Doctoral (PhD) Dissertation

Conceptual Representation in the Speech Production of Bi- and Multilingual Children

By

Erika Csillingh

Supervisor:

Prof. Dr. Judit Navracsics

University of Pannonia

Faculty of Humanities

Multilingualism Doctoral School

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Written by Erika Csillingh

Supervisor: Dr. Judit Navracsics

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Abstract

This dissertation investigates cross-linguistic influence and conceptual representation in the spontaneous speech production of early bilingual and multilingual children. Drawing primarily on Pavlenko's Modified Hierarchical Model of the bilingual mental lexicon and Grosjean's Language Mode model, the study adopts a dynamic, context-sensitive view of bilingual language processing. Particular attention is paid to how cross-linguistic differences, language dominance, domain of use and interactional context shape linguistic production. The research employs a qualitative multiple-case-study design involving two English-Hungarian bilingual children and one English-French-Hungarian dominant multilingual participant.

The findings demonstrate that non-target languages remain active even in predominantly single-language interaction and may influence production at multiple representational and linguistic levels. The case studies point to two interacting dimensions of CLI. The first is representational: differences in lexical-conceptual and grammatical organisation create opportunities for transfer. The second is activation-based: dominance, language experience, topic, cultural context, interlocutor and momentary processing demands determine which representations become sufficiently active to influence production. The multilingual findings extend this account by showing that several languages may simultaneously support, inhibit or reinforce a particular representation.

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List of Abbreviations

CCP	Convergent Choice Principle
CHAT	Codes for the Human Analysis of Transcripts
CLI	Cross-linguistic influence
DLC	Dominant Language Constellation
DMM	Dynamic Model of Multilingualism
EFL	English as a Foreign Language
ICM	Inhibitory Control Model
infl	inflection
INV	interviewer
L1	First language
L2	Second language
LEAP-Q	Language Experience and Proficiency Questionnaire
MHM	Modified Hierarchical Model
N	noun
OPOL policy	One Parent One Language policy
PAR	participant
PE	Physical Education
pl	plural
RE	Religious Education
SAV(O)	subject + adverbial + verb + object
sing	singular
SV(O)A	subject + verb + object + adverbial
UK	United Kingdom
V	verb

List of Figures

Figure 1 The “wax and wane” of languages (adapted from Grosjean’s language grid 2013, p. 10) 12
Figure 2 The visual representation of the language-mode continuum (adapted from Grosjean (2013, pp. 1–9)) 15
Figure 3 The Speech Production Model (adapted from Levelt) 19
Figure 4 The Distributed Feature Model (adapted from De Groot) 21
Figure 5 The Revised Hierarchical Model (adapted from Kroll and Stewart) 22
Figure 6 The Modified Hierarchical Model (adapted from Pavlenko) 23
Figure 7 The morphosyntactic differences between English and Hungarian constructions used to express past experience. 103

List of Tables

Table 1 A quantitative overview of the size of the corpus 43
Table 2 Distribution of data across languages 43
Table 3 Participant A's exposure to languages at the time of data collection..... 46
Table 4 Participant A's exposure to languages in various contexts 46
Table 5 Contributing factors to the participant A's language development in each language 47
Table 6 The languages participant A would choose for various activities 47
Table 7 Participant A's reported proficiency levels according to various language skills in each language..... 47
Table 8 Participant B's exposure to each language..... 48
Table 9 Participant B's exposure to languages in various contexts 48
Table 10 Contributing factors to participant B's language development in each language 48
Table 11 The languages participant B would choose for various activities 49
Table 12 Participant A's reported proficiency levels according to various language skills in each language..... 49
Table 13 Instances of conceptual transfer in the interviews conducted with Participants A and B 50
Table 14 Instances of lexical or semantic transfer in the interviews conducted with Participant A 54
Table 15 Instances of structural transfer in the interviews conducted with Participants A and B 63
Table 16 CS from Hungarian to English in the Hungarian single-language interview with Participant A sorted by level of equivalence 67
Table 17 CS from English to Hungarian in the Hungarian single-language interview with Participants A and B sorted by level of equivalence 68
Table 18 Instances of borrowing in Participant A's interview in Hungarian..... 87
Table 19 Participant C's distribution of language exposure at the time of data collection 88
Table 20 Exposure to each language in various contexts 89
Table 21 Contributing factors to the participant's language development in each language 89

Table 22 The languages the participant would choose for various activities 89
Table 23 Reported proficiency levels according to various language skills in each language 90
Table 24 Non-CLI related morphological and morphosyntactic phenomena in the interviews with Participant C..... 110

Table of contents

Signatures i

Abstract ii

Acknowledgements iii

List of Abbreviations iv

List of Figures v

List of Tables vi

Chapter 1. Introduction 1

1.1. Bilingual language processing, cross-linguistic influence, and conceptual representation 1

1.2. The research gaps and the present study 3

1.3. Research questions 6

Chapter 2. Theoretical background 8

2.1. Describing bilinguals 8

2.2. Defining bilingualism and multilingualism 9

2. 3. Understanding the multilingual competence 10

2.4. The effects of multilingual competence on individual performance 11

2.5. Language fluency, language dominance and the Complementarity Principle 11

2.6. Language Modes 14

2.7. Empirical findings on representation, conceptual transfer, and cross-linguistic influence in bilingualism and multilingualism 16

2.8. Models of bilingual speech and the mental lexicon 18

2.9. Bilingual speech and cross-linguistic influence 26

2.10. Code-switching in bilingual speech 28

2.11. Theoretical grounding and conceptual framework of the current study 32

Chapter 3. Methods 35

3.0. General approach and selected research methods 35

3.1. Case study methodology for qualitative inquiry 35
3.2. Participants 38
3.2.1. Bilingual participants 38
3.2.2. The multilingual participant 40
3.3. Data collection 40
3.4. Data processing and analysis 43
Chapter 4. Bilingual case studies 46
4.1. The linguistic background of participants 46
4.1.1. Participant A 46
4. 1.2. Participant B 47
4.2. Results and data analysis 50
4.2.1. Implicit forms of CLI 50
4.2.1.1. Conceptual transfer 50
4.2.1.2. Transfer at the lexical/semantic level 53
4.2.1.3. Hybrid structures 60
4.2.1.4. Structural transfer 62
4.2.2. Explicit forms of CLI 66
4.2.2.1. Code-switching 66
4.2.2.2. Borrowing 87
Chapter 5. A Multilingual Case Study 88
5.1 The linguistic background of participant C 88
5.2 Results and data analysis 91
5.2.1. Implicit forms of CLI 92
5.2.1.1. Transfer at the conceptual level 92
5.2.1.2. Transfer at the lexical/semantic level 92
5.2.1.3. Lexical selection phenomena 96
5.2.1.4. Structural transfer 100

5.2.2. Explicit forms of CLI 111
5.2.2.1. Code-switching 111
5.2.2.2. Borrowing 115
Chapter 6. General discussion 117
6.1 Empirical findings 117
6.2 A comparison of bilingual and multilingual findings 122
6.3 Theoretical evaluation 127
Chapter 7. Conclusions and limitations 129
7.1 Conclusions 129
7.2. Limitations 129
7.3. Significance and implications of the study 130
References 132
Appendix 1 141
Appendix 2 142
Appendix 3 144
Appendix 4 146
Appendix 5 148
Appendix 6 151
Appendix 7 154
Appendix 8 156

Chapter 1. Introduction

1.1. Bilingual language processing, cross-linguistic influence, and conceptual representation

A foundational theoretical framework that has influenced research on bilingual language processing is Grosjean's Language Mode model (2013). It posits that all of the speaker's languages may be active or activated even in situations where the bilingual is using only one of their languages. In this model, a bilingual's language mode may be positioned at any point between the two extremities of a continuum (i.e. between a fully monolingual mode and a fully bilingual mode) at a given moment, and movement along the continuum may occur rapidly depending on changes in the context or the situation. The activation level of the language that is not being used may depend on a variety of factors, such as the characteristics of the language in question: the level of proficiency, dominant or non-dominant status, typological similarities with the language being used, age and context of acquisition, recency of use; the general context of the interaction (e.g. the environment, the presence of speakers of the language; and, in alignment with the Complementarity Principle, the topic may also induce a higher level of activation (Grosjean et al., 2013). Consistent with Grosjean's findings, in a study on CLI in the spontaneous autobiographical narratives of Russian-English bilinguals, Marian and Kaushanskaya (2007) found that the bilingual language interaction is largely determined by various aspects of the language environment, as well as language architecture, such as grammatical category, semantic structure, syntactic organisation and concreteness. Their findings support a view of the bilingual lexicon as a dynamic, interconnected and context-sensitive system.

Cross-linguistic differences are central to the study of bilingual language processing because they make it possible to observe how bilingual speakers coordinate form and meaning across two linguistic systems. Languages differ not only in their words and grammatical structures but also in how they categorise experience. Cross-linguistic differences may affect bilingual performance at the phonological, morphosyntactic and lexical levels; however, for many years, less attention was devoted to how such differences manifest themselves at the conceptual level.

Earlier psycholinguistic studies on bilingual concepts examine whether L1 and L2 words are linked to a shared conceptual representation. In these studies, conclusions are drawn based on measuring reaction-times in tasks such as picture naming, translation, word association, lexical decision, semantic categorisation and the Stroop interference task (de Groot, 1992; De Groot et al., 1994; J. Kroll, 1993; J. F. Kroll & Stewart, 1994; Snodgrass, 1993). The basic assumption of these studies is that faster reaction times point to stronger interlingual connections, taken as evidence for shared concepts.

Based on these findings, various models of the bilingual mental lexicon have been proposed to describe bilingual processing and representation (for a summary see de Bot & Bátyi, 2022). Most of these models focus on the mapping of form to meaning and assume shared conceptual representation. De Groot's Distributed Feature model (1992)is an exception among the earlier models, as it integrates a differentiated approach to conceptual representations.)

Eventually another line of research emerged which started to explore the nature of conceptual representation, more specifically, how mental representations are linked to word forms (Ameel et al., 2005; Athanasopoulos, 2009; B. C. Malt & Sloman, 2003; Pavlenko, 2002a, 2003, 2008). Instead of focusing on whether the conceptual store is shared or separate, these studies offered a more differentiated view of lexical concepts and explored what is shared and what is separate in them across languages.

These studies reveal cross-linguistic differences in the relationship between words and real-word referents in all domains, ranging from concrete words such as containers (B. C. Malt & Sloman, 2003), furniture Graham and Belnap (1986), colour (Andrews, 1994; Athanasopoulos, 2009), through the domain of emotions (Pavlenko & Driagina, 2007; Sachs & Coley, 2006), and the domain of abstract categories(Panayiotou, 2004; Pavlenko, 2002b, 2002a, 2003, Karasik et. al., 2005, as cited in 2009a).

From a language learning and bilingual performance perspective, the implications of these findings are manifold. In cases of non-equivalent or partially equivalent categories, for target-like performance bilinguals need to develop lexical categories that reflect these differences. Speakers with lower L2 proficiency may fail to internalise these distinctions, which may result in instances of L1 conceptual transfer in their performance (Graham & Belnap, 1986; Jarvis & Pavlenko, 2008; Pavlenko & Driagina, 2007). Partial conceptual restructuring or convergence may account for the emergence of categories that do not

correspond to the requirements of either language (Ameel et al., 2005). In case the conceptual restructuring is successful, bilingual performance is likely to comply with the language-specific constraints of each language.

Integrating these findings, and after a critical review of the Revised Hierarchical Model (J. F. Kroll & Stewart, 1994) and the Distributed Feature Model (de Groot, 1992), the two most prevalent models in the discussion of bilingual's conceptual representations at the time, Pavlenko proposed the Modified Hierarchical Model (2009a). By establishing the idea of a conceptual store made up of shared and language-specific lexical categories, this model makes it possible to account for cross-linguistic differences where language-specific categories encompass conceptual nonequivalents as well as the language-specific components of partial equivalents. Nonequivalents and partial nonequivalents may have important implications on bilingual speech production: some speakers use them only in the corresponding language, others recur to code-switching or lexical borrowing as an interpretive element, and a third group of speakers' performance may be marked by disfluencies such as a pause, hesitation or stutter while they search for a non-existent equivalent (Pavlenko, 1997, 2003).

1.2. The research gaps and the present study

Although the Language Mode model and the Modified Hierarchical Model have been instrumental in conceptualisations of bilingual language processing, the bilingual lexicon and conceptual representation, these frameworks have rarely been explored in relation to naturalistic speech data and especially in multilingual contexts. The current dissertation aims to bridge this theoretical gap through the analysis of bilingual and multilingual spontaneous speech produced in the course of semi-structured interviews. By applying Grosjean's Language Mode model to spontaneous bilingual speech, the degree of activation of each language can be treated as a contextual variable that helps explain when and why cross-linguistic influence, borrowing, code-switching, and lexical selection difficulties occur. The Modified Hierarchical Model can be useful to interpret how speakers map words in each of their languages onto fully shared, partially shared, or language-specific conceptual representations. Through the analysis of CLI it may be possible to identify differences of category boundaries and culturally specific categories across the participants' languages, as well as to explore how cross-linguistic differences play out in naturalistic speech at the level of conceptual representation in early bilinguals and multilinguals.

Multiple empirical gaps have also been identified from the review of the most relevant literature. These pertain to language combinations, participant populations, methodological approaches and context.

Empirical research into cross-linguistic influence is more extended in relation to certain language pairs than others. Multiple studies have explored cross-linguistic relations, for instance between English and Russian (Marian & Spivey, 2003; Pavlenko, 2002b, 2003, 2008, Karasik et al., 2005, as cited in 2009a; Pavlenko & Driagina, 2007; Sachs & Coley, 2006), English and French (Grosjean, 1998, 2008), English and Dutch (De Groot & Nas, 1991; Hermans et al., 2011; Kootstra et al., 2010), English and Spanish (Graham & Belnap, 1986; B. Malt et al., 2003), English and Greek (Athanasopoulos, 2009), or Dutch and French (Ameel et al., 2005). Although several studies in contact linguistics have examined the language use of Hungarian-English bilinguals (Bartha, 1993; Fenyvesi, 2005; Kontra, 1990; Kovács, 2001), their primary focus has been sociolinguistic, particularly on code-switching in the context of language shift, rather than on the psycholinguistic dimensions of bilingual language use. Consequently, English-Hungarian bilingualism and especially English-French-Hungarian multilingualism, has so far been underrepresented in the cross-linguistic influence literature. The current study seeks to contribute to this line of research with empirical data in these language relations. Because of the typological distance owing to the presence of Hungarian, a Finno-Ugric language, in contact with Indo-European languages (English, French, German and Russian), these language combinations may be particularly interesting when it comes to investigating cross-linguistic differences and their manifestations in authentic bilingual and multilingual speech.

A second empirical gap rises from the fact that the majority of studies related to cross-linguistic differences focus on various groups of late bilinguals, while less attention has been directed on early bilingual and early multilingual participant populations. Since the onset and mode of language acquisition, as well as life experience in more than one cultural environment may play a crucial role in a speaker's language development, and more importantly in the development of conceptual representations, the current dissertation contributes to current knowledge with important insight in early bilingual language use. The inclusion of multilingual empirical data is another area that aims to strengthen the originality of the current study.

Finally, much of the existing research on CLI relies heavily on experimental designs, often conducted in controlled laboratory settings. Such experiments were based on tasks such as picture naming and semantic categorisation (Caramazza & Brones, 1980; Chen, 1992; Dufour & Kroll, 1995; McElree et al., 2000), categorisation and sorting tasks (Athanasopoulos, 2009), objects (B. C. Malt et al., 1999), pictures (Athanasopoulos, 2006) or scripts (Sachs & Coley, 2006), various forms of naming tasks (Ameel et al., 2005; Athanasopoulos, 2009), and similarity judgement tasks (Moore et al., 1999). While these studies have yielded important insights, they can sometimes limit the ecological validity of the findings, since everyday language use is deeply rooted in context. In the case of bilingual speech, there is a clear need for more investigations that focus on naturalistic or near-naturalistic language use. The benefits of such an approach are threefold. First, methodologies that allow participants to express themselves freely provide more valid data, as they capture CLI as it occurs in spontaneous interaction rather than in artificially elicited contexts. Second, naturalistic designs minimise priming effects and other experimental artifacts (Grosjean, 1998; Dörnyei, 2007), thereby producing results that more accurately reflect real-world bilingual communication. Finally, natural speech is accompanied by non-verbal phenomena – gestures, pauses, facial expressions and prosodic cues – that enrich the dataset by offering additional windows into the cognitive processes underlying speech planning and production. By embracing this methodology, the dissertation aims to broaden the scope of CLI research and bring it closer to the authentic practices of bilingual communication.

The theoretical and analytical framework chosen for any study inevitably shapes the methods of data analysis and, by extension, the findings it produces. Since both the Language Mode model and the MHM support a dynamic, context-sensitive view of bilingual processing and performance, the current study wishes to contribute to an underrepresented line of research that relies on naturalistic speech data and adopts an exploratory research methodology. This methodological approach ensures the observation of language use that is more consistent with everyday bilingual and mulitilingual experience.

1.3. Research questions

Within the scope of bilingual language production, the primary aim of this dissertation is to examine bilingual speech produced under cross-linguistic and cross-cultural constraints. The dissertation seeks to find answers to the following research questions:

1. How do cross-linguistic differences influence language performance in the speech of English-Hungarian bilingual and English-French-Hungarian multilingual speakers?
2. How are cross-linguistic differences manifested in the bilingual and multilingual mental lexicon and conceptual representations in early multilinguals with lived experience across multiple cultural contexts?
3. In what way is multilingual production different from bilingual production in light of CLI phenomena?

Answering these questions will help to gain a deeper understanding of the mental processes that regulate the language production of early bilingual children in the English-Hungarian bilingual, and the French-Hungarian-English multilingual context. The theoretical framework of the research design is primarily based on Grosjean's theories on language modes (2001) and the Complementarity Principle (2015), as well as Pavlenko's Modified Hierarchical Model (2009a) of the bilingual mental lexicon.

The dissertation is divided into seven main chapters.

Chapter 1 contains the general introduction that establishes the position of the current research in the large body of bilingualism research and presents the research questions.

Chapter 2 is the literature review, which highlights the most important theories and research upon which the current research design has been built.

Chapter 3 provides information on the selected research methodology, complemented by details of the conceptual design, as well as the methods of data collection and data analysis.

Chapter 4 presents the case studies of two bilingual children, Participant A and Participant B, together with the results and their discussion. The in-depth analysis of the various types of CLI and other speech phenomena is based on examples examined in context, in order to provide broader insight into the processes underlying speech production.

Chapter 5 presents Case Study C with particular attention to specific features of multilingual speech production.

Chapter 6 contains the integrated discussion of the findings from the three case studies.

Chapter 7 offers the conclusions of the study with the limitations, significance, and implications of the research findings.

Chapter 2. Theoretical background

2.1. Describing bilinguals

Research focusing on how bilinguals store, process and produce language relies on theories related to the mental lexicon. It was Francois Grojean who first claimed that the bilingual mind is not the mere sum of two monolingual minds, but a unique system emerging from the combination of the languages spoken by the individual (1989). This was the foundation upon which a series of subsequent models were created to describe the modus operandi of such a complex and delicate system. Once it became evident that monolingual models are not suitable to perform this tasks, new frameworks were needed to account for the co-existence and continuous interplay between the speaker's languages.

It is very rare for bilinguals to demonstrate equal fluency across all their languages. Instead, their language configuration, i.e. the relative status of each language in terms of fluency, is largely defined by patterns of use (Grosjean et al., 2013). A language that is used on a daily basis is likely to become dominant with a high level of fluency, while one that is on demand only occasionally, for example once a month, will typically be characterised with a lower fluency. This feature is described by Grojean as the Complementary Principle, which will be discussed in detail in section 2.5.

In addition to frequency of use, several other factors influence a speaker's ability to access and use their languages effectively. These include the domains of use, for instance, whether a language is required at home, in educational settings, or in the workplace, as well as modalities in which it is practiced. Some bilinguals may possess high oral fluency in one language but demonstrate stronger literacy skills, such as writing proficiency, in another. Thus, language dominance is not a unitary construct but one that may vary across different communicative skills and contexts.

Furthermore, language configuration is not static but rather dynamic and subject to change over time. As individuals encounter new environments and life circumstances, the demands placed upon their languages may shift, altering the relative dominance and fluency of each (Grosjean et al., 2013). For example, a speaker who primarily used a heritage language in the home may later find that professional or academic contexts necessitate greater use of the societal majority language, thereby shaping their linguistic profile. This dynamism is described by the author as the "wax and wane" of languages.

Bilingual development therefore is largely shaped by both biological and experiential factors. Timing, sequence, and learning context interact to produce significant variation in bilingual proficiency, dominance patterns, and language use.

2.2. Defining bilingualism and multilingualism

It is important to address the relationship between bilingualism and multilingualism. At first glance, these terms seem to be easy to distinguish: bilingualism refers to the ability to use two languages, while multilingualism denotes the ability to use more than two. In practice, the distinction is less clear-cut. While a large body of bilingualism research does not make a distinction between the two categories, as there seems to be a general agreement that in most cases multilingualism can be regarded as an extension of bilingualism (de Groot, 2011; Grosjean, 2015; Grosjean et al., 2013), some researchers argue that the two categories should not be treated as conceptually overlapping (Hoffmann, 2001; Hoffmann & Stavans, 2007).

In the first chapter of *The Psycholinguistics of Bilingualism*, Grojean proposes an integrative approach, defining "bilingualism, and indeed multilingualism, as the use of two or more languages (or dialects) in everyday life" (2013, p. 5). The introductory chapter then offers a description of bilinguals, where, for instance, when discussing the relative status of a bilingual's languages at various points in life, he talks about La, Lb and Lc to denote the three languages of a speaker. Similarly, Grosjean's Complementarity Principle applies to multilinguals too, but with even more variability in linguistic competence. Along the same lines, de Groot argues that from a psycholinguistic perspective theories, processes and mechanisms related to bilingual language use apply just as well to multilinguals (2011).

While the two groups of speakers indeed share a lot of characteristics, such as a tendency to code-switch, possessing cognitive flexibility and heightened cultural awareness, some researchers prefer making a distinction. Hoffman (2001), and Hoffmann and Stavans, for instance, suggest that there is a qualitative difference between bilinguals and trilingual speakers (multilinguals) originating from a greater number of combinations between the potential and the actual language use and a more intricate interplay of "attitudinal and sociocultural factors" that regulate language production (2007, p. 58). Other scholars also point out that multilinguals often enjoy a distinct advantage in acquiring additional languages, largely owing to the facilitation effect of prior language learning experiences and an enhanced level of metalinguistic awareness (Martin-Rhee & Bialystok, 2008). In

the present dissertation, an inclusive approach will be adopted, highlighting the specificities of multilingualism only when they are directly relevant to the analysis.

2. 3. Understanding the multilingual competence

An influential approach to understanding multilingual competence is the Dynamic Model of Multilingualism (DMM) developed by Herdina and Jessner (2002). This model provides a comprehensive framework for explaining the wide range of abilities that enable effective language use among bilingual and multilingual speakers. Following in Grojean's footsteps, the DMM challenges the notion that multilingual competence is simply the additive sum of the knowledge in separate languages. Instead, it conceptualizes the multilingual mind as a complex, dynamic, and interactive system in which all languages are interconnected. A central idea of the model is that any change in the competence of one language, whether through learning, attrition, or shifts in dominance, inevitably leaves traces on the other language(s) while at the same time initiating modifications within the system as a whole. This system-based view highlights the interdependence of languages within the multilingual repertoire and the constant adaptation of the system in response to new linguistic and contextual demands.

While the DMM provides a macro-level perspective on multilingual competence as a constantly evolving system, another branch of multilingualism research turns toward a micro-level focus, aiming to model the bilingual mental lexicon and the mental processes involved in language production. Scholars in this area (De Bot & Schreuder, 1993; de Groot, 1992; J. F. Kroll & Stewart, 1994; Levelt, 1989; Pavlenko, 2009a; Poulisse & Bongaerts, 1994) offer theoretical models to describe how lexical items from different languages are stored, activated and retrieved during speech. Both perspectives share a common view of bilingualism as inherently interactive and dynamic. Whereas the DMM emphasizes how systemic changes ripple through the entire linguistic repertoire, lexical models show how individual words and concepts are linked across languages and subject to cross-linguistic influence. Together, they reinforce the idea that multilingualism is not a compartmentalized phenomenon but a networked and adaptive system, shaped simultaneously at the global and the lexical level by experience, context and communicative need.

2.4. The effects of multilingual competence on individual performance

At the individual level one implication of multilingualism is that it affects the cognitive abilities of the speakers: executive control functions such as attention, inhibition and task switching are often enhanced in bilinguals (Bialystok, 2006; Martin-Rhee & Bialystok, 2008). Moreover, speaking two or more languages can boost divergent thinking and the ability to adapt to new rules or shifting perspectives, facilitated by higher cognitive flexibility (Peal & Lambert, 1962; Kessler & Quinn, 1980; Kharkhurin, 2007).

The debate on the "bilingual advantage" was largely shaped by the work of Ellen Bialystok and colleagues (Bialystok et al., 2004, 2007), who reported bilingual-monolingual differences in several domains of cognitive performance, particularly in tasks tapping into executive functions. At the same time, it is important to note that the scope and nature of bilingual advantage remain highly contested. Critics argue that the label is problematic because the available evidence does not unequivocally demonstrate that enhanced cognitive performance is causally attributable to bilingualism. Furthermore, the term may also be too generic: findings suggest the existence of potential advantages and disadvantages which vary across different groups of bilinguals and across distinct cognitive domains (for a review see de Bot, 2017).

The third impact of multilingualism on individual performance is what is referred to as multilingual awareness – a dynamic system of skills and competencies that ensues from exposure to and the use of multiple languages. This means that beyond the knowledge of the language, the bilingual cognitive toolkit also encompasses metalinguistic awareness and intercultural awareness, regulating language use effectively in a range of communicative settings (Herdina & Jessner, 2002).

2.5. Language fluency, language dominance and the Complementarity Principle

A watershed statement that by now is the bottom line of all bilingualism research was proposed by Francois Grojean when he advocated a "wholistic" approach to bilingualism saying that "bilinguals are not two monolinguals in one person" but the languages create a unique, interdependent and dynamic system (Grosjean, 1989).

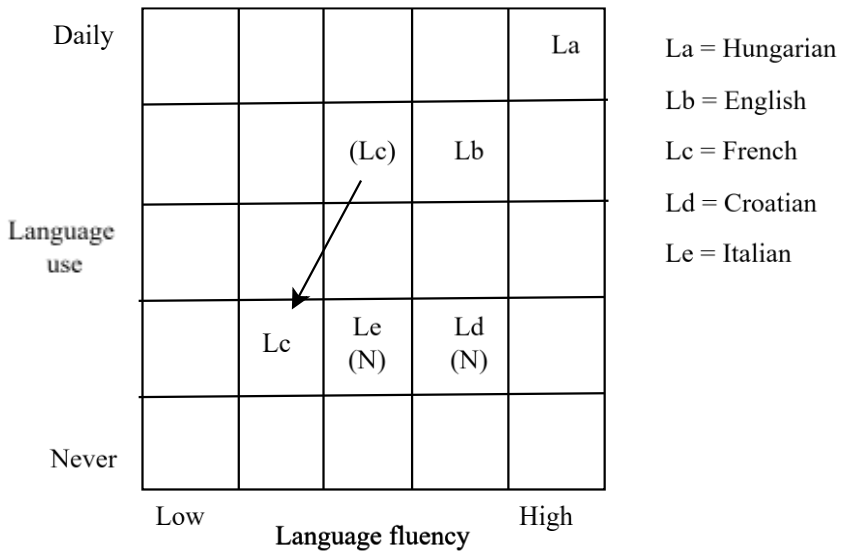
Researchers in as early as the 1930s recognised the fact that being able to use both languages equally in all spheres of life is unrealistic, "only approximations […] can be

expected" (Leopold, 1939, pp. 5–6). In practice, unbalanced bilingualism, where one language is more dominant than the other, is most common. How a speaker's languages are used at a certain stage of life will define the relative status of each language. A snapshot of the position of the languages at any point in life constitutes the language constellation of the speaker.

The key factor that determines the relative status of a bilingual's languages is the frequency of use. The more often a language is needed on a daily basis, the higher the fluency will be in that language. A less frequently used language, on the other hand, on demand only twice a week for instance, will rank lower on the fluency scale. The same applies to multilinguals, where the relative position of three or more languages can be similarly established.

Another key feature of bilingualism is that the relative status of a bilingual's languages can change over time. Life events may bring about new linguistic demands, as, for instance, a new job may require frequent use of a previously rarely used language, or relocation may necessitate the acquisition of additional languages. Figure 1 illustrates Grojean's (2013) conceptualisation of the language constellation grid.

Figure 1 The "wax and wane" of languages (adapted from Grosjean's language grid 2013, p. 10)



This diagram not only illustrates the relative positioning of a bilingual's languages but also accounts for newly acquired ones (marked by 'N') and shifts in the prominence of existing languages (such as 'Lc') owing to life events such as moving to another country

or getting a new job demanding less frequent use of a previously more dominant language. Notably, unlike the conventional practice of labelling languages numerically based on the acquisition order (e.g. L1, L2), this model uses letters. This approach emphasizes that individuals may acquire more than one language from birth (making terms like L1 misleading) and that the order of acquisition does not necessarily determine lifelong fluency. Proficiency in each language can undergo serious changes, either improving through frequent use, immersion (acquisition) or formal learning, or, declining through attrition due to infrequent use, limited exposure or even resistance.

A bilingual's language history is shaped by a range of factors that together contribute to the uniqueness of their individual linguistic system. These factors include, for instance, which languages are acquired at what age and how, as well as the frequency and context of use for each language. Patterns of language use are dynamic and may shift over time. Depending on life circumstances, certain languages may become more dominant, while others may become dormant or gradually fade due to reduced relevance or lack of use.

Based on the premise that the bilingual's languages constitute a unique, interdependent system, any change affecting one language would have an impact on the other(s). The "wax and wane" of languages, as Grojean refers to the process (2013, pp. 9–11), may involve transition periods of varying length when serious restructuring takes place. As one language gains momentum and becomes more dominant, its influence may increase on the other language(s). The period of transition may last several months or even years during which the effectiveness of communication may temporarily decrease as the languages adjust to one another. As the process unfolds, it alters the configuration of the person's languages, leading to changes in language processing. After stability is reached, bilinguals typically recover their previous level of communicative ability.

It is a common feature of the bilingual experience that the languages fulfil certain functions as they are linked to certain domains of life but not to others. For example, it might well be the case that a speaker uses one language at home and another at school or work. The Complementarity Principle, introduced by Grosjean (1997 as cited in Grosjean et al., 2013) describes this phenomenon:

> Bilinguals usually acquire and use their languages for different purposes, in different domains of life, with different people. Different aspects of life often require different languages (p.12)

The range of contexts in which a language is used has a direct impact on fluency. When a language is limited to fewer domains, it is used less frequently, which often results in lower fluency. In contrast, the more areas of life a language is used in, the more often it is practiced, leading to higher fluency. If a particular domain isn't associated with a language, the bilingual is likely to lack the necessary vocabulary, stylistic range, or language variety required for that context (Ivanova & Costa, 2008). When discussing a topic in the "wrong" language, they may struggle to find appropriate words, hesitate, or switch to the other language if the situation permits (Grosjean, 2008).

Language dominance, which can shift over time, is also closely connected to the Complementarity Principle. Firstly, a person's first language, for example, is not necessarily their dominant one throughout life. As circumstances and environments change, so too can a bilingual's language dominance or usage patterns. Secondly, Grosjean also points out that bilinguals are often assumed to be natural translators, but this ability does not always extend to specialized or technical domains, where expertise in terminology and context is required.

Language dominance and the way in which an individual's languages complement each other can also be approached through the prism of Aronin and Singleton's concept of Dominant Language Constellation (DLC) (2012). Developed specifically for multilingual contexts, the DLC construct distinguishes between a speaker's overall language repertoire and the smaller set of languages that are functionally central in everyday life. At the individual level, the DLC captures the observation that, although multilinguals may have knowledge of several languages, only a subset is typically used intensively. While Aronin and Singleton note that the constellation often comprises around three languages, the DLC is not defined primarily by the number of languages. Rather, it is more profoundly characterised by the specific languages involved and by individual differences in proficiency, patterns of use, and interrelations among the languages. The authors further emphasize the enabling, empowering potential of specific constellations, which support effective participation across diverse linguistic settings, and argue that DLC languages often play an important role in speakers' "identity construction" (2012, p. 71).

2.6. Language Modes

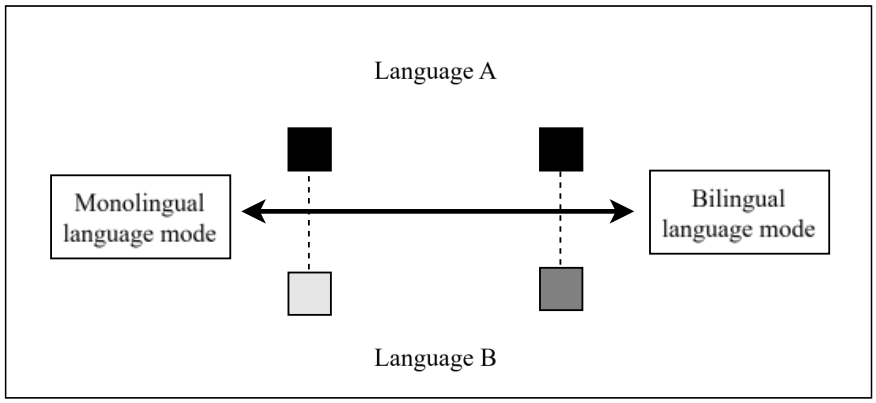
Language mode refers to "the state of activation of the bilingual's languages and language processing mechanisms at a given point in time" (Grosjean, 2001). Whenever bilinguals

communicate with others, they are constantly – though often unconsciously – making two key decisions which language to use and whether to incorporate the other language. These choices influence both the language use and the cognitive processes involved in managing their languages.

The answer to the first question determines which language the speaker will use, referred to as "base language". When a bilingual concludes that the other language is not suitable for the context, that language is deactivated, and communication proceeds in a monolingual mode. However, if the speaker considers the second language appropriate or necessary for the situation, its activation level increases, and elements from it may be integrated into the base language discourse, or even the option of changing base language becomes available. In this case, the bilingual operates in a bilingual mode.

The two situations described above are at the extremities of a continuum referred to as "the language mode continuum" by Grosjean (see Figure 2).

Figure 2 The visual representation of the language-mode continuum (adapted from Grosjean (2013, pp. 1–9))



In reality, bilinguals are likely to find themselves somewhere in between, i.e. in an intermediary language mode. This covers a variety of communicative situations. Bilinguals may differ in how frequently or flexibly they shift along the language mode continuum, depending on the demands of everyday interactions. However, it is generally true that most bilinguals adjust their position on this continuum based on who they are talking to, the context of the interaction, and the subject being discussed. Such adjustments may occur rapidly, often in response to factors like the perceived language

preference of the interlocutor or the arrival of a new speaker, which may introduce the need or opportunity to use a different language.

A final question concerns positions on the language mode continuum that lean toward the monolingual end: what happens to the language that is not being used in the conversation? While some bilinguals are quite skilled in restricting communication to a single language, they are rarely able to completely "switch off" the other one. In such cases, the non-target language is not inhibited – as proposed by Green (D. W. Green, 1998) but debated by Grosjean (2013, p. 16) – but rather deactivated, meaning it is temporarily placed "on hold" but readily accessible if needed. One indication of this availability is the bilingual's ability to activate and use the non-target language almost instantly when the situation changes. Another sign is the presence of cross-linguistic influence in speech, where traces of the non-target language emerge. This suggests that the speaker is unable to fully activate the base language and fully deactivate the non-target language.

2.7. Empirical findings on representation, conceptual transfer, and cross-linguistic influence in bilingualism and multilingualism

Research on bilingual and multilingual conceptual representation has progressively moved beyond the general question of whether the conceptual store is share do r language-specific. The more informative question is which aspects of particular lexical concepts are shared across languages, which are language-specific, and how their accessibility changes according to experience and context. Although translation equivalents often activate a common conceptual-semantic base, they do not necessarily encode identical categories, prototypes, boundaries, or perceptual features (Francis, 2009; J. F. Kroll & De Groot, 2020; Pan et al., 2021). Pavlenko similarly argues that the strength of connections between translation equivalents should not be equated automatically with conceptual equivalence: rapid translation or cross-language priming ma demonstrate strong interlingual links without revealing whether two words are mapped onto the same range of real-world referents (2009a).

This distinction is methodologically important. Traditional psycholinguistic studies have frequently relied on reaction-time measures, lexical decision, semantic priming, translation, word association, and single-picture naming. Such tasks provided valuable evidence concerning lexical connections and conceptual mediation but often avoided precisely those stimuli for which languages differ in categorisation. Consecutive cross-

cultural approaches therefore have employed naming, sorting, categorisation, and narrative-elicitation tasks involving multiple objects, events, or situations. Therse methods make it possible to compare category boundaries and prototypes across monolingual and bilingual speakers and to distinguish genuine conceptual equivalence from similarity restricted to prototypical exemplars (Ameel et al., 2005; J. F. Kroll & De Groot, 2020; B. Malt et al., 2003; B. C. Malt et al., 1999; Pavlenko, 2008).

Evidence from this research supports a differentiated account of bilingual conceptual organisation. Some translation equivalents exhibit near-complete conceptual equivalence, allowing learners to connect and L2 word form to a previously established concept. Others are only partially equivalent: their categories may overlap while differing in scope, internal structure or prototypical member. Once category may be nested within a broader category I the other language, or one language may lexicalise distinctions that the other leaves undifferentiated. In such cases, L2 learning requires conceptual restructuring, that is, the adjustment of category boundaries in accordance with target-language conventions. Conceptual non-equivalence presents a further challenge because learners must develop a new multimodal representation rather than merely acquire a new label (Pavlenko, 2003; Pavlenko & Driagina, 2007).

Pavlenko's Modified Hierarchical Model (2009a, see a detailed description in the next section) captures these possibilities by distinguishing fully shared, partially overlapping, and language-specific conceptual representations. It also separates conceptual transfer from semantic transfer. Semantic transfer concerns inappropriate links between words and already differentiated concepts, whereas conceptual transfer originates in differences between the structure or boundaries of the underlying categories. From this perspective, bilingual non-target performance may reflect reliance on an L1 category when using an L2 word, L2 influence on an L1 category, partial restructuring, or convergence towards a representation that differs from those of monolingual speaker of either language.

Other empirical literature likewise portrays conceptual activation as dynamic and context-sensitive. Pan et al. (2021), for example, found that Mandarin-English bilinguals processed culturally biased images more efficiently when the language of the prime matched the cultural context of the image, suggesting that language experience influences which semantic and perceptual features become active. Multilingual evidence indicates that similar representational principles may extend beyond two languages, although

conceptual access can be asymmetric across L1, L2, and L3; it is also sensitive to task, proficiency, learning history, and environmental context (Sperl et al., 2024).

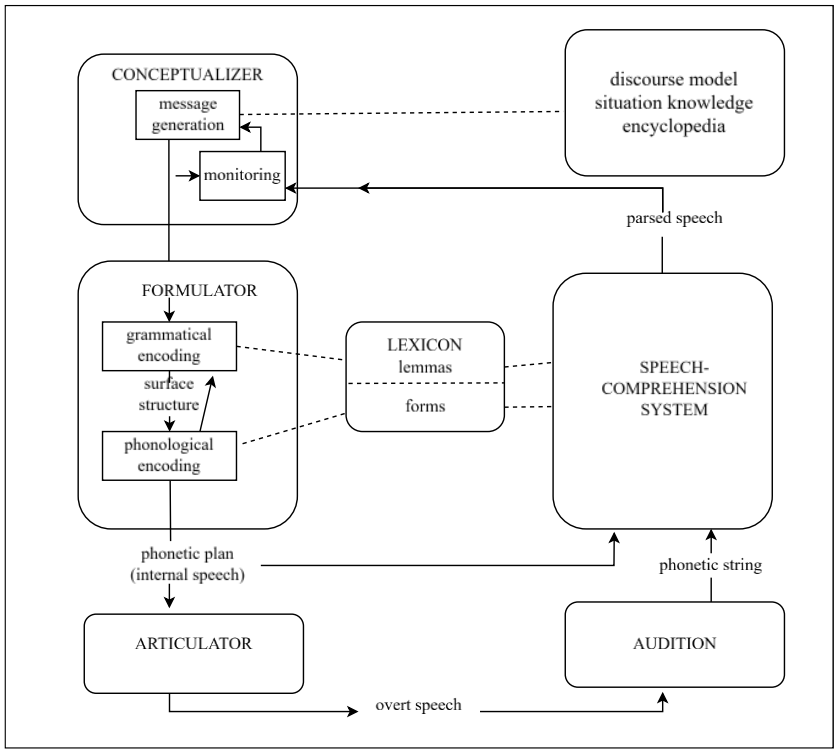
Conceptual transfer is therefore better understood not as the simple movement of a fixed concept from one language to another, but as the language-modulated activation of distributed knowledge. Linguistic, cultural, and interactional contexts may foreground some conceptual features while inhibiting others. This helps explain why the same bilingual may conform to language-specific category constraints in one task but display transfer, convergence, borrowing, loan translation, or hesitation in another. The bilingual lexicon is consequently best viewed as a dynamic and continually reorganising system rather than as two stable, compartmentalised stores (Benati & Schwieter, 2017; Libben & Schwieter, 2019).

The literature converges on the existence of substantial conceptual integration across languages. Conceptual organisation is shaped by category equivalence, language dominance, proficiency, cultural experience, context of acquisition, and current communicative demand. Cross-linguistic influence is therefore expected rather than exceptional, but its direction, strength, and observable form vary across speakers, languages, tasks, and conceptual domains.

2.8. Models of bilingual speech and the mental lexicon

Language production and language choice is the result of a complex process. Decades of research into speech production has produced various models to describe the mental lexicon and illustrate the cognitive processes behind oral communication. Levelt's Speech Production Model (1989, see Figure 3) outlines the stages involved in transforming a communicative intention into spoken output. It is groundbreaking in conceptualizing the process in a modular, feed-forward form, introducing the notions of conceptualizer, formulator, and articulator.

Figure 3 The Speech Production Model (adapted from Levelt)



The conceptualizer is responsible for generating the preverbal message, i.e. what the speaker wants to communicate. To break down this phase further, Levelt distinguishes subcomponents, such as macroplanning (the selection of the communicative goal), microplanning (selection of relevant information, perspective, etc.), and monitoring (an internal feedback system to check for appropriateness or errors). At the formulator stage the preverbal message is converted into a linguistic structure. This occurs in two steps: starting with grammatical encoding through which lexical selection and syntactic structure building is executed, followed by phonological encoding, which converts syntactic structure into sound patterns. Finally, the articulator executes the motor program to produce speech by preparing the phonetic plan and controlling the vocal tract to create the spoken utterance and monitoring speech for errors. Error detection can lead to repairs or corrections.

An overarching feature of the Speech Production Model is that the process occurs in a cascading manner as speakers are planning and speaking simultaneously. In other words, different processing levels operate in parallel, with information being transmitted to the next stage even before it is fully processed at the current one.

Since Levelt's model was meant to describe monolingual speech, eventual modifications have been suggested to cater to the bilingual features of speech production, such as code-switching and cross-linguistic influence. The very start of the process is identical in both monolingual and bilingual speech, since at this stage the original idea is generated in a pre-verbal form (Levelt, 1989). However, once the speaker starts the search for the appropriate lexical concept (still at the conceptualiser phase), the selection is inevitably language specific. This is the very locus where the monolingual and bilingual processes diverge because, in the case of bilinguals, corresponding lexical concepts in both of the speaker's languages are activated (D. W. Green, 1998; Costa, 2005; Heij, 2009).

To accommodate the presence of multiple lexical sets, several modified versions of Levelt's Speech Production Model have been proposed. One such modification, introduced by De Bot and Schreuder (1993), adds a new component called the verbalizer between the conceptualizer and the formulator. Another revision by Poulisse and Bongaerts (1994) suggests that the preverbal message includes not only conceptual information but also a language cue, facilitating language choice.

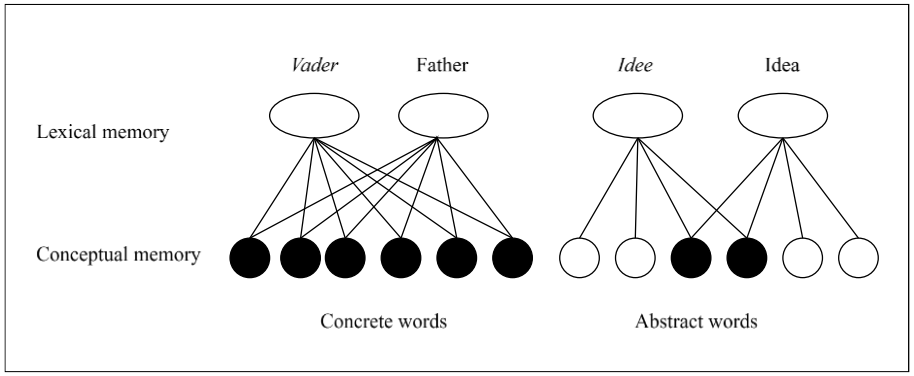
There is still disagreement about the locus of language selection, with arguments for selection at the conceptual level (Heij, 2009), at the lexical level (Costa et al., 1999) or at the semantic level (D. W. Green, 1998). In addition, Kroll et al. (2006) argue that both languages can remain active throughout the execution of speech, making the system broadly nonselective and susceptible to cross-linguistic interactions. They note that while it is sometimes possible for bilinguals to plan their speech entirely in one language without interference from the other, such instances are rare. The same idea is supported by Navracsics (2010), who argues that the conceptual category of the selected language inevitably increases the level of activation of the corresponding lexical items, although the competing concepts from the non-target language are also available, with a lower level of activation.

In the context of any language pair the process may become even more complex due to potential cross-cultural differences and their linguistic representations. In Chapter 1 of *The Psycholinguistics of Bilingualism*, Grosjean (2013) evokes two examples to illustrate this point. The first concerns a dilemma faced by a French-English bilingual when trying to talk about Thanksgiving in French – a culturally specific event that may lack a direct equivalent in the other language. The second example highlights the influence of biculturalism on the bilingual mental lexicon. For bilinguals who are not bicultural and

have only encountered one type of bread, the English word *bread* and the French *pain* likely refer to the same concept. In contrast, for bicultural bilinguals, these words evoke distinct concepts for these words: *pain* may bring to mind a traditional baguette, while *bread* might refer to a rectangular loaf baked in a pan.

Other models of the bilingual mental lexicon may offer some more insight into the nature of language processing. De Groot's Distributed Feature Model (1992, see Figure 4) offers a theoretical framework to describe the relationship of words and their meanings when two language systems are involved.

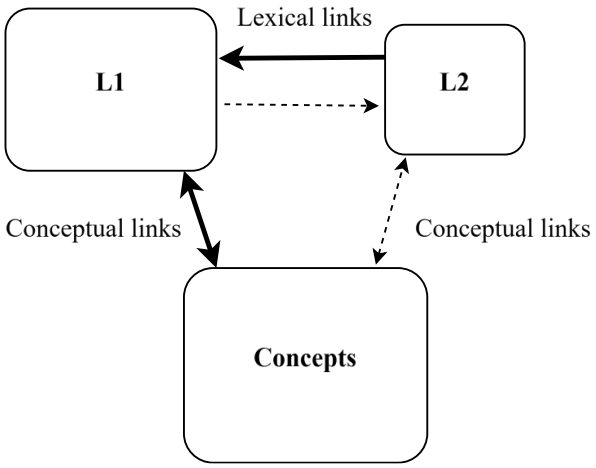
Figure 4 The Distributed Feature Model (adapted from De Groot)



The main strength of this model is that it accounts for cross-linguistic differences. The central question in this approach is whether concepts are shared, partially shared or separate at the semantic level. However, by relying on the feature-based approach, it is insensitive to prototype and context-dependent effects (Murphy, 2002).

The next model which attempts to offer further insight into bilingual processing is Kroll and Stewart's Revised Hierarchical Model (1994, see Figure 5).

Figure 5 The Revised Hierarchical Model (adapted from Kroll and Stewart)



The novelty of this model is that it incorporates features of the mental lexicon and processes that secure communication between lexical elements and concepts. However, it assumes the existence of a unified and stable conceptual store, and in this respect does not accommodate for cases where the conceptual representations do not fully overlap.

With the exception of the Distributed Feature Model (de Groot, 1992), earlier models of bilingual processing and representation assume that although phonological and morphosyntactic forms differ across languages, meanings and/or concepts are largely, if not entirely, shared (cf. Costa, 2005; J. F. Kroll & Stewart, 1994). As a result, much of the theoretical focus in bilingual lexicon research has traditionally centred on how linguistic forms are mapped onto meaning.

However, a new research direction has emerged which shifts attention toward how forms are connected to real world referents (B. C. Malt & Sloman, 2003; Pavlenko, 2002a, 2003, 2008; Sachs & Coley, 2006). Within this framework, studies explore the structure of linguistic categories as represented in the minds of monolinguals and investigate how bilinguals' conceptual categories compare to those of monolingual speakers of their respective languages. Pavlenko (2009a) argues that evidence from these studies points to a far more intricate conceptual organization than previously assumed.

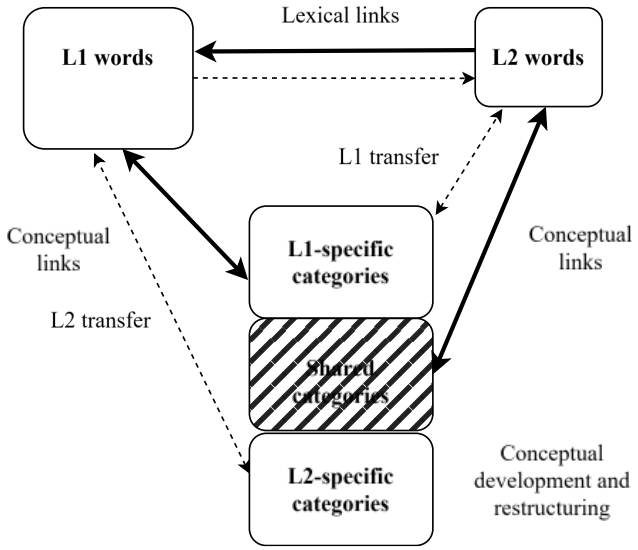
Research in cognitive psychology, cognitive linguistics and linguistic anthropology indicates that speakers of different languages use linguistic categories that can vary in structure, boundaries, or prototypicality of certain category members (Pavlenko, 2009a, p. 133). As a result, translation equivalents across languages do not always reflect

conceptual equivalence. Categories that correspond only partially are in a relationship of partial (non)equivalence. In the case when a linguistic category of one language does not have a counterpart in the other, the lexical concepts are in a relationship of conceptual non-equivalence.

These equivalence relationships have an impact on bilingual speakers' linguistic categories. There exist both objective differences – observable in the performance of monolingual or L1-dominant speakers of the respective languages – and subjective differences, reflected in the mental representations of different types of bilingual speakers.

The Modified Hierarchical Model of the bilingual mental lexicon, proposed by Pavlenko (2009a, p. 147) (see Figure 6), reflects these cross-linguistic differences by presenting the conceptual store as an entity which incorporates shared, partially shared and language-specific representations.

Figure 6 The Modified Hierarchical Model (adapted from Pavlenko)



In the case of shared categories, i.e. a relationship of full equivalence, the lexical concepts in the two languages point exactly to the same referent, therefore this case may present the least mental effort while planning speech. In the Hungarian-English language pair such fully equivalent concepts are *cat* and *macska*, *street* and *utca*, or *submarine* and *tengeralattjáró*. These concepts share all their conceptual features across the languages.

Partial equivalence, on the other hand, may present some difficulty for the speaker, as only some of the conceptual features are shared. In this case, the corresponding lexical concepts may overlap with respect to certain elements but diverge concerning others, so additional explanation is needed once a conceptual transfer happens across the languages.

One example, with a pinch of social and cultural flavour, is the phrase *to be on holiday/szabadságon lenni.* While both contain the conceptual element of being away from work, what one does during this period differs. For the British it involves travelling, while for Hungarians it may as well mean simply staying at home.

Pavlenko (2009a) distinguishes two types of nesting, a form of partial conceptual equivalence. In Nesting Type 1 a smaller category in one language is contained within a broader category in another. On example is Russian *revnost'*, which is used exclusively with reference to intimate relationships, and is therefore narrower than English *jealousy*, used both in romantic contexts and when someone experiences envy. In Nexting Type 2 one broad category in one language corresponds to two or more more finely differentiated categories in another. In the Hungarian-English language pair, one example of this type of nesting is Hungarian *asztal* and English *desk/table*. Whereas the word *asztal* in colloquial Hungarian is a broad category which encompasses subcategories such as *desk*, *dining table* and *coffee table*, the three latter are distinct categories in English. One may argue that the word *íróasztal* corresponds to desk, but in practice *asztal* is replaced by the word *íróasztal* only in cases where the speaker specifically wants to emphasize what type of furniture they are referring to. Another example for nesting Type 2, is English *bottle* and Hungarian categories *üveg/palack/flakon*. The English word *bottle* may refer to both glass and plastic containers for liquids, whereas Hungarian has three distinct categories, one for containers made of glass (*üveg*), one for containers made of plastic (*palack*) mostly used to hold drinks and gas, and one for containers made of plastic (*flakon*) used to hold drinks, beauty products or detergents. Having said this, it is worth mentioning one exception: *kólásüveg* (*bottle of Coke*, üveg = glass container) is a common name in everyday language usage denoting a plastic container (here common usage has kept the original term from the times when the fizzy drink came in bottles made of glass).

Owing to cross-cultural or cross-linguistic differences, certain lexical concepts in one language may have no equivalent in the lexical set of the other. Specific terms pertaining to culturally defined items (Santa Claus), events (Glastonbury Festival), or institutions

(Covent Garden), as well as culinary terms (roast dinner), and holidays (Guy Fawkes' Day) are likely candidates for this category.

The presence of conceptual non-equivalents, and concepts that stand in relationships of partial (non)equivalence, has important implications for the bilingual mental lexicon and for bilingual performance. First, there may be significant variations in conceptual representations both within and across the linguistic categories of monocultural bilinguals and bilinguals who are also bicultural (Grosjean et al., 2013) as discussed earlier in this chapter.

Second, representations in the bilingual lexicon are not static but fluid, and subject to alterations through life experiences and the acquisition of new cultural or linguistic knowledge. Drawing on Spivey (2007), Marian (2009) argues that representations in the bilingual mental lexicon are best conceived as a process – a dynamic continuity of mental states. As bilinguals develop their own representations through processes of conceptual restructuring, these adjustments may result in non-target like patterns in language production (Pavlenko, 2009a). Such restructuring may be prompted by shifts in language dominance, a common feature of bilingual experience, which can alter the direction of cross-linguistic influence between languages (Pavlenko, 2002a; Sachs & Coley, 2006). This idea was further developed by Benati and Schwieter (2017), who extended the MHM to account for changes in trilingual lexical and conceptual representations. Their Trilingual Modified Hierarchical Model incorporates both conceptual restructuring and the gradual development of target-like linguistic categories through language learning. It further predicts that learning new words in either L2 and or L3 may likewise lead to conceptual reorganisation but It further predicts that learning new words in either L2 and or L3 may equally lead to a conceptual reorganisation. The authors also propose that more empirical research is necessary to reveal the direction and background of the processes of lexical mediation in the case of trilinguals.

Third, the impact of conceptual representations on bilingual speech is especially prevalent in cases of partial equivalence and non-equivalence, which demand additional cognitive effort from the bilingual while searching for the most appropriate lexical concept. This heightened effort can affect language performance, particularly in interaction, where planning takes place under strict time constraints. Non-equivalents and partially equivalent linguistic categories often surface in speech production as disfluency phenomena, such as filled and unfilled pauses, hesitation, and false starts (Pavlenko,

2003), which indicate the mental effort involved in locating an appropriate translation equivalent. In addition, bilingual speech may be marked by other forms of cross-linguistic influence, including borrowing, loan translations and code switching, which often serve an interpretive function.

This phenomenon, in turn, has important implications for theories of bilingual processing. When a lexical concept from one language is used as an interpretive category in another, activation becomes a bidirectional process that integrates both linguistic and social dimensions within the conceptualiser. Several studies (Jarvis, 2003; Sachs & Coley, 2006) have shown variation in bilingual performance across tasks, reinforcing the view that conceptual representation is a dynamic, emergent phenomenon that operates in a context-dependent manner (Barsalou, 2003; B. Malt et al., 2003). In other words, representations are susceptible to emerge, assemble and reassemble according to the communicative intent and the circumstances of the interaction.

Theories from different subfields of bilingualism research confirm the relevance of the context-dependent nature of bilingual performance. Grosjean's language mode model (2001) for one highlights the fact that movement along the language mode continuum depends on the interlocutor and the situation and changes can happen very rapidly at any moment during a conversation. The same phenomenon is described from a sociolinguistics perspective by Giles (2016) in a framework called the Communication Accommodation Theory which examines how people adjust their behaviour in social interactions. Applying Giles' concept to bilinguals, De Houwer (2019) introduces the Convergent Choice Principle (CCP) to describe the various patterns of bilingual interaction where the interlocutors tend to select the language or mix the languages according to the linguistic repertoire and preferences of the speaking partners.

2.9. Bilingual speech and cross-linguistic influence

Cross-linguistic influence (CLI) refers to the ways in which a bilingual's knowledge of one language affects their use of another. It is an umbrella term covering diverse phenomena, such as borrowing, code-switching, transfer and interference. CLI can occur in either direction between the speaker's languages and can be observed in both comprehension and production.

In bilingual speech production, both languages are typically activated at various levels, even when the speaker intends to use just one (Bialystok et al., 2009; Navracsics, 2010;

J. F. Kroll et al., 2012). As a result, structures or words from the non-target language may appear in speech. This can happen unintentionally, producing slips of interference in the target language. One example of such unintended CLI phenomena is loan translation, defined as "literal translations of concepts from the non-target language" (Backus & Dorleijn, 2009, p. 75). In other cases, non-target elements are deliberately used for emphasis, identity signalling, or interpretive purposes (Pavlenko, 2009a). These may take the form of code-switching or borrowing (discussed in more detail in the next section) and often function as communicative resources. Language dominance can be a key factor in regulating CLI: the dominant language often exerts greater influence on the less dominant one, though the direction may shift or become bidirectional over time.

CLI can surface at all levels of language. Phonological influence appears in accent, pronunciation, prosody, and rhythm, where one language shapes the sound system, stress, or intonation of the other. Lexical influence includes loan translations – translating an expression from one language word-for-word into another -, false friends, formally similar words with different meanings, or cognates and closely related words. Morphosyntactic influence can be detected in altered word order, agreement patterns, or non-target like uses of function words or tense/aspect markers. At the conceptual level, other language influence reflects differences in category boundaries when concepts are organised differently across languages, leading to differences in word choice. Lexical concepts, i.e. linguistic categories linked to words may vary across languages in terms of structure, boundary, and prototypicality (B. Malt et al., 2003). This variation may have implications on bilingual language production in terms of what representations are activated in a given context. Finally, semantic influence involves meaning extensions or narrowing originating from the non-target language.

Grojean argues that interference phenomena typically arise in the monolingual mode, when code-switching is not permitted. He distinguishes between two types of interference. The first is permanent, where traces of one language consistently appear in the other, such as a lasting accent – phenomena he associates with language knowledge. He proposes reserving the term "transfer" for these static forms. The second type is dynamic, reflecting the momentary intrusion of the other language, such as producing a non-target-like stress pattern of a word. Grosjean links these to encoding mechanisms and notes that they are more likely to occur when bilinguals are stressed, tired or emotional (2013, p. 21). A longitudinal study of English-Hungarian-Persian children conducted by

Navracsics (2014) also highlights the role of the language of emotions in parent-child communication as a likely source of CLI.

Finally, beyond overt verbal phenomena, interference may also take subtler forms. Disfluencies such as pauses, hesitations, or stuttering can occur, for instance, when a bilingual is searching for a non-existent translation of a conceptual non-equivalent (Pavlenko, 2009a).

2.10. Code-switching in bilingual speech

One of the most distinctive features of bilingual language use is code-switching – the alternate use of two or more languages within the same utterance or conversation (Auer, 2005; Poplack, 1980; Stavans & Swisher, 2006). While switching most commonly occurs between utterances, it can also happen at virtually every linguistic level: phonological, morphosyntactic, lexical, and semantic.

A central model addressing code-switching is Myers-Scotton's Matrix Language Frame (MLF) model (1993), which focuses on types such as intrasentential and insertional code-switching. In this framework, the matrix language provides the grammatical structure into which elements from the embedded language are inserted. The matrix language is typically identified as the one contributing to the majority of lexical items in a given discourse.

While Myers-Scotton introduced the terms "matrix language" and "embedded language" (1993), there are alternative terms used by other scholars referring to the same concepts: "base language" and "guest language" used by Grosjean (2013, pp. 18–20), and "host" or "recipient language" and "donor language" used by Deuchar (Deuchar et al., 2007).

Classification of other language elements in the matrix language has been the subject of an ongoing discussion among researchers. Most scholars agree that the level of integration is a measure for distinguishing between code-switching and borrowing, but conclusions lead to very different categorisations. Grosjean refers to code-switching as a complete shift "to the other language before shifting back to the base language" (2013, p. 19), while he defines borrowing as a phenomenon "which involves integrating elements of one language into the other language". Following Treffers-Daller's review (2010) he further breaks down cases of borrowing into two categories: loanwords, when both form and content are borrowed, and loanshifts, when either the meaning of a base language

word is extended to a word of the other language, or when literal translations and/ or word order arrangements of other language expressions appear in the base language utterance.

The MLF framework also provides a lens for examining the degree of linguistic integration of inserted elements. Myers-Scotton distinguishes between more central forms of integration, such as subject-verb agreement and tense/aspect marking, and more peripheral traits. This distinction allows researchers to differentiate between code-switching instances, which display central grammatical integration, and borrowings, which tend to show only peripheral adaptation.

Supporting this view, evidence from Stammers and Deuchar (2012) highlights frequency as an important factor in determining whether donor-language items become integrated. Their study focuses on the insertion of English verbs in Welsh discourse. The results demonstrate that listed English origin items are similarly integrated as native Welsh verbs of the same frequency and that there is a positive correlation between frequency and level of integration. Unlisted English verbs however seem to be less integrated as listed English origin verbs or native Welsh verbs with the same frequency A major implication of Stammers and Deuchar's findings is that listedness of donor language items - whether they are established in the recipient language's lexicon – is a significant factor in distinguishing between code switching and borrowing. As we have seen, Myers-Scotton's and Stammers and Deuchar's categorisations are much more inclusive regarding cases of code-switching, and more exclusive as to cases of borrowing, compared to other scholars (Poplack et al., 1989; Poplack & Meechan, 1998; Grosjean et al., 2013).

Classifications of code-switching and borrowing discussed above reflect a linguistic approach. However, these phenomena are also a psycholinguistic issue. Using other language elements is far from being an "error" or a result of "careless" language use, a view often held by observers with monolingual bias. In reality, code-switching in bilingual speech is always rule governed and fulfils various purposes (Grosjean et al., 2013), such as using the most appropriate word or expression, addressing a linguistic need (as described for instance by the Complementarity Principle), adopting group conventions, including or excluding others, or gaining higher prestige and acknowledgement.

Studies focusing on the language use of the Hungarian minority in Ukraine have produced comparable findings. Márku (2013) found that code-switching consistently serves a

pragmatic function, enabling speakers to adapt to changing circumstances, accommodate monolingual interlocutors, or adjust to formal situations in order to make their message more effective, efficient, and credible. Code-switching may also serve to express solidarity, signal status, or deliberately exclude others from an interaction. Further studies investigating the language use of English-Hungarian bilinguals have confirmed that code-switching is a normal language contact phenomenon in these communities (Bartha, 1993; Fenyvesi, 2005; Kontra, 1990; Kovács, 2001; Németh, 2002; Vančoné Kremmer, 1998).

Speech planning and production, unlike comprehension, is an intentional process, theoretically allowing speakers to select which language to activate. However, research shows that both languages remain active to some degree during production, making complete control over language choice unlikely (J. F. Kroll et al., 2012). Because lexical items from both languages are activated through spreading activation, bilinguals must inhibit elements from the non-target language to avoid interference.

The ability to manage interference and switch languages has been examined through Green' Inhibitory Control Model (ICM) (1986; 1993, 1998). This model explains switching costs – the time required to reactivate a language after inhibition – by linking them to language dominance. Stronger languages require stronger inhibition, resulting in greater reactivation costs. Later refinements to the model (Fink & Goldrick, 2015; Schwieter & Sunderman, 2008) showed that when the two languages are of similar strength, switching costs can be symmetrical, suggesting a more balanced control system.

Recent work has expanded the focus of code-switching research to the role of cognates – words similar in form and meaning across languages – in facilitating code-switching. Broersma and colleagues (Broersma et al., 2020; Broersma & De Bot, 2006) investigated triggered code-switching in Welsh-English bilinguals, finding that the presence of cognates increased the likelihood of switching. Speakers who used more cognates overall also tended to switch languages more often, indicating that lexical similarity can act as a catalyst for cross-linguistic activation. Typological distance plays an important role here, since cognates are more common in language pairs that are typologically closer.

Other studies have examined the flexibility of language control mechanisms. Mosca and de Bot (2017), for example, found that Dutch-English bilinguals with small differences in language dominance showed no consistent dominance effect on switching costs in production. Instead, they reported a "paradoxical language effect" – faster responses in

the L2 than in the L1 – suggesting that language control is more adaptive and context-dependent than fixed models assume.

Green and Abutalebi (2013) investigated this process by integrating behavioural and neuroimaging evidence, proposing that bilingual speech production relies on a set of language control processes. Within their Adaptive Control Hypothesis, they describe three interactional contexts – single language, dual language, and dense code-switching – and identify eight types of cognitive control that are engaged depending on the demands of each context.

They identify two processes that support communication in a single language context. Goal maintenance ensures that the speaker adheres to the task of using one language while avoiding the other. Effective goal maintenance requires managing interference from the non-target language, which, following Kerns et al.'s (2004) conceptualization of interference control, is achieved through two complementary processes: conflict monitoring – detecting cues in the environment that might prompt activation of the other language (e.g. overhearing someone speak it) – and interference suppression, which inhibits the competing linguistic representations triggered by such activation.

Dual-language contexts, where both languages are actively available for communication impose greater cognitive control demands. Smooth switching between languages in such contexts is supported by salient cue detection, response inhibition, and task engagement/disengagement These processes allow the speaker to halt ongoing production in one language and shift efficiently to the other (D. W. Green & Abutalebi, 2013).

Previous research indicates that bilinguals with high proficiency in both languages and frequent code-switching experience show enhanced efficiency in conflict monitoring and inhibitory control (Barbu et al., 2018; Hartanto & Yang, 2016; Verreyt et al., 2016). In contrast, bilinguals whose experience is dominated by single-language contexts and who rarely code-switch tend to incur higher switching costs, but demonstrate stronger skills in goal maintenance and interference control (Han et al., 2022).

Code-switching research reveals that language choice in bilingual speech is shaped by a complex interplay of linguistic structure, lexical activation, inhibition, cognitive flexibility and frequency effects. As a highly effective interactional tool, code-switching reflects the adaptive nature of the bilingual mind, capable of integrating elements from multiple languages to meet communicative demands.

2.11. Theoretical grounding and conceptual framework of the current study

With the evolution of theories and models designed to explain bilingual language processing, it has become increasingly clear that bilinguals represent a highly versatile group of language users. This diversity can be partly attributed to the broad range of factors regulating bilingual linguistic behaviour. Nevertheless, former studies also reveal considerable variation in bilingual performance across tasks (Barsalou, 2003; Cooper, 1971, as cited in Grosjean et al., 2013; B. Malt et al., 2003). Such findings necessitate the revision of earlier theories to gain a deeper understanding of how bilinguals navigate multiple languages in various communicative contexts. Beyond their theoretical implications, these insights also offer an opportunity to reconsider the methodologies adopted for studying bilingual performance.

As reviewed in the previous sections, models of speech production and theories of the bilingual mental lexicon have evolved over time in an effort to explain how linguistic resources are mobilised to best serve the speaker's communicative intent. Most early models assume that while languages differ in phonological and morphosyntactic forms, meanings or concepts are largely shared (Costa, 2005; J. F. Kroll & Stewart, 1994). Consequently, research primarily focused on mapping form to meaning, examining the strength of interlingual connections, without addressing the nature of conceptual representation itself (Groot, 2002; J. F. Kroll & Tokowicz, 2009).

A different line of research on concepts in the bilingual lexicon has started investigating how word forms map onto real-world referents (Cook et al., 2006; Pavlenko, 2002a, 2003, 2008; Sachs & Coley, 2006). This shift of focus is more concerned with the internal structure of linguistic categories, i.e. mental representations. Findings from this line of inquiry challenge the assumption of a completely shared conceptual store and pointing instead to a more complex organization. Instead of asking whether representations are shared or separate, these studies rather examine what aspects are shared and what remain language-specific in particular lexical concepts. This line of research tries to reveal how bilinguals' categories compare to those of monolingual speakers of their respective languages. By doing this it becomes possible to uncover the effects of cross-linguistic differences on conceptual representations, and, in turn, on bilingual production.

Acknowledging that conceptual representation is a dynamic and context-dependent phenomenon (Barsalou, 2003; B. Malt et al., 2003), further research is needed to identify the factors that influence language activation and to clarify the place of language selection in the bilingual speech production. As de Bot and Bátyi (2022) suggest, there is a need for more empirical work examining the factors in language activation proposed by Grosjean (2013) – such as the languages involved, interlocutors, and topic – as well as those identified by Kroll et al. (2006), including language proficiency, dominance, context of acquisition, and processing demands.

Moreover, further inquiries are required to investigate how equivalence relationships shape bilinguals' linguistic categories, particularly in language pairs that have received less scholarly attention. Identifying objective differences between representations can expand our understanding of conceptual boundaries across new language combinations. At the same time, analysing subjective differences in empirical data can provide insights into mental representations of specific types of bilinguals within less explored language pairs.

From a methodological perspective, many psycholinguistic studies of concepts in the bilingual lexicon have focused on interlingual connections relying on a variety of reaction-time tasks, such as lexical decision, picture naming, translation, translation equivalent recognition, semantic categorization and the Stroop interference task. These studies are typically based on the assumption that faster reaction times indicate stronger connections between word forms, which in turn are taken to point to shared meanings (Pavlenko, 2009a).

However, the strength of interlingual connections may be influenced by a wide range of other factors, including proficiency levels in each language, contexts of acquisition and use, and the frequency with which particular word pairs are coactivated. Furthermore, the reliance on tasks involving decontextualised words, isolated pictures of prototypical objects, as well as the avoidance of cross-linguistic differences for the sake of stimulus comparability may have created a somewhat distorted picture of the bilingual lexicon. Under such experimental conditions, bilinguals are most likely to activate similar representations across their languages (J. F. Kroll & Tokowicz, 2009). To address these limitations, Pavlenko (2002a, 2003, 2008; Pavlenko & Driagina, 2007) tested and strongly advocated for the use of narrative tasks in the study of bilingual linguistic categories. Narrative data offer several advantages, including greater ecological validity

through the use of words in context and sensitivity to cross-linguistic differences (Pavlenko, 2009a).

Given the context dependent nature of bilingual performance, research methodologies should integrate both psycholinguistic and sociolinguistic perspectives when examining bilingual speech. The fluidity of mental representations often emerges from the interplay of individual and social factors. Therefore, a comprehensive study and interpretation of narrative data require an interdisciplinary approach to data analysis.

Chapter 3. Methods

3.0. General approach and selected research methods

The current dissertation is based on three case studies designed to investigate conceptual representation in young bi- and multilinguals, through the analysis of their speech production. Its primary focus is the effect of cross-cultural and cross-linguistic differences on language production with particular attention on language choice strategies and CLI phenomena. One major characteristic of qualitative inquiry is that it focuses on meaning in context (Merriam & Merriam, 2009). Accordingly, the research design of this dissertation incorporates three components which facilitate a comprehensive observation of bilingual language processing and language use: the selection of methods used for data collection, data processing and data analysis.

3.1. Case study methodology for qualitative inquiry

Bilingualism has been examined through a wide range of disciplinary approaches and methodological traditions. Since language use is profoundly influenced by personal, social, cultural, and situational factors, qualitative methods are particularly well-suited for research in this area (Dörnyei, 2007). These methods aim to explore specific contexts in depth, providing valuable insights into the nuanced ways in which such factors shape language use and communication

Discussing the strengths and weaknesses of qualitative research, Dörnyei (2007, pp. 39–42) identifies several key characteristics that define this approach. Qualitative research can be compared to a journey into uncharted areas, making it inherently exploratory in nature. This exploratory quality allows researchers to address the research problem using emergent methods, which offer flexibility and openness in uncovering new details. Consequently, this approach can expand our understanding of the phenomena under investigation. The bottom-up nature of qualitative inquiry is particularly effective for addressing "why" questions, as it prioritizes deep exploration of underlying causes and motivations. Additionally, the participant-sensitive nature of qualitative research is invaluable in navigating complexity. It not only allows researchers to delve deeply into the data but also has the potential to reveal new connections between variables, thereby broadening the scope of understanding of the research problem.

One of the methods traditionally used in qualitative research is case studies. Creswell's defines this type of design as "the study of an issue explored through one or more cases within a bounded system" (2009, p. 73). The „bounded system" refers to the creation of a solid research design that allows a disciplined, systematic inquiry well-grounded on existing theory and conducted with consistency.

Creswell also notes that unlike studies that analyse cross-sectional data from a large number of participants, case study research typically focuses on a single case or a small set of cases. Consequently, its findings are inherently particularistic, uncovering what is unique by examining the complex interplay of influencing factors in depth. Case studies are particularly suitable for investigating processes (Merriam & Merriam, 1998). This type of research offers a „flexible and highly context-sensitive micro-perspective" of the studied phenomena, which has the potential of „uncovering the subtle personal processes (Dörnyei, 2007, pp. 29–30). Dörnyei also argues that although the particulars of a study typically do not generalise, the main ideas and the process observed might. Owing to the discovery-oriented, open-ended character of qualitative inquiry, a descriptive approach to data analysis is most appropriate, aiming to reveal insights based on what emerges from the data. Finally, an additional feature of case study research is that it is heuristic (Merriam & Merriam, 1998), as its final analysis relies heavily on the researcher's ability to identify patterns, draw logical conclusions, and interpret findings within a broader conceptual framework.

In line with the study's aim of conducting an in-depth inquiry, interviews were selected as the primary method of data collection. This technique offers advantages similar to those Pavlenko attributes to narrative elicitation tasks (2009a). Linguistic data collected through semi-structured interviews possess multiple advantages. First, the non-experimental setting ensures the observation of language production in context. This is especially beneficial, since the primary focus of the current dissertation pertains to features of language use that more often than not are dynamic and context dependent. Second, the narratives produced in response to interview questions reflect a more realistic sample of the participants' actual language use as the interview questions merely serve as guidelines, but participants are encouraged to elaborate on their ideas freely. Third, semi-structured interviews ensure a fair amount of flexibility for the interviewer, for instance, the opportunity to ask for clarification, encourage the participant to elaborate further on a topic, in other words, make on-the-spot decisions and direct additional attention to

anything that may be relevant for the aims of the study. As an additional factor, the interviewer's participation also contributes to the exchange. Beyond the articulation of the questions, the interviewer genuinely reacts to participant responses to provide feedback, facilitate the conversation, and build and reinforce the rapport with the participant. In case of child participants, it is particularly important to provide support and react with empathy to emergent issues such as sensitivity or anxiety concerns. Along the same lines, the physical environment may also have an impact on participants' behaviour and general sense of security: a familiar setting, i.e. the family home, therefore may provide comfort for young participants. Finally, linguistic data gained from interviews are also sensitive to cross-linguistic differences, which have important implications for bilingual language production (Pavlenko, 2009a) and which are at the focus of the present dissertation.

Video recording the interviews was beneficial because the recordings yield to the observation of multiple factors of the interaction (Merriam & Merriam, 1998). First, the interaction itself, i.e. what is being said and how, is an area where recordings facilitate a detailed observation with the possibility of replaying parts when necessary. Not only the wording of the participant responses can be accurately noted, but subtle elements, particular features of speech, such as intonation, timing, pace, the length of pauses, and phonetic aspects can also be observed. These features may contribute to the validity of analysis and interpretation. Secondly, thanks to video recordings, it is possible to take note of the individual characteristics of the participants. Besides the general individual factors, it is possible to discern non-verbal clues such as movements of the head and the eyes, shifts in posture, hand gestures, and facial expressions, which add to the context of the interview. Such clues may have relevance in gaining a deeper understanding of the communicative intent. For instance, facial expressions may be crucial in recognizing when the participant uses humour or says something with a sarcastic tone. Body language may provide clues as to how the participant's anxiety level changes, which is known to have an impact on certain features of language use, such as the length of the responses, or the ease with which the participant is involved in the conversation. Finally, recordings offer an opportunity to observe the physical setting in which the interaction is taking place.

This research design puts cross-linguistic differences into focus and creates a communicative setting in which CLI phenomena can be observed in context. Observing

CLI in this way can provide insights into the mental processes involved in speech planning and production, particularly in situations where conceptual representations may not fully overlap.

3.2. Participants

Two bilingual (A and B) siblings and a trilingual teenager (C) participated in the studies. Participant A is an 11-year-old female English-Hungarian bilingual, and Participant B is an 8-year-old male English-Hungarian bilingual child. Participant C is a 13-year-old French-Hungarian-English dominant female multilingual teenager.

The criteria for selection derive from the particularities of the research design. Since the primary focus is on the language use of children who have acquired their languages in early childhood, and who also have experience in two different cultures, the participants had to meet two criteria: they had to be early bilinguals who have lived and studied in two different countries.

3.2.1. Bilingual participants

Participants A and B were born to Hungarian parents residing in the U.K. at the time when the children were born. The parents are Hungarian native speakers with intermediate level of English proficiency. They had moved to the U.K. for employment purposes (before the children were born) with the definite intention of relocating back to Hungary after a few years (which had happened a year before the data collection). This defined the family language policy: they followed the one language at home, other language at school rule. While they were very supportive in the children's progress in English at school, they also intended to raise their children not only to be native speakers of Hungarian but ones, whose Hungarian is devoid of all traces of English, the majority language eventually acquired by the children through immersion and participation in English speaking educational institutions. For this goal, Hungarian was used exclusively at home. Moreover, after the children started attending nursery school and eventually, school, and their English started to exert an influence on their Hungarian, the parents made every effort to eliminate, as much as possible, all forms of English influence from the children's Hungarian: for example, code-switching was discouraged, and non-Hungarian phonemes were corrected. Although one might think this must have been a difficult and tiresome practice not without conflicts or frustration, the parents explained that they had a good reason to do so: they wished to protect the children from being singled out as "foreigners"

or “different” after their return to Hungary. In addition, both participants reported to have used English at school exclusively since there were no Hungarian classmates in their study group. The major implications of these circumstances of language acquisition are that both Participant A and B grew up with extensive experience in single-language use in their daily life, each of their languages belonging to a separate domain of life.

Growing up in an English-speaking environment, the siblings still had regular opportunities to use Hungarian outside the home due to two cousins residing nearby and participation in an active local community. Besides the parents’ close attention to the children’s language development, they also made sure to strengthen the children's sense of Hungarian identity. They became the motor of the local Hungarian community, organising family gatherings, barbecues and eventually a weekend Hungarian school to promote the cultural education of the children in the community. Participant A and B were active organisers and participants of these events, helping their parents in various activities ranging from logistics, to cooking.

With all the effort to ensure their children’s Hungarian education, the parents were also very supportive towards the children’s progress in English as well as their cultural immersion. Evidence from both the parental interview and the children’s accounts proves that the parents gave all the support for the children’s academic success, with extra practice and support with home assignments. At one point in the parental interview the father made the proud remark that A and B will carry the U.K. experience throughout life and grow up to become open-minded and tolerant adults who value cultural diversity. To sum up, the parents’ attitudes towards the children’s language development and cultural education created a safe and supportive environment for Participant A and B for growing up as bilinguals embracing the languages and cultures they were exposed to early in their life.

Although the siblings come from the same family background, with similar experience in the two cultures, they possess distinct features of language development due to the different time span of UK residency and experience in the UK education system. While Participant A was 10 when the family moved back to Hungary, with altogether six years of experience in pre-school and school (3+3years), Participant B was only 7 with 3 years of experience in pre-school and only 1 year of school experience. As a consequence, he had significantly less exposure in the English-speaking academic context.

3.2.2. The multilingual participant

Participant C was born to a Hungarian-French mixed marriage where the father is a French native speaker with a high level of English and basic Hungarian knowledge, while the mother is a Hungarian native speaker multilingual, with very high proficiency of English, German and French. When Participant C was born, the family lived in Paris, France, but they moved to London, the U.K. when the child was 2.5 years old. Originally the family tried to follow a slightly adapted OPOL policy at home (the father using French exclusively and the mother using mostly Hungarian and occasionally French in parallel from the earliest times), but, as is often the case in multilingual families, putting this into practice was often complicated or impossible because of the father's limited knowledge of Hungarian. With relocation to an English-speaking environment the situation became even more complex when, for example, friends from school visited, bringing English into the home as the only language everyone shares. A younger brother was born while the family already lived in the U.K. The children mostly use French between them. With time English became Participant C's dominant language although she proves to be the most consistent family member who insists on using Hungarian with her mother and using French with her brother and father whenever possible. In addition to her three most frequently used languages, the participant also has basic knowledge of German and rudimentary knowledge of Russian acquired through formal instruction.

3.3. Data collection

Data collection took place in multiple stages using three different instruments: a questionnaire and two types of interviews backed up by audiovisual recordings. In the first stage, preliminary contact was established with the parents through an exchange of e-mails and short video chat sessions which provided an opportunity for me to make the first introductions, inform the parents about the major goals of the research and get the consent of the parents for conducting the child interviews and using the data for scientific purposes. Having done all this, the parents completed the parental version of the Language Experience and Proficiency Questionnaire (LEAP-Q) (Kaushanskaya et al., 2020), a validated tool widely used in bilingualism and multilingualism research, to gain preliminary information on the participants' language profiles, their language histories, and the language constellation at the time of data collection. It is important to note that the parents' assessments of their children's proficiency and relative exposure to each language across different domains of activity are intended to provide broad indication

rather than an exact measure. Therefore, no final conclusions are drawn from these data alone.

In the next stage, two in-depth parental interviews were conducted to build a fuller picture of the children's language acquisition, individual developmental trajectories, as well as family language practices, and parental language and culture related attitudes. Planning these interviews involved processing the information gained from the LEAP questionnaires and creating a topical outline that is flexible enough to allow room for any digression that allows a more profound understanding of the children's language acquisition background. For Participants A and B, both parents joined the online interview, whereas for Participant C the interview was conducted in person with the mother only.

Information from the parental interviews was fed into the semi-structured child interviews making sure each child interview is tailor-made and reflects the particular features of the child's experience. Careful planning was central at this stage since asking the right questions was the key of gaining rich and authentic data for the study. Since the theoretical foundation of the interviews was that language production is context dependent and cross-linguistic differences are likely to trigger CLI phenomena, the interview questions were built around culturally primed topics, such as school life, food, and holidays and celebrations, including family events as well as selected national holidays or cultural celebrations. These topics were to be discussed in one language as much as possible. The aim was to collect empirical data on bilingual language planning and processing from the participants' responses as the children were asked to retrieve memories gained in one linguistic context and report on them in the other language. While the participants were asked to use one language at a time, instructions did not categorically disallow the use of the other language(s). The key motivation here was to see how the children manage their languages in the bilingual mode.

Depending on the particularities of each participant's personal experience and level of interest, these broad themes are discussed at varying length in the individual interviews. The topic of school, for instance proved to be relatable for each participant as all of them gained experience in various levels and types of education. Besides attending institutions of formal education, all of them were involved in week-end schools for periods of varying length as part of their minority language and culture education. The topics of food and celebrations, on the other hand, are canvassed to the extent corresponding to each

participant's ability to recall certain events or willingness to express their preferences or personal views. In some of the interviews the conversation on food is limited to the discussion of canteen food, while in others, cooking and culinary traditions of the family are also embraced as emergent topics of interest.

As a benefit of the flexibility allowed by the semi-structured interview design and the overarching objective of collecting spontaneous speech data by encouraging the participants to elaborate on any points that they are willing to talk about, some of the interviews induced the discussion of additional topics, many of which are related to the bilingual experience: language attitudes, varying degrees of competences in various languages, language learning, language awareness, questions of identity, and family language practices.

The above-mentioned topics are discussed in each of the participants' languages with an underlying design to encourage the use of one language to recall memories experienced in a different linguistic environment. The languages involved are English and Hungarian for Participants A and B, and French, English and Hungarian for Participant C.

The semi-structured interviews were carried out and video recorded in seven separate sessions in each of the children's languages (English and Hungarian with Participants A and B; English, French and Hungarian with Participant C). The interviews with the two younger participants (Participants A and B) took place in the comfort of their home. In their case, an intentionally informal seating arrangement where both the interviewer and the respective participant were seated on the floor was meant to further alleviate the pressure of the formality of being interviewed. Due to logistics, the interview with Participant C was carried out in a rented holiday home in Hungary, while the family was on visit during the summer holidays. Nevertheless, the setting ensured a safe and quiet environment for each interview. Since Participant C is somewhat older than the other two, and certainly more mature, the physical space seemed less important as reflected in the poise and the calm and collected conduct of the interviewee.

As a result of data collection, an extensive dataset has been generated. Table 1 demonstrates the size of the corpus. In the first set, the duration of the interviews is demonstrated in each language. The second set showcases the wordcount of the transcribed data for each interview. In the third part, the distribution of the data are shown for each participant. Table 2 highlights the distribution of the data across the languages.

Table 1 A quantitative overview of the size of the corpus

	Participant A	Participant B	Participant C
Duration			
English	50m	38m	1h 3m
Hungarian	47m	32m	47m
French	--	--	46m
Word count			
English	6942	2713	10 274
Hungarian	6466	4022	5202
French	--	--	6892
Distribution across participants			
	31%	17%	52%

Table 2 Distribution of data across languages

English	Hungarian	French
47%	37%	16%

3.4. Data processing and analysis

As part of data processing, the video recorded interviews were first transcribed to make the data ready for analysis in a written form. It is important to note here that the method selected for transcription, using the CHAT format (MacWhinney, 2000), makes it possible to link written form to the corresponding sections of the video, thus allowing an easier access to contextual features and non-verbal cues. In the next phase, all instances of non-target-like performance were identified in order to prepare them for analysis. Contextual factors again were at the forefront in this stage, as special attention was directed on the immediate environment of each element, often leading to the selection of sections of responses rather than isolated words or expressions.

Data analysis also involved a comprehensive approach through the categorization of the selected elements according to form (implicit and explicit forms) and the level of language they contained transfer phenomena (conceptual, semantic, grammatical, etc), as well as the discussion of contributing factors, interlingual considerations and implications on our understanding of the bilingual mental lexicon.

Data processing started with transcribing the child interviews using the CHAT transcription format (MacWhinney, 2000) particularly developed for the processing of bilingual data. One advantage of this format is that transcription involves linking the written form to the corresponding section of the recordings. Since oral language extends beyond being a mere string of words, it is often the case that both linguistic and paralinguistic elements need to be taken into consideration for a comprehensive interpretation of bilingual phenomena.

Data analysis began with the identification of implicit and explicit forms of CLI. In case of implicit CLI, the phenomena were further categorized according to the linguistic level at which interlingual transfer occurred, namely conceptual transfer, lexical/semantic transfer, and structural transfer. As for explicit CLI, instances of code-switching and borrowing were identified.

The overall approach to data analysis heavily relies on the premise that knowledge gained from case studies is deeply embedded in context (Merriam & Merriam, 1998). Consequently, the discussion of results from each case study is presented separately, taking into account individual factors, such as language history, interlingual factors, and contextual considerations.

CLI phenomena are sorted into two main categories: implicit and explicit language phenomena, involving the appearance of non-target language elements. Implicit cross-linguistic influence is defined as the unconscious or unintentional transfer of linguistic or conceptual knowledge or patterns in bilingual speech from one language to another, without changing the language.

The category of implicit CLI is further broken down into subcategories to account for transfer phenomena occurring at various levels of language. Conceptual transfer is defined as the influence of one language's conceptual categories and representations on the use of another language. It occurs when a speaker interprets, categorises, or describes objects, events, emotions, or experiences according to the category boundaries,

prototypes, or conceptual distinctions associated with the non-target language. Lexical/semantic transfer is defined as a speech phenomenon in which knowledge of the relationship between words and meanings in one language influences lexical selection or word use in another language. Finally, structural transfer is defined as the influence of one language's grammatical or formal organisation on another. Explicit cross-linguistic influence is defined as the use of elements from one language to another in intrasentential or intersentential positions with changing the language.

The category of explicit CLI is further broken down into two subcategories, code-switching and borrowing. Distinction between these two subcategories is based on Stammers and Deuchar's previously discussed criteria (2016). Code-switching is defined as the use of material from both of a bilingual's languages within the same conversation or utterance, for a whole clause, a phrase or a single word. Borrowing is categorized as an item originating in one language that has become incorporated into the lexical system of another. A well-established borrowing may be used even by monolingual speakers of the recipient language.

In the next three chapters, CLI phenomena are presented, analysed and discussed in the context of the three case studies. The same analytical categories and general methodology were applied to both the bilingual cases and the multilingual case in order to ensure theoretical and methodological alignment and to support a comparative perspective. Nevertheless, the greater complexity of the multilingual case, particularly the potential interplay among multiple languages, required specific analytical considerations. For this reason, the multilingual data are presented in a separate chapter.

Chapter 4. Bilingual case studies

4.1. The linguistic background of participants

4.1.1. Participant A

Participant A is an early bilingual with L1 Hungarian and L2 English. Based on the parents' report, she began acquiring Hungarian from birth and became fluent at the age of 3. She began acquiring English at the age of 1 and became fluent at the age of 4. She spent 10 years and 8 months in an English-speaking context (the U.K) with altogether 6 years of experience in a school where English was spoken. She had lived one year and five months in Hungary and had had eleven months of experience in a Hungarian school at the time of data collection. As reported by the parents, on a scale of 10, she identifies with the Hungarian culture completely (score 10), and with the English culture moderately (score 5).

Table 3 demonstrates the distribution of exposure to the participant's languages.

Table 3 Participant A's exposure to languages at the time of data collection

Hungarian	English
70%	30%

Table 4 illustrates the parents' ratings, on a scale from zero to ten, to what extent the participant was exposed to each of her languages in various contexts at the time of data collection:

Table 4 Participant A's exposure to languages in various contexts

	Hungarian	English
Interacting with friends	10	2
Interacting with family	10	0
Watching TV	5	5
Listening to radio/music	5	9
Reading	5	5

Table 5 summarizes how much the following factors contributed to the participant's language development on a scale from zero to ten.

Table 5 Contributing factors to the participant A's language development in each language

	Hungarian	English
Interacting with friends	7	10
Interacting with family	10	1
Reading	5	7
Language tapes/self instruction	1	5
Watching TV	7	9
Listening to the radio	1	1

Table 6 below demonstrates which language she would choose for various activities.

Table 6 The languages participant A would choose for various activities

	Hungarian	English
Speaking with a person who is equally fluent in all of her languages	70 %	30 %
Reading a text translated into each of her languages	60 %	40 %

On a scale from zero to ten, the participant's level of proficiency in speaking, understanding, and reading, as reported by the parents, is demonstrated in Table 7.

Table 7 Participant A's reported proficiency levels according to various language skills in each language

	Speaking	Understanding spoken language	Reading
Hungarian	10	10	8
English	8	9	7

4. 1.2. Participant B

Participant B is an eight-year-old male bilingual whose first language is Hungarian and whose second language is English. He began acquiring Hungarian from birth and became fluent at the age of three. He began acquiring English at the age of one and became fluent at the age of four. He spent seven years and three months in the U.K, with altogether three years of experience in a school where English was spoken. He had spent one year and

three months in Hungary with one year of experience in a Hungarian school at the time of data collection. On a scale of ten, he identifies with Hungarian culture completely (score 10) and with English culture moderately (score 5).

Table 8 demonstrates the distribution of exposure to the participant's languages:

Table 8 Participant B's exposure to each language

Hungarian	English
80%	20%

Table 9 illustrates the parents' ratings, on a scale from zero to ten, to what extent the participant was exposed to each of her languages in various contexts at the time of data collection:

Table 9 Participant B's exposure to languages in various contexts

	Hungarian	English
Interacting with friends	10	1
Interacting with family	10	1
Watching TV	6	5
Listening to radio/music	3	5
Reading	8	3

Table 10 below summarizes how much the following factors contributed to the participant's language development on a scale from zero to ten.

Table 10 Contributing factors to participant B's language development in each language

	Hungarian	English
Interacting with friends	7	10
Interacting with family	10	1
Reading	5	7
Language tapes/self instruction	1	1
Watching TV	7	9
Listening to the radio	1	1

Table 11 below demonstrates which language she would choose for various activities.

Table 11 The languages participant B would choose for various activities

	Hungarian	English
Speaking with a person who is equally fluent in all of her languages	90 %	10 %
Reading a text translated into each of her languages	80 %	20 %

On a scale from zero to ten, the participant's *level of* ***proficiency*** in speaking, understanding, and reading, as reported by the parents, is demonstrated in Table 12.

Table 12 Participant A's reported proficiency levels according to various language skills in each language

	Speaking	Understanding spoken language	Reading
Hungarian	9	9	8
English	6	7	6

As the youngest of the participants, the child seemed quite nervous during both interviews. Several measures were taken to alleviate his anxiety; nevertheless, it must be noted that he remained rather tense and uneasy throughout both sessions. Even so, he was cooperative and responded to all questions to the best of his ability. His answers were generally brief, and it was frequently necessary to precede content questions with a series of yes/no questions to encourage him and to help sustain the conversation.

The interviews confirm the data provided by the parents about the participant's language constellation. Overall, he expressed himself fluently in his dominant language Hungarian. His responses in his less dominant language, English, were occasionally hesitant, often disrupted by false starts, self-corrections, and filled or unfilled pauses of various length. Some of the inaccuracies in English, especially the ones at the beginning of the interview, can be accounted for by his anxiety (*we was on the beach*). Occasionally, when the discussion was directed towards topics that he found exciting e.g. when talking about the prospect of setting up a zipline in the garden his speech became more fluent and relaxed.

4.2. Results and data analysis

In this sub-chapter, based on the transcripts of the oral interviews conducted with Participant A and B, all the phenomena that fall in the category of cross linguistic influence (CLI) will be presented.

4.2.1. Implicit forms of CLI

4.2.1.1. Conceptual transfer

The participants' knowledge of the world includes experiences gained in more than one country and more than one language from their early years. The concepts they use for understanding the world around them have evolved from these diverse experiences, integrating elements from the various cultures and languages in unique combinations. CLI phenomena at the conceptual level can be attributed to the co-activation and interference of conceptual features from the non-target representations.

Table 13 summarizes the instances of conceptual transfer observed in the interviews with the two bilingual participants. All instances occur in Participant A's interviews.

Table 13 Instances of conceptual transfer in the interviews conducted with Participants A and B

item	translation	target structure
Participant A, interview in Hungarian		
mosogató öö folyadék üvegbe ből	in a from a dishwashing liquid bottle	mosogatószeres flakonból
kettő húsos és egy öö vegetáriánus ***választék***	two meat-based [options] and a vegetarian choice	két húsétel és egy vegetáriánus étel

The following sections present each instance of conceptual transfer in context, followed by a detailed analysis demonstrating the non-target conceptual elements that emerge in the utterances.

Example 1 is taken from a portion of the interview in which Participant A recalls a past school project. The interview was conducted in Hungarian and the project in question was a home assignment issued set at her school in the U.K.

Example 1

INV: És milyen feladatot választottál még ami ilyen, amire úgy emlékszel, hogy tetszett?
And what other projects did you chose which you remember to have liked?

PAR: Szerintem	*volt egy*	*o*	*ja igen*	*öööö*	*egy*	*submarine-t*
I think	there was a	s[ort of]	oh yes	er	a	submarine.N.infl.obj

kellett csinálni	*és*	*öö*	*ilyen*	*öö*	***mosogató***	*öö*	***folyadék***
had to make	and	er	sort of	er	dishwashing	er	liquid

üvegbe	*ből*	*csináltuk*	*és*	*aztán*	*abból*	*vágtunk*	*ki ablakokat.*
in bottle	from	made	and	then	from it	we cut	windows

I think there was a **s**(ort of) oh yes er we had to make er a submarine and in a/from a er dishwashing er liquid bottle and we cut windows in it.

(Excerpt retrieved from the interview in Hungarian with Participant A)

This sequence contains multiple speech phenomena most of which, as well as their interrelatedness, will be discussed in a later section. Here, however, the analysis is restricted to conceptual transfer and focuses exclusively on the non-target phrase "*mosogató folyadék üvegbe*" (*dishwashing liquid bottle*; highlighted in bold in the excerpt). The phrase can be regarded as a direct transfer of the English conceptual representation *dishwashing liquid bottle*. The elements of the transfer are summarised below:

English concept	**Utterance in Hungarian**	**Target Hungarian concept**
dishwashing liquid	mosogató folyadék	mosogatószer
bottle	üveg	flakon

In English, *dishwashing liquid* is a compound noun consisting of *liquid* modified by *dishwashing*. The Hungarian target item is also a compound (mosogató + szer; dishwashing + detergent), but unlike the English expression, *mosogatószer* conceptually encodes the "liquid detergent" element without requiring the overt lexical item *folyadék* (*liquid*) in the surface structure. The appearance of *folyadék* in the participant's utterance

therefore points to the influence of the English concept, which explicitly specifies the detergent's fluid form.

A similar transfer is observable in the choice of "*üveg"* for *bottle*. In English, *bottle* is a category that encompasses both glass and plastic containers, whereas Hungarian *üveg* is used predominantly for glass containers. The appropriate target term in this context is *flakon* (for a more detailed discussion, see Section 2.8). The use of "*üveg"* thus reflects the extension of an English category boundary into Hungarian.

Finally, the example also reflects a morphosyntactic difference between English and Hungarian modifier constructions. English compounds are formed through juxtaposition (e.g. *dishwashing* + *liquid* + *bottle*), while Hungarian typically requires derivational marking on attributive modifiers. Accordingly, the target structure *mosogatószeres flakon* is derived by adding the suffix, *-s, -os/-es/-ös* to the modifier: *mosogatószer* + *es* + *flakon*. This suffix is absent from the non-target structure: the morphologically expected form would be *mosogató folyadék +os + üveg = mosogató folyadékos üveg*. The omission of the suffix in the actual utterance provides further support for the observation that the utterance was formulated based on the English representation.

Example 2

The quoted passage is taken from the interview in Hungarian, where canteen food in the U.K. and that in Hungary are discussed.

*PAR1: +< *ott jobb volt a kaja*.
There the food was better.
*INV: *tehát akkor ott főztek helyben?*
So lunch was prepared in the school?
PAR1:igen.*
Yes.
*INV: *igen?*
Yes?
*PAR1: *és öö de* ***ott volt öö több választék***.
And um but there were um several options.
*PAR1: *ott* ***volt nemtudom kettő húsos és egy öö vegetáriánus választék***.
There was I don't know two meaty options and a vegetarian one.
*PAR1: *és aztán abból lehetett választani.*
And we could choose from these.

(Excerpt retrieved from the interview in Hungarian with Participant A)

Here the use of the word *választék* reflects CLI of the either of the English words *option/choice*. (For simplicity's sake, we will mention *choice* solely in the analysis, but all observations equally apply to its alternative, *option*. The Hungarian word *választék* and the English word *choice* differ in their usage both from a morphosyntactic and a conceptual point of view.

As for morphology and morphosyntax, while choice can be used in combination with quantifiers in singular or plural form, *választék* can only be used in the singular, and it never takes quantifiers as a determiner. The influence of the English usage can be detected in the non-target structures *több választék* and *kettő húsos és egy öö vegetáriánus választék*, where *több*, *kettő*, and *egy* are quantifiers (several, two, one). The structures reflect the extension of syntactic knowledge associated with English lexeme *choice* on to the Hungarian lexeme *választék*.

The English concept *choice* constitutes two category elements: item + possibility to choose; it refers to a single item that can be chosen by an individual. In fact, *choice* has no conceptual equivalent in the Hungarian language. None of the derivative nouns of *választ* (to opt for, choose, select) refer to an item: *választás* refers to the act of choosing, *választék* is never used to denote a single item that can be selected, it is used exclusively in the meaning of an array of various items on offer, similarly to collective nouns.). With no equivalent available, the participant selected the closest approximation, *választék*, a noun that denotes items. The word *választék* appears twice in the passage and in both cases the structures reflect the traits of the conceptual category of the English concept *choice*.

4.2.1.2. Transfer at the lexical/semantic level

CLI phenomena at the lexical and semantic level reflect non-target production in the choice of words based on word from (lexical transfer) or based on meaning (semantic transfer). The instances of lexical or semantic transfer identified in the interviews with Participants A and B are presented in Table 14. Next to each example of CLI in this category the corresponding translation, along with the assumed target structure, is given for each instance.

Table 14 Instances of lexical or semantic transfer in the interviews conducted with Participant A

item	translation	target structure
Participant A, interview in Hungarian		
akik ***tanították az órákat***	who taught the lessons	akik az órákat tartották
kiadták *az ilyen report card-ot*	they issued a (sort of) report card	bizonyítványt/értékelést írtak
Participant A, interview in English		
semi-joint *houses*	ikerházak	semi-detached houses
Participant B, interview in Hungarian		
és ő mindig hallgat az órákra	and he always listens to class	és ő mindig figyel az órán
szoktunk *pár… hogy ketten vagyunk*	we used to work in pairs… the two of us	volt, hogy párban, hogy ketten voltunk
Participant B, interview in English		
out in [name of town]	kint [város]-ben	back in *[name of town]*
ABC	ábécé	English; / Literacy/Writing
Painting and the ABC	festést és az ábécét	Painting and the alphabet

Some of the transfer phenomena in this category originate from the influence of a collocational pattern in the other language. Three examples were observed in the interview carried out in Hungarian with Participant A.

Example 3

This example is taken from a portion of the interview carried out in Hungarian, when Participant A is speaking about the school and the teachers in the U.K. The quoted phrase bears the imprint of the English collocation *teach lessons.* while the target collocation in Hungarian is *órát tart* (*hold a lesson*). Besides the lexical transfer, the utterance also reflects the word order required by English grammar; in Hungarian the object should precede the verb:

actual utterance				target structure			
"akik	*tanították*	*az*	*órákat"*	*akik*	*az*	*órákat*	*tartották*
who	taught	the	lessons	who	the	lessons	held

Example 4

"kiadták	az	ilyen		REPORT	CARDot"
					N + infl. obj.
[they] issued		the	sort of	report	card

In the current analysis we only deal with the non-target-like use of the verb, "*kiadták*" but will not treat the code-switching *"report card"* (discussed in a later section.) In this section of the interview the grading system is discussed where Participant A explains the written feedback they received at the end of the academic year. The utterance is the result of a lexical transfer where English collocation *issue a report card* is the source. In Hungarian the verb *kiadni* would refer to *publish in print*, while the intended meaning could be expressed by *írni* (*write*) or *kioszt* (*hand out*). Consequently, the target structure would be as follows:

REPORT CARDot	*írtak*	OR	*REPORT CARDot*	*osztottak ki.*
report card +suffix obj.	[they] wrote		report card	[they] handed out

The CLI in question may be triggered by the upcoming code switching, which is a culture-specific term used in the U.K: school context. It is also to be noted that the Participant's utterance aligns with the English word order rules, further evidence for transfer.

Example 5

The quoted passage is taken from the interview in English, where Participant A discusses the physical environment and family homes in the U.K. The interview was recorded in Hungary, approximately a year after the family had relocated there from the U.K. The CLI phenomena in the passage seem to confirm the importance of contextual factors in language production, and, in this respect, align with Marian's (2009) conceptualisation of the mental lexicon as a process rather than a state. The quoted section incorporates two instances of non-target structures, highlighted in bold.

*INV: *okay what about the streets and the houses?*
*INV: *were they very different?*
*INV: *do they look different?*
*PAR: *yes.*
*PAR: *those houses were bigger.*
*INV: *uhum*.
*PAR: *and there were different types.*

*PAR: *&-er there were **semi semi joint houses**.*

*PAR: *there were c there were **completely like joint houses**.*

(Excerpt retrieved from the interview in English with Participant A)

The analysis will focus first on the two non-target structures, *semi-joint houses* and *completely joint houses,* followed by a discussion of four utterances marked by a-d in the excerpt.

The passage about the various types of residential homes in the U.K. revolves around three lexical items that belong to one semantic domain: *semi-detached house*, *detached house,* and *terraced house*. In the quoted section the participant attempts to specify these types of houses she became familiar with in the U.K. but naming them seems to cause difficulty. One of the emerging phrases, "*semi semi-joint houses"*, reflects a surface structure the speaker is in search for, but *joint* is not the intended component.

The non-target phrase *semi-joint* and the target phrase *semi-detached* reflect a conceptual link based on antonymy: both *joint* and *detached* are versions of being (dis)connected. The restart *"semi semi"*may be an indication the speaker is in search for the right phrase. The corresponding phrase in Hungarian is *ikerház* (*twin house*). Conceptually the approach in the two languages is fundamentally different. The English phrase *semi-detached house* is based on the idea of a house being only partly detached from the neighbouring one, i.e. the two houses share one wall, but the rest of the buildings and the gardens are separate. The Hungarian phrase *ikerház*, on the other hand, relies on a metaphor based on the word twin (*iker* + *ház* = *twin* + *house*); . the Hungarian concept reflects the idea of two identical buildings being attached rather than partially detached. The emergent non-target form "*semi-joint house*" results from CLI where the category component (i.e. the quality of being attached) of the Hungarian lexical concept *twin* is transferred on to the English lexical concept, as illustrated below:

twin → being attached →joint

The same transfer phenomenon appears in the next utterance, where the participant continues naming another type of residential building: *"and completely like joint houses"*. This structure is again a non-target phrase with *completely joint houses* at the centre. The underlying target structures *row of house* or *terraced house* and the Hungarian equivalent *sorház* (*row* + *house*) do not seem to surface in this form, the speaker is relying more on

the previously accessed word, *joint*. The data do not provide sufficient evidence to define whether the 11-year-old participant is familiar with either of the target forms *row of houses* or *terraced house*. However, the insertion of "like", similarly to the restart in the previous instance, is a dysfluency phenomenon that may indicate a recognition that "*joint"* is not the desired phrase.

From a speech production point of view, looking at the above discussed CLI in their broader context holds potential for a deeper understanding of the unique dynamics of adjustments that help the speaker find her way around the discrepancy of lexical concepts. These adjustments take place over the course of four utterances (a-d):

*INV: *okay what about the streets and the houses?*
*INV: *were they very different?*
*INV: *do they look different?*
*PAR: *yes.*
*PAR: *those houses were bigger.*
*INV: *uhum*.
*PAR: *and there were different types.*
*PAR: *&-er there were **semi semi joint houses***. (a)
*PAR: *there were **c** there were **completely like joint houses***. (b)
*PAR: *and there were **detached** houses*. (c)
*INV: *uhum okay*.
*INV: *and which type did you use to live in?*
*PAR: *&-er **semi-detached** house.* (d)

(Excerpt retrieved from the interview in English with Participant A)

Indicators of the process include disfluency phenomena as well as the use of the coping strategy described below.

Utterance (a), "*there were **semi semi joint houses",*** suggests that macro planning has been completed (the intended message is conceptualised), but that the speaker encounters difficulty during microplanning. As the utterance is being formulated and the non-target element "*semi-joint*" is articulated, production is temporarily disrupted when the speaker may recognise that a different term is needed in the second part of the hyphenated phrase ("*semi-joint"*). The resulting restart, repeating the first appropriate element ("*semi*"), may function as a time-gaining strategy that supports lexical search for a target item to replace "*joint*". Such disfluency is characteristic of bilingual speech in situations involving cross-linguistic differences (Pavlenko, 2003).

Utterance (b), "*there were* ***c*** *there were* ***completely like joint houses",*** is still governed by the influence of the Hungarian concept (*iker* = *twin*) as described above. Firstly, it contains a restart *("there were c… there were completely…"*), which suggests an emerging awareness that the previously accessed item "*joint*" and the phrase currently being formulated, "*completely joint*", are not the appropriate forms the speaker is searching for. Secondly, the insertion of "*like*" in the phrase "*completely like joint houses*" appears to function strategically, as a filler typical in colloquial English, allowing the speaker additional time for planning and lexical search. Although the final output ("*completely joint houses*") still does not match the target form, the restart and the inserted filler together may be indicative of an ongoing (albeit not yet successful) self-monitoring and repair process.

The conundrum around "*joint*" is eventually resolved in utterance (c), "*and there were* ***detached*** *houses*", where the speaker continues listing the types of housing in the U.K. and the key term "*detached'* finally emerges. Apparently, this facilitates the activation of the previously inaccessible expression *semi-detached*, which is subsequently articulated in utterance (d), "*er* ***semi-detached*** *house".*

The CLI observed here illustrates the dynamic nature of bilingual representations in two respects. First, partially shared representations may give rise to transfer effects in spontaneous speech production. Second, when a speaker encounters difficulty in finding the intended word or phrase, the interactional context may facilitate successful lexical retrieval, provided sufficient time is available for continued search and self-repair.

Example 6

The interview in Hungarian with Participant B contains two instances of CLI in this category. In the first example the participant is explaining why his friend is good in English. He uses a phrase "*és ő mindig hallgat az órákra" (and he always listens to class),* the CLI originates from a semantic extension of the English verb *listen*. While in English this verb may denote both 'pay attention to auditory input' and 'pay attention to something in general', as in a school setting, during lessons. In Hungarian the two meanings are expressed with different words, *hallgat* in case of auditory input, and *figyel* (az órán) to express 'paying attention in class'. In the utterance "*és* ő *mindig hallgat az órákra,"* the intended meaning was the latter, so a monolingual speaker would use the

phrase *és ő mindig figyel az órán*. Therefore, the phrase *"hallgat az órákra"* is an example of lexical and semantic transfer at the same time.

Example 7

The other example occurs in a section of the interview in which the discussion centres around comparing school practices and homework in the U.K. and in Hungary. Referring to classroom routines, he explains that they used to study in various work forms:

*INV: *És akkor egyedül dolgoztál rajta vagy vagy együtt csináltatok dolgokat?*
And then did you work on it alone or or did you work with others on things?

*PAR: *Egyszer*	*öö*	*szoktunk*	*pár…*	*hogy*	*ketten*
		Verb 1st p. plural, past			
once	er	[we usually do]	pair	[so] that	two

vagyunk	de	és	szoktuk	úgy hogy	négyen	is
Verb 1st p. plural, present			*Verb 1st p. plural, past*			
[we] are	but	and	[we] used to	in a way that	four [of us]	too

meg meg	egyedül	is
and and	alone	too

Sometimes we worked in pairs; other times we worked in groups of four or on our own.

The utterance "*szoktunk pár… hogy ketten vagyunk*" (we used to work pair… that there were two of us) is unique in that, in this case, CLI does not result in non-target production. What we observe here is an instance of self-repair, but not because the initial attempt is incorrect in Hungarian: *párban lenni/dolgozni* (be/work in pairs) is a fully acceptable structure in Hungarian. The speaker interrupts the utterance and opts for "*hogy ketten vagyunk*" (there are two of us) in an effort to comply with the one-language rule of the interview. This instance is nevertheless included among the CLI phenomena because Hungarian *pár* and English *pair* are cognates, which facilitates faster access to this item compared to the alternative *ketten* that eventually emerges,

As a side note, it should be pointed out that s*zoktunk* is an inaccurate form in this context: although the speaker's intention is to refer to past events from the period when the family resided in the U.K., he uses a verb form whose morphology suggests past tense, but which is used in Hungarian to express habitual actions in the present. This is an issue of language use in the participant's native language.

Example 8

*INV: Are they more simple?

*PAR: Yeah

*INV: Here in Hungary, you mean?

*PAR: No.

*INV: No?

*PAR: **Out in [name of U.K.town].**

With reference to a place in a different country, a colloquial phrase in Hungarian is *kint .... -ban* (*out* + *in* …) ; for example, the phrase kint *Angliában* can be translated as *back/over there in England*). The use of "*out*" in the passage suggests a lexical transfer from Hungarian to English. It may be argued that this instance is also an example of grammatical transfer (or grammatical calque), based on the contrast what preposition each language requires in this context. One way to approach this ambiguity is to categorize this instance as an instance of lexico-grammatical transfer, which incorporates both a non-target lexical selection and grammatical pattern.

Example 9

In one section of the interview, Participant B recalls the subjects he studied at school in the U.K. In doing so, he mentions "*ABC*" several times. In Hungarian lower primary education, ABC is a commonly used label for lessons in which pupils learn the alphabet and acquire basic reading and writing skills. The occurrence of CLI in this instance may be related to Participant B's schooling trajectory: he attended only one year of school in the U.K. and spent a further year in a Hungarian school before the interview was conducted. He labels this subject with the Hungarian term, but produces it with English pronunciation, whereas the rest of the subjects he lists correspond to conventional English usage.

4.2.1.3. Hybrid structures

The interviews contain three examples of non-target structures composed of elements taken from both languages. All instances occur in the interviews with Participant A: two in the interview conducted in Hungarian and one in the interview conducted in English.

Example 10

This example was retrieved from a section of the interview where the Participant talks about the sports activities she pursued and tournaments she participated in in the U.K. school.

"LONG JUMPot	is	csináltam"
N + infl. obj.		V infl. 1st p. sing. past tense
long jump	too	[I] did

The quoted expression is a hybrid form, incorporating an insertional switch (*long jump-ot*) and a lexical choice ('*csináltam'*) based on the English collocation *do the long jump*. The use of the verb *csinálni* ("csináltam" in the past tense 1st person singular) is the result of transfer from English. In Hungarian possible phrases are *távolugrást gyakoroltam* (*I practiced the long jump*) or *távolugrásban indultam* (*I competed in the long jump*). (The analysis of code-switching will be discussed in a later section.)

Example 11

Another hybrid solution, "*random szerűen*", appears in a portion of the interview where Participant A is giving an account of classroom practices in the U.K:

*PAR: *meg ott nem voltak nekünk külön tankönyveink.*

PAR: ott a tanár öö mindig öö nála volt és osztotta ki öö **random szerűen** hogy ki kinek melyik jut.*

*PAR: *de igazából ott nem volt az hogy ez az én tankönyvem az meg a tiéd.*

And there we didn't have textbooks on our own. There the teacher always kept them and distributed them to the students randomly. So really it wasn't like this is my textbook and that is yours.

The hybrid phrase "*random szerűen*" appears to result from the merging of the English adjective "random", used adverbially on the model of *randomly* (*random* + ~~*ly*~~), and the Hungarian adverbial suffix "-szerűen", as found in *véletlenszerűen (~~véletlen~~ + szerűen)*. This hybrid formation is facilitated by the fact that the two lexical source forms, as well as their components are full equivalents; the combination is therefore lexical in nature.

Example 12

The second example, "*the highest group",* occurs in a portion of the English-language interview in which the participant recalls her experiences at a Hungarian weekend school.

**PAR: and basically the smaller kids er did only like drawings and colouring painting stuff like that.*

PAR: er like the er but I made **the high highest group like the big big kids er it learned about culture and maybe word searches er maybe they read books I think.*

The hybrid expression seems to arise from the blending of two semantically related collocations: *the oldest group* and *the highest grade.* The source of this hybrid structure appears to be conceptual: the corresponding Hungarian phrase, *a felsős csoport,* reflects the same structure as the non-target phrase:

a	*felsős*	*csoport*
the	*highest*	*group*

There seems to be a discrepancy between the two adjectival forms. Hungarian *felsős* is the unmarked, base form of the adjective, although semantically it denotes a group that is higher than some others. In English, by contrast, the emergent adjective appears in the superlative form. Although "*felsős*" may normally refer to any upper elementary group or grade, not only the oldest one, in this particular context it in fact would denote the oldest, i.e. the highest one, since the weekend school comprised only four age-ranged groups, the 10-14 group being the oldest.

In sum, this hybrid utterance follows the structure of the underlying Hungarian lexical concept *felsős csoport* but also combines two synonymous English collocations: *highest ~~grade~~* + *~~oldest~~ group*. The self-repair "high highest" may indicate the additional effort involved in searching for an appropriate expression in English.

4.2.1.4. Structural transfer

In this section instances of structural transfer are presented and discussed. In bilingual speech, grammatical production errors typically reflect the influence of morphosyntactic

patterns from one language on speech production in the other. Table 15 demonstrates the instances of structural transfer in the interviews with Participants A and B.

Table 15 Instances of structural transfer in the interviews conducted with Participants A and B

item	translation	target structure
Participant A, interview in Hungarian		
a tanár tartotta a fiókjában	the teacher kept them in her drawer	a tanár a fiókjában tartotta
***egy** év végén*	at the end of a year	az év végén
***desszertre** néha volt ilyen gyümölcstál*	for dessert sometimes there was a fruit bowl	desszertnek néha volt ilyen gyümölcstál
Participant B, interview in Hungarian		
mert ott is voltak több barátok	because I had several friends there too	mert ott is volt több barátom
Participant B, interview in English		
he not… she [Mum] is not swimming too…lot	anya nem sokat úszik	she is not swimming/she doesn't swim too much (?)
because there is the pretty good players		because there are pretty good players
our	a miénk	ours (as a response to the question: Which room was bigger?)

The listed examples originate from cross-linguistic influences involving various domains of grammar/syntactic structures. These domains are:

Word order

Example 13

a tanár tartotta a fiókjában

the teacher kept them [books] in her drawer

This utterance reflects the English word order subject + verb + object (as manifested in the verb form) + adverbial (SV(O)A), while the target Hungarian structure in this case would be SAV(O):

a tanár	a fiókjában	tartotta
the teacher	in her drawer	kept them

(The verb form “tartotta” reflects the definite, objective conjugation, which comprises conceptually the presence of an object.)

Definite/indefinite articles

In a discussion about when students get feedback on their work, Participant A uses the phrase “egy év végén” (at the end of a year). This seems to reflect the use of the indefinite article in English to refer to a period when any given academic year comes to an end. In Hungarian the use of the definite article *az* is required both for specific or general reference, so the resulting target structure is: *az év végén*.

Inflections/prepositons

Example 14

“desszertre	néha	volt	ilyen	gyümölcstál”
for desert	sometimes	there was	like a	bowl of fruits

The phrase *desszertre* reflects a pattern that may or may not originate from CLI. It is a structure consisting of desszert + -re (N + inflection). In common Hungarian usage the appropriate inflection is -nak/-nek, so the target form would be *desszertnek*. There is no clear evidence to prove whether the error stems from English or similar eating-related Hungarian forms. The English structure for dessert may be a source of CLI, however, in other phrases for may as well correspond to either *-nak/-nek* (e.g. barátomnak, for my friend), or *-ra/-re* (for dessert, for luch) depending on the context. Alternatively, similar phrases in Hungarian related to eating and meals may have provided the pattern: e.g. *reggelire, ebédre*; for breakfast/lunch.

Singular/plural agreements

Example 15

The quoted examples were taken from the interviews conducted with Participant B. In the first case, he talks about social connections back in the U.K.

mert ott is voltak több barátok

because there too were several friends

because there were [I had] several friends there too

This non-target form potentially originates from the English structure *several friends*. While in English the quantifier *several* requires the noun to be in plural form, in Hungarian *több* takes the noun and the related verb in a singular form. Thus, the target-like structure is:

mert ott is volt több barát(om)

because there too was several friend (of mine)

Example 16

A similar case of problem can be observed in the English-language interview with participant B:

because there is the pretty good players

This utterance also contains an error of agreement in relation to the phrase "*there is*" and the noun it corresponds to ("*players*"). This instance may result from an error in microplanning.

Gender marking

In Hungarian the 3rd person singular personal pronoun has a single form and it does not reflect gender. In addition, it is normally omitted unless the intended message necessitates special emphasis (e.g. ő nem úszik gyakran, de én igen; she does not swim too often, but I do).

Example 17

he not… she is not swimming too…lot

This example was taken from a section of the interview where the participant recalls event from a family holiday. With reference to his mother, he starts a sentence by using the masculine form of the pronoun (he). However, after a pause where self-monitoring and a repair process is taking place, he reformulates the head of the sentence and uses the correct, feminine personal pronoun (she). It may well be the case that in this utterance the

microplanning got as far as recognising the need for a personal pronoun, but the correct form was only identified when the process of self-monitoring signalled the error.

As a summary, the instances of implicit CLI phenomena discussed above suggest that both of the participants' languages remain highly activated. Even in situations where they are expected to rely on only one language, the non-target language influences production in unpredictable ways and at multiple levels, including the conceptual, lexical, semantic, and procedural.

4.2.2. Explicit forms of CLI

The categorization of explicit types of CLI is grounded in Stammers and Deuchar's (2016) distinction between instances of code-switching and borrowing. Their theory pivots around the question of whether the donor language elements are well established in the recipient language lexicon. Consequently, they emphasize frequency as a crucial factor in integration and as a determining criterion for distinguishing between code switching and borrowing. The results sections of the case studies apply these criteria for categorisation.

4.2.2.1. Code-switching

Instances of code-switching are presented in two separate tables (Tables 16 and 17). The majority of code-switching from Hungarian to English is related to the topic of school. Code-switching instances from English to Hungarian are mostly related to food. Many of them occur in a section of the interview in English where the participant switches to Hungarian for a longer stretch in the discussion of canteen food in Hungary (9 instances out of the total of 30). A similar switch to English did not occur in the interview in Hungarian.

Table 16 CS from Hungarian to English in the Hungarian single-language interview with Participant A sorted by level of equivalence

code-switched item	translation	equi-valence	context/actual utterance; comments	topic
Participant A				
term	félév/trimeszter/ szemeszter	non	*INV: és Angliában bem nem volt házi egyáltalán vagy csak kevés? *PAR:ott az volt hogy ö egy **termre** adtak egy lapot öö és aztán azon voltak házifeladatok. öö szóval egy lap volt. …és aztán azt egy **term** alatt… azon volt öt-tíz feladat… öö amikből négy kötelező amit meg kell csinálni. *INV: mert … miket csináltatok? játszottatok? *PAR: öö minden hm **term**-ben volt egy olyan hogy öö kett szerintem három sport és aztán azt addig tanultuk.	school
science	természettudom ányos tantárgy	non	*INV: hm és ez a muffinos feladat ez melyik órára kellett? *PAR:hát ez ez olyan volt hogy csak **science**-re kellett a a házifeladat. *INV: és milyen tantárgyaid voltak…mondjuk az utolsó éven? Emlékszel? *PAR: nem voltam hatodikban csak ötödikben de ott öö volt öö **science** matek. *(self-correction)*	school
Reception	első általános iskolai év	non	*INV: és … miért szeretted őt? miért ő lett a barátod szerinted? *PAR: mert **Reception** óta együtt játszottunk meg beszélgettünk.	school
report card	év végi szöveges értékelés	non	*INV: … milyen jegyeket lehetett kapni? *PAR: öö ott öö nem voltak jegyek ott öö egy év végén kiadták az ilyen **report cardot**. és aztán arra rá volt írva.	school
roast dinner	ebéd sült hússal	non	*INV: és mik voltak a legjobb kaják amit ott enni lehetett? *PAR: a **roast dinner**.	food
gammon	füstölt sonka	non	*INV: az milyen volt? *PAR: az öö olyan… három hetente volt …három hetente újrakezdődik az ebéd. … és aztán az első hétre a **roast dinner** az olyan volt hogy **gammon** szóval az az ilyen szalámi na öööö szóval disznóhús krumpli és öö zöldségek.	food
high-school	középiskola	partial	*INV: és milyenek voltak a az órák az iskolában? *PAR : ott nem volt öö órarend ott nem volt órarend mint itt. … és öö öö ott az elején olyan volt hogy csak egy egy tanár volt. de így a végén hogy megszokjuk a hogy ö meg tudjuk szokni a **high schoolt**. hogy ott különböző tanárok meg tantermek vannak.	school
RE, Religious Education	hittan	partial	*INV: és milyen tantárgyaid voltak? *PAR: volt öö science matek… ööm ööm gr volt English grammar meg literacy …. meg **RE** meg PE *INV: az RE az mi? *PAR: öö **Religious Education**.	school

English grammar	angol nyelvtan	full	see above	school
literacy	írás/olvasás	full	*see above*	school
PE	testnevelés	full	*meg PE (see above)*	school
submarine	tengeralattjáró	full	*INV: és milyen feladatot választottál még ami ilyen amire úgy emlékszel hogy tetszett? *PAR: szerintem volt egy o ja igen öö egy **submarine**-t kellett csinálni**.**	school
Big Fire of London	nagy londoni tűzvész	full	*discussing schoolwork* *PAR: meg voltak ilyen feladatok hogy öö …. az egyikre még emlékszem hogy írni kellett ö egy történetet öö egy híres embernek az életéről… aki ott volt a **Big Fire of London-ben** szerintem.	holidays
religion	vallás	full	*INV: és … ott …egy pap jött vagy egy lelkész jött hozzátok? *PAR: nem csak más történetekről tanultunk. más izé ö religionökből.	culture /school
long jump	távolugrás	full	*discussing sports in the U.K: school* INV: és ilyen tanulmányi versenyek vagy valamilyen versenyek voltak … az iskolában Angliában? *PAR: …öö focira foci tornák voltak meg netball tornák meg ilyesmik. meg öö **long jumpot** is csináltam és aztán abból is volt.	sports/school
garlic	fokhagyma	full	*discussing canteen food in the U.K:* *INV: hm hm jó és akkor ez volt a kedvenced? *PAR: aha. meg nagyon finom volt a lasagna. a lasagne az **garlic** hát öö fokhagymásan	food
witch	boszorkány	full	*discussing Halloween* *INV: és milyen milyen jelmezek voltak? *PAR: öö voltam öö vámpír meg voltam öö **witch**.	holidays

Table 17 CS from English to Hungarian in the Hungarian single-language interview with Participants A and B sorted by level of equivalence

CS item	translation	equivalence	context/actual utterance; comments	topic
Participant A				
pörkölt tésztával	stew with pasta	non	*a long stretch of CS about canteen food* *INV: erm are there any dishes you liked in the canteen food here? *PAR: here? *INV: here in Hungary yes *PAR: not really *PAR: well *INV: anything that was well well prepared and you liked? *PAR:yeah. *INV: what what was it? *PAR: hm (.) pörkölt tésztával.	food

meg volt rizses husi	and there was meat risotto	non	*same stretch of CS about canteen food, mentioning two dishes (stew and risotto) that she likes*	food
főzelékek voltak fasírttal	there were various types of creamed vegetables with meatloaf	non non	*same stretch of CS about canteen food, mentioning dishes she dislikes* *PAR: szerintem más nem volt, ami ennyire ízlett *PAR: **fő főzelékek** voltak *(tone and accompanying facial expression : I don't like it*) *INV: uhum uhum *INV: you don't like *PAR: fasírttal *(tone and accompanying facial expression : I don't like it)*	food
diós tészta meg mákos tészta	pasta with walnut and pasta with poppy seed	non	*PAR: and something strange in the school food as well is that er for the main food er sometimes it would be er pasta with walnuts. *PAR: so er diós tészta meg mákos tészta *INV:uhum *PAR: er and they wouldn't give any food but it well the soup would be quite meaty but then they wouldn't give any other food; well the food would be the sweet walnut and poppy seed er pasta	food
a főzelék	the creamed vegetable	non	*INV: …any dish that you would never ever touch or just hate? *PAR: I'm not that much picky but it's … de a főzelék!	food
     ünnepek ünnepekről tanultunk	 holidays we learned about the holidays	 partial partial	*PAR: erm and it was basically learning about the Hungarian Hungarian culture *INV: okay could you tell me an example? *INV: what what did you learn there? *PAR: ünnepek *INV:uhum *PAR: ünnepekről tanultunk	school
nem t'om, nem jó	I don't know, it's not good	full	*discussing creamed vegetable* *INV: you like vegetables. *PAR: yeah *INV: what's the problem with it? *PAR: nem tu'om nem jó.	food
szerintem más nem volt, ami ennyire ízlett	I don't think there was anything else that I liked so much	full	*from the stretch of CS about canteen food, after mentioning two dishes (stew and risotto) that she likes*	food
meg gyümölcsmártás hússal	and sour cherry sauce with meat	full	*from the long stretch of CS about canteen food, mentioning dishes she dislikes (expresses indignation)*	food
szegény husit beleteszik a gyümölcsbe	poor meat is dipped in the sauce	full	*from the stretch of CS about canteen food, mentioning dishes she dislikes* *(childlike, playful tone)*	food

külön a hús meg a gyümölcsmártást	meat (full) and sour cherry sauce (non) separately	full	*INV: [you] don't seem to like it. *PAR: külön a hús meg a gyümölcsmártást. De egybe! (*intended message: they are acceptable separately but not on one plate)*	food
de egybe!	but in one dish!	full	*from the same section; indignantly*	food
néptánc	folk dance	full	*INV: and what about dance? *INV: what kind of dance do you do? *PAR: &er Hungarian folk dance. *INV: oh. *PAR: néptánc.	school
nem tudom	I don't know	full	*PAR: uhm we went on holiday last week ah with the neighbours. *INV: uhum. *INV: and where where did you go? *PAR: er to er to er. *INV: if you can't remember. *PAR: nem tudom**.** *INV: the name of the place don't worry it's all right. *(intended meaning: I can't remember)*	holiday
igen	yes	full	*from the same portion about the family holiday:* *INV: is it in Hungary? *INV: did you visit a place in Hungary? *PAR: igen.	holiday
nem tudom	I don't know	full	*about the friends nextdoor* *INV: where do they go to school? *PAR: &-er nem tudom. *INV: uhum another school in Tapolca probably.	friends
nem Tapolcára	not to Tapolca	full	*PAR: in nem Tapolcára.	
valahol máshova	somewhere else	full	*PAR: valahol máshova. *false access of pronoun (valahol, instead of valahova) due to cross-linguistic influence: somewhere in both cases*	
a Balaton mellett valahol.	somewhere near lake Balaton	full	*PAR: a Balaton mellett valahol. *INV: some other place okay. *PAR: uhum. *INV: uhum maybe in Balatonfüred they.	
valahol	somewhere	full	*PAR: aha valahol. (meaning: I can't remember)	
iskola	school	full	*INV: okay let's talk a little bit er about your school here in Hungary. *INV: okay so what what's it called and what type of school is it? *PAR: &-er it's &-er we can learn English and Hungarian in that school. *INV: uhum okay what's the name of the school? *PAR: &hm Batsányi Iskola.	school

nem tudom de vannak olyanok, akik nem annyira jók	I don't know there are some [teachers] who are not that good	full full	*INV: do you find them helpful? *PAR: yeah. *INV: okay. *PAR: well not all teachers. *INV: okay do you have anyone special in mind? *INV: who is not particularly helpful? *INV: you don't have to say the name just tell me what subject they teach. *PAR: &-er nem tudom. *PAR: de vannak olyanok akik nem nem annyira jók. *(affective motivation: reluctance to openly criticize a teacher)*	school
meg (Annabelle)	and (Annabelle)	full	*discussing the Hungarian school in the U.K.* *INV: did you have any friends here at the Hungarian school? *PAR: yes. *INV: yes. *INV: could you name them? *PAR: Ayshie erm meg Annabelle	school
megye	county	full	*INV: uhum okay so your grandparents live is Somogy county right? *PAR: yes one of my grandmas and the other lives in er (.) er (.) Csongrád-Csanád megye.	family
     nem tudom hogyha meghalna az anya vagy az apa vagy a [brother's name]	 I don't know if daddy or mum or [brother's name] died	 full full	*INV: erm right er anything what what are things that make you sad? *INV: when you feel sad what are the reasons? *PAR: (.) nem tudom. *INV: okay. okay. *INV: anything that worries you? *INV: when do you (/) do you feel worried about anything in the world or in your life? *PAR: (.) hogyha meghalna az anya vagy az apa vagy a [brother's name].	emotions
Participant B				
is	too	partial	*Discussing holiday activities:* INV: Why do you like it [going to the beach] so much? PAR: because there … because there are lots of people that I / that I …. because my my erm friend was there and and my ….Koppány **is**	friends/holiday
több	more	full	*INV: And the way how you learn at school here in Hungary, is it very different from the way you learned back in Southend? *PAR: *Nods.* *INV:It is? OK. And could you tell me what the difference is? What's so different about it? *PAR:Here Hun… Here … Here there are… több… more home/homework than in England.	school

ennyi	that's all	full	*INV: Now could you tell me about what subjects you study at school? What are your subjects? PAR: ABC, Reading, Drawing, Painting,	school
desszert	dessert	full	*Comparing the U.K: and Hungarian schools* OK, and what else is different? *PAR: The lunch … is different. OK, what's lunch like? *PAR: In [name of U.K. town] there was… chocolate for **….** for desszert.	school
és	and	full	INV: Can you tell me their names? PAR: Dávid, Koppány, Máté, Gabi és Balázs.	friends
Párizs Ugyanaz, Páris	Paris The same, Paris	full full	INV: Does he know a lot about football? PAR: Yeah. INV: Which is his favourite team? PAR: Hm, Párizs. INV: Hm, OK, and which is your favourite team? PAR: Ugyanaz, Párizs.	friends

Conceptual equivalence should always be studied in the context of specific language pairs and specific cultural settings, since lexical concepts may vary across cultures that use the same language, e.g. across various English-speaking countries. The data below are situated in the context of Hungarian on one hand and UK English on the other.

4.3.2.1.1. Full equivalence and code-switching

The relation of full equivalence is a clear-cut case where monolingual speakers of the two languages in question would have the same idea in mind when hearing the respective word. One example of this is the concept of *the long jump* in English and *távolugrás* in Hungarian. Categorization of such word pairs raises no issues. The transcritps contain the following other examples:

CS from Hungarian to English: *English grammar/angol nyelvtan; PE/testnevelés; submarine/tengeralattjáró; Big Fire of London/a nagy londoni tűzvész; religion/vallás; garlic/fokhagyma; witch/boszorkány*;

CS from English to Hungarian: *gyümölcsmártás/cherry sauce; néptánc/folk dance; igen/yes; nem tudom/I don't know; valahol/somewhere; iskola/school; megye/county; több/more; ennyi/that's it; desszert/dessert; és/and; Párizs/Paris*

Code-switching between fully equivalent lexical categories is generally considered least likely to occur in a single language context. Nevertheless, both interviews contain several such instances. An analysis of the factors motivating these code-switches reveals multiple

contributing influences, which will be discussed below, together with selected examples for illustration.

Language-specific context

Due to the participant's language history, certain topics trigger a heightened activation of one language over the other. Numerous examples of switching from Hungarian to English occur during discussions related to school, which can be attributed to the participant's considerably longer study experience in the English-speaking environment. The words within the school-related topic are either directly linked to the school system, such as school subjects (e.g. *English grammar, PE*), or indirectly associated with content learned in the UK context, including events, facts, or acquired knowledge and skills (e.g. *submarine, Big Fire of London, long jump, garlic*).

Another example is related to holidays (*witch*). Although certain elements of Halloween have been adopted in Hungary, dressing up in costumes remains less common compared to English-speaking cultures. This cultural difference likely accounts for a higher activation of English when referencing Halloween traditions during the Hungarian interview.

The mere activation of a concept or event in the non-target language is not, in itself, a sufficient condition to trigger code-switching. Rather, it is the interplay between lexical access and language control that contributes to the appearance of code-switching, particularly in the bilingual mode. Additional contributing factors can often be uncovered through meticulous contextual analysis.

What follows is an example taken from the interview in Hungarian. The topic discussed is education. In this portion of the interview, the participant was required to give an account of school projects she worked on at her school in the UK.

Example 18

INV: És milyen feladatot választottál még ami ilyen, amire úgy emlékszel, hogy tetszett?
And what other projects did you chose which you remember to have liked?

PAR: Szerintem	*volt egy*	***o***	*ja igen*	***öööö***	*egy*	***SUBMARINE-t***
I think	there was a	s[ort of]	oh yes	er	a	submarine.N.infl.obj

kellett csinálni	*és*	***öö***	*ilyen*	***öö***	*mosogató*	***öö***	*folyadé**k***
had to make	and	er	sort of	er	washing-up	er	liquid

üvegbe	***ből***	*csináltuk*	*és*	*aztán*	*abból*	*vágtunk ki ablakokat.*
in bottle	from	made	and	then	from it	we cut windows

I think there was a **s**(ort of) oh yes er we had to make er a submarine and in a/from a er washing-up er liquid bottle and we cut windows in it.

The presented example is a complex sentence in Hungarian with one code switched element, one example of calque, and multiple cases of disfluency all highlighted in bold. The code-switched item, '*SUBMARINE-t'*, marks a watershed moment in processing: all preceding and subsequent indicators are in connection with the choice the speaker makes as a solution to a linguistic dilemma. What circumstances led to this decision and what consequences it had on the rest of the utterance must be investigated in context. Context in this case refers both to the sentence level environment of the code-switched element and the complexity of social and psycholinguistic factors affecting the speaker in this particular situation.

The utterance under investigation is a response to an interview question. The process of conceptual preparation of the answer can be divided into two stages. Initially, in order to identify and select a life event to talk about, a quick memory search needs to take place. The first phrase in the utterance is a filler whereby the speaker is gaining time for the task. The phrase, however, is left unfinished when the search proves to be successful. The result is a false start ('*szerintem volt egy o*'; 'I think there was a s(ort of)'), where the speaker starts an utterance and stops midway: '*o*' is the unfinished version of '*olyan'*, 'sort of'. The false start is a function of the abrupt evocation of a particular memory. This is the moment of conceptualising, the preverbal stage of the planning process (Levelt, 1989).

What follows is a phrase '*ja igen*' ('oh yes') indicating that the memory has been accessed.

The next element of interest is a filled pause ('*öö*', 'er'), which is inserted to allow additional time for the second stage of conceptual preparation verbalisation, i.e. a search for the corresponding lexical concept (Pavlenko, 2009b). Although the goal is to keep the originally agreed language, Hungarian, there is a simultaneous, competing communicative impulse to express the newly generated idea. This results in the emergence of the next word, a single- item switch to English '*submarine'* embedded within the Hungarian matrix- language sentence. Both inhibitory and facilitating factors underlie this instance of code-switching.

From a linguistic standpoint, there are several features that would normally inhibit code-switching in this context. The analysis reveals a high level of morphosyntactic integration: structurally, the code-switched element appears within a noun phrase headed by a Hungarian indefinite article, and a Hungarian inflection *-t* is attached to the English word marking it as the object of the verb phrase *kellett csinálni* ('we had to make'). Thus, the English lexical item is fully embedded within the matrix-language Hungarian sentence and is clearly governed by Hungarian morphosyntactic rules. In addition, the code-switch cannot be attributed to language-dependent differences as the lexical analysis indicates equivalence at both the lexical and conceptual levels: the English lexical concept *submarine* has a Hungarian equivalent *tengeralattjáró*, and both refer to the same real-world entity a proof of conceptual equivalence, These factors would typically reduce the likelihood of code-switching in this particular environment.

The participant's language history and circumstances of acquisition provide further inhibiting factors from a sociolinguistic perspective. As an early consecutive bilingual, through language socialisation the child gained considerable experience in strict single-language use in both languages: Hungarian exclusively at home and English exclusively in nursery and later at school.

In addition to these individual factors, the interview setting itself provided further motivation to maintain Hungarian-only use. It had been agreed in advance that this particular interview would be conducted in Hungarian, and it can reasonably be assumed that the participant attempted to meet the expectations concerning language choice. To reinforce the language mode, all communication on the day of the recording was

conducted in Hungarian, and at the start of the interview the use of Hungarian was reiterated, even though no rule was explicitly formulated against code-switching.

Despite these inhibiting factors, a number of conditions favouring code-switching can also be identified. From a psycholinguistic perspective, this instance clearly stems from considerations of economy. The speaker avoids the cognitive cost of deactivating *submarine* and activating *tengeralattjáró*. The fact that submarine is accessed first can be attributed to the context dependence of episodic memory: there is a stronger conceptual link to the English lexical concept than to the Hungarian one because the relevant experience was originally acquired in an English-speaking context. Several control mechanisms are at play here. Goal maintenance namely the urgent need to verbalise the concept is constrained by the latency induced by interference suppression i.e. inhibiting the salient response (the English word *submarine*) in order to access the non-salient equivalent (the Hungarian lexical concept *tengeralattjáró*). In this case the conflict is resolved in favour of urgency and against latency; failure of interference suppression triggers the code switch. The lapse of control at this point has further consequences later in the utterance, manifested in a cascade of disfluencies, an instance of self-repair (*üvegből*, 'from a bottle') and a calque ('*mosogató folyadék üveg'*, 'washing-up liquid bottle') which, in standard Hungarian would be *mosogatószeres flakon* in the absence of cross-linguistic interference.

A sociolinguistic explanation for why this code switch could nevertheless occur is linked to the speaker's multilingual awareness. Although it had been stipulated at the start that the interview would be conducted in Hungarian and, in compliance with this request, the participant made a clear effort to use only one of her languages throughout, she was nonetheless aware that the interviewer speaks both Hungarian and English, and they are both in the bilingual language mode. This knowledge did not directly prompt code-switching but made a "shortcut" available, which the speaker exploited spontaneously despite the language constraint. It can be assumed that interacting with a monolingual Hungarian interlocutor would have reduced the likelihood of code-switching in this sentence.

In summary, this example illustrates a complex interplay of inhibiting and facilitating factors. On one hand, the participant's language history, socialisation in strict single-language use, the Hungarian-only interview setting, and the full morphosyntactic integration and lexical equivalence of the item would normally act against code-

switching. On the other hand, psycholinguistic pressures of processing economy and context-dependent activation, combined with the speaker's awareness of the interlocutor's bilingual repertoire, create conditions for an otherwise unlikely code switch, followed by further signs of cross-linguistic interference in the subsequent utterance.

The unpredictable nature of the emergence of elements from the non-target language is further supported by examples that occur in Participant B's interview in English. In his case, English is a significantly less dominant language compared to Hungarian. Furthermore, because of his younger age, he seems to recur to code-mixing occasionally. When asked about the school subjects at the school in Hungary, he provides the list and concludes with "*ennyi*" (*that's all*) quite naturally:

Example 19

INV: Now could you tell me about what subjects you study at school? What are your subjects?

PAR: ABC, Reading, Drawing, Painting, English…. ennyi.
that's all

Another instance of code-mixing occurs when he gives account of dishes at the school canteen and instead of English *dessert,* he concludes the utterance with its cognate *desszert* in Hungarian:

Example 20

PAR: The lunch … is different.

INV: OK, what's lunch like?

PAR: In [name of U.K. town] there wa…chocolate for …. for desszert.
dessert

Indicators of code-mixing are the ease with which he integrated these words into the English sentences and the absence of any attempt for self-repair. Similar phenomena did not occur in the Hungarian interview.

In the following instance, on the other hand, it is possible to observe a higher level of language awareness and self-monitoring: the realization of the use of the non-target language is instantly followed by self-repair, providing the corresponding word in English.

Example 21

Here Hun… Here … Here there are… több… more home/homework than in England.
more

The disfluency phenomena preceding the code-switch indicate a clear effort to deactivate dominant Hungarian and search for the non-dominant words in English.

These examples taken from the speech production of Participant B suggest that he is at a stage of language development where code-mixing still plays a role in his language use but emergent language awareness and self-monitoring can also be observed in his production around instances of code-switching.

Affective factors

Strong emotions or strongly held opinions appear to be a frequent trigger for code-switching into L1 Hungarian; however, no examples of switching to English were observed in this category. Code-switching occurs, for instance, when the participant – seemingly embarrassed – articulates criticism toward a teacher, when she enthusiastically recalls an inspiring home assignment involving a submarine and when she discusses her greatest fear: the hypothetical loss of family members. This type of code-switching also emerges when the participant expresses strong preferences, aversions, and, on one occasion even indignation, associated with certain canteen foods (*meg gyümölcsmártás hússal*). In fact, the topic of canteen food seems to elicit especially strong emotions, as shown by an extended stretch containing multiple instances of code-switching.

Example 22

*INV: *… are there any dishes you liked in the canteen food here?*

*PAR: *here?*

*INV: *here in Hungary yes.*

*PAR: *not really*.

*PAR: *well*.

*INV: *anything that was well* &*PAR:*yeah well prepared and you liked*?

*INV: *what what was it?*

*PAR: *pörkölt tésztával.*
stew with pasta

*INV: *okay uhum that's yummy*.

*PAR: *meg volt rizses husi.*
and there was meat risotto

*INV: *aha okay.*

*PAR: *szerintem más nem volt, ami ennyire ízlett.*
I don't think there was anything else I particularly liked

*PAR: *fő főzelékek voltak*.
there were various types of creamed vegetable

*INV: *uhum uhum*

*INV: *you don't like*

*PAR: *fasírttal.*
with meatloaf

*INV: *aha*

*INV: *do you like those?*

*PAR: *meg gyümölcsmártás hússal.*
and sour cherry sauce with meat

*INV: *don't seem to like it.*

*PAR: *külön a hús meg a gyümölcsmártást…de egybe(n)!*
the meat and the sour cherry sauce separately… but in one dish

*PAR: *szegény husit beleteszik a gyümölcsbe.*
poor meat is dipped into the sauce

*INV: *I see you don't think they fit.*

*INV: *they it's not a good match do you think?*

*PAR: &gest: no

*INV: *okay you would never do that on your own?*

*PAR: *no*.

Utterances marked by strong affection are often reinforced with various verbal and non-verbal cues, such as changes in tone, the use of humour, facial expressions, or gestures, which serve to enhance the expressive power of the statements.

Phonetic activation

Proper names (geographical names, people) seem to trigger a code switch on various occasions. This phenomenon was described by Grosjean as phonetic activation (2013). This phenomenon can be observed on two occasions in the interview in English with Participant A, and both involve a switch from English to Hungarian:

While talking about her friends at the Hungarian weekend school in the UK, the participant mentions two names, one English name (Ayshie) and a Hungarian name (Annabel).

*INV: did you have any friends here at the Hungarian school?

*PAR: yes.

*INV: yes. could you name them?

*PAR: Ayshie erm meg Annabel.

In the utterance the anticipation of the Hungarian name appears to trigger a code-switching, as evidenced by a filler (*erm*) and the use of the Hungarian linking word "*meg"* (an informal Hungarian equivalent of '*and'*). In the second example, recalling a geographical name, the mention of a Hungarian county (*Csongrád-Csanád megye)* similarly induces a switch (*megye; county*). In both cases, the phonological properties of the names appear to activate the non-target language.

In the interview in English with Participant B, several instances of phonetic activation were observed in the category of full equivalence. Examples 23 and 24 were produced in responses to questions related to the participant's friends:

Example 23

This example was taken from a response

INV: *Can you tell me their names?*

PAR: *Dávid, Koppány, Máté, Gabi* ***és*** *Balázs.*
and

Example 24

INV: *Are they Hungarian friends?*

PAR: *Yes.*

INV: *Could you name a few? Who are they?*

PAR: *Dávid és Koppány*.
Dávid and Koppány

The next example is retrieved from a section of the interview in which playing football is discussed:

Example 25

INV: *What position do you have?*

PAR: *Hm, I'm front, Dávid is at/is front* *és* (and) *Koppány is a goal/goalkeeper.*

These examples involve a switch from English to Hungarian.The mentioning of the participant's frineds' first name serves as a phonetic cue and has a priming effect that is manifested in code-switching, namely the word choice for the connector "*és*" instead of *and*.

Example 25 provides an opportunity to observe how the phonetic switch ("Dávid") and the CS element that follows ("és", and) affect speech production in the wider context. In both cases disfluency phenomena:occur: first an instance of self-repair (*at/is front*) then a re-start (*goal/goal keeper*). These disfluencies may indicate a higher cognitive load associated with switching back to English.

4.3.2.1.2. Conceptual non-equivalence and code-switching

Conceptual non-equivalence is the epitome of asymmetry of representation at the crossroads of cultures. In cases where a lexical concept exists in one language without an equivalent in the other, bilinguals face the challenge of conveying the intended meaning in the incongruent language. One strategy is to provide an explanation by pointing out the most relevant features of the concept in question. However, this approach may be arduous, lengthy, and disruptive for the flow of communication. What is more, the result of such explanations may seem a poor approximation and still unsatisfactory in the speaker's mind. In such cases, code-switching may serve as a more effective and accurate alternative, and if this is the case, it is used in an interpretive function (Pavlenko, 2008).

In the category of non-equivalence, owing to cross-cultural or cross-linguistic differences, no monolingual speaker of the non-corresponding language would have a grasp of the concept even if it is described or explained in their language. This is the case of certain dishes which are particular to one culture but unknown in the other. *Pasta with poppy seed* would evoke no memory or image in the mind of an individual growing up in the UK without some knowledge of Hungarian cuisine. Similarly, *term* would not ring a bell to any Hungarian native speaker unless they are familiar with the school system in the UK or some other country with a similar division of the school year. Therefore,

categorization does not seem problematic. The transcripts contain the following instances in this category:

CS from Hungarian to English: *term, science, Reception [year], report card, roast dinner, gammon*

CS from English to Hungarian: *pörkölt tésztával (stew with pasta), rizses husi (meat risotto), főzelék fasírttal (creamed vegetable with meatloaf), diós tészta (a sweet pasta dish with walnut), mákos tészta (a sweet pasta dish with poppy seed)*

In the interview in Hungarian, most of the code-switched elements relate to the topic of education, with a few pertaining to the domain of food. Due to the differences between the educational systems in the UK and Hungary, certain English concepts, such as *term*, *science* (as a school subject), *Reception*, and *report card* lack direct conceptual equivalents in Hungarian. As a result, code-switching provides an efficient means for the speaker to convey these ideas. The same applies to food-related code-switched elements, where cultural differences of culinary practices similarly prompt the use of English terms to express concepts that are not easily translatable.

The term *science* emerges on two occasions in the interview, both times denoting a school subject. Yet, a closer analysis reveals a conceptual distinction between the two instances. In the first case, it appears in in the context of home assignments and is modified by a Hungarian inflection ("*science-re"*; 'for science'). This instance is no different from the previously listed school-related code-switches, functioning as a means of interpretation. From the context, i.e. various assignments at the UK school, it is obvious that the speaker refers to the school subject, encompassing the comprehensive study of the physical and natural world.

In the second occurrence, *science* is listed alongside other subjects taught at the UK school, and the participant provides clarification through self-correction, adding the intended Hungarian term "*matek*" ('maths'). This substitution notably narrows the scope of the concept to a specific branch of natural sciences, mathematics. The correspondence here reflects the shift in the structure of the conceptual categories, shaped by the participant's current schooling experience in Hungary, where natural sciences are divided into discrete subjects such as mathematics, physics, and chemistry. The shift supports Pavlenko's argument (2009a) regarding the context-dependent and dynamic nature of bilingual conceptual systems.

The interview in English contains instances of non-equivalence exclusively within the domain of food. Notably, at one point, code-switching takes place at the discourse level: the participant shifts entirely from English to Hungarian for an extended portion of the interview in which canteen meals are discussed, despite the interviewer continuing in English (see Example 22 in the section about affective factors).

While naming the dishes in the non-target language may reflect an interpretative intent, the complete language shift appears to be motivated by a different factor. Given that the participant is expressing strong preferences – both likes and dislikes – this segment likely carries a significant affective load, which may account for the full switch to the emotionally dominant language.

In the following section of the interview, after switching back to English, the participant discusses two typical Hungarian dishes. Initially, she offers translations in English but then feels compelled to name the dishes in Hungarian as well (see Example 26).

Example 26

And something strange in the school food as well is that er for the main food er sometimes it would be er pasta with walnuts. So er ***diós tészta, meg mákos tészta*** *er and they wouldn't give any food with it. Well, the soup would be quite meaty but then they wouldn't give any other food. Well, the food would be the sweet walnut and poppy seed er pasta.*

Here code-switching once again fulfils an interpretive function, as evidenced by the positioning of the phrases, and lack of syntactic integration. Moreover, the content of the entire paragraph offers a deeper insight into the system of conceptual representations in the participant's mental lexicon. The mention of soup and sweet pasta – a common combination in Hungarian school canteens – is framed by the speaker as unusual, indicating a sense of detachment. While a monolingual and monocultural Hungarian speaker would regard this combination of dishes perfectly normal, the participant's knowledge of British culture situates these foods in a different light, creating a distancing effect. Considering the participant's linguistic and sociocultural background, this excerpt reflects a distinctive integration of cultural concepts and highlights the presence of a bicultural perspective.

4.3.2.1.3. Partial equivalence and code-switching

Partial equivalence is a more complex issue. Taking Pavlenko's definition as a starting point, this is the case when certain elements of the two corresponding lexical concepts

overlap, but others do not. The case of *RE* vs. *hittan* can be cited as an illustration. When used as the name of a school subject, i.e. one item in the list of school subjects, the representations can be regarded as equivalent. However, when considering the content of the given subject, as experienced by the participant in the U.K. school (dealing with religions around the world), and eventually in the Hungarian school (centering around Christianism), it becomes evident that the two concepts diverge. Consequently, the *RE* and *hittan* pair has been classified as a case of partial equivalence. The same principles were applied in assigning items into one of the three categories.

In the interview in Hungarian with Participant A, four items are standing in a relationship of partial equivalence. *RE* and *Religious Education* appear as two separate instances but represent the same lexical concept, with RE serving as the abbreviation for Religious Education. While *Religious Education* and *hittan* both denote a school subject, they differ in content, making them as distinct categories (see the results section for a more detailed analysis). A similar relationship exists between *high school* and *középiskola*, as both refer to secondary education institutions, but differ in age range, specialization options, and types of final examinations.

Closer analysis of the data reveals that in both cases the participant refers to the overlapping representations yet resorts to code-switching. One explanation could be that, since the participant began schooling in the UK, these concepts were first encoded in English, resulting in a higher activation level for the English terms compared to their Hungarian equivalents. This is supported by the appearance of *PE*, despite the existence of a fully equivalent lexical item in Hungarian (*testnevelés*). A second explanation, possibly reinforcing rather than weakening the first, lies in the structure of representations. Their distinct cultural connotations increase the cognitive salience of the English representations, making code-switching more efficient not only ecologically but also conceptually.

The appearance of the term *literacy* in the data raises questions due to the ambiguity of the speaker's intent. It is mentioned alongside *English grammar ('English grammar **meg** literacy')*, in reference to a fifth-grade school subject. This suggests a possible instance of phonologically related approximation where the speaker may have intended to say *English grammar and literature*. The false start before '*English grammar*' seems to reflect interference from the Hungarian name of the corresponding school subject *Magyar nyelv és irodalom* ('Hungarian grammar and literature'). However, since some

uncertainty remains even after the interviewer's request for clarification, validity can only be maintained if this item is included in the analysis (see Example 27 for context).

Example 27

*INV: *és milyen tantárgyaid voltak?*
and what subjects did you have?

*INV: *mondjuk az utolsó éven.*
say, in the last year.

*INV: *emlékszel?*
can you recall them?

*PAR: *nem voltam hatodikban csak ötödikben de ott… öö… volt …öö …science… matek.*
I wasn't in sixth grade, only fifth, but there… erm …there was… erm science… maths.

*PAR: *ööm ööm gr volt* ***English grammar*** *meg* ***literacy****.*
erm…erm… gr there was English grammar and literacy

*PAR: *vagy ha jól tudom.*
or if I am right

*INV: *literature*?

*PAR: **li lit**, igen az, meg öö szerintem ennyi.
lit lit, yes, that's right, and erm I think that's all.

No Hungarian equivalent is available for *literacy* denoting a single school subject, but two constituents, reading comprehension and written production, are part of the Hungarian lower elementary curriculum. Provided the speaker did mean to say 'literacy', this example can be identified as nesting, where the English category subsumes two categories in Hungarian (Pavlenko, 2009a). In case the speaker meant to say 'literature', it can be regarded as a case of phonological substitution facilitated by the activation of a phonologically similar word.

The interview in English contains one case of code-switching in the category of partial equivalence. After naming an activity in English (*Hungarian folk dance*), the participant feels the need to add the Hungarian equivalent (*néptánc*) as a means of interpretation (see Example 28).

Example 28

*INV: *and what about dance?*

*INV: *what kind of dance do you do?*

*PAR: *er Hungarian folk dance*.

*INV: *oh.*

*PAR: *néptánc*.
folk dance

A morphological analysis of this example yields an interesting result. *Hungarian folk dance* functions as the object of the verb *do*; therefore, it would be expected that the object suffix be attached to the Hungarian equivalent: '*néptánc* +***ot***'. However, this is not the case. The Hungarian element does not seem to be morphologically integrated into the structure of the hypothetical full sentence 'I do Hungarian folk dance*'*. This supports the interpretation that the code-switched element is presented as an additional reference, rather than a syntactic constituent of the main clause.

The following example occurs in the portion of the interview with Participant B where he is reminiscing a family holiday at the beach:

Example 29

PAR: *because there … because there are lots of people that I / that I …. because my my erm friend was there and and my ….Koppány* ***is.***

In this example the participant seems to be searching for a phrase (possibly classmate or teammate). As the sought item seems to be inaccessible, he decides to name the person, which in turn serves as a phonetic trigger for code-switching ("is"; too).

English *too* and Hungarian *is* show substantial semantics overlap in their core additive function (which is the case in the cited example) but they are not fully equivalent. Hungarian *is* participates in a broader range of constructions, such as "even" (e.g. *még Péter is eljött – even Peter came*), and as a component of concessive structures (e.g. *bármi is történik – whatever happens*). These non-equivalent components may present challenges for English learners of Hungarian.

It is important to note that, beyond its additive meaning, English *too* can also function as an excessive degree modifier (e.g. *He is too young to drive*), a mening expressed in Hungarian by *túl* (*túl fiatal – too young*). This semantic distinction may pose difficulties for Hungarian learners of English at lower proficiency levels.

As demonstrated in the previous sections, code-switching is never the result of an arbitrary language choice, and this holds particularly true in single-language contexts. A thorough examination of the interplay between conceptual representations and contextual factors is essential for understanding the underlying motivations that regulate each instance of code-switching.

4.2.2.2. Borrowing

There are two instances of borrowing in the interview in Hungarian with Participant A. Both are based on lexical items that are commonly used in conversations among Hungarian teenagers.

Table 18 Instances of borrowing in Participant A's interview in Hungarian

random	véletlenszerű/random	full	*a tanár ... osztotta ki random szerűen*	
sleepover	ottalvás/sleepover	full	*meg amúgy volt voltak sleepoverek*	

The word *random* in the non-target form "*random szerűen*" is a borrowed element functioning as a constituent of a hybrid construction (see the analysis in the previous section). *Sleepover* appears with a Hungarian plural suffix attached to it. Although *ottalvás* is available as an existing Hungarian equivalent, the speaker appears to opt for the borrowed item. Given that this instance occurs in a section of the interview where the participant is discussing family gatherings in the U.K., the contextual setting may have promoted the selection of the English-origin lexical item.

Chapter 5. A Multilingual Case Study

5.1 The linguistic background of participant C

Participant C is a thirteen-year-old multilingual child, whose language repertoire consists of five languages. Her languages in order of dominance are English, French, Hungarian, German, and Russian. She acquired her languages in the following order: French and Hungarian simultaneously, English, German and Russian (the latter two through language learning). She began acquiring French and Hungarian from birth and became fluent in both languages at the age of three. She began acquiring English at the age of two, when the family moved to the U.K., and, after a very quick adaptation facilitated by the English-speaking nursery school environment, became fluent at the age of 3. She started learning German in a formal setting from the age of 11 and, Russian as an optional subject from the age of 12, as she fundamentally enjoys learning new languages. She has three languages in her dominant language constellation at the time of the interviews: French, English and Hungarian.

She had lived two years and 6 months in France and had had altogether one year and 6 months of experience in a nursery school where French was spoken. She had lived 11 years in the U. K. and gained 11 years of experience in schools where English is spoken. She has never lived in Hungary and never attended a Hungarian school.

In her case the distribution of language exposure at the time of data collection is demonstrated in Table 19.

Table 19 Participant C's distribution of language exposure at the time of data collection

English	French	Hungarian	German	Russian
65 %	20 %	12 %	3 %	0 %

Table 20 illustrates the parent’s ratings, on a scale from zero to ten, to what extent the participant was exposed to each of her languages in various contexts at the time of data collection:

Table 20 Exposure to each language in various contexts

	English	French	Hungarian	German	Russian
Interacting with friends	10	1	1	1	0
Interacting with family	0	10	5	0	0
Watching TV	1	2	1	1	0
Listening to radio/music	1	2	1	2	0
Reading	6	2	1	2	0
Language lab/self-instruction	0	0	0	0	0

Table 21 summarizes how much the following factors contributed to the participant's language development in each language on a scale from zero to ten:

Table 21 Contributing factors to the participant's language development in each language

	English	French	Hungarian	German	Russian
Interacting with friends	8	2	2	2	0
Interacting with family	0	10	10	0	0
Reading	6	5	2	2	1
Language tapes/self instruction	0	0	0	0	0
Watching TV	1	2	1	2	0
Listening to the radio	1	1	0	2	0

Table 22 below demonstrates which language she would choose for various activities.

Table 22 The languages the participant would choose for various activities

	English	French	Hungarian	German	Russian
Speaking with a person who is equally fluent in all of her languages	50 %	30 %	20 %	0 %	0 %
Reading a text translated into each of her languages	80 %	10 %	10 %	0 %	0 %

On a scale from zero to ten, the participant's *level of* ***proficiency*** in speaking, understanding, and reading, as reported by the parent, is demonstrated in Table 23.

Table 23 Reported proficiency levels according to various language skills in each language

	Speaking	Understanding spoken language	Reading
French	10	10	10
English	10	10	10
Hungarian	9	9	9
German	5	6	6
Russian	4	4	4

As a member of a French-Hungarian multilingual family residing in an English-speaking country (the U.K.), Participant C is immersed in the three of her most frequently used languages on a daily basis. She goes to an English school, so over time English has become her dominant language. Nevertheless, she speaks French with her father and brother, and Hungarian with her mother.

Based on the data in terms of language performance as well as the personal accounts of language experience, it can be stated that she has become a textbook example of a multilingual. Beyond her ability to speak multiple languages, she demonstrates a high level of multicultural awareness: she fully embraces her French identity, while also identifying as a proud "Londoner" who is highly aware and fond of London's multicultural milieu. Another aspect of her true multilingual self is the high level of metalinguistic awareness. She not only enjoys speaking multiple languages and learning additional ones, but also actively reflects on cross-linguistic differences and continually compares her languages. Her success in maintaining a very high level of proficiency in English, French and Hungarian is partly due to her distinct pro-active attitude towards cultivating all three languages in her dominant language constellation and engaging with all three cultures as much as possible. For example, she attended a French weekend school in London for children with a francophone background, she asked her Hungarian grandmother to teach her the language and Hungarian history in online sessions and maintains regular contact with a Hungarian cousin through live chat two or three times a week.

5.2 Results and data analysis

Overall, Participant C understood and endorsed fully the guidelines specified at the beginning of the interviews, namely that she is encouraged to respond to the questions in as much detail as possible. Her responses in all three interviews contain long stretches of answers in which she elaborates on the various topics discussed. Data fully confirm the proficiency levels indicated in the LEAP questionnaire and reported in the parental interview.

Examining the frequency of CLI instances in the data, a definite asymmetry can be observed. Implicit phenomena occur primarily in the interview conducted in Hungarian, whereas a more balanced distribution of explicit phenomena was found across the three interviews. Breaking down the implicit CLI phenomena into categories, the results reveal a clear asymmetry: no examples of conceptual and lexical/semantic CLI and only 3 instances of structural CLI were found in the interviews in English and French. The interviews conducted in Hungarian on the other hand contained no conceptual transfer, but yielded all the 9 examples of CLI in the lexical/semantic category and 12 of the 15 instances in total of CLI in the structural transfer category.

According to the data from the parental LEAP questionnaire (see Appendix 1), English is the dominant language of the speaker, followed by French. Hungarian is in the third position on the scale of dominance. The same order is established by the speaker herself in the interview in Hungarian when asked which language is the easiest for her to use:

"Hát azt hiszem, hogy most már angol, de sokáig azt mondtam, hogy francia. De azért most szerintem azért is, mert a Covid miatt nem voltunk annyira sokat Franciaországon. Kevesebbet beszéltem franciául, és ugye mindig beszélek minden nap körülbelül angolul, mert iskolába járok ott és angol iskolája iskolára járok, és az öm akkor mindig beszélek angolul, meg olvasok, meg írok meg öö hallgatok meg ilyesmik úgyhogy mindig, öö angolul mindig van valami, de franciául meg magyarul nem minden nap meg nem folyton kell beszélni."

"I think now it's English, but for a long time I used to say it was French. But now I think it's also because, due to Covid, we didn't spend so much time in France. I spoke French less, and of course I speak English almost every day, because I go to school there and I go to an English school, so I'm always speaking English, and reading, and writing, and

listening and things like that, so there's always something in English. But in French and Hungarian I don't have to speak every day and not constantly."

When asked about what nationality she is, she also reflects on her languages and her experience as a multilingual:

I don't know, living in London, I've always felt like different because I speak so many languages and people are like amazed that I speak so many languages. So like it's, I don't think of it as normal in England, I'm not English. Um, but I think in Hungary also it was, I've never felt Hungarian, even though I could speak it like too since like I was, I'm never like completely fluent. But even though I can speak it, it's always weird because I don't know the expressions, I don't know the, the slang kind of like young people's slang. And so it's, I like, I feel like I'm speaking a different language when I'm speaking Hungarian. Um, and then in France, I can understand because we go so much. And like they know that I'm French. That I think probably France still is the main, the main nationality.

5.2.1. Implicit forms of CLI

Given that Participant C is a multilingual speaker, the analysis of implicit CLI phenomena involves the examination of the equivalents in all her other languages in order to determine, where possible, the direction of linguistic influence, i.e. which language exerts an influence on the language being used. In the following sections, CLI examples will be showcased with the translations in English, French, German and Russian (in this order):

5.2.1.1. Transfer at the conceptual level

The interviews with Participant C contain no instances of conceptual transfer.

5.2.1.2. Transfer at the lexical/semantic level

No CLI of this type was identified in the interviews conducted in English and French, all CLI instances of lexical/semantic transfer were identified in the interview conducted in Hungarian. Examining the CLI in this category reveals that in most cases identifying the source of influence can be problematic or impossible in multilingual data.

The following example illustrates the relatively rare case in which one language, in this case English, can be identified as the source of cross-linguistic influence:

Example 30

In a section of the interview conducted in Hungarian, the participant explains how many guests she is allowed to invite when celebrating her birthday. The CLI occurs in this context:

Hát attól függ, hogy hova megyek, mert akkor szabaduló szobába mentünk és akkor hat ember volt a max, de öm ***hogyha csak a házban van,***
if just the house+suffix in it's

akkor amennyit csak akarok, de utána nekem kell takarítani.

Well, it depends on where I'm going, because that time we went to an escape room and the maximum was six people, but um, **if it's just in the house**, then as many as I want, but afterwards I have to clean up.

The first question to ask here is what the intent of the speaker is. One possibility is that she mentions "*ház*" (house) as the house of the family. In this case, the common expression would be "*hogyha csak a házunkban van"* (*if it's just in our house*). Although the family does not reside in a detached house (personal communication by the parent), this meaning cannot be fully ruled out as they occupy a housing unit called "upper maisonette", a French-origin expression containing the lexical element *maison* (*house*); the second possibility is that the participant erroneously mentions "*a házban*" (in the house) to refer to "*otthon*" (*at home*), as opposed to a different venue, such as an escape room. In this case the target phrase is *hogyha csak otthon van*.

If we examine the latter possibility in the participant's other languages, we find that in three of the speaker's languages the concept of home is expressed by collocations that contain the lexical item *house (ház)*;

English: *if it's just at home*
French: si c'est seulement *à la* ***maison***
German: *wenn es nur im* ***Haus*** *ist*
Russian: *если это только в* ***доме***

While neither English *house* nor Hungarian "*ház"* is linked conceptually to *home*, and *otthon* respectively, French *maison*, German *Haus*, and Russian *дом* conceptually integrate a "house" component as well as a "home" component, which seems to have surfaced in the utterance. Therefore, French, German or Russian are all potential sources

for the influence, with French being the most likely candidate due to the large differences in dominance.

Example 31

In another section of the same interview, the participant recalls the festive events on Guy Fawkes Night:

PART:	*Aha,*	*van*	*a*	*Guy Fawkes Night*		*november*		*ötödikén.*
	Yes	there is	the	Guy Fawkes Night		November		fifth + on
	Mindig	*halljuk,*	*vagyis*	*látjuk*	*a.*	***tűzijátékokat,***	*öm*	*meg…*
	Always	we hear	rather	we see	the	fireworks	erm	and…

Yeah, there's Guy Fawkes Night on November 5th. We always hear—or rather, see—the **fireworks**, um, and…

INV:	*És ki szoktatok menni egyébként ilyenkor ünnepelni?*							
	And do you usually go out to celebrate at this time?							
PART:	*Aha,*	***voltunk***		***egyszer***	***egy***	***ilyen***	***szép***	***tüzijáték…***
	Yeah,	***we have been***		***once***	***a***	***like***	***nice***	***fireworks…***
	kirakatra.	*És*	*az*	*jó*	*volt,*	*de*	*nagyon*	*hangos.*
	display + to.	***and***	***it***	***good***	***was***	***but***	very	loud.

Yeah, **we have been to a nice firework … display once**. And it was good, but very loud.

This excerpt contains a transfer phenomeon (*"tűzijáték" kirakat*; *firework display*) and a procedural memory related CLI instance. The latter will be discussed in a later section. The transfer phenomenon is associated with the Hungarian word *tűzijáték*, which is mentioned twice in this section. First, it appears in its fully target-like form, complete with the appropriate inflections denoting plural and objective case. *("tűzijáték-ok-at"; fireworks + pl +obj.*). The second time it is mentioned, it emerges in a non-target form: "*tűzijáték kirakatra*". The utterance is accompanied by a series of body language and linguistic cues: a pause between *tűziáték* and *kirakatra*, to allow time for a search for the appropriate lexical item to formulate the appropriate collocation; a hand gesture and facial expression likely to mark dissonance, i.e. the participant is aware that the accessed item *kirakat* is not the most fitting option.

To examine a potential cross-linguistic influence, we need to look at the translations of the utterance in all of the participant's languages:

English:	we have been to a **firework display** once.
French:	on a assisté une fois à un beau **feu d'artifice**.
German:	wir waren einmal bei einem schönen **Feuerwerk**.
Russian:	мы однажды были на красивом **фейерверке**.

The English translation stands out as the only one, in fact, a collocation, with the same surface structure as the non-target item "*tűzijáték kirakat*": *firework display*. The semantic analysis reveals that the non-target form "*tűzijáték kirakat*" is associated with two distinct meanings of the word *display*: one is 'an event' or 'a show', such as a *fireworks display* or an *air show*. This constitutes the intended meaning. The corresponding (target) lexical item in Hungarian is *bemutató*. The other meaning of the word *display* is 'a static arrangement', as in *window display* or a *museum display*. The accessed non-target element *kirakat* in Hungarian is associated with this meaning. Therefore, it can be concluded, that the CLI instance is a lexical and semantic transfer: the non-target form "*tűzijáték kirakat*" is the result of implementing the surface structure of the corresponding English collocation, and linking the wrong meaning of the polysemous English word *display* to the Hungarian word *kirakat*, which refers to a static arrangement, but not to an event.

Example 32

This example comes from the portion of the interview in Hungarian, when the participant is summarising the story of a book she read as a child in Hungarian, with the help of her mother. While she describes an adventure the characters go through, she uses the following phrase: "*van amikor nem tudják* ***elkapni a vonatot***". (*once they can't catch the train*). The phrase *elkapni a vonatot* is a non-target form in Hungarian. The translations of the quoted line are as follows:

English:	once they can't **catch the train**
French:	une fois, ils n'arrivent pas à **attraper le train**
German:	einmal schaffen sie es nicht, **den Zug zu erwischen**
Russian:	однажды они не **успевают на поезд**

The non-target phrase may be the result of CLI of English (*catch the train*) or French (*attraper le train*), or German (den Zug erwischen) on Hungarian. Since English *catch,* French *attraper,* and German *erwischen* overlap semantically, it is not possible to determine which of these languages provided the source for the transfer. The quoted verbs

in all three languages are polysemous: they may refer to *be in time for the train*, as well as *to get hold of* (e.g. a ball, or a criminal). In Hungarian, on the other hand, these two meanings are expressed by two distinct verbs: *elérni* (be on time) is one, being the target form, while *elkapni* is the other, which corresponds to the second meaning of the above mentioned verbs. Therefore, the non-target output "*elkapni a vonatot"* is the result of a semantic transfer where the meaning *be in time* is erroneously linked to the Hungarian word *elkapni*. Consequently, English, French and German are all potential candidates for being the source. Russian *успевать* is the only one that does not have the second semantic component (i.e. *get hold of*), therefore it is the only language that can be eliminated as a potential source in this case.

As we have seen, the identification of the source language in implicit CLI instances in multilingual speech is often unpredictable and, in most cases, ambiguous, particularly when the languages involved are typologically close.

5.2.1.3. Lexical selection phenomena

The instances discussed in this section involve trouble accessing or selecting the desired lexical items, based on semantic or phonological connections. In the following sections some of these phenomena will be discussed based on examples in two categories: semantic substitutions and phonologically related substitions. All of these phenomena occur exclusively in the interview conducted in Hungarian with Participant C.

Semantic substitutions and approximations

Within this category, non-target forms may reflect difficulty in distinguishing nuances of meaning between synonyms (Examples 33 and 34), an inadequate selection of words from the same semantic domain (Example 35), or a difficulty in lexical access or an instance of approximation (Example 36). For example, when the participant is discussing the preparations for the visit to Hungary, she mentions that they had a whole day to pack their things because on the day before departure there was no school:

Example 33

> PART: *Igen, ugye ööm pénteken kellet volna lenni iskola, de nem volt és azért pénteken volt egy egész nap hogy pakoljunk,* ***összetegyük a dolgokat*** *meg vásároljuk meg ilyesmi.*
>
> Yes, um, on Friday we were supposed to have school, but there wasn't, and so Friday was a whole day for us to pack, put things together, shop, and things like that.

Saying "*összetegyük a dolgokat*" instead of *összerakjuk a dolgokat* is a semantic substitution based on synonymity: two words with very similar semantic components, yet when it comes to packing, or getting things ready, as in the given context, "*összerakjuk*" is more idiomatic.

A similar instance occurs when the participant discusses her experiences in going grocery shopping in Hungary:

Example 34

INV: *És akkor mi az, amit magyarul beszéltek például meg?*

PART: *Hát hogyha megyünk vásárolni például mondjuk, vagy a boltba vagyunk, akkor magyarul beszélünk egymással, meg a öm az* ***árussal*** *is.*

INV: And then what is it that you discuss in Hungarian for instance?

PART: Well, for example, if we go shopping, or if we are in a store, then we speak Hungarian with each other, and also with the **shop assistant**.

Selecting the word „*árus*", instead of *eladó* to refer to the shop assistant is semantic substitution again: both Hungarian words refer to a person who sells something but „*árus*" is more common to be used in the context of farmers' markets, while *eladó* is more idiomatic for people who work in a shop.

The next example was taken from the portion of the interview when the discussion focuses ont he languages used in the family:

Example 35

PART:	*az anyukám… öööö…*	*az apukám*	*francia*
	my mother …. erm…	my father	[is] French

This instance of self-repair is an example of semantic pharaphasia; both *mother* and *father* have a semantic component of *parent*; the error stems from selecting the wrong word from the same semantic domain.

The last example in the category of semantic substitution was taken from a section of the interview where the participant is asked to talk about her fears or worries. In her response she mentions global warming as a major concern for her:

Example 36

INV: *És van valami, ami miatt aggódsz így világszinten?*

PART*: Hát a felmelegedés,* ***a*** *ilyen…* ***global warming****. Igen, az az izgat nagyon, mert hát ugye nekünk kell ezzel* ***nekünk generációnak*** *kell ezzel foglalkozni, és*

					az	***kicsit***	***rossz,***
					it's	a bit	bad

hogy	*ránk*	*fogtak*	*hogy*	*ránk*	*fogták.*
that	on us	put the blame	that	on us	put the blame
		V 3rd p. pl, past, indefinite			V 3rd p. pl, past, definite

INV: And is there anything you worry about on a global level? **PART:** Well, warming, that kind of… **global warming**. Yes, that worries me a lot, because, well, **our generation** has to deal with it, and **it's a bit bad that they've put that on us, that pushed that onto us.**

Although our main focus in this section is the phrase „*az kicsit rossz, hogy ránk fogtak ránk fogták*", it is important to note that the utterance appears in a section which contains a series of disfluency phenomena (filled and unfilled pauses, restarts), as well as an instance of code-switching (global warming). These phenomena are undoubtedly connected. These aspects will be addressed in a later section on code-switching.

In this case, the expression ("*ránk fogták*") selected to convey the idea of leaving or shifting the burden of global warming onto the speaker's generation does not match the meaning of the intended idiomatic expression (*ránk hagyták* or *ránk hárították*), nor does it seem to derive from another expression of similar meaning. It therefore appears to be a substitution arising from the lack or inaccessibility of the appropriate phrase.

Phonologically related substitution

Phonologically related substitution in bilingual speech occurs when the speaker produces a lexical selection error involving phonologically similar lexical items. A small number of such speech errors were observed in the data, all occurring exclusively in the interview conducted in Hungarian. One instance occurs in a portion of the interview where the participant explains that the holiday in Hungary was a long-awaited event after an extended period spent in London, and going to school:

Example 37

INV: *El tudnád nekem mondani, hogy mikor érkeztetek Magyarországra? Mikor jöttetek?*

PART: *Szombaton érkeztünk ide, mivel csak csütörtökön fejeztük be az iskolát. És ööö már nagyon vártam, mert* ***már*** already ***régen*** a long time ago ***iskolában*** at school ***vagyok*** I am/I have been ***és*** and

régen a long time ago ***Londonban*** in London ***vagyok*** I am/I have been *és már unalmas volt. És ööö igen, most már a Balatonnál vagyunk és lehet fürödni meg mindenfélét és az nagyon jó Londonhoz képest.*

INV: Could you tell me when you arrived in Hungary? When did you come?

PART: We arrived here on Saturday, since we only finished school on Thursday. And um, I had really been looking forward to it, because **I've been at school for a long time and I've been in London for a long time**, and it had already become boring. And um, yes, now we're at Lake Balaton, and you can swim and do all sorts of things, and that's very good compared to London.

The context suggests that the intended temporal adverb is *régóta* (*for a long time*), rather than "*régen"* (a long time ago). The former denotes period lasting up to the moment of speaking, whereas the latter refers to a more distant time in the past. The substitution may be attributed to the phonological similarity of the two forms, both derived from *rég* (*old times*). It is also noteworthy that the speaker uses the present-tense form "*vagyok*" (I am). While Hungarian does not grammatically distinguish between the present simple and the present perfect, the intended meaning appears to concern a past state that no longer holds (the speaker is no longer at school and no longer in London). The past tense form *voltam* (I was/I have been) would therefore better match the intended meaning.

A similar instance of phonological substitution can be observed in a section of the interview where the participant is asked to formulate her opinion about the current state of affairs:

Example 38

INV: Szerinted milyen világban élünk?

PART: Szerintem jobb, mint volt, de még mindig lehetne rajta igazítani.

INV: Miért jobb, miért gondolod, hogy jobb?

PART: Hát mert leginkább	**a nőknek**	**mindig**	**rossz**	**helyük**				
	women	always	bad	[their] place				
volt,	és most már kezd jobb lenni.	**Még mindig**	**nem vagyunk**	**a**	**legjobb**	**helyen**,		
had/have had		still	we are not	the	best	place + in		

de kezd jó lenni és az jó, az jó dolog. De igen, szerintem még lehetne sokat igazítani rajta.

INV: What kind of world do you think we live in?

PART: I think it is better than it used to be, but it could still be improved.

INV: Why is it better? Why do you think it is better?

PART: Well, because women have mostly always been in a bad position, and now it is starting to get better. We are still not in the best position, but it is starting to become good, and that is good, that is a good thing. But yes, I think it could still be improved a lot.

Similarly to the previous example, the substitution in this case appears to originate from the approximation of two morphologically related forms: *hely (place)* and *helyzet* (position, situation). While the former typically refers to a literal place or location, the latter is more commonly used in an abstract sense to refer to a person's status, situation or social position. Consequently, the target forms are *helyzetük* (their position, instead of *helyük*, their place) and *helyzetben* (in a position, instead of *helyen*, in a place).

As we have seen from the previous examples, such errors may reflect limited proficiency, difficulties in lexical selection, substitution, or approximation.

5.2.1.4. Structural transfer

Structural transfer refers to the cross-linguistic influence of the grammatical or syntactic patterns from one language on the production of another language. The resulting form may be target-like or non-target-like, depending on whether the structures of the two languages are compatible. The interview data with Participant C contain a considerably higher number of instances in Hungarian, a less dominant language, than in English and French, the speaker's most dominant languages.

In the following section, the speech phenomena will be presented according to the grammatical features they are related to.

Determiner-noun agreement

Example 39

INV: mondtad, hogy [name of town] után majd mentek [name of another town] -be. Ott ki lakik?

PART: Ott a nagymamám meg a nagypapa.	**De**	**még**	**lakik**		**ott**	**ööm**
	But	also	lives V 3rd p. sing		there	erm

anyának	**sok**	**barátnői**	meg barátok laknak ott mert mert ott járt egyetemre.
mother's	many	her female friends N pl.possessive	

INV: You said that after [name of town] you'll be going to [name of another town]. Who lives there?
PART: My grandmother and grandfather live there. But also, um, many of my mother's female friends and friends live there too, because, because she went to university there.

The highlighted structure contains an error in determiner-noun agreement. The phrase "*sok barátnői*" (many of her female friends) is problematic because in Hungarian the determiner "*sok*" (many) requires a singular noun, unlike in the speaker's other languages, where the determiner takes a plural noun and the verb is in 3rd person plural too:

English: **many** of her female **friends live** there

French: **beaucoup** de ses **amies** y **habitent**

German: **viele** ihrer **Freundinnen wohnen** dort

Russian: там **живут многие** её **подруги**

In Hungarian, however, the target phrase is: *sok barátnője (many of her frirends; determiner + N.sing. possessive).* The verb form preceeding the noun *("lakik", lives; V3rd person sing)* suggests that at the early stages of planning the utterance, this rule was applied, i.e. the verb form ("lakik") matches the singular noun requirement. The onset of interference seems to have occurred in the moment the determiner was articulated. Consequently, the noun is not in singular form, as required by Hungarian grammar rules, but in plural form, corresponding to the grammar of all the speaker's other languages.

As a side note, it is interesting to observe that Lanstyák reports non-normative plural marking after the quantifier *sok* ('many') among monolingual Hungarian speakers, particularly in dialectal varieties (2024). If this form becomes more widely established in standard Hungarian usage, it may eventually come to be regarded as accepted rather than as an error or a manifestation of transfer.

Preposition/inflection agreement

Example 40

This example is taken from a portion of the interview where the discussion centres around Guy Fawkes Night celebrations. The lexical/semantic transfer taking place in this example is discussed in the previous section (see the analysis of Example 31). Here only the non-target inflection "*tűzijáték kirakat**ra**"* will be addressed.

INV:	*És ki szoktatok menni egyébként ilyenkor ünnepelni?* And do you usually go out to celebrate at this time?						
PART:	*Aha,* *Yeah,*	***voltunk*** we were/have been	***egyszer egy*** once a		***ilyen*** like	***szép*** nice	***tüzijáték….*** fireworks
	kirakatra. display + to. N + alliative infll						

The inflection *-ra* (*onto*) added to "*kirakat*" (*display;* intended word *bemutató*) is a non-target-like form in the context of "*voltunk egyszer" (we have been … once)*. The target structure is *voltunk egyszer egy ilyen szép tűzikjáték bemutató**n** (kirakat**on**,* using the non-target lexical item*)*. According to Hungarian grammar "*voltunk egyszer*" (*we have been once*) requires a locative inflection on the subsequent noun: *kirakaton/bemutatón/, and not the alliative inflection, as it appears in the utterance: "kirakat**ra**"/bemutató**ra***.

The first step of the analysis should concern the verb in the utterance. The Hungarian verb "voltunk" semantically incorporates two potential meanings: one is that were were at a fireworks display (spaciotemporal state), and the other is that we have been there (reporting about a past experience). The use of "*egyszer*" (*once*) suggests that the latter is the intended meaning. Accordingly, the translations of the utterance in the speaker's other languages are as follows:

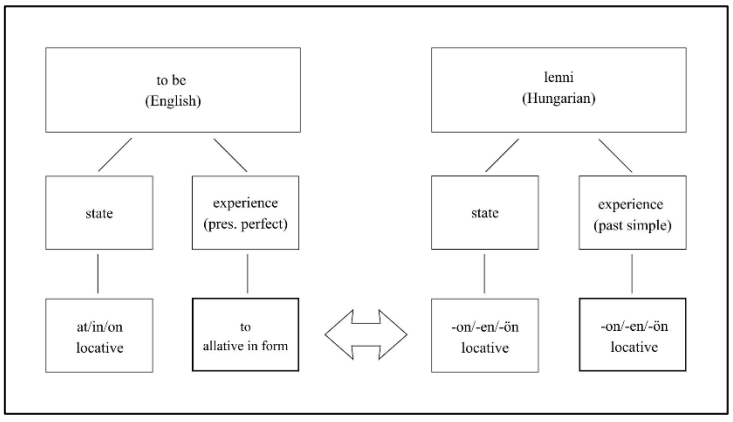
English:	we have been **to** a nice firework display once.
French:	on a assisté/été une fois **à** un beau feu d'artifice.
German:	wir waren einmal **bei einem schönen Feuerwerk**.
Russian:	мы однажды были **на красивом фейерверке**.

Keeping in mind the two possible meanings of the Hungarian verb, English seems to be the only verb, which has got two distinct forms two express this dichotomy: the past simple for spaciotemporal state, and the present perfect for past experiences. In the three other languages the equivalents of *once* next to the verbs indicate the second meaning, similarly to Hungarian.

The next step of the analysis focuses on the adverbials governed by the verbs in each language. Since the Hungarian non-target form *("kirakatra"/bemutatóra*) involves an allative inflection instead of a locative one, we need to look at whether this distinction is relevant in any of the speaker's other languages. The German and Russian translations can be ruled out as the predicates *wir waren* and *мы были* both take a locative prepositional phrase (*bei einem schönen Feuerwerk; на красивом фейерверке*) indicated by a specific case (German: dative; Russian: prepositional). These forms correspond to the Hungarian target form, involving a locative inflection on the noun (*kirakaton/bemutatón*). The French translation contains the preposition *à.* Although in general it may be used to express both locative (i.e. *on a été à ...)* and allative (i.e. *on est allés à…)* qualities but in this instance, maintaining the verb *to be,* only the locative meaning is relevant. *(On a assisté à…* is a more natural translation but here *à* refers neither to locative nor allative qualities, it is simply a prepositional complement of the verb *assister).*

The present perfect structure *has/have been* + *to* in English seems to be the only structure which may be associated with the non-target noun form (N + allative inflection) in the utterance. While both English verb *to be*, and Hungarian verb *lenni* take a locative preposition/inflection to express a spaciotemporal state, they differ when it comes to reporting past experiences: the perfect aspect in English requires the preposition *to*, a conceptually locative but formally allative preposition, while the Hungarian past tense takes a locative inflection, as illustrated in Figure 7.

Figure 7 The morphosyntactic differences between English and Hungarian constructions used to express past experience.



As illustrated in Figure 7, the non-target expression seems to be a CLI involving the influence of English on a Hungarian utterance: "*kirakatra*" contains an allative inflection *(*past tense +*-ra/-re*) attached to the noun, which suggests a transfer of the English allative form (*to*) onto the Hungarian structure. The same conclusion is supported by the fact that the same CLI is also associated with an English-origin lexical/semantic transfer (see the analysis for Example 31).

Example 41

Another example comes from the same portion of the interview, where the participant further explains what the fireworks look like. The account contains the following phrase:

INV: És akkor egy kicsit le tudod írni, hogy mi történik ilyenkor?

PART: Hát ilyen kis puskák, ilyen kis masinák vannak, és akkor ilyen mindenféle tűzijátékot lőnek ki, és úgy vannak szinkronban, hogy **mindenféle** **ilyen** **rajzokat** **meg**
all sorts of like drawings and

ilyesmiket **csinálnak** **az** **ég,** **az** **égbe.**
such things [they] do the sky the sky+into

INV: And so could you describe a little bit what really happens then?

PART: Well, there are these guns, these small machines and then they eject all sorts of firework, and they are synchronized in a way so that they do all sort of drawings and such things in the sky.

In this example " *az égbe*" (*the +sky + into*) represents a non-target form because of the wrong inflection attached to the noun. The restart in the utterance may be indicative of the speaker's effort to search for the adequate inflection. The target Hungarian form is *az égre* (*the + sky + onto*). Here, unlike in Example 40, the error does not involve a wrong choice between a locative and an allative inflection, as both the non-target form and the idiomatic target form incorporate an allative suffix. The choice here is rather on choosing between *into* and *onto*, based on what sounds more natural. Looking at the translations, we find the following:

English:	they make drawings **in the sky**	
French:	ils font des dessins **dans le ciel**	
German:	sie machen Zeichnungen **in den Himmel**	(an den Himmel)
Russian:	они делают рисунки **в небе**	(на небе)

In all of the speaker's other languages the most natural forms involve an equivalent of "*égbe*", the actual non-target form. This is indicative of a potential cross-linguistic influence. In two cases, in German and Russian, there exist alternatives which would correspond to the Hungarian concept "*égre*" (German: *an den Himmel*; Russian: *на небе*,

but these are less idiomatic options. In the case of English and French, no such alternatives are available. These observations do not provide conclusive evidence regarding the source language of CLI:

Atypical word order

In a section of the interview where the participant is asked to make comparisons between the U.K. and Hungary, the following sentence is formulated:

Example 42

PART: Ööm, hát Londonba, az ugye egy város, úgyhogy sokkal tobb több ember van,

meg	**modernebb**	**egy kicsit**	**is**	**szerintem**.
and	more modern	a bit	also	I think

Um, well, in London, that's a city, of course, so there are many more people, and I think it's also a bit more modern.

If we compare the participant's languages from the perspective of word order rules, we find that they can be ranked according to the level of flexibility. English and French have the lowest flexibility as in these languages syntactic relations define the order of words in a sentence (SVO being the basic word order). German is somewhat more flexible due to the fact it distinguishes between main clauses (SVO) and subordinate clauses (verb-final) as to the position of the verb. Russian has relatively flexible word order rules, defined by information structure and emphasis. Hungarian has the most flexible word order system governed primarily by topic-focus structure.

In the quoted passage, two elements require cross-linguistic examination: the position of the modifier "*egy kicsit*" (*a bit*), and that of the additive adverb "*is*" (*also*).

As regards the word order of "*egy kicsit*" (*a bit*) and "*modernebb*" (*more modern*), Hungarian permits more than one arrangement: *egy kicsit modernebb*, and *modernebb egy kicsit* are both acceptable. In the speaker's other languages, by contrast, the equivalent modifier must precede the adjective (see the underlined phrases):

English: and I think it's **also** a bit more modern

French: et je pense que c'est **aussi** un peu plus moderne

German: und ich finde, es ist **auch** ein bisschen moderner

Russian: и, по-моему, это **ещё** немного современнее

This position is also fixed: *a bit* and *more modern*, as well as their equivalents in the other languages, form a single unit and cannot be separated in any of the four languages. This constraint appears to have been transferred to the Hungarian phrase "*modernebb egy kicsit*", which, in turn influences the placement of "*is*" (*also*). If the phrase is interpreted as a single constituent, the additive adverb can only appear immediately after it, as is in fact the case in the quoted non-target utterance:

Non-target: *meg modernebb egy kicsit **is** szerintem (and + [it is]more modern +a bit +also +I think)*

While in English, French, German, and Russian the additive adverbs *also/aussi/auch/ ещё* precede the element they modify (the underlined phrases), Hungarian differs in that the corresponding adverb *is* normally follows the modified element. The target phrase is therefore as follows:

Target: *meg modernebb **is** egy kicsit szerintem* (*and + [it is]more modern + also +a bit +I think*).

Example 43

The only instance of structural transfer in French comes from the section of the interview where the participant is asked to propose ideas to make the world a better place:

> INV: Si tu voulais changer, améliorer le monde, qu'est-ce que tu proposerais?...
> PART : Je proposerais…. de de réduire **les les effets de carbone dioxyde…le dioxyde de carbone** sur l'environnement.
>
> INV: If you wanted to change, to improve the world, what would you suggest? …
> PART: I would suggest…reducing the effects of carbon dioxide on the environment.

The self-repair serves to realign the word order, potentially transferred from the English phrase *carbon dioxide* with that of the French collocation *dioxyde de carbone*. In addition, it requires the addition of "*de*" to conform to the French structure.

The use of definite and indefinite articles

Errors in this category involve omitting the article where it would normally be required, or adding one where it common usage would not do so. For example, mentioning Christmas and Easter, the participant refers to these celebrations in Hungarian without a definite article: "*de Karácsonyt megünnepeljük, meg Húsvétot is"*. This is in contrast to Hungarian usage, where the definite article is required, but in alignment with the rules of all the speaker's other languages, where no article is used:

Example 44

English:	*but we celebrate Christmas and Easter too*
French:	*mais nous fêtons Noël et Pâques aussi*
German:	*aber wir feiern Weihnachten und auch Ostern*
Russian:	*но мы празднуем Рождество и Пасху тоже*

Example 45

In the same section, when talking about family celebrations, the following sentence is formulated:

> *Azt szoktuk megü megünnepelni, amikor jön valaki Londonba és meglátogat minket, akkor* ***elmegyünk az étterembe****.*

This is an example of article insertion in a context where Hungarian does not normally require an article. When referring to eating out in general, Hungarian more naturally uses *elmegyünk étterembe*, or *étterembe megyünk*. The definite article "*az"* is typically used only when referring to a specific restaurant. The presence of the definite article in this context may therefore reflect the influence from the speaker's other languages:

> English: We usually cel— celebrate that when someone comes to London and visits us, then **we go to a restaurant**.
>
> French: C'est ce que nous avons l'habitude de cé— de célébrer : quand quelqu'un vient à Londres et nous rend visite, alors **nous allons au restaurant**.
>
> German: Das feiern wir gewöhnlich – wenn jemand nach London kommt und uns besucht, **gehen wir ins Restaurant**.
>
> Russian: Мы обычно это пра— празднуем: когда кто-то приезжает в Лондон и навещает нас, **мы идём в ресторан**.

A comparison of the translations suggests that either French or German may be the source of influence, since the corresponding phrase incorporates a definite article in these languages:

French: au = au = à + le

German: ins = in + das

Given the participant's dominant language constellation, however, French appears to be a more likely source of influence.

The use of possessive adjectives

The following examples both involve the non-target use of the possessive adjectives, but the instances occur in two different interviews.

Example 46

In the final section of the interview in Hungarian, the participant mentions one of her greatest worries, global warming. With reference to this issue, she makes the following statement:

Hát a felmelegedés,	*a ilyen…*	*global warming.*	*Igen, az az izgat nagyon,*	*mert*
Well the warming,	the kind of…	global warming.	Yes, that that worries [me] a lot,	because

hát	*ugye*	***nekünk kell***	***ezzel***	***nekünk generációnak***	***kell***	***ezzel foglalkozni,***
well	you see	we have to	with this	we generation	have to	with this deal

Well, global warming, that kind of… global warming. Yes, that really worries me, because, well, it's our generation that has to deal with it.

This is an error related to procedural memory involving a difficulty finding the adequate form of the Hungarian personal pronoun in the phrase that translates as "*our generation has to deal with it*". Morphologically the verb "*kell*" (*have to*) lies at the core of the problem since it requires the dative case. The participant's first attempt aligns perfectly with common Hungarian usage: "*nekünk kell*" (*we (dative form) + have to*). This phrase is followed by a restart where the speaker adds *generáció* (*generation*) for clarification. However, this insertion results in a non-target solution (*nekünk generáció + nak*) since the added noun changes the required form of the preceding pronoun: the target form (*a mi generáció+nk +nak)* consists of the definite article (*a*), the nominative form of the personal pronoun *we* (*mi*) and the word *generáció* with a possessive (-*nk*-) and a dative inflection (-*nak*). The error here is less likely to originate from an other-language influence, it is rather a difficulty in adapting the personal pronoun (from dative to nominative) and adding the adequate inflection to the noun *generáció* to express possession.

Example 47

The following instance also involves a procedural error concerning possessive pronouns; however, in this case the example is drawn from the interview in English. In a discussion of family relations, the participant refers to her aunt who is her father's sister:

***INV:** *Who's your favorite relative in France?*

PAR: Um, it's not a favourite relative but probably the one that I have the most fun with is my aunt, is my dad's sister, like* ***her um his only sibling.***

When referring to the father's sibling, the participant produces a self-repair involving the possessive adjective. It is highly probable that the context, namely the fact that the father is French and the aunt lives in France, strongly activates the participant's French. The error appears to originate from a difference between the agreement rules governing possessive adjectives in English and French. In English, the possessive agrees with the gender of the possessor (in this case, the father), whereas in French the form of the possessive adjective agrees with the gender of the possessed noun (in this case, the sister/aunt). Thus,the possessive forms differ in reference to the father's sister:

English: ***his*** *sister* (possessive adjective agreeing with the masculine possessor)

French: ***sa*** *soeur* (possessive adjective agreeing with the feminine noun)

The self-correction is also accompanied by slight laughter, suggesting the speaker's awareness of and amusement at the error, as well as a pause before the word "*sibling*". This pause may indicate an effort to inhibit interference from French.

Non-CLI related grammatical errors occurred exclusively in the interview conducted in Hungarian (see Table 24). The majority of these instances involve erroneous inflections related to possession (*testvéréje, barátaink akinek az anyuka francia és az apuka magyar*), plurality (*barátnőimekkel*), and spaciotemporal relations (*minden éven, nyári szüneten, angol iskolára járok ott, Debrecenen, Franciaországon, Görögországra*). These instances may be the result of lower proficiency, supported by the fact that no self-corrections take place in these occurrences.

Table 24 Non-CLI related morphological and morphosyntactic phenomena in the interviews with Participant C

item	translation	target structure
interview in Hungarian		
testvéréje	his sibling	testvére
a barátnőimekkel	with my friends	a barátnőimmel
Debrecenen (as in Budapesten)	in Debrecen (city)	Debrecenben
minden éven, most az éven	every year, this year	minden évben, ebben az évben
nyári szüneten	on summer holidays pendant les vacances d'été	nyári szünetben
minden ételen van valami hús	there's meat in every dish	minden ételben van valami hús
és angol iskolára járok ott	and I go to an English school there	és angol iskolába járok ott
Franciaországon (as in Magyarországon)	in France	Franciaországban
Görögországra (as in Magyarországra)	to Greece	Görögországba
barátaink akik akiknek [.....]az anyuka francia és az apuka magyar	our friends where […] the mother is French and the father is Hungarian	barátaink, ahol […] az anyuka francia, az apuka magyar

In sum, the vast majority of the structural errors were produced in the interview in Hungarian (ten instances), while only two such instances occurred in the interview in English and one in the interview in French. These data seem to support the view that procedural memory related phenomena are more likely to occur in a language in which the speaker has lower proficiency.

An additional aspect of implicit CLI in Participant C's interviews is that all instances affecting production in English and French are followed by immediate self-correction. This is not the case in relation to CLI occurring in the interview in Hungarian, nor in the case of non-CLI related grammatical errors. Although in some instances accompanying gestures or facial expressions indicate that the participant is aware of the non-target output, no self-correction takes place in subsequent utterances.

5.2.2. Explicit forms of CLI

5.2.2.1. Code-switching

Unlike implicit CLI instances, code-switching occurs in all three interviews with a relatively balanced distribution: six instances in the interview in English, seven instances in the interview in French, and five instances in the interview in Hungarian.

All six switches from English are directed toward French. In all cases, the switched items are language-specific expressions for which no direct English equivalent is available. One instance, "*Bastille Day*", may be analysed as a hybrid form involving both lexical and phonological switching: *Bastille*, a culturally marked item associated with the French national holiday, is phonologically aligned with French, whereas *day* is an English lexical item realized with English phonology. The remaining instances are all linked to French cuisine and refer to culture-specific dishes, namely *ravioles, des ravioles de Dauphiné, viennoiseries, boeuf bourguignon,* and *blanquette de veau*. All switches are restricted to naming the food item, and the items are embedded in matrix language English sentences:

> *I love **ravioles**, uh, **ravioles**, just like pasta with cheese and melted cheese inside.*
>
> About cafés in France: *You can have like those different **viennoiseries**, and it's also like a social thing, you start talking to the table next to you.*
>
> *I would recommend trying **Boeuf bourguignon** and **Blanquette de veau**, which is like, **Boeuf bourguignon** is like with red wine and then **Blanquette de veau** is with white wine, so it's like two different kinds of wine things, which are also very French.*

The participant is instantly ready to explain in English what the dishes are like. This indicates a high level of cross-cultural awareness.

All seven code-switching instances from French are directed to English. The majority of code-switched items are school related, and as such are strongly associated with the domain of the participant's life where she uses English. These instances perfectly align with Grosjean's conceptualisation of the Complementarity Principle (2015), according to which bilinguals' languages are often distributed across various domains of their life, speaking one language in one context, for instance with family members, and another in a different context, such as school or work. This is exactly the case for Participant C: she uses French and Hungarian at home and English at school. As seen in the excerpt below, code-switching occurs when the speaker recurs to terminology closely connected to

school life, and in the case of "grammar school" she also provides an extended explanation what the term specifically refers to:

> INV: *Alors est-ce que tu peux décrire ton école?*
>
> PART: *Ah oui, mon école, je je vais à l'école à Londres. Elle est à une heure de ma maison. Donc ça me prend une heure d'y aller. Là je suis en* ***year nine****, enfin je vais aller en* ***year nine*** *en septembre. Et ça fait deux ans que je suis dans cette école. C'est* ***une grammar school****. Donc en Angleterre, c'est un système un peu différent que ici ou en France.* ***A grammar school****, ça veut dire que il faut, euh, des examens, des concours pour entrer, mais il y a pas besoin euh, t'as pas besoin de payer. Donc c'est pas une une école privée mais c'est quand même un truc, enfin une école qui est un peu plus sélective qu'une école publique.*
>
> INV: So, can you describe your school?
> PART: Ah yes, my school — I, I go to school in London. It is an hour from my house, so it takes me an hour to get there. Right now I'm in Year Nine — well, I'm going into Year Nine in September. And I've been at this school for two years. It's a grammar school. So in England, it's a somewhat different system from here or from France. A grammar school means that you have to take exams, entrance exams, to get in, but you don't need to pay. So it's not a private school, but it is still, well, a school that is a bit more selective than a public school.

In both instances, "Year Nine" is embedded in the French sentence through the use of the French preposition "en" (in). "Grammar school" also appears twice in the sequence but in each case it is introduced by an indefinite article from a different language. In the first instance, it is preceded by the French indefinite article *une*, which reflects the gender of the corresponding French noun "*école*" (*school*). In the second, it is preceded by the English indefinite article "*a*", thus constituting a fully English noun phrase. This second instance is also noteworthy in that it conforms to the pattern of left dislocation, a characteristic feature of spoken French in which the topic is introduced at the beginning of the sentence and subsequently resumed by the clause that follows.

Further school related instances of CS appear with reference to a school subject (*j'aime bien le… Design Technology; I love Design Technology*), a special school event ("*on a une journée qui s'appelle Foundation Day*"; we have a day called Foundation Day), and a professional who helped the participant prepare for the entrance exam. This latter case is interesting because the participant, although unsure about the appropriate terminology, is making an attempt to repair the code-switched element through approximation:

> INV: *Et tu t'es préparée toute seule?*
>
> PART: *Alors moi je me suis préparée toute seule pendant la grande partie de l'année, mais après, c'est ma mère qui m'aidait des fois à corriger des choses. Puis c'est elle qui trouvait les les papiers et après pendant 6 semaines, j'ai eu un* ***tutor*** *je sais pas comment… un tuteur?*

The interview in French contains one code switched element that is not related to school but is a culture-specific item "*zipcard*", which has no equivalent in French, since it refers to a card used in London for public transport.

All five code-switching instances from Hungarian are directed to English. Two items are culture-specific as they relate to British celebrations ("*Guy Fawkes Night*", "*trick-or-treat*"), two are relatively recent additions to English vocabulary, and as such, have no standardised equivalents yet in Hungarian (*"blush puff pot", "dogsit*"), and one instance ("*fun"*) is an English word that is widely known and seems to appear increasingly in Hungarian as a loanword. The reason why it is listed here is that in the actual utterance it does not occur as an independent noun, but as a modifier in a hybrid phrase: "*fun dolog*" (*fun thing)*.

It is worth examining three of these instances in context in order to observe how they are integrated into the sentence:

Example 48

Discussing Halloween:

> INV: *És Halloweent szoktatok…[ünnepelni]?*
> PART: *Ja, igen, szoktunk* ***trick or treat-elni****, az ugye nagy szám Angliában.*
>
> INV: And do you usually celebrate Halloween…?
> PART: Oh, yes, we usually go trick-or-treating; that's a big deal in England.

The term trick-or-treat is used specifically in connection with Halloween. Although this celebration has increasingly become part of contemporary Hungarian festive practice, the specialised vocabulary associated with it does not yet appear to have been fully standardised or replaced by established Hungarian equivalents.

Example 49

Discussing the traditions connected to Santa Claus:

> INV: *És az hogy történik?*
> PART: *Hát meg kell tisztítani a cipőket. Én nem szoktam sosem, csak úgy teszek. … És utána kapok valamit.*

Tavaly	***ilyen***	***blush***	***ilyen***	***blush puff potokat***	*kaptam.*
Last year	like	blush	like	blush puff pots	received

> INV: And how does that happen?
> PART: Well, you have to clean the shoes. I never really do it, I just pretend. … And after that I get something. Last year I got things like blush — blush puff pots.

This account suggests that the family celebrates the occasion in line with the Hungarian traditions associated with Santa Claus. The repeated insertion of "ilyen" (like/such), along with the restart, may reflect an ongoing search for an adequate equivalent to replace the English term.

Example 50

Explaining why the participant wishes she had a dog:

> *...nagyon szeretem a kutyákat, nagyon barátságosak, mindig, sose gonosz[ak]... És valamikor* ***dogsitoltam*** *Londonban, de az nem ugyanolyan, mintha, mint hogyha igazán lenne kutyám.*
>
> I really love dogs, they're always very friendly, never mean… And at one point I dog-sat in London, but that's not the same as really having a dog of my own.

Dogsitting appears to be a relatively recent term that has not yet become established in Hungarian vocabulary. Nevertheless, as a coinage formed by analogy with *babysitting,* which is a more wide-spread term in the Hungarian context, it remains relatively easy to understand.

Looking at the examples in their linguistic context, these instances are embedded in a Hungarian sentence morphologically through Hungarian inflectional endings attached to them:

trick-or-treat- *trick*-or-treat	*el -* verb formation suffix	*ni* suffix: infinitive
blush-puff pot- *blush-puff pot*	*ot* *suffix: object*	
dogsit- *dogsit*	*ol-* verb formation suffix	*tam*; suffix: 1st pers. sing. past tense;

Since inflectional suffixes may take different forms depending on the phonetic properties of the host word, the inflections attached to the code-switched elements are informative, as they appear to conform to Hungarian phonological rules. This, in turn, supports the integration of these elements from another language into the corresponding Hungarian syntactic units.

Example 51

INV: *És van valami, ami miatt aggódsz így világszinten?*

PART*: Hát a* ***felmelegedés****, a* ***ilyen****…* ***global warming****. Igen, az az izgat nagyon, mert hát ugye* ***nekünk kell*** *ezzel* ***nekünk generációnak*** *kell ezzel foglalkozni, és* ***az kicsit rossz, hogy ránk fogtak ránk fogták.***

INV: And is there anything you worry about on a global level?
PART: Well, thel warming, the sort of… global warming. Yes, that really concerns me, because, well, our generation has to deal with it, and it's a bit bad that they put it on us — that they pushed it onto us.

This utterance occurs in a section marked by multiple disfluency phenomena including filled and unfilled pauses, restarts, repetitions and self-repair, and an instance of code-switching *("global warming"*). If the elements preceding the code-switch are examined closely, it appears that the participant is able to access only part of the Hungarian term for *global warming*, namely "*felmelegedés*" (*warming*), but not the full expression. The word "*ilyen*" functions as a filler, followed by an unfilled pause, presumably to gain time for lexical selection; after the unsuccessful search, the participant eventually resorts to code switching ("*global warming*").

The subsequent part of the excerpt contains further signs of production difficulty, including self-repair and repetition ("*nekünk kell, ezzel nekünk generációnak kell ezzel foglalkozni" we have to, with this our generation has to deal with this*; for further analysis see Example 46) as well as an error related to declarative memory ("*ránk fogtak ránk fogták; they blamed on us they blamed it on us*; for further analysis see Example 36) These phenomena seem to be interconnected. As discussed in Chapter 4, code-switching may trigger a series of disfluency phenomena owing to increased activation and interference from another language, in this case, English.

It should also be taken into account that this response occurs near the end of a very long interview, so fatigue may have been an additional factor affecting the participant's performance. Finally, the subject matter itself may also be relevant, since the participant is likely to have had fewer opportunities to discuss such issues in Hungarian compared to English, the language used at school.

5.2.2.2. Borrowing

There is one instance of borrowing in the three interviews: "*chatelünk*". It occurs in the interview conducted in Hungarian. The form is based on the English verb *chat,* which has entered youth and social media vocabulary as live text- and videochatting have become routine everyday activities. Since its spelling is not yet fully established in Hungarian,

two versions coexist in current usage, namely *chatelünk* and *csetelünk*, the latter being more conform to Hungarian orthography.

The instances of explicit CLI discussed suggest that code-switching appears to be strongly context-dependent: switches are typically prompted by culture-related language, recent additions to common usage, and by the complementary distribution of the participant's languages across domains in her current life situation. Taken together, these patterns point to the role of dominance and proficiency in shaping implicit CLI, while stressing the importance of contextual and domain-related factors in motivating explicit switching behaviour.

Chapter 6. General discussion

6.1 Empirical findings

The key findings indicate that the speech production of early bilingual children varies depending on several factors, such as age, proficiency, topic, language experience and individual language constellation. The data support earlier work (Costa, 2005, 2005; Heij, 2009; J. F. Kroll et al., 2006; Navracsics, 2010) that even when participants are instructed to use only one language, all of their languages remain activated. Consequently, all seven interviews contain various forms of speech phenomena and instances of implicit and explicit manifestations of cross-linguistic influence.

CLI phenomena at the conceptual level were observed in the interviews with participant A. Consistent with earlier studies (Ameel et al., 2005; Pavlenko & Driagina, 2007; Sachs & Coley, 2006), these data revealed cross-linguistic differences in conceptual representation both in concrete and abstract domains. In the domain of containers, for instance, conceptual categories show a partial equivalence in relation to what words are associated with various types of receptacles in English and Hungarian. More specifically, while the English *bottle* may be used with reference to containers made of glass or plastic, in Hungarian there exist distinct categories according to material: *üveg* for containers made of glass, and *flakon*, for containers made of plastic and palack made of plastic or metal. This partial (non)equivalence therefore can be identified as a case of nesting Type 2 in Pavlenko's categorisation (2009a), where the Hungarian category *üveg* is nested within the English category *bottle* which additionally includes plastic containers for beverage or detergents referred to as *flakon*, and *palack* in Hungarian.

The data have also revealed partial non-equivalence in abstract domains. The English category of *choice* subsumes the categories differentiated by Hungarian speakers as *lehetőség* (approximately option, referring to a singular item that can be chosen) and *választék* (an array of options, as in a menu for example). This case therefore can also be identified as nesting Type 2 (Pavlenko, 2009a).

Other forms of implicit CLI, namely CLI at the lexical/semantic and at the structural level appear in all three cases. The data reveal that the instances of CLI at the lexical/semantic level mostly originate from the influence of polysemy, collocations, or idiomatic expressions in the other language(s).

Some transfer phenomena occur as a result of lexical transfer. Collocational patterns such as *teach lessons*, *issue a report card* or *do the long jump* have emerged in Participant A's interview in Hungarian, leading to non-target forms ("*tanították az órákat*", "*kiadták a report card-ot*", "*long-jumpot csináltam*"). These instances reveal cross-linguistic differences at the lexical level between expressions such as *teach lessons*, *issue a report card* or *do the long jump* in English and *órát tartani*, *bizonyítványt kiosztani*, and *távolugrást gyakorolni* respectively in Hungarian. In the multilingual data, lexical extension occurs when the speaker uses the Hungarian "*a házban*" (at the house) erroneously when referring to "*otthon*" (at home). The analysis revealed that the lexical transfer may have originated from three of the speaker's languages (French, German or Russian), but not English.

The data also contain another type of transfer which reflects a cross-linguistic difference arising from partial semantic overlap between English *listen* and Hungarian *hallgat.* The Hungarian verb *hallgatni* is used with the intended meaning *to pay attention*, assuming that it covers the same semantic range as English *listen.* In Hungarian, however, these meanings are distributed between *hallgat* (listen to/hear attentively) and *figyel* (pay attention). This therefore can be identified as nesting Type 1 .

Lexical-semantic extension from Hungarian to English occurs in the non-target phrase "*semi-joint house*": in the English target expression *semi-detached house*, *detached* is replaced by *joint*, reflecting an extension of this element to the domain of housing, based on the salient conceptual feature that the two buildings are joint by a common wall, similarly to the Hungarian concept *ikerház* (twin house). This instance of transfer reveals a cross-linguistic difference at the level of semantic features between English *semi-detached house* and Hungarian *ikerház*.

Implicit CLI do not affect all languages equally. Regarding which languages are more susceptible recipients of transfer at the lexical/semantic level, data suggest that reduced exposure to the relevant language within the specific life domain may be a predictor. For instance, most of the lexical/semantic occurrences in the bilingual data are related to school life. Participant A gained only one year of experience in Hungarian schooling, compared to three years in U.K. schooling. Participant B spent only one year in an English school before moving to Hungary, where he also completed one year of schooling prior to data collection. The relatively short period of exposure to the Hungarian educational context appears to play an important role in occurrences of the lexical/semantic type.

Similarly, Participant C may have limited experience in discussing U.K. festive events in Hungarian, leading to non-target production in this category. These findings are consistent with Grosjean's Complementarity Principle (2015), reflecting the uneven distribution of languages across domains of use.

Structural transfer phenomena were observed in both the bilingual and multilingual speech data. These instances reflect cross-linguistic differences in word order, the use of definite and indefinite articles, inflectional and prepositional marking, number agreement, and grammatical gender. The findings are consistent with previous research demonstrating that cross-linguistic influence can affect multiple domains of morphosyntactic processing, including word order, morphological marking, agreement, and grammatical gender (Bosch & Unsworth, 2021; Jarvis & Pavlenko, 2008; Lanstyák, 2006; Marian & Kaushanskaya, 2007; Unsworth, 2013)

Although the data indicate that structural transfer phenomena may mostly be related to proficiency, there is also evidence to suggest that any language, including those in which a speaker is highly proficient, may remain susceptible to cross-linguistic influence. Participant C's performance supports this observation: although the vast majority of these phenomena affect her production in Hungarian, a limited number of syntactic and morphological CLI instances are also observed in English and French, two languages in which she is highly proficient. This finding is consistent with Van Dijk et al.'s results (2022) who found that the extent and direction of cross-linguistic influence are conditioned by a variety of factors, such as structural overlap, proficiency, dominance and patterns of language exposure and use.

The data confirm the findings of previous studies (Beatty-Martínez et al., 2020; D. W. Green & Abutalebi, 2013; Grosjean, 2001) that explicit cross-linguistic influence, particularly code-switching, is best understood as a context-sensitive outcome of bilingual and multilingual language activation rather than as an arbitrary alternation between languages. Across the bilingual and multilingual interviews, code-switching occurred in all language combinations examined, while borrowing was relatively rare. The distribution of switches shows that they were determined by conceptual equivalence, domain-specific language use, cultural specificity, lexical accessibility, and interactional context.

In the bilingual data, code-switching occurred across all types of conceptual relationship in Pavlenko's framework (2009a): full equivalence, partial equivalence, and conceptual non-equivalence. Even where translation equivalents were conceptually equivalent, as in *submarine/tengeralattjáró* or *long jump/távolugrás*, switching could still occur when the non-target language item was more strongly activated by the participant's prior experience. School-related concepts were especially likely to trigger English during Hungarian interviews, because many of these experiences had originally been encoded in an English-medium educational context. In such cases, code-switching appears to reflect the interaction of episodic memory, lexical accessibility, processing economy, rather than a lack of an equivalent target language form.

The multilingual data reinforce these domain-specific patterns. All switches from French into English were predominantly associated with schooling, the domain in which English was regularly used, while switches from English into French were largely restricted to culture-specific French food terms. This pattern closely reflects Grosjean's Complementarity Principle (2015), according to which bilinguals' languages become associated with different domains of life. For Participant C, French and Hungarian were primarily home languages, whereas English was associated with school; code-switching consequently followed these functional distributions.

Conceptual non-equivalence proved to be a particularly strong motivation for switching. In the bilingual data, British educational concepts such as *term*, *Reception*, and *report card*, and Hungarian food items such as *mákos tészta* and *főzelék*, lacked direct conceptual counterparts in the other language. Code switching therefore fulfilled an interpretive function, allowing participants to recur to a culturally specific lexical concept directly rather than provide a lengthy or imprecise explanation. The multilingual data display the same tendency: French cuisine items such as *ravioles*, *viennoiseries*, *boeuf bourguinon*, and *blanquette de veau* were retained in French during English production, while English school-system terms such as *year nine* and *grammar school* appeared in French discourse. These findings support previous research on the interpretive or emphatic function of code-switching (Bartha, 1993; Lanstyák, 2006; Németh, 2002; Pavlenko, 2009a)

Partial equivalence presents a more complex situation. Translations equivalents overlap with respect to certain components but differ in category boundaries or cultural content. Examples include *Religious Education* versus *hittan*, and *high school* versus *középiskola*. Consistent with the findings of previous research (Marian & Neisser, 2000; Pan et al.,

2021; Pavlenko, 2009a), data suggest that code-switching in these cases may be favoured because the concept was originally acquired or experienced in one language and because culturally specific features make that representation more salient.

The findings also show that code-switched items can vary considerably in their degree of morphosyntactic integration. Some switches function as independent interpretive insertions, while others are fully embedded in the matrix language. In the multilingual Hungarian data, English-origin items such as *trick-or-treat, blush puff pot*, and *dogsit* receive Hungarian derivational and inflectional morphology, including verb-forming, infinitival, object, and tense/person suffixes. The phonological form of these suffixes follows Hungarian vowel-harmony and morphophonological rules, providing strong evidence that the switched lexical items are structurally integrated into the base language, in this case, Hungarian clauses. These findings converge with evidence found in previous studies (Lanstyák, 2006; Stammers & Deuchar, 2012)

Affective and phonological factors further contribute to switching. In the bilingual interviews, emotionally charged topics including fear, embarrassment, food preferences and strong opinions, frequently prompted switching into the emotionally dominant language. Proper names also acted as phonetic triggers, temporarily increasing activation of the associated language and occasionally leading to nearby function-word switches. These shifts were sometimes accompanied by pauses, repairs and restarts, suggesting increased processing demands during transitions between language systems.

The multilingual findings add further support for a connection between code-switching and lexical selection difficulty. In the *global warming* example, the participant first retrieves only part of the Hungarian expression, pauses, and then switches to English after unsuccessful lexical search. The continuation contains additional repairs and repetitions, suggesting that heightened activation of English may have contributed to sustained processing difficulty. Fatigue and reduced experience discussing the topic in Hungarian may also have played a role.

Borrowing, in contrast, appears much less frequently and is associated with lexical items that have become relatively conventional in youth and digital discourse. Examples include *random*, *sleepover* and *chatelünk*. Their integration into Hungarian morphology and their broader circulation suggest that they function more like incorporated lexical items than momentary switches.

In sum, both the bilingual and multilingual datasets point to a consistent pattern: implicit CLI appears to be particularly sensitive to language dominance and proficiency, whereas explicit CLI through code-switching functions as a more flexible bilingual and multilingual resource, reflecting differences in domain-specific lexical accessibility and communicative demands and, in some cases, allowing speakers to retain language and culture-specific shades of meaning. These findings are broadly consistent with previous research (Argyri & Sorace, 2007; Bartha, 1993; Beatty-Martínez et al., 2020; Lanstyák, 2006; Németh, 2002; Pan & Jared, 2021; Tulloch & Hoff, 2023).

6.2 A comparison of bilingual and multilingual findings

In this section a cross-case discussion is presented to provide a systematic comparison of the bilingual and multilingual empirical findings. The comparison is organised around the distinction between implicit and explicit CLI, as well as the major explanatory variables, such as dominance/proficiency, source language identifiability, conceptual representation, and contextual activation.

Basis of comparison	Bilingual case studies: Participant A and B	Multilingual case study: Participant C	Comparative interpretation
Overall CLI patterns	CLI appears at conceptual, lexical-semantic and structural levels, as well as through code-switching, borrowing and hybrid structures.	CLI also appears across several linguistic levels, but implicit phenomena are highly concentrated in Hungarian. Explicit Cli is more evenly distributed across the three interview languages.	Both datasets support pervasive cross-language co-activation, but multilingualism reflects greater asymmetry and greater complexity in identifying the source of influence.
Conceptual transfer	The data contain clear examples, particularly for Participant A: *mosogató folyadék üveg* and *választék.*	No conceptual transfer identified in the dataset.	Conceptual transfer appears exclusively in the bilingual data.

Lexical/semantic transfer	Occurs both in Hungarian and English: collocational transfer, semantic extension and cross-language lexical approximation, e.g. *teach lessons – tanítani az órákat; semi-joint house, hallgat* influenced by *listen*.	All identified lexical/semantic CLI occurs in Hungarian. Examples include *tűzijáték kirakatra* and *elkapni a vonatot.*	Both datasets show sensitivity to mismatches in collocations, polysemy and lexical-semantic mappings. The key multilingual difference is that several languages may support the same transferred mapping, making source attribution uncertain.
Source of implicit CLI	It is possible to identify the source language because only Hungarian and English are involved.	Frequently ambiguous: English, French, German and sometimes Russian may provide competing or reinforcing mappings.	This is one of the clearest qualitative differences between bilingual and multilingual CLI. Multilingual influence may be cumulative or convergent, not simply involving two languages.
Structural transfer	Includes word order, articles, inflection/preposition choice, number agreement and gender marking.	Includes determiner-noun agreement, inflection/preposition selection, word order, article use and possessive marking. Most instances occur in Hungarian.	The grammatical domains affected are strikingly similar across the two datasets. What differs is the distribution: Participant C's structural CLI is strongly concentrated in her less dominant interview language.
Dominance/pro-ficiency	Participant B's less dominant English shows code-mixing, structural difficulty and lexical search. Participant A also displays contextual activation despit high bilingual competence.	Hungarian is third in dominance after English and French, and implicit CLI is verwhelmingly concentrated there.	Across all cases, weaker relative proficiency appears particularly relevant to implicit non-target production, though it does not predict code-swithing.

Self-monitoring and repair	Repairs occur around lexical search and code-switches; Participant B shows emerging monitoring, e.g. több – more. Participant A eventually retrieves semi-detached after several approximations.	There is a clear asymmetry in this respect: all identified implicit ClI in English and French is immediately repaired, shwereas Hungarian Cli and non CLI grammatical errors frequently remain unrepaired.	Ability to detect and repair non-target output appears related to relative proficiency. The multilingual case makes this relationship especially visible.
Code-switching	Strongly associated with school, food, affect, phonetic activation and culturally specific concepts. Full, partial and non-equivalence all occur.	Relatively balanced across English, French and Hungarian interviews. French switches in English mainly concern French food/culture; Enlgish switches in French concern school; English sitches in Hungarian concern British culture and newer lexical items.	In all cases, code-switching is better predicted by domain and context than by proficiency alone.
Conceptual equivalence and CS	Switching occurs even with fully equivalent items such as *submarine/tengeralattjáró*, showing that lack of equivalence is not necessary for CS. Partial and non-equivalence make switching especially functional.	Most switches are associated with culture-specific items or domain-spedific terminology without straitforward equivalents.	Bilingual data demonstrate particularly clearly that code-switching cannot be reduced to lexical gaps; multilingual data strengthen the role of cultural and domain-specific activation.

Domain specificity	English strongly associated with British schooling; Hungarian with family, Hungarian food and emotionally salient experiences.	English strongly associated with school and London life; French with family and French culture/food; Hungarian with family and Hungarian cultural practices.	Both datasets strongly support Grosjean's Complementrarity Principle: languages become differentially accessible according to the domains in which they are habitually used.
Borrowing	Two identified items: *random* and *sleepover*, integrated into Hungarian usage.	One identified item: *chatelünk*.	Borrowing is rare in both datasets and involves English-origin items embedded in Hungarian youth/social vocabulary.
Morphological integration of non-target items	Strong integration occurs, e.g. *submarine-t, report card-ot, sleepover-ek.*	Particularly clear in *trick-or-treat-elni, blush puff pot-okat, dosit-oltam.*	Both datasets show that overt switching does not imply grammatical disengagement from the matrix language; switched forms can be extrensively integrated morphologically.
Disfluency and CLI	Pauses, repetitions, restarts and repairs cluster around difficult lexical selection and switching, especially *semi-joint – detached – semi-detached* and *submarine*.	Similar clustering appears around *global warming* and other difficult Hungarian formulations.	Both datasets indicate that CLI is best examined dynamically across stretches of discourse rather than as isolated "errors".

The comparison of the bilingual and multilingual case studies reveals greater similarity than difference in the types of cross-linguistic influence observed. In both datasets, non-target language remains available during single-language production and may influence lexical selection, semantic mappings and morphosyntactic formulations. The same broad grammatical domains, including word order, article use, inflectional marking and agreement, are susceptible to cross-linguistic influence in both bilingual and multilingual

speech. The principal difference lies not in the nature of the phenomena themselves but in the complexity of the multilingual system within which they arise.

In the bilingual data, the source of transfer can generally be identified by comparing the two languages involved. In the multilingual case, by contrast, several languages frequently provide compatible semantic or structural mappings, making the source of influence indeterminable. Some findings further suggest convergent influence: a non-target Hungarian form may correspond to the pattern shared by several other languages in the participant's repertoire. Multilingual CLI may therefore be better conceptualised not exclusively as transfer from one identifiable source language, but as an effect of multiple simultaneously available linguistics representations.

A second major pattern concerns language dominance. In Participant C's data, implicit CLI is overwhelmingly concentrated in Hungarian, the least dominant of the three languages used in the interviews, whereas English and French display comparatively few implicit non-target forms and these are consistently followed by immediate repair. A similar, though less pronounced, relationship between relative proficiency and production difficulty can be observed in the bilingual data. These results suggest that dominance and proficiency affect both susceptibility to implicit CLI and the efficiency with which competing representations can be monitored. and repaired.

Explicit CLI displays a different pattern. Code-switching is not confined to the less dominant language and, in Participant C's case, is relatively evenly distributed across the three languages. Instead, its occurrence is closely associated with the functional and cultural distribution of the languages in the participants' lives. English is strongly activated by school-related topics, French by French cultural and culinary concepts, and Hungarian by Hungarian family, cultural and food-related experiences. Comparable domain effects occur in the bilingual data, where British school experience facilitates English activation and Hungarian cultural and affective contexts promote Hungarian activation. The findings therefore suggest that explicit language switching is more strongly regulated by language mode, domain and contextual factors than by proficiency.

Overall, the case studies point to two interacting dimensions of CLI. The first is representational: differences in lexical-conceptual and grammatical organisation create opportunities for transfer. The second is activation-based: dominance, language experience, topic, cultural context, interlocutor and momentary processing demands

determine which representations become sufficiently active to influence production. The multilingual findings extend this account by showing that activation need not be restricted to two language systems; several languages may simultaneously support, inhibit or reinforce a particular representation. Thus, while bilingual and multilingual CLI appear to rely on broadly comparable mechanisms, multilingualism increases the number of potential source languages, making the direction and extent of influence more complex and variable. This aligns with Allgäuer-Hackl and Jessner's (2019) observations about the multidirectional and unpredictable nature of CLI in trilingual production, as well as the findings of other studies on the subject (De Angelis, 2007; Hammarberg, 2018; Wei, 2003)

6.3 Theoretical evaluation

The findings indicate that Pavlenko's Modified Hierarchical Model (2009a) and Grosjean's Language Mode model (2001) offer complementary explanations of the CLI phenomena observed in the data. The MHM is particularly useful for accounting for the representational basis of transfer. Its distinction between fully shared, partially overlapping, and language-specific lexical concepts provides an explanatory framework for conceptual transfer and for distinguishing conceptual from lexical-semantic influence. Instances such as *mosogató folyadék üveg* and *választék* demonstrate that bilingual production may reflect category boundaries and conceptual features associated with the non-target language, while polysemy-based examples such as *tűzijáték kirakat* illustrate transfer at the level of word-concept mappings. The multilingual data further suggest that such influence need not originate from a single language, since several languages may contain equivalent semantic mappings capable of reinforcing the same non-target form.

Grosjean's Language Mode model, by contrast, has greater explanatory value for the contextual distribution of CLI. The interview data show that relative language activation varies with topic, language history, emotional involvement, and the linguistic context in which particular experiences were acquired. This is particularly apparent in code-switching involving fully equivalent lexical concepts, where representational symmetry cannot itself account for language choice. School-related topics consistently increase the accessibility of English, culturally specific food-related topics activate Hungarian in the bilingual and French in the multilingual speakers, and proper names may locally prime the associated language. The knowledge that the interviewer is multilingual further

appears to maintain a degree of activation of the non-target language even in single-language interviews.

In sum, the two frameworks suggest that cross-linguistic influence emerges from the interaction between representational structure and contextual activation. Pavlenko's model helps identify what aspects of lexical-conceptual knowledge are susceptible to transfer, whereas Grosjean's model helps explain when and under what interactional conditions these representations become sufficiently activated to influence production. The data therefore support an integrated approach in which cross-linguistic differences create the potential for transfer, while language mode, dominance, experience, and communicative context regulate whether and how this potential becomes observable in spontaneous speech.

Chapter 7. Conclusions and limitations

7.1 Conclusions

The dissertation aimed at examining bi- and multilingual speech produced under cross-linguistic and cross-cultural constraints by focusing on speech phenomena that indicate cross-linguistic influence (CLI). Through analysing both implicit and explicit manifestations of CLI, it investigated how conceptual representations affect spontaneous speech production in early bi- and multilingual children. The key findings indicate that their speech production varies depending on several factors, e,g, age, proficiency, language dominance, experience in code-switching and individual language constellation.

Bilingual data are rich in all major forms of cross-linguistic influence. The data suggest that conceptual transfer is often emergent in nature and that, following a process of online monitoring and selection, speakers are able to produce self-repair. The findings also indicate that lexical and semantic transfer often co-occur. In addition, the data contain numerous instances of code-switching, manifested across all three equivalence relations. A detailed analysis of these relations, together with the context of the individual examples, suggests that code-switching may be shaped by a range of contributing factors and may serve different functions depending on the type of equivalence relation involved.

The speech data of the multilingual participant allow for several conclusions regarding the distribution and contributing factors of cross-linguistic influence. The findings reveal a marked asymmetry between implicit and explicit manifestations of CLI across the participant's languages. Implicit CLI is observed predominantly in the participant' less dominant language, Hungarian, whereas code-switching occurs more evenly across Hungarian, English, and French. In Hungarian, implicit CLI is observed in both lexical/semantic and syntactic/morphological domains, while comparable implicit effects are not observed in the participant's two more dominant languages, English and French.

7.2. Limitations

Several limitations should be acknowledged. First, the data collection procedure with Participant B yielded a less substantial dataset than those obtained from Participants A and C. This difference appears to be attributable to the participant's heightened level of anxiety, which could not be fully alleviated over the course of the interview. As a result,

the speech samples elicited from Participant B may provide a less representative reflection of bilingual production than the data collected from the other two participants.

Second, the study is based on a small dataset and adopts and in-depth qualitative case-study approach. Although this design allows for detailed analysis of individual instances of bilingual speech, it limits the extent to which the findings can be generalised to broader bilingual populations.

Third, the coding and categorisation of the data are interpretive to some degree. Despite the use of theoretically informed analytical criteria, certain decisions inevitably reflect het researcher's judgment, particularly when distinguishing between related phenomena or assigning instances to specific categories.

Fourth, the analysis of authentic speech data provides only indirect evidence of the cognitive processes underlying bilingual production. Observations concerning lexical access, conceptual activation, or competition between languages are therefore inferential and cannot be treated as direct measures of mental processing.

Finally, the absence of longitudinal data restricts the study's ability to determine how stable or dynamics the identified speech phenomena are over time. It is therefore not possible to establish whether particular patterns represent temporary effects of context and language use or more enduring features of the participant's bilingual systems.

7.3. Significance and implications of the study

A key contribution of this dissertation is that it aligns with and extends psycholinguistic approaches that conceptualise the bilingual mental lexicon as a dynamic system and bilingual language production as a complex process shaped by interacting individual and contextual factors. To address a limitation articulated in the literature, notably that much existing research focuses on late bilinguals, the present study broadens the empirical base by examining the language use of early bilingual children. In doing so, it also advances research on conceptual representation by providing evidence of how cross-cultural and cross-linguistic differences are reflected in bilingual speech in the English-Hungarian bilingual context and a French-Hungarian-English multilingual context. Furthermore, by adopting a qualitative approach, the current study is also heuristic in nature: it employs exploratory techniques by using a non-experimental setting that encourages spontaneous and natural language use.

By incorporating both bilingual and trilingual data, the dissertation contributes to two comparatively under-researched areas: early bilingual speech and multilingual production. The participants' lived experience in at least two national contexts further allows the study to examine the role of bicultural experience in shaping language use. Taken together, these findings underscore the importance of examining bilingual and multilingual speech within its broader ecological context, as such an approach allows for a deeper understanding of the bilingual mental lexicon and the processes underlying language production and processing.

Beyond its theoretical relevance, the systematic analysis of cross-linguistic phenomena has practical implications for parents and educators. Because bilingual language production inevitably reflects interaction between a speaker's languages, cross-linguistic effects should be understood as a normal outcome of bilingual operation rather than as errors or indicators of language deficit. A clearer understanding of the factors that regulate such phenomena can support more informed responses in home and school settings, enabling parents and teachers to tailor language practices and pedagogical approaches to the needs of bilingual children.

In view of the findings of the current study, a differentiated approach can be adopted in vocabulary instruction where conceptual equivalence relationships as well as the learners' proficiency levels are taken into consideration. Thus, similarities and differences may be pointed out in cases of partial non-equivalence in EFL instruction to enhance learners' understanding of cross-linguistic differences. More specifically, learners may benefit from activities that involve explanations, discussions and practice tasks to raise learners' awareness of these differences and to offer them an understanding of the range of contexts particular words can be used. As for cases of conceptual non-equivalence, the aim of instruction should be awareness raising and the facilitation of the development of new concepts through discussions that help learners to conceptualize and interpret the new concepts, using their respective languages if necessary (Pavlenko, 2009a).

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Appendix 1

Link to the LEAP Questionnaire used for data collection :

https://bilingualism.northwestern.edu/wp-content/uploads/2025/11/LEAP-Q2007_parent_1.doc

Appendix 2

Interview questions used for the interview with the bilingual children's partents (in Hungarian)

Angliai tartózkodás

Kérlek, írjátok le röviden a szűken vett családot, a beszélt nyelvek, a család életét meghatározó kultúrák és a lakóhelyeitek megemlítésével.

Mi nektek, szülőknek az anyanyelvetek, és ezen kívül milyen nyelveken beszéltek?

Mi az iskolai végzettségetek?

Kiköltözéskor mindketten beszéltetek angolul?

Milyen nyelvet használtatok az angliai tartózkodás alatt otthon a gyerekek születése előtt? Kizárólag egy nyelvet, vagy keveredett más nyelv is a mindennapi beszédbe?

Mikor születtek a gyerekek?

A gyerekek milyen körülmények között kerültek először kapcsolatba az angol nyelvvel?

Amint oktatási intézménybe kezdtek járni, milyen nyelvekkel találkoztak?

Otthon megváltozott-e a nyelvhasználat amiatt, hogy a gyerekek elkezdtek angolul is érteni?

Milyen alkalmakkor/helyzetben használták a gyerekek a magyar nyelvet?

Milyen alkalmakkor/helyzetekben használták az angol nyelvet?

Megfigyelhető volt-e, hogy az angoltudásuk előrehaladtával, keverték a nyelveiket?

Ha igen mikor?

Milyen módon?

Otthon voltak-e arra szabályok, hogy melyik nyelvet használják a gyerekek?

Az iskola hogyan viszonyult ahhoz a tényhez, hogy a gyerekek kétnyelvűek és két kultúrájúak?

Volt lehetőségük bemutatni a magyar kultúrát, nyelvet az iskolában?

Milyen közösségekbe jártak családosan?

Milyen volt a magyar közösség [város neve]-ben?

Kik voltak a gyerekek legjobb barátai? Milyen nemzetiségű barátok voltak, mi volt az anyanyelvük, milyen nyelven kommunikáltak egymás között a gyerekek?

Hogyan gondolkodtak, érzelmileg hogyan kezelték a gyerekek azt, hogy kétnyelvűek?

Milyen pozitív oldalát érzékelték, fejezték ki annak, hogy több nyelvűek és több kultúrához tartoznak?

Voltak e problémáik, nehézségeik a kétnyelvűség, két kultúrájúság miatt?

Mi miatt döntött a család úgy, hogy hazaköltöztök?

Ezt hogyan kommunikáltátok a gyerekeknek? Ők hogyan készültek érzelmileg a nagy változásra?

Összesen hány évet jártak Angliában oktatási intézménybe a gyerekek?

Hazaköltözés után

Hány évesek voltak a gyerekek hazaköltözéskor?

Milyen érzelmek kísérték a hazaköltözés körüli időszakot?

Nyelvhasználatban, attitűdben jelét adták-e ennek a gyerekek bármilyen formában?

Hogyan sikerült a beilleszkedés itthon?

Mi ment zökkenőmentesen és voltak-e kezdeti nehézségek?

Milyen tapasztalatokat szereztek a gyerekek a magyar iskolában?

Összesen hány évet töltöttek hazaköltözés óta a gyerekek magyar oktatási intézményben?

A hazaköltözés óta milyen gyakran és milyen formában tudják használni a gyerekek az angol nyelvet?

Meséltek-e jó vagy rossz élményekről ezzel kapcsolatban?

Otthon milyen nyelven beszélgetnek?

Szoktak-e a gyerekek nyelvet váltani beszélgetés közben?

Milyen szinten? Szavak, mondatok, egész témák szintjén?

Hogyan élik meg Magyarországon a gyerekek azt a tényt, hogy kétnyelvűek és két kultúrájúak?

Van-e még valami, amit fontos megemlíteni a gyerekek nyelvi identitásával, nyelvhasználatával kapcsolatban?

Appendix 3

Interview questions with the parent of the multilingual child (in Hungarian)

Kérlek, írd le röviden a szűken vett családod, a beszélt nyelvek, a család életét meghatározó kultúrák és a lakóhelyeitek megemlítésével.

Ti, szülők, a gyerekek születése előtt milyen nyelveken beszéltetek, és milyen nyelven beszéltetek otthon? Ha több nyelven, akkor volt-e nyelvváltás a mindennapi kommunikációban?

Ha volt nyelvváltás, az milyen szintű volt, szavak, mondatok, vagy témák szintjén?

Mi nektek, szülőknek, az iskolai végzettségetek?

Amikor megszülettek a gyerekek, milyen nyelvvel/nyelvvekkel találkoztak születésüktől fogva? Hogyan oszlott meg az egyes nyelvek használata? (szülők, témák, helyzetek szerint)

Volt-e hallgatólagos szabály a családban arra, hogy milyen nyelvet használtok a gyerekekkel való kommunikáció során?

Változott-e az egyes nyelvek használata a családban, mielőtt oktatási intézménybe mentek a gyerekek?

Milyen nevelési intézménybe mentek először a gyerekek?

Ott milyen nyelvvel/nyelvekkel találkoztak?

Változott-e az otthoni nyelvhasználat az angol nyelv megjelenésével a gyerekek nyelvi repertoárjában?

Keverték-e az egyes nyelveket? Most keverik-e őket?

Ha igen, milyen szinten? Szavak, mondatok, esetleg egyes témák szintjén?

[Participant A neve] milyen nyelven beszél a barátaival, a családban, illetve az iskolában?

Mutatkozik-e valamilyen nehézség, amikor az egyes nyelvein fejezi ki magát?

Van-e olyan nyelv, amelyen szívesebben fejezi ki magát?

Van-e olyan nyelv, amelyen nehezebben fejezi ki magát?

[testvér neve] milyen nyelven beszél a barátaival, a családban, illetve az iskolában?

Mutatkozik-e valamilyen nehézség, amikor az egyes nyelvein fejezi ki magát?

Van-e olyan nyelv, amelyen szívesebben fejezi ki magát?

Van-e olyan nyelv, amelyen nehezebben fejezi ki magát?

Hogyan élik meg a gyerekek, hogy nem csak többnyelvűek, de több kultúrájúak is?

Szoktatok erről otthon beszélgetni? Esetleg a gyerekek szoktak reflektálni erre a kulturális sokszínűségre mindennapi események kapcsán?

Az iskolában van-e lehetőségük az angoltól eltérő kulturális kötődésük bemutatására, kifejezésére, ápolására?

Milyen gyakorisággal tartjátok a kapcsolatot a magyarországi rokonokkal, milyen gyakran látják a gyerekek a nagyszülőket / esetleg más magyarországi rokonokat, milyen gyakran beszélnek velük?

Ugyanez hogyan történik a franciaországi rokonokkal, nagyszülőkkel?

Örülsz-e annak, hogy a gyermekeid több nyelven is beszélnek, milyen előnyeit látod ennek?

Ha újra kezdhetnéd, ugyanígy csinálnád-e, vagy másképp alakítanád a gyermekeid életét?

Van-e még valami, amit fontos megemlíteni a gyerekek nyelvi identitásával, nyelvhasználatával kapcsolatban?

Appendix 4

Interview Questions for the interviews with Participants A and B

(the interviews were carried out separately with each child)

Interview in Hungarian

Milyen nyelven beszélsz?

Melyik nyelven a legkönnyebb beszélned?

Szerinted jó dolog, hogy több nyelven is beszélsz?

Milyen érzés, amikor magyarul/angolul beszélsz? Van különbség?

Mióta [magyar város neve]-ben éltek, kivel tudsz angolul beszélgetni?

Mesélj az angliai iskoládról.

Neve

Nagy?

Nagyon más volt, mint a magyarországi iskolád?

Miben?

Kik voltak az osztálytársaid? Milyen nemzetiségűek?

Te voltál az egyetlen, aki magyarul tudott?

Volt kedvenc tanárod? Miért?

Melyik tantárgyat szeretted a legjobban? Miért?

Volt házi feladat?

Mi az, amire a legtöbbet kellett tanulnod? Hogyan tanultál? Tudott valaki segíteni?

Milyen jegyeket lehetett kapni az iskolában?

Voltak tanulmányi versenyek? Te részt vettél benne? Volt verseny az osztályok között?

Volt egyenruhád? Milyen? Szeretted?

Az iskolában ebédeltél? Hol? Milyen volt az ebédlő? Mindenki ott evett?

Hol éltetek Angliában?

Milyen volt ez a kisváros? Szeretted [angol város neve]-t?

Mi volt a legjobb benne?

Mi a legkedvesebb emléked [angol város neve]-ból?

Ki volt a legjobb barátod? Mit szerettél benne?

Amikor Angliában éltetek, melyik ünnep volt a kedvenced? Miért?

Hogyan ünnepeltétek?

Van másik kedvenc ünneped? Melyik?

(ha Halloween szóba kerül)

Be szoktál öltözni Halloween-kor? Mit csináltok olyankor? Elmeséled, milyen ünnep ez?

Mit szeretsz benne a legjobban?

Volt már, hogy nagyon megijedtél valamitől?

Melyik a legfélelmetesebb kosztüm Halloween-kor?

Ez milyen ünnep? (kép) Mit ünnepeltek ilyenkor?

Voltál már ilyen felvonuláson?

Félelmetesnek találod, vagy inkább vidám ünnep?







Appendix 5

Interview in English

Tell me about your **summer**. What was the best thing you did this summer?

Who were you the happiest to meet this summer?

Did you do anything for the first time?

Have you tried any new food?

Did you do anything that you will remember for ever?

When you moved house and came to live in Hungary, did you find anything odd here? Anything unsual? (people, food, transport, streets, houses)

Do you have a lot of **friends**? Did you, in [name of U.K. town]?

Who is your best friend in Hungary?

What do you like in him/her?

Tell me about your **school**. What is it called? What type of school is it?

Is it larger or smaller than the school you went to in [name of U.K. town]?

What are your classmates like? Who are the best students? What are they good at?

What subjects do you study? Are they in any way different from your [name of U.K. town]school subjects?

Is school very different in Hungary?

Did you have any difficulties at first because you did not understand what the teacher was talking about? Who did you get help from? Were there any difficult words or expressions you needed help with?

Tell me three things you don't like in school.

Tell me three things you like in school.

What is grading like?

Do you eat at school? Is the dining hall very different from the one in [name of U.K. town]?

What about the food?

What's a dish you particularly like there?

What's the worst dish ever?

Tell me about the [name of U.K. town] Hungarian school.

How many students attended the classes? Did you like anyone particularly?

Who were the teachers?

What did you learn there?

Did you enjoy going there? Why?

Did you have my Hungarian friends in Southend? Did you have any parties? Did you go to places with other families? Do you keep in touch with anyone back in Southend?

Tell me about your **home**. In what way is it different from your home in [name of U.K. town]?

What about the garden? What do you grow there?

Do you enjoy helping out in the garden? What was it like to harvest the food you have grown?

What is [name of Hungarian town] like? How would you describe it to a friend from [name of U.K. town] who has never been to Hungary?

What are the neighbours like?

Do you have any relatives living near you?

Grandparents? Uncles and aunts, cousins?

Who are the most important people for you in life? Who do you love the most?

What's the best thing in life?

What makes you really happy?

What are the most important things in the world?

What makes you sad?

What do you worry about?

If you could change the world, what were the three changes you would ask for?

Appendix 6

Questions for the child interviews with Participant C

Interview in Hungarian

Mikor érkeztetek Magyarországra?

(Bemelegítő kérdések [város neve]-ról, ott töltenek kb. egy hetet)

Jó időtök van? Milyen a víz (Balaton)? Kik vannak még itt?

Meddig maradtok a Balatonnál?

Utána hova mentek? Kinél fogtok lakni?

Mentek [másik város neve]-be is?

Milyen nyelveken beszélsz?

Mely nyelveken a legkönnyebb beszélned?

Szerinted jó dolog, hogy több nyelven is beszélsz?

Kivel tudsz magyarul beszélgetni a családodból?

Szeretsz magyarul beszélni? Szoktál olvasni magyarul? Szoktál filmeket nézni magyarul?

Amikor Magyarországra jöttök, mi az, amit a legjobban szeretsz?

Van valami, ami itt nagyon más, mint Londonban?

Van valami, amit itt furcsának, szokatlannak találsz?

Van olyan étel, amit csak Magyarországon szoktatok enni?

Van, amit nagyon hiányolsz, mert Magyarországon nem tudsz olyat enni?

Kivel szoktatok találkozni, amikor itt vagytok Magyarországon?

A nagyszülőkkel mit szoktatok együtt csinálni?

Van valami, amit különösen szeretsz, amikor a nagyszülőknél vagytok?

Amikor Magyarországon vagytok, kivel szoktál beszélni telefonon? Apával? Barátaiddal?

Van magyar unokatesód? Hogy hívják? Hány éves?

Le tudnád nekem írni, hogy milyen? Mit szeretsz benne a legjobban?

Mit szoktatok együtt csinálni?

Szokott kérdezni téged Londonról?

Amikor otthon vagy Londonban, van olyan ünnep, amikor felhívjátok egymást az unokatestvéreddel, amikor felköszöntitek egymást?

Mit szoktatok megünnepelni családi körben?

Melyik ünnep a kedvenced? Miért? Hogyan ünnepelitek?

Van másik kedvenc ünneped? Melyik?

(ha Halloween szóba kerül)

Be szoktál öltözni Halloween-kor? Mit csináltok olyankor? Elmeséled, milyen ünnep ez?

Mit szeretsz benne a legjobban?

Volt már, hogy nagyon megijedtél valamitől?

Melyik a legfélelmetesebb kosztüm Halloween-kor?

Ez milyen ünnep? (kép Guy Fawkes Night-ról) Mit ünnepeltek ilyenkor?

Voltál már ilyen felvonuláson?

Félelmetesnek találod, vagy inkább vidám ünnep?







Kik a legfontosabbak neked az életben? Kit szeretsz a legjobban a világon?

Mi a legnagyobb öröm számodra az életben?

Mi okoz még örömöt?

Mi az, ami elszomorít?

Ha lenne három kívánságod, mi lenne az?

Szerinted milyen világban élünk?

Mik a legszebb dolgok a világban?

Van valami, ami miatt aggódsz?

Appendix 7

Interview in French

Parle-moi de ton école.

Qui sont tes camarades de classe? Sont-ils tous anglais? Sinon, de quelles nationalités sont-ils?

Es-tu la seule personne de ta classe qui parle français?

Es-tu la seule personne de ta classe / de ton école qui parle hongrois?

As-tu un(e) ami(e) à l'école? Qu'est-ce que tu aimes chez lui / chez elle? Pourquoi est-ce ton ami(e)?

Comment sont les autres élèves de ta classe?

As-tu un professeur préféré? Pourquoi?

Quelle est ta matière préférée? Pourquoi?

Quelles langues étrangères apprends-tu à l'école? Est-ce toi qui les as choisies ou sont-elles obligatoires? Est-ce que tu les aimes?

Si oui, qu'est-ce qui te plaît dans ces langues?

Qu'est-ce qui est difficile? Quand vous apprenez quelque chose de nouveau que tu trouves difficile, est-ce que tu le compares parfois à une langue que tu parles déjà? À laquelle?

Peux-tu donner un exemple de quelque chose qui est très différent en allemand et en anglais?

Peux-tu donner un exemple de quelque chose qui est très différent en allemand et en français? Y a-t-il aussi des ressemblances ?

Quelle est la matière pour laquelle tu dois travailler le plus? Comment travailles-tu? Est-ce que quelqu'un t'aide parfois?

Quelles notes peut-on avoir à l'école?

Y a-t-il des concours scolaires? Est-ce que tu y participes parfois? Y a-t-il des concours entre les classes?

As-tu un uniforme? Comment est-il? Est-ce que tu l'aimes?

Est-ce que tu déjeunes à l'école? Où? Comment est la cantine? Est-ce que tout le monde y mange?

Est-ce que tu aimes Londres?

Qu'est-ce que tu préfères à Londres?

Comment sont les transports? Est-ce que tu vas à l'école seul(e)?

Combien de temps faut-il pour arriver à l'école ? Quels moyens de transport dois-tu prendre? Comment sais-tu quand tu dois descendre?

Quel billet ou quel abonnement utilises-tu?

Quand tu fais un trajet plus long, qu'est-ce que tu fais habituellement pour passer le temps?

Appendix 8

Interview in English

Do you usually call anyone back home while you are in Hungary? Who?

When you are back in London, who are the people you can talk to in French?

What do you like doing when you are with your Dad?

What's the best thing about him?

Do you read in French? What's your favourite? Why? Tell me a story you especially like.

Do you find it easier to read in French or in English?

If I asked you what nationality you are, what would you say? Why?

Tell me about the French school. What was it like? What did you learn there?

What was a lesson like? Did you have to take notes? Did you work in groups? What sort of activities did you do in class? Did you work on projects?

In what way is the French school different from normal school? Were there any activities you never did in your school on weekdays?

Did you celebrate any holidays in the French school?

How often do you talk to your relatives in France?

How often do you meet them?

Who is your favourite relative in France? Why? What do you like doing together?

Do you like travelling to Paris? Why?

You were born in Paris and your parents used to live in Paris. Do you meet any French friends of theirs when you are in Paris?

Tell me about your grandmother. What kind of person is she? What do you like in her?

What is it like to stay in her house? Do you think she has a typical French home?

What food do you eat when you visit her?

Do you talk to her in French? What is her French like?

What about your grandfather?

Have you visited other parts of France as well? Which ones? What did you like there?

When you are in Paris, do you feel at home or rather as a foreigner or a tourist?

What do you like best about being in France?

What is very different from London?

Are there any dishes you especially like?

Imagine your friend is going to France. What would you recommend them trying, what do you think is a must see, a must eat or a must do in Paris/France?