Second language versus third language vocabulary acquisition: 
A comparison of the English lexical competence of monolingual and bilingual students*

Timea Molnár
University of Szeged

This study focuses on the differences between SLA and TLA, namely the effect of bilingualism and that of the L2 on the acquisition of an L3. The findings are based on the assessment of the English lexical competence of Hungarian monolingual, Hungarian-Romanian bilingual and Romanian monolingual students, all of whom are learners of English as an L2 or an L3. The results showed that the Hungarian-Romanian bilingual group performed better than the Hungarian monolingual group, and that the Romanian monolingual group achieved the highest scores. The study also focuses on the performance of the three groups concerning cognate versus non-cognate target words, in which respect evidence of the cognate facilitating effect and that of the finite effort effect has been found. The results of this study confirm that bilingualism has a positive effect on L3 acquisition but the attributes of the previously learnt languages have an important role as well.

1. Introduction

Third language acquisition (TLA) is a relatively new area of research in the field of second language acquisition (SLA), yet it has recently become the focus point of many studies. The number of studies carried out in TLA has especially increased within the European Union, where besides the fact that large segments of the populations of several countries are already bilingual or multilingual, the importance of learning foreign languages is greatly emphasised (Cenoz, 2000; Herdina and Jessner, 2000 and 2002; Safont Jorda, 2005; Council of Europe, 2001).

The present study aims to analyse the relationship between the languages involved in TLA. Numerous SLA studies have already shown that the first language (L1) has a great impact on the acquisition of the second language (L2) and that the closeness of the two languages plays an important role in language acquisition (Ard and Homburg, 1983; Odlin, 1989; Gass and Selinker, 2001; Herdina and Jessner, 2002). However, the presence of two previously learnt languages instead of just one makes the process of TLA more complex than that of SLA. Since vocabulary acquisition plays a major role in learning a language, and transfer from previously learnt languages is more salient in the case of the lexicon, this study focuses on third language (L3) vocabulary acquisition in

* I would like to thank Anna Fenyvesi and Don W. Peckham for their guidance and helpful comments.

Toronto Working Papers in Linguistics (TWPL), Volume 33
© 2008 Timea Molnár
a case where the L2 is typologically closer to the L3 than L1 is. A point of interest in this scenario is whether learners of English as an L3 will still rely mainly on their L1 or whether they will make use of their knowledge of their L2 as well. If they make use of their L2, will the transfer be more likely to happen from the L2 rather than from the L1?

In order to find answers to these questions, the English vocabulary knowledge of monolingual Hungarian, bilingual (Hungarian-Romanian) Hungarian and monolingual Romanian students are studied with the help of Nation’s Vocabulary Levels Test (Nation, 1990), which measures the knowledge of words of different frequency. The performance of these students is analysed from various aspects, first comparing the overall scores of the three groups and then focusing on their performance on cognate as well as on non-cognate target words.

2. Literature review

Before presenting the findings of the study, definitions of the terminology central to TLA which are relied on in this study, such as multilingualism, TLA, and metalinguistic awareness, are discussed. Then, central issues of TLA, such as the effect of bilingualism on TLA, the source of transfer, and the relationship between the proficiency in the three languages, are briefly touched upon. This is followed by an overview of multilingual acquisition research and findings of empirical research in this field.

2.1 Terminology related to TLA

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). According to this definition, bilingualism can be regarded as a form of multilingualism. However, 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.

The definition of TLA is also a controversial one. TLA refers to the languages that were learnt after an L2, thus, it can define the acquisition of a third, fourth or fifth language as well (Safont Jorda, 2005). From this point of view, TLA and multilingual acquisition denote the same process. TLA or multilingual acquisition used to be regarded as a form of L2 acquisition (Safont Jorda, 2005). The acquisition of an L2 and that of an L3 share common characteristics, yet the latter is more complex due to the context of acquisition, variation in the order of learning the languages, the perceived distance between the languages involved, and the sociocultural status of the languages involved in the learning process (Cenoz, 2000). The cognitive and linguistic processes involved in TLA are similar to the ones used in SLA, but, according to Clyne (1997), the additional language makes the operations of these processes more complicated. TLA 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 being learned (Cenoz and Genesee, 1998, Safont Jorda, 2005).

Learning an L3 also differs from learning an L2 in the sense that L3 learners develop new skills, which are defined as language learning skills, language management skills and language maintenance skills (Herdina and Jessner, 2000). These skills contribute to a more highly developed language awareness, or metalinguistic awareness, which can be seen as the advantage that bilinguals develop due to contact with two language cultures. Metalinguistic awareness refers to the awareness of the formal linguistic features of language in general and the ability to think abstractly about a language (Malakoff, 1992 cited in Safont Jorda, 2005). Similar to this, Gombert (1992) defines metalinguistic activities as comprised of activities of reflection on language and its use and the ability to intentionally monitor and plan methods of linguistic processing.
According to studies by Bialystok (1988, 2001), bilingual children exhibit a higher level of metalinguistic awareness than monolingual children do. Moreover, Bialystok points out that there is a positive correlation between the high levels of bilingualism and a better ability of thinking about the language. Based on Bouvy’s study (2000), a source of evidence for metalinguistic awareness is the fact that not only the L1 can serve as a source of borrowing in multilingual acquisition, but other previously learnt languages as well. L2/L3 transfer reflects the learner’s perception of similarities and differences between their L2 and L3, and, due to this, only transferable elements or elements that the learners consider to be transferable will be transferred.

Since bilingualism and TLA are connected to each other, the next section will discuss the effects of bilingualism on the acquisition of an L3.

2.2 Bilingualism and TLA

Earlier, many regarded bilingualism as being disadvantageous due to the fact that people, it was claimed, are hardly able to learn any of the two or more languages as perfectly as they would if they only had to learn one language. Moreover, it was suggested that children were hindered in learning other things because their brain was overburdened by having to process two languages instead of just one (Jespersen, 1922 cited in Herdina and Jessner, 2002).

Indeed, managing and maintaining more than one language is quite a challenge, and the language proficiency of bilinguals may be deficient in the sense that L2 learners cannot reach the level of native speakers in the L2. However, several studies point toward the advantages of bilingualism. Some researchers (Bain and Yu, 1980; Ben-Zeev, 1977; Ianco-Worall, 1972; Bialystok, 1988; Ringbom, 1987) provide accounts of the positive effect of bilingualism on linguistic and cognitive development. Kecskés and Papp (2000) argue that bilingualism facilitates the acquisition of an additional language. Findings from other studies (Bild and Swain, 1989; Cenoz and Valencia, 1994; Klein 1995; Thomas 1988) confirm this by showing that contrary to the belief that bilingualism hinders the acquisition of an additional language, it actually favours it. A positive effect of bilingualism on TLA is also attributed to the fact that bilingual students are able to use a wider variety of learning strategies and to weigh the effectiveness of these strategies due to their experience in learning languages (McLaughlin and Nayak, 1989).

2.3 Transfer

A point of interest in multilingual acquisition is the phenomenon of transfer. An earlier claim in SLA assumed that where the L1 and L2 show structural similarity, the L1 would facilitate the acquisition of the L2 through positive transfer, while differences between the two languages would result in interference problems. Needless to say, positive or negative transfer occurs in multilingual acquisition as well, but with the presence of an additional language, this process becomes more complex. An important question here is which language the learners of an L3 choose as the source language for transfer in the target language: their L1, or the language they are the most proficient in, or the language that is typologically closer to the target language. According to Williams and Hammarberg (1998), there are several criteria thought to be influential in the relationship between the languages in TLA and production. These criteria are: the typological similarity between the languages, cultural similarity, proficiency, recency and the status of L2.

Learners of an L3 tend to borrow from those previously learnt languages which are typologically closer to the target language. Cenoz (2001) examined the storytelling of Basque-Spanish bilingual students in English and found that transfer mainly occurred from Spanish, which is typologically closer to English, regardless of whether Spanish was their L1 or L2. This finding
provides additional evidence that transfer to L3 can occur not only from the mother tongue but from the non-native language as well. DeAngelis and Selinker (2001) propose the term of interlanguage transfer in order to define the influence from a non-native language on another non-native language.

2.4 The developmental interdependence hypothesis

Cummins’ developmental interdependence hypothesis (1978) suggests that a child’s L2 competence depends on the level of the competence the child has already attained in the L1. Cenoz (2000) claims that the same may be expected in the case of TLA, where the different degrees of proficiency in the L1 and L2 would affect the acquisition of an L3. In the extended version of the developmental interdependence hypothesis Cenoz proposes that 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 helps the transfer from one language to the other.

Muñoz (2000) carried out a study among Spanish and Catalan speaking bilingual students learning English as an L3. The proficiency level of these students in all three languages was measured through two Catalan tests, two Spanish tests and four English tests. When comparing the results of the tests, a strong correlation was found between the scores of the tests in the three languages. This finding confirmed the hypothesis that those students who were highly competent in their L1 and their L2 would have a higher level of competence in their L3 as well. The results of this study support the developmental interdependence hypothesis described above.

Besides finding that high proficiency in the first two languages had a beneficial effect on the proficiency in the L3, Lasagabaster (2000) also found that, contrary to expectation, there was a higher correlation between the scores on the L2 test and that of the English test than between the scores on the L1 test and the English test. This was assumed to be due to the fact that the L2 (Spanish) and English are typologically closer to each other than the L1 (Basque) and English are.

After discussing the features of L3 acquisition, let us examine the findings of some empirical studies on L3 acquisition.

2.5 TLA studies

Several TLA studies have focused on comparing the performance of monolingual and bilingual students in the target language. The results usually show that the bilingual students outperform the monolinguals. Cenoz (1992, cited in Cenoz and Genesee, 1998) compared monolinguals and bilinguals learning English as an L2 and L3, respectively, and found that the bilingual learners scored better on a number of English language tests. In Canadian immersion programmes, bilingual students were also found to perform better on tests of French than their monolingual peers did (Bild and Swain, 1989; Hurd, 1993). Another example of such studies is Thomas (1988), where English-Spanish bilinguals outperformed their English monolingual peers on French tests. All these studies demonstrate the positive effects of bilingualism on L3 acquisition.

Other studies in L3 acquisition have focused on transfer in L3 production. Ringbom (1986) found that in the case of Finnish and Swedish bilinguals learning English, transfer took place more often from Swedish, which is genetically closer to English, than from Finnish, regardless of the L1 of the subjects. This shows that learners of an L3 do not necessarily rely on their L1, but they make use of their knowledge of other languages and transfer from the one that is perceived to be closer to the target language. Tremblay (2006) also claims that the way language learners perceive the distance between languages plays an important role in transfer from one language to the other. In this study it
was found that English-French bilinguals learning German perceived English as being closer to the TL, and, therefore, they relied on their English knowledge rather than on their French.

3. The study

The present study deals with L3 vocabulary acquisition with a focus on the role of bilingualism and also the role of the L2 in the acquisition of the L3. For this purpose, the performance of monolingual and bilingual students was compared.

3.1 Research questions

Taking the theoretical frameworks and studies referred to above as a starting point, the present study focuses on the following questions:

(1). Is there a difference in the performance between Hungarian monolingual, Hungarian-Romanian bilingual and Romanian monolingual students in terms of vocabulary knowledge?

(2). Is there any difference in the lexical knowledge of the three groups when focusing on cognates that resemble the L2 lexical items but not the L1 and on non-cognates that do not resemble their counterparts in either of the previously learnt languages?

The expectations were that there would be a clear difference in the test results of the three groups. The bilingual Hungarians were expected to perform better than their monolingual counterparts. Similarly, the Romanian monolinguals were also expected to outperform the Hungarian monolingual students due to relatedness between their L1 and the target language. However, there were no firm expectations concerning the performance of the Romanian monolingual group as compared to the Hungarian-Romanian bilinguals. As a result of the lack of the positive effect of bilingualism, the Romanian monolinguals could be expected to obtain lower scores that the bilingual group but they could also be expected to outperform the bilinguals due to their possible better command of Romanian. Knowledge of Romanian was definitely expected to help in the performance on the vocabulary test score.

3.2 Participants

In investigating the difference between SLA and TLA, and the influence of the L2 on the L3, the vocabulary knowledge of 200 students was tested, 43 of whom were monolingual Hungarian students from Hungary, 97 who were Hungarian-Romanian bilingual students from Romania, and 60 who were monolingual Romanian students from Romania. All students were learners of English either as their L2 (for the monolinguals) or as their L3 (for the bilinguals). The three groups were made up of students in their 10th, 11th or 12th year of school. The Hungarian-Romanian bilinguals constituted the focus group and the other two monolingual groups functioned as control groups. The Hungarian monolingual group served as a control group in comparing the results of monolingual versus bilingual students in order to find out whether bilingualism had any effect on their performance in the L3. The Romanian monolingual control group was introduced in order to see whether the possible differences in the scores of the monolingual and the bilingual Hungarian students were only due to bilingualism or to knowledge of Romanian as well.

In order to have comparable sources for the study, the participants were chosen from high schools that are regarded as high prestige institutions. In addition to this, all students were enrolled in
similar classes, namely special English classes with six English classes per week including classes with native speaker English teachers.

In the case of the bilingual students, Romanian is used both in natural settings, as a community language, and in the instructional setting. The Hungarian-Romanian bilingual students were not tested on their Romanian proficiency, but because they are students of a high prestige school and the admittance to this institution is based on a set of exams, including one in Romanian language and literature, we can assume that they are proficient in their L2 as well. Moreover, due to the fact that they live in an area where Romanian is widely spoken, they need to use Romanian in their every-day life. This strengthens the presupposition that their proficiency level in Romanian is fairly high.

Concerning the use of the terms ‘monolingual’ and ‘bilingual’ in this study, none of these students were monolingual in absolute terms, that is, they all were able to function to a certain degree in more than one language. However, in this study, the terms monolingual and bilingual define the number of languages that the students had already acquired before learning English, and which languages they were able to function well.

3.3 Data collection and analysis

All three groups were given the same vocabulary test, namely, the Vocabulary Levels Test designed by Nation (see Appendix 8 in Nation, 1990). This test measures the vocabulary knowledge on several frequency levels, and it was chosen for the following two reasons. On the one hand, the test contains a great number of words that resemble their Romanian equivalents. These words may originate from the same historically shared parent language, and they may be borrowed words or international words. In the present study, the term cognate is used to define the English words which resemble their Romanian equivalents without differentiating between their origins. On the other hand, this test was chosen because it gives an opportunity to compare the vocabulary knowledge of students on different levels. Nation’s level test measures the vocabulary proficiency on five levels: the 2,000 word level, the 3,000 word level, the 5,000 word level, the University word level and the 10,000 word level. Each word level contains 18 word definitions and 36 words. The task for participants was to find the right words for the definitions in the 30 minutes given to complete the test.

In order to compare the data sets collected in this study, a series of descriptive statistics was carried out on several levels. First, in order to obtain a general picture, the overall results of the three groups were compared. Then, the performance of the three groups was also compared focusing on the cognates and the non-cognates in order to see if there was a difference in the results of the two groups and, if so, how it related to their overall performance. Since it cannot exactly be known how students thought about the distracters and only their decisions concerning the target words can be observed, only those cognates and non-cognates were taken into consideration that were among the 18 target words for each level.

In order to be able to state whether the differences in the scores of the monolingual and bilingual groups are statistically significant and where exactly these significant differences are significant, ANOVAs and Tukey post hoc tests were carried out focusing on overall scores, scores on cognates and scores on non-cognates, respectively.

3.4 Selection of cognates

When analysing the performance of the monolingual and the bilingual groups on cognates, only those English target words were taken into consideration that resembled their Romanian
equivalents but not the Hungarian ones. This group of 22 cognates was selected in a two-step process. First, a monolingual Romanian dictionary was consulted to get a list of the words that resembled their Romanian equivalents. Then, a group of five Hungarian university students who did not speak any Romanian were asked to choose the English words that resembled their Hungarian equivalents as well. As a result of this, the words that resembled their Hungarian equivalents as well were eliminated and, thus, a list of the target words that resembled only their Romanian equivalents was finalised. In the second step, these cognates were classified from the point of view of their similarity to the words in English. For this purpose, the parameters used by Ard and Homburg (1983) were applied. The similarity parameters were based on form, specifically on the orthographical and phonological representations of the words. Each parameter had five separate values from 1 to 5 (1 representing the greatest similarity and 5 representing the least similarity to the English word). In assigning these values to the cognates, the Explanatory Dictionary of the Romanian Language (Dicționarul Explicativ al Limbii Române, 1998) was consulted.

The value of 1 in orthographic similarity indicates that the Romanian word is orthographically identical to the corresponding English word. These words from the test are: compliment and fragrant.

The value of 2 was assigned to the words with identical stems but some differences in their grammatical ending. Most cognates were labeled as belonging to this group. These words are the following:

1. invite – a invita
2. temperature – temperatură
3. victory – victorie
4. palm – palmă
5. scheme – schemă
6. annual – anual
7. definite – definit
8. ultimate – ultim
9. supplement – a suplimenta
10. auxiliary – auxiliar
11. pompous – pompos
12. volatile – volatil
13. saliva – salivă
The value of 3 indicates a regular orthographic correspondence in the stem between the English and the Romanian words. Examples of such correspondences include -y/-iu, -ence/-ență, -able/-abil. These words are the following:

1. salary – salariu
2. affluence – afluенță
3. deficiency – deficiență
4. interminable – interminabil

The value of 4 was assigned to words that were relatively close, but an irregular orthographic relationship with English was identified. The only one word belonging to this group is the following:

1. blaspheme – a blestema

The value 5 indicates that the words were orthographically or morphologically more distant. These words are:

1. elect1 – a allege
2. bench – bancă

In the second step, the cognates were grouped based on semantic similarity. For this purpose, in addition to the *Explanatory Dictionary of the Romanian Language* (Dicționarul Explicativ al Limbii Române, 1998), an English-Romanian bilingual dictionary was also consulted. From the point of view of lexical similarity, whenever the first meaning of the Romanian words coincided with the English meaning, a value of 1 was assigned to them. Most of the cognates belong to this group. Such words are compliment, fragrant, temperature, victory, palm, scheme, annual, ultimate, supplement, auxiliary, saliva, salary, deficiency, interminable, blaspheme, bench and elect.

A value of 2 was assigned if the first meaning of the word was different in Romanian but the second meaning was the same as the English one. For example, the first meaning of the word afluенță is ‘crowd’ and only the second meaning is ‘wealth’. Words belonging to this category are definite, affluence and volatile.

A value of 3 indicates that only the third meaning of the Romanian word coincides with the meaning of the English word. An example for this is the word pompos, where the first meaning of the word is ‘showy’, the second meaning is ‘loaded’, and only the third meaning is ‘full of self importance’. The words invite and pompous belong to this last group.

Table 1 summarizes the formal and semantic similarity of the cognates. The value of formal similarity decreases from top to bottom and the value of semantic similarity decreases from left to right. Therefore, the words with a high degree of similarity are in the upper left corner, and these are the words where positive transfer from L2 to L3 is expected.

---

1 The word does not resemble the corresponding English word but its derivates are similar. Eg. elector/elector, elections/elecții.
Table 1. Cognates classified based on formal and semantic similarity. Note: decreasing formal similarity is shown from top to bottom and decreasing semantic similarity from left to right (1, 2 and 3 signalling the degree of semantic similarity, 1 being the highest).

<table>
<thead>
<tr>
<th>formal similarity</th>
<th>semantic similarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>compliment</td>
<td>invite</td>
</tr>
<tr>
<td>fragrant</td>
<td></td>
</tr>
<tr>
<td>temperature</td>
<td></td>
</tr>
<tr>
<td>victory</td>
<td>ultimate</td>
</tr>
<tr>
<td>palm</td>
<td>supplement</td>
</tr>
<tr>
<td>scheme</td>
<td>auxiliary</td>
</tr>
<tr>
<td>annual</td>
<td>definite</td>
</tr>
<tr>
<td></td>
<td>pompous</td>
</tr>
<tr>
<td>volatile</td>
<td>saliva</td>
</tr>
<tr>
<td>saliva</td>
<td>salary</td>
</tr>
<tr>
<td>salary</td>
<td>affluence</td>
</tr>
<tr>
<td>deficiency</td>
<td>interminable</td>
</tr>
<tr>
<td>interminable</td>
<td>blaspheme</td>
</tr>
<tr>
<td>blaspheme</td>
<td>bench</td>
</tr>
<tr>
<td>bench</td>
<td>elect</td>
</tr>
</tbody>
</table>

4. Results

After administering the vocabulary test, the score for each participant was recorded in a database and descriptive statistics as well as inferential statistics were carried out with the help of the SPSS program. Although there were three groups of students participating in the study, the comparisons were mainly done between the Hungarian monolingual and the Hungarian-Romanian bilingual students, and between the Romanian monolingual and Hungarian-Romanian bilingual group, respectively. As a first step, the overall test scores of the monolingual and bilingual students were compared in order to see whether there was any difference in their performance. The overall scores of the three groups are presented in Table 2.

As shown by the figures in Table 2, the performance of the students on the test increased in direct proportion to their level of education, the highest scores being attained among the 12th graders. In addition to this, we can see that there is a difference in the mean scores of the three groups. As was expected, the Hungarian-Romanian bilingual group performed better than the Hungarian monolingual group. The highest scores were obtained by the Romanian monolingual group, which outperformed even the bilingual group.
Table 2. The overall scores of Hungarian monolingual, Hungarian-Romanian bilingual and Romanian monolingual students on the Vocabulary Levels Test expressed in percentages.

<table>
<thead>
<tr>
<th>Language background</th>
<th>Grade</th>
<th>Number of students</th>
<th>Mean</th>
<th>S.D.</th>
<th>Average Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hungarian monolingual</td>
<td>10</td>
<td>14</td>
<td>50.00</td>
<td>10.05</td>
<td>53.80</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>18</td>
<td>54.88</td>
<td>9.53</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>11</td>
<td>56.87</td>
<td>10.08</td>
<td></td>
</tr>
<tr>
<td>Hungarian-Romanian bilingual</td>
<td>10</td>
<td>39</td>
<td>62.02</td>
<td>14.10</td>
<td>64.80</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>28</td>
<td>63.89</td>
<td>14.42</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>30</td>
<td>69.26</td>
<td>13.78</td>
<td></td>
</tr>
<tr>
<td>Romanian monolingual</td>
<td>10</td>
<td>19</td>
<td>73.51</td>
<td>11.19</td>
<td>77.74</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>17</td>
<td>76.93</td>
<td>8.26</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>24</td>
<td>81.67</td>
<td>9.72</td>
<td></td>
</tr>
</tbody>
</table>

The one-way analysis of variance indicated that there was a significant difference in the overall scores of the Hungarian monolingual, the Hungarian-Romanian bilingual and the Romanian monolingual groups. The high F-value (48.47) and p< .001, indicate that the results are not due to chance, but they are statistically significant. The large effect size (eta squared=0.34), showed that language background had a strong influence on the overall scores.

Since the ANOVA test only shows that there is a significant difference in the scores of the three groups, but it does not show exactly where this difference is significant, a post-hoc tests were carried out as well. The homogenous subsets calculated by the Tukey test show three subsets: Hungarian monolingual, Hungarian-Romanian bilingual and Romanian monolingual. These three subsets reveal that these three groups were distinctly and statistically significantly different from each other in respect of the overall scores.

The scores of the three groups of students were also compared on the different word levels presented in the vocabulary test in order to see if there was a pattern in the different performance of the participants. These figures are presented in Table 3.

Table 3. The test scores of Hungarian monolingual, Hungarian-Romanian bilingual and Romanian monolingual students on each word level expressed in percentages.

<table>
<thead>
<tr>
<th>Language background</th>
<th>Grade</th>
<th>2,000 word level</th>
<th>3,000 word level</th>
<th>5,000 word level</th>
<th>University word level</th>
<th>10,000 word level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean  S.D.</td>
<td>Mean  S.D.</td>
<td>Mean  S.D.</td>
<td>Mean  S.D.</td>
<td>Mean  S.D.</td>
</tr>
<tr>
<td>Hungarian monolingual</td>
<td>10</td>
<td>75.79 15.5</td>
<td>74.21 16.24</td>
<td>38.49 18.93</td>
<td>48.81 15.12</td>
<td>12.70 10.32</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>75.31 11.46</td>
<td>83.64 10.51</td>
<td>43.21 13.94</td>
<td>49.07 21.06</td>
<td>23.15 14.54</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>84.34 9.23</td>
<td>80.30 10.64</td>
<td>45.45 14.86</td>
<td>54.04 17.23</td>
<td>20.20 15.57</td>
</tr>
<tr>
<td>Hungarian-Romanian bilingual</td>
<td>10</td>
<td>75.07 15.75</td>
<td>82.91 13.98</td>
<td>56.13 19.32</td>
<td>58.40 15.86</td>
<td>37.61 19.47</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>81.35 10.82</td>
<td>85.32 11.83</td>
<td>54.96 20.52</td>
<td>61.90 15.02</td>
<td>35.91 24.91</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>82.04 12.09</td>
<td>89.07 12.33</td>
<td>57.04 19.94</td>
<td>73.33 14.10</td>
<td>44.81 22.12</td>
</tr>
<tr>
<td>Romanian monolingual</td>
<td>10</td>
<td>85.67 8.55</td>
<td>90.94 10.17</td>
<td>63.45 18.26</td>
<td>79.24 13.58</td>
<td>48.25 15.5</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>89.54 7.05</td>
<td>92.16 6.53</td>
<td>69.28 15.85</td>
<td>85.95 8.36</td>
<td>47.71 19.04</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>82.87 14.73</td>
<td>91.67 11.46</td>
<td>77.31 13.89</td>
<td>88.66 8.1</td>
<td>67.82 18.01</td>
</tr>
</tbody>
</table>
Although on the 2,000 word level the Hungarian monolingual group performed better than the Hungarian-Romanian bilingual group (in the case of the 10th and 12th graders) and they scored higher than the Romanian monolingual group as well (in the case of the 12th graders), the pattern showed that the Romanian monolingual group obtained the highest scores and that the Hungarian-Romanian bilingual group performed better than the Hungarian monolingual group. Another tendency that could be observed was that the difference in scores was not very high on the 2,000 word level and on the 3,000 word level. However, the difference between the performances of the three groups showed a growing tendency towards the higher word levels, that is, on the university word level and on the 10,000 word level.

In seeking the possible answers to what had caused this difference in the scores of the three groups, special attention was paid to their performance on cognates since Romanian as opposed to Hungarian shares a number of cognates with English. In this step, a comparison was made based on the scores of the students where the target words resembled the Romanian words but not the Hungarian ones. The overall scores on cognates are presented in Table 4.

Table 4. Cognate overall scores of Hungarian monolingual, Hungarian-Romanian bilingual and Romanian monolingual students expressed in percentages.

<table>
<thead>
<tr>
<th>Language background</th>
<th>Grade</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Total Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hungarian monolingual</td>
<td>10</td>
<td>44.81</td>
<td>12.96</td>
<td>50.32</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>53.03</td>
<td>11.77</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>52.89</td>
<td>15.91</td>
<td></td>
</tr>
<tr>
<td>Hungarian-Romanian bilingual</td>
<td>10</td>
<td>67.37</td>
<td>14.63</td>
<td>71.74</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>68.34</td>
<td>16.98</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>80.61</td>
<td>13.44</td>
<td></td>
</tr>
<tr>
<td>Romanian monolingual</td>
<td>10</td>
<td>87.56</td>
<td>10.90</td>
<td>87.58</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>83.16</td>
<td>10.99</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>90.72</td>
<td>7.02</td>
<td></td>
</tr>
</tbody>
</table>

As shown by the figures in Table 4, the same tendency could be noticed in the scores on cognates as in the overall scores. In other words, the Hungarian-Romanian bilingual students outperformed their Hungarian monolingual peers and the highest scores were obtained by the Romanian monolingual group. Moreover, the difference between the Hungarian monolingual and the Hungarian-Romanian bilingual students was greater than the difference between the Romanian monolinguals and the Hungarian-Romanian bilinguals. This indicated that the degree of knowledge of Romanian or the lack of it had an impact on the scores obtained on these cognate words.

The one-way analysis of variance showed a statistically significant difference in the scores on cognates of the three groups (F=89.95, p< .001). The large effect size (eta squared=0.47), showed that the language background had a highly significant influence on the scores on cognates.

Similarly to the comparison of the overall performance of the three groups, the homogenous subsets calculated by the Tukey test showed three subsets regarding the variable ‘overall scores on cognates’: (1) Hungarian monolingual, (2) Hungarian-Romanian bilingual and (3) Romanian monolingual. These three subsets revealed that these three groups were distinctly and statistically significantly different from each other regarding the overall scores on cognates as well.

When analysing the scores on individual cognates, it was found that, with a few exceptions, the Romanian monolingual students had the highest scores on most cognates and the Hungarian-
Romanian bilinguals scored better than the Hungarian monolinguals did. The full list of the cognates and the scores the three groups obtained on them is provided in Table A of the Appendix. The largest difference in scores between the Hungarian monolingual and the Hungarian-Romanian bilingual students was found in the case of 11th graders concerning the word *interminable* (a difference of 71 points). When comparing the Hungarian-Romanian bilingual students to the Romanian monolingual students, the major difference in scores was found in the case of 10th and 11th graders concerning the words *deficiency* and *auxiliary*, respectively (a difference of 74 points). Note that all of these words share a high degree of semantic similarity with their Romanian equivalents.

A surprising result was the difference in scores on the word *scheme* where the Romanian monolingual students performed worse than the Hungarian-Romanian bilingual students, the largest difference in scores being of 76 points in the case of the 11th graders. This difference cannot be completely accounted for based on the collected data. However, a possible explanation could be that the students in this group associated the word *scheme* with the Romanian word *schema*, meaning ‘figure’ instead of ‘plan’, as proposed by the test.

Table 5. The overall test scores on non-cognates (English words that do not resemble either their Romanian or their Hungarian equivalents) expressed in percentages.

<table>
<thead>
<tr>
<th>Language background</th>
<th>Grade</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Total Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hungarian monolingual</td>
<td>10</td>
<td>42.68</td>
<td>12.46</td>
<td>48.66</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>51.81</td>
<td>9.50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>51.14</td>
<td>10.97</td>
<td></td>
</tr>
<tr>
<td>Hungarian-Romanian bilingual</td>
<td>10</td>
<td>52.95</td>
<td>17.59</td>
<td>54.61</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>55.09</td>
<td>18.86</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>56.33</td>
<td>19.13</td>
<td></td>
</tr>
<tr>
<td>Romanian monolingual</td>
<td>10</td>
<td>58.82</td>
<td>15.75</td>
<td>66.38</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>66.32</td>
<td>10.86</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>72.40</td>
<td>14.84</td>
<td></td>
</tr>
</tbody>
</table>

As we can see, the group that had Romanian as a previously acquired language did not only perform better when the English words resembled their Romanian equivalents, but they also obtained higher scores when the target words shared no features with the Romanian ones. As expected, the Hungarian-Romanian bilingual participants scored higher than the Hungarian monolingual participants did, and the Romanian monolingual participants obtained the highest scores yet again. A comparison of the differences between the total mean scores of the three groups clearly showed that the difference between the Romanian monolingual students and the Hungarian-Romanian bilingual students was larger than the difference between the Hungarian monolinguals and the Hungarian-Romanian bilinguals. This suggested that it was not so much the knowledge of Romanian itself, but what made a difference in this situation was the potential difference in the knowledge of Romanian between the last two groups.
The one-way analysis of variance showed that there was a statistically significant difference between the overall scores of the three groups on non-cognates \( (F=16.99, \ p< .001) \). The large effect size (eta squared=0.14) showed that the language background of the students had a highly significant influence on their scores on non-cognates.

Contrary to the findings concerning the overall scores and the scores on cognates, from the point of view of the scores on non-cognates the Tukey test found that only the mean of the Romanian monolingual group differed statistically significantly from the means of the other two groups. Thus, the means for the Hungarian monolingual and the Hungarian-Romanian bilingual groups were not statistically significantly different from each other from this point of view. The homogenous subsets calculated by the Tukey test revealed two subsets in respect of the variable ‘non-cognate overall scores’: (1) the Hungarian monolinguals and the Hungarian-Romanian bilingual; (2) the Romanian monolinguals.

To sum up, based on the results of the three groups on the vocabulary test, a clear pattern could be noticed, namely, that the Hungarian-Romanian bilingual students performed better than the Hungarian monolingual students, and the Romanian monolingual students outperformed both of the other two groups. The results of the inferential statistics showed that the differences in scores of the three groups were statistically significant from the point of view of the overall scores as well as from the point of view of the scores on cognates and on non-cognates.

5. Discussion

In order to investigate the relationship between the previously learnt languages, the English vocabulary knowledge of Hungarian monolingual, Hungarian-Romanian bilingual and Romanian monolingual students was compared and analysed. Unsurprisingly, a tendency for the scores to increase as the students advanced in their studies could be noted. The students most probably learned more English words as they advanced in their studies. However, this finding also confirms the developmental interdependence hypothesis (Cummins, 1978) and its extended version (Cenoz, 2000). Advancing in their studies, the students reached a higher proficiency level in their L1 as well as in their L2 (in the case of the bilingual group), and this can be related to their increasing proficiency level in the L3.

As expected, the Hungarian-Romanian bilingual students performed better on the English vocabulary test than their Hungarian monolingual peers. On the one hand, this can be attributed to the positive effect of bilingualism on TLA. On the other hand, due to the fact that the L2 of the bilingual students shares common features with their L3, a further facilitating effect can be asserted.

The results of the comparison of the scores on cognates clearly confirmed the cognate facilitating effect, which both the Hungarian-Romanian bilingual students and the Romanian monolingual students could profit from due to their knowledge of Romanian, a language that shares a number of cognates with English due to the result of the influence of Latin on both languages. The closeness of the two languages and the positive influence of Romanian on the acquisition of English were also observed by Iatcu (2000). In addition to this, the scores on cognates also provided evidence of the result of a lightened learning burden due to the L1/L2 and L2/L3 similarity in the case of the Romanian monolingual group and the Hungarian-Romanian bilingual group, respectively. According to Nation (1990), the learning burden of the meaning of a word is light if the form of the word predicts its meaning, and when the meaning of the word corresponds to the meaning of a mother tongue word. It can be noticed that the cognates on which both the Hungarian-Romanian bilinguals and the Romanian monolinguals scored the highest share a high degree of formal or semantic similarity with their Romanian equivalents. Such words were elect, invite, salary, victory, palm, annual and ultimate. All of these words figure in the left or the upper part of the Table 1, which
confirms the expectations that the high degree of semantic and formal similarity of these words should result in high scores.

An interesting finding was that the differences between the scores of the Hungarian-Romanian bilingual and the Hungarian monolingual students were higher in the case of the lowest word frequency levels. Evidence of a lighter learning burden could be found in this case as well as the number of cognates rose with the difficulty level of the English words. Although these cognates were not high frequency words in Romanian either, the bilingual students had the advantage of already having met these words in a more familiar environment in their L2 context. The Hungarian monolingual students, on the other hand, were less likely to have met these words in an everyday situation. Therefore, it is easier for the bilingual students to recognise these low frequency words. Also, on the lower difficulty levels, the knowledge of the groups with the different language background could be evened out due to the many years of studying English. Opposed to this, the lower frequency words are met later on in the learning process and specifically because these are of low frequency, it is harder to learn them.

When comparing the scores obtained on non-cognates it was found that the Hungarian-Romanian bilingual students performed better than the Hungarian monolingual students not only when the target words resembled their Romanian equivalents but also when these did not resemble the words from any of the previously learnt languages. In this case as well, the highest scores were obtained by the Romanian monolingual students. These results confirmed the finite effort effect proposed by Ard and Homburg (1983). Based on this, the Hungarian-Romanian bilingual and the Romanian monolingual students performed better on non-cognates because the learning burden in the acquisition of the cognates was low, and this way they had more time to learn the more difficult words, that is, the non-cognates. In contrast, the Hungarian monolingual students already had to put in more effort in the acquisition of the words which are cognates in Romanian but are not cognates in Hungarian, and thus they had less time for learning the words that are difficult for the bilinguals as well. The better scores of the Romanian monolingual students can be explained similarly. Due to the fact that they had a better command of the language and can probably identify more words as being cognates in English and Romanian, they needed less effort to learn the cognates than the Hungarian-Romanian bilinguals did, and as a consequence they had more time to learn the non-cognates.

The results of the statistical analysis pointed out that both the positive effect of bilingualism and the relatedness of Romanian and English had a highly significant effect on the acquisition of English as an L2 or L3. However, the fact that the Romanian monolingual group performed better than the Hungarian-Romanian bilingual group potentially shows that the relatedness of the previously learnt languages and the target language had a higher effect on the L3 vocabulary acquisition than bilingualism did. A better command of the typologically closer language to the target language can result in better knowledge of the L3 vocabulary even when the positive effect of bilingualism could not be traced. This was attested by the Tukey post hoc test on non-cognates, which revealed only two subsets, differentiating only between the Romanian monolingual group and the other two groups.

6. Conclusion

The aim of the present study was to discover the effect of an L2 on the acquisition of an L3. The positive effect of bilingualism on L3 acquisition was already known from the extensive literature on L3 acquisition, but in addition to confirming this, the present study also sought to verify to what extent the quality of the L2 had an effect on the performance in the L3. In order to find out the answers to these questions, a vocabulary test was administered to Hungarian monolingual, Hungarian-Romanian bilingual and Romanian monolingual students of English.
In comparing the results obtained by the three groups, the Hungarian-Romanian bilingual students were found to have scored higher than their Hungarian monolingual peers, however, Romanian monolingual students were found to have outperformed both of the other groups. The same pattern was noticed considering cognate target words as well as non-cognate target words. These results were attributed to the positive effect of bilingualism, to the facilitating effect of cognates and to the finite effort effect.

Taking into consideration the results of the present research, it can be concluded that bilingualism has a positive effect on the acquisition of an L3, based on the fact that positive transfer can happen from the L2 as well as from the L1. Also, the relationship between the already acquired languages and the target language is very important since only a typologically related language can positively influence the acquisition of an additional language. That is why an L2 can play an important role in L3 acquisition provided that it is typologically closer to the target language than the L1 is. This was the case for the Hungarian-Romanian bilingual students for whom their knowledge of their L2 played a larger role in their performance in the L3 than their L1 did.

From the results of this study it was found that besides the knowledge of an L1, knowledge of an L2 also formed a resource to which the learner of an L3 could turn. Therefore, these findings do not only serve as an expansion of the palette of TLA, but they also carry a message to foreign language teaching, where the emphasis should not only be laid on the target language but, where it is possible, the previously learnt languages should be taken into consideration as well. Pointing out the transferable features from the previously learnt languages into the target language could help reduce the learning burden and accelerate the language acquisition process.

References


