Correlation between the original word knowledge and the strategy of connecting with the original words in the acquisition of loanword in Korean by Chinese speakers*

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Choi, Eun ji. 2020. Correlation between the original word knowledge and the strategy of connecting with the original words in the acquisition of loanword in Korean by Chinese speakers. *Linguistic Research* 37(Special Edition): 163-188. The current study aimed to examine the correlation between knowledge of original words and strategy of connecting loanwords with original words in Chinese students at an intermediate/advanced level of proficiency in Korean language. A total of 47 participants were selected for the study and underwent testing with 29 English loanwords in Korean selected from advanced vocabularies and paired with their origins in English to assess their knowledge and recognition of original words and loanwords and ability to associate loanwords with the corresponding original words. The data were used to determine the correlation between these variables. Correlation analyses revealed a strong significant correlation between original word knowledge and loanword knowledge across participants. However, no significant correlation was observed for original word knowledge with loanword recognition and the ability to connect loanwords and original words. In terms of the English loanwords tested, a significant correlation was found for original word knowledge with loanword knowledge, loanword recognition, and loanword-original word connection. In short, knowledge level of original words was not positively correlated with the abilities to recognize and associate them with the corresponding loanwords. However, knowledge of original words was helpful when learning a loanword that is cognate with the original words. Hence, the current study underscores the need for teaching strategies that allow students who learn Korean as a second language to utilize their knowledge of original words as a means of identifying the loanwords in Korean derived from the original language and uncovering their meaning as well. **(Wonkwang Digital University)**

Keywords loanword, original word, cognate, original word knowledge, loanword knowledge, loanword recognition, strategy of connecting loanwords to original words

1. Introduction

This study aims to examine the correlation between the original word knowledge and the strategy of connecting loanwords to original words in the loanword acquisition by intermediate and advanced Chinese learners of Korean language.

Loanwords refer to the vocabulary borrowed from foreign languages to be integrated into the lexicon of Korean. Therefore, the existence of a loanword presupposes the corresponding cognate. Cognates are a pair of words common in two different languages, which are similar in meaning or form. At first, cognates referred to words shared in two sister languages with historical connection and derived from the same origin (Banta 1981), but recently it also means a pair of loanwords, borrowed from one language to another, and the counterpart in the origin language (Rogers et al. 2015).

In Korean vocabulary, there are numerous borrowed words, especially from the English language, hence the loanwords and the original words in English become cognates. Therefore, it can be assumed that if learners of Korean know the original word, it would help them to learn the corresponding loanword. This is because learners can utilize their knowledge about original words to learn new loanwords based on the morphological similarity of the two words.

This study focuses on a strategy of connecting loanwords to original words when learners of Korean acquire loanwords. A strategy of connecting loanwords to original words is "a strategy of acquiring loanwords in connection to original words, which are cognates (Choi 2017: 190)", and to utilize this strategy, knowledge of the original words should be the basis. Accordingly, this study aims to explore the relationship between the knowledge of original words and the strategy of connecting loanwords to original words.

2. Literature review

2.1 Vocabulary acquisition and cognate knowledge

The influence of cognate knowledge on vocabulary acquisition was examined

in the discussion of foreign or second language education. Researchers of foreign language education have been paying attentions to the influences of cognate knowledge on vocabulary development and most agree that cognate words help learn new words in a foreign/second language (Yoshida 1978; Brown and William 1985; Lotto and De Groot 1998; Hall 2002; Tonzar et al. 2009; Benthuysen 2004; Daulton 2007; Rogers et al. 2015).

After exploring the relationship between the presence of cognates and success of learning Italian vocabulary among German-speaking learners of Italian, Lotto and De Groot (1998) uncovered that it is easier to learn Italian words when there are cognate words in German. In another research, Hall (2002) presented a group of Spanish native speakers studying the English language with a list of 30 pseudowords, mix of pseudo cognates and pseudo non-cognates, and asked them to mark the words they recognize. Respondents reported they know pseudo cognates more frequently. The result indicates that learners use a strategy to infer meaning of words based on an overlap in form. Tonzar et al. (2009) taught a group of juvenile native speakers of Italian new words (Italian-German, Italian-English cognates and noncognates). When asked to recall the words, the students tended to remember a pair of cognates a lot better than that of noncognates. The gap between cognates and noncognate was bigger among Italian-German pairs, with which learners were not familiar, than Italian-English pairs.

A substantial amount of research has dealt with Japanese learners of English. Japanese is a language with many borrowed words from English in its lexicon and it has been a matter of interest whether the loanword knowledge will help native Japanese speakers to develop their English vocabulary. Yoshida (1978) proved the effect of vocabulary education using loanwords among Japanese children who learn English as a second language. In this research, he showed that the awareness of loanwords is useful in learning English words. Brown and Williams (1985) showed that Japanese college-age EFL learners understand English words corresponding to the loanwords in Japan better than those without corresponding loanwords. Benthuysen (2004) tested college-age EFL students to find out if they can match given English words to the loanwords in Japanese. Then he examined the test results in association with TOEIC Bridge scores to find that a group scoring higher in TOEIC Bridge also tends to score

higher in the loanword test. This result indicates that the groups with higher scores are more likely to use a strategy to associate unknown English words with loanwords in Japanese. Daulton (2007) analyzed vocabulary in the English composition by Japanese EFL learners and discovered that they use more English words where there are corresponding loanwords than not, implying that loanwords in Japanese facilitate the use of corresponding English words. Rogers et al (2015) examined intermediate-level Japanese EFL learners to see if they recall English words better when there are cognates in Japanese and revealed that they learn new English words more easily when there are cognates than not. It can be concluded, as seen in the case of English vocabulary education for Japanese learners, that loanwords in the mother tongue, which are cognates, can greatly facilitate the acquisition of vocabulary when learning a foreign/second language.

It has been proven in numerous studies that words are learned better when there are cognates in learning a foreign/second language. This is because knowledge about cognates in the mother tongue facilitates the acquisition of the foreign language.

However, it is difficult to apply the findings to Chinese-speaking learners of Korean as they are. As most Korean loanwords come from English words, Chinese learners should learn Korean, second language for them, by using cognates in English; another foreign/second language. This is clearly different from the situation where learners resort to the cognate knowledge of their mother tongue to learn vocabulary of the second/foreign language.[1]

Therefore, this study aims to examine how much original word knowledge of English influences the acquisition of loanword from English by Chinese learners of Korean as a foreign/second language.

2.2 Korean learners' loanword acquisition and original word knowledge

Most studies on loanword education of the Korean language claim that even

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1   Yang and Oh (2020) have explored the principle of adaptation of English coronal fricatives into Mandarin Chinese. Just as another language elements like encoding complex motion events vary by language (Park 2020), different languages apply different principles in the adaptation of foreign languages.

if a learner has knowledge of original words, it will not lead to the acquisition of loanwords (Lee 2007; Kim 2010; Park 2010). The following cases are presented as the foundation for the argument: where there is a difference between spelling and pronunciation such as 버스 'bus' or 센티미터 'centimeter'; where meaning has changed during the process of introduction such as 셀프 'self' or 파이팅 'fighting'; where the original word is truncated such as 아파트 'apartment'; and where the original word is combined with Korean word parts to become a new word such as 드라이기 'drier' and 비닐봉지 'vinyl bag'.

Studies by Qiu (2016) and Bai (2017), which investigated the use of loanwords by Chinese learners of Korean, support this view. Qiu (2016) interviewed 30 learners of 45 loanwords to explore how they actually pronounce the foreign languages. Only 6 cases showed 100% accuracy, and only 16 examples had more than 50% accuracy, thereby reflecting very low accuracy. In this study, the reasons for this low accuracy include interference of Chinese English pronunciation, transfer of Chinese loanword pronunciation, difference between loanword notation and real pronunciation, and a difficulty in acquiring Korean phonology.

Bai (2017) also conducted a loanword notation test for learners majoring in Korean at a university in China, and examined a percentage of correct answers to notation. Although the percentage of correct answers increased steadily as the grade level went up, the correct answer rate remained low with 58.5% even at the highest grade.

However, the studies of Qiu (2016) and Bai (2017) just show that learners have a difficulty in acquiring loanwords. They do not experimentally examine the factors that influence a learner's loanword skills.

On the other hand, Loong (2014) is a study which claims that learners' knowledge of original words helps in acquiring loanwords. Loong (2014) studied the relationship between the word type recognition ability and word recognition ability for Korean vocabulary by targeting 22 Hong Kong learners of Korean for beginner level. The results of the word type identification test and the meaning interpretation test carried out in this study found that the word type recognition ability is the strongest for loanwords followed by native Korean vocabulary and Sino-Korean vocabulary, and the word recognition ability was the strongest for loanwords followed by Sino-Korean vocabulary, and native Korean vocabulary.

Further, in the case of 커피 'coffee' or 버스 'bus' which had a high percentage of correct answers, there is a positive relationship between the word type recognition ability and word recognition ability. This implies that positive transfer effect of prior knowledge of English as a second language on loanword learning is greater than the positive transfer effect of Cantonese, which is learners' first language, on learning of Sino-Korean vocabulary. However, this study has a limitation since only 5 loanwords were included in the test, and the correlation between word type recognition ability and word recognition ability was not analyzed. The link between the two needs to be explored more experimentally.

Choi (2017), Choi (2019) focuses on the strategy of connecting to original words as a meaning discovery strategy that can be used to identify the meaning of the loanword that is encountered for the first time. Like the strategy of 'check for L1 cognates' among the strategies for discovering meaning presented by Shumitt (1997: 207), the strategy of connecting to original words is a "strategy for acquiring loanwords by connecting to original words, which are the cognate words" (Choi 2017: 190). In addition, in this study, as shown in <Figure 1>, there are 'loanword recognition ability', 'loanwords-original words connection ability', and 'original word knowledge' as the abilities that establish a strategy for connecting with original words.
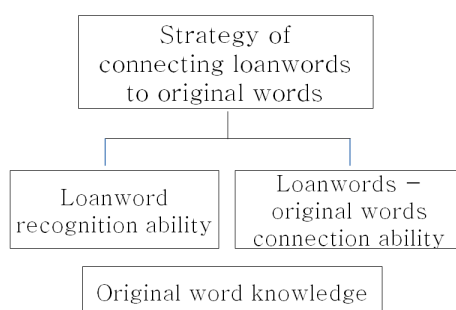

Figure 1. Strategy of connecting loanwords to original words and base abilities

Here, original word knowledge (OWK) indicates whether a learner knows the original words that form a relationship of cognate with loanwords of Korean. Moreover, 'loanword recognition' (LR) ability means "an ability to recognize that

the vocabulary is the loanword when the loanword is newly encountered (Choi 2019: 338)," that is, an ability to recognize loanword as word type of Korean. The 'loanwords-original words connection' (LOC) ability refers to "an ability to grasp the meaning of the loanword by loanwords-original words connection it with the original words when the loanword is newly encountered (Choi 2019: 338)."

Choi (2017), and Choi (2019) investigated this strategy of linking to original words and the base abilities. First, in order to explore the learners' ability of understanding the meaning of loanword in connection with original words when they encounter the loanword, Choi (2017) examined the ability of loanword recognition and connecting with original words for 25 loanword by targeting 17 learners of intermediate and advanced level Korean. As a result, the ability of recognizing the loanword was significantly lower than the ability of recognizing non-loanword, and only 17.9% of the cases succeeded in connecting the loanword with original words, thereby reflecting a very low ability of inferring the loanword in connection with the original words. As a result, intermediate and advanced learners of Korean had a very weak ability of connecting the loanword with the original words. However, the results of this study did not show how learners' abilities are related to each other.

Accordingly, to explore how the original word knowledge, loanword recognition ability, and loanword-original word connection ability affect the loanword ability of Chinese-speaking learners of Korean, Choi (2019) performed a multiple regression analysis and logistic regression analysis. In the multiple regression analysis of this study, learners' knowledge of original words, and loanword-original word connection ability were analyzed as factors influencing the loanword ability of learners, and through the logistic regression analysis, the presence or absence of original word knowledge, loanword recognition, and loanword-original word connection were found to be factors affecting the knowledge of loanword.

As such, Choi (2019) showed that the original word knowledge is a factor influencing the loanword ability. However, a more detailed exploration seems to be needed for a relationship between a learner's knowledge of the original words and the loanword recognition ability or the loanword-original word connection ability which form a strategy of connecting with original words.

3. Research methods

3.1 Subjects

This study surveyed 47 Chinese learners of Korean to identify the relationship between OWK and base abilities of strategy of connecting loanwords to original words. Participants were Chinese students who were studying in Korean universities. They are all learners with intermediate or advanced proficiency, and were certified for TOPIK level 3 or higher in the university admission process. Basic information of the participants is presented in Table 1.

Table 1. Basic information of the participants

Gender	Male		Female		Sum
	11		36		47
Period of living in Korea	0~12mths	13~24 mths	25 mths ~	No response	Sum
	12	23	11	1	47
Period of learning English	0~5yrs	5 ~10 yrs	10 yrs~	No response	Sum
	5	10	21	11	47

To verify if there is a difference between groups due to variables such as period of residence in Korea and period of learning English, multivariate analysis of variance (MANOVA) was conducted. The period of residence in Korea and the period of English learning were set as independent variables, and loanword knowledge (LK), OWK, LR, and LOC were established as dependent variables. The results of MANOVA are as follows.

Table 2. Inter-variable effect test of MANOVA

Source	Dependent variable	Type III sum of square	Degree of freedom	Mean square	F	Significance probability
Correction model	LK	498.863a	22	22.676	1.120	.391
	OWK	831.915b	22	37.814	1.667	.112
	LR	471.727c	22	21.442	.477	.957
	LOC	659.485d	22	29.977	.874	.622
Intercept	LK	1344.554	1	1344.554	66.440	.000
	OWK	1761.247	1	1761.247	77.660	.000
	LR	5811.258	1	5811.258	129.407	.000
	LOC	1320.383	1	1320.383	38.507	.000

Period of learning English	LK	88.152	3	29.384	1.452	.253
	OWK	127.632	3	42.544	1.876	.161
	LR	73.906	3	24.635	.549	.654
	LOC	136.134	3	45.378	1.323	.290
Period of residence in Korea	LK	13.809	2	6.904	.341	.714
	OWK	26.664	2	13.332	.588	.563
	LR	80.197	2	40.098	.893	.423
	LOC	36.089	2	18.045	.526	.597
Error	LK	485.690	24	20.237		
	OWK	544.298	24	22.679		
	LR	1077.762	24	44.907		
	LOC	822.940	24	34.289		
Total	LK	6010.000	47			
	OWK	6738.000	47			
	LR	19558.000	47			
	LOC	6405.000	47			
Correction total	LK	984.553	46			
	OWK	1376.213	46			
	LR	1549.489	46			
	LOC	1482.426	46			

As shown in the table above, the effect of period of residence in Korea, and period of learning English on the LK, OWK, LR, LOC was explored, but the difference between the groups by the three variables were not statistically significant.

3.2 Procedure

This study investigated OWK, LK, LR, and LOC. First, OWK and LK were measured by asking participants if they know the meaning of given original words and loanwords. If they say yes, they are asked to write the meaning in Chinese for confirmation. Their answers were checked by advanced learners of Korean who are also native Chinese speakers.[2]

Next, LR and LOC were investigated. The former refers to an ability to recognize a new word as a loanword. When a Korean encounters unknown

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2 When judging if they know the meaning, any of the multiple senses of the word is considered correct. For instance, 'pop' means 'popular music' but also means 'trend.' Either is considered a right answer.

word and tries to find what that means, he or she would have to recognize that it is a loanword in the first place. Loanwords in Korean often include phonemes such as 슈 or 워, uncommon in Sino-Korean words. If learners can recognize loanwords based on such a phonological clue, it will help them understand the meaning of the loanword when they encounter unknown words.[3] The LR has been measured by the test where subjects are presented with a list of both loanwords and advanced-level Sino-Korean words mixed and asked to mark loanwords.

The LOC means an ability to connect new loanwords with the original word they are familiar with. If learners realize that a new word is a loanword, then they could apply their OWK to the loanword they encounter and connect the original word with it. In other words, learners should be able to retrieve a word with similar pronunciation of the given loanword, from the list of original words they have and connect the two. It is not easy for learners of Korean to have such LOC. This is only possible when learners have internalized the principle of transliteration applied to Korean loanwords.[4] Participants were guided to find as many connections as possible between suggested loanwords and English original words to assess the LOC.[5]

3.3 List of loanwords

30 advanced-level loanwords were used on the test. They were selected from the 93 shared loanwords by the list of loanwords in the advanced vocabulary of the National Institute of Korean Language (2011) and the list of academic loanwords suggested by Kim (2010). First, 23 entries with differences in transcription and pronunciation (e.g., 텍스트[텍쓰트] 'text', 시나리오 [씨나리오] 'scenario') were excluded in reference to the 'list of loanwords with a gap

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3 Native Korean speakers also resort to phonological characteristics to recognize a loanword. For example, even native speakers fail to recognize a loanword such as '비박' because it does not show any typical phonological properties of Korean loanwords even though it originated from a German word, 'Biwak', or a French word, 'Bivouac'.

4 Oh and Kim (2012) is exploring the principle of adaptation when English comes into the loanword of Korean.

5 In this question, participants are led to write the corresponding original word in English and the answers with simple spelling errors (e.g., 'interia,' instead of 'interior' or 'degital,' instead of 'digital') were considered correct.

between transcription and pronunciation from the Basic Korean Vocabulary List' by Cha (2007: 380).[6] Also, words borrowed from German or French (e.g., 테마 'Thema', 부르주아 'Bourgeois') were excluded limiting the entries to loanwords from English only. Lastly, excepted entries were the nine loanwords considered non-advanced from the previous studies, polysemic words or homonyms which students may have already learned in the beginning or intermediate level. Synonyms for which knowledge about one word influences the others, such as 포스트모더니즘 'postmodernism', 포스트모던 'post-modern', and 모더니즘 'modernism' were integrated. Out of the remaining 54 loanwords, 30 were selected at random for the convenience of the research. Further, after the investigation was completed, vocabularies that did not meet the selection criteria were found and accordingly, excluded.[7] In this way, a total of 29 vocabularies were analyzed. The resulting list includes the following words.

글로벌 'global'	네트워크 'network'	데이트 'date'
디지털 'digital'	레저 'leisure'	렌즈 'lens'
마이너스 'minus'	매너 'manner'	벤처 'venture'
벨 'bell'	블랙홀 'black hole'	애니메이션 'animation'
앵커 'anchor'	오존 'ozone'	오케스트라 'orchestra'
웹 'web'	인슐린 'insulin'	인테리어 'interior'
칼슘 'calcium'	캐릭터 'character'	케이블 'cable'
코드 'code'	팝 'pop'	패턴 'pattern'
페미니즘 'feminism'	페이지 'page'	포럼 'forum'
플롯 'plot'	휴머니즘 'humanism'	

The first and second round of tests had conducted with the interval of a week to minimize the effect of memory by being exposed to the 29 words repetitively. The LR and OWK were assessed in the first round, and the LK and LOC in the second round.

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6   Next, the list was reviewed to exclude the entries with meaning changed from the original word or those combined with Korean word parts to coin a new word but there was none applied.

7   Although 미사일 'missile' was included in the original survey, the reviewer pointed out that the actual pronunciation of 미사일 'missile' is [misl] and does not match the pronunciation of the loanword in Korean. Accordingly, of the 30 loanwords, 미사일 'missile' was excluded and analysis was conducted.

3.4 Analysis

The correlation analysis was conducted in three aspects: First, correlation between OWK and LK was analyzed. This is to examine whether having OWK is related to having LK. Second, correlation between OWK and LR was analyzed. This is to examine whether having OWK is related to recognizing new loanwords they encounter. Finally, correlation between OWK and LOC was analyzed. This is to examine whether having OWK is related to an ability to connect a new loanword with the original word.

The analysis of correlation in three aspects was conducted in two ways respectively. First of all, OWK, LK, LR and LOC, were measured for participants and the correlations among them were examined. The purpose of this analysis was to see if much or little OWK of a subject is associated, in general, with LK, LR and LOC. To this end, Pearson's simple product-moment correlation coefficient was calculated.

Next, correlations were examined for each loanword. This is to examine when subjects are equipped with the knowledge of a certain original word, if it correlated to LK, LR, and LOC related to the original word. This assessment of each loanword case is analyzed by cross tabulation analysis and χ^2 test, which is used when both are dichotomized qualitative variables.[8] This is summarized as follows.

Table 3. Contents and method of analysis

Contents		Analysis Method
OWK-LK	Correlation by Participants	Pearson simple product-moment correlation coefficient
	Correlation by Words	χ^2 test
OWK-LR	Correlation by Participants	Pearson simple product-moment correlation coefficient
	Correlation by Words	χ^2 test
OWK-LOC	Correlation by Participants	Pearson simple product moment correlation coefficient

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8   Analysis of words dealt with one case as dichotomized values such as 'have,' and 'do not have', or 'recognize' and 'do not recognize', or 'connect' and 'do not connect' so all of them can be considered dichotomized variables.

Correlation by Words	χ^2 test

SPSS version 21 was used to conduct statistical analysis to calculate correlation coefficients above.

4. Results

4.1 Correlation between original word knowledge and loanword knowledge

First, it was examined whether participants with more OWK also have more LK. With the number of original words and loanwords a subject knows as variables, descriptive statistics and correlation coefficient were calculated.

Table 4. Descriptive statistics of OWK-LK by participants

	Mean	SD	N
OWK	10.68	5.470	47
LK	10.34	4.626	47

The findings revealed that 47 subjects know 10.68 original words and 10.34 loanwords on average out of the 29 given words.

Table 5. Correlation coefficients of OWK-LK by participants

		OWK	LK
	Pearson correlation coefficient	1	.804*
OWK	Significance probability		.000
	N	47	47

* $p<0.05$ (two-sided)

Next, Correlation Coefficients of OWK-LK by Participants were analyzed. The result showed that there is a highly positive correlation between the two with correlation coefficient at .804, which is statistically significant.

To evaluate the correlation of OWK and LK by each case of word, it was examined whether the subject with or without OWK has LK or not by each word. The test was intended to find out whether a subject knows corresponding loanword when he or she knows a specific origin word.

Table 6. Cross-tabulation of OWK-LK for each vocabulary case

| | | | LK | | Total |
			have	not have	
OWK	have	Frequency	371	117	488
		Expected frequency	173.6	314.4	488.0
		% of OWK	76.0%	24.0%	100.0%
		% of LK	76.5%	13.3%	35.8%
		Total %	27.2%	8.6%	35.8%
	not have	Frequency	114	761	875
		Expected frequency	311.4	563.6	875.0
		% of OWK	13.0%	87.0%	100.0%
		% of LK	23.5%	86.7%	64.2%
		Total %	8.4%	55.8%	64.2%
Total		Frequency	485	878	1363
		Expected frequency	485.0	878.0	1363.0
		% of OWK	35.6%	64.4%	100.0%
		% of LK	100.0%	100.0%	100.0%
		Total %	35.6%	64.4%	100.0%

The table above shows the cross tabulation of OWK and LK on 1,363 words of 29 loanwords among 47 subjects. It was highly likely when participants have OWK, they also have LK and when they do not have OWK, they do not have LK, either. This general trend was statistically proven by χ^2 test of OWK and LK by words.

Table 7. χ^2 test for correlation between OWK-LK for each vocabulary case

	Value	Degree of freedom	Asymptotic significance (two-sided test)	Exact significance probability (two-sided test)	Exact significance probability (one-sided test)
Pearson chi-square	542.393a	1	.000		
Continuous correction b	539.648	1	.000		
Likelihood ratio	559.875	1	.000		
Fisher's exact test				.000	.000
Linear to linear	541.995	1	.000		

combination		
Number of effective cases	1363	

a. 0 cell (0.0%) is a cell with an expected frequency less than 5. The minimum expected frequency is 173.65.
b. Calculated only for 2x2 table

As shown above, when the correlation between OWK and the LK was tested, the significance probability was p<.05, implying that the two variables are statistically correlated.

4.2 Correlation between original word knowledge and loanword recognition

For the next step, correlation between OWK and LR was analyzed. First, correlation between OWK and LR was examined by the survey participants. Excluding those with LK, the ratio of having OWK and of recognizing loanwords without LK was obtained to induce variables.[9]

Table 8. Descriptive statistics of OWK-LR by participants

	Mean	SD	N
Ratio of OWK	14.7	14.7	47
Ratio of LR	62.0	24.9	47

As seen in the table above, the ratio of OWK to the unknown loanword was 14.7% and the ratio of LR was 62.0%.

Table 9. Correlation coefficients of OWK-LR by participants

		OWK Ratio	LR Ratio
	Pearson correlation coefficient	1	.068
OWK Ratio	Significance probability		.651
	N	47	47

* p<0.05 (two-sided)

As can be seen above, correlation coefficient of OWK and LR by participants

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9   Having LK means that they are recognize the loanword as a loanword so it was considered better to be excluded.

was .068, which is not statistically significant. It can be interpreted as OWK and LR not being correlated.

Next, correlation between OWK and LR by words is discussed. The cross tabulation of LR on 878 words of the words without LK, out of the 1,363, is summarized as follows according to subjects having OWK or not.

Table 10. Cross-tabulation of OWK-LR for each vocabulary case

| | | | LR | | Total |
			Recognize	Not recognize	
OWK	have	Frequency	81	41	122
		Expected frequency	70.7	51.3	122.0
		% of OWK	66.4%	33.6%	100.0%
		% of LR	15.9%	11.1%	13.9%
		Total %	9.2%	4.7%	13.9%
	not have	Frequency	428	328	756
		Expected frequency	438.3	317.7	756.0
		% of OWK	56.6%	43.4%	100.0%
		% of LR	84.1%	88.9%	86.1%
		Total %	48.7%	37.4%	86.1%
Total		Frequency	509	369	878
		Expected frequency	509.0	369.0	878.0
		% of OWK	58.0%	42.0%	100.0%
		% of LR	100.0%	100.0%	100.0%
		Total %	58.0%	42.0%	100.0%

As seen in above table, subjects are aware of loanwords in more often cases regardless of having OWK. Therefore, it is assumed that LR is not related to OWK. χ^2 test was performed to statistically verify the correlation between the OWK and LR for each vocabulary case.

Table 11. χ^2 test for correlation between OWK-LR for each vocabulary case

	Value	Degree of freedom	Asymptotic significance (two-sided test)	Exact significance probability (two-sided test)	Exact significance probability (one-sided test)
Pearson chi-square	4.124a	1	.042		
Continuous	3.732	1	.053		

correction b					
Likelihood ratio	4.208	1	.040		
Fisher's exact test				.048	.026
Linear to linear combination	4.119	1	.042		
Number of effective cases	878				
a. 0 cell (0.0%) is a cell with an expected frequency less than 5. The minimum expected frequency is 173.65.					
b. Calculated only for 2x2 table					

As a result of χ^2, p<.05. As there was a difference between groups, it can be analyzed that there is a correlation between the OWK and LR. Whether one knows the original words is related to recognizing the loanword.

4.3 Correlation between original word knowledge and loanwords-original words connection

Let's take a look at the correlation between OWK and LOC. The cases where learners have LK were excluded. For those without LK, the ratio of having OWK and of LOC, are calculated and taken as variables.

Table 12. Descriptive statistics of OWK-LOC by participants

	Mean	SD	N
Ratio of OWK	14.7	14.7	47
Ratio of LOC	13.8	11.8	47

As seen in the table above, the ratio of OWK was 14.7% while 13.8% succeeded in loanwords-original words connection.

Table 13. Correlation coefficients of OWK-LOC by participants

		OWK Ratio	LOC Ratio
OWK Ratio	Pearson correlation coefficient	1	.237

Significance probability		.108
N	47	47

* p<0.05 (two-sided)

Correlation between OWK and LOC was analyzed. Correlation coefficient between the two variables was .237, which is not statistically significant. It can be interpreted as OWK and LOC not being correlated. In other words, it is difficult to say that those with more OWK always have higher competence of connecting original word with loanword.

Next, in an attempt to identify the correlation between OWK and LOC by words, the distribution of LOC was examined according to whether learners have OWK or not.

Table 14. Cross-tabulation of OWK-LOC for each vocabulary case

			LOC		Total
			Connect	Not connect	
OWK	have	Frequency	49	73	122
		Expected frequency	14.2	107.8	122.0
		% of OWK	40.2%	59.8%	100.0%
		% of LOC	48.0%	9.4%	13.9%
		Total %	5.6%	8.3%	13.9%
	not have	Frequency	53	703	756
		Expected frequency	87.8	668.2	756.0
		% of OWK	7.0%	93.0%	100.0%
		% of LOC	52.0%	90.6%	86.1%
		Total %	6.0%	80.1%	86.1%
Total		Frequency	102	776	878
		Expected frequency	102.0	776.0	878.0
		% of OWK	11.6%	88.4%	100.0%
		% of LOC	100.0%	100.0%	100.0%
		Total %	11.6%	88.4%	100.0%

The findings show that subjects are more likely not to connect the given loanword to the original word regardless of OWK. This leads to the prediction that the correlation between OWK and LOC will be weak, if at all.

It is noteworthy that in 53 cases, subjects connected the original word to the loanword without OWK. This means they were able to find the corresponding

original word to the given Korean loanword even if they do not know what that means in Korean. The result indicates participants could transliterate the word in alphabets based on the sound of the Korean word even when they do not know what that means.

Table 15. x^2 test for correlation between OWK-LOC for each vocabulary case

	Value	Degree of freedom	Asymptotic significance (two-sided test)	Exact significance probability (two-sided test)	Exact significance probability (one-sided test)
Pearson chi-square	112.453a	1	.000		
Continuous correction b	109.247	1	.000		
Likelihood ratio	82.517	1	.000		
Fisher's exact test				.000	.000
Linear to linear combination	112.324	1	.000		
Number of effective cases	878				
a. 0 cell (0.0%) is a cell with an expected frequency less than 5. The minimum expected frequency is 173.65.					
b. Calculated only for 2x2 table					

To verify the correlation between the original word knowledge and connection with original words for each vocabulary case, χ^2 test was conducted for each vocabulary case. As a result, p<.05, implying that the two variables are correlated. That means it will help participants to infer the meaning of loanwords if they know the origin word.

5. Discussion

This study examined the correlation between OWK and LK, LR and LOC.

First, as a result of examining the correlation between OWK and LK, OWK and LK had a strong correlation with .804 for each research subject, but the correlations between OWK and LR, and OWK and LOC were not statistically significant for each research subject. However, when the correlation was examined by vocabulary case, the results were different. When looking at each vocabulary case, the correlation between the OWK and LK, and the correlation between the OWK and LR, OWK and LOC were found to be statistically significant. This suggests that if a learner knows a specific original word in English, he/she is very likely to know the loanword that makes up the cognate, and succeed in recognizing that loanword, or connecting with cognate words. Although a high level of original word knowledge does not lead to overall loanword recognition ability and ability of connecting with original words, being aware of a particular original word can help in acquiring loanword paired with it.

The results of this study are in line with the results of previous studies that examined the effect of cognate knowledge on vocabulary learning in foreign language education. These studies (Lotto and Groot 1998; Hall 2002; Tonzar et al. 2009; Brown and Williams 1985; Kimura 1989; Robert 2004; Daulton 2007; James et al. 2015) found that the knowledge of vocabularies that are in a cognate relationship helps in learning the vocabularies in foreign language. The results of this study can be said to be consistent with the results of previous studies. Furthermore, this alleviates some of the concerns raised by Lee (2007), Kim (2010), Park (2010), and Qiu (2016). They expressed a concern by stating that there is a possibility that even if one has original word knowledge, it may not lead to acquisition of loanword. However, as shown in Loong (2014), learners have the ability to infer the meaning of loanword that they do not know based on their original word knowledge.

Moreover, the results of the study explain the relationship among the basic abilities that form the strategy of connecting with original words, which was presented by Choi (2019). When looking at each vocabulary case, original word knowledge and loanword recognition ability, and original word knowledge and ability of connecting with original words were found to be correlated. This means that if learners know a specific English vocabulary, they are more likely to recognize the word type of loanword in Korean, which is cognate word, and

identify a cognate relationship between English vocabulary and Korean loanword. As such, learners recognize loanword by using the original words they know, and acquire new loanword while trying to associate it with the original words.

The results of this study implied that the strategy of connecting loanword with original words, which utilizes learners' knowledge of the original words, should be taught in education of loanword in Korean language. Education that fosters strategic abilities to recognize the loanword by using the original word knowledge that learners have and connect the loanword with the original words is needed for learners in identifying the meaning of the loanword they do not know.

6. Conclusions

This study examined the correlation between the original word knowledge and strategy of connecting with the original words in the acquisition of loanword by Chinese learners of Korean. To do this, 47 students were tested to measure original word knowledge, loanword knowledge, loanword recognition ability, and loanword-original word connection ability, followed by an examination of correlations between original word knowledge and loanword knowledge, original word knowledge and loanword recognition, original word knowledge and loanword–original word connection.

As a result, there was a very strong correlation between the original word knowledge and loanword knowledge, and no statistically significant correlation between the original word knowledge and loanword knowledge, and the original word knowledge and loanword-original word connection ability. Learners' level of vocabulary in original words did not have a direct effect on the loanword recognition ability and loanword-original word connection ability.

However, when looking at the correlation by vocabulary case, the original word knowledge and loanword knowledge, the original word knowledge and loanword recognition, and the original word knowledge and loanword-original word connection were found to be statistically correlated. This implies that learners' awareness of specific English vocabulary affect the ability to recognize

loanword that corresponds to the vocabulary and connect loanword with original words and accordingly, helps in acquiring the loanword.

Thus, loanword-original word connection strategy that enables the learners to recognize the loanword by using the knowledge they have and infer the meaning of the loanword by connecting with the original words should be actively taught in education of loanword in Korean.

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Appendix 1
1st investigation sheet

1. Basic information

• Name:
• Nationality:
• Sex: Male   Female
• Period of learning Korean: year   month
• Period of residence in Korea: year   month
• Period of learning English: year   month

2. Please circle the following that you think is loanword.

개조	경보	공동	글로벌
남용	네트워크	덕목	데이트
도예	디지털	레저	렌즈
마모	마이너스	매너	매출

(Omitted)

3. Please answer if you know the meaning of the following English word

	I know (please write the meaning)		I don't know
예) mini	○	迷你	
global			
network			
date			
digital			
leisure			

(Omitted)

Appendix 2
2nd investigation sheet

1. Basic information

• Name:

2. Please answer if you know the meaning of the following loanwords

	I know (please write the meaning)		I don't know
예) 미니	○	迷你	
글로벌			
네트워크			
데이트			
디지털			
레저			

(Omitted)

3. The following are the loanword from English. Please read this loanword and change to English.

Loanword	English	loanword	English
예) 미니	mini	오케스트라	
글로벌		웹	
네트워크		인슐린	
데이트		인테리어	

(Omitted)

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