

CROSS-LINGUISTIC INFLUENCE IN THE PRODUCTION OF GERMAN
PREPOSITIONS BY POLISH LEARNERS OF ENGLISH AND GERMAN

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ABSTRACT

Multilingualism is an increasingly common phenomenon in today's world as the number of people able to speak and/or understand more than one foreign language is growing. Consequently, many linguists, formerly preoccupied with bilinguals, now attempt to investigate multilingual minds. Many experiments have been carried out in order to determine patterns in which languages known to the individual are stored in the mind. In the course of psycholinguistic research linguists have observed a phenomenon known as *cross-linguistic influence* (or *transfer*), i.e. interaction of all languages known to the individual in his or her mind. Moreover, the researchers have identified a set of factors which exert influence on the process of transfer. The identified factors are psychotypological distance of the involved languages, special status of the second language (L2 status), recency of use of the languages, context of interaction and proficiency in all the languages known to a multilingual speaker. The aim of this paper is to report and discuss an experiment carried out in order to examine the importance of cross-linguistic influence and its factors in the performance of a group of Polish learners of English and German.

1. Introduction

Many prominent linguists (e.g. Dewaele 1998; Hufeisen 1993; Stedje 1976; Williams and Hammarberg 1998) have conducted studies in which they analysed language performance of multilingual speakers and found support for *cross-linguistic influence* (or *transfer*), i.e. the interaction of languages in one mind. In the course of research a set of factors affecting transfer was identified. These include psychotypological distance of the involved languages, special status of the second language (L2 status), recency of use of the languages, context of interaction and proficiency in all the languages known to a trilingual speaker.

One of the strongest factors which influences transfer in third language acquisition (henceforth TLA) is typological distance of the involved languages. As was found in empirical studies conducted, among others, by Singleton (1987, as quoted in Singleton 2001), the general tendency for the speakers is to borrow items from languages that are typologically closer. It is essential to note, as Kellerman (1983) claimed, that transfer is determined by the speaker's subjective perception of the linguistic distance (similarity) between the languages known to him/her. For this phenomenon Kellerman coined the term *psychotypology*. For him it is psychotypology that decides upon the source language in the process of transfer.

Another factor identified by linguists as affecting transfer is the so called *foreign language effect* (Meisel 1983, as quoted in Cenoz 2001) or *L2 status* (Hammarberg 2001). It has been observed in many studies that learners tend to transfer more from their L2 rather than from their native language (e.g. De Angelis and Selinker 2001; Williams and Hammarberg 1998).

Another two conditioning factors in transfer are the learner's proficiency in his/her languages and the recency effect. Bilinguals transfer more from their L1 in the earlier stages of second language acquisition (Poullisse 1990, as quoted in Cenoz 2001). L1 influence decreases with the increase in their target language proficiency. Similarly, trilinguals transfer more when they are less proficient in their foreign languages (Cenoz 1998, as quoted in Cenoz 2001). As far as the recency effect (a tendency to transfer more from the foreign language actively used by the speaker) is concerned, it was proven a significant factor e.g. in Hammarberg's (2001) study where his informant transferred more from the foreign language she most recently used.

Related to recency is the length of exposure to the languages, another factor that affects transfer in TLA. One of the studies in which the influence of the length of exposure was observed was reported in Stedje (1976). She noticed in her experiment that Finnish students learning German (their L3) in Sweden exhibited more semantic, grammatical and phonological influence from Swedish (their L2) the longer they stayed in Sweden.

Finally, the last factor is that of specific context of communication, topic and communicators. One of the studies where the effect of this factor was found significant was Dewaele's 2001 study. He discovered that the total number of terms transferred from L2 to L3 is affected by the level of formality in L3 production.

The present paper is an account of the experiment which was conducted in order to examine the importance of cross-linguistic influence and its factors. I based my study on the experiment described in Gibson *et. al* (2001) where they tested cross-linguistic influence in the process of the acquisition of prepositions for verbs in German as the third language. In the study I concentrated on the

phenomenon of transfer in TLA with its factors – L2 status, psychotypology and length of exposure.

2. Method

2.1. Participants

The participants were 23 Polish trilingual students (6 men, 17 women) in their second year of English Philology at the School of English, Adam Mickiewicz University, in Poznań. Their English as the dominant foreign language (L2) is at the advanced level and their German (L3) is higher-intermediate. They all passed the same Practical English exam and did equally well on the German placement test which led them to join German classes at the same level of proficiency.

2.2. Materials

Prepositional verbs and adjectives were chosen as the linguistic material for this empirical study as many learners of German as a foreign language consider regimen of verbs and adjectives to be relatively difficult. Secondly, translation equivalents of prepositional verbs and adjectives differ in Polish, English and German in terms of their choice of prepositions. Hence the possibility of observing transfer was significant.

All the stimuli used in the study came from the lexical corpus of the German course which the participants were currently attending. They were selected so as to generally fall into 7 categories (which have been coded for the sake of clarity). The first category (coded as L1≠L2≠L3) encompassed those verbs and adjectives which require prepositions different in terms of meaning and form for all three languages (e.g. German (G) *allergisch gegen*, English (E) *allergic to*, Polish (P) *uczulony na*). Words within the second category (L2=L3, L1d) need similar prepositions in German and English but different in Polish (e.g. G *bekannt für*, E *known for*, P *znany z*). The third category (L2=L3, L1∅) comprises those target words which go with similar prepositions in German and English but do not require a preposition in Polish (e.g. G *voll von*, E *full of*, P *pelen*). Words within the fourth category (L1=L3, L2d) need similar prepositions in German and Polish but different in English (e.g. G *sich verabschieden mit*, E *say goodbye to*, P *pożegnać się z*). Those verbs and adjectives which form the fifth category (L1=L3, L2Ř) require similar prepositions in German and Polish but no preposition in English (e.g. G *antworten an*, E *answer*, P *odpowiadać na*). Words included in the sixth category (L2≠L3, L1Ř) demand different prepositions in German and English but no preposition in Polish (e.g. G *suchen nach*, E *look for*, P *poszukiwać*). Finally, the seventh category (L1≠L3, L2Ř) comprises verbs and adjectives which go with different prepositions in German

and Polish but do not need any preposition in English (e.g. *G zeugen von*, *E prove P świadczyć o*).

2.3. Procedure

The experiment comprised three questionnaires – the main questionnaire, translation questionnaire and psychotypological questionnaire (see examples in Appendix 1, 2 and 3).

In the main questionnaire, participants had to provide prepositions for verbs and adjectives embedded in German sentences e.g. *Matejko ist bekannt ___ schöne Bilder* (Matejko is known ___ beautiful pictures). These sentences were formed in such a way as to establish context and limit the choice of possible correct answers. Additionally, the sentences provided a clue about the meaning of stimulus words in case the participants were in doubt.

All nouns which occurred after the gaps were in Nominal case so as not to suggest any preposition for the gap. Participants were told that there should be a preposition in each single gap and were encouraged to guess a preposition if they did not know/remember the correct one. After they had completed the main questionnaire, they were given the translation questionnaire to fill in.

In the translation questionnaire, similar in format to the main questionnaire, participants provided Polish and English translations of the German verbs and adjectives. Students were also asked to add such a preposition to each of the translations which would be necessary if these translated verbs and adjectives were embedded in Polish or English sentences equivalent to the German sentences used in the study. In places where the translated verb or adjective required no preposition in Polish or English, participants were asked to put “-”. If the participants did not know the meaning of a German stimulus or were not sure if they understood the stimulus correctly, they were asked to give translations which they thought to be most probable in each case. If the students had problems with correct prepositions for English translations they were asked to guess them.

The last questionnaire examined participants' view on the similarity between Polish, English and German as they were asked to answer a set of multiple choice questions concerning their perception of language distance (see Appendix 3). Participants were asked about their subjective perception of similarity between languages in terms of vocabulary and grammar as the term “language distance” was avoided so as not to suggest that any specialised linguistic knowledge is needed. Additionally, the participants were asked about the strategies they employ when searching for a German word/preposition. This was done in order to check if participants show preference for using any of the two languages as a prop in using German which could result from the perceived simi-

ilarity of languages. Information obtained from the questions was later interpreted against the data from the main study.

The three questionnaires taken together sought to find support or ground for the rejection of the hypotheses listed in the next subsection.

2.4. Research hypotheses

- Hypothesis 1. Participants' performance on the tests should demonstrate the presence of cross-linguistic influences.
- Hypothesis 2. Since psychotypology exerts a huge influence on the choice of the source language, more transfer will be obtained from the language which is perceived as more similar to German.
- Hypothesis 3. Since L2 status is claimed to be a powerful factor in TLA, more transfer will be obtained from English (participants' L2) rather than from Polish (participants' L1).
- Hypothesis 4. Since length of exposure is a major factor in cross-linguistic influence, more transfer will be observed in the performance of those participants who have a longer experience of learning English (their L2).

3. Results

As many researchers (e.g. Dewaele 1998) suggest that learners' errors can result from cross-linguistic influence, the study focused on grammatically incorrect prepositions given by the participants. Incorrect answers were compared with translation equivalents provided by the participants in the translation questionnaire in order to find prepositions affected by cross-linguistic influence. Next, each transferred preposition was compared with its translation equivalents in Polish and in English provided by the participant in the translation questionnaire to determine the source language for transfer. For example if the incorrect preposition was *für* (as in *Helga kommt heute nach Berlin and Markus wartet .für. sie*) and the translations given by the participant were *E wait for* and *P czekać na*, the incorrect preposition was judged to have been transferred from English. Answers were analysed in terms of formal and semantic similarity. Excluded from the analysis of cross-linguistic influence were those cases where translations of prepositions were semantically or formally similar both in Polish and in English as well as incorrect answers with no evidence of transfer.

Following the grouping of answers according to the source language, they were further divided into seven categories described earlier (see section 2.2.). The answers were divided on the basis of the translations provided by the participants in the translation questionnaire.

In the main questionnaire participants collectively gave 708 answers. 41% of the responses were incorrect due to transfer. Answers of all the participants were

affected by cross-linguistic influence. The number of transferred prepositions ranged from 1 to 8 per person.

In the psychotypological questionnaire only 5 participants considered the German grammar similar to Polish and 12 participants considered the German grammar similar to English. One person was of the opinion that German vocabulary is similar to Polish and 12 people claimed that German vocabulary is similar to English. In the search for a German word only 3 people admitted using Polish and 16 people claimed to use English. Seven people claimed to use Polish and 11 to use English when they do not know/remember a German preposition.

A strong correlation ($p = 0.00$) was found between the tendency for participants to look for a German word with a help of Polish and to consider the German grammar similar to Polish. Participants seemed to use English as a prop for production of neither German words nor prepositions even if they perceived English to be similar to German in terms of grammar and vocabulary as no correlation was found between considering English similar to German in terms of grammar and/or vocabulary and resorting to English when in need of German words or prepositions.

Although most of the results fail to be statistically significant, it may be interesting to see how the perceived similarity correlates with the choice of the source language in the study. Participants who perceived German vocabulary to be similar to English did not transfer mostly from English, as the correlation was very weak. This is the only result which reached the significance level $p = 0.01$. It appears from the analysis of the correlations that participants did not transfer more from Polish if they perceived the German grammar or vocabulary similar to Polish. Nor did they transfer more from Polish if they claimed to use Polish when in need of a German word or preposition. Similarly, they did not transfer more from English if they perceived the German grammar and vocabulary similar to English. Claims of using English in search of a German word or preposition did not coincide with responses given in the main questionnaire, i.e. participants did not transfer more from English.

Similarity of prepositions between languages, strongly related to the issue of psychotypology, did not work to participants' advantage. In the cases where the prepositions were similar in German and in Polish, participants gave fewer correct answers than when the prepositions were dissimilar. A stronger tendency to give correct answers was present when prepositions in English and German differed. Furthermore, transfer was stronger in those cases where similarity of prepositions between languages was absent. This seems to be in contrast to the expected advantage of similarity of answers.

In order to analyse the significance of L2 status, I compared the number of items transferred from English to the number of items transferred from Polish. English, participants' L2, appeared to be the source language for transfer in 66%

of cases. A closer look at the 7 categories of stimuli allows to examine the results in greater detail. Table 1 presents results in each of the seven categories.

Table 1. Results in the seven categories for the words transferred from English and Polish

Categories	Transferred words	
	From English	From Polish
L2 = L3, L1d	1	6
% of all transferred in the category	14,30%	85,70%
L2 = L3, L1Ř	5	0
% of all transferred in the category	100%	0,00%
L1 = L3, L2d	23	11
% of all transferred in the category	69,70%	30,30%
L1?L2?L3	54	18
% of all transferred in the category	75,00%	25,00%
L1?L3, L2Ř	0	11
% of all transferred in the category	0,00%	100%
L2?L3, L1Ř	17	0
% of all transferred in the category	100%	0,00%
L1=L3, L2Ř	0	6
% of all transferred in the category	0,00%	100%

The most interesting results concerning L2 status were obtained for category L1≠L2≠L3, where 75% of the items were transferred from English and only 25% from Polish. This means that in cases where there was no similarity between prepositions in all three languages, it was L2 that served as the major source of transfer. Another interesting result comes from the L1=L3, L2d category where participants transferred more from L2, even though similarity suggested L1 as the source language. Similarly, as many as 85,7% of the responses in the L2=L3, L1d category were affected by L1. For the rest of the categories, all answers were affected by transfer from English (as in categories L2?L3, L1Ř and L2≠L3, L1Ř) or from Polish (as in categories L1≠L3, L2Ř and L1=L3, L2Ř).

In terms of the number of years of studying English, there were no significant differences in the sample. The correlation between the number of years of studying English and intensity of transfer from English was weak (0,190) and statistically insignificant ($p = 0.256$).

4. Discussion

The first hypothesis dealt with the very phenomenon of cross-linguistic influence and its presence in TLA studies. As has been shown in the previous section, cross-linguistic influence affected almost half of all the incorrect answers given in the questionnaire. Furthermore, every single subject was found to have transferred at least one preposition. This overall result supports the hypothesis that cross-linguistic influence would be a powerful phenomenon in subjects' performance. The outcome of the study is similar to the results obtained in other transfer-oriented experiments. However, the amount of transfer exhibited by my participants is greater than in other studies. In the study conducted by Cenoz (2003), only about 14% of produced utterances were affected by cross-linguistic influence, whereas in my study it affected 41% of all the incorrect responses and 21% of all the responses. The difference could be ascribed to the dissimilar focus of the experiments. The present experiment was devoted to single words whereas the one reported by Cenoz was concerned with story telling. Hence the nature of the task might have influenced the amount of the transfer obtained.

Hypothesis 2 was concerned with the influence of psychotypology and it claimed that students transfer more from the languages they perceive to be linguistically similar. Unlike in many other studies (e.g. De Angelis and Selinker 2001; Hammarberg 2001; Williams and Hammarberg 1998), my experiment failed to find support for a significant influence of psychotypology on the process of transfer. In the face of the results presented in the previous section, the hypothesis formulated before the experiment has to be refuted. These findings are not in accord with other TLA studies (e.g. Singleton 2001) where psychotypology was a very significant factor. The reason for such a discrepancy might be attributed to the size of my sample. There were only 23 participants and this might have induced the difference in the results. Moreover, answers provided by the participants in the psychotypological questionnaire might have not reflected their true perception of language distance as it might not be open to introspection.

In contrast, Hypothesis 3, which predicted more transfer from English as participants' L2, was supported in the experiment. Indeed, L2 status appears to be a powerful factor, as the participants transferred mostly from English, their L2. English served as the source language for nearly twice as many responses as Polish. The outcome of the experiment is even more interesting if we take into account the fact that psychotypology was not proven to have influenced participants' choice of the source language.

Finally, Hypothesis 4 was concerned with the influence of the length of exposure on transfer. Almost no correlation was found between the length of exposure to English (numbers of years of study) and transfer from English to German. Hence Hypothesis 4 was not supported in the experiment.

This result may be attributed to two facts. First, the difference in the number of years of second language acquisition between the participants was rather small. It ranged from 1 to 7 years, with the majority having had 10 years of learning experience. Furthermore, this difference appears to be even less significant if we take into account the fact that the intensity of exposure to English during the learning process might vary. Second, as the size of my sample was rather small, there is a high probability that the result occurred by chance. Nevertheless, in the face of the findings, the hypothesis which claimed that the longer students learn their L2 the more they transfer from this language has to be rejected.

5. Conclusion

To sum up, a significant amount of transfer was found in the experiment. Among factors of cross-linguistic influence examined in this study only L2 status was proven significant. This outcome is in accord with the results of other experiments which have been carried out in the domain of TLA. However, unlike in other empirical studies, the influence of psychotypology and the length of exposure failed to be exhibited in my experiment. This difference might have resulted from the small size of the tested sample and low variability in terms of the learning experience of the participants. The major conclusion for further research which could be drawn from the analysis of the current data is that the study should be replicated on a larger and more varied sample. This would allow collecting sufficient data and forming conclusions based on statistically significant results.

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APPENDIX 1

- bekannt
Matejko ist bekannt _____ schöne Bilder.
- antworten
Antworten Sie, bitte _____ meine Frage.
- bitten
Monika bittet mich _____ Hilfe. Sie kann das allein nicht machen.
- hoffen
Ich hoffe _____ gut Wetter morgen. Ich möchte einen Ausflug machen.
- allergisch
Meine Schwester ist allergisch _____ Tiere.

APPENDIX 2

- bekannt PL _____ + _____ EN _____ + _____
Matejko ist bekannt _____ schöne Bilder.
- antworten PL _____ + _____ EN _____ + _____
Antworten Sie, bitte _____ meine Frage.
- bitten PL _____ + _____ EN _____ + _____
Monika bittet mich _____ Hilfe. Sie kann das allein nicht machen.
- hoffen PL _____ + _____ EN _____ + _____
Ich hoffe _____ gut Wetter morgen. Ich möchte einen Ausflug machen.
- allergisch PL _____ + _____ EN _____ + _____
Meine Schwester ist allergisch _____ Tiere.

APPENDIX 3

1. Moim zdaniem pod względem słownictwa język niemiecki jest najbardziej podobny do [In my opinion, in terms of vocabulary, German is most similar to]:

- a) języka polskiego [Polish],
- b) języka angielskiego [English],
- c) żadne z powyższych [none of these].

2. Moim zdaniem pod względem gramatyki język niemiecki jest najbardziej podobny do [In my opinion, in terms of grammar, German is most similar to]:

- a) języka polskiego [Polish],
- b) języka angielskiego [English],
- c) żadne z powyższych [none of these].

3. Kiedy brakuje mi słów w niemieckim, to staram się znaleźć właściwe słowo przy pomocy [When I am short of words in German, I try to find the appropriate word with the help of]:

- a) języka polskiego [Polish]
- b) języka angielskiego [English],
- c) żadne z powyższych [none of these].

4. Kiedy nie znam lub nie jestem pewien/na niemieckiego przyimka, pomocny dla mnie w tej sytuacji jest [When I do not know/I am not sure of a preposition in German, I try to find the appropriate preposition with the help of]:

- a) język polski [Polish],
- b) język angielski [English],
- c) żadne z powyższych [none of these].