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The influence of L2 English on learning of L3 German structures – different examples of cross-linguistic influence

Abstract

The paper focuses on multilingual learning experiences and language transfer between L2 English and L3 German. The purpose of the following pilot study is to present how L2 English influences classroom learning of L3 German regarding selected structures, e.g. lexical, morphological and orthographic. The study was carried out with 50 high school learners whose L1 was Polish, L2 English and L3 German. In its theoretical part, the paper discusses crucial notions such as multilingualism and language transfer and elaborates on their role in foreign language acquisition process. Its concluding part reflects upon the similarities and differences between languages and obstacles resulting from this phenomenon. It also focuses on Third Language Acquisition (TLA) process as a challenge both for students and teachers referring to languages typologically close as English and German are.

Keywords: multilingualism; L3 German; L2 English; cross-linguistic influence; lexical transfer

1. Multilingualism

In the words of Aronin and Singleton (2008) the phenomenon of globalization refers to inevitable development of multilingualism emphasizing the rise in foreign language acquisition (Aronin and Singleton (2009:170). Gabryś – Barker (2005:17) defines multilingualism as ‘the ability to use or function in more than two languages.’ The linguist adds that at present multilingualism is not unusual any more, but it is the norm. A multilingual person, according to Singleton and Aronin (2009:171) can be characterized as possessing “a wider range of affordances available for them”. What is more, multilinguals not only have the knowledge, but also improved language awareness. Another crucial notion is introduced by Singleton and Aronin (2009:171) which is multilinguality. This term is the phenomenon of being able to communicate and function in particular languages, and enables a multilingual person to cope with language on his own and any other problems connected with this process (Aronin and O Laoire, 2004). In addition, multilingual people are aware of their possibilities and usefulness which are carried by possessed knowledge. This is known as theory of affordances discussed by Singleton and Aronin (2007), introduced by Gibson (1977; 1979/1986) as quoted in Chłopek (2011:123).

Another pivotal issue referring to the knowledge of multilingual person in comparison to a monolingual one, is *multicompetence* (Chłopek, 2011:66). This term is defined as ‘a complex state of mind that acquired two grammars’ (translation is mine, after Cook, 1991:112). Cook redefined this notion in the following way: ‘a knowledge of more than one language in one mind’ (translation is mine, after Cook, 2001:12). The above-mentioned definitions draw our attention to *complexity* referring to multicompetence. Chłopek (2002:67) explains that foreign language acquisition process is not the same as acquiring first language (L1). Learning a new foreign language is very much grounded on languages which have already been acquired. Languages and interlanguages result from this phenomenon – they function in mind in a complex and dynamic way.

As Chłopek (2011:67) writes, another feature of multicompetence is *dynamism*. Both the development and regression occur in a multilingual mind at the same time, and are much more visible than in a monolingual one (Jessner, 1998:155; Herdina, Jessner, 2000; 2002; Dewaele, Pavlenko, 2003:137). Multilingual competence is the outcome of dynamic relations occurring between the following variables:

- the systems of L1, L2 and L3;
- cross-linguistic interaction;
- multilingualism-factor.

Without the interaction of the above-mentioned factors multilingualism would hardly be possible, because thanks to them our brain has knowledge, can process various languages and draw new conclusions and as a result is able to use a new language. The more dynamic these elements interact with each other, the more effective language learning and production are.

2. Foreign Language Learning and Working Memory

It is worth emphasizing that foreign language learning has an influence on the development of working memory. But first it is necessary to introduce the term working memory. As Mizera (2006:1) writes, working memory is ‘the ability to simultaneously maintain and manipulate information in the performance of cognitive tasks’ as well as in tasks developing L2 skills, e.g. listening or speaking (Fortkamp, Bergsleithner, 2007:41) – the definition is based on the working memory model introduced by Baddeley (1986, 1999, 2003; Gathercole & Baddeley, 1993; Baddeley & Hitch, 1974). In the beginning, working memory was divided into three components: the Phonological Loop, the Visuo-Spatial Sketchpad and the Central Executive (Baddeley, 1986). In 2000, the researcher included the fourth component which is the Episodic Buffer of working memory. Their main functions can be briefly described as follows:

- Central Executive – the most essential component in working memory model which controls the work of the entire working memory; it gives attentional

resources to other sub-components (Baddeley and Logie, 1999; Piotrowski 2004; Orzechowski, Piotrowski, Balas, Stettner, 2009:28);

- Phonological Loop – is used for phonological information; it is subdivided into: phonological store which stores information and articulatory loop responsible for information processing (Orzechowski, Piotrowski, Balas, Stettner, 2009:28)
- Visuo-Spatial Sketchpad – its function refers to storage and rehearsal of visual and spatial information (shape, size, colour as well as spatial location) (Piotrowski, 2004);
- Episodic Buffer – is responsible for temporary storage of complex information which can be linked, although they are of various origins (Piotrowski, 2004:25;35).

The role of foreign language learning in working memory improvement was proved on the basis of research conducted by monolingual and bilingual children. The study carried out by Morales, Calvo and Bialystok, (2013) compared the tasks measuring working memory of monolingual and bilingual children. The study revealed that bilingual pupils responded much faster than monolingual ones and, what is more their answers were more detailed than those provided by monolingual children. This confirmed that bilinguals' central executive is very efficient. In the second task measuring other functions of central executive component, bilingual learners again outperformed monolinguals. The above-mentioned tasks revealed that bilingual children use their working memory better than monolinguals.

Working memory is strongly connected with language aptitude which in general is understood as “a knack for learning a foreign language” (Gardner and Lambert, 1972:2). Working memory is the component of language aptitude and it enables us to store and process linguistic information, e.g. identifying and distinguishing sounds, recognizing grammatical structures or inductive language learning (Carroll, 1981). Cross-linguistic influence is possible, because linguistic information which is stored in long-term memory can be dynamically processed in our working memory system. This is one important reason why we can function in multilingual environment.

3. Cross-linguistic influence

As Chłopek writes psychological processes occurring both during studying and using foreign language are implicit rather than explicit. Their quality and frequency can be observed on the basis of cross-linguistic influence (Chłopek 2011:139). They occur because linguistic systems of a multilingual person are stored in one structure of memory and in addition are connected with one system of term representations. When we use a particular target language, elements coming from a non-target language are activated. Chłopek (2011:141) explains that a cross-linguistic influence ‘is any type influence of at least one language (or interlanguage) on any other lan-

guage (or interlanguage)'. Gabryś-Barker (2009:155) explains that when we observe foreign language learning process, we focus not only on 'the present state' 'but also on what comes before and after'. The phenomena which refer to *before* are named *transfer of learning*, and the second group concerning *after* – *proactive interference*. Gabryś-Barker adds that it is difficult to separate these phenomena, and this is the reason why many researchers treat them as homogenous. The linguist explains that transfer of learning is strongly connected with the knowledge previously possessed and proactive interference focuses on transfer effects. Knowledge which learners have already acquired may make learning process easier, which is called positive transfer, or more difficult – negative transfer. Moreover, there are two more types of transfer of learning as Gabryś-Barker notices (2009:155): a general transfer concerning the entire context of learning and specific transfer referring to particular area of knowledge that can be transferred because of some similarities.

Chłopek (2011:142) writes that the above-mentioned phenomena can be intentional or unintentional. Researchers are usually interested in the examples and effects of the negative transfer which is named interference, due to the fact that they can be easily observed. These instances can occur by mistake (Corder, 1967/1981) or constantly, and are known as mistakes or competence mistakes (James, 1998; Ecke, Hall, 2000). Seifert sums up that transfer can occur 'when students apply moderately general principles to new problems or situations' (Seifert 1991:183 quoted in Gabryś-Barker 2009:156).

4. Types of transfer

Cross-linguistic influence regarding lexis is the most popular type of transfer, because it can be easily observed, e.g. when a learner uses inappropriate word in an utterance, it can ruin the meaning of the entire sentence. What is more, there group of lexical items in a language is much more numerous than a grammatical one (Chłopek, 2011:197).

Undoubtedly, studies focusing on the lexical transfer are quite numerous (Ringbom 2005, De Angelis 2007, Gabryś-Barker 2005, 2006, Chłopek 2011, Targońska 2004), but there are fewer works on cross-linguistic influence at the morphological and orthographic level. Cross-linguistic influence occurs because the system of the target language is not acquired in a sufficient way.

Ringbom (1987 as quoted in Chłopek, 2011:198)) analysed 11 thousand essays which were written in English, produced by students whose L1 was Swedish, L2 Finnish or L1 Finnish, L2 Swedish and L3 English. On the basis of the research, it turned out that it was Swedish which influenced L3 English no matter if it was students' mother tongue or not. Furthermore, the researcher carried out another study referring to translation of lexical units with learners who knew the same languages

as above-mentioned. The main source of transfer of form was Swedish. However, semantic transfer was caused by mother tongue (both Finnish and Swedish), and there was no transfer on the basis of L2.

The research conducted by Targońska (2004) revealed that L2 English can be helpful in learning L3 German (the instance of positive transfer), because of the fact that students can notice some similarities between these two languages. On the other side, students learn German on the basis of L2 English filter, which can lead to negative transfer, e.g. they write *Tafle* instead of correct German form *Tafel*, because English *-le* ending is deeply rooted in their mind.

Chłopek (2011:147-150) enumerates and explains types of transfer regarding the research conducted with students from German Department whose task was a written production in L3 English. For the purposes of this paper, the most meaningful transfer types are briefly discussed below:

- “totally or partially deceptive cognates - false friends” (Chłopek, 2011:147; Ringbom, 2007:78-88) – similarity of equivalents in two particular languages is the reason for transfer, e.g. *at the time he works in a fabrik* (Swedish *fabrik* = English *factory*, English *fabric* means *cloth*);
- semantic extension of single lexical units – transfer of meaning of a particular lexical unit, e.g. *He bit himself in a language* (Finnish *kieli* = English *language*);
- nonce borrowing, nonce loan – a borrowing used ad hoc; refers to using lexical unit from a source language which is adapted concerning its morphology, phonology as well as orthography in the target language; a non-existing form is the result of this process;
- morphological transfer – a non-target morphological rule or a morpheme influences production in a target language (Chłopek, 2011:149);
- orthographic transfer – using an orthographic rule or transferring particular orthographic examples into the target language.

As far as lexical transfer is concerned, it is a very important type of cross-linguistic influence, because it deals with vocabulary, which enables us to communicate. On the basis of similarities between languages students can build and enrich their vocabulary range and this can make communication easier and more effective. Morphological and orthographic types of transfer seem to be more difficult to acquire, because they deal with grammar which is specific for each language. Sometimes it is possible to look for similar patterns and make use of them in another foreign language, especially in languages from the same language family or even from different families, e.g. a necessity to inflect verbs in German and French.

5. Research design

The study focuses on the process of foreign language learning in Poland, mainly on two obligatory foreign languages in high school curriculum. In the words of De Angelis and Selinker (2001), transfer of learning is more likely to occur between languages typologically close. It has been designed to reveal the role of L2 English in L3 German acquisition. The study was conducted with 50 Polish learners from high school in Silesia (Gliwice) whose L1 is Polish, L2 English and L3 German. Their level of proficiency in English is upper - intermediate and in German is intermediate. The main aim of the study was to see if learners transfer particular lexical, grammatical and orthographic structures from L2 English to L3 German.

The study was conducted from May to June 2014 and subdivided into two parts. In the first part, students wrote an essay on their best holidays (see Appendix 1). The word limit was up to 200 words. The task took learners about 45 minutes. The second part of the study was a translation task, which aimed at translating twelve sentences from L1 Polish into L3 German (see Appendix 2). The sentences forced students to write particular German structures in translation task which revealed the role of L2 English in L3 German production. The sentences to translate contained the use of words, prepositions, articles and one example of grades of adjectives. Both the translation task and long written production revealed the examples of negative transfer between English and German.

The papers, 50 essays and 50 translation tasks, were collected and corrected referring to Cross-Linguistic Influence (CLI) between L2 English and L3 German. The results are presented and discussed in the tables below.

6. Results analysis

The first group of results to analyse refers to lexical transfer between L2 English and L3 German. The outcomes occurred in students' written production about their best holiday. The examples are visible in *Table 1*, in column *The example of error*. In the words of the first example, an erroneous use of English word *gift* in L3 German can be seen. Students transferred the meaning *present* to L3 German, but they should have written *Geschenk*. The word *Gift* exists in German, but means *a poison*. There are two more similar examples: students used L2 *Olympics* in L3 German instead of correct term *Wettkämpfe*, and English adjective *fast* instead of *schnell*. The situation is the same with the use of verbs. In English we usually say *to go by bus*, and learners transferred the meaning of the verb *go* into German, which is *gehen*. The problem to note is that, in German we must say *mit dem Bus fahren*, not *mit dem Bus gehen*.

Students make use of their L2 knowledge and transfer it into L3 German, on the basis of which they try to function in new linguistic situations. The consequences

of this phenomenon can develop in two directions. On the one hand, it can cause misunderstandings in communication, e.g. with a word *gift* – it is a huge difference if we have a present (English meaning) or poison (*der Gift* – German meaning). On the other hand, transfer of particular structures can be very imprecise, but it can still be communicative, e.g. erroneous form *mit dem Bus gehen* still means that *we travel by bus*, although the correct form is with different verb *mit dem Bus fahren*.

Table 1. Lexical transfer between L2 English and L3 German

Type of CLI	Number of incorrect sentences	The example of error	Correct L3 German form	Intended meaning	Source of error
False friends	4	Ich habe ein Gift für dich.	Ich habe ein Geschenk für dich.	I have a gift for you.	L2 gift = L3 Geschenk
False friends	3	Sie bekam eine schlanke Frau.	Sie ist eine schlanke Frau geworden.	She became a fit woman.	L2 become = L3 werden
False friends	12	Mein Freund kann sehr fast laufen.	Mein Freund kann sehr schnell laufen.	My friend can run very fast.	L2 fast = L3 schnell
False friends	14	Dorthin kann ich mit dem Bus gehen.	Dorthin kann ich mit dem Bus fahren.	I can go there by bus.	L2 go by bus = L3 mit dem Bus fahren
Ad hoc borrowing	11	Mein Freund nimmt in dem Olympics teil.	Mein Freund nimmt an den Wettkämpfe teil.	My friend takes part in the Olympics.	L2 Olympics = L3 Wettkämpfe

The second group to discuss (*Table 2*) refers to the use of prepositions and their transfer. The errors concerning them can occur because of similarities of form between English and German. In English, if we *prepare for* a particular event, we have to use a preposition *for*. German equivalent of the above-mentioned phrase is *sich vorbereiten auf / für*. Nearly 50 per cent of students identified the similarity between English *for* and German *für* and used this preposition correctly (positive transfer). The rest of the group used German preposition *auf*, which is correct as well, or did not translated the sentence correctly.

Another example concerning prepositions in English *to take part in*. German equivalent is *teilnehmen an*, and definitely not *teilnehmen in*. Translation task revealed that about the half of the learners noticed similarity in the form between English *in* and German *in*, and this was the reason of error and negative transfer as well.

It is obvious that languages differ in their prepositional systems. Prepositions are difficult to learn for students, and although they are “small words”, they carry crucial meaning. In the examples presented they do not change the meaning of the whole utterance, but they refer to linguistic precision.

Table 2. Transfer of prepositions from L2 English into L3 German

Verb + preposition	Number of incorrect sentences	%	The example of error	Correct form in L3 German	Intended meaning	The source of error
sich vorbereiten auf/für	21/50	42	Ich bereite mich für Abitur vor.	Ich bereite mich für/ auf Abitur vor.	I prepare for the matura exam.	L2 I prepare for Matura exam. = L3 Ich bereite für Abitur vor.
teilnehmen an	23/50	46	Ich nehme in dem Wettkampf teil.	Ich nehme an dem Wettkampf teil.	I take part in the contests.	L2 take part in = L3 teilnehmen an
warten auf	20/50	40	Ich warte für dich.	Ich warte auf dich.	I wait for you.	L2 wait for = L3 warten auf
auf diese Weise	3/50	6	In diese Weise werden wir nicht sprechen.	Auf diese Weise werden wir nicht sprechen.	In this way we will not talk.	L2 in this way = L3 Auf diese Weise

Adjectives and transfer between English and German were also observed in the study (Table 3). A comparative grade of the adjective *interesting* in English is formed by adding the word *more*: *more interesting*. In German, we do not use any additional words in adjectives, but add the ending *-er*. 28 per cent of students produced the comparative form in German *mehr interresant* instead of *interessanter*. The erroneous German form *mehr interessant*, can have its roots in the correct English form *more interesting*. The situation is similar with the superlative form. 20 per cent of students used the erroneous German form *am meisten luxuriös* instead of *am luxuriösesten*. The source of error can be seen both in L1 Polish and L2 English. In these

two languages we use additional words in superlative and comparative degrees before the adjective.

Table 3. Comparative and superlative forms of adjectives

Type of CLI	The number of incorrect sentences	%	The example of error	Correct form in L3 German	Intended meaning	Source of error
Transfer of the comparative from L2 into L3	14/50	28	Diese Buch ist mehr interessant als früher.	Diese Buch ist interessanter als früher.	This book is more interesting than the previous one.	L2 more interesting = L3 interessanter
Transfer of the superlative from L2 into L3	10/50	20	Wir haben die Nacht in am meisten luxuriös Hotel verbracht.	Wir haben die Nacht in am luxuriösesten Hotel verbracht.	We spent the night in the most luxurious hotel.	L2 the most luxurious = L3 am luxuriösesten

One example concerning transfer of articles is presented in Table 4. It can be noticed that in English sentence *I want to be a doctor*, indefinite article *a* is necessary. German translation of this sentence is: *Ich möchte Arzt werden* (without any articles). In 36 per cent of students' papers, the translation contained a definite or an indefinite article: *Ich möchte ein/der Arzt werden*. The source of error can be L2 English. One reason for this phenomenon can be that the students have been learning English longer than German. This means that English article system is deeply rooted in their mind and it is transferred into L3 German. This type of error highlights the need to differentiate article systems between particular examples in various foreign languages.

Table 4. Transfer of articles form L2 English into L3 German

Type of CLI	Number of incorrect sentences	%	The example of error	Correct L3 German form	Intended meaning	Source of error
Transfer of articles	18/50	36	Ich möchte ein/der Arzt werden.	Ich möchte Arzt werden.	I want to be a doctor.	L2 I want to be a doctor. = L3 Ich möchte Arzt werden.

Plural forms in English can be a source of error in L3 German as it is presented in Table 5. In English, after the word *glasses* we are obliged to use a verb in plural, e.g. *My glasses are red*. The equivalent of English *glasses* in German is *Brille*, and after *Brille* we use a singular verb, e.g. *Meine Brille ist rot*. German construction *Meine Brille sind rot* is the example of the negative transfer from English into German.

Another example concerning the plural form is German noun *Polizei* after which we should only use a verb in singular form, e.g. *Die Polizei sucht nach die Tätern*. 12 per cent of learners used the verb in plural, which can be explained on the basis of English – here after the equivalent *police* the plural verb should be used: *The Police look for the perpetrators*.

The source of transfer can be not only L2 English, but also students' mother tongue Polish, because the word *glasses* in Polish is plural and needs a verb in plural as well. A good learning aid would be a comparative list of particular nouns in English and German which would emphasize the differences between singular and plural forms and make studying easier.

Table 5. Transfer of plural forms from L2 English into L3 German

Type of CLI	Number of incorrect sentences	%	The example of error	Correct L3 German form	Intended meaning	Source of error
Transfer of L2 plural form of a verb after a noun in plural	12/50	24	Meine Brille sind rot.	Meine Brille ist rot.	My glasses are red.	L1 Moje okulary są czerwone. = L2 My glasses are red. = L3 Meine Brille ist rot.
Transfer of L2 plural form of a verb after a noun in plural	6/50	12	Die Polizei suchen nach die Tätern.	Die Polizei sucht nach die Tätern.	The Police look for the perpetrators.	L2 The Police look for the perpetrators. = L3 Die Polizei sucht nach die Tätern.

Last, but not least issue to discuss is orthographic transfer between English and German. The equivalent of English noun *apple*, is German *Apfel*. As it can be easily observed, in the former the noun's ending is *-le*, and the latter *-el*. English ending *-le* can be transferred into German, and this is the reason why 8 students used the erroneous form *Apfle* in German. The example with English *uncle* is analogical: *Oncle* instead of *Onkel* in German.

Orthographic transfer is based on similarities of written form of the words between English and German. Students who have been learning English longer than German got accustomed to writing patterns in English and as a result need to practice German spelling more. This type of transfer does not impede communication very much and proves that it is still possible, although the words do differ, but in small extent.

Table 6. Orthographic transfer between L2 English and L3 German

Type of CLI	Number of incorrect sentences	The example of error	Correct L3 German spelling	Intended meaning	Source of error
Transfer of order of letters	Sentences found in 7 essays	Mein Oncle ist sehr nett.	Mein Onkel ist sehr nett.	My uncle is very nice.	L2 uncle = L3 Onkel
Transfer of order of letters	8	Ich habe eine Apfle in meinem Rucksack.	Ich habe einen Apfel in meinem Rucksack.	I have an apple in my backpack.	L2 apple = L3 Apfel
Transfer of order of letters	16	Hundret	Hundert	hundred	L2 hundred = L3 Hundert

Summary of findings

1. Transfer of prepositions from L2 English into L3 German is the strongest – it occurs nearly in the half of papers. Almost a half of students transfer prepositions from L2 English into L3 German, especially these which are physically similar to each other in both languages, e.g. L2 *for* → L3 *für*; L2 *in* → L3 *in*. Prepositions have smaller semantic weight. Moreover, they are redundant elements – at this level of language acquisition, learners can communicate successfully without them. Transfer of function words can be caused by the fact that they usually are shorter and less noticeable for learners than lexical words (Ringbom 1987).

2. The instance of transfer of nouns is mostly visible within the scope of false friends between L2 English and L3 German. There is the example of ad hoc borrowing as well.

3. Approximately 23 per cent of students transfer the comparative and superlative forms of adjectives from English into German, e.g. L2 *more interesting* → L3 *mehr interessant*.

4. Nearly 40 per cent of learners write articles in German sentences when it is not needed because of the influence of L2 English, e.g. *I want to be a doctor.* → L3 *Ich möchte ein/der Arzt werden.*

5. Plural nouns in L2 English seem to be plural too in L3 German for 24 per cent of learners.

6. English spelling is deeply rooted in learners' knowledge, because they transfer it into German words, e.g. L2 *apple* → L3 *Apfle*. Transfer at the orthographic level occurs because of similarities between languages (Targońska, 2004). High proficiency level of the source language and low proficiency level in the target language can create favourable conditions for orthographic transfer (Chłopek 2011).

Summarizing the above-mentioned research findings, it can be observed that similarities at the level of lexis, grammar and spelling between L2 English and L3 German can influence acquisition process of the German language. In some examples the transfer of similar words or forms does not change the meaning of the utterance very much, but this phenomenon refers to linguistic precision. But sometimes, using an erroneous form can impede the whole communication. Although, transfer errors do occur, learners are still able to communicate and prove that they try to function not only in the new language, but also in multilingual environment. It is a challenge both for teachers and students to be aware of the similarities and differences between languages typologically close. It is worth to draw learners' attention to this problem and endeavour to facilitate teaching program in order to make their speech and written production less erroneous.

References

- Aronin, L., and O Laoire, M. (2004). Exploring multilingualism in cultural contexts: Towards a notion of multilinguality. In: Hoffmann, C., and Ytsma, J. (Eds.) *Trilingualism in family, school and community*. Clevedon: Multilingual Matters Ltd.
- Baddeley, A.D. (1986). *Working memory*. Oxford: Oxford University Press.
- Baddeley, A.D., Logie, R.H. (1999). Working memory: The multiple-component model In: Miyake, A., Shah, P. (Eds.) *Models of working memory: Mechanisms of active maintenance and executive control*. Cambridge: Cambridge University Press
- Baddeley, A. D., Hitch, G. (1974). Working memory. In: Bower, A.G. (eds.) *Recent advances in learning and motivation*, Vol. 8. New York: Academic Press.
- Carroll, J.B. (1981). Twenty-Five Years of Research on Foreign Language Aptitude. In: Diller, K. C. (Ed.) *Individual Differences & Universals in Language Learning Aptitude*. London: Newbury House Publishers, Inc.
- Chłopek, Z. (2011). *Nabywanie języków trzecich i kolejnych oraz wielojęzyczność. Aspekty psycholingwistyczne (i inne)*. Wrocław: Wydawnictwo Uniwersytetu Wrocławskiego.
- Cook, V.J. (2001). *Second Language Learning and Language Teaching*. London: Hodder Arnold.
- Cook, V.J. (1991). The property of the stimulus argument and multicompetence. *Second Language Research* 7(2), 103-117.
- Corder, S.P. (1967) [1981]. The significance of learners' errors. *International Review of Applied Linguistics* 5(4), 161-169. In: Corder, S. (Ed.) *Error Analysis and Interlanguage*. Oxford: Oxford University Press, 5-13.
- De Angelis, G. (2007). *Third or Additional Language Acquisition*. Clevedon: Multilingual Matters.
- De Angelis, G., and Selinker, L. (2001). Interlanguage transfer and competing linguistic systems in the multilingual mind. In: Cenoz, J., Hufeisen, B., and Jessner, U. *Cross-linguistic influence in third language acquisition. Psycholinguistic perspectives*. Clevedon: Multilingual Matters.
- Dewaele, J.M., and Pavlenko, A. (2003). Productivity and lexical diversity in native and non-native speech: A study of cross-cultural effects. In: Cook, V. (Ed.), 120-141.

Ecke, P., Hall, Ch., J. (2000). Lexikalische Fehler in Deutsch als Drittsprache: Translexikalischer Einfluss auf drei Ebenen der mentalen Repräsentationen. *Deutsch als Fremdsprache* 37(1), 30-36.

Fortkamp, Malice, B.M., and Bergsleithner, J.M. (2007). *The relationship among individual differences in working memory capacity, noticing, and L2 speech production*. Doctoral dissertation. Universidade Federal de Santa Catarina, 2007.

Gabryś-Barker, D. (2009). The role of transfer of learning in multilingual instruction and development in: Arabski, J., Wojtaszek, A. (Eds.) *Multidisciplinary perspectives on second language acquisition and foreign language learning*, Katowice, University of Silesia.

Gabryś-Barker, D. (2006). The interaction of languages in the lexical search of multilingual language users. In: Arabski, J. (Ed.), *Cross-linguistic influences in the second language lexicon*. Clevedon: 144-166.

Gabryś-Barker, D. (2005). *Aspects of Multilingual Storage, Processing and Retrieval*. Katowice: Wydawnictwo Uniwersytetu Śląskiego.

Gardner, R. and Lambert, W. (1972). *Attitudes and Motivation in Second Language Learning*. Rowley, Mass: Newbury House.

Gathercole, S. E. & Baddeley, A.D. (1993). *Working Memory and Language*. Hove, England: Lawrence Erlbaum Associates Ltd.

Gibson, J.J. (1979) [1986]. *The Ecological Approach to Visual Perception*. Boston: Houghton Mifflin. [Hillsdale, NJ: Lawrence Erlbaum].

Gibson, J.J. (1977). The theory of affordances. In: Shaw, R. E. and Bransford, J. (Eds.) *Perceiving, Acting and Knowing*. Hillsdale, NJ: Lawrence Erlbaum, 67-82.

Herdina, P. and Jessner, U. (2002). A Dynamic Model of Multilingualism: Perspectives of Change in Psycholinguistics. Clevedon: Multilingual Matters.

Herdina, P., and Jessner, U. (2000). The dynamics of third language acquisition. In: Cenoz, J. and Jessner, U. (Eds.), 84-98.

James, C. (1998). *Errors in Language Learning and Use: Exploring error Analysis*. (Applied Linguistics and Language Study. Harlow et al. Longman Pearson Education.

Jessner, U. (1998). Bilingualismus und Drittspracherwerb: Dynamische Aspekte des Multilingualismus auf individueller Ebene. In: Hufeisen, B. and Lindemann, B. (Eds.), 149-158.

Mizera, G. J. (2006). *Working memory and L2 oral fluency*. Unpublished PhD thesis. University of Pittsburg.

Morales, J., Calvo, A. and Bialystok, E. (2013). Working memory development in monolingual and bilingual children. *Journal of Experimental Child Psychology*, 114(2).

Orzechowski, J., Piotrowski, K.T., Balas, R. and Stettner, Z. (2009). *Pamięć robocza*. Warszawa: Wydawnictwo SWPS Academica.

Piotrowski, K.T. (2004). *Rola centralnego systemu wykonawczego pamięci roboczej w krótkotrwałym przechowywaniu informacji. Badanie metodą generowania interwałów losowych*. Unpublished PhD Thesis.

Ringbom, H. (1987). *The role of the first language in FLA*, Clevedon, Multilingual Matters.

Ringbom, H. (2005). L2 transfer in third language acquisition. In: Hufeisen, B., Fouser, R.J. (Eds.).

Ringbom, H. (2007). *Cross-linguistic Similarity in Foreign Language Learning*. Clevedon, Buffalo, Toronto: Multilingual Matters.

Seifert, K. (1991). *Educational Psychology 2nd Edition*. Boston: Houghton Hifflin Company.

Singleton, D. Aronin, L. (2009). Multilingual language learners' use of affordances: theoretical perspectives and some evidence, in: Arabski, J., Wojtaszek, A. (Eds.) *Multidisciplinary perspectives on second language acquisition and foreign language learning*, Katowice, University of Silesia.

Singleton, D. and Aronin, L. (2007). Multiple language learning in the light of the theory of affordances. In: *Innovation in Language Learning and Teaching* 1(1), 83-96.

Targońska, J. (2004). Zur Nutzung von Englischkenntnissen beim Erwerb des deutschen Wortschatzes. *Eine empirische Untersuchung an polnischen Schülern*, in: Hufeisen, B., Marx, N. (2004). *Beim Schwedischlernen sind English und Deutsch ganz hilfreich*, Peter Lang.

Appendix 1

Napisz esej opisujący Twoje najlepsze wakacje. Limit słów: 200.

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Appendix 2

Przetłumacz zdania z języka polskiego na język niemiecki.

1. W ten sposób nie będziemy rozmawiać.
2. Mój kolega bierze udział w zawodach.
3. Chciałbym zostać lekarzem.
4. Jadę autobusem.
5. Ta książka jest bardziej interesująca niż poprzednia.
6. Mam dla ciebie prezent.
7. Przygotowuję się do matury.
8. Czekam na ciebie.
9. Moje okulary są czerwone.
10. Mój wujek jest miły.
11. Jestem Polką/Polakiem.
12. Jutro idziemy do parku.

