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NATIVE LANGUAGE ATTRITION OR EXPANSION? CONSIDERATIONS ABOUT LEXICAL REVERSE TRANSFER: A CASE STUDY

Abstract. A bi- or multilingual repertoire is a complex and dynamic system of languages (Herdina & Jessner, 2002; Herwig, 2001; Larsen-Freeman & Cameron, 2008; Stotz & Cardoso, 2022) which interact with each other and with the conceptual system (Kroll & Stewart, 1994; Pavlenko, 2009). Importantly, fluent and regularly used native languages are not spared from the influence of later acquired non-native ones. The paper presents the results of a case study conducted with a native speaker of Polish with three additional languages: English, German, and French. Based on the analysis of the instances of lexical reverse transfer observed in the spoken production in her L1, it is concluded that reverse transfer may lead to partial L1 attrition, at least when the monolingual perspective is taken. From the multilingualism point of view, reverse transfer should rather be treated as a phenomenon leading to partial restructuring and enhancement of mother tongue competences.

Keywords: native language attrition, lexical reverse transfer, cross-linguistic influence, multilingualism.

1. Introduction

The influence of the native language (L1) on later acquired ones (L2, L3 etc.) has been widely researched and documented (for an overview, see Chłopek, 2011; De Angelis, 2007; Ringbom, 1987). Fewer research studies have been concerned with reverse (retroactive) transfer (RT), even though native language competences fluctuate in the course of life and are influenced by non-native languages (Cook, 2003; Jessner & Megens, 2019; Kecskés & Papp, 2007, p. 380; Schmid, 2012; Timmermeister & Schmid, 2018).

Reverse transfer has typically been discussed in the context of first language attrition, but it may also be analyzed as a type of cross-linguistic influence, a phenomenon which is inextricably linked to bilingualism and

multilingualism and does not necessarily lead to L1 loss (Chłopek, 2012; Cook, 2003; Pavlenko, 2004; Schmid & Köpke, 2007). In a bi- or multilingual mind, each language system, including the L1, may be influenced by the other language systems (Coderre et al., 2016; Thierry & Wu, 2007). This does not mean, of course, that proactive (“forward”) and retroactive (“backward”) influences are qualitatively and quantitatively similar (e.g., Schmid & Köpke, 2007). The present paper takes up the issue of reverse transfer in bi-/multilinguals who use their mother tongues on a regular basis, and contemplates the question of whether non-native languages lead to partial L1 attrition or rather an expansion of the L1 system.

2. The multilingual mind, cross-linguistic influence, and reverse transfer

Nearly forty years ago Grosjean (1985) wrote his famous statement:

The bilingual is *not* the sum of two complete or incomplete monolinguals; rather, he or she has a unique and specific linguistic configuration. The co-existence and constant interaction of the two languages in the bilingual has produced a different but complete language system. (p. 471, emphasis in the original)

Even though the holistic view of language knowledge and language development/use in bilinguals represented by Grosjean (1985) has been called into question by neurolinguistic studies showing that languages are stored in separate neural networks of the brain (Fabbro, 2001; Paradis, 2004), it is generally accepted that they nevertheless interact with each other (De Angelis, 2007; Pavlenko, 2009). Each language is acquired and used with the active involvement of the other languages present in the mind/brain (Coderre et al., 2016; Thierry & Wu, 2007), which leads to the development of both formal and semantic connections between the language subsystems (Herwig, 2001; Ringbom, 1987), e.g., between such words as *table* and *Tafel* (German “board”) and such words as *board* and *Tafel* (Herwig, 2001). In consequence, the bi-/multilingual repertoire is a set of “dynamically interacting subsystems of a common linguistic system, subject to individual variation and change over time” (Herwig, 2001, p. 115).

Language acquisition and use phenomena are often studied within the framework of the Dynamic Systems Theory (Herdina & Jessner, 2002; Larsen-Freeman & Cameron, 2008; Stotz & Cardoso, 2022). The theory allows us to understand bi-/multilingual development as a process char-

acterized by non-linearity, reversibility, stability, interdependence of language systems, complexity, and qualitative changeability (Herdina & Jessner, 2002). According to Dewaele and Pavlenko, a bi-/multilingual person's competence never reaches a final stage of development and should be perceived as a "never-ending, complex, non-linear dynamic process in the speaker's mind" (Dewaele & Pavlenko, 2003, p. 137). Each part of the multilingual repertoire may undergo restructuring, enhancement, or attrition, which is determined by a variety of individual factors – both external, such as the learning environment, and internal, such as the age of acquisition, the language maintenance effort, or interactions between languages (Cameron & Larsen-Freeman, 2007; Dewaele & Pavlenko, 2003; Herdina & Jessner, 2002). Timmermeister and Schmid (2018, p. 278) indicate that bi-/multilingual competences constitute a continuum where neither the L1 nor any further languages are exempt from cross-linguistic influence and change.

Language use would be impossible without the parallel engagement of the *conceptual system*, which is a neural structure comprising non-verbal mental representations. These representations develop under the influence of various individual experiences, as well as the semantics of the acquired languages, especially those which were mastered early in life and/or in natural communication, i.e., mainly native languages (Barsalou, 2008; Paradis, 2004). Some conceptual representations (or concepts) are specific to one language only, whereas others are shared by two or more languages (Pavlenko, 2009); there are also conceptual representations with no language equivalents (Pavlenko, 2009; Paradis, 2004). Due to the connections between the language systems and the conceptual system, interlingual interactions may take place via the common conceptual system (Pavlenko, 2009), whereby the spreading mutual stimulation of more or less closely related lexical units and concepts may lead to the activation of a large network of verbal and non-verbal representations (Kharkhurin, 2008). At the beginning stages of L2 (L3, etc.) development, non-native words are strongly linked to their native language equivalents and conceptual representations are accessed by means of L1 lexis (lexical mediation); with growing proficiency, however, non-native words build stronger, direct connections with the conceptual system (conceptual mediation) (Kroll & Stewart, 1994; Pavlenko, 2009, p. 146). Gabryś-Barker (2005, pp. 59–85) claims that multilinguals build complex interlingual associations; at lower levels of proficiency predominantly lexical associations are created, whereas higher proficiency levels are characterized by conceptually mediated ones.

Compared to monolinguals, bilinguals and multilinguals have developed wider conceptual networks, which is a consequence of their multi-

farious language-related experiences (Pavlenko, 2009). Moreover, their array of emotional representations is also richer than that of monolinguals (Pavlenko, 2005). Switching between languages oftentimes involves changes in ways of thinking and feeling (Panayiotou, 2004; Wierzbicka, 2004), which is due to the existence of strong links between the conceptual system and the limbic system (Paradis, 2004). However, research also indicates the existence of conceptual and emotional transfer, i.e., the activation of concepts and emotions (patterns of thinking and feeling) which are “incongruent” with the currently used language (Latkowska, 2013; Pavlenko, 2009).

Research studies show that during communication all languages present in a bi-/multilingual mind are co-activated and interact with each other, even if only some of them are required in a given situation (Coderre et al., 2016; Gabryś-Barker, 2005, pp. 59–85; Kharkhurin, 2008; Kroll et al., 2015; Thierry & Wu, 2007; Van Hell & Dijkstra, 2002). These interlingual interactions lead to cross-linguistic influences. *Cross-linguistic influence* (CLI) is generally understood as any kind of influence of the knowledge of at least one language on the learning, knowledge, and use of another one (e.g., Jarvis & Pavlenko, 2008, p. 1; Laufer, 2003, p. 20; Sharwood Smith & Kellerman, 1986). CLI embraces various interlingual processes, such as lexical retrieval problems, language avoidance, over- or underproduction of language elements, effectiveness of learning a new language, or interlingual transfer (De Angelis, 2007; Jarvis & Pavlenko, 2008; Sharwood Smith & Kellerman, 1986; see also Chłopek, 2011, ch. 4.2).

Interlingual transfer has been differently defined in the literature. For instance, Odlin (1989) understands it as “the influence resulting from similarities and differences between the target language and any other language that has been previously (and perhaps imperfectly) acquired” (p. 27). Nevertheless, it must be pointed out that this author uses the terms “interlingual transfer” and “cross-linguistic influence” interchangeably. It should also be noted that even though partial similarities (and partial differences) between languages may induce transfer, its origin lies in the co-activation of language systems in the mind (as mentioned above). For this reason, a better definition seems to be the one proposed by Færch and Kasper (1987), who concentrate on the psycholinguistic processes taking place in the mind. According to these researchers, transfer is “a psycholinguistic procedure by means of which L2 learners activate their L1/Ln knowledge in developing or using their interlanguage” (p. 112). A similar explanation of this phenomenon is offered by Meisel (1983), for whom transfer is “a psychological process whereby the learner, consciously or not, incorporates native language features into his target language production”; as such, transfer func-

tions as a strategy of language production, reception, and learning, applied by language learners along with many other strategies (p. 14). Importantly, the definitions proposed by Færch and Kasper and by Meisel suggest that transfer may have a facilitative effect on language learning and communication.

In the present paper, the term *interlingual transfer* denotes the activation and use of a non-target language lexical item, orthographical feature, grammatical structure, morphological feature, pragmatic rule, etc., during target language production or comprehension. It is understood that this process may be either dynamic (i.e., caused by occasional activation of an element stored in a non-target language system during target language use) or static (i.e., resulting from the activation of a non-target element which is already embedded in the target language system) (Grosjean, 1994, 2011; Paradis, 2004). Transfer may be intentional or not; it may lead to either acceptable or non-normative/erroneous language production and reception (see also Chłopek, 2011, ch. 4). Importantly, interlingual transfer may take place both “forwards” (from previously to later acquired languages) and “backwards” (from later to previously acquired languages). The latter type is termed *reverse transfer* (RT). The present paper takes up the issue of RT of non-native languages to the mother tongue.¹

As mentioned above, interlingual interactions at the lexical level may take place either directly between languages (lexical mediation) or via the conceptual system (conceptual mediation). It is argued that transfer from the L1 to a non-L1 engages semantic properties of words and corresponding concepts, which is due to the strong links between L1 elements and conceptual (and emotional) representations. As for RT, in the early stages of non-L1 development it is mainly lexically driven, but with growing fluency it gradually proceeds with the mediation of the conceptual system as well (Kroll & Stewart, 1994; Pavlenko, 2009; see also Chłopek, 2011, ch. 5.5).

3. Cross-linguistic influence and native language attrition

From the psycholinguistic point of view, *language attrition* (*erosion*, *regression*) is usually understood as partial or complete loss of language competences, resulting in an individual’s incapability to use a given language fluently and appropriately to a given situation (Gallo et al., 2021; Hansen, 2001; Schmid, 2004). Non-pathological attrition takes place when two or more languages come in contact with each other in the same mind. It is common in situations in which there is “a change in linguistic behavior due

to a severance of the contact with the community in which the language is spoken” (Schmid, 2008, p. 10), when “another language has come to replace it as the person’s normal and regular means of communication” (Hyltenstam & Viberg, 1993, p. 5).

Attrition is often discussed in the context of L2 influences on the L1 (e.g., Pavlenko, 2004; Schmid & Köpke, 2007; Schmid, 2012). According to Pavlenko (2004), language attrition is the “loss of some L1 elements, seen in inability to produce, perceive, or recognize particular rules, lexical items, concepts, or categorical distinctions due to L2 influence” (p. 47). However, it should be noted that CLI does not necessarily lead to complete language loss, but at times only to partial restructuring of the L1 system (L1 lexical units, morphosyntactic structures, phonetic properties, pragmatic rules, etc.), e.g., incorporation of some L2 elements into the L1 system, replacement of certain L1 elements with new ones, or a shift from some L1 features towards their L2 counterparts (Cook, 2003; Jarvis, 2003; Pavlenko, 2004; Schmid, 2013; Schmid & Köpke, 2007). Pavlenko (2004) argues that “L2 influence on L1 is a phenomenon in its own right and cannot always be taken as evidence of L1 attrition” (p. 47). What is more, researchers hypothesize that a non-L1 may influence the L1 in a positive way, i.e., enhance its development and lead to its expansion (Jarvis, 2003; Kecskés & Papp, 2007). It seems that the native language may not only develop more efficiently because of the new linguistic skills (and bi-/multilingualism-related metalinguistic and metapragmatic awareness, see Chłopek, 2011, ch. 3.6 & 3.7), but it may also become richer due to non-native influences. Nevertheless, it is also possible that a given non-L1 may have both a negative and a positive impact on the L1, like, e.g., in Haman et al.’s (2017) study, where L2 exposure negatively influenced children’s L1 productive grammar, while at the same time enhancing story structure scores in the L1.

The neurolinguistic processes involved in CLI and attrition can be explained by the *Activation Threshold Hypothesis* proposed by Paradis (2004, 2007). According to this hypothesis, an adequate (threshold) amount of neural impulses is necessary for the activation of a given neural entity to occur. The activation threshold of a given linguistic item (a morpheme, a word, a phrase, etc., belonging to any language system present in the brain), and thus the possibility of it being selected for communication purposes, depends on how recently, frequently, and intensively it has been used, along with the network of connected items and the language subsystem it belongs to (Paradis, 2004, p. 223). Importantly, the activation of one entity leads to the automatic inhibition of an antagonistic one. Thus, if one language is chosen for communication, access to the other languages

present in the brain becomes more difficult. Languages which are regularly and strongly suppressed may be influenced by the other ones and even gradually regress (Paradis, 2004). Nevertheless, as mentioned above, all languages of a bi-/multilingual are usually co-activated, and even when the L1 is a regularly used language, the other language systems are never completely “switched off” (Coderre et al., 2016; Kharkhurin, 2008; Kroll et al., 2015; Thierry & Wu, 2007; Van Hell & Dijkstra, 2002). This contributes to some “competition” between language systems, and particularly if a non-L1 is a fluent and often used language, it may interfere with the L1 and call forth L1 regression processes (Köpke, 2007; Paradis, 2007; Timmermeister & Schmid, 2018).

Apart from CLI and the recency and frequency of language use, another factor which seems to influence the extent of attrition is the *age of onset of bi-/multilingualism* (Hyltenstam et al., 2009; Köpke, 2007; Montrul, 2008; Schmid, 2012; Timmermeister & Schmid, 2018). Studies show that when intensive contact with a new language begins before puberty, a major or even complete loss of the L1 is possible (Timmermeister & Schmid, 2018, p. 279). Thus, if the L1 has not been fully acquired, its regression is more likely. Referring to such cases, some researchers use the term “incomplete L1 acquisition” rather than “L1 attrition”, indicating that language acquisition was interrupted or at least impeded before L1 competences fully developed and consolidated (Montrul, 2008; Schmid, 2012; Schmid & Köpke, 2017; Timmermeister & Schmid, 2018). On the contrary, if non-L1 acquisition takes place after puberty, alterations within the L1 system are marginal (Timmermeister & Schmid, 2018, p. 279). Similarly, adult learners of an additional language may be expected to experience very little L1 attrition. However, as Yilmaz and Schmid (2018) indicate, even though “their native language system has been stabilized through practice, literacy, and education into adulthood” they still may “lose some of their productivity and creativity in their native language, make occasional lexical and grammar errors, and speak with a foreign accent” (p. 226).

Nevertheless, researchers point out that it is impossible to state with certainty which factors inevitably lead to language attrition (Opitz, 2019; Schmid, 2012). Most probably it is a result of a variety of different factors, which are highly individual and changeable. Some researchers adopt the Dynamic Systems Theory perspective on attrition and perceive it as a phenomenon which results from the dynamic and complex character of the multilingual repertoire and a variety of speaker-internal and -external variables. As already mentioned, one characteristic feature of multilingual competence is its *reversibility* (Herdina & Jessner, 2002). One language of a bi-/multi-

lingual person may regress, e.g., due to disuse or cross-linguistic influence; however, if reactivated, it may progress again, as suggested by Hyldenstam and Viberg (1993). For this reason, both language attrition and language acquisition can be treated as processes which are part of language development, or language change (Opitz, 2019; Sharwood Smith, 2019). The acquisition and attrition of one language system depend on similar processes within the other language systems present in the mind, whereby significant factors are language maintenance effort and language acquisition effort, as well as metalinguistic and cross-linguistic awareness (Herdina & Jessner, 2002; Jessner & Megens, 2019).

4. Research on reverse transfer

RT and L1 attrition have been documented in research studies conducted with speakers of minority languages, usually migrants. Of interest to the present study is the fact that RT has also been investigated as part of CLI observed in the production/reception of learners or users of second and additional languages with relatively stable L1 competences (Chłopek, 2009a, 2012, 2013; Cook, 2003; Ringbom, 2006; van Hell & Dijkstra, 2002; Williams & Hammarberg, 1998). Researchers usually agree on some important factors which may induce or strengthen RT. Firstly, the recency and frequency of use of a given language may call forth intensive transfer from this language to another.² Secondly, transfer is particularly intensive when the non-target language is a fluent one. Thirdly, an important factor is also typological closeness of one's languages, especially one's own perception of such closeness, i.e., psychotypology (Chłopek, 2009a, 2012, 2013; Cook, 2003; Ringbom, 2006; Van Hell & Dijkstra, 2002; Williams & Hammarberg, 1998). In the remaining part of this section research is presented which was conducted with the same participant as the participant in the present study.

At the time of the first study (Chłopek, 2009a), the respondent, J., was 9–15 years old and knew three languages: L1 Polish (the dominant language), L2 English (in this period her competences developed from A2 to B1), and L3 German (in this period her competences developed from B1 to B2+³). All of her languages were acquired and used mainly in real-life communicative situations. The study consisted in an analysis of all transfer instances collected for over 6 years (2001–2007). Only 23 instances of RT were observed, among which the largest group was that of “lexical inventions and nonce borrowings”, comprising 13 instances of RT from German (the stronger non-L1) and 5 instances of RT from English (the weaker non-L1).

The results indicate that a developing non-L1 does not have much impact on a dominant mother tongue.

The data for the next study (Chłopek, 2012, 2013) were collected for about 5 years, when J. was 16–20 years old (2007–2011). During this period, Polish (her L1) remained her dominant language (C2). English and German were developing steadily and became fluent non-native languages; at first German had the edge over English, but in 2008 J.'s English competences slightly surpassed her competences in German (the proficiency level in English went up from B1 to C1+ and in German from B2+ to C1). In September 2007, she started to learn her L4 – French; this language developed slowly and reached a moderate proficiency level (A1+/A2). Whereas Polish, English, and German were acquired and used predominantly in authentic communicative situations, contact with French was mainly restricted to school settings. The study concentrated on lexical RT. Altogether, 430 instances (395 types) of RT occurrences were observed. Transfer from the L2 (English) was slightly stronger than transfer from the L3 (German) and there was hardly any transfer from the L4 (French) (215 instances of RT from the L2, 191 instances of RT from the L3, 12 instances of RT from the L2 and/or L3, and 12 instances of RT from the L4). This is a direct reflection of three factors: language proficiency, recency of use, and the interlocutor's competences. The notably largest group of RT occurrences was the category of nonce borrowings (272 tokens, 253 types). A few of them were recurring instances (e.g., *endżojać się*, “enjoy yourself”). The category of code switches comprized the second largest group (69 tokens, 68 types), and the category of loan translations – the third (47 tokens, 37 types).⁴ The final conclusion of the study was that the knowledge of non-target languages may contribute to an enhancement of the target language (the L1): Fluent bi-/multilinguals manipulate their languages in a purposeful way, adjusting non-target forms and meanings to target-language utterances in a flexible way, in accordance with their communicative intentions, which usually leads to semantic enrichment not only of their utterances, but also of the whole linguistic competence (Chłopek, 2013, p. 43).

5. The present study

Aim and research question

As mentioned above, several researchers maintain that CLI need not lead to language loss (Cook, 2003; Jarvis, 2003; Pavlenko, 2004; Schmid, 2013; Schmid & Köpke, 2007), and some even hypothesize that

a non-L1 may influence the L1 in a positive way (Jarvis, 2003; Kecskés & Papp, 2007). This was also the conclusion of the above-mentioned research (Chłopek, 2012, 2013). Nevertheless, having analyzed the spoken L1 utterances of the respondent for a longer period of time, I observed much variability in the intensity and origin of RT, and hence the way the L1 was used. Thus, it was interesting to establish how exactly non-L1s present in a multilingual mind shape the L1, if all of them are relatively fluent and frequently used – i.e., whether these influences are negative (L1 attrition) or positive (L1 enrichment).

The present study concentrates on lexical reverse transfer effects. Therefore, attrition is understood here as gaps in the lexical knowledge of the mother tongue, manifesting themselves in incorrect or non-normative production and comprehension of lexical items (words, phrases, collocations, etc.), as well as serious lexical retrieval problems. The research question to be answered is: *Does an adult multilingual's lexical knowledge of a mother tongue which is regularly used, but is continuously influenced by non-native languages, undergo partial attrition or, conversely, enhancement (enrichment)?*

The participant

At the time of the study, J. spoke four languages. Polish (L1) was used from birth in a Polish-speaking environment. It remained her dominant language until the age of 21, when her competences in English became equivalent to Polish ones. English (L2) was used by the respondent regularly from the age of 3 until the end of the study. Most of the time she had regular communicative contact with this language. From 16 to 19 years of age she attended a high-school class where most subjects were taught in English. At that time English also became (and remained) the language she preferred over the other ones when using the internet (e.g., watching films). At the age of 20 she spent a few weeks in the UK, and from 21 to 25 years of age she studied and worked in Scotland and in the USA. German (L3) was used irregularly for communicative purposes from 6 years of age until the end of the study. When she was 8–9 years old, J. attended a primary school in Germany. At the age of 19 she spent a few months in Germany (for work purposes). Her competences in German were stronger than those in English until 16 years of age, then English steadily became more fluent. J. learned French (L4) at school when she was 16–19 years old. Later, at 19 and 20 years of age, she spent a few months in France (for work purposes). When aged 21–25, she attended formal French classes at university. None of the non-native languages impeded L1 growth causing “incomplete

L1 acquisition” (Montrul, 2008; Schmid, 2012; Schmid & Köpke, 2017; Timmermeister & Schmid, 2018) early in life.

During the data collection period, Polish and English were more frequently used than German and French. The participant’s oral competences in English became native-like (C2) at the beginning of this period, in German they remained fairly communicative during the whole period (C1), and in French they remained moderate (although they developed from A1+/A2 to B1). It must be added that the respondent’s interlocutor (the present author) had a good knowledge of Polish, English, and German, but not French. Another person who was sometimes present during the conversations had a good knowledge of Polish and German, and some knowledge of English. It must also be stated that the respondent’s attitudes towards all her languages were positive. Finally, it is worth noting that all three non-L1s are typologically distant from the L1. Put together, these factors suggest the probability of RT mainly from English and to a lesser degree from German.

Method and procedure

The study took place from January 2012 to December 2019, when the respondent was 20–28 years old. The data were gathered during informal unstructured, spontaneous conversations between the respondent and the author of the present paper in their L1 – Polish (as mentioned above, at times, another person was present during the conversations). Lexical RT samples were collected on a regular (though not daily) basis in a variety of communicative settings. Any instance of such transfer was recorded by the author (on paper or mobile phone), along with additional information as to the topic of the conversation, the situational context, the respondent’s comments, emphasis put on certain words etc. Only J.’s own language use was recorded; lexical borrowings present in the Polish language or quotations of other people’s utterances were not included in the corpus. There were no special “recording sessions” as this could have biased the respondent towards or against particular language use.

In January 2020, the collected data underwent a thorough analysis. A speech error analysis was chosen as the most appropriate method for the present study. For this purpose, a typology of lexical transfer occurrences was used. All instances of lexical RT from the respondent’s non-L1s to her L1 were classified as belonging to one of the following six categories: code switching, nonce borrowing, loan translation, semantic extension, semantic extension of cognates, or false friends (see next section). The source language was identified for each instance.

In February 2020, I asked J. to go through all her utterances from the corpus and give the normative Polish equivalents of all RT instances in order to check whether she knew them. All her problems with this task were noted down. The reason why this was not done right after a given utterance was produced is that this might have induced self-monitoring processes, thus influencing L1 production.

Analysing data obtained from one subject makes generalizations hardly possible, and thus may be perceived as limited research. However, there is an important positive aspect of such studies. Namely, the researcher is usually able to understand the subject's intentions and hence recognize the sources of and reasons for transfer – and this allows an insight into the psycholinguistic processes behind language performance.

Analysis criteria

The typology of lexical transfer occurrences was based on Ringbom (1987) and Chłopek (2011, 2012, 2013). Ringbom divided the interlingual lexical influences which he observed in the written production of Finnish- and Swedish-speaking adolescent students in their L3 English into five categories: language switches or complete language shifts, language coinages (hybrids, blends, and relexifications), totally or partially deceptive cognates (false friends), semantic extension of single lexical units, and loan translations (calques of multi-word units). Chłopek extended his typology to include non-lexical transfer and to distinguish between two kinds of semantic extension instances – involving a cognate relationship or not. The lexical categories proposed by Chłopek (2011, 2012, 2013) are described below and exemplified by RT instances from the present corpus.

1. *Code switching* (CS) means alternating between one's languages in communication. A lexical code switch is the use of a non-target lexical item (a free morpheme, single word, or phrase) which involves some syntactic adaptation to the target-language utterance, e.g.:

[1] *Jest crappy połączenie* (target: *Jest beznadziejne połączenie*, "The connection is crappy", switch into English, the word *crappy* was pronounced with the British accent).

2. A *nonce borrowing* (NB), sometimes also termed an *ad hoc loanword* or a *nonce loan*, is the use of a non-target language lexical item which involves its morpho-syntactic and phonetic/phonological or orthographical adaptation to the target language. The non-target element is integrated into the base language utterance as the need arises, e.g.:

[2] *Weź się dukaj* (target: *Weź się schyl / Zrób unik*, “Duck, please”, NB of the English verb *duck*).

CS and NB are similar processes, as both involve a certain “takeover” of a non-target lexical item. It seems that their occurrence depends on the grammatical (in)congruence of the interacting languages.⁵

3. A *loan translation* (LT), or a *calque*, results from word-for-word translation of a multi-word lexical unit (e.g., a compound word, a collocation, a phrase, an idiomatic expression). This process is usually connected with the adoption of the non-target morpheme/word order, as well as some morpho-syntactic adaptation to the target language, e.g.:

[3] *Czy on był w pozycji, żeby stawiać warunki?* (target: *Czy on miał możliwość / Czy on był w stanie stawiać warunki?*, “Was he in a position to impose conditions?”, LT of the English phrase *be in a position*).

4. *Semantic extension* (SE)⁶ takes place when the meanings of both lexical units partially overlap, but the non-target element has a wider meaning than its target equivalent. This meaning is ascribed to the target item, e.g.:

[4] *Chciałam go zapytać, żeby mi pomógł* (target: *Chciałam go poprosić, żeby mi pomógł*, “I wanted to ask him to help me”, SE of the Polish verb *pytać*, due to the knowledge of the English verb *ask*, which translates into *pytać* – “ask [questions / about sth]” and *prosić* – “ask [a favor / for sth / sb to do sth]”).

5. *Semantic extension of cognates* (SEC) is a process similar to SE in that the target element takes on the broader meaning of the non-target element. The difference lies in the presence of some formal similarity of the lexical items, e.g.:

[5] *Nie umiem dotrzeć do oryginalnego źródła* (target: *Nie umiem dotrzeć do pierwotnego źródła*, “I can’t find the original source”. SE of the Polish adjective *oryginalny*, caused by the knowledge of the English adjective *original*, which translates into *oryginalny* – “imaginative, creative” and *pierwotny* – “not being a copy or a later version”).⁷

6. The processes characteristic of SEC are similar to the ones typical of the false friends phenomenon, the only difference being the existence of some semantic overlap in the former case and no such overlap in the latter. The *false friends* (FF) phenomenon takes place exclusively due to some formal similarity of lexical items belonging to two languages. The target element is used with the meaning of the non-target element, e.g.:

- [6] *To mi się tylko zwraca za rentę* (target: *To mi się tylko zwraca za czynsz*, “This only pays back for the rent”, the Polish noun *renta*, i.e., “pension” was used with the meaning of the English noun *rent*).

It should be asked what is actually transferred, or “taken over”, in the process of interlingual influence: *form* (the phonological, phonetic, orthographical, and morpho-syntactic properties of a lexical item) or *meaning* (its semantic properties). Research shows that this depends on the proficiency of the languages involved. In the early stages of language learning, transfer from another, usually more fluent language is predominantly form-based, i.e., non-target language forms are activated and used (along with the intended meanings) in target language utterances. Conversely, if the languages present in the mind are fluent, interlingual transfer is predominantly meaning-driven, i.e., non-target meanings are activated and “taken over” (sometimes along with their forms) to the target language utterance (Chłopek, 2009b; Ringbom, 1987). This is undoubtedly due to the strong links between fluent languages, in particular their semantic representations, and the conceptual system (Chłopek, 2011, ch. 5.5; Kroll & Stewart, 1994; Pavlenko, 2009).

In the case of relatively fluent languages, like the respondent’s languages, all the enumerated types of lexical transfer are triggered by the activation of a non-target lexical unit (probably evoked by the activation of a non-target conceptual representation). CS, NB, and LT involve some “takeover” of both the formal and semantic properties of the activated lexical unit. As a result, the speaker creates a target language utterance which contains a non-normative form along with its original meaning. SE, SEC, and FF, in turn, mean a “takeover” of a non-target semantic feature, which is ascribed to an existing target lexical item. Consequently, the target language utterance contains normative forms, but with non-normative meanings.

Results and discussion

Table 1 presents the number of all the instances of lexical RT observed during the data collection period.⁸ Altogether, 426 tokens (353 types) of RT were recorded. The *source of transfer* was mainly English (L2): 378 tokens (311 types); some transfer from German (L3) was also noted: 39 tokens (35 types); there was not one instance of transfer from French (L4). This result is not surprising when taking into account the above-mentioned factors potentially shaping RT (see section “The participant”): the respondent’s attitudes towards each of her languages and the typological similar-

ities between her L1 and her non-L1s being more or less equal, the factors which probably played a role for RT were: recency and frequency of language use, proficiency in each language, and J's interlocutors' language competences.

Table 1

Number of all observed instances of RT

Transfer category	Types vs tokens	Source of transfer			Total
		L2	L3	L2/L3	
CS	types/tokens	71/73	15/17	0/0	86/90
	% of tokens	17.1	4.0	0.0	21.1
NB	types/tokens	111/145	18/20	3/3	132/168
	% of tokens	34.0	4.7	0.7	39.4
LT	types/tokens	80/89	1/1	3/5	84/95
	% of tokens	20.9	0.2	1.2	22.3
SE	types/tokens	13/18	1/1	0/0	14/19
	% of tokens	4.2	0.2	0.0	4.5
SEC	types/tokens	29/44	0/0	1/1	30/45
	% of tokens	10.3	0.0	0.2	10.6
FF	types/tokens	7/9	0/0	0/0	7/9
	% of tokens	2.1	0.0	0.0	2.1
Total	types/tokens	311/378	35/39	7/9	353/426
	% of tokens	88.7	9.2	2.1	100.0

L1 – Polish, L2 – English, L3 – German, L2/L3 – English and/or German

It turns out, however, that over the years the source languages did not influence the L1 to the same extent. After grouping the RT instances according to three different periods it is clear that German (L3) influences were initially relatively strong, but English (L2) established itself as the dominant donor language (or “default supplier”; Williams and Hammarberg, 1998) when J. moved to an English-speaking country:

- January 2012 – September 2012 (J. lived in Poland): 70 types, 76 tokens in total; 48 types, 51 tokens (67.1% of tokens) of RT from English (L2); 20 types, 23 tokens (30.3% of tokens) of RT from German (L3). Compared to the outcomes of the study conducted in the years 2007–2011 (Chłopek, 2012, 2013), there is already a change in the source languages,

reflecting increasing competences in English and frequency of its use, but German still plays an important role.

- September 2012 – May 2016 (J. studied and worked in Scotland and in the USA, communicating mainly in English; her English became native-like; at this period our conversations became more irregular): 128 types, 146 tokens in total; 117 types, 136 tokens (93.2% of tokens) of RT from English (L2); 7 types, 8 tokens (5.5% of tokens) of RT from German (L3). During this period the English influences are robust and RT from German is marginal.

- June 2016 – December 2019 (J. lived and worked in Poland): 173 types, 203 tokens in total; 161 types, 191 tokens (94.1% of tokens) of RT from English (L2); 8 types, 8 tokens (3.9% of tokens) of RT from German (L3). In spite of its weaker activation, English remains the main donor language. Altogether, the varying influences of the respondent's non-L1s confirm the relevance of language proficiency, the recency and frequency of language use, and the awareness of the interlocutors' competences for RT (Chłopek, 2012, 2013).

As Table 1 shows, most RT instances belong to the *category NB* (132 types, 168 tokens, 39.4% of tokens), which is in line with the results of the previous studies conducted with the respondent (Chłopek, 2009a, 2012, 2013). Nevertheless, there are also quite a lot of instances of *CS* (86 types, 90 tokens, 21.1% of tokens) and *LT* (84 types, 95 tokens, 22.3% of tokens). These proportions did not change much over the three periods of the study: NB always comprised the largest group, and CS and LT competed for second position. As mentioned above, these three transfer types are instances of a “takeover” of a non-target lexical unit, both its form and its meaning. It may be hypothesized that this process is preceded by the activation of a non-target conceptual representation which evokes this “full” transfer of a non-target element. Moreover, the high figures related to NB, as opposed to the other transfer instances, can be explained by the morpho-syntactic, phonological, and phonetic differences between Polish and English/German. One notable difference is that Polish is a highly inflected language, which is an important reason why the adaptation of English/German lexical items to Polish utterances usually requires some structural modifications.

As the number of types versus tokens indicates, there are not many *recurring RT instances*. Actually, the most frequent such instances were recorded only four or five times during the whole data collection period; there were 8 such types altogether. Interestingly, they were mostly different from those which were observed in the previous research studies con-

ducted with the respondent, two exceptions being: *rejuzać/rijuzać* (see example [10]; 4 tokens in the present corpus, 2 tokens in the corpus from Chłopek, 2012, 2013) and *oryginalny* (see example [5]; 4 tokens in the present corpus, 3 tokens in the corpus from Chłopek, 2012, 2013). This indicates that the majority of the non-target lexical items which appeared in target-language utterances were not incorporated into the L1 mental lexicon. Instead, they were only activated as the need arose, for the current purposes of communication. In other words, most of the observed RT instances are cases of dynamic, not static, transfer (Grosjean, 1994, 2011; Paradis, 2004). This confirms the dynamic nature and qualitative changeability of multilingual competences (Dewaele & Pavlenko, 2003; Herdina & Jessner, 2002; Timmermeister & Schmid, 2018).

On the basis of the present corpus, several *purposes of RT* can be recognized⁹:

- the need to render a meaning (and a concept) which cannot be (appropriately) expressed in the target language, e.g.:

[7] *To jest taka Musterklammer* (target: *To jest taka klamra do papieru [?]*, “That’s a kind of paper fastener / split pin”, CS into German, German pronunciation of the noun *Musterklammer*). (See also [2].)

- the wish to avoid the emotional load carried by the L1 lexical item and/or to replace it with the emotional load carried by a non-target item, e.g:

[8] *Wiedziałam, że będę musiała fejsać takie akżujajszonsy* (target: *Wiedziałam, że będę musiała stanąć w obliczu takich oskarżeń*, “I knew I would have to face such accusations”, two instances of NB of the English words *face* and *accusations*). (See also [1].)

- jocular purposes, e.g.:

[9] *To się jeszcze okaże, czy nie będę jadła swoich słów* (target: *To się jeszcze okaże, czy nie będę musiała odwołać moich słów*, “We shall see if I won’t be eating my words”, LT of the English phrase *eat one’s words*).

- verbal economy, i.e., the wish to express a given idea in a concise way, e.g.:

[10] *Można to rijuzać* (target: *Można tego jeszcze raz użyć*, “It can be reused”, NB of the English verb *reuse*).

In the above cases, RT seems to be intentional, at least to some extent. However, part of the observed instances probably result from unintentional transfer. Namely, some RT instances, when pointed out to J., evoked a reaction of surprise or consternation (examples [5], [6], [11]).

When confronted with the corpus, the respondent was able to name most *normative L1 equivalents of the RT instances*. There were 19 tokens (4.5% of all tokens), or 13 types (3.7% of all types), which she was not able to properly translate into Polish. Some of these translation problems may have resulted from the lack of one-to-one L1 and L2/L3 equivalents, as well as the need to restructure the Polish sentences in order to express the non-target meanings. Nevertheless, when given the correct L1 equivalents, the participant was able to understand all of them. The following examples belong to this group:

[11] *Dzięki temu turyzm wzrasta* (target: *Dzięki temu wzrasta/rozwija się turystyka*, “Thanks to this, tourism grows”, NB of the English noun *tourism*¹⁰).

[12] *Mogę tak napisać? Czy to zbyt schleimig?* (target: *Mogę tak napisać? Czy brzmi to jak nadmierne lizusostwo? / Czy byłoby to zbyt lizusowskie?*, “Can I write it like this? Or is it too toadying?”, CS into German).

While searching for the Polish translation equivalents of the RT instances, the respondent had serious *retrieval problems*. She often named several Polish words and found it difficult to decide which one to choose. And even when she was eventually able to name the close L1 equivalent, she persistently claimed that its meaning was different. This happened in the case of as many as 99 RT instances, or 84 types (e.g., in the case of examples [2], [7], [12]). This suggests that the use of a non-target element was often evoked by the need to express a meaning – and concept – which was impossible to render in the L1. A similar finding was reported in the previous study conducted with the same respondent (Chłopek, 2012, 2013). Even though at that time she was able to retrieve all L1 translation equivalents from memory, J. would typically argue that “a given L1 word did not ‘sound’ right or made a totally different sense than an L2/L3 word” (Chłopek, 2013, p. 45). In her research, Pavlenko (2004, pp. 49–50) also noted that even if L1 translation equivalents do exist, bilingual speakers may use L2 lexical items in order to indicate conceptual differences. This tendency probably becomes more marked with growing non-L1 fluency, as a comparison of the previous (Chłopek, 2012, 2013) and the present studies indicates.

In her lexical searches, the respondent would sometimes evoke another non-L1 item belonging to the source language or to another language. Since

the activated items were semantically related, it is possible that these interlingual interactions took place via the conceptual system (Kharkhurin, 2008) and that the retrieval problems arose from the conceptual differences between Polish and English/German lexical items. These lexical searches offer additional evidence for the complexity of multilingual competence, within which languages continuously interact with each other (Herdina & Jessner, 2002; Herwig, 2001). The last three examples are not part of the corpus, but were recorded when J. was asked to give normative Polish equivalents of RT instances:

[13] *Ślupał... coś w stylu howerał... Swoop to tak, jak orzeł spada na swoją prey* ("He swooped [NB from English]... something like hovered [NB from English]... Swoop [CS into English] is when an eagle falls on its prey [CS into English]").

[14] *Musterklammer to jest coś w stylu Schnellhefter* ("A paper fastener / split pin [CS into German] is something like a loose-leaf binder [CS into German]").

[15] *Redimać? Czyli jak się blamirasz to potem robisz coś lepszego i się redimasz...* ("Redeem [NB from English]? So when you disgrace yourself [NB from German], then you do something better and you redeem yourself [NB from English]").

Altogether, the previous (Chłopek, 2009a, 2012, 2013) and the present studies confirm that the multilingual repertoire is characterized by dynamism and complexity (Herdina & Jessner, 2002; Timmermeister & Schmid, 2018). Changes in language input, such as the intensity of exposure to a new language, and consequent enhanced language use, which occur in the course of one's life, may lead to activation or inhibition of languages present in the multilingual system (Green, 1998), and eventually to some restructuring of the language systems present in one's mind (e.g., Dewaele & Pavlenko, 2003, p. 137). Similarly, the differing environmental challenges and opportunities (inter alia, the language competences of the interlocutors and their communicative flexibility) cause appropriate modifications in language use (e.g., appropriate inhibition/activation processes), which may lead to changes in a language system. Moreover, speaker-internal factors such as language proficiency, cross-language interactions, individual communication strategies, the willingness to juggle with one's own languages, etc., may call forth emergent properties, thus contributing to some alterations within a language system. Apparently, however, these changes are reversible, since RT seems to be a dynamic, not static, phenomenon – at least in the case of a regularly used mother tongue.

As the results show, in a multilingual mind with (relatively) fluent and active languages, lexical RT seems to involve both formal and semantic

properties of non-L1 lexical elements. It may be hypothesized that this phenomenon is at least partially conceptually-driven and results from the desire to render a meaning which is absent from the L1 mental lexicon. As research shows, in the case of fluent source languages, interlingual transfer may take place with the mediation of the conceptual system (Kroll & Stewart, 1994; Pavlenko, 2009; see also Chłopek, 2011, ch. 5.5). Some concepts are specific to one language only (Pavlenko, 2009), but a speaker may activate and attempt to express them even if another language (e.g., the L1) is currently used (e.g., Chłopek, 2011, ch. 4.6; Latkowska, 2013; Pavlenko, 2009). “To use lexical concepts of one language as interpretive categories in another language, bilinguals may resort to codeswitching, lexical borrowing, or loan translation” (Pavlenko, 2009, p. 147). Nevertheless, transfer of meaning is not necessarily always a reflection of transfer of conceptual representations (Pavlenko, 1999, 2009, pp. 148–149).

The present study aimed to answer the following research question: *Does an adult multilingual’s lexical knowledge of a mother tongue which is regularly used, but is continuously influenced by non-native languages, undergo partial attrition or, conversely, enhancement (enrichment)?* The obtained results indicate that after many years of experiencing RT, the L1 of a multilingual person may exhibit some deficiencies. Firstly, the respondent was unable to name some normative L1 equivalents of the RT instances (which is contrary to the previous study, Chłopek, 2012, 2013). Secondly, she often experienced lexical retrieval problems when searching for the right L1 words in her memory. Thus, it might be concluded that an L1 which has been acquired at a high level of proficiency and remains an important means of everyday communication may undergo some attrition. However, this statement should be attenuated by the following facts: Firstly, most RT occurrences did not establish themselves as part of the L1 system, but were cases of dynamic transfer, used for current communicative purposes. Secondly, although the reported L1 deficiencies were observed during language production, the respondent was able to understand their correct L1 equivalents. According to Pavlenko (2004, p. 54), attrition means language regression “not only in production but also in perception and comprehension.” Additionally, it seems that the conclusion that some L1 attrition has taken place in a multilingual mind as a consequence of RT is only possible from the monolingual point of view. Taking the multilingual stance, it is necessary to perceive multilinguals as specific language users (see Grosjean, 1985) who have complex networks of conceptual representations (developed in contact with all their languages) and who activate and capitalize on all their language competences in order to express their thoughts and emotions as accu-

rately as possible, and to achieve specific communicative intentions. It may be said that, to this end, languages complement (rather than compete with) each other in the same mind. These processes inevitably entail alterations in L1 performance – the L1 is used in a way which is unique to a multilingual person, i.e., his/her language constellation and individual experiences. Thus, the mother tongue characterized by reverse influences may provide evidence of an enhanced language system, capable of expressing novel ideas and feelings.

The above statement finds confirmation in the relevant literature. Researchers argue that a completely acquired L1 system is normally very stable and resistant to decline, and the observed attrition problems are usually temporary and result from processing difficulties related to lexical access and CLI; seldom are they caused by the restructuring and erosion of the underlying linguistic competences (Montrul, 2008; Schmid, 2012; Schmid & Köpke, 2017; Timmermeister & Schmid, 2018). Moreover, a non-L1 may even contribute to some enrichment of the L1 in that it enables a given person to express what would be impossible to render in the mother tongue (Pavlenko, 2004, p. 49). To conclude, in a multilingual mind with (relatively) fluent languages, attrition of some L1 lexical items *may* take place (at least at the level of production), but RT should rather be perceived as a phenomenon which enhances communication and enriches the native language.

6. Summary

The present study attempted to shed some light on the psycholinguistic processes of RT from non-native languages to the native language of a multilingual person, as well as to reflect upon the relationship between RT and L1 attrition. Both the present analysis and the previous research conducted with the same respondent (Chłopek, 2009a, 2012, 2013) indicate that the L1 of a multilingual person may be continually influenced by the other languages present in the mind, even if it is fluent and regularly used. Important factors which shape RT are non-L1 proficiency and recency of use, and the awareness of the interlocutor's language competences. The present study also suggests that in the case of a multilingual who is (relatively) proficient in his/her languages, RT is probably conceptually mediated to some extent, since non-L1 lexical items are often used in order to express specific concepts and emotions which cannot be appropriately rendered in the L1. The obtained data also confirm the complex and dynamic nature of the

multilingual repertoire, and its qualitative changeability, including variable cross-linguistic influences.

As the research results indicate, the L1 of a bi-/multilingual person whose languages are (relatively) fluent and regularly activated may undergo partial attrition (at least in production). At the same time, reverse transfer may result in partial restructuring and enhancement of the mother tongue. Thus, in the case of a bi-/multilingual, one should speak of a unique linguistic competence, or a specific idiolect, developing and changing in response to his/her individual experiences. Within this idiolect, each language may either undergo regression or be complemented by the other languages present in the mind, according to the arising needs to express his/her thoughts and feelings in the most accurate way.

Study limitations

Nowadays, most people acquire more than one language and often reach high levels of competence in their languages. Studying multilinguals is important, since the understanding of the psycholinguistic processes taking place in a multilingual mind may contribute to the development of a solid theoretical basis for effective and efficient teaching and learning methods, materials, motivational strategies, or assessment techniques. It seems that it may also contribute to a better understanding of other people. Longitudinal studies may provide some answers to the questions about the dynamic and complex processes of language change, including native language variation induced by non-native competences. The present study should be treated as a contribution to this research area, which will hopefully offer some background for future studies dealing with reverse transfer in a multilingual mind. Nevertheless, some limitations of the study should be pointed out. Firstly, it was conducted with one respondent only – a person with a specific language constellation and individual (linguistic and non-linguistic) experiences. Secondly, it is possible that not all RT instances were identified, especially those which involved the use of normative target language forms. Thirdly, even though J.'s interlocutor strove not to introduce foreign words into her L1 utterances, it cannot be ruled out that some of the observed RT occurrences were a result of overhearing instances of mixed speech and incorporating them into the L1 subsystem, instead of transfer processes taking place in the respondent's mind.

NOTES

¹ It should be pointed out that there is no agreement among researchers (linguists, psycholinguists, SLA researchers) with regard to terminology such as *transfer*, *interference*, *code-switching*, etc. (see, e.g., Treffers-Daller, 2009). For example, Odlin (1989) and Jarvis and Pavlenko (2008) use the terms “transfer” and “cross-linguistic influence” interchangeably; moreover, whereas Grosjean (1994) and Paradis (2004) use the terms “dynamic interference” and “static interference”, Grosjean (2011) suggests a distinction between dynamic interference and static transfer.

² According to Williams and Hammarberg (1998), the frequency of the activation of a non-target language is one of the factors determining which language of a multilingual person will become the “default supplier”, i.e., the language which gets activated along with the target language and is the source of automatic transfer.

³ Proficiency levels according to the *Common European Framework of Reference for Languages* (Council of Europe, 2001). The assessment of J.’s proficiency in English and German was carried out informally by the present author based on her oral competences and the results of tests taken at school; the assessment of proficiency in French was made by her French teacher.

⁴ The meanings of the terms “nonce borrowing”, “code switching”, and “loan translation” are explained below in the “Analysis criteria” section.

⁵ That is, CS may take place when full adaptation of a non-target language lexical item to a target language utterance is not possible for linguistic or pragmatic reasons. For instance, the English adjective *crappy* (from example [1]) might be transformed so as to render a nonce borrowing with Polish morphosyntactic properties (e.g., *krapiowe*, *krapiczne*), but the new form would depart from the original too much and hence would probably not be understood by the interlocutor.

⁶ In some research studies, cases of semantic narrowing are mentioned, where some L1 meanings have been lost (Pavlenko, 2004, p. 51). However, no such case has been observed in the present corpus.

⁷ It seems, though, that this Polish word is slowly assuming the additional meaning of the English one.

⁸ The case-study character of the research and the relatively random data collection made it impossible to carry out an advanced statistical analysis.

⁹ The purposes of the observed RT occurrences were established based on the respondent’s language competences, the situational context of her utterances, and her current psychological state; nevertheless, it cannot be ruled out that some purposes have not been identified.

¹⁰ And perhaps also of the German noun *Tourismus*, as one of the reviewers of the present article has suggested.

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