INTERLINGUAL NEAR HOMOPHONIC WORDS AND PHRASES IN L2 LISTENING: EVIDENCE FROM MISHEARD SONG LYRICS

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ABSTRACT

Recent studies on bilingual spoken-word recognition have demonstrated that bilinguals cannot deactivate the native-language lexicon; i.e., language-nonselective access is applied. This study attempted to examine whether this phenomenon could be observed in a unique Japanese word play called *Soramimi awaa*, in which Japanese words and phrases are misheard in foreign song lyrics. The analysis revealed that these interlingual near homophones were mostly reported as shorter L1 phrases, suggesting that L2 spoken input may easily activate Japanese bilinguals' L1 lexicon .

Keywords: bilingualism, spoken-word recognition, interlingual homophone, nonselective access, word play.

1. INTRODUCTION

Today's psycholinguistic models of spoken-word recognition assume a basic mechanism of spoken-word recognition by monolinguals in which multiple word candidates are simultaneously activated and compete with each other until the target word is determined on the basis of auditory input. It is also assumed that the whole process works in listeners' single lexicon [1,2,3,4,5].

Some researchers on spoken-word recognition have directed attention toward spoken-word recognition in bilinguals. By definition, bilinguals differ from monolinguals in that they possess two lexicons, one for a first language (L1) and the other for a second (L2), whereas monolinguals possess a single lexicon. These researchers' main concern is to discover how multiple word activation occurs in bilinguals' dual lexicon [6,7,8].
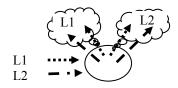
Two types of hypotheses regarding multiple word activation in bilinguals have been proposed, initially in the domain of visual word recognition. One is a language selective access hypothesis in which lexical candidates in the dual lexicons are independently activated by (visual) input [9]. The other is a language nonselective access hypothesis in which lexical candidates in both lexicons are concurrently activated [10]. Studies of visual word recognition support the second hypothesis [11].

Further research examined whether language nonselective access also held for bilingual spoken-word recognition. In eye-tracking studies [6,7], Russian-English bilinguals were instructed to move objects whose names shared the same initial phonemes as the name in the other language of a competitor object (e.g., Russian *marka* 'stamp' and English *marker*); an eye-tracking device monitored their eye movements as they responded. In separate sessions, the instructions were given in Russian and English. The results showed that these participants tended to look at both the target and competitor objects. Similar results were also found with Dutch-English bilinguals [12]. These studies strongly suggest that language nonselective access applies in bilinguals' spoken-word recognition [8].

These findings imply that incoming acoustic-phonetic information activates word candidates from the dual lexicons of bilinguals simultaneously, as illustrated in Figure 1. To put it another way, bilinguals are not able to inhibit activation of the irrelevant lexicon [9].

Figure 1. Dual activation in bilinguals' lexicons

Given that the ultimate goal of spoken-word recognition is to retrieve only relevant words which are associated with a speaker's messages, these findings suggest that bilinguals experience unwanted word activation harmful for processing. Ideally selection of the correct word should proceed as quickly as possible, but in bilinguals, irrelevant word candidates may delay this [12].

These conclusions concerning bilinguals' spoken-word activation are based upon laboratory experiments. We now ask whether there is any further evidence directly related to this issue of lexical (de)activation which can be found in spontaneous linguistic activity. In other words, we look for linguistic exercises where L1 words are activated in L2 communication or vice versa. It is hard to find such evidence in real communication settings because this phenomenon interferes with normal speech communication [12,13]. It is a task for researchers of speech perception to compile databases of cross-language mishearings, and we hope that this will happen one day. In the meantime, however, we found a rich source of evidence in a Japanese form of word play.

The principal function of word play is to amuse the speaker or others by employing words in a clever way. There are various types of word play in Japanese; the one analysed here is called *Soramimi awaa* ('empty ear hour'). *Soramimi awaa* is a misheard lyric - sometimes called *Mondegreen*, after a well-known English example ("laid him on the green" heard as "Lady Mondegreen" [13]). *Mondegreen* can occur when one hears L1 or L2 songs, just as ordinary misperception occurs in L1 and L2 speech. But whereas ordinary *Mondegreen* occurs within a single language, *Soramimi awaa* is unique in that it occurs cross-linguistically in hearing foreign songs. In other words, the basic mechanism of *Soramimi awaa* appears to be the same as the one in bilinguals' word activation: the native L1 lexicon is triggered by non-native L2 auditory input.

The examples of *Soramimi awaa* were originally introduced in an audience-participation TV program in Japan and they are now compiled as a database on the website [14]. The good thing about this database is that all the relevant information including both recorded foreign songs and misheard song lyrics are available so that one can examine how misperception occurs objectively. (Note that no information is given on the audiences' linguistic background, however.)

Theoretically speaking, two types of *Soramimi awaa* could exist: L1 misheard song lyrics caused by L2 foreign songs and L2 misheard song lyrics caused by L1 foreign songs. Since, to our knowledge, the latter has not been the subject of explicit attention, and it is certainly not available on the website, we confined our examination to cases of the former.

2. ANALYSIS

It is important to bear in mind that the fundamental issue here is how a continuous stream of sound in L2 songs, with no overt divisions into discrete units, is interpreted as meaningful chunks in L1. Even though *Soramimi awaa* is unique in the sense that the source and perceived languages are different, central to this issue is the problem of phonological processing, just as with ordinary mishearings. Thus, *Soramimi awaa* was analyzed with respect to two types of phonological processing. The first is at the segmental level. Typical mishearing at the segmental level includes the addition, omission and substitution of a particular speech segment. The second is at the phrasal level. In addition to segmental errors, juncture misperception often causes mishearing at this level. Thus, we first report the cases of misheard song lyrics at the segmental level and then the cases at the phrasal level.

194 misheard song lyrics which were broadcast on TV between 1992 and 2007 were analyzed from the website. The phonetic distance between the actual and perceived song lyrics varied from well preserved to very little preserved. Since this word play was intended to amuse, the reported misheard song lyrics are often nonsense, semantically speaking. We only analyzed misheard song lyrics which showed clear resemblances between the source and the perceived song lyrics.

2.1. Interlingual near homophonic words

Interlingual near homophonic words were defined as perceived words in L1 which were triggered by L2 song words. In *Soramimi awaa* the perceived words were Japanese, and the source words were English. In the database as a whole, three basic types of phonological process occurred; examples can be found of each of these processes in the interlingual near homophones, as Table 1 shows.

Table 1: Interlingual near homophonic words.

Source song lyrics	Perceived song lyrics
A. Insertion	
1. cry [kraɪ]	kurai [kuɾai] 'dark'
B. Deletion	
2. go [goʊ]	go [go] 'go'
C. Alternation	
3. psycho [saɪkoʊ]	saikou [saikoo] 'the highest'
4. low [loʊ]	rou [roo] 'wax'
5. shadow [ʃædoʊ]	shadou [ʃadoo] 'roadway'

As can be seen from the examples in Table 1, although some speech segments are distorted, source and percept appear to be almost identical. For example, take a look at (1). In this case, a high back vowel [u] was inserted into a consonant cluster [kr-] in the source song lyrics. In other words, it involved the process of insertion. Insertion of vowels into clusters which are illegal in the L1 is a well-known feature of Japanese perception of foreign languages, which has also been demonstrated in the laboratory [15]; thus the present data exemplify known effects and are not artificially constructed. In the case of (2), the second element of a diphthong [oʊ] in the source song lyrics was deleted. That is, it involved the process of deletion. And in the case of (3), the diphthong [oʊ] in the source lyric was replaced by a long vowel. In other words, it involved the process of alternation. Both these cases are also natural misperceptions of non-Japanese sequences by Japanese listeners. Thus, all these data clearly show that when Japanese L2 listeners hear foreign songs, interlingual near homophonic Japanese words may be activated in their L1 lexicon according to natural phonological processes.

Of the 194 cases analysed, only 9 (4%) fell into this category of near homophonic words. Six of these wese cases of type C (alternation).

2.2. Interlingual near homophonic phrases

Interlingual near homophonic phrases were defined as perceived L1 phrases triggered by the L2 song lyrics. These phrases accounted for 96% of the 194 cases, and as described earlier, they tended to involve more complex phonological processing: mishearing of speech segments as well as misperceiving juncture within or between words. Five representative examples of interlingual near homophonic phrases are shown in Table 2.

As can be seen from the examples in Table 2, the most notable fact is that the number of words in perceived song lyrics was nearly always less than that of source song lyrics. This was true of 85% of the phrase cases (and of the remainder, 12% had the same number of words and only 3% had more). For example, consider (1). The source contains three words, whereas the percept is only one word. The three words have been merged into a single word through the process of deletion (the medial word [ðə] and the coda segment [d]). Example (2) involves a similar process. First, the onset segment

[r] in the second syllable of the first word was deleted. Then the coda cluster [st] was deleted. And finally the second element of the diphthong [aɪ] was deleted. In the case of (3), both phonological processes at the segmental and the juncture levels are involved. Thus the second element of the diphthong [aʊ] and the final stop in the coda of the first word were deleted. Then the second word was split into two as [so] and [ʊ]. And finally, this second element of [ʊ] was merged with the final word (the final segment [t], again an illegal coda in Japanese, was also deleted).

Table 2: Interlingual near homophonic phrases.

Source song lyrics	Perceived song lyrics
1. come the sword	komusoo 'priest'
[kʌm ðə sɔd]	[komɯɯso]
2. every darkest sky	ebi dake suka 'Only shrinp?
[ɛvri dɑrkɛst skaɪ]	[ebi dake sɯɯka]
3. sound so sweet	sanso usui 'the air is thin'
[saʊnd soʊ swit]	[sanso usɯɯi]
4. us and then	asu anzen 'tomorrow safe'
[əs ənd ðɛn]	[asu anzen]
5. made my heart come all undone	memai hakken oranda 'dizziness discovery Holland'
[meɪd maɪ hɑrt kʌm ɔl ʌndʌn]	[memai hakken oranda]

In sum, the fact that the reported percept was nearly always shorter than the input suggests a process of lexical activation rather than deliberate syntax construction. Further, although phonetically matched lexical items were in general generated, they were modified by natural phonological and morphological processes. Thus, we may conclude that when Japanese L2 listeners heard foreign songs, they could activate near homophonic Japanese phrases in their L1 mental lexicon.

3.   DISCUSSION & CONCLUSIONS

The present study has attempted to analyze Japanese misheard song lyrics called *soramimi awaa* in the light of the hypotheses concerning bilinguals' spoken-word recognition as proposed in laboratory-based studies. As discussed in the introduction, the recent findings on bilingual word activation have suggested that irrelevant L1 word candidates play a role in spoken-word recognition in L2; the L1 lexicon cannot be deactivated. The present study has examined whether relevant evidence could be found in word play.

These interlingual near homophonic words and phrases suggest that the hypothesis of L1 activation seems to be real for these Japanese L2 users. The findings of this study raise some intriguing questions with respect to bilingual spoken-word recognition. First, how could the Japanese lexicon so easily be activated by English auditory inputs in this word play? A recent study using the gating paradigm has shown that proficient bilinguals use knowledge of sublexical or even subphonemic aspects of the auditory signal to discriminate between lexical candidates in their L1 and L2 [8]. If word activation is determined by the knowledge of auditory features in this way for all listeners, the Japanese lexicon should not be expected to be activated by the auditory signal in English songs. However, the word play results contradict this. At least for these listeners (less proficient than those in [8]), and in the case of deliberate attempts at word play, the knowledge of sublexical or subphonemic aspects of the auditory signal seems not to rule out L1 word activation in bilingual spoken-word recognition. If so, such findings in word play may be observable in other L2 users too.

Second, could we also observe the reverse in word play – could the L2 lexicon be activated by L1 auditory inputs? In this study this problem was not examined because such word play was not available at the moment. However, if our findings are correct, we predict that the English lexicon may be activated by Japanese auditory input. Consider Table 1 again; as long as the phonemic conversion rules are well learned by Japanese English learners, words should be easily activated. The construction of phrases (cf. Table 2), involving the operation of more complex phonological and morphological processes, may however be less likely. In either case, the word play may be a useful method for L2 teachers to stimulate enjoyable L2 production.

Finally, is there a difference between bilinguals and monolinguals in the (de)activation of word candidates? In the relevant literature, it is assumed that deactivation is required because bilinguals have two lexicons. Since monolinguals have a single lexicon, there is no second lexicon to be deactivated. However, we suggest that our results indicate similar performance for monolinguals and bilinguals. The word play examples showed the same kinds of processes as appear in adaptation of foreign loan-words in Japanese [16], and as are observed in laboratory studies of L2 perception by Japanese listeners [15].

The word play which we have examined is potentially a rich source of evidence about the mechanisms of bilingual spoken-word recognition. We hope that further investigations will be conducted with other bilingual populations.

4. ACKNOWLEDGEMENT

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