*) might be used as a guess. Progression towards a possible answer can be further helped by the knowledge of the readings of either one of the characters; in the case of (a), if a student already knew that the kanji 下 could be read as /ka/, they might quickly connect the context with phonetic form *rooka* 'hallway'. This parallels the reading processes in the 'real world'- often readers use context to give a list of possible readings for an unknown character, then using known phonological forms to facilitate informed guesswork. For example (b), if a learner knows the meaning of relatively simple words such as *gakkoo* (school), *usagi* (rabbit) and *niwatori* (hen), they will be able to guess at the meaning of the unknown kanji (in this case the verb *shiiku suru* 'to keep in a cage'), and hence use their existing vocabulary resources to deduce a possible response. Let us now compare the above sentences with an example taken from a JSL text.

Figure 7:   Example of an ambiguous reading exercise

店内にはいろいろな外国の物があります。
(*tennai niwa iroirona gaikoku no mono ga arimasu.*)
There are many foreign items in the store.
<div align="right">(Kano *et al* 1989:145)</div>

Even if a learner is familiar with the vocabulary and syntax of the other items in the sentence, the imprecise nature of the context means that there are fewer semantic clues available to the learner. If the learner does not know the reading of either of the kanji in the compound any number of two-character compounds could fit into the space and still

provide a perfectly natural sentence. In contrast, the example in Figure 8b narrows down the probabilities by helping to activate a learner's schema- in this case, the world-knowledge that if you have a rabbit and a hen at school they are probably being raised in a cage (which is the meaning of the verb *shiiku suru*).

These examples underline the crucial role of context supplied by the example sentence. Since most exercises and test questions are unrelated to one another semantically, they provide context only at the sentential level. Furthermore, it might be thought that given the language handicap, JSL learners need even more contextual clues than do native readers to help prime connections and establish semantic, phonological, and orthographic links between forms. It is crucial to note that providing rich intra-sentential context does not require difficult linguistic forms, simply a comprehensive understanding on the part of the materials designer of the nature of kanji (as outlined in Chapter 1) and comprehension of how kanji work in context. In order to instil effective reading/writing strategies, training learners to piece together clues from the rest of the immediate sentence should be as much a focus of kanji drills/exercises as basic reading/writing skills, although sadly the former is neglected in favour of the latter.

Assumption 6. JSL learners need specialised methods (such as mnemonics) to master kanji, and should not use the methods employed by native learners.
Perhaps the most commonly held of the assumptions about kanji is that learning them in the same way as Japanese students is illogical and time-consuming. Many of the motives for this view (mostly differences between L1 and L2 learners and learning environment) are valid, though ironically it is the over-generalisation of this idea that is responsible for many of the problems in JSL kanji education.

As a way of 'easing the memory burden', mnemonic imagery and etymological explanation, are both examples of popular methods for JSL kanji learners, as witnessed in two of our surveyed texts.

Certainly, these methods utilise the learner's imagination and encourage motivation, in the sense that they provide a break from the drudgery of learning by traditional, rote-based methods. However, is it accurate to claim, as Sisk-Noguchi does, that mnemonic use unequivocally aids the retention of kanji in memory? Contradictory research results indicate that mnemonics have yet to be completely accepted as a major methodology. Indeed, in his foreword, *Henshall* himself admits the fickle nature of mnemonics, pointing out that 'for the serious scholar it can be misleading to rely on mnemonics alone' (1988:ix) Simply because a method or strategy is different does not mean that it works, and simply because a method works for others does not mean that it works for all learners. Cognitive research has shown the inconsistency of strategy use across learners; this needs to be taken into account before extolling a possibly particular method as beneficial for all learners.

A study by Wang and Thomas (1992) showed that learners who were taught kanji with a mnemonic-based method showed no greater retention than those who were taught with the traditional rote learning, and in fact displayed a *greater degree of forgetting*. Therefore, it might be possible that mnemonics are quite a learner-specific strategy, which can aid learning in the types of learners with learning strategies and behaviour suited to

such methods, but may not be of help to others.

Using mnemonics and etymological explanation to aid kanji memorisation is an area where primarily, differences in learners' strategies and preferences play the major role in determining the success of the instruction material. Since each individual brings to the learning experience their own unique views of the world, an imagination is an largely immeasurable factor. Mnemonics, especially for a visually-based medium such as kanji, is subjective at best; the person resting against a tree that one learner sees might be seen by another as a sword and a kite. Here we should follow the advice of Hatasa (1989:61) and rather than force a mnemonic onto a learner, first explain the meaning of each radical while giving the leaner free reign to imagine their own mnemonic. An advantage of this method is that, the individual creativity of each learner is harnessed and used in the most effective way. Such personalised mnemonics might better help learners to retain kanji information, (whether phonological or semantic), by activating existing cognitive structures, rather than constructing new ones. *Heisig* actually gives his readers the opportunity to do this in the latter half of his text, but since he supplies the (still rather explicit) keywords, it is still not a completely autonomous process.

3.2   Additional Proposals

Based on the results of the cognitive research reviewed here, it would seem that rather than focussing exclusively on the L1/L2 learner and environment differences, we should instead follow Kaiser's advice (1995:26) and consider the universals in kanji cognition, which suggest the provision, at both the introducion and application levels, of enough contextual information (examples, etc.) to develop and maintain balanced and complete representations of kanji in a learner's cognitive structure. A look at kanji learning materials used by native Japanese reveals a number of approaches not often found in JSL texts. The following section introduces only a few of these.

In order to differentiate between vast numbers of homophones, synonyms and homographs found in Japanese, a learner must have a number of strategies at their disposal. The key to establishing these strategies is first recognizing the manifold nature of kanji and the various types, and understanding how they work in context. Many scholars (Murayama 1993, Matunaga 1999, Gutch 1997, Hanada 1987) have underlined the importance of learning kanji in context, though as we have found, this is yet to find manifestation in JSL kanji texts. Only one of the textbooks under analysis here (*Nishiguchi*) showed any manifestation of this approach, although it did not supply any of the following types of exercises, which are common in Japanese kanji texts.

Figure 8:   Example of an exercise involving homophonous kanji

（カイコ）後の再就職が決まる。
a. 回顧　　b. 懐古　　c. 蚕子　　d. 解雇

(source: *Kanken Jitsuryoku Tesuto* No. 23, www.kanken.or.jp)

Figure 9:   Example of an exercise involving (semi-) homographic kanji

３月には会社から（　　　　）もらって、国へ帰りたいと思っている。
a. 休憩　b. 休息　c. 休暇　d. 休養

<div align="right">(source: Kanken Jitsuryoku Tesuto No. 23, www.kanken.or.jp)</div>

Figure 10:   Example of an exercise involving synonymic kanji

私はあまり（　　　　）ではないから、編み物などは苦手です。
a. 上達　b. 器用　c. 発達　d. 的確

<div align="right">(source: Kanken Jitsuryoku Tesuto No. 23, www.kanken.or.jp)</div>

Given their prevalence in Japanese, we might echo Ishii's suggestion to instil in learners the skill to choose an appropriate form from a group of homophones (1998:76), propose that context-based learning is the most effective means. The exercise in Figure 8 requires the learner to choose the correct compound from a group of homophonous compounds (all are read /*kaiko*/). From the rest of the sentence, which refers to 're-employment' 間（再就職 *saishuushoku*), a learner may make a semantic connection with 解雇 *kaiko* 'dismissal'. In the exercise in Figure 9, a learner must choose the correct compound for the sentence from a group which all feature a common character (休) and consequently, a similar meaning (from the list, *kyuukei*, 'rest break' *kyuusoku*, 'relaxation', *kyuuka* 'holiday' and *kyuuyoo* 'recreation', only *kyuuka* is a possible fit). Meanwhile, in Figure 10 the target is one of a group of orthographically dissimilar but semantically parallel forms (from a. *jootatsu* 'improvement' b. *kiyoo* 'dextrous', c. *hattatsu* 'development' and d. *tekikaku* 'precise', (b) is the only possible answer.) Such exercises as these draw attention to the subtle differences in sound, meaning and orthography often hidden in JSL texts where a single English word is given as a corresponding meaning, and little or no contextual examples are supplied. Of course, it is also possible to combine the overlapping homophony and homography effects in a single exercise, where a learner must choose from forms sharing orthographic and phonological features.

As we have seen, the mutually-reinforcing effect of simultaneous instruction of the phonetic, orthographic, and semantic dimensions of kanji is often neglected by JSL materials writers in favour of reducing the memory burden on learners.

Tamaoka (1995:23) stresses the systematic instruction of all three representations of kanji, echoing Hanada, who suggests that JSL kanji instruction should emphasise the orthographic, phonetic and semantic similarities between individual kanji when they are found (1987:214). This can be done when the kanji are first introduced (e.g. by grouping similar kanji together to force learners to focus on how they are different), but can be highlighted to a far greater extent within practical exercises such as those shown above, especially if the learner is given an opportunity to self-correct. With careful arrangement, it is possible to include all three representations of kanji in a single exercise (for example, a set of possible answers might include kanji which are phonologically, semantically, or orthographically similar to the target form) to better replicate to conditions under which kanji are accessed in real world reading and writing. The most vital point is that the materials designer is aware of the learner level and adjusts the ratio of skills required

accordingly. Hanada (1997) also advocates the use of exercises not often found in JSL texts, such as the ones reproduced below.

Figure 11(Figure 4):   Example of a radical identification exercise

覧　　a. 見　　b. 又　　c. 臣　　d. 八

(*Kanji Nooryoku Kentei*- Sample Questions for Level 3, 1999)

Figure 12:   Example of an error identification/correction exercise

交通機関や旅館等の観光情報を程供する .

(*Kanji Nooryoku Kentei*- Example Questions for Level 6, 2002)

Figure 13:   Example of a compound-forming exercise (antonyms)

博学―①学　　集中―分②　　失望―③望　　中止―④行　　泣く―⑤う
き　・　さん　・　ぞっ　・　む　・　わら

(Kanji Nooryoku Kentei- Example Questions for Level 6, 2002

Figure 11 shows a simple exercise requiring the learner to identify the radical from a list of four potential radicals. (Alternately, the learner might be asked to draw the radical from memory.) This aids knowledge of radical and both semantic and phonological activation (depending on the kanji). The exercise shown in Figure 12 requires the learner to first find which of the kanji (either single or in compounds) is 'misspelled' and then to give the correct kanji (in this instance, the first character of the final kanji compound, 程供 *teikyoo* 'offer', is incorrectly written as 程 (*tei*) when it should be written 提 . This type of exercise is invaluable since it not only involves both the comprehension and production processes, it also provides strategy training for differentiating homophonic characters. The final example, shown in Figure 13 requires the learner to choose an appropriate kanji to place in a compound from a bank of kana readings (it is not specified whether they are *on* or *kun*), which would result in an antonym for the given hint. For example, the correct answer to question one would be mu (written 無), which would give us 無学 *mugaku* 'uneducated' as an antonym to the hint word 博学 *hakugaku* (learned). Hints can also be given as synonyms. These exercises again require contextual knowledge, and might help strengthen the conceptual bonds between words in Japanese by showing the learner how words relate to one another in the Japanese context (which is perhaps more important than simply offering an equivalent English meaning for each kanji or compound.)

The exercises shown above are often used in Japanese kanji textbooks but are rare in JSL materials, a trend which is surprising given that they there is no especially advanced linguistic or cultural knowledge required for their completion. Indeed, they might be easily adjusted to match the learners level. Provided the target knowledge (e.g. ability to recognise radicals) is compatible with the course's aims, there are no reasons why such exercises should not be included in JSL kanji materials.

Not only is an understanding of a kanji or vocabulary item's role in a sentence important, but also knowing a compound's structure (i.e. the parts of speech that each character represents within a word) seems to Gutch 'not only helpful but natural' (1998:51). This analysis fosters strategies to help reader guess the role of an unknown

Table 4: Kanji compound structure typology

(after Nagaho, 1987:188)

1. *Subject/Predicate*: The first character represents the subject of the concept, while the second character describes its movement, features, or change. Usually noun + verb , noun + adjective pairings. 　　e.g.　　地震 (*jishin*, earthquake) ＝地 (*ji*, earth, ground) +震 (*shin*, to shake)
2. *Modifiers*: The first character (an adjective or adverb) describes a quality of the second (a noun or verb) 　　e.g.　　老人 (*roojin*, elderly person) ＝老 (*roo*, old) +人 (*jin*, person) 　　　　　再会 (*saikai*, reunion) ＝再 (*sai*, again) +会 (*kai*, to meet)
3. *Parallel pairings*: The two characters that make up the kanji are of the same type (e.g. noun + noun, adjective + adjective) and are similar, related or even opposite in meaning. 　　e.g.　　民族 (*minzoku*, people, race) ＝民 (*min*, people, subjects) +族 (*zoku*, tribe) 　　　　　教育 (*kyooiku*, education) ＝教 (*kyoo*, teaching) +育 (*iku*, to raise, bring up)
4. *Supplement*: Usually in verb/adjective + noun configuration. The first character of the pair describes the action or state of the second character noun. 　　e.g.　　乗車 (*joosha*, boarding) ＝乗 (*joo*, to ride, get into) +車 (*sha*, vehicle) 　　　　　失望 (*shitsuboo*, to be disappointed) ＝失 (*shitsu*, to lose) +望 (*boo*, hope)
5. *Designators*: Usually made up of an adjectival or verbal kanji with a 'prefix' character (such as 不 fu, 'un-', 可 ka, 'able to-' or 未 mi 'not yet-') attached to the front of the compound 　　e.g.　　不正 (*fusei*, unfair) ＝不 (*fu*, un-) +正 (*sei*, correct, just) 　　　　　未知 (*michi*, not yet known) ＝未 (*mi*, not yet) +知 (*chi*, to know)

kanji when encountered in a compound with a known form. Japanese kanji texts, especially at the advanced levels, often feature such exercises. The learner is given a series of two-character compounds, and asked to classify the relationship between the two kanji as belonging to one of the categories shown in Table 4. As suggested by Hatta, Kawakami and Hatasa (1997:415), knowing how kanji can be compounded, and being able to recognise the patterns in compounds are skills that might further extend a learner's kanji/vocabulary concept map.

Research on morphological semantics has concluded that two-kanji compounds are activated as both morpheme units and as compound units, and that there are differenced in reaction times across different compound structure types (Tamaoka and Hatsuzuka, 1998), which suggests that analysis of the relationship between characters in a compound would be beneficial for both comprehension and production skills. Since a non-native learner of Japanese often remembers the meaning of a new kanji or compound by associating it with an equivalent meaning in their L1, we might support Gutch (1998) and Murayama's

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5) Of course, there are compounds which are not applicable to such analysis; *ateji* or *jukujikun*, or kanji which only ever appear in one instance (e.g. the character 械 *kai* from 機械 *kikai* (machine).

(1993) claim that exercises that encourage intra-compound analysis have their place in JSL kanji teaching[5].

3.3. Communicative Kanji Teaching

One approach that considers many of the issues raised by the above assumptions is described as 'communicative kanji teaching' or 'teaching kanji as vocabulary', (as opposed to teaching kanji as a separate topic in JSL). Although there are many proponents of this method (Kaiser 1995, Kawaguchi 1993, Hanada 1987, Murayama 1993, Itoh 1986) it seems to have remained a classroom-centred approach, and as reported in this paper, there is still little evidence of it in JSL kanji textbooks and learning materials[6].

   Communicative Kanji Teaching is described by Kawaguchi (1993:16) as built on the fundamental tenet that since kanji used in day-today Japanese are inseparable from words, kanji instruction should take place first and foremost through vocabulary learning. This approach acknowledges the multifaceted and mutually- reinforcing nature of kanji, as well as the simultaneous employment of 'top-down' and bottom-up' processes involved in all types of reading. Through contextualisation of the target forms, it helps develop the learner's ability to use existing knowledge (linguistic and extra-linguistic) to infer the meaning, reading and usage of unknown words (Kawaguchi, 1993:16). Contextualisation is also especially important in kanji teaching since many kanji reading and writing strategies, including *on*/*kun* reading judgements and homophone/homograph differentiation rely wholly on context. A key to this contextualisation is the use of authentic materials, which show the learner exactly how kanji relate to one another within text.

Conclusion

There remain a number of fundamental differences between the methods, strategies and exercises used by native Japanese and foreign learners of kanji. Some of the reasons for this division are based on immutable differences between the two groups of learners and their linguistic and pedagogic environments. Others though, seem to be grounded more in empirically unproven assumptions about the nature of written language and language learning.

   Many of the methods employed by native readers of Japanese are often hastily and indiscriminately dismissed as irrelevant or time-consuming by JSL teachers and materials writers. Given that a far smaller percentage of JSL learners than native Japanese will need to progress to the level where advanced kanji identification/production skills are required, their claim may have some validity. However, most of these assumptions do not seem to conform with actualities on the essential nature of kanji or the universal aspects of reading and orthographic cognition. Since certain methods and strategies that might be proven to

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6) Of the four texts sampled, only *Nishiguchi* could be labelled a comprehensive 'kanji = vocabulary' approach.

be both transferable and beneficial to JSL studies exist, an argument for their inclusion, or at least consideration, seems equally valid.

Specifically, kanji instruction materials must provide for balanced study of all three representations (orthographic, semantic and phonological) of kanji, along with detailed radical descriptions, diverse examples and semantic information, in order to provide greater scope for a learner to create cognitive associations between vocabulary and their constituent kanji.

Although strategies such as the use of mnemonics, or visualisation of pictures drawn from etymological descriptions may have their place in JSL learning, it should also be recognised that they are somewhat learner-specific, and there is no 'magic method' for kanji learning. The 'kanji = vocabulary' method seems to best address these concerns, and its implementation into JSL texts (via some of the many possible exercise ideas found in Japanese kanji texts) may help redress at least some of the limitations currently found in JSL kanji pedagogy.

Given the dearth of research in this area, there are still countless areas for possible further analysis, the most pressing of which is, of course, whether a positive correlation indeed exists between richer context and kanji competence. Studies might also investigate the complex relationship between learner beliefs, strategy awareness and kanji textbook use.

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