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# A cross-linguistic comparison of child-directed speech in L1 vs. L2

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**Abstract**

The present study examines child-directed speech (CDS) of a Slovak mother who intentionally alternates Slovak and English in communication with her two children in order to make them bilingual. It focuses on the occurrence of distinctive features of CDS in the two languages, and more particularly on the analysis of four contrastive aspects: euphemizing lexis, speech density, complexity, and fluency. The language samples recorded within the same time spans were transcribed and analyzed with the aim to discover the impact of L1 and L2 on the use of CDS. Results revealed substantial though not distinctly overwhelming superiority of the native language in all the given aspects and confirmed previous findings concerning qualitative differences between native and non-native speakers. However, they also showed that CDS maintains its distinctive features regardless of speaking a native or a non-native language, even though their quantity and quality might differ.[1]

**Key words**
*Child-directed speech; native and non-native input; euphemizing lexis; speech density; speech complexity; fluency*

## 1. Introduction

Language accompanies humans throughout their lives. The environment into which children are born involves language, and exposure to it does not start only after birth but already prior to it. However, the long-term process of early language acquisition depends essentially on the ambient language input, because without it no acquisition takes place (cf. Pearson 2007: 400). Parental speech is the most important source of language behaviour for children, and is at the same time the goal gradually reached by children in the process of acquisition (Slančová 2018: 16). When talking to small children, parents and caregivers generally communicate in a special way labelled as child-directed speech (CDS). It is a specific type of microsocial communication register, the form of which is conditioned by the child's social role at an early age (Slančová 2018: 17), and which typically involves a high degree of emotional engagement (cf. Ondráčková 2010: 208).

Through CDS parents and caregivers quite unconsciously and intuitively use specific intercultural means of communication (cf. Šulová 2007: 51) that differ from the language ordinarily used in conversation among adults (cf. Ferguson 1977: 209, Slančová 1999: 23). The term CDS thus denotes spontaneous, situational discourse in which the child is an individual or collective addressee (Slančová 1999: 26). Therefore, it cannot be characterized as a single corpus, but must be seen as the product of specific interactions between parents and their children (cf. Snow 1977: 37). The universality of CDS can be confirmed by the fact that this phenomenon was first mentioned in the 1$^{st}$ century BC by the Roman grammarian Varro, who took note of the existence of specific child lexemes denoting eating and drinking (Slančová 1999: 26). Ferguson (1977: 212–213) understands CDS as one of simplified registers, as they seem to be simplified versions of common adult speech. The processes which derive simplified registers from adult speech are either simplifying or clarifying, but some processes are purely expressive, i.e. they add affect to the utterances. He also clarifies that the structure of CDS as a simplified register is to a great extent a response to the need for improved communication when one of the participants has only a limited ability to use language. Since CDS is adjusted to the child's language abilities, it is easier to understand and also facilitates the adult's expression of emotions toward the child and the situation, providing a special means to show affection, irritations, protectiveness, and/or amusement, which goes beyond common adult speech (Ferguson 1977: 232–233).

CDS has a number of distinctive characteristics that facilitate language comprehension and acquisition (cf. Saint-Georges et al. 2013: 11). They can be categorized according to various perspectives but in this study are classified into 5 categories:

1) prosodic: exaggerated intonational contours, slower pace, higher pitch, hyperarticulated vowels (see e.g. Ferguson 1977: 223; Burnham, Kitamura & Vollmer-Conna 2002; Saint-Georges et al. 2013: 11; Spáčilová 2018: 344; Cole & Flexer 2020: 236; Harris 2020),
2) grammatical: shorter sentences, a lower mean length of utterance, more single words, fewer complex sentences, a large number of questions and imperatives, symbiotic plural, shifts in persons (see e.g. Soderstrom et al. 2008, Spáčilová 2018, Harris 2020),
3) lexical: use of euphemizing lexis – diminutives, euphemisms, hypocoristic and familiar names, interjections and onomatopoeic expressions (see e.g. Ferguson 1977; Saint-Georges et al. 2013: 11; Spáčilová 2018),
4) semantic: topics identified in the child's talk, objects and events in the immediate surroundings (Harris 2020),
5) discourse: a high frequency of deictic utterances, self-repetitions, imitations (expansions) of the child's language (see e.g. Newport, Gleitman & Gleitman 1977: 129; Saint-Georges et al. 2013: 11; Cole & Flexer 2020: 238; Harris 2020).

The discussion about native skills vs. non-native skills and the different input they provide have always been a topic of debate. However, studies focusing on CDS in L1 vs. L2 usually involve bilingual communities, e.g. immigrant bilin-

gual populations where parents speak with their children in a late-acquired second language (Altan and Hoff 2018: 128). The specificity of this paper consists in the fact that it concerns a single bilingual family in which both L1 and L2 are intentionally and alternately spoken by one of the parents (the mother) in an otherwise monolingual environment. This means that the mother's L2 is not the language of the surrounding community as is the case in the immigrant bilingual contexts.

Previous research on this topic suggested that children in bilingual homes are exposed to hybrid discursive norms (Shiro 2016: 60), and that the difference associated with native speaker status also concerns the quality of speech rather than simply a difference in its quantity (Shanks, Señor and Hoff 2015). Generally, language input provided by non-native speakers was found to be syntactically less complex than native input; the latter thus being more supportive of children's language development than non-native input (Place and Hoff 2011; Altan and Hoff 2018; Hoff, Core and Shanks 2020). Moreover, according to the findings of research on the Spanish-English bilingual population in the South Florida region in the U.S. by Shiro (2016), references to emotions in CDS of non-native speakers differ from native speakers mostly qualitatively.

Still, non-native speakers vary in their language proficiency. It was revealed that the CDS of native speakers and non-native speakers with good proficiency provide a richer database for language acquisition than the CDS of speakers with limited proficiency that were found to use shorter and lexically less diverse utterances than native speakers (Hoff, Core and Shanks 2020). However, there are still differences between native speakers and advanced non-native speakers, as the study by Erman and Lewis (2015) suggested. Native speakers have more immediate access not only to high-frequency and low-frequency words, but also to productive vocabulary, including pragmatic markers. This can be explained by differences in exposure and degree of more or less immediate access to items relevant for the situation. Although the examined pragmatic markers were known by the non-native speakers, they were not routinized and the speakers probably did not have automatic control of them (Erman and Lewis 2015: 361).

## 2. Method

### 2.1 Aims and research questions

The aim of this study is to examine the impact of L1 vs. L2 on the use of CDS. It briefly monitors the occurrence of distinctive features (classified in 5 categories) in both languages, and, more specifically, analyzes the frequency and variability of four particular aspects: euphemizing lexis, speech density, complexity and fluency. The analysis does not address all the classified categories of CDS, but only four chosen aspects which are associated with the grammatical, lexical, semantic and discourse category of CDS. It does not focus on the impact of the analyzed language input on the children's language acquisition either; it solely provides a cross-linguistic comparison of the investigated CDS samples.

These aspects of CDS were chosen for the analysis since they can be significantly contrastive in L1 vs. L2. Furthermore, their occurrence is objectively measurable and amenable to evaluation. This is important with regard to the fact that the mother and the researcher is the same person, which could otherwise be viewed as a weakness of this study. As for the objectivity or spontaneity of the language material, interactions with children are always spontaneous; however, it should be acknowledged that the mother was aware of her research procedure in which she attempted to speak as naturally as she could.

Speaking L1 generally differs from speaking L2 both in terms of quantity and quality (cf. Shanks, Señor and Hoff 2015). L2 production is usually slower and more disfluent, and its users may have less experience accessing and using L2 linguistic knowledge for communication (Konopka, Meyer and Forest 2018: 72–73). Moreover, L2 speakers might be less familiar with its syntactic structures (Konopka, Meyer and Forest 2018: 73), which makes their speech less complex (cf. Altan and Hoff 2018). The aspects of speech density, complexity and fluency were selected for the analysis based on the aforementioned arguments because they clearly reflect the nature and quality of the input in L1 vs. L2. However, L2 speakers are also supposed to have smaller L2 lexicons (cf. Konopka, Meyer and Forest 2018: 73) and their emotional references differ from L1 speakers (cf. Shiro 2016). The aspect of euphemizing lexis thus complements the analysis of CDS in L1 vs. L2, since it comprises lexemes expressing emotiveness (cf. Spáčilová 2018: 363), and reflects the quality of the typical lexical characteristics of CDS.

In the context of the research aims, the following research questions were formulated:

1) Does CDS maintain its distinctive features even when L2 is spoken?

2) What is the difference between the CDS in L1 vs. L2 with regard to the use of euphemizing lexis and speech density, complexity and fluency?

## 2.2 Participants and family language policy

The participants in this study are a bilingual mother (MOT) – researcher with her two male infants (INF1 and INF2) aged 5 and 2 years. The family lives in Slovakia, both parents being Slovaks with a university degree. However, English is a late-acquired second language of the mother (from the age of 10 via school instruction), a proficient speaker of it, who uses both her native and non-native language in communication with her children in order to make them bilingual. She regularly alternates the two languages in the home, and since English is not her native language, this type of bilingual upbringing is referred to as intentional bilingualism (Štefánik 2000). The children have been exposed to two languages since birth and the amount of exposure to English is between 2–3 hours daily on average. The basic family language policy is twofold: the mother speaks Slovak when the father is at home, and she speaks English when he is not. The source of English input is also extended by English books, songs and cartoons; these being used actively regardless of the presence or absence of the father in the home.

## 2.3 Data collection

The data collection is based on naturalistic self-observation. It comprises audio-recordings of the mother's interactions with her children. Both children were at home during the day at the time of the research because the mother was on maternity leave. The recordings were obtained in the natural home environment and they reflect spontaneous communication between the mother and her children in standard situations, such as eating, washing, playing, waking up and going to sleep. The language sample includes 2 hours of dialogues in Slovak and 2 hours in English and the age span of children during the recording process was 3;10 & 4;7–4;11 for INF1 and 0;8 & 1;5–1;9 for INF2. Files were transcribed manually by the mother-researcher and further analyzed, i.e. scores and rates were calculated subsequently. The total number of words as well as the analysis itself do not include the lyrics of songs and rhymes, since the primary focus was on the mother's own language production, similarly as in Spáčilová (2018: 347). The examples of MOT's speech stated in the paper are transcribed according to the protocol of the transcription and encoding system CHAT, which enables not only speech production to be captured in detail, but also non-verbal communication and the situational context (Slančová 2018: 18).

**Table 1.** File length, activity types and infants' ages for MOT's Slovak transcripts

| File | Date | Activity | Total length | INF1 age (year; month) | INF2 age (year; month) |
|------|------|----------|--------------|------------------------|------------------------|
| 1 | Feb 24, 2021 | Showering and dressing | 6 minutes | 3;10 | 0;8 |
| 2 | Feb 26, 2021 | Dinner | 3 minutes | 3;10 | 0;8 |
| 3 | Jan 9, 2022 | Waking up in the afternoon | 12 minutes | 4;9 | 1;7 |
| 4 | Jan 10, 2022 | Playing in the bed | 9 minutes | 4;9 | 1;7 |
| 5 | Jan 12, 2022 | Changing a nappy and clothes | 6 minutes | 4;9 | 1;7 |
| 6 | Jan 13, 2022 | Playing in the bedroom | 4 minutes | 4;9 | 1;7 |
| 7 | Jan 24, 2022 | Playing with toys | 35 minutes | 4;9 | 1;7 |
| 8 | Jan 25, 2022 | Painting and playing | 15 minutes | 4;9 | 1;7 |
| 9 | Mar 3, 2022 | Dressing | 15 minutes | 4;11 | 1;9 |
| 10 | Mar 3, 2022 | Memo game | 16 minutes | 4;11 | 1;9 |

**Table 2.** File length, activity types and infants' ages for MOT's English transcripts

| File | Date | Activity | Total length | INF1 age (year; month) | INF2 age (year; month) |
|------|------|----------|--------------|------------------------|------------------------|
| 1 | Feb 25, 2021 | Showering and dressing | 6 minutes | 3;10 | 0;8 |
| 2 | Feb 25, 2021 | Dinner | 3 minutes | 3;10 | 0;8 |
| 3 | Nov 8, 2021 | Waking up in the afternoon | 5 minutes | 4;7 | 1;5 |
| 4 | Nov 8, 2021 | Memo game | 16 minutes | 4;7 | 1;5 |
| 5 | Nov 9, 2021 | Playing, fight over a toy | 9 minutes | 4;7 | 1;5 |
| 6 | Nov 25, 2021 | Evening routine | 14 minutes | 4;7 | 1;5 |
| 7 | Nov 30, 2021 | Playing in the bedroom | 12 minutes | 4;7 | 1;5 |
| 8 | Nov 30, 2021 | Eating and dress-ing | 18 minutes | 4;7 | 1;5 |
| 9 | Mar 3, 2022 | Painting | 10 minutes | 4;11 | 1;9 |
| 10 | Mar 4, 2022 | Morning routine | 30 minutes | 4;11 | 1;9 |

## 3. Results

### 3.1 Distinctive features of CDS in L1 vs. L2

Speaking a language, both native and non-native, requires a complex set of skills. The interaction between a caretaker and a child is characterized by intensified expressivity (cf. Brestovičová 2018: 333), and besides general communicative abilities also involves an increased sensitivity towards the communicative partner and his/her developmental level. Therefore, CDS inevitably differs from adult-directed speech (ADS) with regard to the specificity of its prosodic, grammatical, lexical, semantic and discourse features.

The analysis of the language samples collected for this research revealed that although the quantity and quality of the individual CDS features might differ in L1 and L2, they still occur in both. It is thus evident that regardless of speaking L2, the interaction with a child urges the caregiver to adjust his/her speech to the needs and abilities of the communicative partner. However, some L2 patterns, e.g. vocabulary choice, might also be rooted in the fact that English is MOT's late-acquired L2. During the analysis, CDS features were detected in both languages and at all the mentioned language levels. To illustrate the collected data, several CDS features from the English transcripts can be exemplified (with more examples of the analyzed aspects stated in subsequent sections):

(1)  **Shift in persons – 3ʳᵈ person instead of 2ⁿᵈ**
    act%:            INF2 is singing.
    *MOT:          oh, my boy is singing.

(2)  **Shift in persons – 3ʳᵈ person instead of 1ˢᵗ**
    MOT:           mummy can do it.

(3)  **Symbiotic plural – *we* instead of *you/me***
    sit%:            INF1 has finished taking a shower.
    *MOT:          now we can dry your body.

(4)  Expansion
    sit%:            MOT and INF1 are playing Memo game.
    *MOT:          my turn.
    *INF1:         your turn.
    *MOT:          my turn, yes.

### 3.2 Euphemizing lexis

The increased use of euphemizing lexis is one of the typical features of CDS and is related to the speaker's emotional bond to the child. It is implemented especially via euphemization, diminutivization and emotiveness of the expression (Spáčilová 2018: 363).

    The following table summarizes the percentage of euphemizing lexis in MOT's two languages. It distinguishes between euphemisms, diminutives, hypocoristic and familiar names, as well as interjections and onomatopoeic expressions, since all these lexemes bring overall emotiveness and softness to the expression (Spáčilová 2018: 363). Both euphemisms and hypocoristics are closely interrelated with diminutives because they are often created by using diminutive endings, e.g. *daddy, mummy, auntie* (hypocoristics), *tummy* (euphemism). However, in this study, they are treated as separate groups of euphemizing lexis, as explained later. The category of diminutives includes only neutral expressions with diminutive suffixes without any reference to persons. Moreover, familiar names are understood as a subclass of hypocoristics and onomatopoeic expressions as a subclass of interjections. The percentages were calculated from the total number of words. The comparisons of percentages are expressed by means of percentage points (pp).

**Table 3.** Percentage of euphemizing lexis in MOT's language samples

| Language | Diminutives | Euphemisms | Hypocoristic and familiar names | Interjections and onomatopoeic expressions | Total euphemizing lexis |
|----------|-------------|------------|----------------------------------|---------------------------------------------|--------------------------|
| **English** | 0.11 | 0.18 | 3.83 (1.62) | 2.96 | 7.1 (4.88) |
| **Slovak** | 1.61 | 0.32 | 4.58 | 1.83 | 8.35 |

The percentages of euphemizing lexis in MOT's two languages show slight differences. Although the rates of euphemisms and interjections are rather low, they are still moderately higher in her L1. Hypocoristics also prevail in the native language, with an even greater difference when the pure English expressions without code-switched elements are compared (the number in brackets). However, the rate of interjections unexpectedly predominates in L2. A possible cause of this fact can be related to the high frequency of diminutive and hypocoristic formations in Slavic registers of CDS, including Slovak (cf. Ferguson 1977: 213). Since these items naturally prevailed in MOT's Slovak, she might have tried to compensate for it in the available English category of euphemizing lexis, i.e. in her use of interjections. Thus, the total 1–3 pp difference in MOT's euphemizing lexis (depending on the criteria) might be rooted in the languages themselves, besides MOT's language proficiency.

### 3.2.1 Diminutives

Diminutives are words that denote smallness and possibly also express an attitude, either positive or negative, depending on the specific interplay of linguistic and situational factors in a given context (Schneider 2003: 4). Their usage is not only governed by semantic factors to convey the meaning of smallness, but they are primarily a pragmatic device to express endearment and affection (Kempe, Brooks & Gillis 2007: 321). In CDS, the emotional sense of diminutives is understood as principal due to the high emotional involvement of the speaker towards the child (Ondráčková 2010: 14, Spáčilová 2018: 365).

The percentage of diminutives in MOT's language samples is 0.11% in English and 1.61% in Slovak. The pp difference in the frequency of their use is thus not very considerable. Nevertheless, it should be noted that the productivity of diminutives in each of these two languages differs considerably. In English, diminutives are primarily formed analytically by using the lexical element *little*, but it also possesses a subtle inventory of diminutive suffixes, e.g. *-ie/y, -ette, -let, -kin, -een, -s, -er, -poo, -pegs* for forming synthetic diminutives (Schneider 2003: 2). However, they can be applied to a small number of nouns exclusively (cf. Kempe, Brooks & Gillis, 2007: 320–321). By contrast, there is a great variety of diminutive suffixes in Slovak, where diminutives are formed solely by derivational suffixes and

also mark gender distinctions. The whole range includes masculine suffixes: *-ok, -ík/-ik, -ček/-tek*; feminine suffixes: *-ka, -ička/-ôčka, -enka/-ienka*; and neuter suffixes: *-ko, -ce, -íčko, -iečko, -atko, -očko* (Vužňáková 2013: 46). Slovak is also one of many languages that have a much wider range of diminutive productivity than English (cf. Kempe, Brooks and Gillis 2007: 321). It allows diminutivization not only in nouns but also in adjectives, adverbs and verbs. Moreover, they are marked by grammatical categories of gender, number and case/conjugation, and sometimes there is even more than one ending applicable. For instance, the masculine noun *pes* 'dog' can take two diminutive endings: *psík* or *psíček*. Each of these diminutives has a variety of declension endings in singular and plural. The described difference of diminutivization in the two languages leads to a logical conclusion that it generally occurs much more frequently in Slovak than in English. Thus, the percentage of diminutives prevails naturally in Slovak.

The only diminutivized word class in English was nouns and it also predominated in Slovak, as naturally expected (e.g. Spáčilová 2018: 365). The semantic categories detected in the language samples were congruent for both languages; they included body parts, animals, objects/toys/clothes, foods and drinks (in Slovak exclusively), and some other (not classified) nouns. The pragmatic aspect of their use confirmed the possible negative connotation of the otherwise positively diminutivized words *nálada → nálad**ička*** 'mood' and *pár → pár**ik*** 'couple'. Its ironic meaning is demonstrated in examples 5 and 6:

(5)  *INF2:          &=cries.
     *MOT:           Alexík, máš náladičku dneska?
      %eng:          Alexík, are you in a moodie today?

(6)   act%:          MOT and INF1 are playing Memo game.
                     INF1 has turned two different cards.
      *MOT:          no, to asi nie je úplne párik.
      %eng:          well, this is not quite a little couple.

The following table (Table 4) offers an overview of the nominal diminutives recorded in MOT's conversations with her children. The English translation equivalents are provided in their neutral forms.

**Table 4.** MOT's nominal diminutives

| LG | Body parts | Animals | Objects | Foods and drinks | Other |
|---|---|---|---|---|---|
| EN | *handies* *little eyes* | *little kitten* | *little picture* | | *little gnome* |
| SK | *noštek* 'nose' *rúčky* 'hands' *nôžky* 'feet' *zúbky* 'teeth' | *zajačik* 'rabbit' *krtko* 'mole' *kuriatko* 'chicken' *prasiatka* 'pigs' | *postieľka* 'cot' *knižka/knižočka* 'book' *plienočka* 'nappy' *obrázok* 'picture' *gombíčky* 'buttons' *bytík* 'apartment' *vláčik* 'train' *kartička* 'card' *topánočky* 'shoes' *pyžamko* 'sleepsuit' | *banánik* 'banana' *hrášky* 'peas' *chlebík* 'bread' *vajíčko* 'egg' *vodička* 'water' | *detičky* 'children' *kvietok* 'flower' *ružička* 'rose' *soplík* 'snot' *snehuliačik* 'snowman' *slniečko* 'sun' *náladička* 'mood' *pesnička* 'song' *párik* 'couple' *chvíľka* 'moment' |

Since Slovak allows diminutivization of some other word classes as well, MOT's language samples also included diminutives in verbs: *pobežkať* 'run' (dim.), *spievkať* 'sing' (dim.); adverbs: *trošku* 'a bit' (dim.); and adjectives: *maličká* 'little' (dim. fem.).

### 3.2.2 *Euphemisms*

In the broad sense, "euphemisms are sweet-sounding, or at least inoffensive, alternatives for expressions that speakers or writers prefer not to use in executing a particular communicative intention on a given occasion." (Burridge 2012: 66). In topics related to children's environment, euphemisms might not inevitably fulfil an evasive or substitutive function, as for example in the semantic sphere of some intimate body parts and processes (e.g. *wee*). They can also denote activities, which they expressively meliorate. The following table (Table 5) summa-

rizes semantic groups of MOT's euphemisms produced in the analyzed language samples:

**Table 5.** Semantic groups of MOT's euphemisms

| Language | Body parts | Body processes | Activities |
|---|---|---|---|
| **English** | *tummy* | *make a poo*<br>*have a wee* | |
| **Slovak** | *pusinka/pusina* 'mouth' | *vycikať sa* 'have a wee' | *na/papať (sa)* 'eat'<br>*spinkať* 'sleep' |

Due to the character of the analyzed research data, the present study understands euphemisms as meliorating lexemes (used especially in communication with children) in a broader sense, i.e. as meliorating expressions with a positive expressive meaning (Brestovičová 2018: 287), and hence not only the lexemes meliorating certain unpleasant circumstances; similarly as in Ondráčková (2010: 15) and Spáčilová (2018: 372). Contrary to diminutives, euphemisms do not (have to) include a diminutivizing suffix, e.g. *papať* 'eat', *wee*. However, sometimes they might comprise a diminutive suffix but they are formed from a different word stem than their neutral counterparts, e.g. *pus**inka*** vs. *ústa* 'mouth'. The percentage of euphemisms in MOT's CDS is not very extensive; 0.18% in English and 0.32% in Slovak. The pp difference between the languages is thus minimal.

### 3.2.3 Hypocoristic and familiar names

"Hypocoristics are chiefly used to express warm feelings of love and kindness" (Savickienė 2007: 33). They can be formed and understood in different ways; for instance, they can be viewed as part of diminutives because of the use of diminutive endings by which they are often created, e.g. *daddy, mummy, auntie*. However, in this study diminutives and hypocoristics are regarded as two separate (though interrelated) categories, in accordance with Savickienė (2007), Thomadaki & Stephany (2007), and Spáčilová (2018).

Most typically, hypocoristics are derived from proper names either by diminutive suffixes (e.g. *Annie*) or by a reduction (e.g. *Alex/ander*) (cf. Savickienė & Dressler 2007: 3; Thomadaki & Stephany 2007: 113). In Slovak, these two cases can also be combined, i.e. hypocoristis can be formed from a truncated stem (only the first syllable with one or two consonants of the second syllable) and suffixes (e.g. *Adrián → Aďo*), or just like any other diminutive with the typical endings (e.g. *Adrián → Ad**ík**, Ad**íček***). Moreover, hypocoristics might not be formed from proper names exclusively; common-noun diminutives can also be used as hypocoristic names for caretakers (e.g. *mummy*) (Savickienė & Dressler 2007: 3), and hypocoristic functions are also served by diminutives derived from common nouns (e.g. *srdiečko* 'heart' (dim.) (cf. Thomadaki & Stephany 2007: 113).

In the analysis of the collected research material, the group of hypocoristic and familiar names comprises all the hypocoristics derived from proper nouns (even

those ones that do not contain a diminutive suffix, e.g. *Alex, Aďo*), familiar names of family members and close persons, e.g. *mummy, daddy, mamička* 'mummy', as well as all the forms of addressing the child that express a positive emotional relationship (both with and without a diminutive suffix), e.g. *sweetie, honey, my little boy*. Moreover, multi-word hypocoristic expressions (e.g. *my little boy*) are understood as a single unit (cf. Spáčilová 2018: 364–365). Unmarked forms of proper names, such as Adrián or Alexander, are not included among hypocoristics (cf. Spáčilová 2018: 373–374). The following table (Table 6) gives an overview of all the hypocoristics and familiar names detected in MOT's speech samples. Some Slovak items have no English equivalents, so translations are provided only where possible.

**Table 6.** MOT's hypocoristics and familiar names

| Proper names with dim. suffixes | Truncated forms of proper names | Common-nouns diminutives for caretakers in Slovak (familiar names) | Common-nouns diminutives for caretakers in English (familiar names) | Common nouns and other words in Slovak | Common nouns and other words in English |
|---|---|---|---|---|---|
| ALEXANDER *Alexandrík* | ADRIÁN *Aďo* *Adík* *Adíček* *Adinko* ALEXANDER *Alex* *Alexík* *Alexíček* *Aľko* *Aľčík* *Alexinko* | *babka* 'grandma' *dedko* 'grandpa' *mamička* 'mummy' *tata/ocko* 'daddy' | *auntie* *daddy* *mummy* | *Alexík môj* 'mine' *Alexíček môj zlatý* *bambuš* *boboš* *miláčik* 'sweetie' *môj* 'mine' *môj drahý* 'my dear' *môj pomocník* *môj zlatý* *moje mucičko malé* *moje zlatko* *mucko* *snehuliačik* *ty môj* 'you mine' *zbojňoš* *zbojňoš Alexík* *zlatíčko moje* | *baby* *baby Alexander* *sweetie* *honey* *little gnome* *my baby* *my boy* *my little Alexander* *my little Adík* *my little boy* *my little kitten* *my little one* |

The percentage of hypocoristics and familiar names shows two items in MOT's English – 3.83% (1.62%). The first number is higher since it includes code-switched phrases consisting of the Slovak hypocoristic forms of the children's names as well as English expressions, e.g. *my little Adík, baby Alexík*. This can be viewed as evidence of dominance of MOT's native language – Slovak, which is quite natural. However, it might also be caused by the fact that Slovak (similarly as in case of diminutives) has a much wider range of hypocoristic endings. The second number in brackets contains only pure English hypocoristic forms, including the truncated version of the name Alexander → Alex, as it can occur in both languages. The percentage of Slovak hypocoristics and familiar names (4.58%) is higher when compared to both English percentages. It should be also added that hypocoristics derived from proper nouns prevailed in the corpus, and that the unmarked form of the name Adrián did not occur at all. The unmarked form of the name Alexander occurred eight times, exclusively in English. This can be caused by a different connotation this name carries in the two languages, as well as by the different manner of pronunciation, where the English version sounds much milder.

### 3.2.4 Interjections and onomatopoeic expressions

Interjections and onomatopoeic expressions are the easiest words intuitively used by adults in communication with children so as to simplify the utterance and accommodate it to the child's thinking and speaking skills. They are also among the first words pronounced by children, since they require less articulative abilities than diminutives and euphemisms (Ondráčková 2010: 16). They are thus cognitively graspable and articulatively imitable for children (Brestovičová 2018: 337). Moreover, interjections are a prototypical representative of expressive words bound to the situation. As a word class reflecting iconicity, immediately related to the situation and emotions, they belong to the central word classes of CDS (Brestovičová 2018: 334), contrary to ADS where it is the least frequent word class used, at least in the Slovak language (cf. Šimková 2011: 331). They also "play an important role in communicative as well as non-communicative contexts, and their actual linguistic value and role were underestimated and misjudged for quite a long time" (Stange 2009: 1). Furthermore, they are both universal to all languages, but also language-specific, which means that they have to be learnt. Yet, their features are more or less the same regardless of the language (Stange 2009: 21).

Although there is no clear consensus on how to define and categorize them (Stange 2016: 5), an interjection can be described as "an exclamatory insert used in speech to express emotion or attitude" (Biber, Conrad and Leech 2005 457 quoted in Stange 2016: 5). There is an overlap with regard to which items fall into the category of interjections. Consequently, definitions of interjections may or may not include onomatopoeic expressions (e.g. *boom*), or discourse markers (e.g. *uh-huh*), but they always include emotive interjections (e.g. *ouch*) (Stange 2016: 5).

In this paper, all the mentioned items are included in the category of interjections, despite certain difficulties in deciding what (not) to consider an interjection. For example, the particle *no* 'well' in Slovak can be treated as both a particle

and an interjection, depending on the situational context. Similarly, the interjection *oh* in English can be viewed either as a discourse marker or an expression of surprise, i.e. a pure interjection. Exclamations and affirmatives, such as *great!* or *okay* are not included in the category of interjections because they can function as other word classes (e.g. *great* → adjective) and they might lack emotional content. The individual items in the corpus were carefully examined case by case, and imitations of the children's productions were not included in the category. Onomatopoeic expressions are understood as a subclass of interjections in this study, since they are the only layer of language that is directly motivated by extralinguistic reality (because it imitates it), and is also closely related to it (Ondráčková 2010: 125–126). The following table (Table 7) enumerates MOT's interjections and onomatopoeic expressions that occurred in the language samples.

Despite a greater variation in the occurrence of MOT's Slovak interjection compared to the English ones, the rates are surprisingly contradictory. Within the euphemizing lexis, this category is the only one in which English prevails over Slovak – 2.96% vs. 1.83%. Although the pp difference is not very considerable, it is still valuable as for the comparison of L1 and a L2, because it hints to a likely subconscious effort to compensate for the smaller range of possibilities within the other three categories of euphemizing lexis in English. The interjection *oh* substantially predominated in the corpus, which might also be associated with MOT's use of English as a foreign language, since speakers of L2 can tend to overuse certain forms which are in accordance with the norms of L1 (cf. Ellis 1997: 52). Thus, the English interjection *oh* can be understood as a parallel of the Slovak particle *no* that occurs very frequently in the front position. These expressions, however, are not quite equivalent in the two languages, which means that the overuse of the English *oh* in MOT's CDS definitely points to a conscious effort to make the speech fluent and natural.

### 3.3 Speech density, complexity and fluency

While the examination of euphemizing lexis concentrated more on the lexical and semantic features of MOT's CDS, the 3 following aspects – speech density, complexity and fluency involve mainly grammatical and discourse considerations. When examining the mentioned aspects of speech, it is crucial to determine what constitutes an utterance. It is not a simple task, because spontaneous conversation includes sentence fragments and ellipses, and therefore it is not easy to set utterance boundaries. Though acoustical criteria seem to be more objective, they are likely not as sensitive or accurate as subjective methods, since they may underestimate the length and complexity of CDS utterances, especially taking the exaggerated prosodic boundaries of CDS into consideration (Soderstrom et al. 2008: 877).

When analyzing the transcripts, utterance boundaries were determined based on prosodic, syntactic and semantic/discourse factors. The considerations were decided on a case-by-case basis by the author of this study – MOT herself. With regard to coding and acoustical analyses, routines (such as songs and rhymes), non-linguistic mouth noises (such as laughter, sneezing or coughing) and all non-

**Table 7.** MOT's interjections and onomatopoeic expressions

| Slovak | | English | |
|---|---|---|---|
| **Interjections – emotive and volitional** | **Onomatopoeic expressions** | **Interjections – emotive and discourse markers** | **Onomatopoeic expressions** |
| *hm, mhm, ehm-ehm* | *puk* 'crack' | *er* | *shhh!* |
| *ach* 'oh' | | *oh, ah* | *bzzz-bzzz* |
| *jój, jáj* | *brm-brm* 'vroom-vroom' | *oh yes, oh yeah!* | |
| *jejejej* | | *oh no!* | |
| *ajajajajaj* | | *ohoho!* | |
| *ojoj, ojojoj* | | *oh goodness!* | |
| *aha* 'uh-huh' | | *yeah!* | |
| *no* 'well' | | *uh-huh* | |
| *ej* | | *huh?* | |
| *hej!* 'hey!' | | *ha* | |
| *há, hí* | | *hey!* | |
| *haha, hahaha* | | *peekaboo!* | |
| *á, ó, ou* | | *hello, bye-bye* | |
| *au* 'ouch' | | | |
| *hop!* | | | |
| *hurá* 'hurray' | | | |
| *čau, ahoj, haló* 'hello' | | | |

CDS utterances were excluded from the analysis. Some other paralinguistic vocalizations with phonological content and discourse functions (such as sounds indicating approval or disapproval) were included in the analysis. The remaining utterances were classified according to their syntactic and linguistic complexity. Moreover, the criterion of a multiclause utterance was that it had to contain at least two predicates and at least one subject, similarly as in Soderstrom et al. (2008: 877–878).

### 3.3.1 Speech density

The density of MOT's CDS was measured by words and utterances in the transcripts, similarly as in Soderstrom et al. (2008). During the analysis the total number of words and utterances as well as the average and highest number of words per minute were examined.

**Table 8.** Density of MOT's speech

| Language | Total number of words | Average number of words/ minute | Highest number of words/ minute | Total number of utterances |
|---|---|---|---|---|
| **English** | 5605 | 46.7 | 104 | 1116 |
| **Slovak** | 5711 | 47.59 | 118 | 1045 |

As can be seen in Table 8, the density of MOT's speech did not differ very much in her two languages. She produced slightly more words in Slovak but a few more utterances in English. The higher number of English utterances might be associated with the complexity of MOT's CDS, since her speech comprised more multiclause utterances in Slovak vs. more one-word utterances in English, as described in the next section. The higher amount of English one-word utterances might thus be the cause of her overall higher number of English utterances. The difference between MOT's average and highest number of words per minute in the two languages was also minimal, so it can be concluded that speaking L1 or L2 made no substantial difference in the density of MOT's CDS, despite showing a subtle advantage for L1.

### 3.3.2 Speech complexity

MOT's complexity of speech was measured by the percentage of multiclause, one-word, and two-word utterances as well as by the mean length of utterance in words (MLUw), similarly as in Soderstrom et al. (2008). The percentages were calculated from the total number of utterances. The comparisons of percentages are expressed by means of percentage points (pp).

**Table 9.** Complexity of MOT's speech

| Language | Total number of utterances | Multiclause utterances | One-word utterances | Two-word utterances | MLUw |
|---|---|---|---|---|---|
| **English** | 1116 | 13.35% | 20.07% | 9.23% | 5.02 |
| **Slovak** | 1045 | 22.11% | 17.03% | 11.96% | 5.46 |

Multiclause utterances show a considerable difference (more than 9 percentage points). Being the most explicit indicator of speech complexity, they demonstrate a sure, though still not very striking, prevalence of L1. Correspondingly, one-word utterances prevail slightly in English and two-word utterances prevail somewhat in Slovak. However, the difference of 2–3 pp can still be considered marginal (cf. Spáčilová 2018: 392), albeit the subtle differences in the individual items create a homogenous picture of this aspect. The MLUw score is almost the same in both languages, which reconciles and unifies the previous differences. To sum up, MOT's CDS was moderately more complex in her L1.

### 3.3.3 Speech fluency

Fluency is commonly viewed as smoothness of communication. It is intuitively associated with general oral proficiency, including effortless processing and automaticity of language use (see Lintunen & Peltonen 2019). From this perspective, "fluent represents the highest point on a scale that measures spoken command of a foreign language" (Lennon 1990: 389). Because English is MOT's foreign language, the criterion of fluency was considered essential for the comparative analysis of her CDS in a native vs. a non-native language. MOT's level of English competence was rated at C1 in the Common European Framework of Reference for Languages, which defined her as a proficient user of general English. She studied it at university but otherwise never lived in an English-speaking country, so it is not a language of everyday colloquial experience for her. These factors are very important for a realistic view of MOT's use of English and emphasize the justifiability of comparing her fluency in Slovak vs. English. Oral language generally includes a certain amount of disfluencies, because sometimes ideas are formed and adapted while speaking, especially when it comes to informal conversation (including CDS) in any language (native or non-native). The analysis focused on three categories: disfluencies (utterances including hesitations, false starts and slips of the tongue), utterances with multiple intrasentential disfluencies, and self-repetitions. The percentages were calculated from the total number of utterances with the exception of multiple intrasentential disfluencies that were calculated from the number of disfluent utterances. The comparisons of percentages are expressed by means of percentage points (pp).

**Table 10.** Fluency of MOT's speech

| Language | Total number of utterances | Disfluencies | Multiple intrasentential disfluencies (rates within disfluencies) | Self-repetitions |
|---|---|---|---|---|
| **English** | 1116 | 10.93% | 35.25% | 10.22% |
| **Slovak** | 1045 | 8.71% | 21.51% | 8.42% |

The rates of disfluencies and self-repetitions show a slight difference in favour of the native language, although the difference of 2 percentage points is relatively marginal. However, a more detailed insight into the rates of disfluencies by means of considering multiple intrasentential disfluencies provides data bearing a more striking difference (almost 14 pp). It is actually the biggest difference in the overall analysis. It means that although the percentage of general disfluent utterances in the two languages was not remarkably different, their internal details still show a considerable increase of hesitations and false starts in MOT's English in comparison to her Slovak. Thus it can be concluded that MOT's speech is moderately more fluent in her L1.

The mentioned disfluencies are supplemented by several examples:

(7)  act%:        INF1 has finished playing and is tidying up.
     *MOT:        Alexík, are you tiding up the building blocks?
     *MOT:        thank you.
     *MOT:        I like it <when we> [/] when we tidy up (..) all our mess (..)
                  when we finish playing.

(8)  act%:        MOT and INF1 are playing Memo game.
                  INF1 is turning cards when it is not his turn.
     *MOT:        you can only (..) uh turn the cards when it's your turn.

(9)  act%:        INF1 is going to have dinner.
                  MOT is preparing it.
     *MOT:        look, I've got this (..) piece <of> [/] of bread (..) with jam.

     act%:        INF1 is going to take a shower.
     *MOT:        okay, Adík, please, can you take off your clothes?
     *MOT:        because we are going to take a shower.
     *INF1:       no.
     *MOT:        please, <I> [/] I really need it.

## 4. Discussion

This paper contributes to the debate on native vs. non-native language input with regard to CDS, yet in a context different from typical immigrant bilingual communities, which virtually corroborates the heterogeneity of bilingual environments (cf. Place & Hoff 2011). Despite the specificity of intentional bilingualism implemented in a monolingual environment, the results provided in the study are largely congruent with previous research in this field. The cross-linguistic comparison confirmed CDS as a specific type of simplified register characterized by intensified expressivity, situational character and an increased degree of predictability (cf. Brestovičová 2018: 333–334). Although some previous research focused on the speech of mothers exclusively, their findings can be generally applied to CDS, since no substantial difference between the speech of mothers and fathers was found, e.g. Spáčilová (2018). Moreover, the specific features of adult-child interaction can also occur in children over 4 years when talking to babies or dolls (cf. Slančová 1999: 23).

The results obtained in the analysis of the collected data of MOT's language samples revealed that as for the four examined aspects – euphemizing lexis, speech density, complexity and fluency, L1 surpassed L2 in all of them, albeit not very substantially. Euphemizing lexis showed both greater variability and frequency in Slovak, especially due to the higher productivity of diminutive and hypocoristic endings; however, English interjections (mostly *oh*) occurred slightly more frequently in MOT's CDS than in Slovak for two likely purposes: to compensate

for the smaller range of euphemization in English as well as to make the speech sound fluent and natural even at the cost of overuse of certain expressions. The latter thus confirms the findings of Erman and Lewis (2015) which suggest a difference between native and advanced non-native speakers in terms of immediate access to low-frequency words and productive vocabulary, including pragmatic markers.

As for grammatical and discourse considerations, speech density, complexity and fluency were examined. Speech density as a purely quantitative aspect showed the slightest difference between the native and non-native language. The other two aspects indicated moderate but still important differences related to both the quantity and quality of MOT's CDS, especially concerning the rates of multiclause utterances (9 pp difference) and multiple intrasentential disfluencies (14 pp difference); both in favour of the native language.

It can thus be summarized and concluded that CDS maintains its distinctive features regardless of speaking a native or a non-native language to the child. Nevertheless, the impact of L1 vs. L2 on the use of CDS becomes evident in the frequency and variability of some lexical and syntactic structures as well as in the degree of fluency. These findings are in accordance with preceding research that suggested qualitative differences between native and non-native speakers (Shanks, Señor and Hoff 2015; Shiro 2016), e.g. syntactically less complex speech of non-native speakers (Altan and Hoff 2018), greater support of children's language development from native input (Place and Hoff 2011; Altan and Hoff 2018; Hoff, Core and Shanks 2020), and hybrid communicative practice in bilingual homes (cf. Shiro 2016).

This study delivers a partial cross-linguistic comparison of CDS in L1 vs. L2; however, the collected data leave several other possibilities/aspects for further examination and analysis, e.g. prosodic features, the occurrence of questions, imperatives, expansions and deictic utterances. Another element of CDS amenable to investigation is the production of errors, which could be substantial from the point of view of a native vs. a non-native language. Moreover, CDS also changes in relation to a child's age, e.g. the degree of diminutivization decreases with the increasing age of the child (see e.g. Melzi and King 2003). MOT's language corpus confirms this, because in the recorded situations where both children were present and addressed by MOT, both euphemisms and diminutives occurred noticeably more in her speech addressed to the younger INF2. Nevertheless, age differences were not included in the main scope of examination in this paper. The given issues thus offer suggestions for further research that could achieve more complex processing of the cross-linguistic comparison of CDS.

## Notes

[1]     A brief account of the results related to this research was previously published as: Vozníková, (2022). The current paper, however, comprises a detailed analysis and more specific considerations of the investigated aspects.

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