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Cognate Recognition and L3 Vocabulary Acquisition

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Abstract. One of the new trends in applied linguistics is concerned with third or multilingual language acquisition. Several linguists suggest that prior language knowledge should be taken into consideration and relied on in third language (L3) vocabulary teaching. Starting from these suggestions, the present study aims to verify the positive effect of cognate recognition and cognate-based instruction in the process of third language acquisition. For this purpose, an English vocabulary test was carried out among Hungarian high school students with Romanian as a second language (L2) and learning English as an L3. Before the test, the study group was presented with the structural similarities between the L2 and L3 lexical items. The results show that the study group obtained slightly higher scores on the vocabulary test than the control group. Following instruction on cognate target words, the difference between the two groups became more accentuated. Furthermore, a positive correlation was found between the L2 proficiency and the L3 vocabulary test scores. The results of this study confirm the expectations that cognate-based instruction can positively influence third language acquisition for which a necessary prerequisite is a good command of the previously learnt languages.

Keywords: third language vocabulary acquisition, L2/L3 structural relationship, teaching through cognates

1. Introduction

As a result of the increased importance of learning foreign languages within the European Union, where several countries are already bilingual, a new area of applied linguistics has emerged, one dealing with multilingual acquisition. Thus, the focus has shifted from studies in second language acquisition to studies in third language acquisition. Research in third language acquisition relies on research in second language acquisition, but it also takes into consideration the factors specific to its own area of studies. Being a recently emerging field, third language acquisition poses rather more questions than answers precisely due to its complexity. The present study seeks to answer some of these questions concerning the processes taking place in third language acquisition.

This paper commences with a definition of what third language acquisition stands for and a brief description of its characteristics. After reviewing some of the studies in foreign language vocabulary teaching, the findings of the present pilot study will be presented and possible perspectives for further research in the area will be discussed.

The aim of the present study is to investigate how knowledge of previously acquired languages can be utilized in L3 vocabulary teaching. More specifically, it seeks to verify whether pointing out the correspondences between the L2 and L3 lexical items can enhance L3 vocabulary acquisition. For this purpose, an English vocabulary test was carried out among Hungarian high school students whose L2 is Romanian and who are learning English as an L3. In order to verify whether focusing on the structural relationships between L2/L3 cognates has any effect on L3 lexical competence, the English vocabulary test scores of the students receiving instruction were compared to the scores obtained by the students who had not received instruction. Furthermore, the present study also focuses on possible correlations between L3 vocabulary knowledge and other factors, such as L2 proficiency, number of years of studying the L3, and number of foreign languages spoken.

2. Literature Review

This section serves to provide the theoretical framework of the present study. First, the field of third language acquisition will be defined followed by an outline of its characteristics. Second, a selection of studies in foreign language vocabulary teaching will be presented. These studies served as a starting point for the present study.

2.1. Third language acquisition

The definition of multilingualism is somewhat controversial. In general terms, multilingualism can be defined as the command and/or use of two or more languages by a speaker (Herdina and Jessner 2002). Even though this definition suggests that bilingualism can be regarded as a form of multilingualism, a clear distinction between these two terms is provided by the same authors (2000) stating that multilingualism addresses only those languages that were learnt after a second one. Therefore, trilinguals can be considered to be multilinguals.

The definition of L3 acquisition is also a controversial one. L3 acquisition refers to the languages learnt after an L2 regardless of being a third, fourth or fifth language (Safont Jorda 2005). From this point of view, L3 acquisition and multilingual acquisition denote the same process.

2.2. Characteristics of third language acquisition

Second language acquisition and third language acquisition share common characteristics; however, the latter is more complex due to several factors, such as the context of acquisition, variation in the order of learning of the languages, the perceived distance between the languages involved, and the sociocultural status of the languages involved in the learning process. Thus, third language acquisition involves unique and complex factors and effects due to the various possible interactions between the previously acquired languages and the one in the process of learning (Cenoz and Genesee 1998, Safont Jorda 2005). Consequently, L3 acquisition poses not merely a quantitative but rather a qualitative linguistic change in comparison to L2 acquisition (Safont Jorda 2005).

One of the complex features of third language acquisition is transfer. In second language acquisition transfer usually takes place from the first language (L1) to the L2. However, in L3 acquisition a phenomenon called interlanguage transfer can take place (DeAngelis and Selinker 2001). This means that transfer to the L3 can occur not only from the mother tongue but also from a non-native language. Learners of an L3 tend to borrow from those previously learnt languages which are typologically closer to the target language. This is clearly reflected in Cenoz's study (2001) where the English storytelling of Basque-Spanish bilingual students was examined. The results of the study showed that transfer mainly occurred from Spanish, which is typologically closer to English, regardless of whether Spanish was their L1 or L2.

Another feature of L3 acquisition that has to be taken into consideration is described by the extended version of the developmental interdependence hypothesis. Cummins' interdependence hypothesis (1978) proposes that a child's L2 competence depends on the level of the competence in the L1. Similarly, in the

case of L3 acquisition the different degrees of proficiency in L1 and L2 have an effect on the acquisition of the L3 (Cenoz 2000). Thus, learners who have a high level of competence in their first two languages will succeed in the acquisition of the L3 because of their highly developed common underlying proficiency, which will help the transfer from one language to the other.

A special characteristic of the trilingual or the multilingual speaker is multilingual competence, which can loosely be defined as the ability to use several languages appropriately and effectively (Cenoz and Genesse 1998). Multilingual competence does not designate the sum of several monolingual competencies, but it is a unique form of language competence due to the interaction of the languages known by a multilingual (Cook 1992).

2.3. Teaching vocabulary through cognates

The present study seeks to find out how the above-described characteristics can be implemented in foreign language vocabulary teaching in the Transylvanian context, where minority students learn their first foreign language as an L3 after having acquired the state's language as an L2. The following section will present studies supporting the teaching of foreign language vocabulary through cognates.

One of the most widely accepted practices in foreign language teaching proposes that other languages should be excluded and that the target language is the only one allowed in the classroom. Contrary to this, Jessner (1999) recommends that prior language knowledge should be reactivated in the classroom and that students should look for equivalent expressions in their L1, L2 and L3. In accordance with Jessner, Carlo et al. (2004) consider it useful to teach students to draw on their cognate knowledge, which can serve as a means of figuring out the meanings of new English words.

Empirical studies focusing on teaching foreign language vocabulary through cognates were first carried out in the L2 acquisition context. Rodríguez (2001) proposes that English can be taught through meaningful reading and by relying on the students' knowledge and literacy in their L1. He also suggests that teachers should rely on L1/L2 cognates to teach students to analyze the L2 and be able to understand texts in the L2.

Dressler (2000, cited in August et al. 2005) carried out a research among Spanish speaking fifth graders learning English who had been taught to search for cognate relationships as a strategy in reading texts in English. The results of the study showed that those students who were taught to search for cognate relationships were more successful in inferring meaning for untaught cognates than their peers in the control group. Furthermore, Dressler points out that there was variability in the perception of L1/L2 cognates, the connection between the

phonologically more transparent ones being more easily perceived than between the less salient ones.

Caplan-Carbin (2006) proposed that teaching the systematic relationship of the historical sound changes between English and German would help English speaking learners of German to recognize cognates and as a result expand their vocabulary in German more easily. By comparing the pre-test results with the post-test ones, the author found a difference in scores which could be attributed to the instruction of the structural relationship between the two languages. Although the difference between the two scores was small, Caplan-Carbin suggests that these findings can be of considerable pedagogical value.

3. Research Question

Based on the theory behind L3 acquisition, the present study seeks to rely on the findings of L2 acquisition studies concerning the method of teaching foreign language vocabulary through cognates and to implement these in an L3 acquisition context. Therefore, the main questions the present study proposes to answer are the following:

1. Does explicit instruction of the structural relationships between L2/L3 cognate pairs help in the L3 vocabulary acquisition?
2. Do other factors such as years of L3 studies, number of additional foreign languages spoken, or L2 proficiency correlate with the L3 vocabulary knowledge?

The expectations are that the students that have received instruction concerning the structural relationships between L2/L3 cognate pairs will perform better on the L3 vocabulary test. As far as other factors are concerned, the proficiency in L2 is expected to play an important role in L3 vocabulary proficiency. However, there are no clear expectations regarding the correlations between the years spent studying English or the number of additional foreign languages spoken and the participants' performance on the English vocabulary test.

4. Methodology

In order to test whether the explicit instruction of structural relationships between L2 and L3 lexicon facilitates the acquisition of L3 vocabulary, the English vocabulary knowledge of 26 high school students was measured. The subjects were tenth graders who have Hungarian as their L1, Romanian as L2 and are learning English as an L3. The participants were divided into two groups, a study group and a control group. The study group (15 students) first was presented with possible

structural relationships between Romanian and English words. During the instruction phase, orthographic and suffix correspondences were pointed out and examples were given for each.

After the instruction, the students were asked to complete an English vocabulary test, namely Nation's levels test. This test was chosen for two reasons. On the one hand, the test contains a large number of words that are cognates in Romanian. More specifically, 48 out of 90 target words resemble their Romanian equivalents. On the other hand, it gives an opportunity to measure the vocabulary knowledge on different levels according to the frequency of the words. Each word level contains 18 word definitions and 36 words. The students were asked to find the right words for the definitions given. The control group (11 students) received no instruction but were only asked to complete the same vocabulary test.

After the test, some additional information about the students' linguistic background, such as years of studying English and additional foreign languages spoken, was also collected. In addition, the participants' Romanian teacher was asked to rate their proficiency in Romanian. The Romanian grades would not have served the right purpose for illustrating their proficiency in Romanian because they reflect mainly the student's knowledge of the subject (Romanian literature) rather than the ability to speak the language. The participants in the study group were also asked to reflect upon the instruction, whether they had found it helpful, whether they had made use of the material while completing the test, and whether they consider that this method should be applied in their English classes.

5. Results

After administering the vocabulary tests, the score of each participant was introduced in a database and descriptive statistics (mean and standard deviation) as well as inferential statistics (Mann-Whitney test) were carried out. As a first step, the overall test scores of the two groups was compared in order to see whether there was any difference in their performance.

Table 1. Overall test scores on Nation's levels test expressed in percentages.

	N	Mean	SD
Study group	15	53.11	11.76
Control group	11	45.05	18.88

As it was expected, the study group performed better on the English vocabulary test than their peers in the control group. The fact that the study group profited from the instruction is not only reflected by their higher mean score but also by a

smaller standard deviation, which means that their answers were more consistent than the answers of the control group.

Before carrying out an inferential statistical test to verify if the study group and the control group differed on the overall scores obtained on the English vocabulary test, the data set was tested to meet the necessary assumptions for an independent-samples t-test. Since neither the assumption of normal distribution of the data nor the assumption of equal variances was met, the non-parametric Mann-Whitney U test was used to analyse the data. The difference between the scores of the two groups was not found to be statistically significant ($p = 0.09$, $U = 50.50$, $Z = -1.66$), however, a medium effect size ($r = 0.32$) was found for the difference between the study and the control group.

Given that the test itself gives opportunity to measure the lexical competence of the students at the different word levels based on the frequency of use of the words, the scores obtained on the test were examined on all these levels. Table 2. shows the mean results obtained by the two groups, broken down to the five word levels.

Table 2. The test scores obtained on the different word levels expressed in percentages.

	N	2,000 word level		3,000 word level		5,000 word level		University word level		10,000 word level	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Study group	15	70.74	11.77	75.18	16.64	39.62	14.97	53.33	16.10	26.66	14.11
Control group	11	63.13	21.55	61.61	24.01	37.87	16.81	41.91	21.71	20.70	25.10

As the figures show, on each word level the study group obtained higher scores than the control group. The largest difference in scores were found on the word levels containing the highest number of cognates, exactly where the study group could profit more from the instruction. Thus, the difference between the mean scores of the two groups was of 13.57 on the 3,000 word level and of 11.42 on the university word level. As can be seen, the scores obtained on the university level interrupt the pattern of descending scores as the word levels get higher. This is most probably due to the fact that with a few exceptions, all target words are cognates. Therefore, the L2's facilitating effect may account for higher scores than on the lower level of 5,000 words.

In order to trace the possible positive effect of the instruction through which students in the study group would be more successful in recognizing cognates and

thus profit from the cognate facilitating effect, the mean scores obtained on cognate words were also compared. These scores are presented in Table 3.

Table 3. Overall mean scores on cognates expressed in percentages.

	N	Mean	SD
Study group	15	61.57	14.56
Control group	11	51.75	18.65

A closer look at the test results of the two groups revealed that the study group answered more test items correctly than the control group when the target words were cognates in Romanian. The standard deviation of the mean scores was also smaller for the study group than for the control group, which shows a more consistent performance, which can be attributed to the explicit instruction of the structural relationship between the L2 and L3 lexical items.

Because the necessary assumptions for an independent-samples t-test were not met, the Mann-Whitney U test was carried out to verify if the study group and the control group differed from the point of view of their performance on cognate items. Similarly to the overall scores, no statistically significant difference was found between the two groups' performance on the cognate items ($p = 0.12$, $U = 52$, $Z = -1.58$). The test revealed a medium effect size difference between the study and the control group ($r = 0.31$).

The comparison of the scores on the cognates belonging to the different word levels showed the same pattern as in the case of the overall scores. As shown in Table 4, the study group outperformed the control group on each word level and the greatest difference between the two groups was found on the word levels containing the highest number of cognates (a difference of 15.15 on the 3,000 word level and of 11.21 on the university word level).

Table 4. The test scores obtained on cognates on the different word levels expressed in percentages.

	N	2,000 word level		3,000 word level		5,000 word level		University word level		10,000 word level	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Study group	15	81.33	9.90	78.78	18.71	53.33	22.25	56.66	15.39	37.77	26.32
Control group	11	75.45	23.39	63.63	26.03	45.45	18.09	45.45	21.30	28.78	33.40

As a first step in searching for a correlation between the L3 lexical competence and the number of years spent studying the L3 or the number of foreign languages spoken, or the proficiency in the L2, scatterplots were consulted in order to verify if the relationship between the variables was linear or not. L1 proficiency was not included in the equation since it only shares a small amount of cognates with the L3, and the aim of the present study was to reveal the role of the L2 in teaching the L3 vocabulary through L2/L3 cognates. The inspection of the scatterplots showed that only the relationship between the variables of proficiency in Romanian, the overall scores and the scores on cognates were linear, therefore a Pearson's correlation test was conducted only for these variables. The results confirmed the expectations that there would be a positive correlation between the proficiency in the L2 and the L3 vocabulary proficiency. Table 5 reveals that there is a statistically significant correlation between the L2 proficiency and the overall scores on the L3 vocabulary test and the scores obtained on cognates ($p = .03$, $r = .42$; $p = .006$, $r = .52$, respectively). Furthermore, a medium effect size ($R^2 = 0.17$) was found for the correlation between proficiency in Romanian and the overall scores, while the correlation between proficiency in Romanian and the scores on cognates resulted in a large effect size ($R^2 = 0.27$). Possible explanations for the fact that no relationship was found between the scores obtained on the test and the number of years spent studying English or the number of foreign languages spoken are the following. Starting early does not necessarily result in higher proficiency in a foreign language, because older learners advance at a higher rate in the first stages of language acquisition (Muñoz 2000) and thus they can level out their peers starting learning English at a younger age. The reason why the number of foreign languages showed no relationship with the test scores can be attributed to the fact that, as the additional information revealed, most students were learning one additional language, German, which was still at the beginning stage of the acquisition process.

Table 5. Correlations between proficiency in Romanian and the overall scores and scores on cognates.

		Proficiency in Romanian
Overall scores	Pearson Correlation	.420*
	Sig. (2-tailed)	.033
Scores on cognates	Pearson Correlation	.525**
	Sig. (2-tailed)	.006

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

After the completion of the English vocabulary test, the students belonging to the study group were asked whether they had found the instruction helpful and whether they had made use of it while solving the test. As shown in Table 6, ten out of fifteen students found the instruction of structural relationships between the L2 and L3 words to be helpful in learning new lexical items. However, not all of them made use of the material during the test.

Table 6. The students' opinions about the instruction and material concerning the structural relationships between the L2 and L3 lexical items.

	considered the teaching helpful			**used the cognate material**	
	Frequency	Percent		Frequency	Percent
"not helpful"	5	33.3	**"no"**	7	46.7
"helpful"	10	66.7	**"yes"**	8	53.3
Total	15	100.0	**Total**	15	100.0

When asked whether they considered that foreign language vocabulary should be taught through this method or not, the students belonging to the study group provided valuable insights. The majority of students considered the method of teaching foreign language vocabulary through cognates to be useful. Most of those students who answered negatively considered that this technique should not be applied in foreign language classroom teaching because their proficiency in Romanian is not adequate for being able to profit from such instruction. Some samples from the students' answers are provided below:

- *Yes, it would be a good idea.*
- *Yes, but there are similar words as well that have different meanings.*
- *This would help in learning both Romanian and English.*
- *Yes, but first in Romanian classes, because it's easier for them to understand it.*
- *Not really because some don't even speak Romanian well, so it's pointless.*
- *It's better to keep the two languages apart. Besides, we should understand the Romanian words first.*

6. Discussion

The results of the English vocabulary test confirmed the expectations that instruction of the structural relationships between the L2 and L3 lexicon would have a positive effect on the students' performance on the L3 vocabulary test. The

study group did not only outperform the control group, but they also provided correct answers more consistently. The fact that the difference between the scores of the two groups became more accentuated on the word levels that contained the highest number of cognates shows that pointing out the similarities between the two lexicons and the explicit instruction of the structural similarities between the L2 and L3 lexical items enhances the noticing of cognates and thus facilitates the learning of L3 vocabulary. Moreover, the fact that one of the largest differences between the scores of the two groups was found on the university word level shows that this method can be of great help in learning English for academic purposes.

The statistically significant correlation found between L2 proficiency and the scores obtained on the L3 vocabulary test point at the relationship between the L2 and L3 of these students. In other words, the more proficient the students were in Romanian, the higher they scored on the test. This relationship suggests that students are likely to profit from instruction based on structural similarities of the L2 and L3 lexical items provided they have the sufficient knowledge of the L2, which can be then transferred to their L3. Therefore, it is not sufficient to focus only on L3 vocabulary teaching but adequate attention also needs to be paid to the teaching of L2. Moreover, as one of the students noted, such vocabulary teaching method may prove useful not only in the case of L3 vocabulary acquisition but also for improving L2 vocabulary.

In order to verify whether the difference between the study and the control group was significant or not, a Mann-Whitney U test was carried out both for overall test scores and for scores on cognate target words. Although the study group did obtain higher scores in both cases, no statistically significant difference was found between the two groups. However, taking into consideration the clear pattern of the results, further research in this area is recommended in order to have a better understanding of the effect of teaching foreign language vocabulary through cognates. Such research would entail a longitudinal study, focusing on a more extensive instruction period, repeated testing and larger sized groups.

Should the findings of such a large-scale study confirm the results of the present study, possible applications of this method should be considered in foreign language teaching. First, approaching the students' L2 as an aid in L3 vocabulary acquisition could contribute to economizing the learning process, thus making better use of the time spent on language learning. Second, these findings may be integrated in foreign language teaching through the creation of special learning materials designed for comparative instruction.

7. Conclusion

The purpose of this study was to investigate whether instruction of the structural similarities between the L2 and L3 lexicon facilitates L3 vocabulary acquisition. The results showed that the students receiving such instruction obtained higher scores both on cognate target words and overall on the L3 vocabulary test. Further analysis of the data revealed a positive correlation between L2 proficiency and the students' L3 vocabulary achievements. It was proposed that the method of teaching foreign language vocabulary through pointing out the similarities between the L2 and L3 lexical items is recommended because it may facilitate L3 vocabulary acquisition. Furthermore, it was suggested that this method cannot only have a positive effect on L3 vocabulary acquisition, but it may also improve the students' L2 vocabulary.

In order to fully understand how instruction of structural relationships between L2 and L3 vocabulary items may affect L3 vocabulary acquisition, further research has been recommended. Finally, possible applications in the methodology of foreign language teaching have also been proposed.

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