



10.2478/topling-2021-0004

## The skill of natural interpreting in a trilingual child

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### Abstract

The present work seeks to contribute to the fields of translation and bilingual acquisition focusing on the particular case of natural translation/interpreting of a single Slovak/English/German balanced trilingual child between 0;03 and 8;01 years. Natural interpreting is a strategy used by bilinguals whereby a message expressed in one language (source language = SL) is reproduced in another (target language = TL). Our study is based on two premises: 1. Translation in a bilingual child is an innate skill which can be acquired without formal training and is developed through guidance and practice (Harris, 1978); and 2. Natural interpreting can occur within different combinations of languages. We address the issue of bilingual competence and in particular the relationship that exists between linguistic competence and performance in the process of interpretation activity in the bilingual child. The first aim of the study is to reveal the social-academic context and the main sources of linguistic input, which had an important effect on the speech development of the child. The second aim of the study is to show that a trilingual child was able to become a sophisticated interpreter as she gradually moved through stages of pre-translation, autotranslation and transduction to more complex forms of interpretation (Harris and Sherwood, 1978; Harris, 1976 and 1978). The third aim of the study is to document the types of errors produced by the child and through error analysis and statistical data reveal whether these errors may hinder the communication of accurate meaning in the TL. The translation competence of the bilingual child is analysed via different types of spontaneous, elicited and experimental data gathered from the child's longitudinal production recorded by the researcher in diary annotations, audio recordings and video recordings. Examples of the child's interpretations presented in this paper are transcribed in the CHAT format. The results of our study demonstrate that a trilingual child acquiring three languages in a bilingual community with the bilingual-monolingual interaction strategy used by parents at home can become a competent interpreter by the age of 8;01 years and deliver messages quite accurately in the TL regardless of the directionality of interpretation. The results of error analysis show that the type of errors produced by the child in the process of interpretation are mainly morphological and occasionally syntactic or intrusion errors, which do not lead to misinterpretation of the meaning of original message in the TL.

### Key words

natural interpretation, trilingual competence, pre-translation, autotranslation, transduction, error analysis

### 1. Introduction

The question of natural translation in bilingual children has become a widely studied phenomenon, drawing the attention of more and more linguists. It appears that bilingual children, no matter what two or more languages they acquire at an early age, can naturally interpret from one language to another. They develop the ability to reformulate messages from the source language into the target language as they develop their linguistic competence in each language. Harris (1976) defines natural interpreting as

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“the translation done by bilinguals in everyday circumstances without special training for it”. Natural interpretation is now studied within the field of translation studies, for which Harris (1976) proposed a first postulate for a new departure:

All bilinguals can translate. In addition to some competence in two languages Li and Lj, they all possess a third competence, that of translating from Li to Lj and vice versa. Bilingualism is therefore a triple, not a double, competence; and the third competence is bi-directional. (ibid., pp. 96-114)

Harris (1976) calls this third competence *natural translation* (NT), which more recently has been designated as *natural interpreting* (Álvarez de la Fuente and Fernández Fuertes, 2015a and 2015b). NT has also been defined “as the sum of an innate ability parallel to bilingualism and a communicative function in a familiar context” (Álvarez de la Fuente and Fernández Fuertes, 2012, p. 98). When bilingual children interpret, they rely on their natural linguistic and cognitive skills. Interpreting is a natural skill in bilinguals developed by virtue of metalinguistic awareness but like all other skills may be improved through guidance and practise (Harris, 1976; Malakoff and Hakuta, 1991). Metalinguistic awareness enables the individual to think about the nature of language in abstract terms, i.e. to reflect on the structural properties of language. It develops differently in every child; therefore, the proficiency of interpretation seems to be the result of interaction between metalinguistic ability and language proficiency (Harris and Hakuta, 1991).

The skill of natural interpreting in bilingual children develops in the same way that mother-tongue language abilities develop (Malakoff, 1992, p. 518). There is a difference between transcoding (the process of apprehending the message) and interpretation (the process of translating the message) in the translation process (Harris, 1980; Seleskovitch, 1976). The translator must be familiar with the original text and its pragmatic context in order to understand the text fully, decode the surface word chains into syntactic and semantic structures and interpret the linguistic structure (Harris, 1980, pp. 5-6). It is the message and not the linguistic or semantic structures of the source text which must be encoded in the target language (Harris, 1980, p. 6).

Recent theories of translation underline the communicative character of interpretation (Malakoff, 1991; Seleskovitch, 1976). During the translation activity, the translator proceeds from Stage 1 – analysis of the source-language text, to Stage 2 – comprehension of the meaning; and from Stage 2 to Stage 3 – synthesis of the information into the target language (Seleskovitch, 1976; Malakoff, 1991). Natural interpreting involves four processes: understanding of the vocabulary of the original source-language text; understanding of the meaning of the original source-language message; encoding of the message in the target-language; and judgment of the suitability of the target-language text (Malakoff, 1992). The input mechanisms of two languages are activated during interpreting, one for perception (the SL) and one for production (the TL), with the output mechanism of the target language only being active (Grosjean, 2013).

Various studies on the skill of natural interpreting in children and young adults have been done in the past few years (Harris, 1976 and 1978; Malakoff and Hakuta, 1991; Malakoff, 1992; Grosjean, 1992, 2001, and 2013; Álvarez de la Fuente and Fernández Fuertes, 2012; 2015a, and 2015b; Seleskovitch, 1976; Ronjat, 1913; Nida, 2002; Bialystok, 2004 and others). Most authors seem to agree on the assumption that bilingual children are capable of reformulating source-language messages into the target language in multiple directions without receiving special training for it and that their linguistic competence and natural interpreting skills are developed simultaneously.

There exists little empirical discussion of natural interpreting from a linguistic, sociolinguistic, psycholinguistic or developmental perspective taking into account individuals speaking two or more languages, one of which is Slovak. The present study seeks to contribute to the discussion of natural interpreting through an analysis of a case study of spontaneous, elicited and experimental interpretations of a trilingual child who has been acquiring Slovak (as her mother tongue at home), German (primarily in kindergarten and at school), and English (from caregivers and friends). The results of our analysis show that a) the linguistic environment along with the academic, social and cultural support of the family and the community had a great influence on the child’s linguistic development; b) in the development of her interpreting skills, the participant gradually went through the stages of pre-translation, auto-translation and transduction; and c) the errors that the child made in the target-language sentences were few and mostly structural, which did not hinder the comprehension of the original source-language text.

The present study supports the claim that bilingual children can become proficient interpreters without receiving formal training in interpreting.

## 2. Aims of the paper and research questions

The present study is meant to contribute to the fields of translation and bilingual acquisition focusing on the particular case of natural interpreting of a single Slovak/English/German balanced trilingual child Stephanie between 0;03 and 8;01 years. We address the issue of bilingual competence in relationship to natural interpreting skills in the participant. The first aim of the study is to look more closely at the social-cultural and academic context that played an important role in the development of the child's trilingual competence. The second aim of the study is to show that the skill of natural interpreting was developed in the participant as she proceeded through the stages of pre-translation, autotranslation and transduction, followed by more complex forms of interpretation (Harris and Sherwood, 1978; Harris, 1976 and 1978). The third aim of the study is to document the types of errors produced by the child and through error analysis and statistical data reveal whether these errors may hinder the communication of the accurate meaning of the source-language text in the TL.

Example 1 illustrates the participant's ability to translate the first five sentences from the children's book *Oh, wie schön ist Panama!* by Janosch (2001) from German (SL) to Slovak (TL) at the age of 7;07.

- (1) @Begin  
 @Languages: deu, slk  
 @Participants: STE Stephanie Target\_Child, INV Investigator  
 \*INV: es waren einmal ein kleiner Bär und ein kleiner Tiger die lebten unten am Fluß@deu  
 %eng: once upon a time, there was a little bear and a little tiger who lived down by the river  
 \*STE: Jedného dňa@slk (...) +/  
 %eng: once upon a time  
 %com: Stephanie's brother interrupting, STE hesitating, she found the text difficult to translate, the INV provided additional questions and split the longer text into shorter passages, in order to make it easier for STE to translate the text  
 \*INV: was ist ein kleiner Bär, Stevka?@deu  
 %eng: what is a small bear, Stephanie?  
 \*STE: malý macko@slk  
 %eng: a small bear  
 \*INV: und ein kleiner Tiger?@deu  
 %eng: and a small tiger?  
 \*STE: malý tiger@slk  
 %eng: a small tiger  
 \*INV: die lebten unten am Fluß@deu  
 %eng: who lived down by the river  
 \*STE: neviem@slk  
 %eng: I don't know  
 \*INV: und sie hatten auch ein Boot@deu  
 %eng: and they also had a boat  
 \*STE: že mali, mali, jak sa to povie (..) loďku@slk  
 %eng: that they had, how do you say it (..) a boat  
 \*INV: sie wohnten in einem kleinen Haus mit Schornstein@deu  
 %eng: they lived in a small house with a chimney  
 \*STE: by som povedala, že ťažké@slk  
 %eng: I'd say that it's difficult  
 \*INV: was ist Schornstein?@deu  
 %eng: what's a chimney?  
 \*STE: (...) [%Stephanie's brother provided the translation first and then Stephanie just repeated it] komín@slk

%eng:	chimney
*INV:	also wo wohnten sie?@deu
%eng:	so, where did they live?
*STE:	in eine@deu (..) malý domček@slk
%eng:	in a (..) small house
*INV:	s čím?@slk
%eng:	with what?
*STE:	s komínom@slk
%eng:	with a chimney
*INV:	der kleine Tiger ging in den Wald Pilze finden@deu
%eng:	the small tiger went to the woods to find mushrooms
*STE:	on išol (..) on, malý tiger išol do (..) do lesa@slk (..)
%eng:	he went (..) he, the small tiger went to (..) to the woods (..)
*INV:	Pilze finden@deu
%eng:	to find mushrooms
*STE:	hríby nájst'@slk
%eng:	to find mushrooms
@End	

Due to the literary style of the source text, Stephanie found it rather difficult to translate, as expressed in her comments above. Nevertheless, encouraged by the investigator to keep trying and with the help of the investigator's additional questions (formulated in Slovak), Stephanie was able to translate most of the text accurately, omitting only one clause *die lebten unten am Fluß* ('who lived down by the river').

## 2.1 Research question 1

Even though bilingual children seem to possess an innate skill of reformulating source-language texts into target-language texts, based on our observation of a trilingual child and her interpreting skills we believe that the linguistic environment has a decisive impact on a child's linguistic development, especially when languages are in contact, used in different communicative actions, by different people and in different contexts. A bilingual's proficiency in all their languages is best achieved when exposed as a child to natural speaking environments approximately for the same amount of time throughout the day. It is impossible that language input be provided in all areas of knowledge and social communication in all the languages in question. However, with the appropriate support of the family and the community, the bilingual individual may become quite proficient in both or more languages. Our Research question 1 was: What were the social, cultural and academic conditions under which the participant developed her trilingual competence and, consequently, her natural interpreting skills?

## 2.2 Research question 2

If a bilingual child is believed to possess a natural interpreting skill and become a quite sophisticated interpreter (based on his metalinguistic awareness and bilingual competence), then he will probably develop this skill in a certain manner. Therefore, we have adopted the theory proposed by Harris (1976 and 1978) that bilingual children proceed from the stage of pre-translation (when they perform "bilingual responses" and mostly with single words) to the stage of autotranslation (whereby the child interprets to others what he has said or written himself) and finally to the stage of transduction (in which the interpreter acts as an intermediary between two other people). Our Research question 2 was: Did the participant in this particular case study develop her natural interpreting skills by way of moving through the stages of pre-translation, autotranslation and transduction?

## 2.3 Research question 3

When the bilingual child has developed the skill of natural interpreting, it is beneficial to know what types of errors are made in the TL sentences and whether and how these errors in the TL text may impact the comprehension of the source-language text. Our Research question 3 was: What types of errors (structural, lexical, semantic, etc.) will the participant produce in the TL sentences and how will these errors influence the understanding of the original source-language text?

### 3. Research methodology

In order to provide answers to the research questions and contribute to the discussion on natural interpreting in bilinguals, we analysed longitudinal data collected by the researcher in the form of a speech diary, audio and video recordings of spontaneous, elicited and experimental production of natural interpreting. By spontaneous interpretations we mean those situations in which the participant reformulated SL texts into the TL or acted as an intermediary between two speakers of two different languages without being asked to do so. By elicited interpretations we mean those situations in which the participant was asked to interpret SL sentences in the TL. By experimental interpretations we mean those situations in which the participant was required to fulfil certain interpreting tasks prepared by the researcher. We begin by introducing the data selected for our study, followed by a detailed description of the participant, her social and academic background and the dominant sources of linguistic input, specification of the periods which contributed to the development of her natural interpreting skills (pre-translation, autotranslation, and transduction) and conclude with the findings we gathered from error analysis of the TL sentences. By pre-translation we mean the period when the participant provided bilingual responses during the pre-translation stages. By autotranslation we mean an activity whereby the participant interpreted to others what she had said herself. By transduction we mean those situations in which the participant acted as an intermediary between two other people. The term natural interpreting is used for all forms of reformulating source-language texts in the target language orally.

#### 3.1 Data collection and selection

The data comes from the researcher's collection of diary annotations, video recordings and audio recordings documenting speech production of a single child, Stephanie, from 0;03 to 8;01 years. We analysed the participant's spontaneous and elicited multidirectional production of interpretations (1;10 to 8;01) recorded on a daily basis. We also analysed the participant's interpretations (7;07 to 8;01) produced during four experimental tests created by the researcher.

The experimental tests contained whole sentences to be interpreted by the participant, in view of Catford's theory of meaning (1965), who argues that the meaning of a source-language unit may be fully captured in an equivalent target-language unit only at the sentence level (Malakoff, 1992). The participant was expected to provide sentences in the TL containing coherent sentence structure and meaning. The tests included the interpretation of idiomatic expressions, whereby the participant was first required to decode the meaning of the expression in the SL and substitute it with the equivalent idiomatic expression in the TL. The sentences chosen for interpreting included content, vocabulary and structures that the researcher believed would be within the scope of knowledge of the participant.

Test 1 contained 44 interrogative sentences (including direct and indirect questions) which the participant was asked to reformulate in the TL. The test was applied in multiple language directions, Slovak (SL) → English (TL), English (SL) → Slovak (TL), Slovak (SL) → German (TL), German (SL) → Slovak (TL), English (SL) → German (TL), and German (SL) → English (TL). The age of the participant during Test 1 was 7;10 years. The source-language text included "Yes/No" questions and "Wh-" questions in present simple, present continuous, present perfect, past simple, past continuous and future simple tenses. On average, it took the participant 25 minutes to complete the tasks in Test 1.

Test 2 contained 20 sentences in form of statements, which the participant was asked to translate into the TL. The source language was Slovak. The test was applied in multiple language directions, Slovak (SL) → English (TL), English (SL) → Slovak (TL), Slovak (SL) → German (TL), German (SL) → Slovak (TL), English (SL) → German (TL), and German (SL) → English (TL). The age of the participant during Test 2 was 8;01 years. On average, it took the participant 14 minutes to complete the tasks in Test 2.

The aim of Test 1 and Test 2 was to demonstrate: a) the quality of interpretations provided by the participant; b) the comprehension of vocabulary and meaning of the SL text; c) the ability to transfer the meaning of the SL text accurately in the TL; d) the ability to use the appropriate vocabulary, idiomatic expressions, grammar and sentence structure in the TL text; e) the types and number of errors made in the TL text; and f) whether the quality of the TL text depends on the directionality of interpretation.

In order to increase motivation in the participant, support her willingness to cooperate and give more sense to the tasks being performed on experimental Tests 1 and 2, the researcher used the strategy of

including Siri, a built-in “intelligent assistant” that enables users of iOS devices to speak voice commands in order to operate the mobile device and its apps, in the interpretation process. The participant was able to virtually communicate with Siri during Tests 1 and 2 and deliver the TL texts to her. Users can speak commands or ask questions, and receive audible confirmation from Siri in 20 different languages of the world. Since English and German are among these languages, it was possible to use Siri as a tool in the process of testing the interpreting competence of the child. We believe that this strategy helped the child to perform better on the experimental tests.

Experimental Test 3 contained three sentences – the opening lines from the children’s book *Oh, wie schön ist Panama!* written by Janosch (2001) and was performed by the participant at the age of 7;07. The participant was asked to reformulate the SL text (in German) in the TL (Slovak). It took the participant 15 minutes to complete the tasks in Test 3. The aim of Test 3 was to demonstrate: a) the quality of interpretations provided by the participant; b) the comprehension of vocabulary and meaning of the SL text; c) the ability to transfer the meaning of the SL text accurately in the TL; d) the ability to use the appropriate vocabulary, expressions, grammar and sentence structure in the TL text; e) and the types and number of errors made in the TL text; f) how the particular (literary) style of the SL text may affect the quality of the TL text.

Experimental Test 4 contained five sentences (the text of a joke) in Slovak (SL) which the participant (7;11) was asked to reformulate in English (TL1) and in German (TL2). It took the participant 16 seconds to reformulate the SL text in English and 31 seconds to reformulate the SL text in German. The aim of Test 4 was to demonstrate: a) the quality of interpretations provided by the participant; b) the comprehension of vocabulary and meaning of the SL text; c) the ability to transfer the meaning of the SL text accurately in the TL; d) the ability to use the appropriate vocabulary, grammar and sentence structure in the TL text; e) and the types and number of errors made in the TL text; f) how the particular (humorous) style of the SL text may affect the quality of the TL text.

Different types of text (literary vs. pragmatic) and linguistic structures (questions vs. statements) were used in the experimental texts. These texts and structures were specifically used to show how these issues would affect vocabulary choice, sentence structure, style and the process of transforming direct speech into indirect speech.

Examples illustrating the participant’s spontaneous and elicited natural interpretations during the stages of pre-translation, autotranslation and transduction as well as some interpretations produced during experimental Tests 1-4 were selected and transcribed in the CHAT format in this paper.

### 3.2 Data range

The collected data include the production of speech in three languages actively spoken by the participant: Slovak, English and German. Slovak was the mother tongue of the child spoken to her by both parents from birth. The child started acquiring English at the age of 1;01 years from a native speaker of English (3 days a week; 5 hours each day) and German at the age of 3;02 years in kindergarten in Austria where German was the common language of communication (5 days a week; 5 hours each day). The data of the participant’s speech development began to be collected when she was 0;03 months and the study was completed when she was 8yrs 01m. The collected material contains 512 translations. The data collected in the form of a speech diary, audio and video recordings cover the age range of 0;03 to 8;01 years. A total of 207 sessions were recorded, of which 42 are in a Slovak context (i.e. with a Slovak interlocutor such as the interviewer or their mother); 80 in a German context (i.e. with a German interlocutor); 75 in an English context (i.e. with an English interlocutor); and 10 in a mixed-language context (i.e. with interlocutors speaking different languages). Transcriptions of utterances in the form of a diary were made on a daily basis during the time of data collection. Audio and video recordings were made at intervals of 2-3 weeks but not on a regular basis. The child was recorded in naturalistic settings, usually at home, in the park, at the playground, on trips, at the swimming pool, etc. She was usually engaged in normal play, sports or homework activities with the interlocutor. For the present study we analysed 84 spontaneous interpretations, 31 elicited interpretations, and 397 experimental interpretations of the child. The elicitation of NT consists of asking the child to act as interpreter for another person. The experimental translations come from four tests created by the investigator (as described in Section 3.1). Table 1 shows the different types of interpretation (spontaneous, elicited, and experimental) collected by the investigator in form of diary annotations,

audio-recordings, and video-recordings. These data were collected at different ages of the participant and the interpretations were performed in multiple language directions.

*Table 1.* Data range collected in form of diary annotations, audio-recordings, and video-recordings

Type of interpretation	Language direction	Age	Number of interpretations
<b>Spontaneous</b>	Slovak → English	1;10 – 8;01	17
	English → Slovak	1;10 – 8;01	18
	Slovak → German	3;02 – 8;01	15
	German → Slovak	3;02 – 8;01	19
	English → German	3;02 – 8;01	8
	German → English	3;02 – 8;01	7
	Slovak → English	2;00 – 8;01	8
<b>Elicited</b>	English → Slovak	2;00 – 8;01	4
	Slovak → German	3;02 – 8;01	6
	German → Slovak	3;02 – 8;01	7
	English → German	3;02 – 8;01	3
	German → English	3;02 – 8;01	3
	Slovak → English	7;07-8;01	69
	English → Slovak	7;07-8;01	64
<b>Experimental</b>	Slovak → German	7;07-8;01	69
	German → Slovak	7;07-8;01	67
	English → German	7;07-8;01	64
	German → English	7;07-8;01	64
<b>TOTAL</b>			<b>512</b>

#### 4. The social-cultural and academic context: sources of linguistic input

The first aim of the present study is to look more closely at the social-cultural and academic context which played an important role in the development of the child's trilingual competence. Stephanie was 0;03 months when the data of her speech production began to be collected by the researcher, and the study was completed when the participant was 8;01. Slovak was the mother tongue of the child, spoken to her by her father from birth and by her mother from 1;00. Her mother spoke to her exclusively in Spanish between 0;00 and 1;00. Although Stephanie could understand many words and utterances (including questions and commands) in Spanish by the age of 1;00, she discontinued acquiring Spanish at that age. From then on, her mother spoke mostly Slovak to her. She was born in Slovakia but moved with her parents to Austria when she was 3;02. The child began acquiring English at the age of 1;01 years from native speakers of English (generally 3 days a week; 5 hours a day) and German at the age of 3;02 years in a German-speaking kindergarten in Austria (commonly 5 days a week; 5 hours a day). She attended three years of kindergarten and began attending a German-speaking primary school (Volksschule) in Austria when she was 6;02. Stephanie was exposed to German for approximately 4 to 5 hours a day in school. She was exposed to Slovak for approximately 3 to 4 hours a day when interacting with her parents and her brother. Stephanie was also acquiring English in kindergarten (between 3;02 and 6;00) in a naturalistic way one day a week for the period of one hour. From 6;02 she was acquiring English at primary school twice a week for the period of one hour.

Slovak was spoken to the child by both parents, her brother, her grandparents and other relatives and friends; German was the language commonly used in kindergarten and in school in the morning and sometimes with friends in the afternoon and on weekends; and English was used by American caregivers for approximately four hours a day after school during the school year. There were times, for instance in the summer, when the child was mostly exposed to one language (Slovak), when the family was staying in Slovakia. However, the family often received visits from other countries, therefore, the child was often interacting in all three languages even during summer holidays and other longer holidays

(e.g. Christmas and Easter). The family generally used their mother tongue (Slovak) at home; however, code-switching commonly occurred especially in communication between Stephanie and her brother and Stephanie and her mother.

The participant's main interlocutors and sources of linguistic input were the following:

Mother – her first language was Slovak but she also spoke English, Spanish, German, Czech and Italian fluently. She was a university linguistics professor. She used Slovak, English and German when speaking to Stephanie. The mother spoke solely in Spanish to Stephanie for the first year of the child's life.

Father – his mother tongue was Slovak. He also spoke English and Italian but Slovak was the language used in communication with Stephanie. He was a manager at a chemical company.

Brother – his mother tongue was Slovak. He was born two years after Stephanie. He began acquiring English and German at the age of 1;0 years. He spoke Slovak, German and English in communication with Stephanie.

Caregivers, playmates and cousins – Stephanie had Slovak, German and English-speaking caregivers and playmates. While in Austria, she spoke English and German to her caregivers and playmates on a daily basis. When in Slovakia (in the summer time, during holidays, and on weekends) she spoke Slovak to her Slovak playmates and cousins.

Grandparents and other relatives – most of Stephanie's relatives were Slovak. She visited them with her parents on a regular basis. Stephanie used Slovak in communication with her Slovak relatives.

Television, DVDs and other sources of audio and video recordings – Stephanie listened to Slovak, German, and English audio recordings. She watched videos and cartoons primarily in Slovak, English and German but often also in Czech and sometimes in Spanish, Russian, Polish and Portuguese.

Songs, rhymes, children's literature and skits – Stephanie was actively engaged in learning songs and nursery rhymes. Children's stories were read to her daily and she was also often involved in interactive activities, whereby she and her interlocutors took on a specific role speaking a specific language. All of these activities were performed in Slovak, English, German and sometimes also in Czech, Spanish, Italian or French.

It was the choice of the participant's parents to migrate for reasons of the child's linguistic development. The parents' justification was that a natural speaking environment, where different facets of life require the use of one or all the languages in contact (at school, at home, with friends, at various kinds of social events, etc.) would provide the child with the opportunity to develop competencies in several languages. Grosjean (2002) calls this the complementarity principle, according to which bilingual individuals commonly acquire and use their languages for different functions, in different areas of life, with different people.

Another reason for raising the child in a multilingual environment was to give her the opportunity of fostering different cultures. Besides other valuable benefits of this approach, in a bilingual's language practice, knowledge of the source culture may be more crucial than linguistic proficiency (Nida 2002).

All three languages acquired by the child were positively viewed and valued as well as supported emotionally and academically by the parents. German was the majority language, while English and Slovak were the minority languages. Reaching proficiency in the majority language (German) was required by her school.

Interpreting was part of the participant's everyday activity. The participant acquired the skill of natural interpretation gradually through stages of pre-translation, autotranslation and finally transduction and showed evidence of becoming quite a proficient interpreter in any direction by the year 8;01. She often interpreted spontaneously, as well as when she was asked to do so. Even though German was the majority language and English and Slovak were the minority languages, there was a balance in the number of interpretations documented in different directions.

It appears that the linguistic environment has a decisive impact on the child's linguistic development, especially when languages are in contact, used in different communicative actions, by different people, and in different contexts. The participant's proficiency in Slovak, German and English was achieved through exposure to these languages in natural speaking environments for approximately the same amount of time during the day and enhanced by the emotional and academic support of her family, friends and educators. In this section we sought to clarify the social, cultural and academic conditions under which the participant developed her trilingual competence and, consequently, her natural interpreting skills.

## 5. Stages in the development of natural interpreting skills

If a bilingual child possesses the skill of natural interpreting and is able to become a sophisticated interpreter due to his metalinguistic awareness and bilingual competence, then this skill will probably be acquired gradually and grow concurrently with the development of linguistic competence and practice. Harris (1976 and 1978) proposed the theory that bilingual children proceed from the stage of pre-translation (when they perform “bilingual responses” and mostly with single words) to the stage of autotranslation (whereby the child interprets to others what he has said or written himself) and finally to the stage of transduction (in which the interpreter acts as an intermediary between two other people).

The second aim of this study is to show instances of pre-translation, autotranslation, and transduction stages in the participant’s development of natural interpreting skills, which helped her move to more complex forms of interpretation (Harris and Sherwood, 1978; Harris, 1976 and 1978). We analysed the participant’s spontaneous and elicited production of interpretation documented by the investigator during the different stages of pre-translation (1;10 to 2;00 years), autotranslation (2;00 to 3;07 years), and transduction (3;07 to 8;01 years) in the form of diary annotations, audio recordings and video recordings. The collected data contain 9 interpretations from the pre-translation period, 24 interpretations from the autotranslation period, and 479 interpretations from the transduction period in multiple language directions. Examples of the participant’s production of interpretation during each stage of the development of natural interpreting skills are also included in this section.

### 5.1 Pre-translation

The development of natural interpreting skills in bilinguals is commonly described in terms of a set of stages that the bilingual child goes through from the onset of linguistic development in early childhood. Even though the skill of natural interpreting is believed to be innate, it is not necessarily coexistent with bilingualism (Malmkjær, 2009). Valdés et al. (2003) suggest that the growth of innate capacities rests on the bilingual speakers’ actual practice in translating or interpreting. In other words, the quality of natural interpreting depends on the bilingual’s linguistic competence, motivation and practice.

Harris (1978) following Ronjat (1913) identifies the bilingual response in pre-translation stages with a reflex. Pre-translations “are mostly single words...They may be interpersonal..., or the child may be observed doing autotranslation on his own (intrapersonal)” (Harris, 1978, p. 17). This pre-translation stage is considered a preparatory stage for the active bilingualism of a later time.

Stephanie at 1;11 years:

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(2)  @Begin
      @Languages:      slk, eng
      @Participants:   STE Stephanie Target_Child, MOT Mother
      %com:            Stephanie’s mother asking Stephanie in Slovak to say thank you and
                      good-bye to the child’s English-speaking caregiver.
      *MOT:            pod’akuj!@slk
      %eng:            say thank you!
      *STE:            thank you!@eng
      *MOT:            pozdrav!@slk
      %eng:            say good bye!
      *STE:            bye-bye!@eng
      %eng:            good bye!
      @End
```

In Example 2 Stephanie’s mother asked Stephanie to say thank you and good-bye to the child’s English-speaking caregiver. The child responded by reflex in English because she identified her interlocutor with the English language. In a case like this, the languages of inquiry simply trigger two linguistic realizations of the one concept. Harris and Sherwood (1978) call this a “bilingual response”, and according to Ronjat as well as to Harris and Sherwood, translation is not involved in this process. At this stage (coexistent with the one-word stage of monolingual acquisition), the participant was also observed spontaneously rehearsing word triplets: *dog/havko/Hund* (English/Slovak/German),

*hand/ruka/Hand* (English/Slovak/German), a playful, enjoyable use of the two languages which persists later (Harris and Sherwood 1978).

Stephanie at 2;00 years:

- (3) @Begin  
 @Languages: eng, slk  
 @Participants: STE Stephanie Target\_Child  
 \*STE: [%pointing at a dog] and this *havko*@slk, *dog*@eng...  
 @End

Example 3 is an example of word pairing, where the child repeated pairs of synonymous words of which one word was in one language and the other word in the other language, as though the child was rehearsing a bilingual lexicon.

### 5.2 Autotranslation

An activity whereby the child interprets to others what he has said or written himself is called *autotranslation* (Harris, 1978). This type of interpretation is similar to the playfulness with single words and triggers the activation of associative memory capable of storing a natural interpretation lexicon. Pre-translation provides the child with the possibility to build up and practise a coordinated bilingual lexicon, and autotranslation provides “plenty of practice irrespective of the degree of adult cooperation” (ibid., p. 19). Instances of concurrence of later stages of pre-translation and autotranslation observed by Ronjat were also documented in Stephanie’s case.

The first instances of autotranslation in Stephanie appeared around year 2;00 when autotranslating numerals 1-10 in multiple directions.

Stephanie at 3;08 years:

- (4) @Begin  
 @Languages: eng, slk  
 @Participants: STE Stephanie Target\_Child  
 \*STE: this is my house!@eng  
 %com: Stephanie made the statement in English and then autotranslated it to Slovak.  
 \*STE: toto je moja [: môj] domček!@slk  
 %eng: this is my house  
 @End

Stephanie at 3;12 years:

- (5) @Begin  
 @Languages: slk, deu  
 @Participants: STE Stephanie Target\_Child, MOT Mother  
 %add: MOT  
 \*STE: Emilie je ešte *krank*@deu  
 %eng: Emilie is still sick  
 \*STE: [%autotranslated for their mother] Emilie je ešte *choručká*@slk  
 %eng: Emilie is still sick  
 @End

Example 4 illustrates a case of interpersonal translation, when the participant translated a word from the source language (German) to the target language (Slovak) to another person. Example 5 illustrates a case of intrapersonal autotranslation, when the participant translated an utterance from the source language (English) to the target language (Slovak) to herself.

### 5.3 Transduction

*Transduction* is the type of communication in which the translator acts as an intermediary between two other people while decoding already expressed language (Harris, 1978 and 1980). Infant bilinguals

autotranslate as well transduce. Children sometimes autotranslate or transduce spontaneously because they find it amusing. This experience is “irrespective of the interpersonal communicative function of the translation” (Harris, 1978, p. 20). Manifestations of transductions in Stephanie began to be evident from the age of 3;07 onward. Stephanie acted as an intermediary between two people in multiple language directions.

Stephanie at 5;03 years:

- (6) @Begin  
 @Languages: slk, deu  
 @Participants: STE Stephanie Target\_Child, MOT Mother, INE Ines Playmate  
 @Situation: Stephanie, Ines, and Mother at a playground in Austria. Stephanie and her mother are talking about parts of the playground equipment which were removed from the playground for the winter.
- \*STE: maminka, prečo je toto preč?@slk  
 %eng: mom, why is this away?  
 %add: MOT  
 \*MOT: lebo za chvíľku bude snežiť, tak to museli dať preč, keď tu bude snežik@slk  
 %eng: because it's going to snow in a little while, so they had to remove it, when the snow is here
- %add: STE  
 \*STE: mami, a ko sa povie po nemecky *snežik*?@slk  
 %eng: mom, how do you say *snow* in German?  
 %add: MOT  
 \*MOT: Schnee@deu  
 %eng: snow  
 %add: STE  
 \*STE: Ines, der Schnee kommt, dann muss das weggeben, wenn der Schnee kommt, es muss weg (. ) der Schnee kommt dann@deu  
 %eng: Ines, the snow will come, then this has to give away, when the snow comes, this has to go (.) the snow will then come
- %add: INE  
 @End

Example 6 demonstrates Stephanie's activity of interpreting source-language (Slovak) messages into the target language (German) to another person. The interpreting was spontaneous, as Stephanie wanted to include her German-speaking friend Ines in the conversation, which was taking place in Slovak.

Stephanie at 4;10 years:

- (7) @Begin  
 @Languages: slk, eng  
 @Participants: STE Stephanie Target\_Child, MOT Mother  
 @Situation: Stephanie was talking to her mother as they were reading a children's book in English.
- \*STE: maminka, čo je to *first spring day*?@slk  
 %eng: mom, what is *first spring day*?  
 \*MOT: to je *prvý jarný deň*@slk  
 %com: Stephanie's mother continued reading the book  
 \*STE: mami, čo je to *in the morning*?@slk, eng  
 %eng: mom, what is *in the morning*?  
 \*MOT: No ved' *ráno*@slk  
 @End

Stephanie also often asked questions about why there were different labels for things across languages, such as *dog* (in English) – *havko* (in Slovak) – *Hund* (in German) and questions in Example 7. Stephanie found it fascinating to think about languages, their sounds and words. Thereupon she demonstrated her strong metalinguistic awareness (Malakoff and Hakuta, 1991).

Stephanie at 4;07 years:

- (8) @Begin  
 @Languages: slk, deu, eng  
 @Participants: STE Stephanie Target\_Child, MOT Mother  
 @Situation: Stephanie was watching Mickey Mouse in a German dubbing. She found the German translation of the expression *bubble factory*, which was used in the original English version of the cartoon incorrect.  
 \*STE: ale *Machine* neni bublifuk!@slk, deu  
 %eng: but Machine is not bubble factory!  
 \*MOT: a ako sa to povie po anglicky?@slk  
 %eng: and how do you say that in English?  
 \*STE: *bubble!*@slk  
 @End

Stephanie had watched the same cartoon with the original English audio track several times before her mother intentionally switched the language of the audio track to German. Stephanie did not complain about having to listen to the German dubbing while watching one of her favourite cartoons; however, she did pay attention to the German translation and compared it to the original English version of the script, which she was well acquainted with. She had remembered that one of the key elements in the cartoon was the bubble factory and she remembered its name in English. Upon hearing the German translation of ‘bubble factory’, she expressed her disapproval of the German synonym used in the German dubbing, as she found it inaccurate (Example 8). Another interesting event was that she used the Slovak equivalent of *bubble factory* (‘bublifuk’), when commenting on the inappropriate German translation to her mother.

Table 2 below shows the number of interpretations documented during the stages of pre-translation, autotranslation and transduction in multiple directions between 1;10 and 8;01 years.

Table 2. Data range during the stages in natural interpreting

Stages in natural interpreting	Language direction	Age	Number of interpretations
	Slovak → English	1;10 to 2;00 years	3
	English → Slovak		2
<b>Pre-translation</b>	Slovak → German		2
	German → Slovak		2
<b>Autotranslation</b>	English → German		0
	German → English		0
	Slovak → English		6
	English → Slovak		4
	Slovak → German		4
	German → Slovak		5
	English → German	2	
	German → English	3	
<b>Transduction</b>	Slovak → English	3;07 to 8;01 years	85
	English → Slovak		80
	Slovak → German		84
	German → Slovak		86
	English → German		73
<b>TOTAL</b>	German → English		71
			<b>512</b>

The analysis of the participant’s production of interpretation showed that the child’s skill of natural interpreting developed gradually, as she moved through stages of pre-translation (when she performed

“bilingual responses”), autotranslation (whereby the child interpreted to others what she had said or written herself) and transduction (in which the child acted as an intermediary between two other people). Therefore, the answer to our Research question 2 is that the participant in this particular case study developed her natural interpreting skills by way of moving through the stages of pre-translation, autotranslation and transduction. The quality of the target-language text did not seem to depend on the directionality of interpretation.

## 6. Types of translation strategies and errors

As the bilingual child develops the skill of natural translation, he adopts certain translation strategies in the process of reformulating source-text messages in the target language. These strategies may help the interpreter to communicate the meaning of the source text accurately; however, they might also disclose the interpreter’s insufficient linguistic competence in the target language on one or more language levels. The third aim of our study is to look at some of the translation strategies used by the participant and document the types of errors produced in the course of interpretation. The task of the following section is to answer Question 3: What types of errors (structural, lexical, semantic, etc.) will the participant produce in the TL sentences and how will these errors influence the understanding of the original source-language text.

Interpreting proficiency seems to be “the product of an interplay between metalinguistic maturity and bilingual proficiency” (Malakoff and Hakuta, 1991, p. 149). In order to transfer source-language texts into the target language, the interpreter applies certain interpreting strategies, depending on the specificities of the target language. For instance, the light verb construction *to be x years old* contains the verb *to be* in English, the verb *sein* (‘to be’) in German but the verb *mat’* (‘to have’) in Slovak and the verb *tener* (‘to have’) in Spanish. One strategy might be to use the verb *to have* in some verb constructions when going, for example from English to Slovak or from German to Slovak. However, this rule may not be applied for all light verb constructions. Overusing this strategy would result in an error. Also, routine formulas, like Happy Birthday, Happy New Year, Happy Anniversary all contain the adjective *happy* in English. When translated into Slovak, the adjective *šťastný* (‘happy’) would only be used in the formula *šťastný Nový rok* (‘Happy New Year’) and *všetko najlepšie k narodeninám* (‘happy birthday’, literally ‘best wishes on your birthday’) or *všetko najlepšie k [Vášmu] výročiu* (‘happy anniversary’, literally ‘best wishes on your anniversary’) would be the appropriate formulas in Slovak. Therefore, the interpreter should be aware of the structural and semantic differences, between the source language and the target language (bilingual proficiency) and the resulting structure and meaning in the target language (metalinguistic skill).

In order to convey the meaning of the original text, natural interpreting requires: a) the ability to reformulate the meaning of the source-language text into the target language using an appropriate target-language grammatical and sentence structure; and b) at the same time evaluate the equivalence of the meaning of both texts and the suitability of the grammatical and sentence structures used in the target-language text (Malakoff and Hakuta, 1991, p. 149-150). Stephanie tried to reproduce the meaning of the original text as accurately as possible searching for adequate lexical equivalents to be employed with an appropriate sentence structure in the target-language text. For this purpose, she used different translation strategies, examples of which are introduced below.

Stephanie at 7;10 years:

```
(9) @Begin
    @Languages:      slk, eng
    @Participants:   STE Stephanie Target_Child, INV Investigator
    @Situation:      Part of experimental Test 2.
    *INV:            umývam si ruky@slk
    %eng:            I'm washing my hands/I wash my hands
    *STE:            I wash my hands... I'm now washing my hands@eng
    @End
```

Stephanie at 7;10 years:

(10) @Begin  
 @Languages: slk, deu  
 @Participants: STE Stephanie Target\_Child, INV Investigator  
 @Situation: Part of experimental Test 2.  
 \*INV: umývam si ruky@slk  
 %eng: I'm washing my hands/I wash my hands  
 \*STE: *ich Hände wasche*@deu  
 %eng: I wash hands  
 \*INV: dá sa to aj inak povedat?@slk  
 %eng: is there some other way to say that?  
 \*STE: *ich händewasche meine Hände*@deu  
 %eng: I wash hands my hands  
 \*INV: ako povieš, umývam si ruky?@slk  
 %eng: how do you say, I wash my hands?  
 \*STE: *ich wasche meine Hände*@deu  
 %eng: I wash my hands  
 @End

Examples 9 and 10 show the participant's effort to reformulate the original Slovak text *umývam si ruky* ('I wash my hands/I'm washing my hands') in English (TL1) and German (TL2) accurately. The child tried to employ the appropriate equivalents, grammar and sentence structure in both target languages. She provided two possible translations in English – *I wash my hands* and *I'm now washing my hands* which was quite appropriate, as the present simple tense form of the Slovak verb *umývat* ('to wash') – *umývam* ('I wash/I'm washing') conveys the meaning of both the present simple and present continuous tense forms of the verb *to wash* in English. In the German translation, the participant sought to place the sentence elements in the appropriate order, thus providing not only the adequate lexical equivalents but also grammatical and sentence structure in the target-language text.

### 6.1 Lexical translation

Lexical translation is the translation of individual words, such as common nouns, proper names, numerals, etc. Around age 3;00, Stephanie often produced lexical translations in multiple directions, as, for instance, in Examples 11 and 12.

Stephanie at 3;00 years:

(11) @Begin  
 @Languages: eng, slk  
 @Participants: STE Stephanie Target\_Child, MOT Mother  
 \*STE: this is bubbles, bubble balls@eng  
 %com: her mother did not understand what Stephanie meant, Stephanie was pointing at cereal  
 \*STE: brown@eng  
 \*MOT: what is it, Števká?@eng  
 \*STE: *guličky*@slk  
 %eng: balls  
 @End

Stephanie at 3;07 years:

- (12) @Begin  
 @Languages: slk, eng  
 @Participants: STE Stephanie Target\_Child, FAT Father  
 @Situation: Stephanie looking at a horse in the countryside.  
 \*STE: horse!@eng  
 \*FAT: ako sa to povie po slovensky?@slk  
 %eng: what is it called in Slovak?  
 \*STE: *koník*@slk  
 @End

Stephanie at 4;09 years:

- (13) @Begin  
 @Languages: slk, deu, eng  
 @Participants: STE Stephanie Target\_Child, MOT Mother, FAT Father  
 @Situation: Stephanie's mother was reading a story in German to Stephanie. Stephanie's father came into the room and asked a question about the story.  
 FAT: Števká, o čom ti maminka číta?@eng  
 %eng: Stephanie, what is your mom reading about?  
 \*STE: (..) Sleeping beauty!@eng  
 @End

In Example 13, Stephanie translated the main protagonist's name from German (Dornröschen) to English (Sleeping Beauty). This example shows that Stephanie was able to translate across languages and her translations were multidirectional. On another occasion, in a Slovak context Stephanie naturally translated the name of another classic children's book Aschenputtel to English (Cinderella). This is probably due to the fact that Stephanie was more familiar with the English names of the protagonists than with their Slovak equivalents.

## 6.2 Lexical selection

In situations when a word in the source language may permit several potential translations in the target language, the participant tried to choose the most appropriate equivalent.

Stephanie at 5;00 years:

- (14) @Begin  
 @Languages: eng, slk  
 @Participants: STE Stephanie Target\_Child, DEL Delaney Caretaker, ELI Eliska Cousin  
 @Situation: Stephanie playing with playdoh with her cousin Eliska (speaking Slovak) and Delaney (speaking English).  
 \*DEL: it's not ready yet@eng  
 \*ELI: čo povedala?@slk  
 %eng: what did she say?  
 %add: STE  
 \*STE: *že to ešte neni hotové*@slk  
 %eng: that it's not ready yet  
 @End

The English adjective *ready* is a polysemic word with several equivalents in Slovak, two of which are: *pripravený* ('prepared for action') or *hotový* ('finished', 'prepared for use'). In Example 14, Stephanie accurately translated the meaning of Delaney's utterance into Slovak, choosing the adjective *hotový* so as to reproduce the meaning of something not being finished or prepared for use yet.

### 6.3 Lexical collocation

Lexical collocation here means that one lexeme requires the use of particular accompanying lexemes. While performing experimental Test 1, Stephanie was asked to translate the following question from Slovak (SL) to English (TL) (Example 15):

Stephanie at 7;10 years:

(15) @Begin  
 @Languages: slk, eng  
 @Participants: STE Stephanie Target\_Child, INV Investigator  
 @Situation: Part of experimental Test 1.  
 \*INV: koľko máš rokov?@slk  
 \*STE: how old are you?@eng  
 @End

In Example 15, Stephanie used the appropriate verb *to be* in the English translation of the question *How old are you?* even though the verb *mat'* ('to have') is used in the same question in Slovak: *Koľko máš rokov?* (literally 'How many years do you have?').

Stephanie at 7;10:

(16) @Begin  
 @Languages: slk, eng  
 @Participants: STE Stephanie Target\_Child, INV Investigator  
 @Situation: Part of experimental Test 2.  
 \*INV: oblečiem si pyžamo@slk  
 \*STE: I'm gonna put my pyjamas on@eng  
 @End

In Example 16, Stephanie accurately translated the utterance from Slovak to English. She used the appropriate words, grammar and sentence structure. She also used the appropriate phrasal verb *put on* as an equivalent of the Slovak reflexive verb *obliecť si* ('to put on clothes').

### 6.4 Idiomatic translation

Idioms and other figures of speech of the source text need to be recognized and translated respecting the style of the source language. Idiomatic translation follows the structure of the TL and sounds natural while communicating the exact message of the source text.

Stephanie at 7;07 years:

(17) @Begin  
 @Languages: deu, slk  
 @Participants: STE Stephanie Target\_Child, INV Investigator  
 @Situation: Part of experimental Test 3.  
 \*INV: es waren einmal ein kleiner Bär und ein kleiner Tiger@deu  
 %eng: once upon a time there was a small bear and a small tiger  
 \*STE: jedného dňa (...)@slk...  
 %eng: once upon a time  
 @End

In Example 17, Stephanie accurately translated the German idiomatic expression *es waren einmal* into Slovak (*jedného dňa*), which is a conventional Slovak opening in storytelling.

### 6.5 Syntactic transformations: word order

Transformations occur when a new construction is created from an existing syntactic structure by performing one or more of the following three operations upon it: movement, deletion, or insertion. These operations are constrained by a number of rules and traditionally adhered-to constraints.

Stephanie at 7;10 years:

- (18) @Begin  
 @Languages: slk, deu  
 @Participants: STE Stephanie Target\_Child, INV Investigator  
 @Situation: Part of experimental Test 2.  
 \*INV: maminka povedala, že už musíme íst' domov@slk  
 %eng: my mom said that we have to go home  
 \*STE: meine Mama hat gesagt wir müssen nach Hause gehen@deu  
 %eng: my mom said we have to go home  
 @End

In Example 18, Stephanie correctly placed the infinitive of the verb *gehen* ('to go') at the end of the German sentence, even though in the Slovak sentence the verb *íst'* ('to go') precedes the adverbial of place *domov* ('home').

Stephanie at 7;10 years:

- (19) @Begin  
 @Languages: slk, eng  
 @Participants: STE Stephanie Target\_Child, INV Investigator  
 @Situation: Part of experimental Test 2.  
 \*INV: ked' budem mať 10 rokov, kúpim si nový bicykel @slk  
 %eng: when I'm ten, I'll buy a new bike  
 \*STE: when I'm ten, then I'm gonna have new a bike@eng  
 @End

In Example 19, Stephanie correctly transformed the Slovak sentence into English, using the correct verb form after the subordinating conjunction *when*. The Slovak conjunction *ked'* ('when') is followed by a verb in the future tense (*ked' budem mať desať rokov*), whereas the English conjunction *when* is followed by a verb in the present tense (*when I'm ten*).

Stephanie at 7;10 years:

- (20) @Begin  
 @Languages: slk, deu  
 @Participants: STE Stephanie Target\_Child, INV Investigator  
 @Situation: Part of experimental Test 2.  
 \*INV: ked' budem mať 10 rokov, kúpim si nový bicykel @slk  
 %eng: when I'm ten, I'll buy a new bike.  
 \*STE: wenn ich zehn Jahre alt bin, dann kaufe ich mich eine neue Fahrrad@deu  
 %eng: when I'm ten years old, then I will buy [myself] a new bike  
 @End

In Example 20, Stephanie accurately translated the Slovak utterance into German. She used the appropriate word order, which in the German sentence is different from the word order in the Slovak sentence. The verb in the subordinating clause is correctly placed at the end of the sentence. The verb in the main clause is used in the simple present tense in German, an appropriate verb form in German to refer to a future event. In Slovak, the verb *kúpim* ('I'll buy') in the main clause is used in the future tense.

## 6.6 Deeper linguistic transformations: expansions

Expansions and reductions are frequent procedures when a translator has to translate a longer stretch of text. While performing experimental Test 1, Stephanie was asked to translate the following question from Slovak (SL) to German (TL):

Stephanie at 7;11 years:

- (21) @Begin  
 @Languages: slk, deu  
 @Participants: STE Stephanie Target\_Child, INV Investigator  
 @Situation: Part of experimental Test 1.  
 \*INV: koľko máš rokov?@slk  
 %eng: how old are you?  
 \*STE: wieviel Jahre alt bist du?@deu  
 @End

In her translation to German (Example 21), Stephanie used the appropriate verb *sein*, even though the verb *mať* ('to have') is used in the Slovak question. However, she added the noun *Jahre* ('years'), which is part of the Slovak utterance but redundant in the German translation. Moreover, *wieviel* ('how many') does collocate with *Jahre* ('years'); however, the accurate translation into German would be *Wie alt bist du?* ('How old are you?'), i.e. with the question word *wie* ('how') followed by an adjective instead of *wieviel* ('how many') followed by a noun.

In Example 6, Stephanie summarized the conversation between her mother and herself to Ines in German, while adding two redundant clauses at the end (*es muss weg, der Schnee kommt dann*). This is also an example of a syntactic transformation (replacement of verb by a noun) and transformation of direct speech to indirect speech.

## 6.7 Lexical approximation

Lexical approximation is treated as a case of pragmatic vagueness. Encoded word meanings are no more than a clue to the speaker's meaning, and are typically adjusted (e.g. broadened or narrowed) in the course of the comprehension process.

Stephanie at 7;06 years:

- (22) @Begin  
 @Languages: slk, deu  
 @Participants: STE Stephanie Target\_Child, MOT Mother  
 @Situation: Stephanie was reading a book that was assigned for homework.  
 \*MOT: ako povieš pani učiteľke, že si už celú knižku prečítala?@slk  
 %eng: how will you tell your teacher that you've read the whole book?  
 \*STE: ich habe schon alle Seiten gelesen@deu  
 %eng: I have already read all of the pages  
 @End

Stephanie used a syntactic paraphrase in Example 22. She may not have recalled the equivalent for *knižku* ('book') in German, so she used a paraphrase instead. This is also an example of vocabulary accommodation, which means that the translator selected a word that approximates the meaning of the source word. Stephanie translated the phrase *celú knižku* ('the whole book') as *alle Seiten* ('all pages') instead of *das ganze Buch* ('the whole book').

Stephanie at 6;02 years:

- (23) @Begin  
 @Languages: slk, deu  
 @Participants: STE Stephanie Target\_Child, MOT Mother, EMI Emilie Friend, PAU Brother  
 @Situation: Paul was asking his mother whether he could eat a cookie that he had found in the car.  
 \*PAU: maminka, môžem zjesť toto Oreo?@slk  
 %eng: mom, may I eat this Oreo?  
 %add: MOT  
 \*MOT: nie, lebo je to už staré a bolelo by ťa bruško@slk  
 %eng: no, because it's old and you could have a stomach ache

%add: PAU  
 \*STE: Palko darf nicht die (Kekse) essen, weil dann ihr Bauch tut weh@deu  
 %eng: Palko may not eat the cookie, because then he will have a stomach ache  
 %add: EMI  
 @End

In Example 23, Stephanie accurately reproduced the dialogue between her mother and her brother (performed in direct speech) to her friend Emilie in indirect speech in German, employing a third person pronoun to talk about her brother.

Stephanie at 7;10 years:

(24) @Begin  
 @Languages: slk, eng  
 @Participants: STE Stephanie Target\_Child, INV Investigator  
 @Situation: Part of experimental Test 1.  
 \*INV: opýtaj sa Siri, prečo je vonku taká zima@slk  
 %eng: ask Siri, why it's so cold outside  
 \*STE: why is it outside so warm cold?@eng  
 @End

In Example 24, Stephanie formed a correct direct question using the appropriate lexemes, grammar and sentence structure. She first used the opposite equivalent of *zima* ('cold') in English – warm – but immediately corrected herself and used the synonym *cold*. The transformation of indirect speech to direct speech occurred several times especially during experimental Test 1.

Stephanie often expressed curiosity about the meaning of words and expressions and their appropriate equivalents across languages. She often elicited translations of lexemes belonging to different semantic fields, such as colours, animals, days of the week, months of the year, seasons of the year, names of foods, etc. and institutionalized expressions, such as wishing someone to enjoy their meal, and so on across Slovak, English, German, Spanish, and sometimes Italian and Czech. She was occasionally dissatisfied with the answers she had received, as she pondered upon the meaning and nuances of meaning in each of the synonyms and found discrepancies or asymmetry in the semantic structure of the given lexemes in the two languages.

Stephanie at 5;00 years:

(25) @Begin  
 @Languages: slk, eng  
 @Participants: STE Stephanie Target\_Child, MOT Mother  
 @Situation: Stephanie was talking to her mother in the kitchen one morning.  
 \*STE: maminka, ako sa povie *dobrá chuť!*@slk  
 %eng: mom, how do you say *bon appetit* in English?  
 \*MOT: enjoy your meal!@eng  
 \*STE: Ale nie tak, inak!@slk  
 %eng: Not like that, some other way!  
 @End

In Example 25, Stephanie was not satisfied with the English equivalent her mother had provided. Stephanie may have heard the English expression *bon appetit!* before but her mother did not use it, as she thought the expression *enjoy your meal!* was a true English expression unlike the former, which is a borrowing from French. This is also a cultural phenomenon and an attempt to translate across two different cultures, in which the act of wishing someone to enjoy their meal is not as common in one culture (English-speaking) as in the other (Slovak-speaking). Stephanie was naturally used to hearing the expression *dobrá chuť!* at home every time she had a meal whether in the company of other family members or just by herself.

Our case study shows that the participant was a quite proficient translator and made few errors in her interpreting activity. A measure of the accuracy of grammar and sentence structure was included to

assess whether the child was producing structural errors. A measure of the accuracy of meaning was included to assess whether the child was providing semantically accurate interpretations. The results show that the child understood the purpose of the interpreting tasks and was able to communicate the meaning of the original message accurately in the target language, regardless of the structural correctness of the target-language sentence or the vocabulary chosen. The interpreted sentence could contain structural errors and still communicate the meaning of the original message in the source language accurately.

For illustration, we will provide the text from experimental Test 4, where the participant was asked to tell a joke in Slovak (SL) (Example 26) and then translate it to German (TL1) (Example 27) at 7;11 years and later to English (TL2) (Example 28) at 8;01 years:

- (26) @Begin  
 @Languages: slk  
 @Participants: STE Target\_Child, INV Investigator  
 %com: Part of experimental Test 4.  
 \*STE: išol slon do bazéna a si zabudol plavky. A sa pýtal mravčeka: „Môžem si požičať tvoje plavky? A mravček povedal: „Áno!“@slk  
 %eng: an elephant went to the pool and had forgotten his swimsuit. And he asked an ant: “May I borrow your swimsuit?” And the ant said: “Yes!”  
 @End
- (27) @Begin  
 @Languages: deu, slk  
 @Participants: STE Target\_Child, INV Investigator  
 %com: Part of experimental Test 4.  
 \*STE: Da einmal war ein Elefant und hat im Schwimmbad gegangen. Danach er hat die Schwimmanzug vergessen. Der Elefant hat gesagt@deu (.)  
 %eng: there was once an elephant and went to the pool. Then he had forgotten his swimsuit. The elephant said (.)  
 %com: STE asking her mother about a word in German.  
 \*STE: mami, ako sa to volá?@slk  
 %eng: mom, what’s it called?  
 \*INV: ameise@deu  
 \*STE: die Ameise: “Darf ich von dir den Schwimmanzug ausborgen?” Und die Ameise sagt: “Ja!”@deu  
 %eng: the ant: “May I borrow the swimsuit from you?” And the ant says: “Yes!”  
 @End
- (28) @Begin  
 @Languages: eng  
 @Participants: STE Target\_Child, INV Investigator  
 \*STE: elephant has gone to the pool and has forgotten his swimsuit. And has said to the ant: “Can I borrow your swimsuit?” – “Yes!”, says the ant.@eng  
 @End

The form of the text in Examples 26, 27, and 28 is a discourse between the two main characters, an elephant and an ant. The text contains typical features of a joke: an introduction describing the setting and the main characters, a dialogue between the main characters including a question and an answer in direct speech. The dialogue is introduced by reported speech containing verbs in the past tense. The question in direct speech contains a verb in the present tense expressing a request for permission to do something. Stephanie was able to reproduce the joke in all three languages (Slovak [SL, Example 27], German [TL1, Example 28] and English [TL2, Example 29]) accurately, maintaining the appropriate lexical, grammatical, syntactic and even stylistic and pragmatic levels of the joke.

The interpretation in English is almost identical to the original text on all language levels. Both the text in the Slovak original and the interpretation in English contain humour, brevity, a playful function, surprise effect, few characters and a social effect. The interpretation in German contains more analytical forms and expansions; nevertheless, the sense, flow, playful function, number of characters, humour, surprise effect and social effect are maintained. Therefore, we conclude that Stephanie provided accurate interpretations of the source-language text in both target languages.

Table 3 provides examples of errors made in the participant's translations between 7;07 and 8;01 years.

Table 3. Examples of errors in translations between 7;07 and 8;01 years

Language direction	Type of error	Source-language text	Target-language text
Slovak → English	word order	Vieš povedať niečo po slovensky?	Can you say in Slovakian something?
	tense/addition of an auxiliary verb, wrong word order	Videla si moje kľúče?	Do you have seen my keys?
	vocabulary/using a hyponym	Už si obula <i>topánky</i> ?	Do you have your <i>boots</i> on?
English → Slovak	past participle, semantic addition	Vypil som všetko mlieko.	I have <i>drunk</i> all of the milk <i>what we have got</i> .
	preposition, case	I'm going to the dentist.	Idem <i>do</i> zubára.
	source, paradigmatic/polysemy	Because you can't break read stone.	Lebo <i>red stone</i> sa nedá <i>pokaziť</i> .
	source/possession source/polysemy	Ellie's dad. Her mom got a baby.	Ellie's <i>tatinko</i> . Jej mama <i>dostala</i> <i>bábätko</i> .
Slovak → German	source/tense sequence	When we're finished eating, we'll play.	Ked' sme sa napapali, tak sa budeme hrať.
	word order	Vieš, kto je moja najlepšia kamarátka?	Weiss du, wer ist meine beste Freundin?
	article, case	Vieš skákať na trampolíne?	Kannst auf <i>ein</i> Trampolin Hüpfen?
German → Slovak	agreement/gender	Som chlapec alebo dievča?	Bin ich <i>eine</i> Bub oder <i>eine</i> Mädchen?
	source/possession	Die Mama von Miriam.	Maminka <i>od</i> Miriam.
	source/addition of possessive pronoun	[Emilie] ihre Schwester hat Tik Tok.	Emilie <i>ihre</i> sestra má Tik Tok.
	source/subject-verb agreement	Wie viele Wolken sind am Himmel?	Koľko oblakov <i>sú</i> na oblohe?
	source/noun source/literal translation, tense/conjugation	Das ist ein Müllauto. Hast du gesehen, was da steht?	To je <i>kôšauto</i> . Videl si, čo tam <i>stojilo</i> ?

Language direction	Type of error	Source-language text	Target-language text
English → German	source/verb	I'm gonna put my pyjamas on.	Ich tue meine Pyjama <i>angeben</i> .
	paradigmatic/plural of nouns	How many fingers do you have?	Wie viele Fingern hast du?
	addition of indefinite article and preposition	My dad makes good pizza.	Mein Papa kann <i>eine</i> gute Pizza <i>zu</i> machen.
German → English	source/collocation	Ich putze mir die Zähne.	I <i>clean</i> my teeth.
	source/tense	Meine Mama hat gesagt wir müssen nach Hause gehen.	My mom <i>has said</i> we're going home.
	source/word order	Meine Katze liebt Milch zu trinken.	My cat loves milk to drink.

## 7. Results and discussion

The early age at which the first production of interpreting in Stephanie was documented was 1;10 years. It was manifested by spontaneous autotranslation of numerals 1-10 and word pairs in multiple directions. In the pre-translation and autotranslation stages, spontaneous translation was prevalent. However, the child preferred to perform spontaneous translations over elicited translations in general. Pre-translation occurred before interpersonal autotranslation and transduction but was also concurrent with autotranslation and transduction. Intrapersonal autotranslation was concurrent with the late part of pre-translation. Autotranslation occurred before transduction but was also concurrent with transduction. Intrafamily translation occurred concurrently with extrafamily (close friends) translation.

Stephanie often served as an expert interpreter. Her interpreting was socially functional. From the sociological point of view, Stephanie's interpretations could be characterized as intra- and extrafamily, interpersonal, pragmatic and documentary. From the linguistic point of view, the usual mode was semi-consecutive (dialogue-interpreting), summary-consecutive (free) interpreting (with correct reproduction of the sense) and sight translation (reading a document or piece of writing in the original language, and translating it out loud in the target language), all of them two-way (Slovak ↔ English, Slovak ↔ German, English ↔ German). Situational context played an important role in spontaneous and elicited translations. The child was willing to perform interpreting for the purpose of including all participants in communication. On the other hand, when translations were elicited as part of an experimental design, there seemed to be a lack of motivation in the child, as performing the translations excluded this important social aspect of communication. The child performed better in the interpreting activity when she felt motivated, interested, in a good mood, and well rested.

The participant's interpretations were often very complex and so were the procedures used in the interpretation process. The strategies employed by the participant contained the characteristics of word pairing, lexical translation, lexical selection, lexical collocation, lexical incorporation, idiomatic translation, syntactic transformations, and deeper linguistic transformations. In most translations the child selected equivalent logical forms to reproduce the meaning of the source-language text into the target language accurately. The child's interpretations became more lexically, idiomatically, and stylistically accurate with time and exposure to the three languages. There were instances when Stephanie chose a functional equivalent over a formal equivalent, thus providing a natural utterance in the target language, transmitting an accurate meaning. Conventionally listed sets (for instance, days of the week or months of the year) were harder to translate. Mathematical symbols (numerals) were not difficult to translate, which was probably due to the fact that mathematics is a semiotic system in its own right, with its own syntax and its own writing system (Harris, 1978, p. 9).

The child produced very few literal interpretations, insertions of false cognates, or vocabulary intrusions. The most challenging type of sentences were those including idiomatic expressions and collocations. In addition to knowing the differences in structure, the child had to understand

the differences in connotative meaning of the different combinations of words in the two languages. The content of the source text was interpreted accurately on the semantic, lexical and syntactic levels, while sometimes switching from direct to indirect speech mode and vice versa.

The quality of sentence translations was assessed in terms of being correct (containing the appropriate vocabulary and sentence structure), partially incorrect (if a word or key concept was omitted or if the wrong grammatical or syntactical structures were inserted in the translation), or wrong (if the translation contained both lexical and syntactic errors). In the English-Slovak translations, 0 percent were wrong and 8 percent partially incorrect; in the Slovak-English translations, only 1 percent were wrong and 12 percent partially incorrect; in the German-Slovak translations, only 2 percent were wrong and 8 percent partially incorrect; in the Slovak-German translations, only 1 percent were wrong and 10 percent partially incorrect; in the German-English translations, only 1 percent were wrong and 9 percent partially incorrect; in the English-German translations; only 1 percent were wrong and 11 percent partially incorrect. These quantitative results confirm that the directionality of translation did not seem to be an important factor in interpreting efficiency. Therefore, the dominance of one language over another was not ascertained.

Most errors were morphological, for instance the use of incorrect forms of reflexive pronouns in German; verb forms in Slovak, English and German; and gender of nouns or articles in German, e. g. *Kannst auf ein Trampolin Hüpfen?* ('Can you jump on a trampoline?'), where the correct form of the indefinite article should be *einem*. In *Ist deine Mutter eine Amerikaner?* ('Is your mother American?') *Amerikanerin* (the feminine form) should be employed instead of the masculine form (*Amerikaner*). The indefinite article *eine* is redundant in the German sentence, which might be the result of interference between English and German (source-word intrusion). In *Liest du sich ein Buch?* ('Are you reading a book [to yourself]?') the appropriate form of reflexive pronoun would be *dich* ('yourself') instead of *sich* ('himself/herself/themselves'). The wrong past participle forms were used in the translations "I have dranked all of the milk" and in "Hab ich alle Milch getrinken?" ('Have I drunk all of the milk?') where *drunk* should be used instead of *drinked* in the English sentence and *getrunken* ('drunk') instead of *getrinken* in the German sentence.

Syntactic errors occurred less frequently and most of them were word-order based. Going from Slovak to English or from Slovak to German, the literal order of words in the source sentence was sometimes preserved in the target-language sentences, for instance in the placement of the direct object or the verb. In English and German indirect questions, where the verb should come after the subject, the literal order of words in the source language was sometimes preserved in the TL sentence. For example, in "Do you know who is my best friend?" the copula *is* should be placed after the subject *friend* at the end of the sentence. In a similar manner, in the German sentence *Weiss du wer ist meine beste Freundin?* ('Do you know who is my best friend?') the copula *ist* should follow the subject *Freundin*. However, this type of error occurred inconsistently in the translations, while in other instances the literal order of words and ideas of the source sentence was not preserved, but rather non-literal translations were provided.

In general, source-language intrusion errors occurred infrequently, which provides evidence for the separation of the three languages. The occasional lexical, morphological and syntactic errors reflected the participant's high level of proficiency in each of the languages in question; however, they did not cause misinterpretation of the meaning of the source-language text. Stephanie recognized and corrected some of her own errors caused by interference. However, it appeared that some of the lexical errors may have been the result of insufficient linguistic competence in the source language, e. g. when translating sentences from a German children's book into Slovak (TL) where the use of specific vocabulary and style required more elaborate translations.

The results of this case study support the claim that natural interpreting is a strong ability in bilingual children. The participant was capable of interpreting sentences that were within her comprehension and vocabulary. She was able to reformulate the original source-language meaning in the target-language sentence structure, which proved her sensitivity to the differences between the two language systems. The interpreting proficiency of the participant showed her high level of metalinguistic maturity and bilingual proficiency. The apprehension and judgment of both meaning and structure were perceptible in the process of natural interpreting of the child. The child produced significantly more complete natural interpretations than incomplete or erroneous natural interpretations in all the stages.

## 8. Conclusions

The findings from the present case study provide an insight into the trilingual competence of the participant as well as into her natural interpreting skills. It may be concluded that a) the social, cultural and academic upbringing of the participant had a great impact on the child's language development and the development of her natural interpreting skills, while natural interpreting proved to be an innate skill in the child, acquired without formal training and developed through guidance and practice; b) before she achieved her current sophistication in natural interpreting skills, the child moved through stages of pre-translation, autotranslation and transduction to more complex forms of interpretation; and c) natural interpreting occurred in different combinations of languages, and the errors produced in the target-language sentences did not hinder the comprehension of meaning of the source-language text.

The results of our study demonstrate that the trilingual child, acquiring three languages in a multilingual community with the bilingual-monolingual interaction strategy used by the parents at home became quite a competent interpreter by the age of 8;01 and was capable of reformulating source-language messages accurately in the target language regardless of the directionality of interpretation. The results of the error analysis show that the types of errors produced by the child in the process of interpretation were mainly morphological, occasionally syntactic or source-language (grammar or lexical) intrusion errors, which did not affect the communication of the meaning of the source-language text properly in the target language.

This is in no way an exhaustive representation of the development, competence and performance of the child's skills in natural interpreting. With the development of literacy in reading and writing, i.e. learning the relation between letters and sounds and between print and spoken words, the child's metalinguistic awareness and linguistic competence will grow, which will also undoubtedly be reflected in the growth of her translation competence, especially if literacy is developed in all three languages (Slovak, English and German). Therefore, a further study of the participant's competence in written translation might bring a valuable contribution to the discussion of the topic.

## Acknowledgment

The author gratefully acknowledges the contribution of the Scientific Grant Agency of the Slovak Republic under the grant 1/0454/18.

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