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Graphic loans: East Asia and beyond

Abstract. The national languages of East Asia (Chinese, Japanese, Korean and Vietnamese) have made extensive use of a type of linguistic borrowing sometimes referred to as a 'graphic loan'. Such loans have no place in the conventional classification of loans based on Haugen (1950) or Weinreich (1953), and research on loan word theory and phonology generally overlooks them. The classic East Asian phenomenon is discussed and a framework is proposed to describe its mechanism. It is argued that graphic loans are more than just 'spelling pronunciations', because they are a systematic and widespread process, independent of but not inferior to phonological borrowing. The framework is then expanded to illustrate borrowing between English and East Asian languages, and between non-East Asian languages, showing that graphic borrowing also applies to phonographically written source language forms.

Keywords: Loanwords, Graphic loans, Japanese, Chinese, Korean, Vietnamese

1. Loanword classification. Studies of the classification of different types of lexical borrowing generally build upon Haugen (1950) and Weinreich (1953). Despite some differences of approach and terminology, both authors' overall categorization of lexical borrowing is similar, reflecting a classification according to two broad criteria.

(i) Whether the source language item is a single morpheme or a combination of two or more morphemes, either bound (a compound word) or free (a phrase).
(ii) Whether the influence from the source language is realized as carrying over actual form into the target language (phonological loan, Haugen's "loanword" and Weinreich's "transfer") or carrying over of meaning only, affecting the meaning or combination of forms in the target language (Weinreich's "semantic loan" or "translation loan", differentiated according to the first criterion, classified by Haugen together as "loanshift").

Permutations of these two criteria have resulted in various categorizations of loan types, but the classifications used by Haugen, Weinreich and later authors typically include only one category in which actual form is carried over, i.e. phonological form. It is presumably because of the recognition of the primacy of the spoken language that the written medium and the fact that users of modern national languages use words in *two* forms according to medium, phonemic and graphemic, have been considered secondary to the loan process.

However, some linguists of East Asian languages have observed that the western-based treatment of loans is not sophisticated enough to describe the loan process in East Asia, and an additional category of loan, the "graphic loan", has been identified. Masini (1993:128) defines the concept as:

> "when the language adopts both the meaning and the writing form of the foreign term. The phonemic shape of the word is determined by its own phonemic system, regardless of the phonemic shape of the words in the borrowing language."

Even amongst Western scholars specializing in East Asian linguistics, the term or its concept are still rarely referred to, except by the few who focus on loan processes between Chinese and Japanese (Masini 1993; Liu 1995; Cheng 2001).

In the following sections I shall introduce typical examples of the graphic loan in East Asia ('Chinese character graphic loans', section 2.1), explore those aspects of the languages that allow them to occur (2.2), and posit a mechanism to explain the process and how it contrasts with phonological loans (2.3). I shall then expand the framework to explore other cases of borrowing, most of which have conventionally been considered phonological loans (section 3).

2. Chinese character graphic loans in East Asia.

2.1. Data. Masini (1993) and Liu (1995) present sizable lists of words that are graphic loans between Japanese and Chinese during the nineteenth and early twentieth centuries as a result of contact with the West and modern Western concepts.

In the nineteenth century both Chinese and Japanese produced neologisms through the morphological resources of their own languages rather than resort to phonological borrowing to express new political, social, economic or scientific concepts. The preferred morphological resource was the East Asian equivalent of the neo-Classical compound. Just as Greek and Latin were the languages of civilization in Western Europe to be exploited for the creation of new technical vocabulary (Jesperson 1982:106-10, 112-3; Adams 1973:128-34; Bauer 1983:213-6), or Sanskrit and Pali in the Indian subcontinent and in much of South-East Asia (Masica 1991:70, 81-4), so Classical (or Literary) Chinese is the language of civilization and learning in East Asia, encompassing the users of Chinese, Japanese, Korean and Vietnamese. Consider, for example, the concepts of 'telegram' or 'aeroplane':[1]

(1a) English *telegram* ← Classical Greek *tēle-* 'far' + *grámma* 'written thing'

			(chosen over the arguably more correct derivation *gráphēma*)
Japanese	*denshin* 電信	←	Classical Chinese 電 ‘lightning’ therefore ‘electric’ + 信 ‘letter’
French	*aéroplane*	←	Greek *aér*, *aero*- ‘air’ + *plánon* ‘wandering (thing)’
Japanese	*hikōki* 飛行機	←	Classical Chinese 飛 ‘fly’ + 行 ‘travel’ + 機 ‘machine’

English, French, and Japanese in turn loaned certain neo-Classical neologisms into neighbouring languages, e.g. French *télégramme*, English *aeroplane*, or Korean *chŏnsin* ‘telegram’ and *pihaenggi* ‘aeroplane’. Most of the words listed by Masini (1993) and Liu (1995) are neo-Classical in nature, and a large number have been borrowed into neighbouring languages.

The question of which language first invented a word, and then loaned it to the others, is complicated. The assumption was often that reflected by Gao and Liu (1958) and repeated in Miller (1967) that these words were established in Japan. In the later nineteenth century, Japan rapidly modernized in the wake of the Meiji Restoration (1868) in order to compete with the Western powers. China and Korea, on the other hand, resisted modernization, with the result that Japan became technologically and militarily stronger. At the turn of the twentieth century, in the wake of the Sino-Japanese War (1895), large numbers of Chinese were studying in Japan, returning to become the intelligentsia of China. In playing catch-up, China learnt from Japan and translated large numbers of texts relating to Western-derived knowledge from Japanese (Masini 1993:107-8). In addition, Taiwan and Korea were annexed by Japan in 1895 and 1910 respectively, and remained under Japanese control till the end of the Pacific War. As a result, in the later nineteenth and early twentieth centuries it was from Japan that a large number of neologisms spread into Chinese and Korean.

More recent studies, such as Masini (1993) and Liu (1995), have shown that such movement was not exclusively from Japanese. Both provide evidence in the form of early citations in Chinese texts, written by native Chinese or by Western missionaries and their Chinese associates, of many words previously assumed to be neo-Classical compositions in Japanese years or decades later. The current concensus is that neo-Classical neologisms shared by Japanese and Chinese were created in some cases in Japan, in others in China. Masini (1993:149, 165-6, 168) provides the interesting example of ‘telegram’ (2):

(2a) C. *dianbao* 電報 ‘telegram’ → J. *denpō* 電報 ‘telegram’
(2b) J. *denshin* 電信 ‘telegram; telegraphy’ → C. *dianxin* 電信 ‘telegraphy; telecommunications’

Chinese and Japanese created different neo-Classical forms for this concept. Chinese then borrowed the Japanese form (with semantic modification) while Japanese borrowed the Chinese form, resulting in the two neologisms existing in both languages. Korean and Vietnamese, on the other hand, seem to have created neo-Classical forms of their own much less commonly, choosing rather to borrow the forms from Japanese and Chinese respectively (Sohn 1999:104; Nguyễn 1980b:97). The two main routes of source language and borrowing are summarized as (3) and (4):

(3)	Chinese	→	Japanese	→	Korean
		→	Vietnamese		
(4)	Japanese	→	Korean		
		→	Chinese	→	Vietnamese

We may add Korean and Vietnamese forms to (2):

(5)	C. *dianbao*	→	J. *denpō*	→	K. *chŏnbo*
		→	V. *điện-báo*		

(6)	J. *denshin*	→	K. *chŏnsin*		
		→	C. *dianxin*	→	V. *điện-tín*

The meanings of these words in Korean and Vietnamese are those found in Japanese and Chinese respectively. Mair (1992) and Liu (1995) also discuss “round-trip” forms, words that were invented in China, but because of the slowness of the country to modernize in the second half of the nineteenth century spread more quickly into Japan than across China. Their ultimate diffusion in China is to be attributed to the influence of Japan, and therefore they were borrowed ‘back’ into the language which had coined them. An example given by Liu (1995:275) is the neologism for ‘committee member; deputy’:

(7) C. *weiyuan* 委員 → J. *iin* 委員 → C. *weiyuan* 委員

We may add the Korean and Vietnamese forms, derived according to (3): K. *wiwŏn*, V. *ủy-viên*. A similar category is the “return graphic loan”, which, unlike the round-trip loan, is not a modern creation, but

which existed in older Chinese, and had become obsolete. Such forms were resurrected by Japanese to translate modern concepts, and were borrowed back into Chinese with the new meanings. An example from Mair (1992:11) and Liu (1995:336) is:

(8) C. *shehui*[2] 社會 'festal gathering around communal altar'
→ J. *shakai* 社會 'society'
→ C. *shehui* 社會 'society'

We may again add the Korean and Vietnamese forms: K. *sahoe*, V. *xã-hội*. All the examples given so far are phonologically similar, but these transfers between East Asian languages are not cases of phonological borrowing. Rather, it is the graphic form that is borrowed, and each language pronounces each grapheme according to pre-existing 'reading rules' in each target language.

Among the lists given by Liu (1995), there are various examples in which the Japanese and Chinese phonological forms are etymologically unrelated, but the two languages share a common graphic form. Though such forms are in the minority amongst graphic loans, they are of particular interest, not least because they illustrate clearly that such loans cannot be treated as phonological loans. The diffusion routes are one-way in (9), "round-trip graphic loan" (Chinese → Japanese → Chinese) in (10), and "return graphic loan" (Classical Chinese → new meaning in Japanese → Chinese) in (11). I have added the Korean and Vietnamese forms for completeness.

(9a) J. *tachiba* 立場 'standpoint' → C. *lichang* 立場
→ V. *lập-trường*
→ K. *ipchang* 立場

(9b) J. *kumiai* 組合 'union' → C. *zuhe* 組合
→ K. *chohap* 組合

(9c) J. *hiki-watashi* 引渡 'extradition' → C. *yindu* 引渡
→ V. *dẫn-độ*
→ K. *indo* 引渡

(9d) J. *kogata* 小型 'miniature' → C. *xiaoxing* 小型
→ K. *sohyŏng* 小型

(9e) J. *baai* 場合 'occasion' → C. *changhe* 場合
→ V. *trường-hợp*

(10a) C. *rukou* 入口 'entrance' → J. *iriguchi* 入口
→ C. *rukou* 入口
→ K. *ipku* 入口

(10b) C. *chukou* 出口 'exit' → J. *deguchi* 出口 → C. *chukou* 出口

→ K. *ch'ulgu* 出口

(11) C. *guangchang* 廣場 'open place'
→ J. *hiroba* 廣場 'town square'
→ K. *kwangjang* 廣場
→ C. *guangchang* 廣場
→ V. *quảng-trường*

Two other examples mentioned by other authors that may be added to (9) are 'market' (Masini 1993:196) and 'discount' (Tanaka & Lee 1986:128), the latter not occurring in Chinese or Vietnamese.

(12a) J. *ichiba* 市場 'market' → C. *shichang* 市場
→ V. *thị-trường*
→ K. *sijang* 市場
(12b) J. *waribiki* 割引 'discount' → K. *harin* 割引

A final interesting set of examples consists of phonological borrowings into one East Asian language (EL1) from the West, the transcriptions of which in character script are subsequently borrowed graphically into another East Asian language (EL2). Consider the following examples (adapted from Liu 1995:372 and Nguyễn 1980a:66, respectively), in which the EL1 attempt to copy a particular English (or French) phoneme accurately is realized with a quite different pronunciation in EL2:

(13)		EL1 Phonological Loan	EL2 Graphic Loan
(13a)	E. *Tha**m**es* →	Cantonese *Tai**m**si* 泰晤士 →	C. *Tai**wu**shi*
(13b)	E. *Tu**r**key* / Fr. *Tou**r**quie* →	C. *Tu'**er**qi* 土耳其 →	V. *Thổ **Nhĩ** Kỳ* Cantonese *Tou**yi**kei*

2.2. Character script, lexical strata and Sino-xenic. To understand the above data, we must understand both the nature and role of character script and the existence of the Sino-Japanese, Sino-Korean and Sino-Vietnamese lexical layers (collectively, Sino-xenic) in East Asia.

Character script was developed over three millennia ago in order to write the Chinese language. In contrast with phonographic systems, the principle of character script is that each morpheme is written with its own grapheme. Such scripts used to be characterized as "logographic" or "ideographic", terms still commonly used in the wider literature—for instance, Masini (1993) and Liu (1995) use "ideographic".

However, DeFrancis (1989: 68-9, 114-6) and others prefer the terms "morphosyllabic" or "meaning-plus-sound" to characterize the script. This is in part because terms such as "ideographic" tend to detract from the fact that each grapheme represents a specific phonemic sequence in Chinese, a syllable, rather than represent some abstract idea divorced from the spoken language.[3]

Koreans, Japanese and Vietnamese did not originally have writing systems of their own. As the large influx of Chinese culture and civilization entered what are now Korea, Japan and Vietnam, Classical Chinese was adopted as the (written) language of civilization (Hannas 1997:78; Nguyễn 1997:37; Takeuchi 1999:5). Classical Chinese texts and Classical Chinese translations of Buddhist texts became the basis of elite literature in the three countries, and till the twentieth century there was a significant native-composed literature written in Classical Chinese. In Korea and Vietnam, which were more intimately drawn into the Chinese sphere, vernacular writing remained even after its development subordinate to Classical Chinese (Hannas 1997:60, 83-4). As Lee (1997:25) observes regarding Korea, there was "the unspoken conceit that a literary life did not exist apart from China." The invention of *han'gŭl*, the Korean alphasyllabary, in 1446 was met with resistance encapsulated in Ch'oe Malli's famous memorial that likened the abandonment of character script as a move towards barbarism (Lee 1997:25-6). It was not till the very end of the nineteenth century that *han'gŭl* acquired official status and *han'gŭl* or *han'gŭl*/character mixed script replaced pure character script (Sohn 1999:144-5).

The position of Classical Chinese in Japan, Korea and Vietnam resulted in the development of reading traditions, which governed how the educated elite should pronounce Chinese when reading Classical texts aloud: Sino-Japanese, Sino-Korean, and Sino-Vietnamese. These reading traditions were based on earlier phonological loans: they were phonological copies of various dialects of Tang or pre-Tang Chinese (Pulleyblank 1984:62). Different waves of influence resulted in more than one layer of Chinese readings, which is most obvious in Japan where both pre-Tang (Early Middle Chinese) and Tang (Late Middle Chinese) pronunciations have been codified as *go'on* and *kan'on* readings. It is not uncommon for characters in Japan, therefore, to have more than one Sino-Japanese reading (Sampson 1985:180-1).[4] The position of Classical Chinese meant that any Chinese character, no matter how obscure, could have a Sino-Japanese, Sino-Korean or Sino-Vietnamese pronunciation, and that any Chinese morpheme or word existed latently in these languages and was thus available to be used, described by Miller (1967:244-5) as a "principle of total availability."

Phonological adaptation to the target language at the time of borrowing and subsequent sound changes within the various languages

has resulted in the readings in current Sino-Japanese, Sino-Korean, Sino-Vietnamese and the various 'dialects' of Chinese differing from each other, sometimes quite substantially (Pulleyblank 1984:62; Sohn 1999:103).

(14a)	木	'tree/wood'	EMC.:	*muwk*
			Mandarin:	*mu*
			Cantonese:	*muk*
			SK.:	*mok*
			SV.:	*mộc*
			SJ. (*go'on*):	*moku*
			SJ. (*kan'on*):	*boku*
(14b)	入	'enter'	EMC.:	*nyip*
			Mandarin:	*ru*
			Cantonese:	*yap*
			SK.:	*ip*
			SV.:	*nhập*
			SJ. (*go'on*):	*nyū*
			SJ. (*kan'on*):	*ju*

Chinese words were borrowed gradually from the written language into the spoken languages, and were pronounced according to the established reading traditions. Such words retained their Chinese orthography even when written in vernacular texts. It is estimated that half to 60% of the vocabulary of modern Japanese and Korean (Shibatani 1990:142-3; Sohn 1999:87-8), and up to 70% of the words in a formal Vietnamese text are of Chinese origin (Nguyễn 1997:76).

Moreover, in Japan and Korea, it is conventional not to make a two-way distinction between native and loan vocabulary, but to make a three-way distinction, one which is generally followed in Western works on the subject: 'native vocabulary' (J. *yamatokotoba/wago*, K. *koyuŏ*), 'Sino-xenic vocabulary' (J. *kango*, K. *hanchaŏ*), and 'loan vocabulary' (J. *gairaigo*, K. *oeraeŏ*) (Shibatani 1990:142-5; Iwasaki 2002:29-32; Sohn 1999:87-92; Lee & Ramsey 2000:135-6). 'Sino-xenic vocabulary' includes (a.) original (pre-modern) loans from Chinese, (b.) neo-Classical (or older) creations from Chinese elements within Japanese or Korean, and (c.) the graphic loan of neo-Classical creations from elsewhere. 'Loan vocabulary' consists of modern *phonological* loans. This three-way division recognizes both the long-term influence of the Chinese cultural sphere and the fact that Chinese-derived vocabulary, through its dominance of the lexicon and the fact that it does not consist of modern phonological borrowings, does not feel as alien as 'loan vocabulary' does to native Japanese and Korean speakers (Lee & Ramsey 2000:136). In the case of Japanese, this

status is reflected through orthographic principles: native and Chinese-derived vocabulary are classed together (both written in characters and/or the *hiragana* syllabary) in contrast with loan vocabulary (written in the *katakana* syllabary). Moreover, modern *phonological* loans from Chinese are normally treated as 'loan vocabulary'.

In the case of Japan, the adoption of Chinese character script has resulted in the device whereby a character may be used to represent a native Japanese morpheme of similar meaning to the Chinese morpheme that the character was developed to write. Because the two languages are genetically unrelated the Chinese-derived readings (*on*) and native Japanese readings (*kun*) are etymologically quite unrelated.

(15a)	木	'tree/wood'	*on* (SJ.):	*moku*; *boku*
			kun (native J.):	*ki*; *ko-* 'tree'
(15b)	入	'enter'	*on* (SJ.):	*nyū*; *ju*
			kun (native J.):	*hair-*, *ir-* 'enter'
				ire- 'put in'

Which reading is appropriate for a particular character depends on which other character(s)—if any—it is combined with in a given word. As Chinese-derived words are predominantly poly-morphemic, compounds of two or more characters tend to be pronounced according to Sino-Japanese reading (*on*), while characters that occur alone—or with native Japanese inflectional material written after them—are pronounced according to native Japanese reading (*kun*). There are, moreover, cases in which a graphic word can be pronounced in more than one way. For example:

(16a) *ukigumo* ~ *fuun* 浮雲 'floating cloud'
(16b) *ichiba* ~ *shijō* 市場 'market'

In both examples, the first pronunciation is entirely according to native Japanese reading, the second entirely according to Sino-Japanese reading.[5] In addition, there are a few Japanese words with alternative pronunciations, one of which is hybrid.

(17a) *kōba* ~ *kōjō* 工場 'factory'
(17b) *harikyū* ~ *shinkyū* 針灸 'acupuncture and moxibustion'

In these examples, the first pronunciation is a hybrid reading, in which one character is given a Sino-Japanese reading (*kō*, *kyū*), the other a native Japanese one (*ba*, *hari*). The second pronunciation is entirely Sino-Japanese. This shift between readings is often found

in other aspects of neologism or morphological change in Japanese. Consider morphological truncation in Japanese, in which a phrase is reduced to a single word by deleting all but one character—usually but not exclusively the first—from each component.

(18a) *Ōsaka* 大阪 'Osaka'+ *Kōbe* 神戸 'Kobe' → *Hanshin* 阪神 'Osaka-Kobe [railway]'

(18b) *Waseda daigaku* 早稲田大學 'Waseda university' → *Sōdai* 早大 'ditto'

It is normally the case that when such truncation is applied to a phrase any native Japanese reading is replaced by its Sino-Japanese reading, hence *han*, *shin*, and *sō*. Consequently, Japanese is characterized by an extremely complex system of orthography-to-pronunciation "mapping" (Hannas 1997:26-32). Despite the existence of various readings to a single character, it is normally the case that neo-Classical character compounds are read according to a Chinese-derived reading, and if there is more than one such reading one normally dominates. So, despite a significant number of established words containing (15a) where it is pronounced *moku*, it is the other Sino-Japanese reading *boku* that is chosen to read any unfamiliar word. Hence, reading preferences and orthographic context together make the pronunciation of almost every unfamiliar neologism predictable. Examples (9-12) are exceptions.

Japanese, Korean, Vietnamese and the various dialects of Chinese, therefore, are linked by a common lexical and orthographic heritage. The non-Chinese languages have a full repertoire of Chinese morphemes with their accompanying readings borrowed phonologically in the seventh, eighth or ninth centuries. This repertoire of morphemes and their reading traditions are the basis of graphic loans in East Asia.

It is interesting to note that until recently it was normal practice in all countries to pronounce other East Asian names according to one's own reading traditions. Thus it is that the names of figures from recent Chinese history such as Mao Zedong and Deng Xiaoping are normally realized as graphic loans:

(19)	Chinese:	*Mao Zedong*	*Deng Xiaoping*
	characters:	毛澤東	鄧小平
	Japanese:	*Mō Takutō*	*Tō Shōhei*
	Korean:	*Mo T'aektong*	*Tŭng Sop'yŏng*
	Vietnamese:	*Mao Trạch Đông*	*Đặng Tiểu Bình*

Such approaches to reading East Asian names have been problematic. Until the early 1980s, it was conventional to pronounce the

names of all Chinese and Koreans according to Sino-Japanese readings, including ethnic Chinese and Koreans within Japan's own population. Not all Chinese and Koreans were happy with the distortion of their names. In one case, a suit between an ethnic Korean Ch'oe Ch'anghwa and the state broadcaster NHK went to the Japanese Supreme Court. Ch'oe Ch'anghwa had protested that NHK's continued pronunciation of his name in the 1970s and early 1980s as *Sai Shōka* was against his personal dignity and human rights (*Japan Times*, 17 February 1988; reported in Association Fighting for the Acquisition of the Human Rights of Koreans in Japan 1990).

More recently, the tendency in both Japan and Korea has increasingly been to pronounce names of other East Asians as phonological loans. Consequently, the name of the previous president of the People's Republic, *Hu Jintao*, is pronounced in Japan and Korea phonologically—although in the case of Japan (where it is still written only in characters) a Sino-Japanese reading is also encountered. Interestingly, it is Vietnam, which has fully abandoned character script since the early twentieth century, that consistently still uses Sino-Vietnamese readings, i.e. borrowing current Chinese names as graphic loans, not phonological loans.[6]

(20)	Chinese:	*Hu Jintao*	
	characters:	胡錦濤	
	Japanese:	*Fū Chintao*	(phonological)
		Ko Kintō	(graphic)
	Korean:	*Hu Chint'ao*	(phonological)
	Vietnamese:	*Hồ Cẳm Đào*	(graphic)

Twentieth-century language reform and developing orthographic conventions have resulted in different patterns of character use in the different countries. At one extreme, Vietnamese has long since abandoned the use of characters, and is written entirely in the Roman alphabet (Hannas 1997:84-7). Nam (2001:110) observes that no text composed in Vietnamese has been printed in character script since 1914. Character script has also been abolished in North Korea since 1945 (Taylor & Taylor 1995:241-2). In South Korea, however, characters are still in use, though most texts are now written in *han'gŭl* and either make no use of characters or use them to disambiguate an unfamiliar word (Hannas 1997:61-72; Lo Bianco 2001). Japanese, however, makes as much use of characters as possible, at least within the advisory limit of the *Jōyō kanji-hyō* (List of Everyday Characters; Gottlieb 1995:183-98), within a script that mixes them with two sets of syllabary (*hiragana* and *katakana*). The *hiragana* syllabary is also used to gloss the pronunciation of characters in text, or can replace them when

the characters may be considered unfamiliar (for example in children's books). Moreover, in post-war Japan and on a much greater scale in the People's Republic there have been official character simplification schemes that have resulted in the same characters often being written differently in different countries (Hannas 1997:19-24; Chen 1999:154-62; Seeley 2000:156-7). For example, 'town square' (11) and 'Mao Zedong' (19) are now written as follows:

(21)	Chinese:	PRC:	广场	(simplified characters)
		Elsewhere:	廣場	(traditional characters)
	Japan:	Usually:	広場	(simplified characters)
		Esp. gloss:	ひろば	(*hiragana*)
	Korea:	Either:	광장	(*han'gŭl*)
		Or:	廣場	(traditional characters)
	Vietnamese:		*quảng-trường*	(Roman alphabet)

(22)	Chinese:	PRC:	毛泽东	(simplified characters)
		Elsewhere:	毛澤東	(traditional characters)
	Japan:	Usually:	毛沢東	(simplified characters)
		Esp. gloss:	もうたくとう	(*hiragana*)
	Korea:	Either:	모택동	(*han'gŭl*)
		Or:	毛澤東	(traditional characters)
	Vietnamese:		*Mao Trạch Đông*	(Roman alphabet)

Character simplification may be considered a rather extreme case of difference of font rather than difference of script, as throughout East Asia traditional and simplified variants are considered still to be essentially the same characters. Though greater in scale, this is essentially similar to 'font' differences in English writing between, for example, a cursive handwritten 'a' and a typeset 'a', or between printed Fraktur script in Germany and printed Roman script in the first half of the twentieth century. Consequently, all East Asian characters are given in traditional form elsewhere in this paper.

2.3. Graphic loan theory. Before we consider the theoretical aspects of graphic borrowing, we need to consider the concept of spelling pronunciation within a language. There has long been recognition that spelling may influence pronunciation (Bloomfield 1935:487-8; Jesperson 1982:107-9; Görlach 2002:161, 179-85). For example, the spelling of the English word *often* has in many speakers' usage led to the insertion of a previously lost /t/: /ˈɒfn̩/ → /ˈɒftn̩/. We may characterize this as orthographic interference on pronunciation. The term, as

generally used, implies forms that are both sporadic and unpredictable. They are, in essence, irregularities in the system.

In addition to its use in connection with established vocabulary within a language, spelling pronunciation has also been used to explain the effect of the written medium on the output of the phonological loan process. Haugen (1972 [1950]:96) writes:

> "Spelling pronunciations may be suspected wherever the reproduction varies from normal in the direction of a pronunciation traditionally given to a letter in the borrowing language. In any literate community such influence is likely to be present in a number of words which have been brought to the community in writing."

Presented in this way as "influence" on a phonological process, the term spelling pronunciation as applied to loanwords implies not just that it is sporadic and unpredictable, but also secondary to phonological factors. This secondary status is reflected by the fact that most studies of borrowing make no mention of orthographic factors at all, not least of which Weinreich (1953). If mentioned, it tends to be in passing. Haugen, for example, discusses it no further than the quotation given above. Other treatments are similarly brief, making necessary recognition of the existence of orthographic influence while avoiding taking it further (e.g. Quackenbush 1977:150; McMahon 1994:206). Peperkamp (2005:10) briefly dismisses the theoretical importance of orthography while encapsulating what may be a common belief:

> "Given the metalinguistic character of orthography, adaptations that are (partly) based on spelling correspondences are of course of little interest to linguistic analyses."

Spelling pronunciations, therefore, are generally viewed as sporadic, unpredictable, and secondary to phonological factors—even of little importance to linguistic theory. This view, however, is not valid for the East Asian phenomenon presented above.

Firstly, East Asian character-based loans are not examples of orthographic *influence*; they show no evidence of *any* phonological input at the time of borrowing. They are purely graphic, the readings assigned to them according to conventions relating graphemes to pronunciations. When the Japanese *tachiba* 'standpoint' was borrowed into Chinese, the Chinese merely read each character with the pronunciation conventionally associated with it within Chinese. The fact that Japanese *tachiba* is pronounced according to native Japanese readings, rather than Sino-Japanese readings, reinforces the total irrelevance of the source language phonological form.

Secondly, East Asian character-based loans are highly regular, in that, apart from some minor considerations, the pronunciation that any given graphic loan acquires is normally predictable, at least if the target language is Chinese, Vietnamese or Korean. In the case of Japanese, this is also normally the case too, although there are a few exceptions, such as Chinese *guangchang* → Japanese *hiroba*, rather than the Sino-Japanese reading **kōjō* that might have been expected.

Thirdly, they are not isolated cases, but constitute a sizeable portion of the 'modern' vocabulary of Chinese, Japanese, Korean and Vietnamese, covering the fields of science, technology, politics, sociology, and economics, among others. Masini's (1993:148) study of nineteenth century Chinese texts reveals around 850 such loans from Japanese into Chinese (including "round-trip" loans). As illustrated at the end of the previous section, even names of people of prominence have been borrowed as graphic loans.

These three points illustrate that East Asian character-based loans are not just a secondary influence on a phonological process, unpredictable and sporadic. Rather, they are independent of phonological input, largely predictable, and widespread. In short, graphic borrowing is *systematic*. The aim of this section is to outline the mechanisms involved in this systematic process, contrasting graphic borrowing with phonological borrowing.

Weinreich (1953:47) describes phonological loans as "the outright transfer of the phonetic sequence from one language to another." Graphic loans may therefore be defined as the outright transfer of the orthographic sequence from one language to another.

In a literate society, words take two forms according to medium: a phonological form in the medium of spoken language, and an orthographic form in the medium of written language. When words are borrowed between two modern languages that have standardized orthographies and high levels of literacy, the "outright transfer" may be through either medium. Once borrowed, a form is established within the source language for the other medium. This latter form is based on rules of phonological/orthographic correspondence within the source language.

Consider the (American) English word *jitterbug* in Japanese, a clear example of a phonological loan given by Miura (1979:78).

(23)	US English	['ʤɪrəbʌg]	..…..…….	<jitterbug>
		↓		
	Japanese	/ʤiɾuba/	……..……	<ジルバ>

Graphic forms are represented here within < >. Dotted lines represent the correspondence between spoken and written forms within the

same language. The arrow represents which forms and which media constitute the immediate input and which the immediate output.

If we take example (12b) Japanese *waribiki* → Korean *harin* (phonologically /halin/), we may represent the correspondence as follows:

(24) Japanese /waɾibiki/ ..……. <割引>
↓
Korean /halin/ ….…….… <割引>

The important output of all categories of loan process—phonological, graphic, semantic and translation—is a phonological form in the target language. Phonological loans are direct phonological/phonetic form-to-phonological form copies, and so involve a single stage, variously described in terms of rules or constraints. Once the phonological form (the phonological output) is established in the target language, literate users of a language will then decide on its written representation (graphic output). One choice is to transcribe the phonological output according to the usual rules of the target language (graphic output). Thus, we may characterize phonological loans in terms of two stages, producing in turn the phonological and graphic output (25).

(25)

SL Forms (US English, dialect):	[ˈʤɪɾəbʌg] = <jitterbug>
Phonological/Phonetic Input:	[ˈʤɪɾəbʌg]
Stage 1: Phonological Rules:	(Can be expressed in terms of Optimality Theory)
Phonological Output:	/ʤiɾuba/
Stage 2: Graphic Rules:	Transcription of phonological output in *katakana*: /ʤi/ → <ジ> /ɾu/ → <ル> /ba/ → <バ>
Graphic Output:	<ジルバ>
TL Forms (Japanese):	/ʤiɾuba/ = <ジルバ>

The phonological output in the target language is achieved after just one stage. The graphic output is achieved only after a second stage. In the example given above, the graphic output is derived from the phonological output. An alternative strategy often followed in European

languages is simply to borrow the source language graphic form, e.g. English *façade*, which uses the spelling used in the source language, French. An East Asian parallel is Japanese /pekin/ 'Beijing', which is not a graphic loan from Chinese, as a graphic loan would have given /hokkjoo/, yet the word is still usually written in the same characters as are used in Chinese. In a sense, such loans could be considered simultaneously phonological and graphic:

(26)	French	/fasɑːd/	……<façade>
		↓	↓
	English	/fə'sɑːd/	……<façade>
(27)	early modern Chinese	/peikiŋ/	……<北京>
		↓	↓
	Japanese	/pekin/	……<北京>

However, the means by which the target language phonological form is achieved is of prime importance, and in both the above cases it is not achieved via the written form. These are, therefore, phonological loans, with subsequent matching of borrowed orthography with the phonological output. The Stage 2 Graphic Rules would therefore be: write in SL graphic form.[7]

The graphic loan process can be described in similar terms. Stage 1 results in the phonological output, while a following Stage 2 results in the graphic output; the difference between the graphic loan process and the phonological loan process, therefore, is primarily the nature of the initial input: graphic loans result from a graphic input; phonological loans result from a phonological input. The two loan processes are comparable and parallel in nature.

(28)

SL Forms (Chinese):	/^{35}mau ^{35}tsẓ ^{55}tuŋ/ = <毛澤東>
Graphic Input:	<毛澤東>
Stage 1: Phonological Rules:	Chinese loans: choose Sino-Japanese readings as default <毛> → /moo/ <澤> → /taku/ <東> → /too/
Phonological Output:	/mootakutoo/

Stage 2: Graphic Rules:	According to register and function, either: a. Preserve the graphic input b. Transcribe phonological output into *hiragana* /mo/ → <も> /o/ → <う> (marker of long vowel) /ta/ → <た> /ku/ → <く> /to/ → <と>
Graphic Output:	<毛澤東> ~ <もうたくとう>
TL Forms (Japanese):	/mootakutoo/ = <毛澤東> ~ <もうたくとう>

A similar process to that presented above characterizes the borrowing of the same name from Chinese into Korean or into other 'dialects' of Chinese, such as Cantonese. The case of loans into Vietnamese, however, is fascinating because Vietnamese is no longer written in Chinese characters. Monolingual Vietnamese speakers are generally unfamiliar with characters any more. However, Vietnam has a long tradition of writing both Chinese—which was essentially the official written language of the country for most of its history—and Vietnamese by means of Chinese characters (*chữ nôm*). All loans from Chinese in the latter were written in the same characters as the same words were written in Chinese. Thus, even though characters are not used for Vietnamese any more, there is an educated tradition that correlates Sino-Vietnamese readings with Chinese characters, and the elite who introduce the Chinese names follow this tradition.

(29)

SL Forms (Chinese):	/^{35}mau ^{35}tsẓ ^{55}tuŋ/ = Trad. <毛澤東>
Graphic Input:	<毛澤東>
Stage 1: Phonological Rules:	Chinese loans: choose Sino-Vietnamese readings as default <毛> → /^{44}mau/ <澤> → /^{31}ʈʂaˀc/ <東> → /^{44}ɗoŋ/
Phonological Output:	/^{44}mau ^{31}ʈʂaˀc ^{44}ɗoŋ/

Stage 2: Graphic Rules:	Transcribe phonological output into Roman alphabet a. /m/ → <m> /au/ → <ao> /ʈʂ/ → <tr> /ac/ → <ach> /ɗ/ → <đ> /oŋ/ → <ông> /^{44}/ → zero /^{31} ʔ/ → < ̣ > b. Write space between each syllable c. Capitalize the initial of each syllable of a name
Graphic Output:	<Mao Trạch Đông>
TL Forms (Vietnamese):	/^{44}maʊ ^{31}ʈʂaʔc ^{44}ɗoŋ/ = <Mao Trạch Đông>

The borrowing of *Mao Zedong* predates character simplification in the People's Republic and in Japan. Subsequent graphic differences shown in (22) are subsequent language-internal developments that apply to the graphemes concerned in all occurrences; whether the word is native or loan is irrelevant. However, there are grounds for recognizing a pre-adaptation stage in the loan process, which we may term 'input modification', which modifies the graphic form of the source language to a form that is appropriate as the input into the process.[8] With character scripts, we observe two major cases.

Firstly, names of figures in the People's Republic who have become prominent after the character simplification process has taken place frequently contain characters that have been significantly simplified. For example, both characters used to write the personal name *Jintao* of President Hu Jintao have been simplified. When this name is borrowed graphically into Japanese, Vietnamese or even the Chinese of Taiwan, Hong Kong or the diaspora, the form needs to be graphically modified to traditional characters so that those responsible for introducing the loan into the spoken language are able to recognize the characters, before they are able to apply Stage 1.

Secondly, graphic borrowing of words formed from native Japanese components (9, 12) is complicated by the fact that Japanese is, unlike Chinese, an inflected language, and so verbal endings are written in the Japanese *hiragana* syllabary after any character used to write a verb (Sampson 1985:173, 184-5). Consequently, compounds derived from native verbs frequently retain the *hiragana* spelling. *Waribiki* (12), for example, is a nominalization of a two verb compound, and may be written in Japanese in three ways: a *hiragana* after both component char-

acters; a *hiragana* after only the second component character; or with no *hiragana*. This is shown in (30), with *hiragana* elements underlined.

(30) *waribiki* 'discount' 割り引き
割引き
割引

Hiragana is unique to Japanese; it has no role in other East Asian orthographies, and so input modification involves choosing a character-only variant, or, put differently, deleting any *hiragana* from a source language form. The borrowing of *waribiki* into Korean illustrates the replacement of readings with etymologically totally unrelated readings:

(31)

SL Forms (Japanese):	/waribiki/ = <割り引き> ~ <割引き> ~ <割引>
Stage 0: Input Modification:	Use character-only variant as input
Graphic Input:	<割引>
Stage 1: Phonological Rules:	Japanese loans: choose Sino-Korean readings as default <割> → /hal/ <引> → /in/
Phonological Output:	/halin/
Stage 2: Graphic Rules:	According to register and function, either: a. Preserve the graphic input b. Transcribe phonological output into *han'gŭl*, observing morpheme division represented in the graphic input rather than syllable division /hal/ → <할> /in/ → <인>
Graphic Output:	<割引> ~ <할인>
TL Forms (Korean):	/halin/ = <割引> ~ <할인>

The above illustrates how graphic loans may be considered a parallel phenomenon to phonological loans, the two differing in terms of which is the medium of initial transfer: written language or spoken language. Of course, one could characterize the graphic loaning

process as a type of translation loan, in which the morphemes of one language are translated into corresponding morphemes of the other language. However, to reduce them to merely a type of translation loan fails to recognize that such loans enter the language through the written medium, and the role of a lexicon of conventional readings for characters. Translation loans may be characterized as a process mediated by the meanings of the source language form:

(32) Translation Loan: SL Morphemes → Meanings → TL Morphemes

Graphic loans, on the other hand, are mediated by the orthography:

(33) Graphic Loan: SL Phonological Form → Orthography → TL Phonological Form

Other reasons for treating graphic loans as entirely different from translation loans are:

(i) Some graphic loans are semantically opaque, and therefore there are no morphemes with clearly independent meaning to translate. Examples of semantically opaque loans include C. *shehui* and J. *shakai* (8) or foreign names transcribed into Chinese characters used for phonetic value only (13).
(ii) With the exception of graphic loans which in their Japanese form are pronounced according to native Japanese (*kun*) pronunciation, the target language uses not just morphemes of similar meaning, but the *etymologically identical* morphemes to those used in the source language (Miller 1967:260).

3. Extension of graphic loan theory. The above account has been restricted to the conventional definition of the graphic loan amongst East Asian linguists. Indeed, Masini (1993:128), whose definition of the concept of graphic loan was quoted at the start of this paper, considers it only to be relevant to languages that share character script:

> "Graphic loans are only possible if the languages share the same ideographic writing system and the relationship between the semantic and the graphic shape of the words is direct and not mediated by the phonemic shape."

However, this statement is clearly too restrictive. It ignores the fact that Vietnamese has borrowed graphically from Chinese character forms, even though Chinese character script is no longer used for writing Vietnamese. The graphic output in the target language need not

be in the same script as the source language form, and so, within the framework and definitions presented above, we shall consider whether cases of linguistic borrowing where the source form is not written in character script can also be characterized as graphic loans. We shall consider four broad cases: acronyms generally (section 3.1), English loans into Japanese (3.2), English loans into Chinese (3.3), and loans from other languages into English (3.4). In all cases what we observe is independent of phonological input and arguably systematic, although the rules underlying the system may be complex.

3.1. Acronym graphic loans. Zhou and Jiang (2004:50) observe that Masini's (1997) term "graphic loan" may be usefully applied to English-derived acronyms in Chinese. We can take this observation further and recognize acronyms, or strictly initial-letter abbreviations, as interesting examples of graphic loans between *any* written languages.

(34)	<CD>	English:	/siːdiː/
		French:	/sede/
(35)	<PR>	English:	/piːɑː/
		Japanese:	/piiaaɾu/
		Korean:	/p^{h}iaɾɯ/

The French pronunciation of (34) is based entirely on the spelling <CD>, as the conventional reading of <C> in isolation (i.e. the name of the letter) is /se/ and that of <D> is /de/. Similarly, though Japanese and Korean loans from English typically reflect a non-rhotic British source, the conventional readings of <R> as the name of the letter is /aaru/ and /aɾɯ/ respectively, not */aa/ and */a/, and this is reflected in the Japanese and Korean readings of <PR>.

3.2. English loanwords in Japanese. Japanese has borrowed large numbers of words from English over the last fifty or more years. Much has been written about these loans, and their generally predictable adaptation to the Japanese phonological system. Such approaches as Lovins (1975), Quackenbush (1977), or Kokuritsu Kokugo Kenkyūjo (1990) are rule-based, formally or informally. The usual assumption is that these loans are phonological loans, and explanations for the changes that take place between source and target language are to be found in phonological theory, and spelling influence is treated as exceptional.

There are various problems with this approach. Firstly, although American English is the variety of English that most Japanese are exposed to and which is the prestige variety that six years' worth of compulsory English education aims at (Honna 1995:59), loans from

English generally reflect features of British English pronunciation (Quackenbush 1977:150; Tranter 2000:384-5).

Secondly, there are several processes that are applied to loans from English that clearly reflect orthographic rather than phonological influence. On the one hand there are various isolated cases where a spelling influence may be invoked to explain the unusual phonological output. Tranter (1997:148) gives the following examples:

(36)	English		Japanese	
	<blouse>	/ˈblaʊz/	/buɾausu/	*/buɾauzu/
	<close-up>	/ˈkləʊˌsʌp/	/kuɾoozuappu/	*/kuɾoosuappu/

Japanese does not retain the /z/ in /ˈblaʊz/, inserting /s/ instead by analogy with such spellings as <house>, <mouse> etc. As an example of the reverse, the /s/ in /ˈkləʊˌsʌp/ is not retained in Japanese but replaced with /z/ by analogy with the homograph <close> /ˈkləʊz/.

On the other hand, there are certain systematic phenomena, particularly the Japanese output corresponding to 'reduced vowels' in English unstressed syllables. Tranter (1997:151-2) discusses the realization of English /ə/, /l̩/, /n̩/, and /m̩/, which only occur in unstressed syllables, in Japanese. Japanese has neither a similar vowel nor unstressed syllables. The phonological output is dependent in almost all cases on the spelling of the English original.

(37)	English		Japanese	Examples
	/ə/	<er/ar/re/ure/our>	/aa/	<danc**er**> → /dansaa/
	/ə/	<a>	/a/	<extr**a**> → /ekisotoɾa/
	/ə/	<o>	/o/	<producti**o**n> → /puɾodakuʃon/
	/ə/	<e>	/e/	<tal**e**nt> → /taɾento/
	/ə/	<u>	/a/	<bon**u**s> → /boonasu/

Similar rules may be observed in the treatment of English unstressed /ɪ/, so the second syllable of *rocket* /ˈɹɒkɪt/ is treated as if a stressed syllable *ket* */ˈket/, to give *roketto*, a form which would not have occurred if it were a true phonological loan. The treatment of English schwa in (37) above is determined by spelling analogies in stressed syllables:

(38)		Spelling analogies
	<danc**er**> → /dansaa/	<t**e**rm> → /taamu/
	<extr**a**> → /ekisotoɾa/	<f**a**n> → /ɸan/
	<producti**o**n> → /puɾodakuʃon/	<b**o**ss> → /bosu/
	<tal**e**nt> → /taɾento/	<c**e**nt> → /sento/

<bon**u**s> → /boonasu/ <b**u**s> → /basu/

The treatment of English reduced vowels is particularly significant. Firstly, it is highly predictable and systematic. Secondly, as most English words are polysyllabic, and most polysyllabic English words contain at least one reduced vowel, it accounts for a majority of English-derived loans. I would therefore argue that the overwhelming majority of English loans in Japanese are graphic loans. The importance of spelling is acknowledged by various authors, but little is made of it. Theoretical treatments tend to present borrowing in terms of English phonology → Japanese phonology, resorting to spelling only when it cannot be overlooked. In her opening comments, for instance, Quackenbush observes both that "Some words came in primarily through the oral medium […] while others were introduced through the written medium" and that "Some loanwords have their Japanized forms based on American English rather than British" (Quackenbush 1977:150), but makes no further reference to these points, outlining rules governing the output of English → Japanese borrowing, presented in terms of the phonology of both languages (Quackenbush 1977:152-64). Lovins, on the other hand, discusses in great detail the rules and exceptions for English → Japanese borrowing in terms of segmental phonology (Lovins 1977:53-70, 75-119), but at various points notes that exceptions to the rules are based on English spelling, observing in connection with the treatment of English reduced vowels: "an overwhelming number of Western words in Japanese entered at least partly by the 'eye route'. They are just too close to the Western spelling" (Lovins 1977:53). Despite such observations, there appears to have been little attempt in the literature to formalize the role of spelling. It is the case that the phonological and graphic output in Japanese of the overwhelming majority of loans from English is predictable (Quackenbush 1977:152), and can be reduced to rules. Lovins notes that English <o> in certain loans from US English is realized as Japanese /a/, but in most words from English it is realized as /o/. She attempts to elicit /a/ in experiments with Japanese informants, but fails (Lovins 1975:59).

The argument that English loans into Japanese are usually entirely graphic loans is supported by the small number of clear-cut phonological loans during the twentieth century. Consider the English word *jitterbug*, presented earlier as an example of a phonological loan. The rules for conversion into Japanese following the principles that apply to most English loans would be expected to give */ʤittaabaggu/ or */ʤittaabagu/. These do not occur.[9] The form that actually occurs is /ʤiɾuba/. Although this may be considered an irregular form, it is conventionally treated as being more phonological. Miura, from whom

the example was taken, observes that it did not produce the expected form “which would have been the case if the Japanese, as they normally do, had closely followed the spelling of the original word” because it was “a word brought into Japanese not by intellectuals, but by people who had actual contact with GIs” (Miura 1979:78). A comparison of */ʤittaabaggu/ and /ʤiɾuba/ shows that it is /ʤiɾuba/ that is a true phonological loan from American English [ˈʤɪɾəbʌg]. The flap realization of the onset of the second syllable, the short central vowel in the second syllable corresponding to English schwa, and the realization of the final unreleased plosive as zero is consistent with the processes of phonological copying. It entered post-war Japanese through direct contact between Americans and Japanese, the latter hearing the word—without necessarily knowing how it was spelt—and copying it phonologically.

Although */ʤittaabaggu/ does not occur, it is nevertheless the form we would have expected according to the rules, and the vast majority of words that enter Japanese obey these rules. The pattern of the majority of English loans in Japanese predict with great accuracy that schwa would be changed to a long vowel and a final unreleased plosive would be realized as a geminate consonant + paragogic vowel. Genuinely phonologically-derived forms such as /ʤiɾuba/, or the early twentieth-century /puɾin/ ← *pudding* (Loveday 1996:69) are exceptions. Compare the latter with the graphically derived form *puddingu*.

The process may be described in terms of the framework presented earlier. # is used to indicate a word-boundary.

(39)

SL Forms (English):	/ˈblaʊz/ = <blouse>
Stage 0: Input Modification:	None
Graphic Input:	<blouse>
Stage 1: Phonological Rules:	<#CC> → /#CuC/ <Couse> → /Caʊs/ by analogy with <mouse>, <house> etc. <C#> → /Cu#/ etc.
Phonological Output:	/buɾausu/

Stage 2: Graphic Rules:	Transcribe phonological output into *katakana* /bu/ → <ブ> /ɾa/ → <ラ> /u/ → <ウ> /su/ → <ス>
Graphic Output:	<ブラウス>
TL Forms (Japanese):	/buɾausu/ = <ブラウス>

3.3. English loanwords in (Mandarin) Chinese. In dealing with English loans into Chinese, we must be careful to distinguish between different varieties ('dialects') of Chinese, particularly standard Chinese ('Mandarin' = *Putonghua* = *Guoyu*) and Cantonese. There are various phonological loans from English into Cantonese; the most common of these are assigned characters so that they can be written; and some character forms are graphically loaned into standard Chinese in the same way as described in section 2.1 above. An example is that of English *taxi*:

(40)

SL		Phonological Loan		Graphic Loan
E. /ˈtæksiː/	→	Cantonese /tiksi/		
		↓		
		<的士>	→	C. <的士>
				↓
				/tiʂɻ/

Descriptions of loanwords into standard Chinese frequently do not distinguish direct loans from forms like (40), for example, in the case of *taxi*, Yip (2000:332). Lou (1992), too, in his comparison of differences of name transcription between the People's Republic, Taiwan and Hong Kong, makes limited reference to such Cantonese-derived forms, and he gives forms of foreign names in Hong Kong in Mandarin form. This obscures the fact that the dominant variety of Chinese in Hong Kong is Cantonese—even more so in 1992—and leads to misrepresentations. For example, he illustrates how the name 'Sihanouk' appears differently in the different Chinese-speaking countries:

(41)

PRC:	西哈努克	*Xihanuke*
Taiwan:	施亞奴	*Shiyanu*
Hong Kong:	施漢諾	*Shihannuo*

This leads him to observe that "the final /k/ of Sihanouk is represented in M[andarin] but dropped by T[aiwan] and H[ong Kong]" (Lou 1992:124). This may be true for Taiwan, but for Hong Kong the situation is more complex. The Cantonese reading of the Hong Kong characters shows that /k/ is indeed present for Cantonese speakers:

(42) Hong Kong: 施漢諾 *Sihonnok*

The borrowing relationships between Chinese dialects and English may be characterized by the following, admittedly simplified statement (which ignores both acronyms (see section 3.2) and the significant role of translation loans):

(i) Direct loans from English into Cantonese (and the other 'dialects') are generally phonological (see descriptions of loans in Cantonese within contemporary phonological theory: Silverman 1992; Yip 1993; Jacobs & Gussenhoven 2000).
(ii) Direct loans from English into standard Chinese involve a principle of "transliteration" (see below).
(iii) Direct loans between dialects, e.g. Cantonese into standard Chinese or vice versa, are normally graphic.

Standard Chinese borrows less from Western languages than do Japanese or Korean. Nevertheless, almost all names of people and places from countries that do not use character script *appear* to be phonological in nature. All such apparent phonological loans need to be transcribed into characters in order to be adapted to the written language. Lou (1992:121, 123-4) considers the process in terms of two steps:

> "(1) choosing a string of Chinese syllables that imitate the sound of the original name;
> (2) choosing Chinese characters to represent those syllables."
>
> (Lou 1992:123)

He observes differences between different Chinese-speaking countries, but also a tendency (outside the People's Republic) to use different transcriptions to distinguish between different people (Lou 1992:128), e.g. three prominent Americans named Johnson in the 1970s:

(43)

	Step 1	Step 2
(Lyndon B.) *Johnson*	/tʂan sən/	<詹森>
(Alexis J.) *Johnson*	/tɕʰiaŋ ʂəŋ/	<强生>

(Commander Roy) *Johnson* /tɕiaŋ sən/ <蔣森>

However, Chinese is a contour-tone language, and each of the syllables in Chinese above must have a phonemic tone:

(44) (Lyndon B.) *Johnson* /^{55}tʂan ^{55}sən/
(Alexis J.) *Johnson* /^{35}tɕ^{h}iaŋ ^{55}ʂəŋ/
(Commander Roy) *Johnson* /^{214}tɕiaŋ ^{55}sən/

Lou (1992:123) observes that this "allocation of tones may appear largely arbitrary; however, it is probably more correctly seen as an incidental consequence of the second major step." The characters are read with the usual tone associated with them. In other words, the tones allocated to each of the syllables in the Chinese output is determined not by any suprasegmental features in the source language, but by the reading tradition for the characters chosen to write the borrowed word.

The English to Chinese phenomenon is more complicated than the phenomena discussed earlier. Further research is needed to establish the extent to which the mapping of English consonants and vowels to Chinese is in its basis phonological, or graphic in the way that English to Japanese borrowing is. For the moment, we can observe that the allocation of tones is clearly graphic-based. In that the chosen characters always determine tone, it is also systematic.

3.4. Loanwords in Roman-script languages. The previous sections have dealt with East Asian languages, showing that graphic loans can be systematic and independent of phonological input. In this final section, I shall consider whether certain loans into or between Western languages written in the Roman alphabet can also be considered graphic. It is certainly true that borrowings between most such languages involve no change to the basic spelling, apart from typographic considerations; however, preservation of spelling cannot in itself be taken as an indicator that an item is a graphic loan, as illustrated in (26). It is only when orthographic factors clearly influence the phonological output that we may be dealing with a graphic loan.

Identifying those orthographic factors and the extent to which they accompany or replace phonological input is difficult. Firstly, because the Roman alphabet is essentially phonographic, it is impossible in a large number of cases to distinguish between phonological and graphic loans. For example, the usual output of Japanese (former Prime Minister) Koizumi's name, J. /koizumi/, is /kɔɪˈzuːmiː/, an output that would be expected whether it is a phonological loan or a graphic loan based on the usual romanisation used in Japan. Secondly, target language speakers may have a rough familiarity with foreign words,

and different reading rules may be applied to the spellings of unfamiliar native/nativised words and to the spellings of loanwords (Vendelin & Peperkamp 2006:997, regarding English to French). For example, English speakers may know that French <ch> and <j> correspond to /ʃ/ and /ʒ/ respectively, and automatically apply these readings to French words that they only encounter in reading. It is only when the same reading rules are applied 'incorrectly' that we may be able to identify a graphic loan, such as the frequent British English /beɪˈʒɪŋ/ from <Beijing>. Otherwise, for instance the less frequent /beɪˈʤɪŋ/, it is impossible to differentiate phonological from graphic.

In addition, it is more difficult to distinguish between graphic loan and orthographic interference in a phonological loan. In the case of character graphic loans, each grapheme corresponds to a syllable and/or a morpheme; there is no orthographic marking of discrete phonemes. Consequently, we can make a sharp distinction between phonological loans and graphic loans. In the case of languages written in the Roman alphabet, it is possible for a phonological loan to be introduced, and then in the process of dissemination or even after it has been fully established the pronunciation may be modified to reflect one aspect of the spelling, in exactly the same way as occurs with native words, e.g. the earlier example of <often> /ˈɒfn̩/ → /ˈɒftn̩/.

All the above points make it more difficult to distinguish graphic loans, but the evidence of English into Japanese loans, for example, suggests strongly that a similar process must also occur in the West. Indeed, there are various examples amongst loanwords in which the spelling or the transcription of the source language form must be significant.

There are numerous examples amongst loanwords, where a change between the source and target language may not easily be explained in terms of the phonological rules of the target language. Consider the following:

(45) Arabic /baɣˈdaːd/ → English /bægˈdæd/
French /fasɑːd/ → English /fæˈsɑːd/ ~ /fəˈsɑːd/

The English copy /bægˈdæd/ has undergone a shortening of the vowel of the final syllable, which contrasts with preservation of length in /fæˈsɑːd/ ~ /fəˈsɑːd/. The shortening in /bægˈdæd/ may be explained as due to spelling. Arabicists romanize the Arabic name as <Baghdād>, which in turn is widely written without diacritic as <Baghdad>, earlier <Bagdad>. This in turn is pronounced by analogy with the existing written forms <bag> :: /bæg/ and <dad> :: /dæd/ in English as /bægˈdæd/. On the other hand, we can posit the existence of a reading rule in English, whereby the orthographic sequences <aCV> and <aCe#> are interpreted phonologically as /ɑːCV/ and /ɑːC#/ respectively in stressed syllables if

the word is perceived to be of French origin and not entirely nativized, contrasting with the usual interpretations of /eɪCV/ and /eɪC#/ for long-standing English words (i.e. native or thoroughly nativized loans). This rule is by analogy with a significant number of French phonological loans, such as /fæˈsɑːd/ ~ /fəˈsɑːd/, that are matched in English spelling with their conventional French spellings, i.e. <façade> or <facade>. The same rule is extended to Japanese loans into English:

(46a) J. /karate/ → transcription <karate> → E. /kəˈrɑːtiː/
(46b) J. /origami/ → transcription <origami> → E. /ˌɒrɪˈgɑːmiː/ ~ /ˌɔːrɪˈgɑːmiː/
(46c) J. /kamikaze/ → transcription <kamikaze> → E. /ˌkæmɪˈkɑːziː/

Moreover, /ˌɒrɪˈgɑːmiː/ contrasts with /ˌɒrɪˈgæmiː/, which would be expected if it had been a phonological loan.

The problems mentioned at the start of this section warrant further research. I shall therefore conclude the section with an illustration of how the more clear-cut cases of graphic loans into English may be treated within the framework established earlier. Firstly, Italian /taʎʎaˈtɛlle/ → the widespread British English /taglɪəˈteliː/ illustrates graphic borrowing between European languages

(47)

SL Forms (Italian):	/taʎʎaˈtɛlle/ = <tagliatelle>
Stage 0: Input Modification:	n/a
Graphic Input:	<tagliatelle>
Stage 1: Phonological Rules:	a. General Rules: <gl> → /gl/ etc. b. SL = Italian Rules: <Ce#> → /Ciː#/
Phonological Output:	/taglɪəˈteliː/
Stage 2: Graphic Rules:	Use graphic input
Graphic Output:	<tagliatelle>
TL Forms (English):	<tagliatelle> = /taglɪəˈteliː/

Japanese /karate/, (46a) above, is given here to illustrate the graphic loan process from Japanese into English.

(48)

SL Forms (Japanese):	/karate/ = <空手>
Stage 0: Input Modification:	Romanize: <空手> → <karate>
Graphic Input:	<karate>
Stage 1: Phonological Rules:	a. General Rules: <aCV> → /ɑːCV/ etc. b. SL = Japanese rules: <Ce#> → /Ciː#/ c. Phonological changes that may be handled through Optimality Theory: positioning of stress, reduction of the unstressed syllable to /ə/.
Phonological Output:	/kəˈrɑːtiː/
Stage 2: Graphic Rules:	Use graphic input
Graphic Output:	<karate>
TL Forms (English):	<karate> = /kəˈrɑːtiː/

4. Conclusion. This paper has explored a recognized East Asian phenomenon that is not covered in the standard literature on linguistic borrowing. A mechanism has been posited to explain it, focusing on the fact that words in modern literate societies exist in two media: spoken and written. This has produced the following conclusions:

(i) Graphic loans are a distinct category from both phonological and translation loans.
(ii) Graphic loans and phonological loans are parallel phenomena, the difference between them depending on whether it is the spoken language or the written language that is the route of transmission. Graphic loans are not orthographic influence in the phonological process; the evidence suggests that there is no direct phonological input.
(iii) The graphic loans process may occur even between languages that do not share a script, e.g. from character script in Chinese to Roman alphabet in Vietnamese.
(iv) Lexical borrowing between *any* literate societies may involve a significant quantity of graphic borrowing.
(v) Where graphic borrowing takes place on a significant scale, it tends to be systematic and largely regular. In the case of East Asian character graphic loans, the phonological output is almost always

regular—the prime exception being a relatively small number of forms in Japanese (9-12). In other languages the system may be complicated by a conflict between different reading rules, which may give rise to alternative outputs. When the languages share a common script, for instance, there may be conflict between reading a grapheme how target language speakers are aware it is typically pronounced in the source language, and reading it as it is normally pronounced in the target language. This is a distinction that Vendelin & Peperkamp (2006) term "between language grapheme-to-phoneme correspondence rules" versus "'reading' adaptations".

A loan process has different stages before a word becomes entirely nativized, and the framework presented above posits three stages in the borrowing of graphic loans: Stage 0, Stage 1 and Stage 2.

Stage 0 is the stage at which the bilingual introduces the graphic loan into the target language, making those modifications necessary for it to enter Stage 1. In borrowing between languages that share a script, this modification generally involves no more than what we may term 'font'. Under this heading fall the differences between character script in the various East Asian countries due largely to different post-war script simplification schemes in the People's Republic and Japan. Also under this heading fall such typographic differences between Roman-alphabet languages as different capitalization rules, or the omission of diacritics in English script, or the replacement of Icelandic <þ> with <th> in English. In the case of borrowing between languages that do not share a script in common, the necessary modification needed for the loan to conform to the target language orthography involves transcription, systematic or ad hoc. Increasingly, such transcriptions are developed not by target language-speaking academics, but are officially instituted by the source language-speaking country.

The following stages, Stage 1 and Stage 2, take place in the target language community and do not necessarily involve bilingual individuals. The bilingual has produced the graphic input into Stage 1, which the community then interpret according to orthography/pronunciation correspondence rules and produce a phonological output. Conflict between such correspondence rules, such as whether the <huy> of <Huygens> is to be pronounced by analogy with <buy> or <huge>, and the involvement or not of bilingual speakers in Stage 1, may produce multiple outputs. Thus when the Huygens probe landed on Titan in January 2005, there were various phonological outputs in the British broadcast media, the three commonest being /ˈhɔɪgənz/, /ˈhaɪgənz/, /ˈhjuːgənz/.

Stage 2, the determination of the final graphic output, is distinct from Stage 0. The result of Stage 0 is based on the source language phonology or orthography; the output of Stage 2, on the other hand, is derived from the phonological form that has been established in the target language.

The concept of graphic loans was developed to explain character loans in East Asia. The concept has been extended here to cover various other phenomena, covering a range of languages and circumstances. There is need for further research of individual language pairs (English-Japanese, English-Chinese, German-English etc.) to address outstanding issues. These include the extent of graphic borrowing in comparison with phonological borrowing, particularly when the target language script is phonographic, and the role of the bilingual—or the biliterate—in the process of introduction and dissemination.

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ENDNOTES

[1] Chinese characters are presented in 'traditional' forms except in examples (21-22), regardless of the results of simplification policies that have taken place in both the People's Republic of China and Japan since the Second World War. In the general discussion, Japanese (J.), Korean (K.), (Mandarin) Chinese (C.) and Cantonese examples are transcribed in modified Hepburn, McCune-

Reischauer, Pinyin and Yale systems, with removal of tone markers. Vietnamese (V.) is quoted in current standard orthography, as it alone among the East Asian national languages is written in the Roman alphabet. Early Middle Chinese (EMC.) is transcribed according to the Baxter (1992) system.

2. Though anachronistic, the reading given for the original meaning is in modern Mandarin. This is in part because Classical Chinese was a written language of two and a half millennia and not associated with a single reconstructable language stage. Moreover, Chinese speakers read classical texts aloud nowadays according to modern pronunciation.

3. Another reason for avoiding the terms is the fact that most Chinese characters etymologically are made up of two components: the signific, which gives a rough indication of semantic field, and the phonetic, which gives an approximation of pronunciation. The value of the phonetic has been devalued in Chinese due to both sound and orthographic changes, but is still useful. See DeFrancis (1989:109-110, 113).

4. This is, however, also observed to an extent in Vietnamese. Although only one Sino-Vietnamese layer of readings is given explicit recognition (Pulleyblank 1984: 159), centuries of contact between Vietnam and the Chinese centre of East Asian civilizations resulted in the same morpheme being borrowed phonologically at different times and from different dialects (Nguyễn 1997: 37). Even within Chinese, phonological borrowing of a morpheme from another dialect occurred, resulting in the "colloquial" and "literary" layers of pronunciations in southern dialect groups (Cantonese, Hakka, Southern Min; see for example Hashimoto 1972: 42-4, 115-9ff). Also, some characters in Japan have additional post-Tang pronunciations (*tōsō'on*) (Sampson 1985: 180-1).

5. Neither Masini (1993: 196) nor Liu (1995: 324), who both include *ichiba*, mention the reading *shijō*, which differs in meaning. *Ichiba* refers to a physical market place, whereas *shijō* refers to a financial or stock market, or is used in compounds such as 'market forces' etc.

6. This principle is consistently followed in the Vietnamese media. The only apparent exceptions occur when discussing Chinese names for which characters are initially unavailable, i.e. when the news that is reported comes via the West.

7. The same 'Input Modifications' that are discussed for graphic loans below apply here. Hence spellings such as <facade> in English.

8. One can loosely correlate this pre-stage in the case of graphic loans with the first scansion stage argued for by Silverman (1992) and Yip (1993) for phonological loans.

9. Other phonological loan variants do occur, such as /ʤitabaagu/, which occurs in the 1950 song *Tōkyō kiddo* (www.interq.or.jp/sun/swing/social.htm). The song also has a now obsolete phonological loan *pokke* 'pocket', now the graphically derived *poketto*.

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