Foreign names into native tongues

How to transfer sound between languages — transliteration, phonological translation, nativization, and implications for translation theory

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The transfer of sound from one language into another is not a uniform process, but rather, takes different forms depending on the orthographies and phonological properties of source and target languages, the less common of which involve processes significantly different from transliteration between European phonetic scripts. This paper pools techniques commonly used in loanword phonology and second language acquisition to illustrate complications that arise when translating names from English into languages such as Japanese and Chinese, which differ significantly from the source language in syllable structure and orthographic convention. Competing strategies of adaptation and accommodation are placed in the context of lexical retrieval and compared with experimental studies of nativization in interlanguage. It will be shown that for names to be perceived as similar-sounding across language boundaries, it would be desirable to look beyond segmental equivalence and consider stress, syllable count and other suprasegmental factors that play a greater role in phonological memory.

Keywords: transliteration; phonological translation; adaptation; accommodation; nativization

1. Introduction

As translation methods go, a distinction is often made between the transfer of meaning and the transfer of sound. This is especially true in the Chinese tradition, where the choice between *yiyi* "meaning translation" and *yinyi* "sound translation" accounts for a considerable portion of the literature on translation methodology and theory. However, the balance between the two methods in the theoretical literature is anything but equal: the bulk of the literature on translation theory deals

Target 19:1 (2007), **45–68**.
ISSN 0924–1884 / E-ISSN 1569–9986

with aspects of meaning, and little, if anything, has been written about the technicalities of the transfer of sound (which is so often encountered in the rendering of foreign names), leaving this frequently utilized method of translation in a theoretical limbo: What is sound transfer? What are the algorithms for performing such a transfer? What dimensions of similarity do we take into consideration? What are the empirical bases for guidelines thus formulated? This paper seeks to begin to answer some of these questions by placing the issue of intralanguage sound transfer within the framework of linguistic theory.

The neglect and subsequent decline of the aspect of sound in translation theory is illustrated in Table 1, where it can be seen that while sound-related "transliteration" and "phonological translation" are topics that merit chapter-length treatment in theoretical works in the 1960s, since then treatment of the subject has dwindled to footnote-length mention, and eventually to no mention at all in textbooks published in the last decade or so.

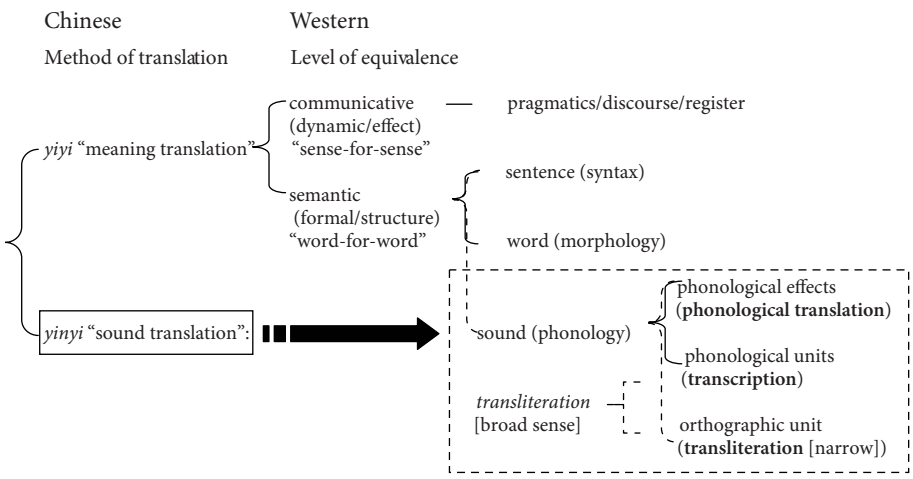
Table 1. Phonological translation in translation texts

	Work on translation theory	**phonological level**
1964	Nida, Eugene A. *Towards a science of translating.*.	transliteration; phonological effect
1965	Catford, John C. *A linguistic theory of translation.*	phonological translation; transliteration
1981	Newmark, Peter. *Approaches to translation.*	transcription (as method)
1985	Smith, Veronica and Christine Klein-Braley. *In other words…Arbeitsbuch Übersetzung.*	phonological effect (limits of translatability)
1992	Baker, Mona. *In other words: A coursebook on translation.*	N/A
1996	Gutknecht, Christoph and Lutz J. Rölle. *Translating by factors.*	N/A
2001	Munday, Jeremy. *Introducing Translation Studies: Theories and applications.*	N/A

Furthermore, it may be interesting to note that while a sound vs. meaning dichotomy exists in the Chinese tradition, the concept of *yinyi* "sound transfer" has no exact equivalent in the Western tradition, as can be seen in Table 2. Some likely candidates include "phonological translation", which most typically refers to the preservation of sound effects in poetic literature, "transliteration", which strictly speaking denotes the conversion of orthographic rather than phonological units, and "transcription", which is most often used to mean the recording of physical sounds using a phonetic writing system. *Yinyi*, to be precise, is none of the above,

but rather, the intralinguistic transfer of phonological content based on perceived dimensions of phonetic similarity.

Table 2. Phonological translation in translation theory



The explanation for this lack of interest in sound may lie partly in the fact that sound lies at the margins of mainstream Western translation theory: for much of its history, translation theory in the Western tradition has focused on levels of equivalence, with much attention placed on the division between dynamic (sense-for-sense) equivalence and formal (word-for-word) equivalence. While sound can be seen as part of the "form" of the linguistic material to be transferred, and hence part and parcel of "formal equivalence", in practice discussion of formal equivalence ends at the level of word or morpheme, and rarely touches upon units at the sublexical level. Hence the transfer of sound, however useful, reduced in content to transcription, transliteration and phonological translation, is pushed to the margins of formal translation, which in turn is marginalized by growing interest in dynamic methods of translation.

Having established the transfer of sound as a useful method that is at best treated as marginal in Western translation theory, let us look at how the subject is dealt with in the Chinese tradition. Many Chinese language treatises on translation begin by defining "meaning transfer" and "sound transfer", the latter for which an example is given below:

> When transferring sound from English into Chinese, start from the pronunciation of the alphabet of the source language, and do your best to transform it into identical or similar-sounding Chinese characters. (Chang 1983: 443)

Note how the definition operates at the level of the alphabet and mentions the use of similarity in sound, but shies away from making explicit what counts as similar or identical in the transfer process. It appears that at a subconscious level, it is assumed that the translator or native speaker will have some intuition about the similarity of phonological units across languages, and that this intuition of phonological similarity is to be used in the process of "transforming [English pronunciation] into similar-sounding Chinese characters". But in linguistic theory no concept can remain undefined and taken for granted — if we are to discuss the strengths and weaknesses of various approaches to the transfer of sound, we need to have an explicit theory of what sounds would be considered similar by speakers of which languages, and which phonetic or phonological features form the basis of similarity judgments. That is to say, we need to have similarity criteria that are couched in phonetic science and psychological reality, and apply the empirical findings of these linguistic subdisciplines to the practice of transliteration and phonological translation.

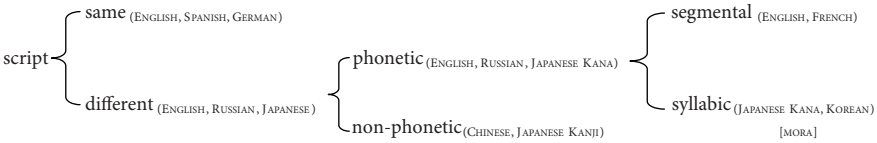
2. Transliteration processes

The transfer of sound as a method of translation is often reduced to the notion of "transliteration" in the Western tradition, for which reason it may be worthwhile to look at examples and types of transliteration between languages before we proceed to topics of greater theoretical concern.

Transliteration typically refers to the mapping of orthographic units from one language to another, and as such is used as an umbrella term for different linguistic processes depending on the types of languages the mapping is being performed between. Important variables in this process are the type of script used, and the relative complexity of the syllable structures of the two languages.

In evaluating script types, important considerations are whether the scripts are phonetic, and if so, what size phonological units they represent. The greater the discrepancy between scripts, the more difficult the mapping. To give an example, a mapping between Greek and English — both segmental scripts — would present considerably fewer complications than say transliteration between English and Japanese, as the writing system of the latter is built upon the mora rather than the segment. Even greater complications would arise when attempting to transcribe English in Chinese, as one would have to transform a segmental phonetic script into a syllabic semi-logographic script and deal with the many complications that arise from the differences between the size and structure of the units represented by the orthographies. Table 3 gives an outline of some of the more commonly encountered script types.

Table 3. Types of scripts



Equally important in determining the degree of difficulty in transliteration is the relative complexity of the syllable structures of the two languages involved. As can be seen from Table 4, languages vary greatly in their syllable structure templates, as a result of which a sound sequence permitted in one language may not be legitimate in another. Problems arise when attempting to transliterate a language with a more complex syllable structure in a language with a simpler syllable structure. Because the target language cannot allow structures in the source language, modifications such as deletion, epenthesis and blending have to be called upon to adapt potential loan words.

Table 4. Syllable structures

	Polish	**English**	**(Chinese) Cantonese**	**(Chinese) Mandarin**	**Japanese**
syllable structure	CCCCCV…CCCCC $C_oC_sC_oV$… CCCCC	$C_fC_oC_sV…C_sCC$	CV…C	CV…C_n	CVC_n CVC_o- (geminate)
examples	“następstw” “strwiąż” “plwać”	“strands” “swirled” “splashed”	“mak” “lam” “hou”	“san” “hao” “niao”	“gen” “get-” “kai”

We follow with examples of transliteration between languages of different types.

2.1 Spanish to English

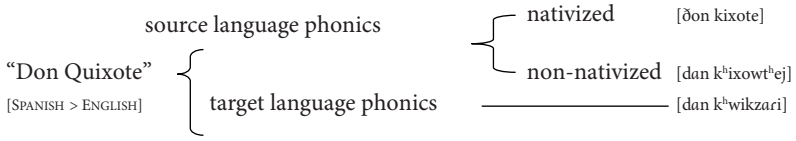
In transliterating from Spanish into English, there is very little conversion to be performed. The target language can accommodate all of the source language’s syllable structures, and the two languages for the most part share the same script, with the exception of letters with special diacritics not found in English, such as “ñ” in “mañana”. In dealing with the adaptation of special symbols, three options present themselves which have all seen usage:

1. Omit diacritics — “manana”
2. Keep diacritics — “mañana”
3. Rewrite using source language phonics — “manyana”

The conversion of special symbols is all that remains to be done at the orthographic level in transliterating between the languages of Western Europe, a miniscule task compared with the difficulties encountered in transliteration between other languages of the world. This may be part of the reason why the study of transliteration and phonological translation has not been taken beyond the preliminary stages in current translation theory.

Orthography aside, more remains to be done when actually "borrowing" a word from a language with the same script. That is, one has to consider, at the level of phonology, whether or not to nativize the word, and if so, whether it is to be pronounced using source-language phonics or target-language phonics. To take an example from Spanish, if the name "Don Quixote" is to be borrowed into English, the speaker could choose to read it in authentic Spanish pronunciation [ðon kixote], as is sometimes done in the pronunciation of foreign names in English news broadcasts, or render it into a sound sequence more familiar to English speakers. If opting for the latter, there is the option of nativizing the Spanish pronunciation, i.e., transforming [ðon kixote] into the more English-sounding "Don Keehotay" [dɑn kʰixowtʰej], or performing the conversion at the level of orthography, in which case the letter sequence "Don Quixote" would be read as if it were English, producing the sound sequence [dɑn kʰwikzɑɹi] — the English adjective "quixotic" [kʰwikzɑɹik] follows this pattern. The three options tabulated below exemplify conversion processes performed at the phonological level when borrowing between Western European languages:

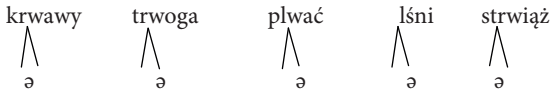
Table 5. English renditions of Spanish "Don Quixote"



2.2 English to Polish

While English and Polish share the same roman script, complications arise because of discrepancies between the syllable structures of source and target languages. More specifically, Polish contains consonant clusters that are not allowed in English, examples of which are given below:

Table 6. English adaptation of Polish consonant clusters



Polish data from Ania Trynkowska, University of Warsaw, personal communication, November 10, 2004

While this poses few problems at the level of orthography — loans into English are written as they would appear in Polish — adaptations appear at the phonological level when the loans are actually read out by speakers of English. In dealing with Polish loans containing clusters not found in English, speakers typically add the vowel schwa [ə] to break the clusters up into separate syllables. As we will see in subsequent sections, vowel insertion, exemplified here, is one of the strategies most commonly used in nativizing foreign syllable structures.

2.3 English to Japanese

Syllable structure complexity is a relative phenomenon. The syllable structure of English may appear simple in comparison with Polish, but when matched up with a language such as Japanese, it is considered relatively complex, and transliterations from English into Japanese run into the same types of problems encountered in transliterations of Polish in English, only this time the two languages do not share the same script, and furthermore, the scripts used for the two languages do not denote phonological units of the same size: English is a segmental script, whereas Japanese *kana* is mora-based.

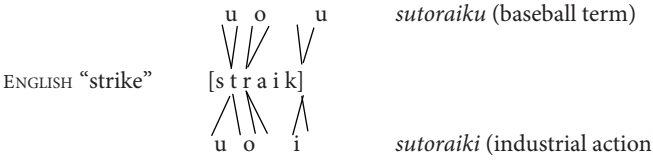
Typical adaptations of English loans in Japanese are given in the examples below. As would be expected, consonant clusters not found in the target language are broken up using vowel insertion, only this time the inserted vowel is not uniform schwa, but instead, can be "i", "o" or "u", depending on the consonant that it follows. Normally "o" is inserted after alveolars "t" and "d", "i" is inserted after palato-alveolars "ch" and "j", and "u" is inserted after all other consonants. These vowel insertion rules are illustrated in the adaptations into Japanese of English "McDonald", "Frankfurt" and "Richmond" in Table 7.

Table 7. Japanese adaptation of English consonant clusters

McDonald	**Frankfurt**	**Richmond**
a u u o	u u u o	i o
makudonarudo	*furankufuruto*	*ricchimondo*
マクドナルド	フランクフルト	リッチモンド

The normalization of Japanese vowel insertion however appears to be a fairly recent phenomenon, as earlier loans do not always follow these rules. The English polysemous word "strike", for example, appears to have entered the Japanese language via two different strata which utilized different vowel insertion rules, resulting in current day *sutoraiku* used for a miss in baseball, and *sutoraiki* to refer to industrial action by labor unions.

Table 8. Variant vowel insertion strategies



While vowel insertion is the strategy used by the majority of Japanese speakers for adapting English consonant clusters, a slightly different strategy is sometimes seen in Japanese immigrants to English-speaking countries who were exposed to the spoken language prior to learning English spelling, and Japanese ESL learners with a higher level of English proficiency. In these speakers we see the use of consonant deletion to augment vowel insertion, thus producing the following forms:

Table 9. Consonant deletion strategies

McDonald	**Frankfurt**	**Richmond**
maddano	*furankufu*	*richimon*

Why add consonant deletion to the repertoire of adaptation strategies? It may be argued that while vowel insertion adapts syllable structures for target language speakers with the purpose of preserving the segments of the source language, it does so at the expense of the rhythm of source language word; more specifically, the strategy of vowel insertion typically increases the number of syllables of the word. It may be that advanced learners and those who are exposed to the language orally are more sensitive to rhythm, syllable count and other suprasegmental aspects of the original loan.

Speech error researchers (e.g., Brown and McNeil 1966; Fay and Cutler 1977; Browman 1978; Aitchison and Straf 1981; Aitchison and Chiat 1981) have shown through malapropisms[1] and top-of-the-tongue (TOT)[2] experiments that rhythm, stress placement and syllable count are significant in lexical retrieval. Consonant deletion is a strategy that allows for greater preservation of these qualities, albeit at the price of omitting individual segments.

So in vowel insertion and consonant deletion, we see two strategies of syllable adaptation that focus on preserving different aspects of phonological structure: the former segmental, the latter suprasegmental. Characterized in terms of the correspondence component of Optimality Theory, we can say that vowel insertion epitomizes the MAX IO constraint, which stipulates that existing segments must not be deleted, while consonant deletion represents the constraint DEP IO, which requires that additional segments must not be added. Viewed from this perspective, the choice of strategy and the ultimate form of the adapted loanword will

have to depend on the relative ranking of the two constraints in the phonological faculty of each individual speaker.

Table 10. Syllable adaptation strategies.

	Max IO (do not delete segments)	**Dep IO (do not add segments)**
Eng → Japn Transliteration	[preserves consonantal units] (**preserves phonemes**)	*(sabotages rhythm)
Eng → Japn Nativization	*(loses consonants)	[preserves no. of syllables] (**preserves rhythm**)

2.4 English to (Mandarin) Chinese

The tug-of-war between vowel insertion and consonant deletion encountered in Japanese adaptations of English loans is mirrored in translations of English names into Chinese. Only, in addition to the two strategies, a third method — blending — is occasionally available. The presence of retroflex and alveopalatal sibilant consonants in Mandarin Chinese means that it is sometimes possible to render English "tr" and "dr" clusters as a Chinese sibilant consonant. The choice between insertion, deletion, and blend, then becomes the main decision to be made at the phonological level in phonological translations from English into Chinese.

In addition to the phonological level, the Chinese transliteration/transcription process is further complicated by a process at the orthographic level, namely, the fact that Chinese uses a semi-logographic script. The result is that each identical syllable corresponds to a large selection of logograms, each with different meanings embedded in the visual makeup of the block character. Whether or not a meaning is desirable then plays a role also in the choice of transliteration strategy. This orthographic/semantic aspect of English to Chinese phonological translation will be the subject of another study; in this paper, I will limit myself to the discussion of word transfer at the phonological level.

Of the methods insertion, deletion and blend commonly used in the adaptation of English into Chinese, it should be noted that different Chinese speech communities show different preferences for choice of strategy. As can be seen in Table 11, vowel insertion is the method of choice in the People's Republic of China, while deletion and blending are used with greater frequency in Taiwan.

Table 11. English transcribed as Chinese

English	**Chinese**		
	Insertion	Deletion	Blend
Qatar	ka-ta-er	ka-da	
Powell	bao-wei-er	bao-er	
Eisenhower	ai-sen-hao-wei-er	ai-sen-hao	
Wimbledon	wei-mu-bo-dun	wen-bu-dun	
Formalin	fu-er-ma-lin	fu-ma-lin	
Moldavia	mo-er-da-wei-ya	mo-da-wei-ya	
Montserrat	meng-te-sai-la-te	meng-sai-la-te	
Trinidad	te-li-ni-da		qian-li-da
Botswana	bo-ci-wa-na		bo-zha-na
Castro	ka-si-te-luo		ka-si-chu

Note: Chinese given in *pinyin* romanization.

Unlike in transliterations from Chinese into English, where the choice of Romanization system uniquely determines the form of the output, in conversions from English into Chinese, no two phonological translations are ever the same, partly owing to the varying use of insertion, deletion and blend at the phonological level, and partly due to differences in choice of character at the orthographic level. Focusing on the phonological level, it would be reasonable to ask, what are the phonological principles that underlie the choice of strategy in each situation, and is there an optimal method to use? We will attempt to build the foundations for an answer to this question in the next section.

3. Experiments

In the previous section, we detailed three strategies commonly used in phonological translation when mapping from complex to simple syllable structures: vowel insertion, consonant deletion, and consonant blending. From existing data it appears that there is no set rule for when to use which principle, and that very often it is a matter of personal and regional preference.

But this invites the question, what empirical evidence do we have that the methods are valid? Convention aside, is there any theoretical basis for choosing one method over another? Can we prove that the purported phonological similarity thus preserved is psychologically real?

To answer these questions, and more specifically, to gauge the psychological validity of methods used to date for adapting consonant clusters in the translation of names, we look at two sets of experiments that approach the issue from speakers' and listeners' perspectives respectively. Lin (2003) examines how speakers choose

between vowel insertion and consonant deletion, taking into account mitigating factors such as target language proficiency, stylistic context, gender of speaker, and native language of interlocutor. Li (2004) provides a listener's perspective, and rates competing strategies using similarity judgements and accuracy of back translations. The two sets of experiments provide us with an empirical basis for better understanding what speakers do intuitively when they try to pronounce a foreign word spontaneously, and what sound combinations are perceived as more similar by speakers of different languages.

3.1 Lin (2003) — Speakers' perspective

Lin (2003) looked at the processing of English consonant clusters by two groups of Taiwanese college students with different levels of English proficiency. Both real words and pseudowords containing word-initial biconsonantal clusters were used in four different settings: minimal pair readings, word list readings, sentence readings and controlled conversation. Results from the four settings were then used to analyze the relation between choice of simplificiation strategy (vowel insertion vs consonant deletion) and mitigating factors such as proficiency, style, gender and interlocutor. Lin's word list for the experiment is given in Table 12.

Table 12. English words and pseudowords containing word-initial biconsonantal clusters

pure	pute	proud	prode	drink	drand	few	fute	sport	spake
	bute	train	trink	green	gree	flute	fleep	state	stee
cure	cupe	cream	cree	blue	blay	friend	froo	skate	skeek
quiz	kwel	play	plue	glass	gleen	sleep	sleem		muke
twin	twiz	class	cleen	swim	swoke	smoke	smake		
dwell	dwin	brown	brode	view	vuke	snow	snork		

Lin's results showed that in natural settings both vowel insertion and consonant deletion were used by Taiwanese learners of English when clusters were encountered, and that speakers alternated between the two simplification strategies depending on setting and sociolinguistic background. Vowel insertion was used more by female speakers and advanced learners, in formal situations, and when speaking to non-native speakers of English. Consonant deletion was used more by male speakers and beginning learners, in informal situations and when speaking to native speakers of English. Lin's results are summarized in Table 13.

Table 13. Mitigating factors in the choice of cluster simplification strategy

	ERROR STYLE (Epenthesis/deletion ratio)	**Statistical significance**
Proficiency	**Low** proficiency → prefer **C-deletion** **High** proficiency → prefer **V-insertion** (i.e., higher proficiency group scored a higher epenthesis/deletion ratio)	Only for minimal pair readings and controlled conversation
Style	**Informal** (sentence, conversation) → prefer **C-deletion** **Formal** (minimal pair, word list) → prefer **C-insertion** (i.e., formal situations showed a greater epenthesis/deletion ratio)	Yes
Gender	**Male** → prefer **C-deletion** **Female** → prefer **V-insertion** (i.e., females have a higher epenthesis/deletion ratio than males)	Only for word list reading and controlled conversation
Interlocuter	(**with native speaker**) → prefer **C-deletion** (**with non-native speaker**) → prefer **V-insertion** (i.e., higher epenthesis/deletion ratio when speaking to non-native speakers)	Only for females

In relation to phonological translation and the nativization of loanwords, Lin's results do not prove or disprove the folk notion that vowel insertion is "less erroneous", "less destructive" and "communicatively less harmful" than consonant deletion (Lin 2003: 440), but does show that the assumption is closely linked to the psychology of the educated or advanced-proficiency learner. Similar claims of advanced learners' preference for vowel insertion are found in Abrahamsson's (2001, 2003) studies of Chinese acquiring Swedish, and Riney's (1990) study of Vietnamese EFL learners.

3.2 Li (2004) — Listeners' perspective

Li (2004) consists of two experiments that measure, respectively, restorability and similarity in phonological translation. Experiment 1 uses restoration rates in back translation among source and target language speakers to measure perceived phonological similarity. Experiment 2 has speakers of both source and target languages give subjective similarity ratings to words translated using different nativization strategies to identify indicators of similarity in native speaker intuition.

The material used in both experiments consists of Chinese translations of the names of four personages (see Table 14) from *Harry Potter and the Sorcerer's Stone* (*Harry Potter* Book 1).[3] For each English name, two different Chinese translations were provided, one from the mainland Chinese translation of the book, and the

other from the Taiwan translation. The names, all of which contain consonant clusters not allowed in Mandarin, were deliberately chosen to reflect the mainland Chinese preference for vowel insertion, in contrast to the Taiwanese penchant for consonant blending and deletion. The experiment can thus be seen as gauge of listener preferences for vowel insertion vs. consonant blending and deletion when faced with the two choices in the phonological translation of English names.

Table 14. Wordlist

Engl	**Trelawny**	[tɹɛˈlɔni]	**Cedric**	[ˈsidɹɪk]	**Godric**	[ˈgɔdɹɪk]	**Draco**	[ˈdɹejkow]
Chin	China	Taiwan	China	Taiwan	China	Taiwan	China	Taiwan
pinyin	*te-li-lao-ni*	*cui-lao-ni*	*sai-de-li-ke*	*xi-zhui*	*ge-de-li-ke*	*gao-zhui-ke*	*de-la-ke*	*zhuai-ge*
IPA	[tʰəlilawni]	[tsʰʷejlawni]	[sajtəlikʰə]	[ɕitʂʷej]	[kətəlikʰə]	[kawtʂʷejkʰə]	[təlakʰə]	[tʂʷajkə]

Names were chosen from the Harry Potter novels because of their relative obscurity — the intention was for subjects to not recognize the sound sequence, and thus have to rely on their awareness of source and target language phonological structure in converting from one language into the other. Subjects who recognized the names due to their background knowledge of the Harry Potter stories were excluded from the experiment.[4] Care was taken also to select only names that are indigenous to English, or ones that conform to English phonological structure — if not, there is the risk that the Chinese translation of the name may have been based on its pronunciation in a non-English source language, and subsequently involve different types of phonemic mappings. A Harry Potter character name "Dimitrov" was initially used early in the experiment, but later dropped because the mainland Chinese translation may have been derived directly from Bulgarian or Russian. The English pronunciations of the names thus chosen are based on the reading of Emma Thompson in the *Harry Potter* movie.

Three groups of subjects took part in the experiments: four native speakers of Mandarin from mainland China, four native speakers of Mandarin from Taiwan, and four native speakers of American English. The native speakers of English have had no prior exposure to the Chinese language.[5] The varied subject pool reflect the backgrounds of those Chinese and English speakers who are likely to come across Chinese translations of English names, and will provide a sampling of differences in judgment that may arise due to language background. Subjects were all educated to college level and above, the level to which a native speaker of Chinese may be expected to know enough English to perform back translation tasks. The experiments were performed on the campus of San Francisco State University.

Table 15. Subjects

		Age	Sex	Native language	Country of birth	Education
Group1	Us1	20	F	English	U.S.A.	B.A.
	Us2	44	F	English	U.S.A.	B.A.
	Us3	49	M	English	U.S.A.	Ph.D.
	Us4	60	F	English/French	U.S.A.	Ph.D.
Group2	Cn1	25	F	Mandarin/Shanghainese	China	B.A.
	Cn2	19	F	Mandarin/Shanghainese	China	B.A.
	Cn3	25	F	Mandarin/Shanghainese	China	B.A.
	Cn4	35	F	Mandarin	China	Ph.D.
Group3	Tw1	23	F	Mandarin	Taiwan	M.A.
	Tw2	30	F	Mandarin/Southern Min	Taiwan	M.A.
	Tw3	34	F	Mandarin/Southern Min	Taiwan	M.A.
	Tw4	27	F	Mandarin/Cantonese	Taiwan	B.A.

3.2.1 *Experiment 1: Back Translation*

3.2.1.1 *Instructions.* In this experiment, subjects were told that they will hear a word in Chinese which is translated from English based on sound/pronunciation, and their task was to guess what the original English was based on sound similarities alone. Subjects were instructed that the original English source does not have to be a real English word, and is most likely an unfamiliar name or nonsense word. All they were expected to do was come up with a sound sequence that sounds like English, which resembles the Chinese they hear.[6]

The experiment was administered separately and individually. The eight Chinese names (two translations each of four English *Harry Potter* originals) were read to each subject by a native speaker of Mandarin Chinese. Consequently, the subjects' attempts at restoring the English source word were transcribed by the reader using the International Phonetic Alphabet (IPA).

3.2.2.2 *Results.* The results of the first experiment are tabulated in Table 16, with responses from each group written out in the International Phonetic Alphabet.

In Table 17, the results of the experiment are presented in the form of deviation in syllable count. The smaller the deviation, the greater the similarity between original and guessed answer, hence the greater the perceived phonological similarity between Chinese translation and original English. A deviation value of "0" indicates that the subject was able to accurately guess the number of syllables of the original source based on the phonological translation; a value of "+1" indicates that the subject overguessed syllable count by one; a value of "–1" indicates that the subject produced a word one syllable shorter than the intended target.

Table 16. Back translation results

Source	**Trelawny**	[tɹɛˈlɔni]	**Cedric**	[ˈsidɹɪk]	**Godric**	[ˈgɔdɹɪk]	**Draco**	[ˈdɹejkow]
stratg	Max-IO	Dep-IO	Max-IO	Dep-IO	Max-IO	Dep-IO	Max-IO	Dep-IO
pinyin	*te-li-lao-ni*	*cui-lao-ni*	*sai-de-li-ke*	*xi-zhui*	*ge-de-li-ke*	*gao-zhui-ke*	*de-la-ke*	*zhuai-ge*
IPA	[tʰəlilɑwni]	[tsʰʷejlɑwni]	[sajtəlikʰə]	[ɕitʂʷej]	[kətəlikʰə]	[kɑwtʂʷejkʰə]	[təlɑkʰə]	[tʂʷajkə]
Us1	tʰəɹliˈlɑwni	tɹiˈlɑwni	ˈsajdlikʰʊkt	ˈʃidɹej	gəɹdəˈlikə	ˈgawtʃowkʰʊk	dəˈlɑkə	ˈtɹajkə
Us2	tʰəliˈlʊŋji	Swiˈlʊŋji	sajdəˈlika	ˈʃidɹej	gəɹdəˈlikə	gawlˈdɹejkə	dəˈlɑkə	ˈdɹægən
Us3	ˈtʰoldmilʊŋni	swejlowˈni	sajdəɹɪlɪsˈkʌt	ʃiˈdɹæŋk	gʊdˈlɪkəɹ	gawdʒgɹejˈkʰʊz	ðəˈlɑk	ˈdɹajgʊd
Us4	tʰəliˈlɑwni	twejˈlʊŋji	ˈsajdəlikʰə	ˈʃidɹej	gʌdəˈlikʰa	gawˈdɹejkʰə	dəˈlɑkə	ˈdɹajga
Cn1	tʰəɹliˈlɔni	tʃəˈlɑni	sɛdəˈɹikʰa	ˈsɛtɹej	kʰætʰəˈɹikʰa	kɑwˈdɹikʰə	ˈtɛɹɛk	tɹæk
Cn2	tʰɔɹɛjˈlɑwni	tɹɛˈlʊni	ˈsædəlik	ˈʃɹɛk	ˈkɛtlɛk	ˈkɹʰatʃɛk	təˈlʌk	tɹɛk
Cn3	tʰɛɹɪˈlowni	tɹɛˈlowni	sɛˈtʰejɹɪk	ˈsitɹɪk	ˈkætəɹɪk	ˈkowdʒɪk	ˈtɛɹɛk	ˈtɹajkow
Cn4	tʰəɹliˈlɑwni	tɹiˈlawni	ˈsajdəɹɪk	ˈsejdɹɪk	ˈkʰəɹtəɹɪk	ˈkʰawtɹɪk	təˈwɔk	tɹæk
Tw1	tʰəɹliˈnowli	ˈtɹɪɹowni	ˈsɛdlɪk	ˈsidɹi	ˈkʰætʰəlɪk	ˈkowdɹɪk	ˈtilɪk	dɹeik
Tw2	tʰəɹliˈlɑwni	tɹɛjˈlawni	ˈsajdəɹlɪkʰəɹ	ˈsidɹej	kəɹtəɹˈlɪk	ˈkowdɪkəɹ	təˈlaik	ˈdɹajgəɹ
Tw3	tʰɛliˈlowni	tɹɛˈlowni	sɛdəˈlolɪk	ˈsidʒoj	kətəˈlikʰow	kowˈdɹejkʰow	dɪˈlakʰow	ˈdɹægow
Tw4	tʰɛɹɪˈɹawni	tɹejˈɹawni	sajtəˈɹɪkʰow	ˈsidɹej	koɹtowˈɹikʰow	ˈkowdɹɪk	təˈɹɑk	ˈdɹægən

Table 17. Syllable count deviation

Source	**Trelawny**	[tɹɛˈlɔni]	**Cedric**	[ˈsidɹɪk]	**Godric**	[ˈgɔdɹɪk]	**Draco**	[ˈdɹejkow]
stratg	Max-IO	Dep-IO	Max-IO	Dep-IO	Max-IO	Dep-IO	Max-IO	Dep-IO
pinyin	*te-li-lao-ni*	*cui-lao-ni*	*sai-de-li-ke*	*xi-zhui*	*ge-de-li-ke*	*gao-zhui-ke*	*de-la-ke*	*zhuai-ge*
IPA	[tʰəlilɑwni]	[tsʰʷejlɑwni]	[sajtəlikʰə]	[ɕitʂʷej]	[kətəlikʰə]	[kɑwtʂʷejkʰə]	[təlɑkʰə]	[tʂʷajkə]
Us1	+1	0	+1	0	+2	+1	+1	0
Us2	+1	0	+2	0	+2	+1	+1	0
Us3	+1	0	+2	0	+1	+1	0	0
Us4	+1	0	+2	0	+2	+1	+1	0
Mean	**+1**	**0**	**+1.75**	**0**	**+1.75**	**+1**	**+0.67**	**0**
Cn1	+1	0	+2	0	+2	+1	0	−1
Cn2	+1	0	+1	−1	0	0	0	−1
Cn3	+1	0	+1	0	+1	0	0	0
Cn4	+1	0	+1	0	+1	0	0	−1
Mean	**+1**	**0**	**+1.25**	**−0.25**	**+1**	**+0.25**	**0**	**−1**
Tw1	+1	0	0	0	+1	0	0	−1
Tw2	+1	0	+2	0	+1	+1	0	0
Tw3	+1	0	+2	0	+2	+1	+1	0
Tw4	+1	0	+2	0	+2	0	0	0
Mean	**+1**	**0**	**+1.5**	**0**	**+1.5**	**+0.5**	**+0.25**	**−0.25**
Total	**+1**	**0**	**+1.5**	**−0.08**	**+1.42**	**+0.58**	**+0.31**	**−0.42**

Table 18. Syllable count deviation average

stratg	**MAX-IO**	**DEP-IO**
	[preserves consonantal units] (**preserves phonemes**)	[preserves number of syllables] (**preserves rhythm**)
Us	+1.29	+0.25
Cn	+0.81	–0.25
Tw	+1.06	+0.04
Total	**+1.05**	**+0.01**

From Tables 17 and 18, we can see that translation strategies using blending and deletion are significantly better at preserving syllable count than translation methods reliant on vowel insertion. Overall, the syllable count deviation for names translated using primarily blends (Taiwan translation) averaged a mere +0.01, while the same count for those names translated via vowel insertion overshot the source by an average of +1.05 syllables — a result to be expected from a method that increases the number of syllables in a word with every vowel it inserts. On this dimension, the strategy of blending appears to render phonologically more similar target forms.

The only exception to this result appears to be in the translation of the name "Draco" by native Chinese speakers from China. The 3-syllable mainland Chinese translation *de-la-ke* rendered 2-syllable back translations from this group of speakers, while the 2-syllable Taiwanese translation *zhuai-ge* produced monosyllabic back translations, hence missing the original by one syllable. Contradictory as this might seem, the results are actually consistent with the general trend, for what is happening with this group of speakers is that they are hypercorrecting: the *ke* and *ge* syllables in the two translations are interpreted by the Chinese speakers not as individual syllables, but as vowel-inserted adaptations of an English syllable-final consonant. And hence while on the surface it seems as if they are getting the syllable count correct using the mainland Chinese translation *de-la-ke*, they are actually coming up with some variation of the two-syllable sequence "derak", which is considerably different from the original "Draco", despite the identical syllable count.

Moving from syllable count at the suprasegmental level, next let us look at the segmental level, at which strategy better preserves consonant clusters. In Table 19, we see word-initial consonant clusters and their back translations, with successful restorations given in **bold**. Table 20 shows the rate of consonant cluster restoration for each back translation attempt: a value of 1 is registered for each successful attempt, and 0 for each attempt that fails to produce the original cluster.

Table 19. Consonant cluster preservation (successful attempts given in bold)

	Trelawny		**Cedric**		**Godric**		**Draco**	
source	**Tre-**	[tɹɛ]	**-dric**	[dɹɪk]	**-dric**	[dɹɪk]	**Dra-**	[dɹej]
stratg	Insertion	Blend	Insertion	Blend	Insertion	Blend	Insertion	Blend
pinyin	*te-li-*	*cui-*	*-de-li-ke*	*-zhui*	*-de-li-ke*	*-zhui-ke*	*de-la-*	*zhuai-*
IPA	[tʰəli]	[tsʰʷej]	[təlikʰə]	[tʂʷej]	[təlikʰə]	[tʂʷejkʰə]	[təla]	[tʂʷaj]
Us1	tʰəɹli	**tɹi**	dlikʰukt	**dɹej**	dəˈlikə	tʃowkʰʊ**k**	dəˈla	ˈtɹaj
Us2	tʰəli	swi	dəˈlika	**dɹej**	dəˈlikə	**dɹej**kə	dəˈla	ˈ**dɹæ**
Us3	tʰoldmi	swej	dəɹlɪsˈkʌt	**dɹæŋk**	dˈlɪkəɹ	dʒgɹejˈkʰɒz	ðəˈla	ˈ**dɹaj**
Us4	tʰəli	twej	dəlikʰə	**dɹej**	dəˈlikʰa	**dɹejk**ʰə	dəˈla	ˈ**dɹaj**
Cn1	tʰəɹli	tʃə	dəˈɹikʰa	tɹej	tʰəˈɹikʰa	**dɹik**ʰə	ˈtɛɹɛ	tɹæ
Cn2	tʰɔɹɛj	**tɹɛ**	dəli**k**	ʃɹɛ**k**	tlɛ**k**	tʃɛ**k**	təˈlʌ	tɹɛ
Cn3	tʰɛɹɪ	**tɹɛ**	tʰejɹɪ**k**	tɹɪ**k**	təɹɪ**k**	dʒɪ**k**	ˈtɛɹɛ	ˈtɹaj
Cn4	tʰəɹli	**tɹi**	dəɹɪ**k**	**dɹɪk**	təɹɪ**k**	tɹɪ**k**	təˈwɔ	tɹæ
Tw1	tʰəɹli	**tɹɪ**	dlɪ**k**	**dɹi**	tʰəlɪ**k**	**dɹɪk**	ˈtilɪ	**dɹei**
Tw2	tʰəɹli	**tɹɛj**	dəɹlɪkʰəɹ	**dɹej**	təɹˈlɪ**k**	dɪkəɹ	təˈlai	ˈ**dɹaj**
Tw3	tʰɛli	**tɹɛ**	dəˈlolɪ**k**	dʒoj	təˈlikʰow	**dɹejk**ʰow	dɪˈla	ˈ**dɹæ**
Tw4	tʰeɹi	**tɹej**	təˈˌɹɪkʰow	**dɹej**	towˈɹikʰow	**dɹɪk**	təˈɹa	ˈ**dɹæ**

Table 20. Word-initial consonant cluster preservation rate

	Trelawny		**Cedric**		**Godric**		**Draco**	
source	**Tre-**	[tɹɛ]	**-dri**	[dɹɪ]	**-dri**	[dɹɪ]	**Dra-**	[dɹej]
stratg	Insertion	Blend	Insertion	Blend	Insertion	Blend	Insertion	Blend
pinyin	*te-li-*	*cui-*	*-de-li*	*-zhui*	*-de-li*	*-zhui*	*de-la-*	*zhuai-*
IPA	[tʰəli]	[tsʰʷej]	[təli]	[tʂʷej]	[təli]	[tʂʷej]	[təla]	[tʂʷaj]
Us1	0	1	0	1	0	0	0	0
Us2	0	0	0	1	0	1	0	1
Us3	0	0	0	1	0	0	0	1
Us4	0	0	0	1	0	1	0	1
Mean	**0**	**0.25**	**0**	**1**	**0**	**0.5**	**0**	**0.75**
Cn1	0	0	0	0	0	1	0	0
Cn2	0	1	0	0	0	0	0	0
Cn3	0	1	0	0	0	0	0	0
Cn4	0	1	0	1	0	0	0	0
Mean	**0**	**0.75**	**0**	**0.25**	**0**	**0.25**	**0**	**0**
Tw1	0	1	0	1	0	1	0	1
Tw2	0	1	0	1	0	0	0	1
Tw3	0	1	0	0	0	1	0	1
Tw4	0	1	0	1	0	1	0	1
Mean	**0**	**1**	**0**	**0.75**	**0**	**0.75**	**0**	**1**

Table 21. Word-initial consonant cluster preservation average

stratg	Insertion (MAX-IO)	Blend (DEP-IO)
	[preserves consonantal units] (**preserves phonemes**)	[preserves number of syllables] (**preserves rhythm**)
Us	0	0.62
Cn	0	0.32
Tw	0	0.88
Total	**0**	**0.61**

In Tables 19, 20 and 21 it is clear to see that word-initial consonant cluster restoration rates are not high, but that translations arrived at by using vowel insertion consistently fail at cluster restoration, registering an average success rate of 0, while translations that use blending sometimes succeed, producing an average success rate of 0.61. This is consistent across all three groups, although it appears that Chinese speakers from Taiwan are best at restoring consonant clusters from blends, with an average of 0.875, followed by American speakers, averaging 0.625. Native speakers from China, averaging 0.313, are the least proficient of the three groups in restoring clusters using this strategy, perhaps because of the greater tendency to use vowel insertion in mainland China.

In the phonological translation of the name "Cedric" we see an instance of varying strategies in the rendition of a word-final consonant. In the mainland translation schwa is inserted to produce an additional syllable "ke"; in the Taiwanese translation final consonant [k] is deleted. In our restoration task, the results were inconclusive: mainland Chinese speakers were largely (75%) able to restore the word-final consonant, regardless of which strategy was used. Native Mandarin speakers from Taiwan were able to restore the consonant half the time (50%) when vowel insertion was used, but were not able to restore it all when the consonant was deleted in the phonological translation. Among the four native speakers of English, there was only one instance of word-final consonant restoration, performed upon a translation that employed the strategy of consonant deletion. Viewed together, the results fail to show whether vowel insertion or consonant deletion is the more effective adaptation strategy in the preservation of English word-final consonants.

Table 22. Word-final consonant restoration

	Cedric	
source	**-c**	[-k]
stratg	Insertion	Deletion
pinyin	*-ke*	φ
IPA	[k^hə]	[…]
Us1	0	0
Us2	0	0
Us3	0	1
Us4	0	0
Mean	**0**	**0.25**
Cn1	0	0
Cn2	1	1
Cn3	1	1
Cn4	1	1
Mean	**0.75**	**0.75**
Tw1	1	0
Tw2	0	0
Tw3	1	0
Tw4	0	0
Mean	**0.5**	**0**

3.2.2 *Experiment 2: Similarity ratings*

3.2.2.1 *Instructions.* In Experiment 2, the same subjects were read each Chinese phonological translation together with its English source word. They were then asked to assign a similarity rating to the pair of words that they hear. Similarity ratings range from 0 to 10, with 0 representing totally dissimilar, and 10 indicating absolutely identical. A total of eight Chinese and English pairings (two Chinese phonological translations each for four English *Harry Potter* names) were read to each subject by a bilingual native speaker of Mandarin Chinese and American English.

3.2.2.2 *Results.* Similarity ratings thus produced are tabulated in Table 23, divided according to word and native language. Within every group, it appears that phonological translations using blending and deletion achieve consistently higher similarity ratings than those arrived at using vowel insertion, and the result holds across all words and all speaker groups. The difference in similarity ratings between the two strategies is greater in Chinese speakers, both from China (average difference 2.75) and Taiwan (average difference 2.56) than in English speakers (average 1.63).

It appears also that the shorter the word, the more pronounced the difference between the two strategies, perhaps because the difference in rhythm caused by the insertion of an additional syllable is more noticeable in a short word than in a long word with many syllables.

Table 23. Similarity ratings

Source	**Trelawny**	**[tɪɛˈlɔni]**	**Cedric**	**[ˈsidɪɪk]**	**Godric**	**[ˈgɔdɪɪk]**	**Draco**	**[ˈdɪejkow]**
stratg	MAX-IO	DEP-IO	MAX-IO	DEP-IO	MAX-IO	DEP-IO	MAX-IO	DEP-IO
pinyin	*te-li-lao-ni*	*cui-lao-ni*	*sai-de-li-ke*	*xi-zhui*	*ge-de-li-ke*	*gao-zhui-ke*	*de-la-ke*	*zhuai-ge*
IPA	[tʰəlilawni]	[tsʰʷejlawni]	[sajtəlikʰə]		[kətəlikʰə]		[təlakʰə]	[tʂʷajkə]
Us1	8	9	6	8	5	8	6	8
Us2	6	6	3	8	5	6	4	3
Us3	4	4.5	3.5	5.5	4	4	4.5	5
Us4	2	4	1	5	3	5	1	3
Mean	**5**	**5.87**	**3.37**	**6.62**	**4.25**	**5.75**	**3.87**	**4.75**
Cn1	7	10	6	8	5	9	4	10
Cn2	10	10	7	8	7	9	3	8
Cn3	7	9	5	7	5	9	3	7
Cn4	6	8	4	6	5	8	3	5
Mean	**7.5**	**9.25**	**5.5**	**7.25**	**5.5**	**8.75**	**3.25**	**7.5**
Tw1	2	3	0	4	1	7	0	4
Tw2	7	8	4	8	3	5	5	7
Tw3	6	8	5	6	6	5	3	7
Tw4	6	9	5	8	7	8	5	9
Mean	**5.25**	**7**	**3.5**	**6.5**	**4.25**	**6.25**	**3.25**	**6.75**
Total	**5.92**	**7.37**	**4.12**	**6.79**	**4.67**	**6.92**	**3.46**	**6.33**

3.3 Discussion

Lin (2003) and Li (2004) in the preceding sections were designed to measure the relative prominence of segment vs. prosody in the phonological transfer of English consonant clusters into Chinese. In actual translation of course consideration will have to be taken for factors other than phonological similarity, such as the use of meaningful vs. meaningless logograms and whether connotations evoked by certain characters are appropriate in certain names, but this paper will focus on the sound aspect of this process only, and leave discussions of meaning to future studies.

In Lin (2003), the folk notion that vowel insertion is more desirable because it preserves all segments, hence improving recoverability, is debunked as a mentality associated with educated and advanced learners. We are further shown that non-native learners alternate between insertion and deletion strategies, and that the choice between the two depends on factors such as proficiency, formality, speaker

gender and interlocutor. For Chinese and Vietnamese speakers at least, the more advanced the level and the more formal the context, the greater the tendency to use vowel insertion.

In Li (2004), we see that between deletion, blend and insertion, vowel insertion is the least effective at preserving source language phonological form, despite its tendency to be used in formal contexts by advanced learners. Both Experiments 1 and 2 point to the prominence of prosody in judging phonological similarity — prosody proved to be much more significant than segmental identity. In the first experiment, translations that were prosodically more faithful but preserved fewer segments were much more easily restored than ones in which all segments were preserved at the cost of prosody. In Experiment 2, again, translations that better preserved syllable count were perceived as more similar than ones which preserved all segments and distorted rhythm. Prosodic rhythm, it seems, ranks higher than segmental fidelity in speaker judgments of phonological similarity. This cut across English and Chinese native speaker groups, and held true at least for consonant clusters in word initial position. In more practical terms, the results suggest that, concerning translation method, blending and deletion, which are less likely to increase syllable count, appear to be better strategies for the adaptation of English consonant clusters than is the more conventional method of vowel insertion, which inevitably inflates syllable count and distorts rhythmic shape.

The results are consistent with psycholinguistic studies of lexical retrieval (Brown and McNeil 1966; Fay and Cutler 1977; Browman 1978; Aitchison and Straf 1981; Aitchison and Chiat 1981), which show that in psychological memory: (1) Not all segments are created equal (the beginning and end of a word carry greater weight than segments in the middle); (2) Regularity of prosody takes precedence over preservation of segments (i.e., rhythm, stress, number of syllables are more important than letters per se). The latter point has profound implications for the translation of foreign names and phonological translation in general.

4. Conclusion

Intralinguistic transfer at the level of sound is a strategy used by translators on a daily basis, often for the translation of culture-bound realia and other metalinguistic level concepts deemed "untranslatable", but more specifically as a norm in the translation of personal names. To date discussions of the phonological translation of names have been relegated to the field of transliteration, which in its strictest sense refers not to the transfer of sound, but to the mapping of similar-sized orthographic units between languages. Using orthographic mapping to transfer sound appears to be a valid method between the genetically-related languages of

Europe, who through the expansion of the Greek and Roman empires have come to share a similar segment-based phonetic writing system. But as we move beyond the cultural scope of Europe, we are forced to look at phonological transfer between languages and orthographies that are much more dissimilar: languages that have drastically different syllable templates, and orthographies that denote different-sized phonological units — from feature to segment, mora and syllable. This moves the phenomenon of phonological transfer beyond the scope of transliteration studies and forces a re-evaluation of the notion of phonological similarity at both segmental and suprasegmental levels.

In this paper we analyzed speaker- and listener-oriented experiments on phonological similarity, and arrived at the conclusion that invariance of prosody ties in more closely to human perceptions of linguistic similarity than segment preservation. In practical terms, where the source language contains clusters not allowed in the target language, the results of the experiments suggest a move away from vowel insertion and towards the strategies of consonant deletion and blending. The prosody over segment hierarchy appears to hold true for word-initial consonant cluster reduction in the conversion of English names into Chinese, and points a way towards the measurement of subject response and psychological reality in translation strategy. It remains to be seen whether the method, if not the rule, applies to other translation and transliteration domains, and whether it can be generalized across languages.

Notes

1. A malapropism is a "confounding of an intended word with another word of similar sound or spelling that has quite a different and malapropos meaning, for example, *an ingenuous* [for *ingenious*] *machine for peeling oranges*." (Hirst and St-Onge 1997: 305)

2. The tip-of-the-tongue (TOT) phenomenon refers to "a state in which one cannot quite recall a familiar word but can recall words of similar form and meaning" (Brown and McNeill 1966: 325). A tip-of-the-tongue experiment induces tip-of-the-tongue phenomena in subjects by exposing them to definitions of obscure words. In an attempt to recall the intended target, subjects produce words and pseudowords similar in phonological structure, which shed light on the organization of lexical storage.

3. I am grateful to my masters supervisee Cindy Lin of the Graduate Institute of Translation and Interpretation (GITI) at National Taiwan Normal University for making me aware of these differences.

4. A subject from Taiwan who took part early on in the experiment was disqualified because of her familiarity with the Harry Potter characters: upon hearing each Chinese translation, she was able to identify each character right away and come up with their English names, showing that she relied not on phonological processing, but on background knowledge.

5. Initially, native speakers of English enrolled in Chinese classes also took part in the experiment, but their results differed significantly from those English speakers who had not had any exposure to the Chinese language. As the numbers of these native English-speaking Chinese learners were insufficient, they were excluded from the present study. The phonological judgments of English native speakers who have some knowledge of Chinese will the subject of a future study.

6. Subjects who were not able to follow these instructions, e.g., subjects who were trying to come up with real words or sentences instead of producing a phonetically similar sound sequence, were eliminated from the study.

References

Abrahamsson, Niclas. 2001. "Acquiring L2 syllable margins — Studies on the simplification of onsets and codas in interlanguage phonology". Stockholm University. [Ph.D. dissertation.]

Abrahamsson, Niclas. 2003. "Development and recoverability of L2 codas: A longitudinal study of Chinese/Swedish interphonology". *Studies in second language acquisition* 25:3. 313–349.

Aitchison, Jean. 2003. *Words in the mind: An introduction to the mental lexicon,* third edition. Oxford: Blackwell. (first edition 1987.)

Aitchison, Jean and Miron L. Straf. 1981. "Lexical storage and retrieval: A developing skill". *Linguistics* 19. 751–795.

Aitchison, Jean and Shula Chiat. 1981. "Natural phonology or natural memory?: The interaction between phonological processes and recall mechanisms". *Language and speech* 24:4. 311–326.

Baker, Mona. 1992. *In other words: A coursebook on translation.* London-New York: Routledge.

Browman, Catherine P. 1978. "Tip of the tongue and slip of the ear: Implications for language processing". *UCLA working papers in phonetics* 42.

Brown, Roger and David McNeill. 1966. "The 'tip of the tongue' phenomenon". *Journal of verbal learning and verbal behavior* 5. 325–337.

Catford, John. 1965. *A linguistic theory of translation.* London: Oxford University Press.

Chang, Ta Tsung. 1983. *The principles and techniques of translation.* Taipei: Kuo Chia Publishing Company.

Gutknecht, Christoph and Lutz Rölle. 1996. *Translating by factors.* Albany, NY: State University of New York Press.

Hirst, Graeme and David St-Onge. 1997. "Lexical chains as representations of context for the detection and correction of malapropisms". Christiane Fellbaum, ed. *Wordnet: An electronic lexical database.* Cambridge, MA: MIT Press, 1997. 305–332.

Lin, Yuh-Huey. 2001. "Syllable simplification strategies — A stylistic perspective". *Language learning* 51:4. 681–718.

Lin, Yuh-Huey. 2003. "Interphonology variability: Sociolinguistic factors affecting L2 simplification strategies". *Applied linguistics* 24:4. 439–464.

Munday, Jeremy. 2001. *Introducing Translation Studies: Theories and applications.* London-New York: Routledge.

Newmark, Peter. 1981. *Approaches to translation.* Oxford: Pergamon Press.

Nida, Eugene A. 1964. *Towards a science of translating: With special reference to principles and procedures involved in Bible translating.* Leiden: E.J. Brill.

Riney, Timothy J. 1990. "Age and open syllable preference in interlanguage phonology". Hartmut Burmeister and Patricia L. Rounds, eds. *Variability in second language acquisition: Proceedings of the 10th meeting of the Second Language Research Forum*, Vol. II. Eugene: University of Oregon, 1990. 196–216.

Smith, Veronica and Christine Klein-Braley. 1985. *In other words.* München: Max Hueber Verlag.

Résumé

Le transfert des sons d'une langue à l'autre n'est pas un processus uniforme : il adopte diverses modalités, qui dépendent de l'orthographe et des propriétés phonologiques des langues sources et des langues cibles ; la moins commune implique des processus considérablement différents de la translittération entre écritures phonétiques européennes. Cet article compare des techniques couramment utilisées dans des disciplines comme la phonologie des emprunts lexicaux et l'acquisition d'une deuxième langue, afin d'illustrer les difficultés qui surgissent lorsqu'on traduit des noms anglais en des langues telles que le japonais et le chinois. Ces langues sont en effet sensiblement différentes quant à leur structure syllabique et quant à leurs conventions orthographiques. Des stratégies concurrentes d'adaptation et d'emprunt sont rapportées au contexte de l'extraction lexicale et se trouvent ensuite comparées à des études expérimentales de la nativisation en interlangue. Pour que les noms soient phonétiquement perçus comme similaires par delà les barrières de la langue, il serait souhaitable de dépasser la perspective de l'équivalence segmentale et de prendre en considération l'accent tonique, le nombre des syllabes ainsi que d'autres facteurs suprasegmentaux qui jouent un plus grand rôle dans la mémoire phonologique.

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