



Universität Hamburg

DER FORSCHUNG | DER LEHRE | DER BILDUNG

# **Demonstratives in Third Language Acquisition**

Dissertation zur Erlangung des Grades der Doktorin der Philologie (Dr. phil.)

an der Universität Hamburg  
Fakultät für Geisteswissenschaften

vorgelegt von  
Stefanie Barkallah  
aus Wolfsburg  
Hamburg, 11.04.2022

# 1. überarbeitete Version

02.12.2023

1. Gutachter: Prof. Dr. Peter Siemund

2. Gutachter: Prof. Dr. Robert Fuchs

3. Mitglied der Prüfungskommission: Prof. Dr. Andreas Bonnet

Datum der Disputation: 26.10.2022

Bewertung der Dissertation: cum laude

Bewertung der Disputation: cum laude

Gesamtbewertung: cum laude

## Acknowledgements

I have never thought I would come to finish this dissertation. When I started, I had a fulltime job and was teaching German in language schools and at university at the same time and every free minute I was working on this study. That was a big challenge and often I was tired and panicked that I would not finish it. But Professor Peter Siemund kept me motivated and was always supporting me with good tips and recommendation that helped me working further on. He always believed in me, though I lost track of my goals. So, thank you for your support and your always good mood that helped me feeling that it is not as bad as it looks like. I would not have made it without your ideas and support. I thank Eliane Lorenz who encouraged me to keep working on this and who supported me with every question I had. Thank you for being so patient with me and my e-mails! You are the best example for other researcher, since you managed so much in such a short time. Thanks for being there for me! In addition, I would like to thank Sheri (Sharareh) Rahbari who helped me and motivated me a lot at the beginning of this journey. I owe you a big thank you! Jonas Wagner, you helped me with contacts to Turkish colleagues which helped me a lot, thank you for your support! Thanks to Prof. Wagner-Nagy who also helped me with Russian contacts. Alexej Lasarenko, a real fun Russian guy, teacher for German as a Foreign language like me, thanks for helping me with the Russian part! It was always funny to work with you! During my time in Hamburg, I worked a lot, and my friends did not see me as often as I wished. But anyhow, they always supported me and motivated me. Moritz, you are my most favourite company when it comes to go for a walk and strolling in Hamburg. Often it cleared my mind, and I was back on track afterwards. Bella, my most favourite Nüsschen in the whole world, thank you that you believed in me and helped me when I was discouraged. We were always far away from each other, but our friendship never changed.

As I moved back to Wolfsburg, my whole life changed. When I got pregnant, I thought I can manage both a baby and the dissertation. What a crazy thought! This was an exciting journey and a roller coaster of feelings. Of course, there was not much time for my work, but somehow, I managed it. Hence, I would like to thank my husband Chiheb Barkallah who supported me the most, who makes me believe in myself and who tries to give me a time window every day for my work even when our son was very strenuous. Thank you for being there for me, Noah, and Leni. Surely, I thank you Noah and Leni for making every day so bright. You are the centre of my life! Another support

in my new baby life is Birka and her lovely big family with three sons and a daughter. You always listen to my complaints, and you looked after Noah when I needed to work. I love your directly and funny Ossi-ish way! Thanks for being there for me. Furthermore, I want to mention my mom and my little brother. Your existence in my life is irreplaceable. Thanks for all your support no matter what, you are always proud of me. My little brother Sven, who is a real joker and makes me laugh and forget my problems and to my mom who pushed me to stand up, when I fall down, straighten my crown and I carry on. And last but not least, I want to thank my lovely second family Barbora, Olaf, Amelie and Arjan Deppe. Amelie was the first (bilingual) girl I helped growing up with. You are always there for me; you always kept me motivating to finish my PhD as you know best how hard it is because you both are Doctors and of course I learned so much of you by helping with Amelie and then years later with Arjan which now is a real benefit with my own kids. Thank you for everything! This exciting journey ended after my second pregnancy. So, last but not least, I want to thank my lovely friends Iffi and Evelina. Iffi, you are one of the friends who were at my side from the beginning of this journey until now. So, I am really happy that you are such a good listener, you always know when to make a joke or better listen to me, my little Potterhead. And Eveline, you were always so proud and supporting, I am happy that we have been friends forever and hopefully always will be. Thanks for being there for me when I needed it. This book is dedicated to my mum and my lovely grandmother, the most carrying and funniest women I know (and to Sven)!



## **Table of contents**

<b>Abbreviations</b> .....	<b>i</b>
<b>List of Figures</b> .....	<b>iii</b>
<b>List of Tables</b> .....	<b>vii</b>
<b>1 Introduction and Motivation</b> .....	<b>1</b>
<b>2 Language acquisition: concepts and current findings</b> .....	<b>12</b>
2.1 Third language acquisition.....	12
2.1.1 State of the art.....	12
2.1.2 Second language acquisition versus third language acquisition.....	15
2.1.3 The effects of cross-linguistic influence in third language acquisition ....	18
2.2 Who is bilingual? Terminological (in)consistencies.....	31
2.3 Bilingual versus heritage speakers.....	35
2.4 Metalinguistic awareness and metalinguistic competences.....	45
2.5 Language learning or language acquisition?.....	53
2.6 Bilinguals learning English.....	54
2.7 Theories in third language acquisition.....	59
2.7.1 Second language status factor .....	60
2.7.2 The cumulative enhancement model for language acquisition .....	61
2.7.3 The Typological primacy model .....	62
2.7.4 The linguistic proximity model .....	65
2.7.5 The Scalpel model .....	66
2.7.6 Hammarberg's models for third language use.....	67
2.8 Bilingual (dis)advantages?.....	69
2.9 The educational system in Germany.....	76
2.10 Conclusion .....	77
<b>3 Demonstrative pronouns</b> .....	<b>79</b>
3.1.1 Types of deixis .....	79
3.1.2 Joint attention .....	87

3.1.3	Functions of demonstratives .....	90
3.1.4	The process of acquisition .....	108
3.1.5	Diachronic perspectives.....	111
3.1.6	A model for demonstrative reference .....	127
3.2	Language typology of English, German, Russian and Turkish .....	129
3.2.1	Demonstratives in English.....	130
3.2.2	Demonstratives in German .....	144
3.2.3	Demonstratives in Russian .....	150
3.2.4	Demonstratives in Turkish .....	156
3.2.5	Comparison of demonstratives .....	163
3.3	Studies on the use of demonstratives .....	165
3.4	Research Questions.....	179
3.5	Conclusion .....	180
<b>4</b>	<b>Methodology - English learner corpus .....</b>	<b>183</b>
4.1	Motivation.....	183
4.2	Learner corpus research .....	184
4.3	Target language use and further concepts.....	188
4.4	Mehrsprachigkeitsentwicklung im Zeitverlauf (MEZ)-project .....	191
4.4.1	Data collection.....	192
4.4.2	Data collection: Wave 1a.....	193
4.4.3	Written Task .....	195
4.4.4	Background questionnaire .....	197
4.4.5	Native speakers of English, Turkish and Russian .....	198
4.5	Transcription .....	199
4.6	The aim of this study .....	207
4.6.1	Demonstrative categories .....	207
4.6.2	Articles .....	208
4.6.3	Subordinator <i>that</i> .....	213

4.6.4	Lexical transfer .....	215
4.6.5	Research objectives and predictions.....	216
4.6.6	Possible cli effects from the heritage languages Russian and Turkish...	218
4.7	Participants.....	222
<b>5</b>	<b>Data analysis – English learner corpus .....</b>	<b>234</b>
5.1	Case study 1 - The use of Demonstratives.....	234
5.1.1	This .....	242
5.1.2	That.....	250
5.1.3	These.....	258
5.1.4	Those .....	263
5.2	Case study 2 - The use of articles .....	279
5.3	Case study 3 - The use of subordinators .....	286
5.4	Case study 4 - Form based lexical transfer .....	292
5.5	Results: Are there any cli effects? .....	298
<b>6</b>	<b>Discussion and further research .....</b>	<b>301</b>
6.1	CLI effects in third language acquisition of bilingual heritage speakers.....	301
6.2	Dominance of languages.....	307
6.3	School type and school grades in English and German.....	309
6.4	Age/Grade.....	310
6.5	Socio-economic status .....	310
6.6	Age of onset learning the heritage language or German.....	311
6.7	Motivation and attitudes towards English.....	312
6.8	Language use at home.....	313
6.9	The use of demonstratives .....	314
6.10	Advantages of bilingual heritage speakers .....	320
6.11	Environmental setting in EFL classrooms .....	325
6.12	Limitations .....	327
6.13	Outlook .....	329

6.14	Concluding remarks .....	331
<b>7</b>	<b>Bibliography .....</b>	<b>336</b>
<b>8</b>	<b>Appendix .....</b>	<b>a</b>
8.1	Supplementary Tables.....	a
8.2	Supplementary Tables 2.....	v
8.3	Abstract (English) .....	ppp
8.4	Abstract (German) .....	rrr
8.1	Declaration on oath.....	ttt

## Abbreviations

7	Grade seven
9	Grade nine
abs. freq.	absolute frequencies
AoA	Age of Acquisition
AP	Associated Press Corpus
APHB	American Printing House for Blind Corpus
ART	Article
ART_ZERO	Zero articles
CDI	Communicative Development Inventories
CEM	Cumulative Enhancement Model
CHILDES	Child Language Data Exchange System
CIA	Contrastive Interlanguage Analysis
CLI/cli	cross-linguistic influence
CLE	cross-language effects
DEF	definite article
DEM	demonstrative
DEM OVER	demonstrative overuse
DEM	demonstrative underuse
UNDER	
DOM	differential object marking
DMTH	developmentally moderated transfer hypothesis
EFL	English as a foreign language
ENG	English (native speakers)
E-LiPS	English Lima Panel Study
f	feminine
FT/FA	Full transfer/full access hypothesis
Ger	German (monolinguals)
HISEI	Highest socio-economic status
HL	heritage language
HS(s)	heritage speaker(s)
IH	Interface hypothesis
Indef	Indefinite article
IL	Interlanguage
L1	first language
L2	second language
L3	third language
Ln/Lx	additional languages
LAT	Language Awareness Test
LCR	Learner Corpus Research
Lex_T	Lexical Transfer
LPM	Linguistic Proximity Model
m	masculine
MEZ	Mehrsprachigkeitsentwicklung im Zeitverlauf
MLAT	Modern Language Aptitude Test
MQD	Manner, Quality and Degree
N.A.	not applicable (unknown information)
NC	negative concord
NCI	negative concord item
NI	Neuroimaging
no	number

NP	noun phrase
ntl	not/non-target like
Pl	plural
PT	processability theory
RExp	raising over an intervening dative experiencer
RUS	Russian
RUS-GER	Russian-German bilinguals
sd	standard deviation
SES	socio-economic status
Sg	singular
SLA	Second Language Acquisition
S-to-S	Subject-to-Subject
Str_T	Structural Transfer
(embedded) T	whether or not a language allows for S-to-S RExp
tl	target like
TLA	Third Language Acquisition
TPM	Typological Primacy Model
TUR	Turkish
TUR-GER	Turkish-German bilinguals
TTR	type-token-ratio
UG	Universal Grammar

## List of Figures

Figure 1: Possible transfer directions in TLA adapted from Cenoz et al. (2001).....	8
Figure 2: Language acquisition processes for L1, L2 and L3 acquisition according to Falk & Bardel (2010: 191).....	20
Figure 3: Sánchez' model of TLA adapted from Hufeisen and Marx (2007) (Sánchez 2020: 18).....	21
Figure 4: Hammarberg's language acquisition hierarchy (Hammarberg 2010: 101).....	34
Figure 5: The sensitive period to acquire a language (Grosjean & Byers-Heinlein 2018: 19).....	39
Figure 6: A trilingual speaker and their language areas (Grosjean & Byers-Heinlein 2018) .....	42
Figure 7: The relationship between metacognition and metalinguistic awareness, taken from El Euch & Huot (2015: 3).....	46
Figure 8: Differences between the linguistic and the metalinguistic competences, according to neurolinguistic studies; (see Paradis 2009; Falk & Bardel 2010) .....	52
Figure 9: The base model of English proficiency and path estimates (unstandardized), taken from Lorenz, Toprak & Siemund (2021).....	55
Figure 10: Hammarberg's template for a model for L3 use (Hammarberg 2017: 13) ...	68
Figure 11: Hammarberg's template for a model for language use by multilingual speakers (Hammarberg 2017: 12) .....	69
Figure 12: The educational system in Germany adapted from (Mattheus et al. 2017) ..	77
Figure 13: The conception of the deictic center, after Diessel (2012: 14) .....	85
Figure 14: Where is the milk? (Danziger 2010: 169).....	86
Figure 15: Illustration of joint attention .....	87
Figure 16: The geographical distribution of 201 languages with pronominal and adnominal demonstratives (Diessel 2013).....	97
Figure 17: Mary and John talk about two bowls of strawberries (Dixon 2003: 80) ....	102
Figure 18: A distinction of demonstratives and their use, after Levinson (2004) in (Levinson 2018).....	103
Figure 19: Scale of anaphoricity and deicticity coded by certain categories of indexical expressions (Cornish 2007: 139) .....	106
Figure 20: The reanalysis of demonstratives into the definite article, after (Demske 2020: 44).....	120

Figure 21: Grammaticalization path of Modern Turkish demonstratives, after (Balpinar 2019: 63).....	123
Figure 22: A model for demonstrative reference, provided by Peeters et al. (2020) ...	128
Figure 23: Language families with branches and languages.....	129
Figure 24: Indo-European language family and the branches with their languages, especially English, German, and Russian.....	130
Figure 25: Deictic function of demonstratives, after (Dixon 2003: 80) .....	134
Figure 26: Determinative pronouns, after (Eisenberg 2004: 180).....	144
Figure 27: Muşlu’s comprehension task for testing the use of demonstrative pronouns in Turkish (Muşlu 2015: 422).....	171
Figure 28: Discourse structure as a tree for left and right frontiers, after (Çokal et al. 2014: 210).....	172
Figure 29: An LCR design after (Granger 2008: 162) .....	186
Figure 30: Connection between German monolinguals and German heritage speakers of Russian and Turkish, after (Lorenz 2019: 166).....	191
Figure 31: Survey waves and cohorts in the project MEZ (Gogolin et al. 2017: 15) ..	192
Figure 32: Picture sequence for the English written task <i>Breakfast in Germany</i> .....	196
Figure 33: Picture Sequence <i>A typical English Breakfast</i> for native speakers of English .....	197
Figure 34: CLI effects from German as the majority language (after Lorenz 2019) ...	216
Figure 35: CLI effects from the heritage languages of Russian and Turkish (after Lorenz 2019).....	217
Figure 36: No CLI effects (after Lorenz 2019) .....	217
Figure 37: Association plot of the bilingual language groups and the age of onset of learning German .....	225
Figure 38: School type versus language group.....	226
Figure 39: Association plot of the school grade .....	228
Figure 40: Association plot of the grade in English per language group .....	228
Figure 41: Association of school type and grade in German .....	228
Figure 42: Association of school type and grade in English .....	228
Figure 43: HISEI per language groups .....	230
Figure 44: Boxplot of the socio-economic status per language group .....	230
Figure 45: Association plot of language groups and books per household .....	231
Figure 46: Number of words per written text (boxplot) .....	237
Figure 47: The use of demonstratives (mean values) .....	237



Figure 48: Number of demonstratives per written text (boxplot).....	238
Figure 49: Formal correctness of demonstratives (boxplot).....	238
Figure 50: Demonstrative categories (mean values) .....	240
Figure 51: Overuse and underuse of demonstratives (mean values).....	241
Figure 52: The subdivision of the demonstrative pronoun <i>this</i> (mean values) .....	243
Figure 53: Formal correctness of the pronoun <i>this</i> (proportions).....	244
Figure 54: Formal correctness of the pronoun <i>this</i> (boxplot).....	245
Figure 55: The use of <i>this</i> as a determiner (proportions) .....	245
Figure 56: The category identifying predicative <i>this</i> (mean values).....	247
Figure 57: The category identifying anaphorical <i>this</i> (mean values) .....	249
Figure 58: Formal correctness of <i>this</i> in its categories.....	250
Figure 59: The use of <i>that</i> and its categories (mean values) .....	251
Figure 60: Formal correctness of the pronoun <i>that</i> (boxplot) .....	252
Figure 61: <i>that</i> as a determiner (mean values) .....	253
Figure 62: Boxplot of <i>that</i> as subordinator.....	254
Figure 63: <i>that</i> as a predicative identifier (mean values) .....	255
Figure 64: <i>that</i> as anaphorical identifier (mean values) .....	256
Figure 65: <i>these</i> and its categories (proportional) .....	258
Figure 66: Formal correctness of the pronoun <i>these</i> (boxplot) .....	259
Figure 67: The determinative use of <i>these</i> (mean values).....	260
Figure 68: The identifying anaphorical category of these (proportions).....	262
Figure 69: <i>those</i> in its three categories (mean values).....	264
Figure 70: Formal correctness of the pronoun <i>those</i> .....	264
Figure 71: The determinative category of <i>those</i> .....	265
Figure 72: <i>those</i> as identifying anaphora.....	266
Figure 73: The use of articles per written text (mean values) .....	280
Figure 74: Different types of articles in written texts (mean values) .....	280
Figure 75: Formal correctness of definite articles (mean values normalized) .....	282
Figure 76: Formal correctness of indefinite articles (mean values normalized) .....	282
Figure 77: Mean values of subclauses (normalized) .....	286
Figure 78: The use of subclauses and demonstratives per language group (mean values) .....	287
Figure 79: Comparison of demonstratives, subclauses and <i>that</i> as subordinator (normalized) .....	287
Figure 80: Types of subclauses (mean values).....	288

Figure 81: The subclauses <i>when</i> , <i>what</i> and <i>if</i> (normalized) .....	289
Figure 82: Boxplot of lexical transfer per language group (mean values) .....	295
Figure 83: Lexical transfer per school type and language group (mean values).....	295
Figure 84: Lexical transfer and age of onset of German (mean values).....	296
Figure 85: Overuse of demonstratives (mean values) .....	298
Figure 86: Comparison of <i>this</i> as determinator and <i>that</i> as subordinator (mean values) .....	298
Figure 87: The use of definite and indefinite articles (mean values) .....	298

## List of Tables

Table 1: Types of deixis in English.....	80
Table 2: Deictic categories, after Diessel (2019) .....	81
Table 3: Pointing gestures and their motives, according to Rohlfs et al. (2017) .....	89
Table 4: Types of demonstratives, after Diessel (1999: 3).....	92
Table 5: Distribution of demonstrative pronouns and determiners, after Diessel (1999: 7) .....	93
Table 6: Mismatch of distance in pronominals and adverbials, after Levinson (2018) .	94
Table 7: Properties of English demonstratives and related grammatical aspects, after Dixon (2003: 69) .....	100
Table 8: Connectives in Turkish derived from demonstratives, after (Balpinar 2019: 68) .....	117
Table 9: Demonstratives <i>the</i> , <i>that</i> and <i>those</i> in Old English, after (Catasso 2011: 19)	119
Table 10: Demonstratives <i>this</i> and <i>these</i> in Old English, after (Catasso 2011: 19) .....	119
Table 11: The overlap of complementizer and marker of definite and relative clauses, after (Frajzyngier 2003: 236).....	125
Table 12: Grammaticalization of demonstratives, after (Diessel 1999: 39).....	126
Table 13: Demonstratives as sources for various grammaticalizations as a summary of Diessel (1999) and Heine and Kuteva (2002), after Helmbrecht (2017: 139) .....	127
Table 14: Demonstratives in English, after (Huddleston & Pullum 2002: 1504) .....	131
Table 15: Relatedness between demonstrative pronouns and personal pronouns, as well as between demonstrative determiners and the definite article (Biber 1999: 347) .....	131
Table 16: Dependent and independent demonstratives, after (Huddleston & Pullum 2002: 1504).....	132
Table 17: Deictic demonstratives, after (Huddleston & Pullum 2002: 1505).....	136
Table 18: Discourse deictic use of demonstratives, after Huddleston and Pullum (2002: 1506).....	136
Table 19: Pronominal inflection of demonstratives, after (Eisenberg 2013: 164) .....	145
Table 20: Declension of the demonstrative pronouns <i>der/die/das</i> , after (Helbig & Buscha 2001: 229).....	145
Table 21: Declension of Russian <i>eto</i> (Wade 2011: 150).....	151
Table 22: Declension of Russian <i>tot</i> (Wade 2011: 150).....	151
Table 23: Comparison of Russian demonstrative pronouns and the English meaning	153

Table 24: Distant stages of Turkish demonstrative pronouns modified, after (Kornfilt 2010: 311).....	156
Table 25: Singular forms of demonstrative pronouns, after (Kornfilt 2010: 311) .....	157
Table 26: Plural forms of demonstrative pronouns, after (Kornfilt 2010: 311) .....	157
Table 27: <i>Demonstrative words</i> ,modified after Göksel & Kerslake (2011: 120) .....	157
Table 28: Declension of the singular adverbial/determiner forms, after (Kornfilt 2010: 312).....	158
Table 29: Declension of the plural adverbial/determiner forms, after (Kornfilt 2010: 312) .....	158
Table 30: Conjunctions in Turkish derived from demonstratives, after (Balpinar 2019: 68) .....	162
Table 31: English demonstratives in the use of an anadeixis or discourse deixis (Cornish 2007: 152).....	174
Table 32: Mair's division of English into varieties (Mair 2013: 10) .....	189
Table 33: Distribution of the participated states according to year in the project MEZ (Hellrung et al. 2017: 10) .....	193
Table 34: Distribution of the participated states according to the type of school in the project MEZ (Hellrung et al. 2017: 13).....	194
Table 35: Distribution of the participated states according to heritage languages in the project MEZ (Hellrung et al. 2017: 13).....	194
Table 36: Distribution of the heritage language of the students according to the type of school in the project MEZ (Hellrung et al. 2017: 14) .....	194
Table 37: Test day one in Wave 1a (n = test groups; Hellrung et al. 2017: 22).....	195
Table 38: Test Day 2 in Wave 1a (Hellrung et al. 2017: 22) .....	196
Table 39: The use of articles according to Quirk et al. (1985:253).....	209
Table 40: The use of a in determiner function according to (Huddleston & Pullum 2002: 372).....	210
Table 41: Inflection of German definite articles and nouns (König & Gast 2018: 57)	211
Table 42: German indefinite articles according to (Eisenberg 2013:169).....	211
Table 43: The language sample of the present study .....	223
Table 44: Gender of German monolinguals and bilingual speakers .....	224
Table 45: Gender of English natives .....	224
Table 46: Age of onset of learning German .....	224
Table 47: School type.....	226
Table 48: School grades in German .....	227

Table 49: School grades in English .....	227
Table 50: The average school grades in German and English and their standard deviation .....	227
Table 51: The socio-economic status (HISEI) per language group.....	229
Table 52: Number of books per household and language group.....	231
Table 53: Languages the students use at home .....	231
Table 54: Attitudes towards English per language groups .....	233
Table 55: Frequency of words, sentences, types, sentences without verbs and the type-token-ratio.....	235
Table 56: Transfer from German (absolute frequencies) .....	236
Table 57: t-tests for the number of words, demonstratives and their target like and non-target like hits .....	239
Table 58: Mean values of the over- and underuse of demonstratives, the standard deviation in parenthesis, t-tests and Cohen's d .....	242
Table 59: Mean values of the categories of the demonstrative pronoun <i>this</i> .....	243
Table 60: Overview of determinative <i>this</i> , the mean values, standard deviation in parentheses, t-tests and Cohen's d .....	246
Table 61: Overview of predicative <i>this</i> , the mean values, standard deviation in parentheses, t-tests and Cohen's d .....	248
Table 62: Overview of anaphorical <i>this</i> , the mean values, standard deviation in parentheses, t-tests and Cohen's d .....	249
Table 63: Mean values of the pronoun <i>that</i> and its categories .....	251
Table 64: Mean values of the determinative category of <i>that</i> , the standard deviation in parenthesis, t-tests and Cohen's d .....	253
Table 65: Mean values of the subordinating category of <i>that</i> , the standard deviation in parenthesis, t-tests and Cohen's d .....	255
Table 66: Mean values of the identifying predicative category of <i>that</i> , the standard deviation in parenthesis, t-tests and Cohen's d .....	256
Table 67: Mean values of the identifying anaphorical category of <i>that</i> , the standard deviation in parenthesis, t-tests and Cohen's d .....	257
Table 68: Mean values of the demonstrative pronoun <i>these</i> and its categories .....	258
Table 69: Mean values of the determinative category of <i>these</i> , the standard deviation in parenthesis, t-tests and Cohen's d .....	260
Table 70: Mean values of the identifying predicative category of 'these', the standard deviation in parenthesis, t-tests and Cohen's d .....	261

Table 71: Mean values of the identifying anaphorical category of <i>these</i> , the standard deviation in parenthesis, t-tests and Cohen's d .....	262
Table 72: Mean values of the pronoun <i>those</i> and its categories .....	263
Table 73: Mean values of the determinative category of <i>those</i> , the standard deviation in parenthesis, t-tests and Cohen's d .....	265
Table 74: Mean values of the identifying anaphorical category of <i>those</i> , the standard deviation in parenthesis, t-tests and Cohen's d .....	266
Table 75: Analysis of Variance 1: The use of demonstratives versus background variables (heritage languages, socio-economic status of the father, school type, English grade, the motivation, number of books): .....	268
Table 76: Linear Model 1: The use of demonstratives versus background variables (heritage languages (reference level: GER7), socio-economic status of the father of bilinguals (numeric), school type (reference level: Gymnasium), English grade (numeric), English is boring (numeric), number of books (reference level: 0-10)):.....	269
Table 77: Analysis of Variance 2: The use of demonstratives versus background variables (heritage languages, highest socio-economic, school type, English grade, Age of onset of learning the heritage language, the motivation, language with siblings): .....	269
Table 78: Linear Model 2: The use of demonstratives versus background variables (heritage language (reference level: RUS-GER7), highest socio-economic status (numeric), English grade (numeric), age of onset of learning the heritage language (reference level: until 2), English is useful (numeric), language with siblings (reference level: German)):.....	270
Table 79: Analysis of Variance 3: The use of demonstratives target like versus background variables (heritage languages, highest socio-economic, school type, English grade, motivation, number of books): .....	270
Table 80: Linear Model 3: The use of demonstratives target like versus background variables (heritage language (reference level: GER7), highest socio-economic status (numeric), school type (reference level: Gymnasium), English grade (numeric), English is useful (numeric), number of books (reference level: 0-10)):.....	271
Table 81: Analysis of Variance 4: The use of demonstratives non-target like versus background variables (heritage languages, school type, German/English grade, highest socio-economic, motivation): .....	271
Table 82: Linear Model 4: The use of demonstratives non-target like versus background variables (heritage language (reference level: GER7), school type (reference level:	

Gymnasium), German/English grade (numeric), highest socio-economic status (numeric), English is boring (numeric)):	272
Table 83: Analysis of Variance 5: The use of <i>this</i> versus background variables (heritage languages, school type, English grade, highest socio-economic, motivation, number of books):	272
Table 84: Linear Model 5: The use of <i>this</i> versus background variables (heritage language (reference level: GER7), school type (reference level: Gymnasium), English grade (numeric), highest socio-economic status (numeric), English is boring (numeric), number of books (reference level: 0-10)):	273
Table 85: Analysis of Variance 6: The use of <i>this</i> versus background variables (heritage languages, school type, English grade, highest socio-economic, motivation, language with father/siblings, number of books):	273
Table 86: Linear Model 6: The use of <i>this</i> versus background variables (heritage language (reference level: RUS-GER7), school type (reference level: Gymnasium), English grade (numeric), highest socio-economic status (numeric), English is useful (numeric), language with father/siblings (reference level: German), number of books (reference level: 0-10)):	274
Table 87: Analysis of Variance 7: The use of <i>this as determiner</i> versus background variables (heritage languages, highest socio-economic, English/German grade):	274
Table 88: Linear Model 7: The use of <i>this as determiner</i> versus background variables (heritage language (reference level: GER7), highest socio-economic status (numeric), English/German grade (numeric)):	275
Table 89: Analysis of Variance 8: The use of <i>that</i> versus background variables (heritage languages, socio-economic status of the father, motivation, English/German grade, school type, family language):	275
Table 90: Linear Model 8: The use of <i>that</i> versus background variables (heritage language (reference level: GER7), socio-economic status of the father (numeric), English is useful/boring (numeric), English/German grade (numeric), school type (reference level: Gymnasium), family language (reference level: German)):	275
Table 91: Analysis of Variance 9: The use of <i>that as subordinator</i> versus background variables (heritage languages, grade, socio-economic status of the father, school type, motivation):	276
Table 92: Linear Model 9: The use of <i>that as subordinator</i> versus background variables (heritage language (reference level: GER), grade (reference level: 7), socio-economic	

status of the father (numeric), school type (reference level: Gymnasium), English is useful/boring (numeric)):	276
Table 93: Analysis of Variance 10: The use of <i>that as subordinator</i> versus background variables (heritage languages, socio-economic status of the father, motivation, language with siblings, number of books):	277
Table 94: Linear Model 10: The use of <i>that as subordinator</i> versus background variables (heritage language (reference level: RUS-GER7), socio-economic status of the father (numeric), English is boring (numeric), language with siblings (reference level: German), number of books(reference level: 0-10)):	277
Table 95: Analysis of Variance 11: The <i>overuse of demonstratives</i> versus background variables (heritage languages, grade, school type, highest socio-economic status, motivation, English/German grade, motivation, number of books):	278
Table 96: Linear Model 11: The <i>overuse of demonstratives</i> versus background variables (heritage language (reference level: GER), grade (reference level: 7), school type (reference level: Gymnasium), highest socio-economic status (numeric), English/German grade (numeric), English is useful (numeric), number of books(reference level: 0-10)):	278
Table 97: Absolute frequencies and mean values of articles, definite, indefinite and zero articles	279
Table 98: Mean values of articles, definite, indefinite and zero articles, the standard deviation in parenthesis, t-tests and Cohen's d	281
Table 99: Mean values of the target like and not-target like use of definite and indefinite articles, the standard deviation in parenthesis, t-tests and Cohen's d	282
Table 100: Analysis of Variance 12: The use of <i>articles</i> versus background variables (heritage languages, grade, socio-economic status of the father, school type, motivation, language with siblings):	283
Table 101: Linear Model 12: The use of <i>articles</i> versus background variables (heritage language (reference level: RUS-GER7), socio-economic status of the father (numeric), school type (reference level: Gymnasium), English is useful (numeric), language with siblings(reference level: German)):	283
Table 102: Analysis of Variance 13: The use of <i>definite articles</i> versus background variables (heritage languages, school type, socio-economic status of the father, language with siblings, number of books):	284
Table 103: Linear Model 13: The use of <i>definite articles</i> versus background variables (heritage language (reference level: RUS-GER7), school type (reference level:	



Gymnasium), socio-economic status of the father (numeric), language with siblings (reference level: German), number of books (reference level: 0-10)):	284
Table 104: Analysis of Variance 14: The use of <i>indefinite articles</i> versus background variables (heritage languages, gender, school type, German grade, highest socio-economic status, language with siblings):	285
Table 105: Linear Model 14: The use of <i>indefinite articles</i> versus background variables (heritage language (reference level: RUS-GER7), gender (reference level: feminine), school type (reference level: Gymnasium), German grade (numeric), highest socio-economic status (numeric), language with siblings(reference level: German)):	285
Table 106: Overview of whether students used either demonstratives and/or subclauses (absolute frequencies)	289
Table 107: Analysis of Variance 15: The use of <i>subclauses</i> versus background variables (heritage languages, gender, school type, highest socio-economic status, age of onset learning the heritage language, language with mother, motivation):	290
Table 108: Linear Model 15: The use of <i>subclauses</i> versus background variables (heritage language (reference level: GER7), school type (reference level: Gymnasium), highest socio-economic status (numeric), age of onset learning the heritage language (reference level: until 2), language with mother (reference level: German), English is useful (numeric)):	290
Table 109: Analysis of Variance 16: The use of <i>subclauses</i> versus background variables (heritage languages, English grade, socio-economic status of the father, language with siblings):	291
Table 110: Linear Model 16: The use of <i>subclauses</i> versus background variables (heritage language (reference level: RUS-GER7), English grade (numeric), socio-economic status of the father (numeric), language with siblings (reference level: German)):	291
Table 111: Absolute frequencies and normalized mean values of lexical transfer	292
Table 112: Mean values of lexical transfer, the standard deviation in parenthesis, t-tests and Cohen's d	294
Table 113: Analysis of Variance 17: <i>Lexical transfer</i> versus background variables (heritage languages, grade, gender, school type, German grade, highest socio-economic status, motivation):	297
Table 114: Linear Model 17: <i>Lexical transfer</i> versus background variables (heritage language (reference level: GER), grade (reference level: 7), gender (reference level: feminine), school type (reference level: Gymnasium), German grade (numeric), highest socio-economic status (numeric), English is useful (numeric)):	297

## 1 Introduction and Motivation

“You can never understand one language until you understand at least two.”

Geoffrey Williams

“Learning another language is not only learning different words for the same things, but learning another way to think about things.” Flora Lewis

The quotations above show how crucial language learning is, more precisely, that it changes our perspectives on language, humans, personal attitudes, etc. Also, it is in the human nature to be capable of learning more than one language. As a baby, we naturally learn the mother tongue. Bonnet & Siemund (2018: 6) state that “this process can never be repeated, as all subsequent language learning processes will invariably be influenced by the cognitive imprint left by the structure of the first language.” In addition, it is easier to learn additional languages at a younger age, but all languages that are acquired previously may interact with each other which may result in transfer effects (Bonnet & Siemund 2018: 6). In recent studies, researchers mostly preferred the term *cross-linguistic influence* (cli-effects) and refer to transfer effects, borrowing, interference, attrition etc. (see Bonnet & Siemund 2018: 6, Cenoz et al. 2001: 1). However, most of the studies focus on these interactions in third language acquisition or multilingualism. First, the type of learner needs to be considered. Who is a third language learner or, more recently, a multilingual? Rothman et al. (2018: 18) include individuals who have at least knowledge about three languages. This is, often, represented in simultaneous and sequential bilinguals who are currently learning a third language (Rothman et al. 2018: 18). Since we are interested in the linguistic representations that are transferred or borrowed etc. from the background languages into the new language, we need to define what type of learner, more precisely, what type of bilingual participates in the current study. Bilinguals can either be balanced or unbalanced. The former is someone who is almost similarly proficient in both languages and can switch between them without a big effort. However, the latter type is one that we find a lot in schools these days, due to migration and globalization: the unbalanced bilingual or a heritage speaker. What this means is that someone may be born in Germany or comes to Germany as a child, because the parents immigrated from, i.e., Turkey. Hence, the parents speak Turkish as their mother tongue. The child, however, acquires Turkish, i.e., at home and uses it with the family, but as the environmental language is German, he will learn this official language, too. In the first

years of living in Germany, the child may be more proficient in Turkish, but as soon as he goes to kindergarten or to school, the dominant language is German. As a natural process, the child uses more and more German and the status of the first and second language can change. Hence, the first language, Turkish, may be now less used and changes into the less dominant language, or minority/heritage language. Instead, German changes into the dominant language and the proficiency level can be higher than that of the heritage language. As a result, the child is still a bilingual, but unbalanced.

This situation is very common, because due to internationalization, globalization, migration, and mixed marriages, multilingualism is a widespread phenomenon (Gogolin et al. 2013) and “especially prominent in urban areas” (Bonnet & Siemund 2018: 3), as official signs, public transportations, announcements in trains, supermarkets only in particular languages, etc. are more and more the norm. In Europe, big cities such as Barcelona, London, Berlin, and Hamburg experience this diversity in different linguistic and ethnic areas (Bonnet & Siemund 2018). In Germany, the main countries of migration are Turkey, Poland, and Syria (Statistisches Bundesamt 2019), but immigrants also have roots in Russia, Kazakhstan, and Italy (Statistisches Bundesamt 2019). Lorenz and Siemund (2019: 1) point out that they “speak German in combination with their respective heritage language, typically in differing degrees of proficiency depending on whether they are first or second-generation speakers. They are unbalanced bilinguals.” Especially the offspring of the first-generation immigrants are typical multilingual speakers, as they normally speak “the relevant national languages of the receiving countries, their heritage languages, and English” (Bonnet & Siemund 2018: 7). In this case, English still has as an exceptional position in the world’s languages as a lingua franca and its enormous number of second language speakers (Siemund et al. 2013).

In all acquisition contexts, English is associated with being the language that has the greatest international currency and this makes it a useful, and often also desirable, language to learn. Because of this characteristic, it has a different standing from that of any other foreign language that may be acquired, and its acquisition will be facilitated by the ubiquity of English, often in attractive contexts (Cenoz & Hoffmann 2003: 2).

### *Multilingualism in the educational system*

For the educational system, the new diversity and still growing multilingualism is challenging, as monolinguals, bilinguals and multilinguals grow up and learn side-by-side in schools (Bonnet & Siemund 2018). Although students bring their background

languages into the classroom (Abney & Krulatz 2015), the habitus in English as a foreign language [EFL] classroom is still monolingual (Chlopek 2015). Unfortunately, cli-effects are often seen as negative and impeding (Chlopek 2015). Bonnet & Siemund (2018: 10) state that “there can be little doubt that FL [Foreign Language] classrooms should take into account and perhaps even foster existing multilingualism”. More precisely, these multi-diverse and multilingual classrooms need to include the multi-ethnicity of students and encourage them to use their background languages, rather than to forbid them. What is more,

multilingualism is an asset rather than a disadvantage for further language acquisition and for cognitive development. There is educational evidence that multilingual classrooms can only reach their goals of language and citizenship education, if multilingual identities are acknowledged and the social functions of language and multilingualism are addressed (Bonnet & Siemund 2018: 22).

The key question still is whether there is a difference between second and third language acquisition, mostly of English as the additional language. In order to foster language learning, these possible differences should be included in foreign language classrooms. Then, the learning environment for both monolingual and bi-/multilingual students would enhance additional language learning.

### *Cross-linguistic influence in multilingualism*

Due to this situation, research in this area of multiple language acquisition is constantly growing. Mainly, cross-linguistic influence is in the focus. The number of possible interactions between the background languages is higher, the more languages are involved. (Siemund et al. 2018) As in this study, the focus lies on the different interactions of the background languages on English as the third language. But the results of studies in this research field vary and a clear tendency of predictors for successful additional language learning is not visible (see Lorenz et al. 2021; Puig-Mayenco et al. 2020; Hopp 2019; Ghezlou et al. 2018; Cabrelli et al. 2015; Hermas 2014 etc.). Therefore, extralinguistic variables are considered “such as the impact of motivation, socioeconomic status or attitudes toward the target language” (Rothman et al. 2018: 23).

### *Demonstrative pronouns*

However, among the first words a baby acquires demonstratives are included. Normally, children point to an object and ask *What is this?/What is that (over there)?* It is naturally that we point towards something that we do not know and ask what it is. Normally, we

do not think about the words we use for this conversation. If someone just exclaims *that*, then no one will understand what they are referring to. But when he points with his finger to the car in front of him or a cloud over him, then it is obvious what he means. Due to their capacity to link entities and utterances, demonstratives are a particular grammatical phenomenon and belong to deictics (Levinson 2018). They can either do that in oral or in written language without the need of pointing with a finger to the object. Levinson (2018: 2) states that

[d]emonstratives like *this* and *that* are within the top 20 most frequent words in English and are among the most deeply conserved and ancient words in languages. [...] Demonstratives are also among the earliest words learned by children, and often the first closed-class opposition.

As we can see in the following examples, demonstratives may refer to an object and they can point to a direction.

- (1) Can we talk about this later? I do not want to fight with you anymore.
- (2) Wow, that was a nice car you came with yesterday.
- (3) These cookies are delicious.

In example one, we first do not know what *this* means here. However, the sentence afterwards does not exactly clarify that, but it gives us a hint that there was a fight. The second example shows a predicative use of *that* and the last a determinative one. Hence, there are different ways to use the four different English demonstrative pronouns *this*, *that*, *these*, and *those*. In this study, we consider three types of demonstratives: (1) determinative, (2) anaphorical and (3) predicative identifying and (4) subordinating. This last category is derived from the demonstrative pronoun and grammaticalized into a subordinator. With an increasing use of subordinators, especially of subordinating demonstratives, students can show their ability to connect sentences to complex structures. However, in German the same structure can be used and hence, a proximity between English and German subordinators might show an influence from German as the dominant language.

### *The focus of this study*

This study aims to examine the role of the background languages in heritage speakers of Russian or Turkish and German as the language of environment. If we assume that early multilingualism has an impact on the language development of English as a second/third language it is quite important to focus on cross-linguistic effects and interactions. Therefore, Siemund et al. (2013:6) argues that

[t]he linguistic consequences of multilingualism and resulting language contact may manifest themselves in structural changes of the languages involved. Changes can surface as differences in pronunciation, lexical choice, or morphosyntax, evaluated against the standard of monolingual usage.

In this research project, the following case studies will be explored and analysed:

- 1) the use of English demonstratives and whether or not they are influenced by the different background languages
- 2) the use of definite and indefinite articles
- 3) subclauses again as a counterpart to *that as subordinator* and whether or not they exclude each other
- 4) lexical transfer from the background languages, but mainly expected to be from German as the dominant language

Within this investigation, seven chapters are included, besides the introduction and final remarks. In this Chapter, the motivation and background of this project including current concepts that lead to the research questions will be explained.

In Chapter 2, we introduce current theories and findings on language acquisition, divided into nine sub-chapters. The first sub-chapter presents the research field third language acquisition which again is divided into three subsections. Chapter 2.1.1. gives an overview of the current state of the art in this research field. In Chapter 2.1.2, we differentiate between second language acquisition and third language acquisition and will then show effects of cross-linguistic interactions (2.1.3). In Chapter 2.2, terminological inconsistencies for the termini *bilingual/trilingual/multilingual* speakers will be presented, followed by a distinction between bilinguals and the special case of heritage speakers (Chapter 2.3). In Chapter 2.4., we will give an overview of metalinguistic awareness and competences, then briefly discuss whether the term *language learning* or *language acquisition* is more adequate (Chapter 2.5), followed by a Chapter about current studies of bilinguals who learn English (2.6). In Chapter 2.7, we present current models in third language acquisition, each sub-chapter contains one model, starting with the *Status Factor Model* in Chapter 2.7.1, the *Cumulative Enhancement Model* in Chapter 2.7.2, Rothman's *Typological Primacy Model* presented in Chapter 2.7.3, followed by the *Linguistic Proximity Model* (2.7.4), the *Scalpel Model* in Chapter 2.7.5 and finally Hammarberg's models for third language use and multilinguals (Chapter 2.7.6). After introducing these models, we will show findings of previous studies on bilinguals having

advantages or disadvantages over monolinguals (Chapter 2.8) and then end with a conclusion (Chapter 2.9).

In Chapter 3, we present demonstrative pronouns. First, we begin with the different types of deixis in the subsection 3.1.1, introduce joint attention in 3.1.2, followed by functions of demonstratives (3.1.3) and then we present the process of acquisition for demonstratives in general (3.1.4). In Chapter 3.1.5, a diachronic perspective on demonstratives will be given by presenting different grammaticalization paths, followed by a model for demonstrative reference in Chapter 3.1.6. In the second part of Chapter 3, we concentrate on language typology, especially of English, German, Russian, and Turkish (3.2). Again, we divided this Chapter into five subsections: demonstratives in English (3.2.1), German (3.2.2), Russian (3.2.3), Turkish (3.2.4) and finally, we compare the demonstratives in the investigated languages (3.2.5). Subsequently, we give an overview of current studies on the acquisition of demonstratives (Chapter 3.3) and end this Chapter with a conclusion (3.4).

The first part of the empirical study is Chapter 4. We present the methodology and begin with the motivation (Chapter 4.1), we then present research on learner corpus (4.2) and target language use (4.3). In Chapter 4.4, we present the basis of this study, namely the project *MEZ - Mehrsprachigkeitsentwicklung im Zeitverlauf*. In Chapter 4.4.1, the general data collection in this study is shown, followed by a subchapter about the data wave 1a in 4.4.2. We then present the written task that is used to test the students (Chapter 4.4.3). Subsequently, we introduce the questionnaire for the participants and their parents in 4.4.4. In this study, we aimed to collect new data from native speakers of English, Turkish and Russian, but due to the Corona pandemic we were only able to collect written data from English native speakers. This is presented in Chapter 4.4.5. In addition, the transcription process is explained in Chapter 4.5 Chapter 4.6 presents the aim of this study and is divided into demonstrative categories (4.6.1), articles (4.6.2), that as subordinator (4.6.3), lexical transfer (4.6.4) and the research objectives and predictions (4.6.5). Finally, possible cli effects from the heritage languages are presented (4.6.6). The final subchapters present the participants (Chapter 4.8).

In Chapter 5, we concentrate on the data analysis which is based on the texts about a typical German breakfast. The first case study focuses on the use of demonstratives in Chapter 5.1 and is split into the four different English demonstrative pronouns namely *this* in Chapter 5.1.1, *that* in 5.1.2, *these* in 5.1.3 and *those* in 5.1.4. In the second case study in Chapter 5.2, the use of definite and indefinite articles is analysed.

For that, the aim is to find out whether students use articles instead of demonstratives. Case study three concentrates on a similar analysis about subclauses (Chapter 5.3). The last case study is about lexical transfer from German as the dominant language of the students (Chapter 5.4). This chapter ends with the results and shows whether there are any cli effects (5.5).

Ultimately, we discuss the results of the case studies and focus on background variables. In Chapter 6.1, cli-effects in third language acquisition are discussed. Then, the status of the dominant language is examined (6.2), followed by a summary of the influence of the participants' school type and school grades in German and English (6.3). Chapter 6.4 surveys the influence of the factor age, the socio-economic status (6.5), the age of onset of learning the heritage language and German (6.6) and the attitudes towards the target language English (6.7). For bilinguals, the language use at home can be an influencing factor for enhancing additional language learning (6.8). In Chapter 6.9, the use of demonstratives is discussed. Then, Chapter 6.10 presents whether the bilingual heritage speakers of this study have an advantage over monolinguals. Finally, the influence of the environmental setting in EFL classrooms is summarized. The last part of this chapter comments on the limitations of this study (6.12), presents an outlook for extensions of the current and future studies (6.13) and concludes by commenting on the most crucial findings within this project (6.14).

### *Third language acquisition and Motivation*

Compared with first (L1) and second language (L2) acquisition, third language (L3) acquisition is more complex since there are two languages that can possibly influence the new acquired language. More precisely, researchers mostly focus on

determining which of the previous languages, if any, exerts a larger amount of influence on the initial representations in L3/Ln interlanguage grammars and thus affects the L3/Ln learning process (Puig-Mayenco et al. 2020: 32).

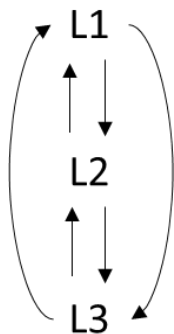
Hence, “the learner’s brain has choice [...] for many if not most domains of grammar” (Puig-Mayenco et al. 2020: 33). L1 and L2 acquisition are not “fundamentally different” from L3 acquisition, but the two sources of transfer make it “multidimensional” (Puig-Mayenco et al. 2020: 33).

Nowadays, the term *transfer* is mostly replaced by *cross-linguistic influence* (CLI) which “includes phenomena such as transfer, interference, avoidance, borrowing, and language loss or attrition” (Lorenz & Siemund 2020: 3). In addition, De Angelis



(2007: 19) states that CLI “seeks to explain how and under what conditions prior linguistic knowledge influences the production, comprehension and development of a target language”. However, Rothman et al. (2018: 24) differentiate between transfer and CLI, as transfer is used “when referring to representation and cross-language effects (CLE) when referring to crosslinguistic influence at other levels.” The latter means influence while processing a language, i.e. false cognates or the interpretation of certain structures (Rothman et al. 2018: 25).

González Alonso et al. (2021: 2) question “[h]ow does the mind of L3/Ln learners make use of previously acquired languages to avoid redundancies in learning?” In second language acquisition, the main sources of transfer come from one language, but in Third Language Acquisition (TLA) two background languages can influence each other, namely the L1 and the L2 which impact the third language and vice versa (González Alonso et al. 2021: 2). In line with González Alonso et al. (2020), this reverse impact of the third language on influencing the background languages is also stated by Cenoz et al. (2001) and illustrated for TLA in the following.



**Figure 1: Possible transfer directions in TLA adapted from Cenoz et al. (2001)**

The process of language acquisition is dynamic and influencing variables can change over time due to different factors. Even the competences in all languages involved can change (Rothman et al. 2013). Lorenz & Siemund (2020) argue that the L2 can also replace the L1 and become the dominant or more proficient language. Interestingly, this cannot only be observed in unbalanced bilingual heritage speakers, it can also happen to third language learners whose proficiency levels can change due to the frequency and recency of use.

Although there are several studies in third/multiple language acquisition (see Chapter 2), the results are conflicting. It remains unclear whether and to what extent the previously acquired languages influence the L3/Ln. Nevertheless, there are several

models that find either the L1 or the L2 or both as influencing factors. One explanation might be the type of learner which is very heterogenous. A typical scenario for an L3 learner is someone living in Sweden who learnt English as a foreign language in school and German at the university. Then, the students' L1 is Swedish, the L2 English and the L3 German (Bonnet & Siemund 2018: 6). Due to migration and, i.e., mixed marriages, this typical L3 learner is not easy to find. Hence, we mainly find L3 learners with changing levels of proficiencies or balanced and unbalanced bilinguals who learn additional or foreign languages etc. Especially, bilingual speakers can be distinguished into different types and therefore, need to be defined. Despite of bilingual speakers, this is also crucial for other language learners in second language acquisition (SLA) or TLA. According to De Angelis (2007), there are terminological inconsistencies regarding the definition of first, second and third language learners as well as bilinguals. (We will come back to that in Chapter 2.2.). Many researchers follow Hammarberg' s label norm of L1 for the first language, L2 for the second language learnt in childhood and L3 for the third language someone acquired (Hammarberg 2018). For bilinguals, this division is not always consistent since the proficiency levels can change and with the label L1 a native-like proficiency is considered.

Another influencing factor worth mentioning is the dominant language. In recent studies, the dominant language of bilingual or trilingual speakers was proven to affect the other languages. Interestingly, it is this dominance factor that can also impact the change of proficiency in bilinguals. If a heritage speaker speaks the minority language at home, he is, probably, high proficient in this language, but then he starts going to kindergarten and learns the majority language or dominant language, the proficiency level of the minority language can change. At a certain point, this heritage speaker may be balanced in both languages. But it is also likely that he will be more proficient in the dominant language, when he also speaks the majority language with friends or when he gets instructions in school in this dominant language. He would then be an unbalanced bilingual speaker.

Undoubtedly, there are more variables than the frequency of use or dominance of language that affects additional language learning. In this study, this unbalanced heritage speaker is in the main focus. We examine whether there are differences between monolingual Germans and unbalanced Russian and Turkish bilinguals learning English as their second or third language. In addition, we compare the results with that of English native adults.

As for the type of learner, the term *bilingualism* can be subdivided into different types. Bilinguals can acquire their languages simultaneously which refers to an early acquisition and means that both languages are learnt at the same time. In contrast, a sequential bilingual acquires one of the languages after the initial stages of the first language (Butler 2013). Also, there is the differentiation between balanced and unbalanced bilinguals that we previously mentioned (see i.e., Grosjean 2010). The latter type of unbalanced bilinguals is in the main focus. Lloyd-Smith et al. (2020: 64) state that “HL[Heritage Language] grammatical performance and competence in many domains of grammar often differ from that of monolingual counterparts”. In other studies (see Kupisch et al. 2014), the results show that there is no clear distinction between the outcome of monolinguals and bilingual heritage speakers. Furthermore, the living situation of heritage speakers play an important role. Hence, heritage speakers of the same language groups can differ in their performance when they live in different geographical areas (Lloyd- Smith et al. 2020). As mentioned above, one question in HL research is why monolinguals and heritage speakers have different results at the “end” of their language development (Lloyd- Smith et al. 2020). What is true is that the input plays a crucial role and impacts the language learning process. According to Lloyd- Smith et al. (2020: 65), “access to qualitatively and quantitatively different input can and does vary across individuals, giving rise to degrees of differential HL outcomes.” In addition, Shin et al. (2021: 1) declare that when the input of grammar is restricted in the heritage language, heritage speakers may “acquire some features of grammar more slowly as compared to children who experience more input.”

Although there are several studies on heritage speakers and their performance in foreign language learning compared to monolinguals (see Chapter 2.3), the results differ and there is no common result which can be traced back to the different proficiency levels and background situations of the heritage speakers. Hence, infant as well as adult heritage speakers may show completely different results within the same group of heritage speakers. As before, this can also be observed for studies in TLA.

A domain that was not in the focus so far in third language acquisition is demonstrative pronouns. We focus on demonstratives as a special category in grammar. As we will see, different researchers claim that demonstratives belong to the first 20 or 50 words that are acquired in language development (see Shin et al. 2021; Diessel 2006; Clark 1978). However, we aim to come up with new insights into using demonstratives in third language acquisition by monolingual and bilingual heritage speakers. Therefore,

students between the ages of 12 and 16 had to describe a picture sequence about a typical breakfast in Germany. This is the basis for the analysis of demonstratives and further categories as counterparts to demonstratives such as articles and subclauses. However, the English demonstrative pronouns *this*, *that*, *these*, and *those* are divided into different categories. In this study, the determinative, identificational and subordinating use of the pronouns is in the focus. In addition, the second category is subdivided into predicative and anaphorical use. In Chapter 3, we will provide an overview of demonstratives and present current studies and findings in language acquisition research. In Chapter 4.6, we explain the demonstrative categories that are used in the analysis.

In this study, it is assumed that the use of demonstrative pronouns differs among the different language groups. Background variables are also considered to affect the use of demonstratives such as *school type*, *age*, *the socio-economic status* of the students' parents, *the students' attitude* towards English, their *school grades* in *English* and *German* etc.

What we will also examine is whether bilinguals have an advantage over monolinguals or whether their performance is similar. Again, we find differing results in studies on bilinguals (see Chapters 2.6 and 2.8), namely that in studies in cognitive science, often bilinguals outperform monolinguals (see Leivada et al. 2021), but in studies on morphosyntax or phonology etc., the results remain unclear, as Lorenz et al. (2020) show. In their study, bilinguals did not show an overall advantage over their monolingual peers. However, in this study, we will discuss the outcome of the statistical analysis in Chapter 6 and, more precisely, if we find a bilingual advantage of the heritage speakers (Chapter 6.10).

## 2 Language acquisition: concepts and current findings

This chapter provides an overview of the research area of third language acquisition (TLA). First, the state of the art of TLA is introduced, followed by a subchapter about the differentiation between second and third language acquisition. We then focus on cross-linguistic effects (CLI). The second part of this chapter examines the terminology relating to bilingual, heritage, trilingual and multilingual speakers. In addition, it is discussed whether the term *language learning* or *language acquisition* is more adequate, which is followed by a subchapter on models in TLA and multilingualism. Finally, we discuss the advantages of bilingualism and multilingualism. In this study, we follow Hammarberg's distinction which uses the label L1 for the first language, L2 for the second language and L3 for the third language.

### 2.1 Third language acquisition

#### 2.1.1 State of the art

The research area of TLA is relatively new and has expanded rapidly during the past decade (Falk & Bardel 2010). This research is constantly increasing, which is why new methods have developed. According to Cenoz (2013: 72), there is “intense activity in TLA,” which is evident in the high number of publications and monographs, magazines, journals, and conferences. The interests and focus of TLA are on “different processes and factors” (Cenoz 2013: 72), but mostly on the possible interactions of the different languages involved. According to Antonova-Ünlü and Sağın-Şimşek (2015: 348),

[w]hile in the second language (L2) learning process, the direction and route of interaction is quite straightforward, in the case of the L3 learning process, interaction patterns might be much more complicated and diverse in nature.

Berkes and Flynn (2012: 143) point out that, “L3 research offers the possibility of assessing the extent to which language-specific properties of either the L1 or the L2 determine subsequent language development.”

For many years, monolinguals were the norm rather than an exception. But due to migration, more children grow up with more than one language. With the website or book *Ethnologue: Languages of the World* (Eberhard & Simons 2020), it can be determined how many languages exist. More than 7000 languages are counted there. In most of the countries, monolingualism is rarely found. Hence, a lot of people speak more than one language which leads to the field of multilingualism and the need to investigate

those languages, as well as the consequences of bilingual, trilingual, or multilingual infants and adults. This field is especially crucial for language teaching because there is a need to adjust teaching for multilingual infants in classes.

As Grosjean (2010: 5-6) indicates, due to immigrants and language contact the phenomenon of bilingualism will increase, as will multilingualism.

With so many languages in the world [...], a lot of contact is bound to take place between people of different language groups. And with such language contact, bilingualism will arise. Members of one group will learn the language of another – just as, for instance, Swiss Germans learn French, or immigrants to the United States learn English. [...] Other times, interacting groups will learn a lingua franca (a language of communication), such as Swahili, which is used for between-group interaction in Eastern Africa.

Note that under the term *multilingualism*, TLA is often included, too. However, due to certain aspects, TLA and multilingualism are growing research fields.

Social mobility, immigration and the spread of English as an international language are powerful promoters of multilingualism and often, in order to meet new educational demands, research into multilingual acquisition has received an impetus for pragmatic reasons as well, such as studies on the question of the optimum age for the introduction of the third language in a school context where the results may be used to inform language planners (Cenoz & Hoffmann 2003: 2).

### *The beginning of TLA/multilingualism*

The first researchers investigating TLA/multilingualism were Vildomec (1963), Stedje (1977) and Ringbom (1987) (Falk & Bardel 2010; Cabrelli Amaro & Iverson 2018). However, experiments were quite sporadic during that period. Only a few studies investigated phonology (e.g., Cabrelli Amaro 2018; Rabinovitsch & Parver 1966). Later, interest in multilingualism increased, leading to a boom at the beginning of the twentieth century. The focus was mostly on CLI and transfer from L1 or L2. Most studies focus on lexical interactions (e.g., Williams & Hammarberg 2009; Cenoz et al. 2003; Dewaele 1998), but there are also studies that concentrate on syntactical interactions (e.g., Bardel & Falk 2007; Flynn et al. 2004; Leung 2005, 2006, 2009). Leung (2007) states that to investigate L3, both syntax and lexicon should be focused on. In addition, there are few studies on phonology (e.g., Rothman & Cabrelli Amaro 2009; Hammarberg & Hammarberg 2009; Chamot 1973). However, the level of interest has also been rising in recent years (Leung 2007). Research on TLA is constantly growing.

The research focus in TLA can differ depending on the investigated processes, as is evident in studies on syntax or lexis. Moreover, most studies on TLA focus on CLIs between the background languages (Cenoz 2013). In general, there are different

presuppositions regarding the definition of TLA. Cenoz points out the difference between the term's *multilingualism* and *TLA* and refers to the definition of *acquisition*.

TLA is a broad area and research focuses on different processes and factors affecting its development. Research in TLA can also adopt a variety of methodologies. The term TLA is sometimes used as synonymous for 'multilingualism', but in a strict sense it means the acquisition of a third language, and multilingualism is a much broader term that does not necessarily refer to acquisition (Cenoz 2013: 72).

### *Differences between TLA and related concepts*

According to Leung (2007), a differentiation must be made between the research fields of second language acquisition (SLA) and TLA. She underlines that the focus in SLA is on acquiring a language other than the first. In contrast, the focus in TLA lies on the impact of the L1 and L2 on the new acquired language (Leung 2007).

The basic idea of Hammarberg (2009) is that all humans are potentially multilingual which means that two or more languages coexist simultaneously next to each other, e.g., an L1, L2 and L3. Hence, transfer might be possible from either the L1 (e.g., different linguistic knowledge of lexis or syntax can be taken and transferred into the L3) or the L2 (e.g., knowledge of word order of the L2 is taken into the L3 or additional language and causes a false use) that can lead to a positive or negative outcome. (Hammarberg 2009). Why is it possible that the source of transfer is sometimes the L1 and sometimes the L2? Several factors come into account depending on the learner. Yet, findings differ, and there is no consensus about whether a certain language is usually taken as a source of transfer when CLI effects are found. Therefore, according to Falk and Bardel (2010: 187),

[t]hese factors are based mainly either on the individual's knowledge or perception of the languages in question, or on the characteristics of the languages themselves (the target language, TL, and the presumed influential language).

There is still a controversial debate about the status of the L2 during the acquisition of third or additional languages. Several factors can play a role during the use of a third language. The main factors are the status of the second language, the proficiency level of the first and second languages and typology (Falk & Bardel 2010). These factors are discussed in the next chapter. For example, it is possible that a learner who speaks languages related to the same language family and that have a high similarity of structure in syntax, morphology and even phonology but still have some differences can have a

positive or a negative transfer during the oral or written text productions. This process is called *cross-linguistic influence* (CLI).

However, there is a discussion in the research field of L1 and L2 about whether there is, according to Chomsky, a universal grammar (UG) that is genetically embedded within the human mind and that allows all human beings to learn languages naturally. Moreover, opinions vary on the question of which roles the L1 and the L2 play (Leung 2005). Garcia-Mayo (2012: 135) states that,

there is an obvious difference between research on L1 and L2 acquisition from this formal perspective: the role of UG in L1 acquisition is uncontroversial, whereas it is a topic that dominates research on adult L2 acquisition.

In L2 and L3 studies, it is debated whether learners have access to UG. This position has been discussed in generative studies (Flynn 2009; Leung 2007; Flynn et al. 2004). Hofer (2015: 14) emphasizes the particularity of L3 learners compared with mono- and bilinguals: they “develop special (linguistic and non-linguistic) skills and abilities which are not found in monolinguals or even bilingual speakers”. In the following, second versus third language acquisition is presented.

### **2.1.2 Second language acquisition versus third language acquisition**

Although SLA and TLA share some qualities, there are several reasons for the differentiation between these terms (Cenoz 2013). As discussed above, the field of TLA is relatively new, whereas the field of SLA emerged in the 1960s (De Angelis 2007). Mostly, SLA has been differentiated from the mother tongue or L1 acquisition. Compared with today’s research, many researchers in the past have suggested that it was unnecessary to distinguish between a second and a third language, since they considered second language as an umbrella term for all languages learned other than the first language (De Angelis 2007). Generally, research questions concerned either the acquisition of the first language or that of the second language. Klein (1995), however, uses the term L3 for all languages other than second languages. The need to differentiate between the different terms was growing, since monolingualism was no longer the *norm* due to migration, mixed marriages, etc. Therefore, the interest in TLA and multilingualism was growing; hence, a differentiation between SLA and TLA was needed (De Angelis 2007).

One of the main differences is the form of acquisition, which differs because of the linguistic repertoire: SLA learners have one language, which they acquired before the L2 whereas TLA learners possess at least two languages, which is an advantage when



learning a new language as, according to Cenoz (2013: 72), L3 learners can “relate new structures, new vocabulary or new ways of expressing communicative functions to the two languages they already know.”

Usually, TLA learners are considered more experienced at learning additional languages, and they know more learning strategies (Cenoz 2013).

We could compare this experience to walking (L1), then learning to drive a car (L2) and then facing the challenge of driving a bus (L3). The experience of driving a car, despite involving different skills and strategies, can nevertheless be extremely useful when driving another type of vehicle: the starting point is not the same as for an absolute beginner. Even though the difference seems clear, it has not been acknowledged in SLA studies that refer to any target language as ‘L2’, paying little attention to the language learning background or experience (Cenoz 2013: 73).

Furthermore, SLA and TLA can differ in their learning contexts. There are many ways to learn an additional language (e.g., in school or a special language school, during studying abroad etc.; see Cenoz 2013). Also, additional background variables are crucial such as age, learning background, motivation, or the learning method.

Hence, these factors are important in SLA and the manner a language is learned. According to Cenoz (2003: 73), it is also crucial “to take into account that TLA is very common among early bilinguals who have acquired their two first languages simultaneously.” Furthermore, Cenoz (2013) distinguishes between an *active bilingual*, on the one hand, which subsumes bilinguals who had acquired their two first languages from birth on and learn an additional language, or heritage speakers who learn at home a minority language and the majority or dominant language in their environment outside their home. On the other hand, she defines a *foreign language user* as someone “who have acquired a foreign language [...] and are in the process of acquiring a third language” (Cenoz 2013: 79). The learning situation varies, as a foreign language learner may have learned one of her/his languages at school or due to language contact with a certain language community (Cenoz 2013). Nevertheless, both types share prior knowledge about language learning strategies of additional languages. Note that both types are interchangeable and not an “either-or-decision” (Lorenz 2019).

In addition, the context the languages are used in are crucial, too. Some L3 learners use their first and second languages every day, others use primarily their L1 like a monolingual, and it is also likely that an L2 is mostly used by an L3 learner when living abroad. Hence, the proficiency levels can change over time (Lorenz 2019). Both SLA and TLA share some similarities, such as the “process of acquiring a non-native language, but TLA brings together SLA and bilingualism because it is related to the outcomes of

bilingualism with other cognitive and social outcomes such as metalinguistic awareness or creativity” (Cenoz 2013: 73–74).

According to Bardel and Falk (2010: 189), the differences between SLA and TLA are complex, since an L3 speaker has a “multiplicity of possible interactions between the linguistic systems” in their mind. In line with this, there are studies that have examined whether bilinguals have advantages over monolinguals in TLA, such as the widespread opinion that bilinguals may have higher scores than monolinguals when learning an L3 (e.g., Cenoz 2013; Safont 2005; Brohy 2001; Cenoz & Valencia 1994). However, the findings are contradictory and need further research. Furthermore, there are different models to explain CLI, which are presented in Chapter 4.7. Cenoz (2013: 75) states that,

[t]he advantages of bilinguals over monolinguals in TLA have been explained in different ways, but most researchers associate them with three factors, firstly, metalinguistic awareness, secondly, learning strategies and thirdly, the broader linguistic repertoire that is available in TLA as compared to SLA.

Since numerous studies have found different outcome between SLA and TLA, the understanding of TLA has changed. According to de Angelis (2007: 4), an L2 learner can no longer be the basis for “non-native language acquisition”, since in SLA, the L1 can be a source of transfer, whereas in TLA, all languages can influence each other and cause CLI effects (Cenoz et al. 2001). Furthermore, the proficiency of a previously learned language can impact the learning of additional languages (De Angelis 2007). We return to this point in the next chapter. As we have seen, there is no common sense about what affects language learning the most, since different factors can play a role, such as age, proficiency level, metalinguistic awareness in the background languages, the status of the second language etc.

#### *Theories in second language acquisition (and third language acquisition)*

In the middle of the 1990s, the *full transfer/full access hypothesis* (FT/FA) was proposed by Schwartz and Sprouse (Schwartz & Sprouse 1996). The idea is that in the initial stages’ knowledge of the L1 syntax is fully transferred to the L2. This hypothesis can be transmitted to TLA; hence, it would correspondingly be talked about a full transfer from the L1 into the L3. The idea is that “the Universal Grammar (UG) is there in acquiring any new language to help the learners with the syntax of that language” (Jabbari & Salimi 2015: 2). In addition to the *cumulative enhancement model* which will be presented in

Chapter 2.7.2, the FT/FA hypothesis includes either positive or negative transfer. Jabbari and Salimi (2015) could not prove the *L2 status factor*<sup>1</sup> which will be discussed in Chapter 2.7.1. However, we claimed previously that the findings of studies on L3 vary crucially. Nevertheless, Jabbari and Salimi (2015) examined L2 and L3 learners of English who were either Persian native speakers who learned English as an additional L2 or Turkmen learners who were native speakers of Persian and had English as an L3. In two experiments, the use of simple present and present progressive was tested. The results support the FT/FA hypothesis and reject the L2 status, since no impeding role of the L2 could be proven, and the significance of the L1 was confirmed (Jabbari & Salimi 2015).

In contrast, Pienemann (1998) proposed the *processability theory* (PT), which is described as “[s]tructural options that may be formally possible, will be produced by the language learner only if the necessary processing procedures are available” (Pienemann 1998: 4). This is regarded as a sole computational process in the learner’s brain and focuses only on “the sequence in which procedural skills develop in the learner” (Pienemann 1998:5). In line with this, Håkansson et al. (2002) presented the *developmentally moderated transfer hypothesis* (DMTH), which is a continuation of the PT. However, Pienemann and Håkansson (2007: 486) understand both theories as “different types of word order [that] may be present at the initial state in different languages.” The basic idea is that knowledge about syntax is not used as a source of transfer in the initial stages of language acquisition; instead, they argue that it may be a source “when the interlanguage (IL) can process it” (Pienemann & Håkansson 2007: 486)<sup>2</sup>.

### **2.1.3 The effects of cross-linguistic influence in third language acquisition**

#### *Definition of the term “cross-linguistic influence”*

González Alonso et al. (2021: 2) understand the term *cross-linguistic influence* (CLI) “as the copying of linguistic representations from one language to another.” According to Lorenz & Siemund (2020: 3) CLI mostly replaced the widespread term *transfer*. With

---

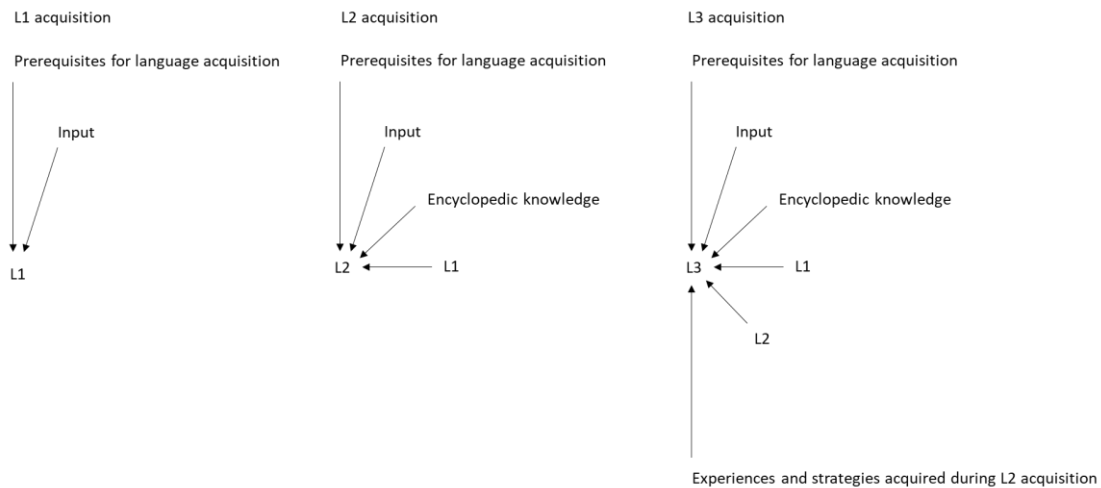
<sup>1</sup> The L2 status factor model claims that in third language acquisition the main source of transfer is the second language learnt, see Chapter 2.7.2.

<sup>2</sup> For a critical discussion about the DMTH or PT, see Bohnacker (2005, 2006) or Lorenz (2019); for a discussion of the interface hypothesis (IH), see Montrul & Polinsky (2011) and for studies on IH see Sorace (2011)

CLI, Sharwood Smith & Kellerman (1986: 1) defined interactions between the background languages that may cause “transfer, interference, avoidance, borrowing and L2 related-aspects of language loss.” More generally, Sharwood Smith & Truscott (2006: 202) describes CLI as “performance strategies and processes affecting L2 knowledge or ‘competence’”. In line with this, De Angelis identifies CLI as “how and under what conditions prior linguistic knowledge influences the production, comprehension and development of a target language” (De Angelis 2007: 19). Following the definition of De Angelis (2007), we explore whether and to what extent background languages influence each other, as well as the acquisition of an L3, namely English. When an L3 learner has two background languages, their brain “has choice” to decide whether a language can be source of transfer and, if so, which language (Puig-Mayenco et al. 2020: 33). Furthermore, both the L1 and the L2 can “simultaneously” impact the L3, which can be seen as “some level of hybridity from both sources” (Puig-Mayenco et al. 2020: 33). Note that CLI can either be positive or negative, and during the acquisition process, an L3 can be influenced by both background languages and vice versa. The L3 can also affect the L1 and L2. Puig-Mayenco et al. (2020: 33) point out that in a situation in which CLI occurs, the learner’s brain “is forced to make an unconscious ‘best guess’ as to what efficiently assist the creation of a linguistic representation that is able to parse the L3/n input”. However, de Angelis (2007: 20-21) underlines that there are two types of CLI: first, the “one-to-one type,” which refers to the interaction “between the source and the target language”; second, the “many-to-one type” regarding the impact from at least two background languages as sources of transfer competing in affecting the L3. Hence, the L1 can influence the L2, and the L2 the L3, and vice versa, or the L1 and the L2 impact the L3, which is called “combined CLI” (De Angelis 2007: 21).

### **2.1.3.1 Transfer effects in first, second and third language acquisition**

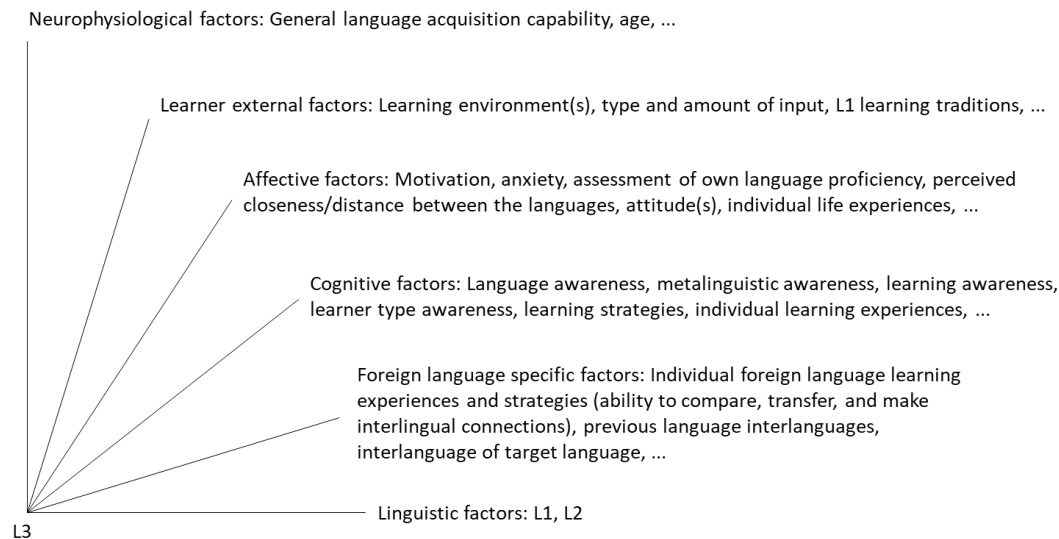
Since we already defined CLI, we now explore which different interactions of the background languages and of the target language are possible. Before we discuss possible scenarios, we illustrate the differences between L1, L2 and L3 acquisition. The following diagram presents the factors involved in the language acquisition processes. This model was designed by Falk and Bardel (2010), who adapted it from Hufeisen and Marx (2007). They assume that every learner has prerequisites for language acquisition. Interestingly, such prerequisites differ from one learner to another.



**Figure 2: Language acquisition processes for L1, L2 and L3 acquisition according to Falk & Bardel (2010: 191)**

To illustrate L1 acquisition, the left diagram shows the factors that impact the process of acquisition, such as prerequisites and input, depending on the parents or caregivers who talk to the child. As illustrated in the middle of this diagram, encyclopaedic knowledge, and knowledge of the L1 influence the acquisition of L2. Hence, more factors are included when acquiring new languages. Yet, in L3 acquisition there are even more factors such as knowledge about the L2. Thus, when a learner has already acquired an L2, he/she has learning experiences and learning strategies. This knowledge may help to learn a third additional language (Falk & Bardel 2010). Note that in this model the backward direction is missing regarding the L2 also impacting the L1, and the L3 may also influence the L2 and the L1. In this model, there is only one direction, namely that from the L1 or L2 onto the new, additional language.

In Figure 3, Sánchez (2020) also adapted the model proposed by Hufeisen and Marx (2007). In addition to the previously diagram, Sánchez includes different factors typically explored in bilingual studies and research on SLA. She points out that her model is not limited to the typical factors discussed in the literature, such as “age, proficiency, aptitude or motivation” (Sánchez 2020: 18). Instead, the model contains neurophysiological factors, learner external factors, affective factors, cognitive factors, and foreign language-specific factors affecting the acquisition of an L3 “in a multilingual learning situation” (Sánchez 2020: 18). Both models include prior language knowledge from the L1 and L2, experience and strategies in learning additional languages and linguistic prerequisites. But the second model is more specific, especially when considering affective aspects, cognitive aspects, and specifics of foreign language learning, such as interlanguages.



**Figure 3: Sánchez' model of TLA adapted from Hufeisen and Marx (2007) (Sánchez 2020: 18)**

Having reviewed the different factors during the acquisition of an L3, in the following, possible CLI scenarios are presented. In the illustration above, different aspects are considered when learning an L3. Transfer effects can either be positive or negative or neither. Lorenz (2019) describes the following scenarios for such an acquisition process:

- (i) no influence from the background languages;
- (ii) exclusive influence from the first language;
- (iii) exclusive influence from the second language; and finally
- (iiii) influence from both the first and the second language.

(Lorenz 2019: 21)

Note there is also the possibility of a “reverse” transfer “from the L2 or the L3 back onto the L1” (Sánchez 2020: 29). In line with this, Kroll, and Navarro-Torres (2018: 246) state:

Perhaps the most important revision in the classic story is that the native language has been shown to be changed by L2 experience. Becoming proficient in an L2 is not only a matter of acquiring all of the new structures and forms associated with the new language, but also regulating the L1 to enable the influence of the L2 on L1. Again, recent neuroscience studies provide dramatic evidence that the L2 begins to change the L1, even when learners are at early stages and not at all proficient in the L2.

According to Lorenz (2019: 21), the first scenario is highly improbable, since it is assumed that “at least some influence” from both previously acquired languages or from just one will occur. Therefore, in Chapter 4.7 models in TLA and/or multilingualism that consider such possible transfer effects are presented.

Second language learners have two systems that can potentially influence each other (L1↔L2) [...]. Two other bi-directional relationships can take place in third language acquisition: the L3 can influence the L1 and be influenced by the L1 (L1↔L3) and cross-linguistic influence can also take place between the L2 and the L3 (L2↔L3). (Cenoz et al. 2001: 2)

In the following, we discuss these scenarios and present different factors that may influence transfer effects.

### *Influence from the L1*

The hypothesis of the *Absolute L1 Transfer* means that transfer from the L1 can take place in two ways: the L1 blocks the L2, or “the L2 is fully based on structural representations of the L1” (Lorenz et al. 2019: 5).

The importance of the L1 during TLA was proven by Jabbari and Salimi (2015). They tested different models in TLA, inter alia the FT/FA hypothesis. Their participants were either native speakers of Persian who learned English as an L2 or native speakers of Turkmen who already learned Persian as an L2 and acquired English as an L3. Via two experiments about simple present and present progressive, the researchers found support for the FT/FA hypothesis. They also found that the L2 was rarely the source of transfer; mostly, the L1 was used in both cases (Jabbari & Salimi 2015).

In addition, Hermas (2014) investigated two scenarios including the *typological primacy model* (TPM) and the L1 as the source of transfer. He tested “subject-verb inversion in declarative sentences and null expletive subjects” (Herma 2014: 1). He examined 14 adults during initial stages of learning English as an L3. The adults were native speakers of Arabic (L1) and advanced learners of French as an L2. To find evidence for morphosyntactic transfer, an acceptability judgement test and a preference test were used and statistically analyzed. To compare the results, three control groups consisting of Moroccan Arabic natives, French natives and American English natives were tested, too. The findings support the basic idea that Arabic as L1 was a source of transfer in the study that did not prove the L2 status factor for initial stages of acquiring an L3. No positive transfer from French was found. “The results indicate that only L1 Arabic has a significant influence on the initial stages of L3 English” (Herma 2014: 15). He further emphasizes that,

[i]f L2 French were involved, we would expect a significant facilitative effect of French on the accuracy of the L3 beginners (L2=L3), leading them to accept the grammatical sentences *and* reject the ungrammatical ones (Herma 2014: 15).

Hermas underlines that the developmental stage during language acquisition is crucial since it influences the results. Hence, the results of the study cannot be generalized; instead, they only refer to the certain group of L1 Arabic speakers, advanced French L2 speakers and learners of L3 English in the initial stages of language development. In this sense, it is necessary to conduct more studies to be able to compare findings. In our study, we focus on two language groups and two age groups, but we return to this later in Chapter 5. Further studies that have found evidence for absolute L1 transfer on the L3 are Hermas (2014), Lozano (2003) and Na Ranong & Leung (2009).

### *Influence from the L2*

Some studies have proved mainly the L1 as a source of transfer; however, for TLA, the *L2 Status Factor Model* was proposed by Hammaberg & Williams (1998). This model finds evidence for the L2 being a source of transfer. We return to this model in Chapter 3.7.1.

In a study about the acquisition of adjective placement in English, Ghezlou et al. (2018) examined one group with native speakers of Azeri<sup>3</sup> who learned Persian as their L2 and another group with L1 speakers of Persian. Both groups were learning English as their additional language. The former as their L3, the latter as their L2. A total of 180 university students, either monolingual or bilingual, took a syntactic structure test, a proficiency test, and a questionnaire regarding background information. The findings indicate “there was no significant difference between the monolingual and bilingual groups’ means on the Farsi-to-English translation” (Ghezlou et al. 2018: 179). Hence, the findings cannot support any advantages of bilinguals over monolinguals. In addition, this outcome establishes a “non-facilitative effect from bilingual learners’ second language” (Ghezlou et al. 2018: 179). To test different models for TLA, their findings neither support the CEM nor the TPM. Instead, they consider the “L2 had a stronger role than L1 in L3 acquisition of adjective placement” (Ghezlou et al. 2018: 180), which is in line with the L2 status factor model. Since Azeri-Persian are normally subtractive or unbalanced bilinguals, the results may be different for another language group. In this case, the L1 is only acquired orally; in institutions, the official language is Persian, which might affect the results of the study (Ghezlou et al. 2018: 180).

---

<sup>3</sup> Azeri is the official language in Azerbaijan



*Influence from both the L1 and the L2*

In recent studies, a fourth scenario has been considered: the possibility of transfer from both the L1 and the L2. This has largely been known as *Hybrid Transfer* (Puig-Mayenco et al. 2020: 48). In a study about the connection between CLI effects and similarity in TLA, Cabrelli et al. (2015) examined, via a scalar grammaticality acceptability task, the initial and the advanced stages of Brazilian Portuguese as an L3, especially “the feature configuration of embedded T” (Cabrelli et al. 2015: 1). Note that embedded T refers here to “the syntactic domain implicated in whether or not a language allows for S-to-S [Subject-to-Subject] RExp [raising over an intervening dative experiencer]” (Cabrelli et al. 2015: 9). In the first experiment, two sequential bilingual groups were tested at their initial stages of learning Brazilian Portuguese as an L3: the first group (A) contained 18 L1 English speakers and advanced Spanish L2 speakers, the second group (B) comprised 15 Spanish L1 speakers and advanced English L2 speakers. In addition, native speakers of English, Spanish, and Brazilian Portuguese served as control groups. Interestingly, Spanish “blocks RExp,” whereas English and Brazilian Portuguese allow it (Cabrelli et al. 2015: 9). The verb examined in the study is *parecer* (*to seem*). The findings of the first experiment confirm that both groups were able to “distinguish between different complement types for the raising verb *parecer/to seem* in both their L1, and crucially, their L2” (Cabrelli et al. 2015: 20). In Spanish, this structure is blocked, which was proven by the performance of both groups. In addition, the groups accepted the structure in English, but they refused the use in Brazilian Portuguese, although it is allowed. The results support the TPM of Rothman, which is presented in Subchapter 2.7.3. However, transfer was found from Spanish either as the L1 or the L2. To discover what might happen after CLI at the initial stages, Cabrelli et al. (2015) again used the experiment from the beginning, but with a different language group to have a cross-sectional study. In this case, 15 L1 English speakers, advanced L2 Spanish speakers and advanced L3 Brazilian Portuguese speakers participated. The question addressed is “how robust is the effect of structurally-driven transfer at the initial stages?” (Cabrelli et al. 2015: 21). The results of the second experiment substantiate the native-like ability in L3 Brazilian Portuguese of L1 Spanish speakers at the expense of their high proficiency in their mother tongue Spanish. Furthermore, advanced learners “successfully reconfigured the feature specification” (Cabrelli et al. 2015: 24). Therefore, both experiments found evidence that at the initial stages either positive or negative transfer can take place and “reanalysis of

this as a byproduct of L3 learning seems to suggest that redundant acquisition is a reality” (Cabrelli et al. 2015: 27). According to Cabrelli et al. (2015), redundant means that something has been learned earlier for another purpose and system that now is disposable for CLI. However, the study indicates that transfer from both L1 and L2 can occur no matter if positive or negative. What is particularly noteworthy is that learners cannot decide whether a background language may be source of transfer and, if so, which language might be supportive for CLI effects from either the L1 or L2 or neither.

### **2.1.3.2 Further concepts and factors affecting the L3 acquisition process**

We have considered different hypotheses in additional language acquisition; however, factors such as typology and proficiency level play a crucial role in certain models. We now briefly discuss these terms.

#### *Linguistic typology*

In the acquisition of additional languages, linguistic typology is one of a plausible explanation when influence from the background languages is found (Lorenz et al. 2018: 6). According to Siemund (2013: 13), linguistic typology includes “structural differences, i.e., structural variation, between languages, working towards taxonomies of linguistic structures and their mutual relationships”. In addition, Ghezlou et al. (2019: 1300) defines typology as

on the one hand [as] the relatedness between the background languages and the target language [...], or as particular structures being similar in the background language and the target language, disregarding the language relatedness.

Hence, typology compares linguistic representations and systems (Lorenz 2019: 129). For that, an example might be monolingual Russian speakers who “find it difficult to acquire the English determiner system when learning English as an L2, since Russian encodes definiteness and indefiniteness differently” (Lorenz et al. 2018: 6). In addition, when an L3 learner of English is a heritage speaker of Russian and dominant in German they benefit from German, since the determiner system in both English and German overlap (Lorenz et al. 2018: 6).

However, languages can share similarities that are either genetically related to the same language family or structurally which means that they are not typologically related,

but they contain similar grammatical structures (see the *Linguistic Proximity Model* in Chapter 2.7.4). According to Croft (1990), the latter type is called *ad-hoc-similarity*. For example, the final position of a verb in German and Turkish or in related languages is a structural similarity. Both genetically and structurally similarity can be found in German and Swedish, e.g., with the aspect of the second-verb position (Falk & Bardel 2010).

Also, *psychotypology* can be a plausible explanation for cli effects in third language acquisition (Kellermann 1983). According to Cenoz et al. (2003: 105), this term is defined as “the individual’s perception of language distance” which means that structural similarity is selective by the learners’ perception.

### *The proficiency level*

The proficiency level in the background languages may alter the outcome of the new acquired language as a plausible explanation (Lorenz et al. 2018: 6).

According to Hammarberg & Williams (2009), a high proficiency level in one of the background languages might have a facilitative effect on the acquisition of a new language and vice versa. Instead, De Angelis (2007) states that a low proficiency level may impact the target language and may lead to negative CLI effects. In general, Hammarberg (2018: 142) points out that, “even a language at an elementary level can become activated and cause transfer in situations where L3 too is at a low level.” In addition, Hammarberg (2018: 142) states that, generally, CLI occurs more often at initial stages in L3 acquisition when the proficiency level is lower “where the lack of expressive resources in L3 more often causes a background language to become activated.” In contrast, De Angelis (2007: 33) argues that transfer may also “occur at more advanced stages of acquisition”:

The effects of positive transfer are most typically found at advanced stages of acquisition, when learners are more likely to benefit from their knowledge of other languages, and of cognate vocabulary in particular.

Note that the type of transfer (positive, negative, or null) depends on the individual learner no matter if the L3 development is at an “early or advanced stage[...]” (De Angelis 2007: 33). According to Montrul (2014), it can vary how proficient a heritage speaker is due to the immigration background and the type of bilingualism. Often, heritage speakers are unbalanced in their languages (Montrul 2014). The level of proficiency can vary in their reading/writing and listening/speaking competences. In addition,

they largely exhibit one frequently used language, which is sometimes referred to as the dominant language, and one less frequently used language (the latter mostly coincides with lower proficiency) (Lorenz & Siemund 2020: 7).

Similarly, the degree of proficiency can change over time depending on the individual situation (Lorenz & Siemund 2020). A child heritage speaker of Turkish-German living in Germany may have more input of German than of Turkish. This can cause L1 attrition in the heritage language because German is dominant. What is important in this context is the input of Turkish. It may very well be that the parents speak less frequently in Turkish at home to the child. Furthermore, it is crucial to identify the learner's background. Young heritage speakers who immigrated to Germany a few years ago may be still very proficient in their heritage language, but if the learner was born in Germany, the proficiency in both Turkish and German may vary in comparison with the former case. The importance of dominant language use is shown in the following.

### **2.1.3.3 The dominant language effect**

Bilingual or heritage speakers can either be balanced or unbalanced. The latter type relates to speakers who have a dominant language and a minority language. Such unbalanced speaker might be more proficient in the dominant language because this language is the language of environment and mostly used in daily life, whereas the minority or heritage language is more commonly used in a family context or in some cases the heritage language is mostly used orally.

However, Hopp (2019) investigated English as an L2 and L3. To compare SLA with TLA, he tested 31 pre-school children in Germany who were monolingual Germans and learning English as a foreign language, and 31 sequential bilingual Turkish-Germans also acquiring English in school in classes three and four. Via a sentence-repetition task and a picture-story retelling task, he explored whether and to what extent existing models in L3 can be applied to German heritage speakers of Turkish with German as their dominant language. On the one hand, the focus was on verb-second order and the order of adverbs, since English and German have different realizations. On the other hand, differences between English and German, and between English, German and Turkish were considered, namely verb-complement order and the realization of subjects and articles (Hopp 2019). However, the findings prove that language dominance plays a crucial role, since the main source of transfer came from German as the majority

language. Due to the lack of differences between the groups, no evidence for CLI from Turkish were found. Hopp (2019: 579) states that “[b]oth groups had greater difficulty with phenomena that are dissimilar between English and German, while analogous phenomena presented less or no difficulty.” Furthermore, the bilingual group displayed the same pattern as the German monolinguals. Thus, the study supports previous results of “analogous development among child L2 and child L3 learners of English” (Hopp 2019: 579) Nevertheless, he also argues that although German is the L2, and when considering the order of acquisition, he admits that it may “equally be a L1 or may have taken over the role of the L1 as it became the more dominant language” (Hopp 2019: 579). According to Hopp (2019), the bilingual group used German more frequently, since it was the dominant language and the language of instruction. Hence, Hopp points out that German had more influence as a source of transfer, but he rejects transfer from L1 or L2, and also the CEM. He suggests that current models in L3 “need to be expanded to include the effects of dominance,” and he questions “if transfer from German reflects effects of typology or dominance or whether their effects are additive” (Hopp 2019: 580). On this basis, it is not possible to distinguish between typological similarity and language dominance, which demonstrates that further studies with other background languages need to be considered.

In a study by Puig-Mayenco et al. (2018), the aspect of the dominant language is examined. Their hypothesis is that “[l]anguage dominance matters” (Puig-Mayenco et al. 2018: 5). Two groups of balanced bilinguals were tested via a grammatical-judgement task and a self-paced reading task. The first group were L1 Spanish speakers who acquired the L1 from birth and Catalan as their L2, which they started at the onset of schooling. The second group contained the opposite scenario, with L1 Catalan speakers and L2 Spanish speakers. Both groups were highly proficient in both languages. The focus of interest were negative concord items (NCI) and differential object marking (DOM). Both languages examined are considered negative concord (NC) languages, with the exception that Catalan “seems to be the only language that allows for optionality of the negative marker when the NCI is in pre-verbal position” (Puig-Mayenco et al. 2018: 3). Spanish is attested “to be a DOM language,” whereas Catalan is not (Puig-Mayenco et al. 2018: 4). However, the results for NCI conditions indicate that neither “dominance of language” nor “order of acquisition” affect the use of NCI (Puig-Mayenco et al. 2018: 4). For DOM, the findings revealed something different. To have a fair comparison, bilingual groups were compared with each other, instead of with the native speaker control groups.

Regarding DOM, the bilingual Spanish-Catalan group displayed influence from Catalan, which was their majority or dominant language. Interestingly, the parents of these bilingual heritage speakers moved to Catalan, which became their L2. Hence, their children were immersed in Catalan at school. However, at home, the family language still is only Spanish. This special environment supports such “successful bilingualism” (Puig-Mayenco et al. 2018: 14). Particularly noteworthy is that the heritage speakers in this study differed from the broader definition of such speakers, since in this case both languages were highly proficient as native speakers of both languages. Normally, according to Montrul (2014) and Lorenz and Siemund (2020), heritage speakers are unbalanced bilinguals. However, Puig-Mayenco et al. (2018: 14) consider their heritage speakers (HSs) “a sub-type” and they clarify that “[t]he increased opportunity to conserve dominance in Spanish does not disqualify our HSs from being HSs.” Furthermore, they point out that an environment such as Spanish-Catalan offers insights into important factors that can be compared with other Spanish heritage speakers and their environments (Puig-Mayenco et al. 2018). Even if the bilingual heritage speakers are balanced, the findings support that dominance of languages matters and impacts the performance of such groups. However, the settings of such bilingual heritage speakers are individual and may vary. Hence, more studies that address language dominance are presented.

Like Hopp (2019), Fallah and Jabbari (2018) also explored bilingual speakers in school at initial stages of learning English as an additional language. The aim of their study was to find evidence for three L3 models: the L1 factor, the CEM and the TPM. In contrast to Hopp (2019), they did not investigate languages that are typologically close to English. A sample of 85 participants were tested in a grammatical-judgement task and an element-rearrangement task to examine attributive adjectives. To compare the results, 21 native speakers of English were tested also. Fallah and Jabbari (2018) divided the participants into three groups: the first group consisted of L1 Mazandarani speakers and L2 Persian speakers whose language of communication is their L1. The second group had the same language constellation, but differed in their language of communication, namely the L2 Persian. The last group included the opposite order of languages, with L1 Persian speakers and L2 Mazandarani speakers. Like the second group, the third also used Persian for communication. In contrast to Hopp (2019), this study considers unbalanced bilingual students speaking a majority language and one used less frequently, but they are not heritage speakers. The results neither support the L1 factor nor the CEM or TPM. Regarding the source of transfer, the main factor that could be proven was language

dominance (Fallah & Jabbari 2018: 210). The researchers argue that the results are limited to the initial stages of L3 acquisition and suggest that further studies with different language combinations are necessary.

In line with this, Jabbari et al. (2018) carried out another investigation about the acquisition of *wh*-question in L3 French by Persian-English bilinguals. Again, they tested current L3 theories. They differentiated three bilingual groups: first, L1 Persian speakers and L2 English speakers whose dominant language was French; second, the same order of languages as Group 1, but with Persian as the language of communication; and third, L1 English speakers and L2 Persian speakers, again with the dominant language being Persian. Via a grammatical-judgement test and an element-rearrangement test, student patterns in French *wh*-questions were tested. Corresponding to Fallah and Jabbari (2018), the findings reject the absolute L1 transfer, the CEM, the TPM and the L2 status factor. Again, the dominant languages played the main role in transfer effects since, for Group A, French, and for the other two groups, Persian, were the dominant languages affecting CLI effects (Jabbari et al. 2018: 14). The researchers argue that “in the initial stages of L3 acquisition, CLI originates from the dominant language of communication, irrespective of whether it is the L1, L2, or L3” (Jabbari et al. 2018: 14). However, they also assume that it is too early to exclude typological similarity or the L2 status factor as possible sources of transfer.

So far, the debate about influencing factors in L3 acquisition and the different findings indicate how relevant this discussion about CLI effects is. With our study, we wish to add new perspectives to this field. However, the results of studies on L3 acquisition are contrary. To discover “when, how and to what extent previous linguistic experience (from the first language, second language or both languages) affects the initial stages and beyond of adult third language (L3) acquisition,” (Puig-Mayenco et al. 2020: 31) Puig-Mayenco et al. (2020) examined 71 studies published between 2004 and 2017. The systematic review indicates that,

differences exist related to the backgrounds of the subjects tested, the languages in the trilingual pairings, the domains of grammar tested and several non-trivial distinctions in type, creation and administration of the testing methodology” (Puig-Mayenco et al. 2020: 48).

In addition, the researchers first suggest that “order of acquisition [...] can hardly be considered the main factor in the selection of the source of transfer in (the initial stages of) L3/Ln acquisition” (Puig-Mayenco et al. 2020: 50). Second, they point out that a bi-directional mirror-image design is needed to determine transfer effects in multilingual learners (Puig-Mayenco et al. 2020: 50).

## 2.2 Who is bilingual? Terminological (in)consistencies

Multilingualism is a common phenomenon. There are 7000 languages around the world, which causes diversity. With 900 million speakers, Mandarin is the language with the highest number of speakers followed by Hindi, Spanish, and English, with more than 300 million speakers (Eberhard & Simons 2020). Some languages have fewer than a thousand speakers.

### *English as global language*

Due to its use as a lingua franca, English enjoys a special status. Therefore, many new languages, such as pidgin versions of English, have flourished. Mostly, however, the monolingual bias is deeply ingrained in the thinking of people (see Hammarberg 2017). Nevertheless, as De Angelis (2007: 10) outlines, “it can no longer go unnoticed that a large part of the world’s population speaks several languages on a daily basis.” Many people are used to speaking more than one language in daily situations (Lewis 2018), which underlines that multilingualism is receiving increasing attention. Another reason for the increasing awareness of multilingualism is that, due to mixed marriages, many children are growing up with more than one mother tongue. Bialystok (2013: 625) states

[c]hildren become bilingual for many reasons: immigration to a new country; extended family that speaks a traditional language; education in a language other than the language of the home; or temporary residence in another country.

The label *L1* is not difficult to define, since it refers to the mother tongue. Yet, for an *L2* or an *L3/Ln* speaker the terminology is still inconsistent. When a new research field arises, new terminology is needed, but what mostly happens is that researchers tend to “borrow the terminology already used in well-established fields such as SLA or Bilingualism and adapt it to multilingualism” (De Angelis 2007: 8). Sometimes, this can lead to overlaps between terms and meanings; hence, it is appropriate to establish new terminologies. However, as De Angelis (2007) points out, there is no consensus regarding the terms used in TLA. We now present different ways to classify L3 speakers.

### *Classification of languages and the problem with the proficiency level*

Hammarberg (2009: 6) states that, “[a] *first language (L1)* is any language acquired during infancy, and a *second language (L2)* [is] any language encountered and acquired after infancy.” As previously mentioned, in SLA, the native language of a speaker is



labelled as the L1, the first language, whereas the acquisition of a non-native language is labelled as the L2, the second language (De Angelis 2007: 4). In line with this, Hammarberg (2018: 140) points out that, “[i]n traditional SLA usage where no distinction is made between a learner of a first L2 and one who learns further languages, all are referred to as L2.” Since in SLA it is widely agreed that the acquisition of an L1 and an L2 differ essentially, the differentiation between L2 and additional languages “is in fact redundant, as the process underlying the acquisition of all non-native languages is essentially the same” (De Angelis 2007: 4).

However, this view has changed, and it can be argued “that some differences between types of acquisition exist and should be accounted for” (De Angelis 2007: 4), as discussed in the previous chapter. Now, the consensus is that all background languages can impact additional language learning and vice versa. Hence, there is a need to define these further languages. According to de Angelis (2007), the terms *multilingualism* and TLA are mostly used synonymously. She suggests the term “third or additional language acquisition [because] it refers to all languages beyond the L2 without giving preference to any particular language” (De Angelis 2007: 11). Hence, she proposes a term that can be delineated from L1 and L2.

Hammarberg (2018) distinguishes the different terms according to their order of acquisition. He argues that in SLA the L2 refers to any non-native language, whereas in TLA it means the second language chronologically learned (Hammarberg 2018: 139–140). He explains that an L3 can be, in chronological order, the language acquired after the L2, but it can also be the languages acquired after two first languages, since this would be the case for early bilingualism. Finally, it can refer to a speaker learning a new language who already speaks one or more additional languages (Hammarberg 2014: 3). Therefore, he proposed 2010 his *linear model*, which refers to the labelling of languages in their chronological order. Due to different proficiency levels and diverse biographies, it may not always be possible to follow this accurate labelling. Nevertheless, Hammarberg (2010: 93) admits, regarding the chronological order of multilingual languages, that often it is difficult and not always suitable to order such languages in a linear model. In this study, bilingual speakers are examined.

The question is, how can we define bilingual speakers who simultaneously acquired their two or more first languages when we follow this linear model? It may be easier labelling bilingual heritage speakers who, for example, were born in Turkey and then moved to Germany at the age of three. In this case, Turkish would be the L1 and

German the L2. However, even the proficiency of these heritage speakers may change over time due to the dominance of one of the languages (Hopp 2019; De Angelis 2007). De Angelis (2007) explains that the languages of bilinguals can either be balanced or one language is dominant. This dichotomy can only be transmitted to multilinguals when related to the proficiency level of each language the multilingual speaks (De Angelis 2007: 9). In our example, the former type is a heritage speaker who is equally proficient in Turkish and German. Since German is the dominant language and used in school etc., the proficiency level becomes higher, and that of the L1 lessens. In this case, we have a dominant relationship between Turkish and German. However, this is not considered in the linear model, which may lead to the wrong assumption that the L1 is always the most proficient. Bilingual heritage speakers may become more proficient in their L2, which may be the dominant language. According to Grosjean and Byers-Heinlein (2018: 7), the proficiency level of bilinguals can change due to different events, such as “moving to another region or country, meeting a partner, or losing a family member with whom one spoke a language exclusively.” However, we cannot identify the proficiency level only in labelling the languages chronologically. It may also be useful in some cases to follow this labelling. In Germany, a monolingual German (L1) child learns English as a foreign language in school as the L2 and then starts to learn French or Spanish or Russian, for example, as their L3. In this context, the labelling is easier than for simultaneous bilinguals or bilingual heritage speakers. For bilinguals, Hammarberg (2014: 6) suggests changing the label differentiated into *native language(s)* and *non-native language(s)* based on cognitive differences. The former type is acquired as a child (since birth) and the latter as an adolescent or adult. In line with this, Hammarberg (2010: 97) defines the third language L3 in a multilingual context as “a non-native language which is currently being used or acquired in a situation where the person already has knowledge of one or more L2s in addition to one or more L1s.”

De Angelis (2007) explains how ambiguous the labelling in such an area is. Dewaele (2017: 3) proposes using the label LX, “meaning any language after the age of 3 years, to any level of proficiency. It is then possible to be either specific and compare the person's L2, L3 or L4, or to make a more global statement about the person's LXs.” He underlines that it is important to find a word that is not a value judgement as it could be seen in the dichotomy of *native vs. non-native speaker* or *new speaker* proposed by O'Rourke and Pujolar (2013). In both views, the definition of *native speaker* is criticized. However, we do not follow this classification. De Angelis (2007) argues that the

discussed inconsistencies do not consider proficiency. In addition, she clarifies that a differentiation between child or adult bilinguals is necessary to avoid a “generalizing [of] research findings” (De Angelis 2007: 10).

However, according to Dewaele (2017), the term *native speaker* does not consider proficiency. It implies that as a native speaker the proficiency level is high. Dewaele (2017) argues that a native speaker can lose their mother tongue, reducing the proficiency level. In addition, language attrition can occur, reducing the proficiency level and the native speaker norm. This is a possible scenario when someone has to leave their country due to war and begins a new life somewhere else. After a certain time, perhaps the L1 is hardly ever spoken and the proficiency in the dominant language grows. According to Ghezlou et al. (2018), another scenario is when a language is only acquired orally and a second L1 is acquired orally and in writing. This often happens in Iran, where Azeri-Persian bilinguals acquire their L1, Azeri, only in spoken language. In academic contexts, they learn Persian in both writing and speaking. Hence, the more dominant language is Persian, which may have a larger effect on additional language learning (Ghezlou et al. 2018). To sum up the discussion on terminology inconsistencies, Hammarberg (2009: 6) defines the L3 as “a special case of the wider category of L2, and not necessarily

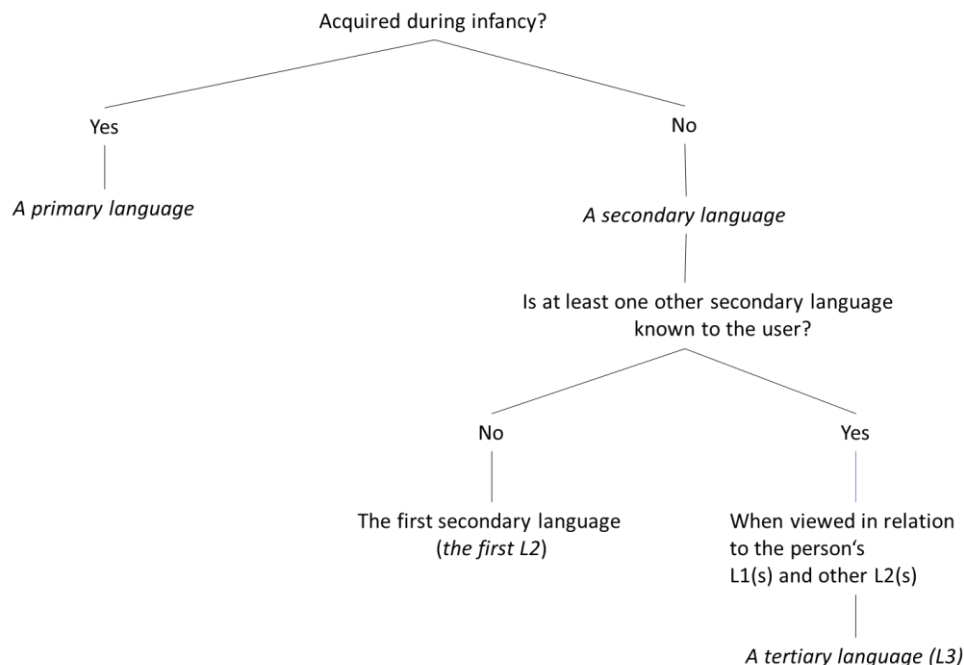


Figure 4: Hammarberg’s language acquisition hierarchy (Hammarberg 2010: 101)

language number three in order of acquisition,” and proposes a language model involving three levels. With this hierarchy of language acquisition, Hammarberg (2010: 101) offers

an alternative to order languages among multilingual speakers, namely with a primary, a secondary and a tertiary language.

Finally, there are overlaps between the definition of bilingualism, TLA and multilingualism. On the one hand, Cenoz (2013: 71) emphasizes that, “TLA is often labelled as *multilingual* because it involves situations with three languages.” Similarly, Aronin (2019: 3) states:

[t]he term multilingualism is used here to refer to the use of three and more languages and is distinguished, where appropriate, from bilingualism, the use of two languages. In this perspective bilingualism is taken to be a special case of multilingualism rather than vice versa.

On the other hand, according to De Angelis (2007: 17), there are also researchers who use “the term multilingualism [...] to refer to bilingualism.” Another example of multilingualism as an umbrella for bilingualism and TLA is the definition of Rothman, González Alonso and Puig-Mayenco (2019: 17–18):

In fact, as the very term suggests, a multilingual is an individual who has knowledge of multiple languages. [...] it is reasonably defensible to argue that bilinguals are multilinguals, having, by definition, competence in more than one language. [...] we consider multilingualism to involve at least three languages. Thus, a multilingual learner would by definition need to be bilingual – either a simultaneously or sequential bilingual – at the onset of L3/L<sub>n</sub> learning.

To distinguish the participants’ languages, we follow Hammarberg’s terminology of L1, L2 and L3. It is noteworthy that we do not refer to the proficiency level by labelling the languages in this way. Rather, we want to differentiate them. In our study, we examine bilingual heritage speakers. We also use the terms *dominant* or *majority language* and *heritage language*. The former refers to German and the latter to Turkish or Russian. To sum up this discussion, Rothman et al. (2019: 23) argue that the perspective of a researcher is crucial when defining the languages:

the choice of who qualifies as a multilingual for any given study needs to be commensurate with the needs and goals of the said study; depending on the questions, this inevitably means that some will qualify and others will not, even when all scenarios involve exposure to three or more languages at some level.

### **2.3 Bilingual versus heritage speakers**

In this subchapter, the definition of bilingualism and the approach of a heritage speaker, which can be considered a specific type of bilingualism are presented. There is a wide range between the definitions of bilinguals of the past and those of today. Some researchers have a broader and some a narrower definition of bilingualism.

*The definition of bilingual speakers*

When describing a bilingual, different terms are used: someone who speaks two languages fluently, has native-like control, has a high proficiency, or speaks perfectly these two languages (Dewaele 2015; Bloomfield 1933). This approach has been criticized by researchers, since it is:

too vague and impossible to operationalize, it refers only to proficiency levels, and it ignores nonlinguistic dimensions. [...] Criteria have thus become vaguer, but also more flexible, conceptualizing bilingualism as a continuum rather than a category (Dewaele 2015:79).

Dewaele (2015: 79) argues that bilingualism can be seen as a continuum, for example, regarding the differentiation between balanced and unbalanced bilingualism. Balanced means that someone has an “equal level of proficiency in both languages” (Butler 2013: 115). Note that an equal proficiency normally refers to a high proficiency in both languages. The term *unbalanced bilinguals* indicate the proficiency level in one language is higher than in the other, which is often the case in heritage speakers. Unbalanced bilinguals can also be called dominant bilinguals, referring to a scenario in which one language is dominant and the other is used less frequently (Butler 2013: 115). Thus, bilinguals are individuals who differ on their position along the continuum scale. Moreover, the proficiency of such speakers can change over their lifespan, which also accounts for the continuum. Lorenz & Siemund (2020) argue that the L2 or the L3 can also replace the L1 and become the dominant or more proficient language.

However, Macnamara (1967) argues that someone is a bilingual when they have a little knowledge in one of the competencies of a non-native language (Macnamara 1967: 59–60). This broader definition considers a minimal ability in speaking, reading, writing, or listening as an additional language. If we follow this definition, most people can be regarded as bilinguals, since they usually learn an additional language in school, and we can assume that they have at least a minimal ability to use one of these languages. Furthermore, this definition does not seem accepted by most researchers, and it does not seem plausible, since nearly everyone could be defined as a bilingual.

Similarly, Haugen (1953) draws attention to a bilingual definition in which someone has a fluent L1 but can express themselves in complete sentences or utterances in an L2. However, many definitions lack the possibility that the balance between two first languages can change over lifespan. As such, the dominant language may not necessarily be the L1 (Butler 2013). Furthermore, Valdés and Figueroa (1994: 8) indicate that bilinguals have “more than one language competence.” Another example of a broader

definition of bilingualism is that of Grosjean (2010: 4), who defines bilinguals as “those who use two or more languages (or dialects) in their everyday lives.” Hamers and Blanc (2000: 7) criticize these definitions, since

they do not specify what is meant by native-like competence, which varies considerably within a unilingual population, nor by minimal proficiency in a second language, nor by obeying the concepts and structures of that second language.

A further concept in which someone is counted as a bilingual is that of Thiery (1978). He argues that “a true bilingual is someone who is taken to be one of themselves by the members of two different linguistic communities, at roughly the same social and cultural level” (Thiery 1978: 146). For Thiery (1978), bilinguals must learn both languages before the age of 14 and have to use them at home as well as in the language communities they are in. In addition, they must be taught in both languages and can switch between them without any effort and even without an accent (Grosjean 2010; Thiery 1978).

To avoid misunderstanding assumptions regarding a *true* bilingual, Cook and Bassetti (2011) use a more neutral term to describe a bilingual: *the L2 user*. According to Myers-Scotton (2002: 1), “*bilingual* refers to persons who speak *two or more* languages.” In contrast, De Angelis (2007) argues that the prefix *bi* in bilingual only relates to the meaning of speaking two languages (*bi* means *two*). Therefore, the definition of Myers-Scotton does not consider the original meaning of the word bilingual and cannot be regarded as useful. Grosjean (2010: 20) commented that these definitions are made from a monolingual point of view:

[...] the majority of bilinguals simply do not resemble these rare individuals. While a few may, such as interpreters and translators [...], most bilinguals are simply not like that. They may not have acquired their languages in childhood, spoken their languages in the home, or lived in two-language communities. Many have not been schooled in all their languages, many have an accent in one of their languages, and more often than not one language does interfere with the other. [...] According to the fluency definition, they are not bilingual, and yet they are not monolingual either, because they live their lives with more than one language.

In addition, Grosjean (2010) argues that, often, definitions of the term bilingualism refer to proficiency levels and to age. He criticizes the monolingual point of view and claims that most bilinguals do not fit into one definition. We return to this point later when we introduce the heritage speaker, a sub-type of bilingualism. Today, many studies support the idea that “bilingualism changes languages, cognition, and the brain in ways that often benefit bilinguals” (Kroll & Navarro-Torres 2018: 245). Bilingualism even has positive aspects for infants, as Bialystok (2013: 645) explains:

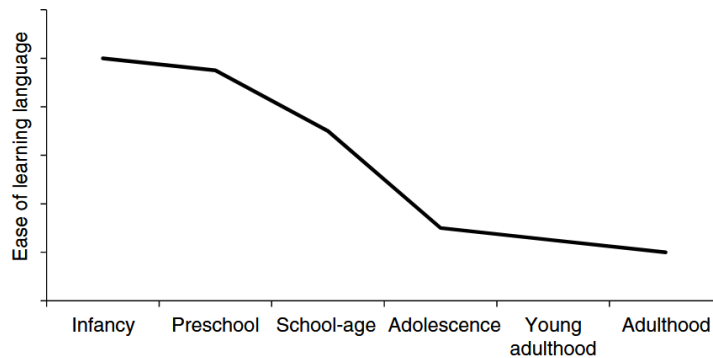
bilingualism never confers a *disadvantage* on children who are otherwise equally matched to monolinguals, and the benefits and potential benefits weigh in to make bilingualism a rare positive experience for children.

### *The factor age - Early and late bilinguals*

Not surprisingly, the factor age is important for defining someone as bilingual. According to Thiery (1978), a bilingual has to learn the L2 before the age of 14. For others, it is the age of four or six (de Houwer 2005, 2006; Meisel 2005). Kupisch (2018) determines early bilinguals as children younger than six. In general, Kroll and Navarro-Torres (2018: 245) emphasize that age is crucial concerning bilingualism:

one reason that bilingualism may have been flagged as problematic in the past by psychologists and linguists is that the classic evidence on late second language (L2) learning in adults shows that the degree of success is related to age of acquisition [...].

It is interesting to note that electro-physicians have carried out studies in which they proved changes in the brains of adult bilinguals before they learn something new (Kroll & Navarro-Torres 2018). Hence, a differentiation between early and late bilinguals is crucial. The former can be divided into simultaneous early bilingualism and sequential bilingualism (Grosjean 2010). A simultaneous bilingual is someone whose parents each “use a different language with their child [...] or the parents use one language and other caretakers [...] use another language,” referring to the initial stages of language acquisition (Grosjean 2010: 178–179). Since the former type refers to acquiring “two languages [...] at the same time, from the beginning of language onset” (Grosjean 2010: 178), the latter means “to have some foundation” (Butler 2013: 113) in the L1, and then acquire the L2, which occurs with heritage speakers. As we have seen, there is no consensus regarding the threshold of cut-off points between early and late bilinguals. The latter term describes “those who became bilinguals during their adulthood” (Butler 2013: 114). Grosjean shows the importance to differentiate between bilingual children and bilingual adults. Thus, he sees a “sensitive period for language acquisition” early in the childhood (Grosjean & Byers-Heinlein 2018: 18). Figure 5 illustrates this period. At the same time, Grosjean & Byers-Heinlein (2018: 18) point out that “individuals can and do become bilingual at any age, from infancy to adulthood”.



**Figure 5: The sensitive period to acquire a language (Grosjean & Byers-Heinlein 2018: 19)**

### *The learning context*

In general, the learning context needs to be considered. Someone who learns an L2 in school and has a high proficiency, such as native-like control of the language, is not called bilingual. When a child learns two languages from birth, Meisel (1989) uses the term *Bilingual First Language Acquisition*.

Often, the variation of input is not considered; for example, the dialect of one parent, which is another crucial factor for the definition of bilinguals (De Houwer 2006). Bilinguals learn two language systems, and one aspect of this is that they learn the boundaries between both. De Houwer (2006) stresses that bilinguals have the ability from the initial stages of their simultaneously learning process to specify the different sounds of speech, for example, of their parents, to categorize them to the two language systems. To distinguish the utterances made in the different language, it is important to underline that the child must live in a bilingual community that does not codeswitch between both languages back and forth, because, according to De Houwer (2006: 781), that is not an actual bilingual.

In this kind of setting, there is no clear differentiation between two ways of linguistic communication that children need to learn to understand and later produce. Children who only hear such code-switched or mixed utterances are not exposed to two separate languages. Thus, they are not actually growing up bilingual.

In this case, appropriate input for a bilingual child would be a family member, for example, the mother, just speaking language x, and another family member, such as the father or a sibling, just speaking language y. Which language is more presentative depends on the situation and can change at any time (De Houwer 2006). The way the languages are offered to a child varies. Usually, both languages are used in families or language communities. Furthermore, “[i]f this is not the case, we would usually be



dealing with the acquisition of a second language some time after the child has been in a monolingual situation” (De Houwer 2006: 781).

### *The type of input*

Subsequently, three types of input are offered regarding Bilingual First Language Acquisition. The first is the concept of *one person, one language*, which means that everyone in the language community speaks just one language with the child, for example, the mother speaks only German and the father only English. The second type means every person speaking two languages to the child. The last type is a combination of the other two. According to De Houwer (2006: 781), the most frequent type is the third one: “Typically, a child growing up with two languages from birth will hear some people speak just one language and will hear others speak two languages.”

However, aspects such as frequency of speaking, recency, the context a language is used in, how many people speak the language with the child etc. affect the balance of languages A and Alpha. It is possible that even if just one person speaks language A with the child, this language is more present than language Alpha, which is spoken by the infant’s environment. Maybe this situation changes during a person’s lifespan depending on the usage of the languages involved (Dewaele 2015; Grosjean 2010; De Houwer 2006).

In addition, factors regarding the environment of an infant play an important role as well: “we know that social background, parents’ education levels, and home literacy environment are massively important in shaping children’s language and literacy development” (Bialystok 2013: 625). In this study, these background variables are considered, too.

### *Balanced and unbalanced bilinguals*

Having discussed the inconsistencies of definitions that can also be applied in the terminologies of trilingual speakers, now the type of bilingualism is discussed. Based on the above examples, someone can be identified as an unbalanced or dominant bilingual (Butler & Hakuta 2006), when he acquired two languages early in childhood and the proficiency levels are unequal. Conversely, if a person speaks two languages with the same or nearly the same proficiency level, they are called a balanced bilingual (Duarte 2011). However, it is almost impossible to be exactly as proficient in one language as in

the other. Nevertheless, as Butler (2013) discusses, this category is not considered a dynamic variable. He refers to the proficiency level when outlining that, normally, it is assumed that a balanced bilingual is highly proficient in their two languages, but the idea is almost neglected that this can change over time dependent on the situation of the learner (Butler 2013; Duarte 2011). Furthermore, Butler (2013: 115) asks

[h]ow much ‘high’ proficiency does one need to obtain in order to be qualified as a balanced bilingual? [...] measuring bilingual proficiency is a very complex business and ‘high proficiency’ itself is frequently determined arbitrarily.

If, for example, a person is a bilingual with the first two languages of English and Chinese and normally lives in Australia, where they have a lot of contact with Chinese people in their work life, we could assume that they are a balanced bilingual. When this person moves to another country, such as Germany, to work there for a few years, then we can assume that their ability to speak two languages from birth with a high proficiency change over this certain time, because the new environmental language is German, and many Germans speak at least a little English. Thus, there is a greater chance to use English than Chinese. As the person will use English more often than Chinese, the balance between the languages may change as Chinese is not as present in daily life as it was previously. This example underlines the “complex and dynamic nature of bilingualism” (Butler 2013: 112). In addition, Butler (2013: 112) outlines the “multidimensionality of bilingualism,” for example, with proficiency level. In line with that, he sums up the different dimensions of bilingualism:

[...] the relationship between language proficiencies in two languages (as seen in *balanced* and *dominant* bilinguals); the functional ability (*receptive* and *productive* bilinguals); the age of acquisition (*simultaneous*, *sequential* and *late* bilinguals); the organization of linguistic codes and meaning units (*compound*, *coordinate* and *subordinate* bilinguals); language status and learning environments (*elite/elective* and *folk/circumstantial* bilinguals); the effect of L2 learning on the retention of L1 (*additive* and *subtractive* bilinguals); cultural identity (L1 *monocultural*, L2 *accultural*, and *deculturated* bilinguals), and so forth (Butler 2013: 112).<sup>4</sup>

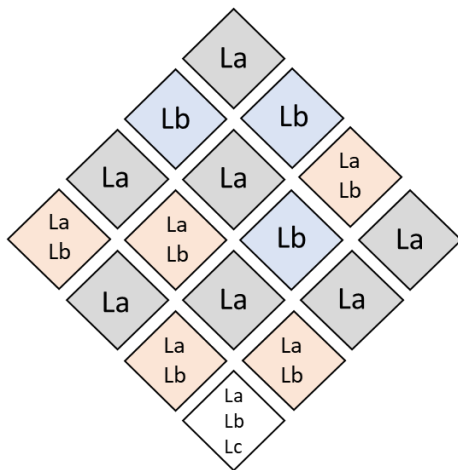
Also, the type of relative status of both languages is crucial. According to Hamers & Blanc (2000:29), additive bilingualism means that “the two languages are socially valued in [the] environment”, whereas subtractive bilingualism refers to an environment in which the first language is devalued (Hamers & Blanc 2000: 29), which is often the case for heritage speakers with a dominant language and a less frequently used language, the heritage language. Generally, these terms are not necessarily related to social values.

---

<sup>4</sup> Italics are original from the quotation

*Grosjean's complementarity principle*

In 2010, Grosjean proposed the complementarity principle. The main focus of the illustration, below, is on the different aspects' bilinguals use their languages for. Grosjean & Byers-Heinlein (2018: 7) use a quadrilateral frame that represent different "domain[s] of life such as work/studies, home, family, shopping, leisure, administrative matters, holidays, clothes, sports, transportation, health, politics, etc." A trilingual speaker is represented with languages a, b, and c. In some areas, the trilingual speaker uses language a, in others language b and then again one area that shares all three languages. The trilingual speaker in some specific areas only obtains one language. According to Grosjean & Byers-Heinlein (2018: 7), all bilinguals have their own pattern, and we can characterize them based on this illustration.



**Figure 6: A trilingual speaker and their language areas (Grosjean & Byers-Heinlein 2018)**

The main aspect of the complementarity principle is that it influences the proficiency of a bilingual speaker:

[i]f a language is spoken in a reduced number of domains and with a limited number of people, then it will not be developed as much as a language used in more domains and with more people. In the latter case, there will be an increase in specific vocabularies, stylistic varieties, discursive and pragmatic rules, etc. (Grosjean & Byers-Heinlein 2018: 8).

Furthermore, Grosjean & Byers-Heinlein (2018: 8) argue that every bilingual possesses different languages that are not equally developed, including the language competences.

According to Dewaele (2015), the monolingual bias in various definitions has led bi- or multilinguals to criticize themselves or even hide their ability to speak more than one language. Bi- or multilinguals have different ways of mastering their languages. Some are like two monolinguals in one person, others have a high proficiency in speaking

their second first language but have no writing or reading skills in the first one etc. (Dewaele 2015; Grosjean 2010).

### *The heritage speaker*

A new subfield of bilingualism concerns bilingual heritage speakers. Kupisch (2018: 653) explains that research in heritage languages “has typically targeted bilinguals at a mature (adult) state,” but earlier heritage speakers are the focus of interest now. A heritage speaker is someone who acquires two languages, one of which is not an official language in the environment the speaker lives in (Kupisch 2018: 653). Kupisch includes two scenarios regarding the age of onset. The first refers to simultaneous bilingual children with 2L1 before they are four years old; the second includes one language acquired from birth, the L2 later in childhood between the ages of four and 10 (Kupisch 2018: 459). According to Kupisch (2019), the principle of *one parent one language* is not generally important; instead, both parents can use the same language to the child, namely the heritage language. Montrul (2014: 168) defines heritage speakers as:

individuals who have been exposed to an immigrant or a minority language since childhood and are also very proficient in the majority language spoken in the wider speech community, are bilinguals characterized by the complex interaction of all these factors.

A majority language is characterized as an official language used in education and media. A minority language refers to ethnic minorities. The social, political, and cultural status of the language is low, but still significant for a population (Montrul 2014: 169).

It is likely that the order of acquisition differs in a family that moved to another country and in which the children at home use the minority language as a family language and then receive additional input of the majority language in kindergarten or school. A second possibility is that one parent only speaks the heritage language at home to the child, and the other parent the dominant language. It may also be that a family emigrates, for example, to Germany from Turkey, and the children first acquired Turkish in Turkey, and when they moved to Germany, they learn German as an L2 (Lorenz & Siemund 2020: 6). Particularly noteworthy is that heritage speakers may experience a weakened proficiency in their L1 and a higher proficiency in the L2. Furthermore, their “first and native language eventually becomes their secondary language” (Montrul 2014: 169). It is common that heritage speakers are unbalanced, since they usually use one language more frequently than the other and, thus, have different levels of proficiency in the languages. Note that they may also be balanced bilingual heritage speakers. If the scenario mentioned

by Montrul (2014) occurs, it is difficult to make a clear distinction between the terms L1 and L2. However, Lorenz and Siemund (2020) argue that unbalanced bilingual heritage speakers can also be classified as subtractive when their proficiency in the heritage language grows weaker and that of the majority language stronger: “the L2 takes over the role of the L1, it replaces it and becomes the stronger language” (Lorenz & Siemund 2020: 7). This can be confirmed by a study of Brehmer & Mehlhorn (2017). They found that the dominant language German replaced the heritage language Russian or Polish as a family language. This mostly happened between siblings, but also the parents reported a decreasing proficiency in their minority language.

In addition, heritage speakers are a heterogeneous group with different patterns regarding their dominance of languages. There are heritage speakers who have “native-like ability in the heritage language, others can merely understand it and don’t speak it, and a vast majority fall in between these two extremes” (Montrul 2014: 171). The majority language is the stronger due to frequency of use or is at the same proficiency level as the heritage language, and that is when we can talk about balanced heritage speakers. The term heritage speaker “implies that the individual must have some receptive or productive linguistic proficiency, however limited” (Montrul 2014: 171). The range between the proficiency level of heritage speakers varies. Perhaps a heritage speaker only has passive knowledge of the heritage language (Lorenz & Siemund 2020: 7). According to Polinsky (2015: 17), the proficiency level in the heritage language cannot be considered to be native like. As before, the knowledge about grammar is limited and their understanding mostly is intuitive (Polinsky 2015: 18). This may be traced back to the missing of formal schooling in the heritage language that may happen to heritage speakers. This means that their development may be behind that of native speakers (Ruhl et al. 2020: 1).

The interest in this sub-type of bilingualism is growing because immigration has increased; thus, new languages are in contact and arise. In Germany, the monolingual bias is still predominant. However, in schools, monolingual Germans learn next to heritage speakers with additional or foreign languages (Lorenz & Siemund 2020; Kupisch 2019; Montrul 2014). When heritage speakers are studied, it is crucial to differentiate between balanced bilinguals and heritage speakers (and monolinguals), because the outcomes can vary greatly. However, it is assumed that the knowledge of previously learned languages affects additional language learning.

In this chapter, we discussed heritage speakers as a sub-type of bilingual speakers. However, the monolingual norm is no longer acceptable; children bilingual heritage speakers are more common today and learn next to monolingual children. In our study, we focus on children heritage speakers of Turkish and Russian and German as their majority language who learn the foreign language of English in school.

In the following, metalinguistic awareness is presented, a topic that seems crucial for bilingual/multilingual speakers.

## **2.4 Metalinguistic awareness and metalinguistic competences**

In this subchapter, the term metalinguistic awareness is defined and compared to metalinguistic competences. Then, studies on this topic are presented.

### *Definitions*

Since multilingualism is no longer an exception but the norm, the interest in studies on multilingual speakers has increased. One subfield examines whether bi- or multilinguals have cognitive advantages due to their *metalinguistic awareness* (Jessner 2006).

Metalinguistic awareness allows the individual to step back from the comprehension or production of an utterance in order to consider the linguistic form and structure underlying the meaning of the utterance. Thus, a metalinguistic task is one which requires the individual to think about the linguistic nature of the message: to attend to and reflect on the structural features of language. To be metalinguistically aware, then, is to know how to approach and solve certain types of problems which themselves demand certain cognitive and linguistic skills (Malakoff 1992: 518).

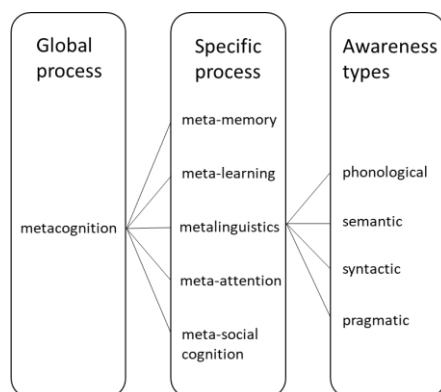
Malakoff (1992) defines metalinguistic awareness as structural knowledge about the background languages that is not limited to one language. Jessner (2006: 42) defines someone as being metalinguistically aware when they can “focus attention on language as an object in itself or to think abstractly about language and, consequently, to play with or manipulate language.” Furthermore, Jessner (2006: 42) considers this ability to be used more frequently by multilinguals than by monolinguals, which can be attributed to the cognitive ability of multilinguals. However, De Angelis (2007: 121) describes metalinguistic awareness as the

learners’ ability to think of language and of perceiving language, including the ability to separate meanings and forms, discriminate language components, identify ambiguity and understand the use of grammatical forms and structures.

The aforementioned definitions overlap as they define metalinguistic awareness as prior knowledge of languages that can be abstractly used when talking about structures and meanings of these prior languages. According to Jessner (2006: 42), it is possible to manipulate language when someone is metalinguistic aware. To pin down the meaning of metalinguistic awareness, El Euch and Huot (2015: 2) explain “[i]t is simply the ability to think about language and talk about it. [...] It is a high-level cognitive ability which is part of the more general concept of metacognition.”

### *Metalinguistic awareness versus metacognition*

In addition to the previous definitions, El Euch and Huot (2015: 2) compare metalinguistic awareness with metacognition, which refers to “the notion of awareness of one’s cognitive processes that enables the individual to analyse and control the way s/he thinks and learns.” In Figure 7, the relationship between metacognition and metalinguistic awareness is illustrated.



**Figure 7: The relationship between metacognition and metalinguistic awareness, taken from El Euch & Huot (2015: 3)**

In general, metacognition is involved in the daily life of individuals, such as self-regulation as a strategy to improve relationships (El Euch & Huot 2015: 3). To illustrate, teachers plan their lessons and, hence, their tasks for students to choose the best way to “improve their students learning process” (El Euch & Huot 2015: 3).

On the other hand, Rauch et al. (2011: 405) argue that metalinguistic awareness is closely related to the approach of language aptitude. Furthermore, they point out that there are two types of tests for measuring language aptitude that explore similar objectives, such as awareness tests. The first includes the *Modern Language Aptitude Test* (MLAT) and *Llama test*, whereas the second concerns the *Language Awareness Test*

(LAT) or other tasks “that require students to judge the syntactic correctness of a sentence” (Rauch et al. 2011: 405). According to Rauch et al. (2011: 405), this overlap is expected, since “certainly metalinguistic awareness of, for example, syntactic structure is one of the most important prerequisites for language learning.” Nevertheless, they also found differences between both approaches, including further areas that are quite close to language aptitude, such as intelligence that relates to “the development of vocabulary” (Rauch et al. 2011: 405).

There is a general belief that metalinguistic awareness enhances additional language learning (De Angelis 2007: 122). However, recent studies have provided different results, indicating there is no clear tendency regarding whether prior language knowledge contributes to the ability to learn additional languages. Since metalinguistic awareness seems closely related to CLI, we now discuss the different findings.

Jessner (2008: 271) argues that three languages in L3 learners may influence each other, which is described as more complex than the system of L2 learners, which is limited to two ways: the L1 influences the L2 or vice versa. However, this influence in L3 learners differentiates monolinguals from bi- and multilinguals, and thus, may cause further skills and competences to be developed when learning new languages (Jessner 2008: 275). According to Jessner (2008), these positive effects occur on a cognitive level in metalinguistic awareness, which causes the differentiation between L2 and L3 learners.

In line with this idea, Cenoz (2013) argues that bilinguals’ metalinguistic awareness increases due to previous learning experiences and strategies, as well as the knowledge of two language systems, which is closely related to learning techniques. The more languages you learn, the more strategies and experiences you have (Cenoz 2013: 76). In addition, Jessner (2008: 277) states that the higher the metalinguistic awareness of a student, the more successful they will be in additional language learning.

#### *Studies on metalinguistic awareness and bilinguals*

However, in a study about language dominance and metalinguistic awareness, Robinson Anthony et al. (2020) examined 46 Spanish English bilinguals and questioned whether language dominance contributes to the transfer of skills such as metalinguistic awareness. Via an English receptive vocabulary task and a metalinguistic task, the effect of an L1 spoken at home on a majority language learned in school was considered. The participants were pre-school age. The results indicate that Spanish as the L1 enhances CLI effects on a cognitive level to English. Thus, CLI effects in linguistic and cognitive skills occur



“from a dominant to a nondominant language [...] during early bilingual language development” (Robinson Anthony et al. 2020: 15). In addition, the findings support the notion that metalinguistic awareness is closely related to the level of dominance, as well as to that of proficiency. In the study, bilinguals were heritage speakers of Spanish who learned the majority language and language of instruction, namely English, when entering school. Thus, the children had low competences in the L2 English. However, they “benefited from higher levels of exposure to and use of the home language, whereas these effects appear to be muted for bilingual children with higher second language skills” (Robinson Anthony et al. 2020: 15).

Another study worth mentioning is that of Fernandez-Dalona and Dalona (2019). They explored metalinguistic awareness in multilingual learners of English and Filipino as foreign languages learned in school whose first language was Cebuano. They used a modified metalinguistic awareness test from Dita’s (2009) to test the awareness of 30 students between the ages of six and eight to identify errors in syntactic structures, phonological sounds, and segments, as well as describing words and their functions in all three languages (Fernandez-Dalona & Dalona 2019: 102). The findings reveal that linguistic awareness differs in every individual in the study; thus, “they do not have similar exposure to the phonological, morphological, and syntactic structures in English, Filipino, and Cebuano” (Fernandez-Dalona & Dalona 2019: 108). Therefore, the study proved that metalinguistic awareness in multilinguals in first grade differs in every language of their system. Finally, metalinguistic awareness in their L1 Cebuano improved their linguistic knowledge in their additional languages of English and Filipino and “help[ed] them in fulfilling their linguistic tasks” (Fernandez-Dalona & Dalona 2019: 109).

In line with Robinson Anthony et al. (2020), Altman et al. (2018) examined the relationship between language dominance and metalinguistic awareness in bilinguals, and whether vocabulary size corresponds with metalinguistic awareness. To test metalinguistic awareness, two components were the focus, namely morphological and lexical awareness regarding “receptive and expressive vocabulary size” (Altman et al. 2018: 1). The study includes bilingual pre-school children aged five to six who were either Russian-Hebrew heritage speakers (15), using Hebrew as their majority language, or Russian-Hebrew bilinguals who are dominant in their heritage language Russian (21), as well as 21 monolinguals. Proficiency was tested in both languages, as well as vocabulary size, but morphological and lexical awareness were only tested in Hebrew (Altman et al.

2018: 1). The findings prove that language dominance positively corresponds with vocabulary size. Considering vocabulary size in Hebrew, heritage speakers dominant in Hebrew and monolinguals performed better than heritage speakers dominant in Russian. Surprisingly, there was no difference considering metalinguistic awareness between the language groups, only in monolinguals who outperformed heritage speakers dominant in Russian in the morphological task. Additionally, morphological awareness was found to benefit from the expressive vocabulary size in Russian dominant heritage speakers. However, receptive, and expressive vocabulary size correlated with language dominance, lexical awareness, and their interaction. Finally, morphological metalinguistic awareness did not correspond with vocabulary size. To sum up, the study found no evidence for

differences between the three groups of 6-year-olds in terms of metalinguistic awareness, except for one instance where monolinguals did significantly better than [Russian] dominant bilinguals on a morphological awareness task” (Altman et al. 2018: 12).

However, the authors state that due to the lack of different performances in the language groups, the selected task of fast mapping may have caused such results. On the other hand, this test “helps increase the size of the lexicon” (Altman et al. 2018: 13). Heritage speakers dominant in Russian were in the early stages of learning Hebrew, the majority language, “in which vocabulary size in [Hebrew] is sensitive to lexical awareness, while vocabulary size in [Russian] hinders the development of morphological awareness in [Hebrew]” (Altman et al. 2018: 13). Finally, the findings prove that lexical awareness is crucial in the early stages of additional language learning of vocabulary.

In contrast, Spellerberg (2016) found no evidence that bilingual children benefit from their two language systems regarding metalinguistic awareness. She examined 219 high school students in Denmark between the ages of 14 and 16, including 106 monolingual Danish students and 113 bi-/multilingual students. The latter group was further divided into 26 students who used Danish at home and 87 who did not. English was studied by all the participants as a foreign language in school. Most participants only used English in school contexts. The aim of the study was to explore “whether there is a correlation between [metalinguistic awareness] and academic achievement” (Spellerberg 2016: 19). In addition, further aspects are considered to play a role in metalinguistic awareness, such as socioeconomic status (SES). To test the students, a metalinguistic awareness test and a questionnaire were used. However, the results differ from those of Fernandez-Dalona and Dalona (2019), who found evidence for the positive effects of metalinguistic awareness on results in additional languages. Spellerberg’s (2016) study does not support such findings since the results found no advantages for bi-/multilinguals

regarding metalinguistic awareness. Furthermore, the more languages someone speaks does not necessarily correlate with a better abstract knowledge about those languages. Instead, Spellerberg (2016: 34) reveals that, “[b]i- and multilingual participants in this study did not do better on the test of MLA the more languages they know.” However, the findings establish that there is a positive correlation between metalinguistic awareness and the results of school leaving exams (Spellerberg 2016: 31). Therefore, if students have high metalinguistic awareness, then they achieve better academic results. In addition, when the SES was low, the results in metalinguistic awareness were also low, so these two factors seem to correlate. As such, bi- and multilingual students who used a family language other than Danish did not score highly in either metalinguistic awareness or in SES (Spellerberg 2016: 36). Spellerberg (2016) admits that the results might be different when more multilinguals participate, as well as when proficiency is measured as a factor, and finally, that the metalinguistic awareness test was in Danish, which was not the L1 of every participant. These factors may have affected the results. However, in the study, bilinguals were heritage speakers. Since Danish was the dominant language of all the participants, it can be assumed that the heritage speakers were unbalanced considering their heritage languages were less frequently used than the dominant or majority language of Danish. Thus, the students may have scored lower for metalinguistic awareness because they had lower skills in their heritage language.

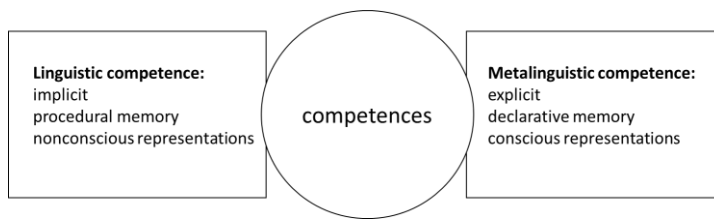
Cohen (2013) focuses on the sub-types of bilingualism, such as balanced or unbalanced bilinguals, and how this influences metalinguistic awareness. The study included participants who were primary bilinguals of French and English and who attended an international school in France. She divided them into two groups of balanced and unbalanced speakers. Various tasks on metalinguistic awareness were conducted in both languages. The results show, for example, when only the highest scores in one of the tests are considered, the balanced bilinguals performed better than the unbalanced group. The author also states that the results are inconsistent; some of the unbalanced bilinguals performed better in their dominant language, and some in their weaker language. In addition, Cohen argues that unbalanced bilinguals should focus more on the weaker language to benefit metalinguistic awareness skills. However, this approach would mean that balanced bilinguals would have higher metalinguistic awareness than the unbalanced group. Nevertheless, the findings support the notion that there are differences between balanced and unbalanced bilinguals regarding metalinguistic awareness and further aspects (Cohen 2013).

Another study on the metalinguistic awareness and literacy needed in L1 and L2 for positive effects on L3 was conducted by Rauch et al. (2011). In the study, 299 German and bilingual Turkish-German students from a secondary school participated. To measure reading proficiency in Turkish, German, and English, different tests were used. Metalinguistic awareness was tested by using questions from the LAT cognitive section. The students were divided into fully and partially biliterate groups. The researchers also measured general cognitive abilities via the Cognitive Abilities Test and considering the SES of either the mother or the father of a student. Regarding reading skills, proficiency in both L1 and L2 are necessary for metalinguistic awareness and reading skills in the L3 to be benefited by biliteracy (Rauch et al. 2011: 414). The researchers argue that this effect can be traced to a higher awareness of metalinguistic that is attributed to full biliteracy. However, these findings support the acquisition of literacy in the L3. Nevertheless, if students do not have access to literacy in the L1 or the L2, they will not experience metalinguistic awareness to benefit additional language learning (Rauch et al. 2011: 414). The study reveals that biliteracy and metalinguistic awareness correlated in additional language learning, and that students can have advantages when they can use their prior knowledge of languages.

#### *Neurolinguistic studies on metalinguistic awareness*

The final part of this subchapter focuses on the metalinguistic competences and findings in neurolinguistic studies. Learners who acquired an L2 in a formal context such as language classes may have an awareness of the linguistic knowledge of the first two languages. This may help them using these experiences for the new language context (Cenoz et al. 2001). This strategy has also been examined in neurolinguistic studies, for example, in Paradis (2004, 2009). Paradis (2009) found that the capacity of verbal communication has two competences: the linguistic competences of a learner, such as the capacity to use the knowledge of phonology, morphology, syntax, lexis, and the metalinguistic awareness of language knowledge and vocabulary (Falk & Bardel 2010). Figure 8 illustrates linguistic and metalinguistic competence. Falk and Bardel (2010: 192) outline the differences between these competences as:

[t]hey involve different types of cerebral representations: Implicit competence involves procedural, nonconscious representations, while explicit knowledge involves declarative, conscious representation. In L1, implicit linguistic structure (phonology, morphology, syntax) is sustained by procedural memory, and words (as form-meaning pairs) are sustained by declarative memory.



**Figure 8: Differences between the linguistic and the metalinguistic competences, according to neurolinguistic studies; (see Paradis 2009; Falk & Bardel 2010)**

During language acquisition, L1 grammar is acquired implicitly and unconsciously, and it is saved in procedural memory, whereas L2 grammar is learned consciously, so the knowledge is saved in the declarative memory, which is, at the same time, the area for both L1 and L2 vocabulary (Falk & Bardel 2010). Neurolinguistic researchers have been having a contentious debate regarding whether the acquisitions of the L1, L2 and L3 are placed in the same cerebral region in a learner's brain and what factors might influence this. Franceschini et al. (2003) give insights into the controversial results that have been produced by Neuroimaging (NI) studies. With NI, the central nervous system can be imaged. The method can illustrate the structure and organization of the brain. Tests have revealed which region of the brain is stimulated when the L2 or L3 are used, and whether they both stimulate the same cerebral area or share the same language zone in the brain (Falk & Bardel 2010). The Broca and Wernicke areas are cerebral areas that store grammatical information and phonological and lexical information, respectively. If an area is damaged, language can be disordered. Falk and Bardel (2010: 2017) explain that "bilinguals' languages may be impaired to different degrees and that they also may recover their two languages independently and/or with different level of success."

None of these studies offer a clear statement. Klein et al. (1995, 1999), have declared that the learning and processing of the L1 and the L2 share a common area in the brain that does not depend on the proficiency level of the background languages or on the type of bilingual speaker regarding early and late bilinguals. Other studies have concluded that it is the opposite, meaning the L1 and L2 are stored in different places (Fabbro 2001; Fabbro & Paradis 1995). An explanation for the conflicting results of NI tests might be the different methods and tasks used when testing participants (Dehaene et al. 2006).

### *Conclusion*

In summary, it has not yet been clarified which areas are activated during the acquisition of the L1, L2 or LX, nor where these languages are stored. In this subchapter, we

discussed how language acquisition is a complex process and a continuum. Furthermore, metalinguistic awareness not only occurs in bi- or multilinguals, but it is also a property for all language learners, including monolinguals. Previous experience in language learning and knowledge of the languages may benefit metalinguistic awareness. However, unbalanced heritage speakers may be less aware of metalinguistics, Cohen (2013), for example, found that unbalanced heritage speakers have lower linguistic skills in their heritage language compared with balanced bilinguals, which may cause lower metalinguistic awareness. Spellerberg (2016), on the other hand, found that a high socio-economic status and metalinguistic awareness correlate. Robinson Anthony et al. (2020) focused on language dominance and metalinguistic awareness. They proved that metalinguistic awareness corresponded with language dominance and language proficiency.

In Subchapter 2.5, it is discussed whether there are differences between the term's *language learning* and *language acquisition*.

## **2.5 Language learning or language acquisition?**

There is no consensus on whether the terms *language acquisition* and *language learning* should be used separately or synonymously. Therefore, the differentiation of Hussain (2017) is presented. He explains that language acquisition is an intuitive process that takes place without any exertion, with the individual unaware “of the grammatical conventions or the syntactic structure of the language involved” (Hussain 2017: 1). In addition, the acquirer is in a natural communicative environment. This term refers to an intentional instructed process in which language is practiced and systematically taught by doing exercises. During language learning, the learner is aware of the learning process and methods used in this context, whereas language acquisition is unconscious (Hussain 2017: 1). This division is in line with Krashen (1981). Both processes are found in children and adults. Children acquire their L1 or L2 in natural settings, as can adults, as long as the process is not instructed. The same applies for language learning, but with systematic and instructed methods, such as in classrooms.

On the other hand, there are researchers who do not follow this distinction, such as Hammarberg (2017). According to Lorenz (2019), it makes sense to follow those who do not support such division, since learners in studies usually fit to one group. Like Lorenz (2019), this study has bilingual participants who acquired their L1 and second first languages in a natural setting and learnt the majority language and their L3 English in a

school context. Their monolingual peers acquired their L1 at home and were learning an additional language (English) in school. However, we are aware that there are differences between the processes of language acquisition and language learning, but they can overlap; for example, the monolingual peers acquired German at home, but it is also the language of instruction in the school where we would talk about language learning. Additionally, German is a subject in school, so the monolinguals and the bilinguals in this study could be found in both situations when taking part in language classes. Following Hammarberg (2017), in our study we do not concentrate on such divisions and, thus, use both terms in a broader sense without making any kind of differentiation.

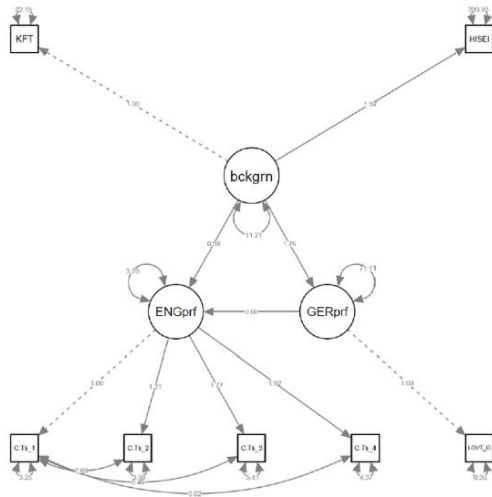
Another crucial differentiation in language acquisition is that of early versus late bilingualism. Therefore, Subchapter 2.6 discusses this differentiation and presents studies with different results on the early and late stages of bilinguals.

## **2.6 Bilinguals learning English**

In the previous chapters, we discussed how studies mostly focus on English as an additional or foreign language. English as a lingua franca possesses a special status. Since it is also in Germany the first foreign language learned in school, in our study we concentrate on English as the L3 learned by bilingual heritage speakers. Therefore, in this chapter, we review studies on bilinguals learning English as additional language.

Lorenz et al. (2021) used a similar sample of the study MEZ to examine whether two background languages enhance additional language learning, specifically English. The sample included 852 monolingual Germans, 237 bilingual Russian-German and 320 bilingual Turkish-German, focusing on proficiency in German and English by measuring reading comprehension tests and C-tests. As in Lorenz et al. (2020), additional factors such as cognitive abilities and SES were also analyzed. The authors propose two structural equation models. One such model excluding the heritage language is presented in Figure 9. This model illustrates the mutual interaction between variables affecting the acquisition of English as an additional (third) language that includes extralinguistic variables regarding cognition and socialization (2020: 21). Furthermore, English proficiency correlates with German reading comprehension (2020: 20). As before, German as the language of instruction significantly influenced the proficiency in English, as well as cognitive skills and the socioeconomic index (2020: 20-21). Surprisingly, when the students were divided regarding their language, the results changed to insignificant. The authors, therefore, argue that a “multilingual boost” depends on group specific

variables closely related to cognitive skills (2020: 21). Nevertheless, the results reveal no significant bilingual advantages over monolinguals; the learner groups performed similarly, yet not identically (2020: 2).



**Figure 9: The base model of English proficiency and path estimates (unstandardized), taken from Lorenz, Toprak & Siemund (2021)<sup>5</sup>**

In line with this study, Lorenz et al. (2020) compared monolingual Germans with bilingual heritage speakers of Russian-German and Turkish-German. The students were either in seventh or ninth grade. The sample included 914 monolinguals, 319 heritage speakers of Russian-German and 485 heritage speakers of Turkish-German for the project *Multilingual Development: a longitudinal perspective (MEZ)*, carried out by the University of Hamburg. To discover whether monolinguals or bilingual heritage speakers perform better when learning English in instructional settings, an English C-Test and reading fluency and comprehension were tested in German, Russian and Turkish (Lorenz et al. 2020: 185). The participants were English learners at a beginner or an intermediate level. The researchers also gathered data regarding the motivation for learning English, gender, school type, school year and the highest SES of either the father or the mother of a student. The findings support that there is a positive correlation between proficiency in German and in English. The only group with a weak but positive correlation was the Russian-German bilinguals. In addition, the younger students displayed a stronger correlation than their older counterparts, except Russian-Germans with reading fluency (Lorenz et al. 2020: 197). Lorenz et al. (2020: 201) proved that German as the language

<sup>5</sup> KFT = cognitive ability, HISEI = highest socioeconomic index, bckrgnd = background variables, ENGprf = English proficiency, GERprf = German proficiency, C.Ts\_1/2/3/4 = English C-Tests, LGVT\_G = German reading comprehension (Lorenz, Toprak & Siemund 2021)



of instructions “has the strongest effect on proficiency in English.” The heritage languages only affected English proficiency slightly; the authors argue that the academic skills in the heritage languages may be too weak to affect additional languages (Lorenz et al. 2020: 201). However, predictors for the performance in English are additional factors, such as inter alia cognitive abilities, school type, gender, and motivation, whereas the highest SES had no significant effect on the performance in English (Lorenz et al. 2020: 186).

Another study exploring the acquisition of English as an additional language learnt by multilingual heritage speakers is Lorenz and Siemund (2020). The authors provide an overview of studies exploring CLI effects and the advantages of multilingual heritage speakers. Lorenz and Siemund (2020) clearly argue to differentiate bilingual subtypes, such as balanced and unbalanced bilinguals and heritage speakers. They state that the outcome of studies concerning bilingual advantages are diverse and may correlate with the type of bilingualism (Lorenz & Siemund 2020: 17). In the study, the researchers compare the advantages of balanced and unbalanced heritage speakers, finding no evidence for benefits of the unbalanced type. However, they offer support for “balanced bilinguals outperforming monolinguals in further foreign language performance” (Lorenz & Siemund 2020: 17). Interestingly, language dominance as well as the frequent use of the background languages affected the acquisition of an L3 and the interplay between previously learned languages, which may cause CLI effects (Lorenz & Siemund 2020: 19). In addition, variables such as high proficiency in the heritage language correlated with transfer effects from that language. In sum, language dominance influenced whether bilinguals have advantages over monolingual peers. For unbalanced bilinguals, however, there was no such evidence of benefits over monolinguals (Lorenz & Siemund 2020: 19).

Another study worth mentioning is Hopp (2019), which focused on English as an L2 and L3. In the study, 31 pre-school children in grades 3 and 4 in Germany were tested. The students were monolingual Germans learning English as a foreign language, and 31 sequential bilingual Turkish-Germans also acquiring English in school. To explore whether and to what extent existing models in L3 can be applied to German heritage speakers of Turkish with German as their dominant language, Hopp (2019) used a sentence-repetition task and a picture-story retelling task. The study examined verb-second order and the order of adverbs, since English and German have different realizations. In addition, differences between English and German, as well as between English, German and Turkish were investigated, concentrating on verb-complement order

and the realization of subjects and articles. The results indicate that language dominance plays a crucial role, since the main source of transfer came from German as the majority language. Interestingly, no evidence of CLI from Turkish was found due to the lack of differences between the groups. Furthermore, the bilingual group displayed the same pattern as the German monolinguals. The study supports previous results that underline an “analogous development among child L2 and child L3 learners of English” (Hopp 2019: 579). Regarding the order of acquisition, Hopp (2019: 579) states that although German is the L2, it may “equally be a L1 or may have taken over the role of the L1 as it became the more dominant language.” However, the bilingual group used German more frequently, since it was the dominant language, as well as the language of instruction. Thus, Hopp (2019) points out that German had more impact as the source of CLI effects, but he rejects transfer from L1 or L2, and the CEM.

In an earlier study by Hopp et al. (2018), transfer from L1 in the early stages of L3 acquisition based on vocabulary and grammar was tested. The study is based on a sample of 88 monolingual Germans and 112 heritage speakers with various L1 languages and German as the L2 who were at the end of grade 3 (Hopp et al. 2018: 313). The former were separated into L1 learners and the latter into L2 learners of German. Via a sentence-repetition task, a category fluency task and the British Picture Vocabulary Scale, the students were tested. The results for the first task reveal no differences between the groups. Moreover, the study suggests “a high degree of interdependence across all languages in the developing L3 lexicon and transfer from German in initial stages of L3 grammar acquisition” (Hopp et al. 2018: 325). Considering heritage speakers, lexical domains are more affected by the dominant language of children acquiring English as an L3 than grammatical domains. Furthermore, the L1 manifests as a strong predictor for vocabulary size in L3 (Hopp et al. 2018: 325). In sum, the study could indicate that language dominance plays a crucial role in unbalanced heritage speakers learning English as an L3.

To find evidence of whether heritage speakers of German-Turkish have an accent, Lloyd-Smith et al. (2017) explored the acquisition of L3 English and focused on language dominance as a predictor for transfer into L3 (Lloyd-Smith et al. 2017: 131). Eighteen bilinguals dominant in German were judged by native speakers according to their accent strength and accent source when tested in naturalistic speech samples. Fifteen participants served as a control group with the first languages of English, German and Turkish. Regarding accent strength, heritage speakers and German controls were almost

rated identically in English as their L3. In contrast, L1 Turkish speakers were perceived as higher accented than bilinguals. However, neither accent strength nor accent source for transfer to L3 English correlated with the age of onset in German. Hence, the study “challenge[s] the assumption that [age of onset] alone is crucial in determining a perceived accent later in life” (Lloyd-Smith et al. 2017: 156). In addition, a predictor for accent source in L3 English was a high phonological proficiency in Turkish. Furthermore, transfer effects in heritage speakers were affected by various sources, but high proficiency seems a crucial factor that benefits transfer (Lloyd-Smith et al. 2017: 156). Finally, transfer that is structure based can be outperformed by a high proficiency level, and bilingual experience positively affects the learning of an L3 by heritage speakers (Lloyd-Smith et al. 2017: 159).

The next study presented here is Maluch and Kempert (2017), who aimed to determine whether the sequence and manner of bilingual language acquisition impact the acquisition of learning English as the L3. The sample included 456 bilingual heritage speakers, defined as minority speakers, and 839 monolingual Germans. To differentiate between subgroups of bilinguals, the authors divided bilinguals into a simultaneous group that learned German and a heritage language from birth onwards, and a sequential group that learned a second language after the age of three. Another differentiation concerned the frequency of use, namely non-switchers, seldom switchers, often switchers and continuous switchers (Maluch & Kempert 2017: 6). The language groups were tested in a listening and reading comprehension task in English. Further variables, such as gender, SES and indicators of cultural capital were analyzed, too. The results found that bilinguals who acquired their two languages simultaneously achieved better results in listening and reading tasks in English. Moreover, when they learned one language in a formal setting, the bilinguals benefitted from such training when compared with “bilinguals who acquired their L1 informally at home as well as their monolingual peers” (Maluch & Kempert 2017: 12). Similar findings regarding the frequency of use suggest that bilinguals who frequently use both languages and switch between them in daily conversations “and within the same conversation” outperform monolinguals as well as bilinguals who rarely alternate their languages (Maluch & Kempert 2017: 12). The study establishes the advantage for bilinguals in English who acquired both of their languages simultaneously, who frequently use both languages, who switch between them daily and who received instructions in the minority language (Maluch & Kempert 2017: 12).

The last study mentioned here is that of Siemund et al. (2018). They focused on English demonstratives in bilingual heritage speakers of Russian-German, Turkish-German and Vietnamese-German, as well as a monolingual control group. Both written and spoken texts of the E-LiPS<sup>6</sup> project were analyzed. Participants were either in grade 7 or 9. All groups had to write a narrative based on a picture sequence about a typical German breakfast and to describe orally a second picture sequence. The older cohort were additionally asked to write an instruction on building a boomerang (Siemund et al. 2018: 389). The statistical analysis reveals significantly different performances between the language groups. On the one hand, negative transfer could be proven from Russian due to the use of demonstratives in contexts in which personal pronouns are expected. Russian grammar may have caused this finding because speakers cannot use personal pronouns in the contexts detected in the study, only demonstrative pronouns. However, the researchers argue that this non-facilitative transfer is weak (Siemund et al. 2018: 400). Since the results only indicate selective transfer, they are more in line with Westergaard's LPM than the TPM, since the latter argues for a holistic transfer (Siemund et al. 2018: 400). The authors state that proficiency and frequency of use are crucial factors affecting additional language learning (Siemund et al. 2018: 403). Siemund (2022: 100) states

that language dominance is a strong predictor of cross-linguistic influence, that cross-linguistic influence works on a property-by-property basis, and that one can observe cumulative enhancement and/or cumulative inhibition depending on the specific language constellation and the phenomena investigated.

The aforementioned studies suggest that language dominance, the type of bilingualism, high proficiency in the heritage language, and frequency of use are predictors for the outcome in English as an L3.

## **2.7 Theories in third language acquisition**

In this chapter, an overview of recent linguistic models focusing on the interaction of background languages and possible sources of transfer is presented.

---

<sup>6</sup> E-LiPS is a subproject of "Linguistic Diversity Management in Urban Areas (LiMA) Panel Study (LiPS)". This study was carried out by the University of Hamburg between 2009 and 2013 by Peter Siemund and Ingrid Gogolin.

### 2.7.1 Second language status factor

Williams & Hammarberg (1998) showed that the background languages may play different roles when acquiring a third languages.<sup>7</sup> More precisely, the second language has been identified as “a desire to suppress L1 as being ‘non-foreign’ and to rely rather on an orientation towards a prior L2 as a strategy to approach the L3” (Hammarberg 2001: 36-37).

In line with Williams & Hammarberg (1998), Falk and Bardel (2007) suggested that the *L2 Status Factor Hypothesis* is the main source for transfer effects in TLA, whether facilitative or non-facilitative. The study explored negation placement. Since the language groups performed differently, Bardel and Falk (2007) argue for the L2 being the main variable for transfer. Furthermore, the results reveal that, “the L2 status factor is stronger than the typology factor in L3 acquisition” (Bardel & Falk 2007: 480). They clearly state that the L2 impedes the L1 as a possible source for CLI effects and that “the L2 acts like a filter, making the L1 inaccessible” (Bardel & Falk 2007: 480).

Berkes and Flynn (2012: 143) argue that the L2 status factor hypothesis mainly focuses on the tendency that the last learned language is the source of transfer in additional language learning processes. Furthermore, they argue

that the L2 Status Factor guides syntactic transfer as well; that is, they posit that syntactic development in subsequent acquisition is also affected by the specific syntactic features of the last learned language (Berkes & Flynn 2012: 143-144).

However, several studies have proven that the acquisition of an L1, L2 or L3 takes place in different ways. Williams and Hammarberg (2009) investigated the development of the L2 status factor hypothesis and emphasize its particularity and importance. Concerning the acquisition of the L3, learners tend to suppress their L1 and try to use strategies they used during the acquisition of their L2 (Hammarberg 2001). This effect was first revealed by Meisel as the *foreign language effect* (Meisel 1983) or *Fremdspracheneffekt* (Ecke & Hall 2000). In a scenario in which a learner has more than one L2, variables such as typology or proficiency level determine which of them dominates. It is assumed “that the L2 status factor, which seems to lead to activation of an L2 and L3 vocabulary, might also have an impact in L3 syntax” (Falk & Bardel 2010: 195).

---

<sup>7</sup> In a longitudinal study, the authors investigated an L3 learner of Swedish with the background languages L1 English and L2 German. Both the L1 and the L2 played different roles: English were used for self-correction in an instrumental role and German for other than pragmatic functions in a supplier role (see Williams & Hammarberg 1998, Falk & Lindqvist 2018).

However, there is no explanation why learners choose the L2 as the dominant background language rather than the L1, but there are some hypothetical assumptions. One of the participants in Hammarberg's study (2001), whose L1 was English, reported that she did not want to show that she is a native speaker of English; thus, she preferred to use her knowledge of her L2. De Angelis (2007) argues that this behaviour of the student is caused by psychological strategies: *perception of correctness* and *association of foreignness*.

Falk and Bardel (2010) suggest that adult learners do not classify additional language learning in categories of L1 or L2, but instead in mother tongue and one that is not their mother tongue, which is, for example, learned later in life in a formal or informal situation. This point refers to differences between sociolinguistic and cognitive aspects. Comparing the L1 and the L2, such differences may be "age of onset, proficiency level, learning situation, metalinguistic knowledge, learning strategies only present in L2, awareness of the language learning process in L2" (Falk & Bardel 2010: 196). In addition, they also claim that the L2 and L3 are more similar regarding the variables of "age of onset, outcome, learning situation, degree of metalinguistic knowledge, learning strategies and degree of awareness in the process of language appropriation" (Bardel & Falk 2012: 68).

### **2.7.2 The cumulative enhancement model for language acquisition**

The *Cumulative Enhancement Model* (CEM) was proposed by Flynn et al. (2004). The model argues that all previously acquired languages can influence further language learning in L3/n.<sup>8</sup> Neither the L1 nor the L2 are of overriding importance, and both can be sources of transfer in the L3. Thus, all languages learned are "equally important" (Flynn et al. 2004: 5). In contrast to other models, the CEM states that background languages can enhance language learning in L3/Ln. Hence, the L1 or L2 can either have a positive or no effect (Flynn et al. 2004; Westergaard et al. 2017). This finding means that during the process of language learning, negative or non-facilitative transfer, interference, deceptive cognate etc. are neglected (Westergaard et al. 2017). According to Berkel and Flynn (2012: 144), the main function of the CEM is

to reveal the structural development in the acquisition of a specific L<sub>n</sub> language, i.e., it focuses on how a multilingual learner constructs the grammar of the target language. [...] and it excludes redundancy in linguistic representation.

---

<sup>8</sup> n = number of languages

Therefore, Flynn et al. (2004) propose that similar concepts of grammar in previously learned languages support the acquisition of such concepts, which can either be the same or similar in the newly acquired languages. However, Rothman (2011: 110) states that the CEM includes all previously learned languages that

can either enhance subsequent language acquisition or, according to Flynn et al., crucially remain neutral. In this sense, previous linguistic knowledge is predicted to transfer in multilingual development only when such knowledge has a bootstrapping effect, otherwise, transfer is expected to not obtain.

To find evidence for the CEM, Flynn et al. (2004) investigated English relative clauses and their acquisition by bilingual Kazakh-Russians, divided into a child group (n=30) and an adult group (n=33). Compared with English and Russian, which possess head-initial relative clauses, in Kazakh they are head-final (Flynn et al. 2004). The findings support the CEM referring to a small percentage of incorrect formed relative clauses, which was analyzed as a cumulative or facilitative impact from Russian. In addition, the authors assume no effect from Kazakh, arguing that, “[t]he L1 does not play a privileged role in subsequent language acquisition” (Flynn et al. 2004: 13). Rothman (2011: 110) claims that these findings

demonstrate that the L2 can influence development of [Complementizer Phrase] structures in L3 acquisition, and that experience in any previously acquired language can be taken advantage of in the acquisition of any subsequent language.

Flynn et al. (2004) point to further research focusing on the differences between adult and child learners of an L3, since their results only establish children’s initial stages of L3 acquisition. Siemund (2022: 76) argues that although there may be support for the CEM, “there is too much evidence for grammatical cross-linguistic influence of a non-facilitating type to warrant the assumption of exclusively positive effects of a previous multilingual experience.”

### **2.7.3 The Typological primacy model**

In line with the previously mentioned models, the *Typological Primacy Model* (TPM) proposed by Rothman (2011) explores how the background languages interplay and affect TLA. He defines the TPM as follows:

Initial State transfer for multilingualism occurs selectively, depending on the comparative perceived typology of the language pairings involved, or psychotypological proximity. Syntactic properties of the closest (psycho)typological language, either the L1 or L2, constitute the initial state hypotheses in multilingualism, whether or not such transfer constitutes the most economical option (Rothman 2011: 112).

In addition, he neglects the L1 as having a privileged role; instead, he assumes that the L1 is not the only source for transfer. Furthermore, he questions the CEM and the L2 status factor due to different outcomes. In his study, he tested whether the L2 status factor model is the best explanation, and whether the L2 plays a crucial role in L3 acquisition or whether typological closeness between the background language and the newly acquired one is the determining factor (Rothman 2011: 111). Rothman (2011: 116) examined adjectival placement in bilinguals: the first group included L1 Italian speakers who learned English as the L2 and Spanish as L3 (n=12), whereas the second group consisted of speakers with L1 English, L2 Spanish and L3 Portuguese (n=15). In addition, Brazil Portuguese and Spanish native speakers were tested, as well as controls. Although adjective placement differs among the languages investigated, Rothman (2011: 118) found neither statistical significance between the L2 learners nor between the L3 learners and the control groups. Hence, the most likely source of transfer in the study was facilitative from the Romance language, rather than from English, the L2. These results argue against the L2 status factor, due to the order of acquisition not being the focus as it is in the L2 hypothesis, which argues for the right “order of successful acquisition” (Rothman 2011: 120). However, the L2 English had no effect on the L3; instead, the Romance languages affected the L3, irrespective of whether they act as L1 or L2. Based on this finding, the results support the CEM, but Rothman (2011: 121) argues that “the CEM is not entirely correct insofar as the transfer can be non-facilitative based on either an L2 effect or typological motivations.” Both models share the assumption that transfer is possible from all background languages, and Rothman (2011: 121) regards his TPM as “a modification of the CEM” but argues the TPM “predicts that transfer always obtains from either the L1 or the L2 [...] and this is based on overall typological proximity.” This transfer can be either positive or negative. In his study, learners were at an intermediate level of proficiency. This, however, can affect the results, because the aforementioned proposed models focus on the initial stages of L3 learners. Rothman (2011: 121) admits that these differences could have led to other results that may point towards the L2 status factor. Furthermore, it remains unclear whether “overall typological proximity” transfer means a full transfer of grammar or just a specific area the L3 language lacks at this certain stage (Rothman 2011: 121). Therefore, further research on multilingual settings is needed to obtain more insights into the variable typology.

Another study worth mentioning is by González Alonso et al. (2021), who clarified the question about overall transfer. They state that, “the full grammar of one of



the previous languages is transferred as soon as this (implicit) comparison is completed” (González Alonso et al. 2021: 3). At a later stage of L3 acquisition, this transfer is reconfigured. Nevertheless, transfer from other background languages at later stages of TLA is not considered. However, the researchers tested recent models to determine which is the best for explaining the findings in this investigation. The sample was 40 Catalan-Spanish bilinguals who are ab initio learning English as an L3. The sequential bilinguals were divided into 18 Spanish-Catalan speakers and 22 Catalan-Spanish speakers. To test for DOM<sup>9</sup>, word order, determiner plus nouns and causative structures with a determiner phrase, the participants took part in an acceptability judgement task in Catalan, Spanish and English. The hypothesis was that a similarity between the students’ performance in English and Catalan or Spanish would support full transfer. Regarding the TPM, this means that Catalan would be the expected source of transfer due to its “larger phonological proximity to English” (González Alonso et al. 2021: 21). However, neither Catalan nor Spanish could be proven as a source of transfer since there were no significant similarities between English and Catalan or Spanish. Nevertheless, the TPM predicts full transfer, and this is not contradicted by the data. The authors admit that “our results do not squarely support for any available theory,” but they interpret them as grammar being transferred from Catalan in this initial stage of English learners, because the same bilinguals were tested regarding definiteness effects and negative polarity items in another study that supports Catalan as the main influence (González Alonso et al. 2021: 21). At this point, their data provide no evidence for either model, but they try to explain the students’ performance by pointing to another study exploring other syntactic structures with the same students. This approach seems unsatisfactory since the data cannot be explained by current models on L3. The authors further argue that their sample may be too small, and they should have used more items. However, they state finally that

[t]he TPM is no exception, but we believe that [the data from this study are compatible with its predictions overall or, at the very least, do not qualify as strong enough evidence to preclude full transfer as a viable option in L3 acquisition (González Alonso et al. 2021: 23).

These findings are quite interesting, since they do not point to any model. Therefore, other explanations and perhaps models need to be developed for such results. The authors admit that further research is needed and the area of TLA is still in the beginning stages.

---

<sup>9</sup> DOM means differential object marking with noun phrases

### 2.7.4 The linguistic proximity model

A newer model is the *Linguistic Proximity Model* (LPM) proposed by Westergaard et al. (2017). Her model differs from the previous ones in their assumption that both previously learnt languages can be sources for CLI effects in the L3. In contrast to the CEM and the TPM, the LPM regards the benefits of both models and does not consider the order of the acquisition of the L1 and L2. Instead, it considers the similarities of the L1, L2 and L3, and Westergaard et al. (2017: 670) “claim that similarity of abstract linguistic properties is the main cause of CLI from previously learned languages.” Both the L1 and the L2 are available when learning the L3. The idea of the LPM is that a learner of a new L3 has complete access to the languages learned before and to the knowledge about linguistic repertoire of these languages; hence, both the L1 and the L2 are active. This means that the linguistic competence of previously acquired languages is achievable during the learning process of the L3. The learner of the L3 does not necessarily display a “complete transfer of one of the previously acquired grammars” (Westergaard et al. 2017: 670). There are two options regarding the influence of the background languages: facilitative and non-facilitative. The first occurs when one or both previously acquired languages have similar structures in grammar to the L3. If a learner mistakes his analysis of the language input of the L3 and uses grammar knowledge of L1 and/or L2, this is non-facilitative influence. Westergaard et al. (2017: 670) define the model as “property-by-property learning [that] allows for both facilitative and non-facilitative influence from one or both previously acquired languages.” The basis for transfer is similarity between the languages, rather than typological proximity. In addition, the researchers agree with the scalpel model of Slabakova (2017) and state that it “considers the language acquisition capacity (for the L1 as well as subsequently acquired languages) to be a sharp instrument, capable of making clear and fine distinctions” (Westergaard et al. 2017: 670).

The basis for the LPM is a study examining adverb-verb placement and subject-auxiliary and using a grammatical-judgement task for English sentences. The study focused on bilinguals of Norwegian-Russian (n=22), monolingual Russians (n=31) and monolingual Norwegians (n=46) who are between the ages 11 and 14. Due to different background languages, the language groups performed differently, which the authors interpret as being caused by the language constellations. Both the facilitative and non-facilitative influence of the background languages are evident in the results of the grammatical tasks. Russian and English share some similarities regarding word order, which is analyzed as positive influence from Russian, on the one hand, and, on the other

hand, negative transfer was found from Norwegian with a verb-second status (Westergaard et al. 2017: 676). Further variables that may impact the outcome, such as age of onset or type of bilingualism, were not considered. However, the bilinguals were considered heritage speakers who may be unbalanced due to their migration background (Westergaard et al. 2017: 679). Westergaard et al. (2017: 678) argue that these results provide evidence for the LPM rather than for any other model. Nevertheless, no further variables were considered, which is crucial, since other aspects such as type of bilingualism, age of onset, language proficiency etc. can affect additional language learning. Therefore, it remains unclear how the outcome of the mono- and bilinguals would have been affected or whether they would perform the same.

A study that can be related to this model is Siemund et al. (2018), presented in Subchapter 2.6, which tested English demonstratives in bilingual heritage speakers and found evidence that all previously learned languages can affect additional language learning.

### **2.7.5 The Scalpel model**

In line with the LPM proposed by Westergaard et al. (2017), Slabakova (2017) presents the *Scalpel Model*, which also includes property-by-property transfer. Like the TPM, on the one hand, and the LPM on the other, Slabakova (2017) states that transfer is based on typological or perceived similarities between the languages involved. In contrast to the CEM, Slabakova does not neglect non-facilitative transfer. She based her model on the analysis of previous studies on TLA and states that the grammar of background languages is stored in a combined manner; therefore, neither the L1 nor the L2 have a privileged role (Slabakova 2017: 656). In her interpretation, Slabakova ignores the privileged role of the first language. In addition, she disagrees with the CEM, which proposes that there are two types of transfer, namely positive or negative, but it does not support negative transfer (Slabakova, 2017: 656). Furthermore, the TPM suggests that transfer is wholesale, which is refuted by Slabakova, as she agrees with the suggestion of Westergaard et al. (2017) of a property-by-property language development (Slabakova, 2017: 657–658). The scalpel model includes variables affecting the outcome of the investigated area that are not considered in the LPM. Slabakova (2017: 652) counts three different areas as influencing factors: cognitive and psychological prominence, typological characteristics, and linguistic characteristics of the new learned language. The first type includes “native, adult-onset or child-onset, strong additional or weak additional

language”; further, the second questions whether languages are “consciously or unconsciously perceived as typologically/structurally related” (Slabakova 2017: 652). However, the scalpel model includes more factors than typology that “may influence the success or failure of acquisition of a specific property in the L3 and often have the effect of thwarting the potential cumulative enhancement” (Slabakova 2017: 659). Furthermore, the model adapts the claim of the CEM and TPM; that is, the L1 and the L2 are equally important in the initial stages of language development regarding sources of transfer (Slabakova 2017: 656). However, she states that research on TLA should also focus on more advanced stages of language acquisition to explore language development (Slabakova 2017: 652).

To sum up the model, the metaphor used by Slabakova at the beginning of her proposal is highlighted. She explains that some grammatical phenomena are transferred more easily than others. The scalpel model means

that the activated grammatical possibilities of the L1-plus-L2 combined grammar act with a scalpel-like precision, rather than as a blunt object, to extract enhancing, or facilitative, options of L1 or L2 parameter values (Slabakova 2017: 655).

However, Slabakova did not conduct her own study to support her model. Instead, she analyzed and interpreted earlier studies, which she used as the basis for the scalpel model. She admits that the model can still be adapted and that “[t]he search for the definitive L3 acquisition account continues” (Slabakova 2017: 662). This statement is somehow irritating, since it seems that the model is not convincing enough to be proved by other studies.

### **2.7.6 Hammarberg’s models for third language use**

Hammarberg (2017) proposed a variable model based on Hufeisen’s factor model (2005) that includes different language knowledge factors. The following diagram illustrates the development of a trilingual speaker.

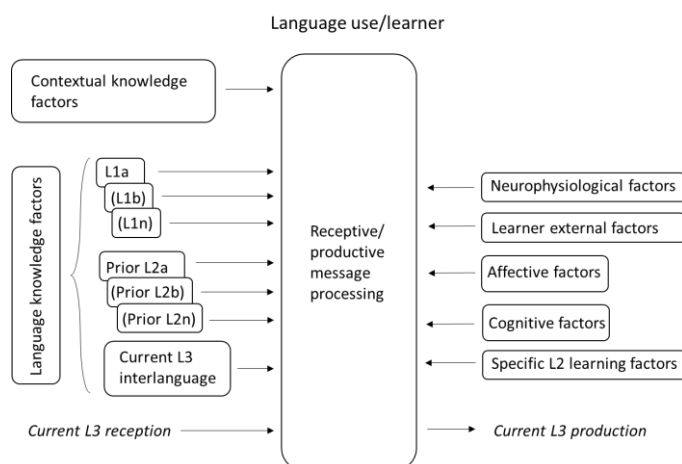
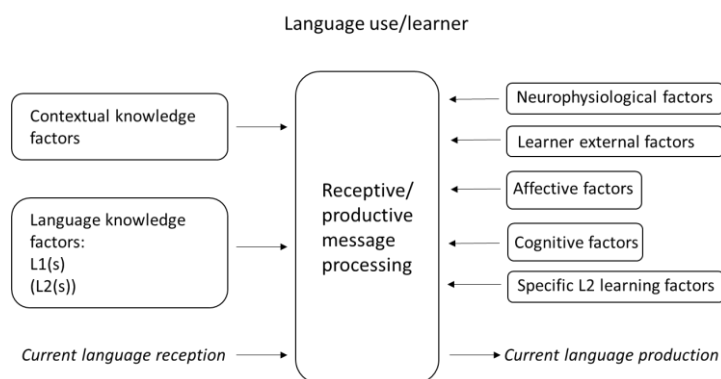


Figure 10: Hammarberg’s template for a model for L3 use (Hammarberg 2017: 13)

The box in the middle of this diagram constitutes the receptive or productive message processing during the L3 acquisition. On the one hand, receptive skills contain reading and listening comprehension and, on the other hand, productive skills, including speaking and writing comprehension. On the left side of the box, the language knowledge factors are presented, which include “one or more L1(s), one or more L2(s)” and the current interlanguage of the L3 that a learner has during the acquisition process, and which indicates that the proficiency level of the L3 is not fully high but approximating the target language dependent of the learner’s stage of development (Hammarberg 2017: 13). This interlanguage can also just occur in the initial stages of language acquisition. Hence, the interlanguage is a dynamic factor. In addition, there is a current L3 perception that is necessary for the process of acquiring a new language. The corresponding current L3 production is as important as the perception. To acquire a language fully, one needs to produce utterances in the new language on its own oral or written states; otherwise, the productive competence is low or towards zero (Hammarberg 2017: 12). Generally, this scenario is common. During initial stages, production competence is normally low as the input needs to be processed. In the next step, this competence can be used to make utterances. In some cases, the perception level is high, and a foreign language can be understood but one is not able to respond. This could happen when a learner speaks, for example, Italian and can understand Spanish because of the typology but he cannot speak in Spanish.

For this study, the model for the L3 user is considered. Hence, we focus on the development of the L3 learner. Hammarberg (2017: 15) outlines that this model is “at the same time situation-related and adaptable to the dynamics of developing linguistic

repertoires.” Figure 11 illustrates the model for a multilingual speaker. Unquestionably, the preceding model.



**Figure 11: Hammarberg’s template for a model for language use by multilingual speakers (Hammarberg 2017: 12)**

the factors on the right side of the box remain the same, but those on the left side are adjusted to multilinguals, as is evident in the presentation of the languages involved. Similar to the first model, this one involves the L1(s) and L2(s). A difference here concerns the language knowledge factors, which include a current L3 interlanguage in The processing box in the middle contains the oral or written interaction of a multilingual, which is influenced by the factors around the box, such as the comprehension of a (previous) situation and “encyclopedic” knowledge (Hammarberg 2017:12). As Hammarberg (2017: 13) states, the languages involved play an important role, no matter if there is more than one L1 or more than one L2 or if both situations appear. On the left side of the model, the contextual knowledge factors are displayed (Hammarberg 2017:12).

## 2.8 Bilingual (dis)advantages?

There is the widespread idea that bilinguals perform better than monolinguals due to their larger linguistic repertoire (Cenoz 2013). Bright and Filippi (2019: 6) state that, intuitively, bilinguals and multilinguals have more linguistic abilities than monolinguals, such as being able to communicate with more people from different cultures, which also may lead to more job opportunities and so forth. Much research has focused on such bilingual advantages in executive functions. The question is whether bilinguals outperform monolinguals when focusing on language acquisition. Several studies have found no evidence of a bilingual advantage that is not limited to the area of executive function (see Goldsmith & Morton 2019; Schroeder 2019; Hopp 2019; Ghezlou et al.

2018). We now examine some recent studies to find evidence of bilingual advantage or disadvantage.

*What is a bilingual advantage?*

According to Lorenz (2022): 9), bilingual advantages mean “*linguistic advantages* in terms of a more target-like performance in a foreign language.” According to de Bot (2017), there are two ways to clarify this term. The first refers to a lay explanation that considers “[c]reative thinking, [m]etalinguistic awareness, [l]ogical thinking, [f]lexibility in thinking, [t]he enhanced ability to learn additional languages” (de Bot 2017: 15). The second includes cognitive abilities such as updating information in the memory, inhibitory control concerning “the ability to ignore irrelevant information,” and the ability to switch between tasks (de Bot 2017: 16). However, Siemund (2020: 14) refers to the following variables when discussing multilingual advantages: “[e]xecutive function (control) and cognitive reserve, [c]ognitive development and educational attainment, [m]etalinguistic awareness, [l]anguage acquisition and learning.” In addition, the assumption is that the more languages, the better the performance. However, it must be remembered that the more languages involved, the more transfer effects are possible, either facilitative or non-facilitative. This process is affected by different variables, including language typology, language dominance, age of onset, recency of use etc. (Siemund 2020: 15), which we discussed in Subchapter 2.1.3. In line with de Bot (2017) and Siemund (2020), Cenoz (2013: 76) states that L3 learners have a “broader linguistic repertoire” due to their previously learned languages. There is a widespread belief that “the more languages a person knows, the easier it becomes to acquire an additional language” (Cenoz 2013: 74). However, studies have found both bilingual advantages and no advantages over monolinguals, as well as a mix of such findings.

As discussed, the type of bilingualism is crucial when learning additional languages. However, this is also important for bilingual advantages, since more-balanced bilinguals are assumed to perform better than less-balanced bilinguals. It has been reported that unbalanced heritage speakers who speak another family language other than the majority language of the environment do not benefit from their background languages; instead, in this case, monolinguals outperform bilinguals (Lechner & Siemund 2014: 320).

*Studies that indicate a bilingual advantage*

Czapka et al. (2019: 9) compared primary school children who were either monolingual (n=69) or multilingual (n=57) attending the third grade in Germany regarding executive functions tasks and skills in spelling, mainly “lexicon size and phonological awareness.” The results prove three aspects in multilinguals: bilingual advantage, a better phonological awareness and a “smaller mental lexicon in German” (Czapka et al. 2019: 9). Interestingly, in their dominant language of German, the multilinguals achieved lower scores than the monolinguals. For spelling, both monolinguals and multilinguals shared the main factors, but lexicon size was a predictor for spelling in multilinguals, and monolinguals “were already able to make use of [executive function] during spelling” (Czapka et al. 2019: 9). The term multilingual refers here to 50 bilinguals and seven trilinguals. This result is quite interesting, since other studies have found that the dominant language has a higher effect on language development, as presented in Subchapter 2.1.3.

Another study that found evidence of a bilingual advantage is Schroeder (2019). He focused on the development of theory of mind. He used two meta-analyses, the first included 16 studies that compared 1,283 children, either bilingual or monolingual. The second analysis comprised eight studies that “statistically adjusted the Theory of Mind scores to correct for a bilingual disadvantage in language proficiency” (Schroeder 2019: 177). Both analyses found evidence of bilingual advantages. The former found a small advantage, the latter a medium-size advantage. Schroeder (2019: 177) states that the results indicate benefits for “the mental state reasoning” of bilinguals having acquired two languages.

Augustín-Llach (2017) tested the performance in English of Spanish-Basque bilinguals (n=87) and monolinguals (n=86). The results prove that bilinguals performed slightly better than monolinguals, which supports bilingual advantages.

Maluch and Kempert (2017) suggest that only particular language groups outperformed monolinguals. They aimed to find out whether “manner of learning, sequence of bilingual acquisition and code-switching practices affect English listening and reading achievement in immigrant bilingual students” (Maluch & Kempert 2017: 5). The language groups were divided based on the learning situation, the frequency of use, and the occurrence of switching between the languages. When the background variables were controlled, the results indicated an advantage for bilinguals in English tests. This result concerns bilinguals with language training, whereas bilinguals who only acquired



their L1 at home were outperformed by the former bilingual type (Maluch & Kempert 2017: 10). As previously mentioned, the type of bilingualism plays a crucial role. Interestingly, in this study sequential bilinguals were outperformed by simultaneous bilinguals. We return to this later; however, sequential bilinguals were found to behave in the same way as the monolinguals. The English outcome was highly affected by the amount of switching between the languages. Therefore, Maluch and Kempert (2017: 10) claim that bilinguals do not differ in their English performance from monolinguals, when they rarely “switch between their languages.” Again, background variables can affect the results in language acquisition studies.

In 2016, Maluch et al. focused on the development of 1032 German students from elementary school to secondary school who were learning English as a foreign language. Interestingly, although they found significant benefits for bilinguals in the younger cohort compared with their monolingual peers, the older cohort displayed no advantages (Maluch et al. 2016: 116). Thus, the bilingual advantage seemed to disappear over the years. However, in grade 8, one bilingual group outperformed monolinguals, namely, the group that spoke German most of the time in their homes. The authors state that such diverse findings can be traced to the “cognitive and linguistic advantages” of the bilingual group, as well as to monolinguals catching up to the linguistic skills of their bilingual peers (Maluch et al. 2016: 116).

Siemund and Lechner (2015) also found younger bilingual learners at the age of 12 benefitted from their two languages more than the older participants at the age of 16. The older cohort did not outperform monolinguals. The authors state that these findings indicate an initial advantage of bilinguals that disappears later when learning additional languages in a school context (Siemund & Lechner 2015: 157–158).

Similarly, Maluch et al. (2015) explored bilingual heritage speakers and the effect of the background languages and variables on English as the L3. The sample consisted of 2835 German students in sixth grade. Bilinguals were further divided into five groups: 105 Arabic-Germans, 110 Chinese-Germans, 57 Polish-Germans, 383 Turkish-Germans and a heterogeneous bilingual group that comprised different L1 languages (n=284). In addition, the monolingual German group included 1896 students. The results indicate a bilingual advantage in learning English as the L3, but the outcome differed according to the language group. If children spoke a heritage language at home, their English outcome benefitted (Maluch et al. 2015: 82). However, a predictor for L3 learning is proficiency in the instructional language. Bilingual children who displayed

advanced instructional skills in German performed better than bilinguals with weaker skills who achieved lower scores than the monolingual group. In general, the authors argue that “speaking a minority home language also supports the language learning under certain conditions” (Maluch et al. 2015: 83). Although bilingual heritage speakers are often regarded as having more challenges in language learning, they are also “coupled with benefits” (Maluch et al. 2015: 84).

Morales et al. (2013) conducted two studies with children who were either five or seven years old. In the first study, 56 children aged five participated in a Simon-type task to test working memory. The findings reveal that bilinguals were faster in responding and more accurate in comparison to the monolingual children. Thus, the bilinguals outperformed the monolinguals in executive functions (Morales et al. 2013: 187). The second study included 125 children, with a younger and an older cohort. Via a visuospatial span task, further components of the executive function were tested. Again, the results indicate bilingual advantages. Both studies found evidence for “an advantage for bilingual children in working memory that is especially evident when the task contains additional executive function demands” (Morales et al. 2013: 187).

Sagasta (2003) explored writing proficiency in English as the L3. The results provide evidence for balanced bilinguals performing better than unbalanced bilinguals.

In line with this, Sanz (2007) conducted several tests to determine whether balanced and unbalanced bilinguals perform differently. The results indicate both support for bilingual advantages of the balanced type in grammatical proficiency and disadvantages in lexical proficiency. Such results are a mix of advantage and disadvantage.

#### *Studies that did not find a bilingual advantage*

Hopp (2019) compared the performance of primary school children in English with bilingual heritage speakers of Turkish-German and a monolingual control group. Between these language groups, there were no significant differences; thus, neither advantage nor disadvantage could be demonstrated.

Goldsmith and Morton (2019) found no significant differences between monolingual and bilingual adults. They tested sequential congruency effects and used a flanker test. In contrast to former studies, sequential congruency effects did not differ between the adult language groups (Goldsmith & Morton 2019: 30). The researchers

admit that in studies with adult monolinguals and bilinguals, results may differ due to different background factors and experiences (Goldsmith & Morton 2019: 31).

Paap et al. (2019) tested 141 college students on selective attention and inhibitory control. The findings indicate that there was no significant difference between the language groups; thus, no bilingual advantage could be found, which supports the null hypothesis (Paap et al. 2019: 185). The authors conclude that advantages regarding inhibitory control for elder bilinguals “are more myth than reality” (Paap et al. 2019: 193).

Lehtonen et al. (2018) aimed to find out whether adult bilinguals outperform monolinguals. They used a sample of 152 published and unpublished studies using several background variables of the participants. The results show no overall advantage of bilingual adults over their monolingual counterparts. In some tasks, small advantages regarding “inhibition, shifting and working memory” could be proven, but in “monitoring or attention,” for example, there was no such advantage. Interestingly, however, the researchers did find a disadvantage for verbal fluency (Lehtonen et al. 2018: 394).

In a similar vein, Ghezlou et al. (2018) found no support for a bilingual advantage when testing the acquisition of adjective placement. They explored Azeri-Persian bilinguals who learned English as the L3. The participants acquired their mother tongue, Azeri, in a natural environment, whereas the L2 Persian is the language of instruction they started to learn at the age of seven. The monolinguals also learned Persian in an instructional setting from the age of seven. When the study was conducted, both groups were students at a university and learned English as the L3 or L2. The bilinguals were enrolled at an Azari university, and the monolinguals at a Persian university. However, the authors state that the results did not indicate that bilinguals outperformed monolinguals. In line with this, the findings reveal a negative transfer from Persian, representing a monolingual advantage rather than a bilingual advantage (Ghezlou et al. 2018: 180). This finding also supports the previously mentioned scenario of unbalanced bilinguals who do not benefit from their non-dominant language. Instead, the dominant language impacts the acquisition of additional languages.

Morales et al. (2013: 531) found no evidence that bilinguals outperform monolinguals, “where higher requirement of proactive-reactive control adjustment was required.” They argue that the results do not generally reveal a better ability on executive functions, and it is more likely that this difference can be traced to calibration (Morales et al. 2013).

In line with the aforementioned studies, Gallado (2007) found no support for bilingual advantages of the balanced type when testing phonological competence in L3 English. This finding reveals how diverse results in studies on bilingual advantages are.

#### *Studies on educational factors*

The previously shown studies demonstrate how differently the outcome of research on bilingual advantages are. As pointed out by Maluch et al. (2015, 2016, 2017), background variables also impact the results of bilinguals learning additional languages. These variables include age of onset, proficiency level, frequency of use, switching between languages, metalinguistic awareness, and SES. One study that focuses on the variable SES and whether it correlates with bilingual advantages is Naeem et al. (2019). Via a Simon task and a Tower of London task (TOL), 45 monolinguals and 45 bilinguals between the ages 18 and 30 were tested. Both low and high SES occurred regularly in the language groups. The findings indicate that bilinguals had an advantage over monolinguals in the Simon task (Naeem et al. 2019: 138). However, SES could not be proven as a predictor in language acquisition. The results indicate that, “SES influences the effect of multilanguage acquisition on performance in one of these tests but not the other” (Naeem et al. 2019: 143). In the Simon task, bilinguals outperformed monolinguals, but in the TOL task, the monolinguals achieved better results than the bilingual group (Naeem et al. 2019: 143). Thus, there is a monolingual advantage. The study did not find clear support for bilingual advantages. In another study, the findings indicate that the SES impacted the results in English as an additional language. Participants with a high SES achieved better results (Lechner & Siemund 2014: 339). This finding contrasts with Naeem et al. (2019). However, in the former study, parameters such as metalinguistic awareness did not correlate with having more background languages. Again, these are two contradictory results that underline the diversity in studies on bilingual advantages. Lorenz (2019: 69) states that, “bilingualism may not necessarily be advantageous or detrimental, when further background variables are controlled. It could not have any effect at all.” In contrast, Spellerberg (2016) argues that a lower SES could be traced to bilingual students, whereas monolinguals had a higher status.

Another variable is that of the learning situation (Augustín-Llach 2017). The English classroom impacts the general performance in English, and the bilingual advantage may decrease (see Maluch et al. 2015; Siemund & Lechner 2015). However,

the outcome in English can be beneficial when students are encouraged to use their background languages and compare the structures with English. Hence, metalinguistic awareness should be used more in language classrooms to enhance language skills in the L3 (Augustín-Llach 2017: 11).

The type of bilingualism was repeatedly mentioned as crucial in studies on TLA. Again, to be balanced or unbalanced as a bilingual can determine the outcome in an L3 (Bialystok 2018; Siemund & Lechner 2015; Cenoz 2013). As found in Ghezlou et al. (2018), literacy in the background language can also be a main variable to influence additional language learning. Since the Azeri speakers acquired their language only orally, they are only literate in Persian. Hence, if literacy is missing in one of the background languages, bilingual advantages may not be identified.

Paap (2019: 722) found that “[s]tatistically significant bilingual advantages are in a clear minority.” Cenoz (2013) argues that the different results may be due to different tasks being conducted. When researchers find evidence for bilingual advantages, Cenoz (2013: 78) states that they conducted more tests regarding an overall proficiency than studies that do not find support for bilinguals outperforming monolinguals. Due to the diverse findings, it is not possible to state whether bilinguals experience advantages or disadvantages over monolinguals. Therefore, further research with more tasks concerning overall proficiency is needed.

## **2.9 The educational system in Germany**

In this study, it is crucial to include the type of school in the analysis of the background data of the participants. We assume that the type of school has an impact on the language development in German and in English. To understand the German terms of school names in our analysis, we will explain the educational system in Germany. Depending on the state in Germany, the compulsory education differs between nine to ten years and includes the attendance of a vocational school for three years.

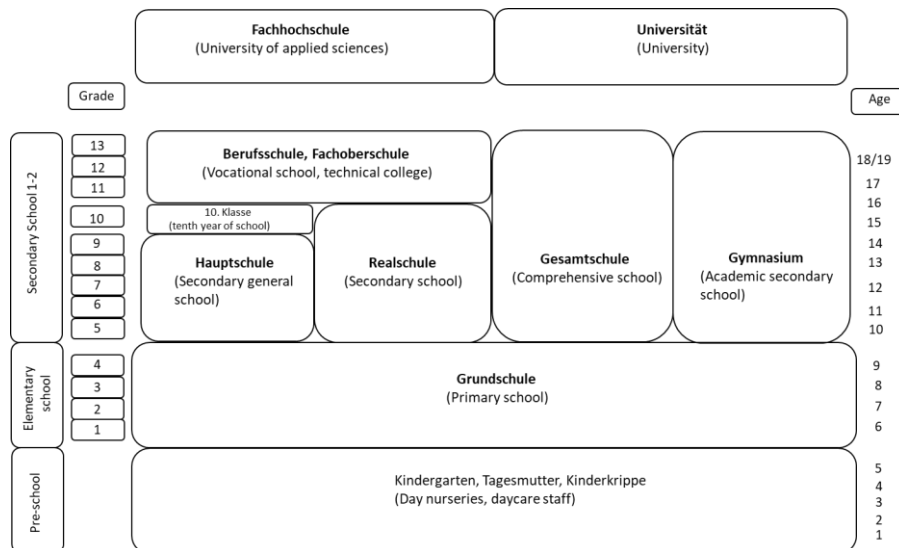


Figure 12: The educational system in Germany adapted from (Mattheus et al. 2017)

In this study, the participants attend secondary schools which includes *Hauptschule*, *Realschule*, *Gesamtschule* and *Gymnasium*. Depending on the school grades, students can either attend the *Gymnasium* after primary school which is the qualification for the academic track or they can attend the *Gesamt-*, *Real-* or *Hauptschule*. The *Gesamtschule* is a compound of all school types which means that students can also go to this school and graduate with a high school certificate which allows them to study at an university. Again, this depends on the students` grade. As mentioned before, we assume that the higher the school degree of a participant is, the more education they get in English and German and the better are the results in these languages. This is not necessarily visible via the school grades, but in the outcome of the proficiency and metalinguistic awareness. In this study, we divide the school type into *Gymnasium* and *Other*. The last type refers to any other compound schools like the *Gesamtschule* and it includes the schools that are not enable students to study like *Realschule* and *Hauptschule*. The distinction follows Siemund and Lechner (2014).

## 2.10 Conclusion

In this chapter, we presented current findings and concepts in TLA. In subchapter 2.1.2, we discussed differences between SLA and TLA. Today, it seems normal to distinguish between both types, but this was not a given. We then provided an overview about studies that found evidence for transfer from the L1, or the L2, or both languages, as well as studies that found the dominant language to be a predictor for transfer effects into the L3. However, there is no common ground about the source of transfer (Subchapter 2.1.3).

Interestingly, these studies do not concern the same type of learner. Therefore, the type of bilingualism or L2 or L3 learner is crucial. That is why we focused first on terminology (in)consistencies and presented different definitions on the L1, L2 and the L3 in Subchapter 2.2. Bilinguals are especially important to define in studies due to their differences, such as balanced bilinguals, unbalanced bilinguals, additive bilingualism, sequential or subtractive bilingualism and heritage speakers who are mostly unbalanced (Bialystok 2018; Montrul 2016). Since heritage speakers are in the focus in this study, we compared bilinguals with this sub-type in Subchapter 2.3.

Further background variables also play a role when sources for transfer effects are detected. These variables include metalinguistic awareness and metalinguistic competences, which are described in Subchapter 2.4. Nevertheless, it remains unclear to what extent metalinguistic awareness is important for better performances in additional language learning. We then briefly presented differences and similarities between the term's language learning and language acquisition. In this study, we use both terms synonymously (Subchapter 2.5).

In our study, the participants are bilingual heritage speakers who learned English as the L3. Therefore, we reviewed studies on bilinguals learning English in Subchapter 2.6. One of the main findings is that the type of bilingualism influences the outcome in English, as well as further background characteristics. As discussed regarding the studies on TLA, the results are diverse. To determine whether our results are in line with one of the current models, we presented the L2 status factor model, the CEM, the TPM, the LPM, the scalpel model and Hammarberg's model for L3 use and for multilinguals (Subchapter 2.7). Like the variable of metalinguistic awareness, there are several other characteristics that may impact bilingual L3 learners.

In the next chapter, we present demonstratives, their different functions, and diachronic perspectives, as well as demonstratives in the investigated languages.

### 3 Demonstrative pronouns

This section provides an overview of demonstrative pronouns in the investigated languages of English, German, Russian, and Turkish. First, we offer insights into the functions of the deictic demonstrative pronoun. Then, demonstratives in German, English, Turkish, and Russian are presented. Also, a diachronic perspective is given as well as studies on demonstratives.

#### 3.1.1 Types of deixis

Generally, our “languages are primarily designed for face-to-face communication in daily life” (Zhao 2007: 1). Hence, the context is always crucial to understand what the other person is talking about. Due to deictic terms, we know and understand our conversation partner (Muşlu 2015).

##### *Defining deixis*

In the most effective way, deictic terms connect our utterance with the context. Lakoff (1974) distinguishes between three types of deixis: spatio temporal deixis, emotional deixis, and discourse deixis. Similarly, Fillmore (1975) differentiates between symbolic use, gestural use and anaphorical use. A further tripartite division of deixis suggested by Bühler (1982) is *demonstratio ad oculos*, *deixis at phantasma* and *anaphorical use* of deictic expressions. Bühler (1982) refers to a referent that is either found in the imagination or the memory of the participant’s mind, or in the extra-/linguistic context. Alternatively, Gundel et al. (1988: 216) states “that deictic expressions signal a change in focus of attention while anaphoric expressions signal focus of continuation.”

According to Diessel (2012: 1), deixis “refers to a class of linguistic expressions that are used to indicate elements of the situational and/or discourse context”. In addition, deixis includes the participants of the communication and the time and place of the communication act (Diessel 2012). Furthermore, Levinson (2018) assumes that deictic expressions vary due to the environment and speech act. Especially, deictic terms are always interpreted in the context they are used in, whereas *I* refer to the current speaker, *now* to an interval including time of speaking and *here* to a location including the place of speaking” (Levinson 2018: 5). In line with this point, Cornish (2007: 138) defines deixis as “the use of speech situation [the (deictic) ground, in Hanks’ 1992 terminology]



to profile a figure.” In conclusion, the context is seen as “a common ground” defined by “a communicative and cognitive procedure in which the speaker focuses the attention of the addressee by the words, the gestures and other directive clues that he uses” (Müller et al. 2014).

However, there are different points of views about deixis. We can divide these into a narrower point of view, such as Bühler’s (1934) origo concept built by a speaker’s body, and a broader viewpoint, for example, Levinson (2003) defines deixis due to the context needed to understand a situation completely. Since “the speaker’s body may provide contextual cues” (Diessel & Coventry 2020:2), the concept of body orientation is an egocentric way of interpreting deixis (Levinson 2003). Therefore, a differentiation is evident between a concept that is body oriented versus not body oriented.

### *Types of deixis*

Traditionally, with the expression *deictic term*, three categories are referred to: personal deixis with words such as *I, my, you, your* etc.; temporal deixis, such as *today, last week, next week* and so forth; and spatial deixis, which includes *demonstrative pronouns*. Table 1 lists different traditional types of deixis.

**Table 1: Types of deixis in English**

Personal deixis	Spatial/place deixis	Temporal deixis
I	me	here there
you	your	this that
she	her	these those
he	his	over there
it	its	tomorrow
we	us	yesterday
they	their	last week

Normally, children start to communicate by pointing to objects and saying *da* (there) or *ah/eh* (Zhao 2007; González-Peña et al. 2020; Tomasello et al. 2007). This is called deictic communication (González-Peña et al. 2020). Tomasello et al. (2007: 705) highlight the effect of pointing:

Rather, pointing can convey an almost infinite variety of meanings by saying, in effect, “If you look over there, you’ll know what I mean,” To recover the intended meaning of a pointing gesture, therefore, requires some fairly serious “mindreading.”

In addition, Diessel (2019) suggests two additional categories, so discourse and social deixis are considered, too. According to Diessel (2019: 7), discourse deixis is used to

“make reference to linguistic entities in the ongoing discourse,” whereas social deixis establishes a “social relationship between the interlocutors.”

**Table 2: Deictic categories, after Diessel (2019)**

Category	Example
Personal deixis	I, you
Place deixis	here, there, this, that
Time deixis	now, then, today, yesterday, tomorrow
Discourse deixis	the latter, the aforementioned
Social deixis	tu, vous [French]

Apart from the new categories of discourse and social deixis, the difference between the traditional division illustrated in Table 1 and this table is that the former lacks the different “pragmatic use” (Diessel 2012: 8). Therefore, Diessel (2012: 8) suggests that “if we consider the various deictic expressions from the perspective of their communicative function, they can be divided into two basic types”. First, “participant deixis” includes participants in the deictic communication act and their relation to the “deictic phenomena.” Second, the “object deixis” refers to objects within the context of a situation or discourse (Diessel 2012: 8). The former function subsumes personal and social deixis. Despite the traditional point of view, personal deixis does not mainly have the function of identifying the participants in the communication act. Instead, they present the “semantic roles of speaker and hearer in the event” (Diessel 2012: 8). In addition, Diessel (2012: 8) compares participant deixis with anaphora, since they both “function to denote a ‘familiar’ or ‘activated’ referent.” Furthermore, participant deixis consists of four particularities that can be distinguished semantically from each other: their “communicative role,” their “number,” their “gender” and their “social rank/relationship” (Diessel 2012: 8).

### *Participant deixis*

In many languages, the communicative role refers to the different roles a participant can take during the speech event. In English, we have pronouns to express the communicative role with *I* and *you*, but in other languages this is normally taken over by “bound morphemes on the verb” (Diessel 2012: 8). Also, number plays an important role in deixis, since most languages distinguish between the singular and plural forms of “I and we and you.” Two types of singular and plural forms can be distinguished: the inclusive pronoun, which refers “to a group of people including both speaker and hearer”; however,

the second type, the exclusive pronoun, does not include these, instead it refers “only to the speaker” (Diessel 2012: 9). The third particularity of participant deixis is gender, and it is not frequently found across all languages. In some, only the singular form is marked for gender, whereas the plural form normally is not. Nonetheless, gender marking in third-person pronouns occurs more frequently than in first or second pronouns (Siewierska 2013). Even so, more common is the last particularity of participant deixis, namely the “marking of social relationships [...] notably in expressions for the addressee” (Diessel 2012: 10).

### *Object deixis*

Having considered the features of participant deixis, we now discuss object deixis. This type is a subsumption of “place, time, and discourse” deixis (Diessel 2012: 10). The first category of place deixis is a small group of deictic expression. Traditionally, the English demonstrative forms of “*this* and *that* and *here* and *there*” are part of place deixis (Diessel 2012: 10). However, temporal deixis is “based on the time-as-space metaphor” (Diessel 2012: 17) by Lakoff and Johnson (1980). According to Diessel (2012: 17), this concept illustrates the relationship between space and time, which “is reflected in the frequent development of temporal expressions from spatial terms.” In addition, the adpositions *in* and *before* and adverbs such as *then* belong to the concept of space and time (Diessel 2012: 17). Because the aspect of time has only one dimension and is seen as a line, three axes for the orientation of space are typically assumed, such as “the front-back axis, the up-down axis, and the left-right axis” (Diessel 2012: 17). It follows that the time-as-space line can be divided into two types of metaphors: first, the ego-moving metaphor, in which the “fictive observer” is following the “time line into the future” (Diessel 2012: 17); in contrast, the second variant of the time-as-space metaphor is the time-moving metaphor, in which there is an observer who is fixed and the events move along the line (Diessel 2012: 17). In addition, the timeline metaphor is “based on the front-back axis of spatial orientation.” Correspondingly, in English, either expressions of time or demonstratives are used to display time deixis. Normally, time deictic terms such as *day*, *week*, *months*, or *year*, are used or a combination of nouns and demonstratives, such as *this week*, *next week* (Diessel 2012: 18).

*Discourse deixis*

In line with this point, discourse deixis can also be identified as a time-as-space metaphor. In this context, utterances or only words within a speech act are regarded that follow one by one and, thus, are structured in a “sequential order” (Diessel 2012: 19). In addition, time deixis refers to the deictic centre that includes “the moment of utterance,” in discourse deixis the continuous speech act locates “a deictic word” and, therefore, determines the deictic centre (Diessel 2012: 19). In general, there is many expressions in discourse deixis. However, English possesses only a few, such as *the aforementioned*, *the latter*. Typically, other deictic expressions can be borrowed and used in this category, such as spatial expressions or “sequential adjectives such as *last* and *next*” (Diessel 2012: 19). In discourse, a topic can be changed by using anaphorical demonstratives, for instance, by drawing the participants’ attention to a new topic or new participant etc. In some languages, there is a differentiation between demonstratives that are used in discourse and ones that refer to entities, except for English and German (Diessel 2012). Furthermore, demonstratives in discourse are not used in combination with a gesture because of the invisibility of participants or referents. If discourse deixis is compared with the external use of demonstratives, both types “create a joint focus of attention” (Diessel 2012: 21). The former means elements within the context (endophoric use), the latter refers to elements outside the context, or, in other words, are in the “physical world” (exophoric use; see Diessel 2012: 21).

*Characteristics of demonstratives and joint attention*

Normally, deictic expressions are used with gestures and facial expression during communication (Muşlu 2015; Zhao 2007). There are many possibilities to underline the words that are used with nonverbal cues (Zhao 2007), such as raising eyebrows, frowning or pursing lips. Consequently, deixis seems crucial when learning a new language. Diessel (2006) explains that the expressions found in a language normally can be classified into two groups: content words and grammatical markers. However, these two groups are not “sufficient to characterize the basic word classes of human languages” (Diessel 2006: 464). For example, demonstratives are part of the grammatical markers, but according to Diessel they do more than function as determiners; they “constitute a unique class of linguistic expressions serving one of the most fundamental functions in language: In their basic use, they serve to coordinate the interlocutors’ joint focus of

attention” (Diessel 2006: 464). Following Clark (1978), the focus of deictic communication lies in joint attention (González-Peña et al. 2020; Tomasello et al. 2007; Diessel 2006). During communication, the recipient needs to understand the communicators’ context by sharing it; this is called the joint attention of recipient and communicator (Tomasello et al. 2007). Therefore, joint attention plays an important role in deictic communication.

### *The deictic centre*

As already mentioned, deixis can be classified into three traditional parts: personal, spatial/place and temporal deixis, and two further categories of discourse deixis and social deixis (Rizal 2020). Another distinction is made between the “speech-internal” and the “speech-external” deixis (Talmy 2020). The former refers to anaphorical deixis and the latter to discourse deixis (Talmy 2020).

In line with these distinctions, when deixis is used as a system to decide what is close and what is far, for instance, it is important to localize both the addressee and the speaker. Therefore, we have the deictic centre, which is sometimes called the origo. In other words, “the deictic centre is the centre of a coordinate system that underlies the conceptualization of the speech situation” (Diessel 2012: 3). According to Diessel (2006: 469), it is “a conceptual unit that is grounded by the speaker’s location in the speech situation at the time of the utterance”.

The utterance and the location of the speaker define the deictic centre. To illustrate differences in distance, a speaker can use *here* to refer to an “area that is conceptualized as the deictic centre” (Diessel 2012: 3). On the other hand, this reveals *there* is an area outside the deictic centre. According to Diessel (2006: 469), the adverbs *here* and *there* are traditionally characterized by their differences in distance, but the deictic centre can vary and, therefore, these deictic terms can either be more specified by, for example, a personal pronoun in an utterance, or refer to a larger area, such as a city.

- 1) Here in Hamburg
- 2) Here in my house
- 3) Here where I parked my car
- 4) Here where I sit

These examples, inspired by Diessel (2012), illustrate the different areas *here* can refer to. In all the examples *here* refers to a location. In the first, the reference of *here* is a whole city. With every example, from 1 to 4, the location is getting smaller, since the last one locates the speaker on something to sit on.

The difference of *there* lies in the exclusion of the deictic centre, so it can refer to any other location outside the origo. According to Lyon (1977: 367), speakers of a communicative situation share their “physical context”. which is based on the origo, that involves three different stages of “a coordinate system” in the deictic centre: “ego” (‘I’), “hic” (‘here’) and “nunc” (‘now’) (Bazzanella 2019: 6). In recent years, the deictic centre or origo has been regarded in “a wider perspective” (Bazzanella 2019: 7), which is evident in the differentiation between the *primary origo* and the *secondary origo* that Fricke (2002) makes. The former refers to both the speaker and the addressee and the role they can play. The latter means that the position of both communicators can change during the whole speech act (Bazzanella 2019; Fricke 2002). In the following illustration, the concept of deictic centre in Hausa is presented. Hereby, the deictic centre can be conceptualized in two different ways: deictic centre 1 is “interpreted relative to the area determined by the speaker’s location alone” (Diessel 2012: 14); deictic centre 2 is “interpreted relative to the common domain of the speech participants” (Diessel 2012: 14). There are languages like Hausa that possess more than the typical widespread division of two or three deictic terms (Diessel 2012).

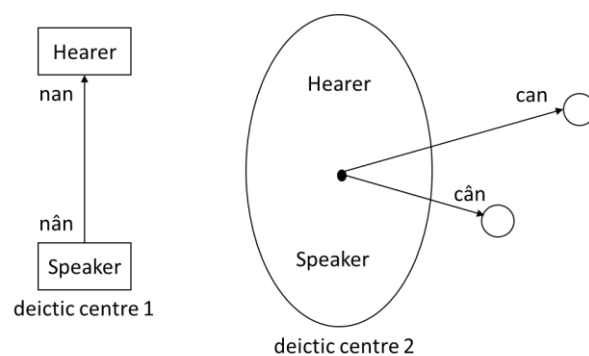


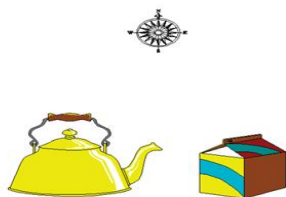
Figure 13: The conception of the deictic centre, after Diessel (2012: 14)

Since languages with more than three deictic terms are widespread, languages with systems that contain more than that often “include a particular expression for objects and locations near the hearer” (Diessel 2012: 13). In this example, Hausa has two ways of constructing a deictic centre. On the left side of the illustration is the first deictic centre. On the one hand, *nan* refers to the hearer, and on the other, *nân* refers to the speaker.

Thus, the deictic centre here only refers to the location of the speaker. While the first deictic centre “exclude[s] the hearer from the deictic centre” (Diessel 2012: 14), the second contains both the hearer and the speaker. In addition, *can* and *cân* refer to a “common domain,” which is somewhere outside the deictic centre, and that needs to be interpreted in relation to the deictic centre (Diessel 2012: 14). A characteristic aspect of the deictic centre is that it “is constantly changing between the communicative partners” (Diessel 2012: 14). As Clark (1978) points out, this changing leads to difficulties for children when changing the perspective. A result of this difficulty is the misinterpretation of a situation (Diessel 2019; Clark 1978).

### *A frame of reference - three types*

Equally important, the deictic centre represents a frame of reference that contains three types. First, in the relative frame, the focus lies on the speaker and their point of view that are determined by deictic terms such as *I, you, here, there* (Diessel 2012: 4). Second, the intrinsic frame has expressions such as *in front of*, which indicate spatial relations. Third, the absolute frame is determined by geographical expressions such as *east, west* (Diessel 2012: 5). All types consist of a coordinate system but differ in their embedded situation of speech (Diessel 2012). Therefore, perspective can change, which is “visible in the language of spatial reference” (Danziger 2010: 168). According to Danziger (2010: 168), in this typology the Anchor plays an important role, which is “the zero point from which the vector is calculated that narrows the search space from Ground to Figure.” Furthermore, the Anchor cannot be moved. The next illustration displays this typology of frames of references.



**Figure 14: Where is the milk? (Danziger 2010: 169)**

Considering the typology, in the absolute frame of reference, the milk is located to the east of the kettle. In the relative frame, the milk is seen from the speaker’s point of view, that is, to the right of the kettle. While the first two types refer to the “surrounded landscape” and the participant of the situation, respectively, the Anchor of the intrinsic

frame of reference is “in the Ground object itself” (Danziger 2010: 169; for further discussion, see Danziger 2010; Majid et al. 2004; Levinson 1996).

### 3.1.2 Joint attention

In order to communicate, a recipient and an addressee need to share their context with each other. Due to this joint attention, they can communicate which is illustrated in Figure 15.

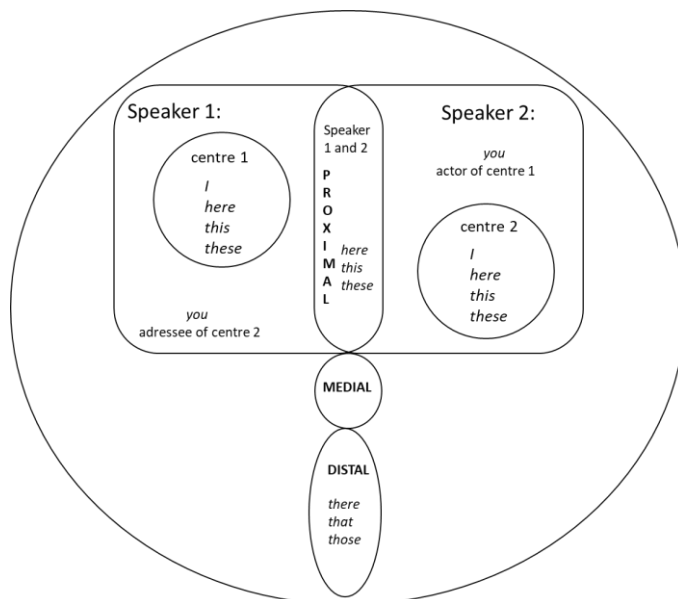


Figure 15: Illustration of joint attention<sup>10</sup>

When speaker one says *you*, s/he refers to the addressee of the speech, and vice versa. Every speaker has its own centre. In addition, the proximal demonstratives *this* and *these*, the local adverb *here* as well as the medial and distal context are shared. Hence, when speaker one says *That is a nice new house over there* that is normally accompanied by a pointing gesture, s/he shares his/her context with speaker two, as is evident in the illustration outlined in the outer circle including both speakers and, in this case, the distal circle. Due to this joint attention, speaker two knows which house is meant.

By now, there is still no consensus about the definitions for joint attention. Salmon (2020: 40) works with the definition that “joint attention can be termed the coordinate attention of two or more people to the same, intentionally focused object, event, or idea.” According to Diessel (2006), joint attention involves three parts in the interaction: a speaker who is the actor, another who the actor addresses their focus to, and

<sup>10</sup> This figure is inspired by an illustration from a study of *Temporal Deixis as a Participation Marker* by Burbienė and Sabaliauskienė (2018).



the object the actor refers to. If the actor wants to communicate with the addressee, they must make the addressee focus on the same object of reference. Therefore, the actor can underline their utterance with facial expressions and gestures, such as pointing with a finger toward the object or entity (Diessel 2006). Around their first birthday, infants try to use pointing gestures and eye gaze to focus the attention of others to a joint reference (Elián et al. 2011). In general, joint attention is an omnipresent phenomenon, and it is necessary for interaction and communication with others (Battich & Geurts 2020). In 1974, Bruner first presented the term *joint attention*, and in 1995, Moore and Dunham referred to joint attention as an important step in the development of infants, especially in the cognitive and social aspects of development. As Battich and Geurts (2020) point out, there is no general definition of the term joint attention. Mostly, definitions refer to the openness and the transparency of the actor and addressee. Furthermore, both the actor and the addressee “are jointly attending to the same object or state of affairs” (Battich & Geurts 2020: 2). Kaplan and Hafner (2006) refer to a triadic interaction that includes a child, an adult and an object. According to Sümer et al. (2020:3), triadic means that the speaker and addressee are looking at each other and then to an object, whereas a dyadic form of joint attention means that the participants in a speech act look at each other, excluding objects.

An alternative view on joint attention is the knowledge-based concept of viewing it “as a primitive relation, which is irreducible to the individual states of relata” (Battich & Geurts 2020: 2). In line with this approach, two participants share a common space with common knowledge that the other one is attending the same space (Battich & Geurts 2020: 2). During communication, there are two aspects that constitute our experiences, when focusing on joint attention: first, the surroundings of the speaker and addressee; second, the representation in our mental lexicon. Campbell (2005) calls these aspects *relational*. Furthermore, he explains that the objects in our surrounded area and their relation to each other determine our experience (Campbell 2005). In this view, joint attention is a “primitive phenomenon of consciousness” (Battich & Geurts 2020: 5). Consequently, when speaker two looks at the same object as speaker one, they both attend to the object, and thus, speaker two is a co-attender with speaker one (Battich & Geurts 2020; Campbell 2005). This view has been criticized by other researchers (see Nanay 2014; Burge 2005) because of the sensory character of the definition. Furthermore, they claim that common knowledge is more the focus of joint attention than perception is (see Nanay 2014; Burge 2005).

*Gestures*

In line with joint attention, gestures play a crucial role during communication. They can help to focus the attention of the addressee on the speaker’s referred object. As discussed previously, infants start early in their development, around the age of six months, “to follow the gaze of their caregivers” (Diessel 2006: 465). There are also other strategies than facial gestures to demonstrate what one refers to. However, gestures can be used in different ways and have different motives. Table 3 presents the motives of pointing gestures, such as a request for an object or information (imperative motive), providing information that a participant in a speech act needs (interrogative motive), to share the mood or attitude with a partner (declarative expressive motive) or to provide needed information for the communication partner (declarative informative motive) (Rohlfing et al. 2017).

**Table 3: Pointing gestures and their motives, according to Rohlfing et al. (2017)**

Motive	Definition	Studies investigating or discussing the motive
Imperative	Pointing to request an object or action	Camaioni et al. 2004; Mundy et al. 2007
Interrogative	Pointing to request an information	Baldwin and Moses 1996; Liskowski 2005; Southgate et al. 2007; Begus and Southgate 2012
Declarative expressive	Pointing to share an attitude with a communication partner	Liskowski et al. 2004, 2007
Declarative informative	Pointing to provide a communication partner with needed information	Liskowski et al. 2006; Behne et al. 2012

Joint attention is crucial role in communication. When children learn to use pointing gestures, they also learn how to use them effectively (e.g., when they want to have an object that they are not able to get on their own, they may use the imperative way and they can underline their urgency to get something with sounds such as *hm*, or *da da*). Another possibility is that children learn to use these gestures to manipulate their parents or, generally, others. This effect receives more attention when they start to use language to keep others focused on what they want and, finally, to get it. Thus, language plays an important role “to create a joint focus of attention” (Diessel 2006: 469).

In addition to the eye gaze, the pointing gesture is important in the development of children. Generally, when talking to infants, two ways they use pointing gestures can be observed: the first is pointing to an object to make the addressee give it to the child, which is known as the *proto-imperative gesture*; the second is the so-called *proto-declarative gesture*, which is characterized by making the addressee look at the communicators reference object or entity (Diessel 2006: 467). According to Diessel (2006), researchers have no consensus regarding when infants learn both types. Some

have said both types of pointing gesture that involve “the extended arm and index finger” (Diessel 2006: 466) are learned when around one year old (Carpenter et al. 1998). Others have remarked that infants first learn the proto-imperative type, followed by the proto-declarative type (Camaioni et al. 1998).

It is generally known that infants use gestures combined with demonstratives to focus or manipulate the addressee’s attention. On the other hand, Levinson (2018: 10) emphasizes that, “many uses of demonstratives do not require gestures.” He further explains that if gestures occur, there are different ways of showing them (e.g., the index pointing finger, “or a head nod or lip point” (Levinson 2018: 10)). Given the above, both joint attention and gestures are crucial in communication, more precisely, when they are combined with demonstratives. In Subchapter 3.1.3, functions of demonstrative pronouns are presented.

### **3.1.3 Functions of demonstratives**

In general, deictic expressions can be realized in different word classes such as adverbs, particles, pronouns, determiners, or verbs depending on the language (Levinson 2018; Diessel 2014; Dixon 2003). As discussed in the previous subchapter, demonstratives can be considered spatial deictics from a semantic point of view and as a word class. In line with this, Levinson (2018: 5) defines demonstratives as follows: “*this* and *that* are instructions to find the referent in the context but give little clue about how to do this.” He further emphasizes that the use of a gesture may help. Thus, demonstratives “work by being semantically general to a point that they invite the recipient to use contextual clues to find a definite interpretation” (Levinson 2018: 6). Correspondingly, Dixon (2003: 61) defines demonstratives as “a grammatical word (or, occasionally, a clitic or affix) which can have pointing (or deictic) reference.” Alternatively, Cornish (2007: 137) refers to demonstratives using the term *demonstrative expressions*, such as “adverbs, pronouns or NPs with a demonstrative determiner.” According to Diessel (2014: 121), demonstratives are defined as follows:

It refers to a class of referential expressions that speakers use to focus the addressee’s attention on a specific referent (or location) in the surrounding situation (or context) and that exhibit some universal semantic and pragmatic properties [..].

*General functions*

According to Diessel (2006: 469), demonstratives have two important functions:

1. First, they indicate the location of a referent relative to the deictic centre.
2. Second, they serve to coordinate the interlocutors' joint attentional focus.

Again, if we combine a pointing gesture with the use of a demonstrative, then we speak of an *exophoric use*, “in which demonstratives refer to concrete entities in the surrounding situation” (Diessel 2006: 470). Diessel (2006: 470) argues that several other properties of demonstratives all are “extensions of the exophoric use.” He (2006: 470) states that these are used without gestures and occur at later stages in language development. We return to this later.

As we have seen, the use of demonstratives is closely related to the use of gestures. An important aspect of demonstratives is that they need a context to be understood, which is, according to Levinson (2003: 2), the coordinate system, in which the participants share the same expressions for spatiality. However, demonstratives can do more than only make the addressees focus on a specific item, “they are also commonly used with reference to linguistic elements in discourse” (Diessel 2006: 475). According to Diessel (2006: 475), the deictic centre is no longer the physical world around us, it is now the discourse and the reference to a specific moment:

If we think of discourse as a linear sequence of words and utterances, we may assume that language involves a text-internal origo that is determined in the string of linguistic elements by the location of the word that is currently produced (cf. Bühler 1934). Demonstratives that are used with text-internal reference indicate a link between the linguistic unit in which they are embedded (e.g., NP, PP, S) and the linguistic element to which they refer (e.g., discourse participant, proposition).

*Four types of demonstratives - according to Diessel (1999)*

In the following, the different functions, and ways to use demonstratives are presented. Diessel (1999) suggests a distribution of four types of demonstratives: pronominal demonstratives as demonstrative pronouns; adnominal demonstratives as demonstrative determiner', adverbial demonstratives as demonstratives adverbs; and identificational demonstratives as demonstrative identifiers, illustrated in Table 4.

**Table 4: Types of demonstratives, after Diessel (1999: 3)**

Distribution	Category
pronominal demonstrative	demonstrative pronoun
adnominal demonstrative	demonstrative determiner
adverbial demonstrative	demonstrative adverb
identificational demonstrative	demonstrative identifier

In our study, we do not exactly follow this taxonomy, but we combine categories that, in English, do not necessarily need to be distinguished. Note that in English, adnominal, and pronominal demonstratives share the same stems but not the same syntax:

[...] pronominal and adnominal demonstratives are in paradigmatic relationship with elements of two separate word classes: pronominal *this* and *that* occur in the same syntactic slot as other pronouns, while adnominal demonstratives are in complementary distribution with articles, possessives, and other adnominal elements that are commonly considered determiners (Diessel 1999: 6).

Therefore, he suggests two categories for both types of demonstratives instead of combining them into one group or category. In addition, in English, the categories pronominal and identificational demonstratives are considered equal (Diessel 1999). According to Diessel (1999), only 24 of his sample of 85 languages separate the adnominal from the pronominal demonstratives. In some languages, such as Mulao, they “have different stems [...] [Mulao] uses *ni* ‘this’ and *hui* ‘that’ as independent pronouns and *na:i* ‘this’ and *ka* ‘that’ as modifiers of a co-occurring noun” (Diessel 1999: 4). In Turkish, it is remarkable that pronominal and adnominal demonstratives (*bu*, *şu*, *o*) are equal, but the inflection is different, as visible in the determiners that are not inflected. Furthermore, they differ in the possibility of taking suffixes to their roots, which only appear on demonstrative pronouns (Diessel 1999).

Due to the reasons mentioned, Diessel (1999) supposes that demonstrative pronouns differ from demonstrative determiners. In his study, 61 out of a sample of 85 languages do not distinguish between adnominal and pronominal demonstratives. In these cases, the demonstratives have both the same inflection and stem (Diessel 1999). The demonstrative pronouns in these languages can either be independent or determine a noun. Furthermore, they can be “used as arguments of verbs and adpositions or in apposition to a coreferential noun” (Diessel 1999: 5).

In other languages, such as Tuscarora, which is an indigenous language of the Iroquois in what is today, New York, adnominal demonstratives can be flexible in their position, and intonation plays an important role. Often, there is a break or a pause between the demonstrative and the combined noun during the utterance (Diessel 1999). In

addition, this language does not keep the two categories of pronominal and adnominal use separate from each other. Hence, the adnominal category considers “demonstrative pronouns that are adjoined to a neighbouring noun in some kind of appositional structure” (Diessel 1999: 6).

Another aspect when dealing with demonstratives is whether all languages possess demonstratives as a grammatical category or marker. Korean, for example, does not have demonstrative pronouns but a demonstrative determiner “together with a classifier, a third person pronoun, or some other nominal element” (Diessel 1999: 6). Table 5 presents the distribution of demonstrative pronouns and demonstrative determiners in three types of languages. According to Diessel (2006: 6), there are languages that do not have demonstrative determiners but do have pronouns, languages that distinguish between the pronominal and adnominal category of demonstratives, and languages that do not have demonstrative pronouns but do have determiners.

For our study, this table is supplemented with the languages of Russian and German as they are important for our participants, since we examine heritage speakers of Russian and Turkish who are dominant in the majority language German as well as a German and English control group.

**Table 5: Distribution of demonstrative pronouns and determiners, after Diessel (1999: 7)**

Language	Demonstrative Pronouns	Demonstrative Determiners
Mulao	x	x
Turkish	x	x
English	x	x
Tuscarora	x	
Wardaman	x	
Korean		x
Lealao Chinantec		x
Russian	x	x
German	x	x

According to Diessel (1999), four types of demonstrative pronouns are distinguished and illustrated in Examples 1-4.

- 1) I do not like that.
- 2) That dog barks dangerously.

The first example is the pronominal use of demonstratives. The demonstrative *that* can substitute a noun or a noun phrase with reference to the situation or context mentioned

before. The second example is the adnominal use of demonstratives. These have the same form and functions as the pronominal demonstratives. In English, pronominal demonstratives can either be *this* or *that*. Here, the pronoun *that* co-occurs with the noun *dog*. In French, both pronominal and adnominal demonstratives differ in their stems *celui* and *celle*, which are used as pronominal demonstratives, and *ce* and *cette*, which are used adnominally (Diessel 2014), illustrated in Example 3.

3) French (Diessel 2013)

Donne-moi ce livre-là et garde celui-ci pour toi  
 give-me this book-there and keep this.one-here for you  
 “Give me that book and keep this one for you.”

4a) Turkish (Kornfilt 1997: 312; 315)

Ali bun-u unut-amı-yor  
 Ali this-acc forget-cannot-prog  
 “Ali is unable to forget this.”

4b) bu gazete-yi

this newspaper-acc  
 “this newspaper”

In Examples 4a and b, the Turkish pronominal and adnominal demonstratives are shown that share the same stem: *bu* is a proximal demonstrative and *o* a distal one. Both are pronominal and adnominal pronouns but differ in their inflection. Unlike the adnominal particles, the pronominal term is inflected for number and case (Diessel 2013).

**Table 6: Mismatch of distance in pronominals and adverbials, after Levinson (2018)**

Pronominals	Adverbials
proximal	proximal
distal	distal
	far distal

Table 6 shows a typical situation in which pronominals, and adverbials do not have the same number. As a result, this mismatch can impact the “usage patterns” (Levinson 2018: 18). Regarding Diessel’s categories, the third is adverbial demonstratives, which is exemplified in the following:

5) This book here is very good. You should read it.

The locative adverbs *here* and *there* can co-occur with another demonstrative and intensify the utterance and the reference of the classic demonstratives. Identificational demonstratives constitute the last category.

6) (That is my car. This book here is mine.)

For this category, brackets are used because, in English, and therefore in our examples, they look the same as the pronominal demonstratives. The reason is that English does not have identifiers that can be distinguished from the pronominal demonstratives. In other languages, the distribution is clearer, since they have demonstrative identifiers that are different from our example (see Levinson 2018; Diessel 1999). Another example for differences between the identificational and the pronominal form of a demonstrative is German: only one identifier form exist that shares the same stem with the pronominal form, but they differ in their possibility of inflection. A German identifier demonstrative is the singular neuter form of *das*, which can either be nominative or accusative and cannot be inflected as an identifier (Diessel 1999), presented in Examples 7a and b.

- 7a) German (personal knowledge)
- |              |     |      |                |
|--------------|-----|------|----------------|
| Das          | ist | mein | Nachbar.       |
| DEM.NOM.Sg.N | is  | my   | neighbour.M.SG |
- “This is my neighbour.”
- 7b) Das
- |              |      |       |          |
|--------------|------|-------|----------|
| Das          | sind | meine | Bücher.  |
| DEM.NOM.Sg.N | are  | my    | books.PL |
- “These are my books.”

Levinson (2018) argues that typologies of demonstratives “den[y] the existence of one-term demonstrative systems,” such as Diessel (1999) does in his point of view, then Diessel would, on the other hand, deny the one-term demonstrative system of German as his native language. However, German has more than one *true* demonstrative. The one Levinson refers to is presented in Examples 7a and 7b. Instead, German has more forms, such as *dieser* (like *this/this one*) and *jener* (like *that/that one*), but the latter form is rarely used. Typically, German uses the former, sometimes combined with *dieser hier* (*this one*



here) or *dieser Mann da/dort* [*that man (over) there*]). This will be discussed in more detail in Chapter 3.2.

In Croatia, there are three forms of identifiers: *se*, *to* and *ovo*. Croatian has “the same phonological form as the nominative (accusative) singular neuter form of the corresponding demonstrative pronouns” (Šimić 2019: 90). Apart from pronominals in Croatia, the identifiers are uninflected, and as in the examples above in German, there is no agreement between the identifier and the noun (Šimić 2019). In Examples 8 and 9, Šimić (2019) provides examples of the Croatian demonstratives as identifiers.

8) Croatian (Šimić 2019)

ʔsa	mihael <sub>b</sub>	arh(a)nĵ(e) <sub>l<sub>b</sub></sub>
this-	Michael-	archangel-
NOM.SG	NOM.SG	NOM.SG

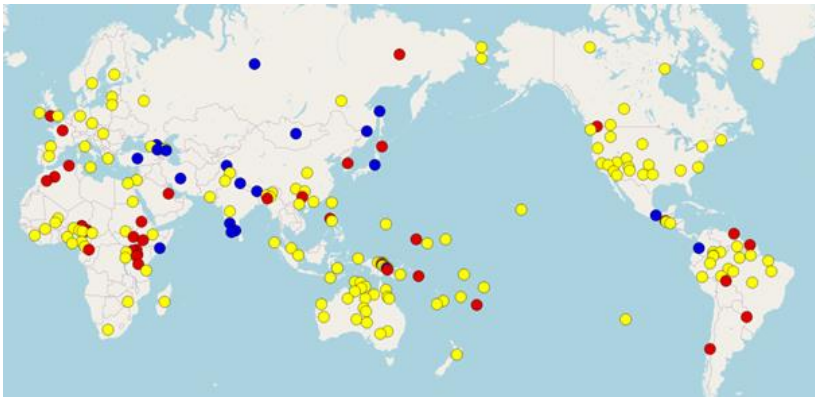
“This Archangel Michael.”

9) ʔsija	imensa	s(ve)ti <sub>h<sub>b</sub></sub>	m(u)č(e)n(i) <sub>k<sub>b</sub></sub>
this-	name-	saint-GEN.PL	martyr-GEN.PL
NOM.PL	NOM.PL		

“These names of holy martyrs. “

*The geographical distribution according to Diessel*

The geographical distribution of both the pronominal and adnominal demonstratives is presented in Figure 16. In line with Diessel’s categories, he distinguishes between different types of languages: value one includes languages in which demonstratives share the same form as English; value 2 refers to languages with different demonstrative forms such as French; value three contains languages with special features regarding inflection like Turkish (Diessel 2013). On the map, yellow represents languages with demonstratives that share the same form. Red stands for different stems of demonstratives, and blue is used for pronominal and adnominal demonstratives that have different features for inflection (Diessel 2013).



**Figure 16: The geographical distribution of 201 languages with pronominal and adnominal demonstratives (Diessel 2013)**

Most of the languages represented on this map have the same forms in both types of demonstratives: pronominal and adnominal. These are 143 languages out of a sample of 201. A smaller number of languages, 37, do not have the same forms, as we have seen with French. The smallest number in this comparison represents languages that have different inflectional features, such as Turkish (21 languages; Diessel 2013).

Levinson (2018: 16) argues that the distinction of proximal/distal “is based on grammars [...] by default rather than by careful examination.” It follows that researcher who used this distribution “often find themselves to have been wrong” (Levinson (2018: 16)). According to Levinson (2018), Diessel used this geographical distribution to describe semantically the distance between demonstratives. Levinson (2018: 16), on the other hand, adds the possibility that more information than only spatial distance can be included, such as “additional deictic factors (e.g., attention, visibility, direction) or [...] properties of the referent (e.g., number/gender/animacy) and more exotic distinction.” For instance, the language Goemai, spoken in Nigeria,

is only a two-term system if one abstracts out the deictic prefixes from the pronominal forms – if not, it is a system with 36 pronominal forms, made up of combinations of the nine positional classifier roots, two numbers and the two demonstrative forms (Levinson 2018: 16).

### *Demonstrative categories - according to Dixon (2003)*

Dixon (2003) offers a different taxonomy of demonstratives, suggesting three types of demonstratives: nominal, local adverbial, and verbal. Although Dixon proposes fewer categories than Diessel, they share some similarities. Dixon’s first category combines the pronominal and adnominal demonstratives of Diessel’s typology. In his distribution, Dixon (2003: 62) emphasizes that the first and second category in some languages “have a secondary temporal sense; for example, ‘this’ or ‘here’ may also relate to ‘now’, and

‘that’ or ‘there’ to ‘then’.” He further clarifies that these forms can either “refer to past or to future, depending on the language” (Dixon 2003: 62).

Another interesting aspect Dixon mentions is that there are random items that can act like demonstratives without being a deictic term, such as *so*. We can compare the following examples inspired by Dixon (2003). In the first example, I am talking with a friend about my new tablet. In the latter, we are talking about snow that was falling this morning and I ask my friend how much snow fell.

10) English (inspired by Dixon)

It is this long. vs. It is so long (showing the length with both pointed index fingers).

11) It was this vs. It was so much.  
much

These examples reveal that in spoken language alternative forms can appear to act like a demonstrative with the ability to link entities. In our study, we do not go any further into this context.

Again, Dixon’s categories are close to those suggested by Diessel (1999). The first category concerns nominal demonstratives. Dixon (2003) defines demonstratives as co-occurring with a noun, appearing in a noun phrase or constituting a noun phrase. There is also the possibility in some languages of appearing with a pronoun. In English, this is not the case. In line with this, in English, nominal demonstratives refer to a “copula subject in an identity clause, e.g. *That’s my wife*” (Dixon 2003: 66). The second aspect for English nominal demonstratives is that they need a noun that follows. According to Dixon (2003), we often use *that* in the combination with *one* as the following noun, as in the next example.

12) English (personal knowledge)

I bought this one.

13) That one seems to fit.

Dixon (2003: 66) underlines that this construction is often used to “sound more felicitous.” He further assumes a relationship between this category and third-person pronouns or articles. There are two ways of using demonstratives: as an anaphora or a cataphora. The

former means to use a demonstrative to refer to a noun or noun phrase mentioned earlier in the context or in a sentence. The latter is used when the information will be introduced later, so first a pronoun or “it” is used and then the meaning in this context is clarified. This approach is outlined by the following examples of Dixon (2003):

- 14) English (Dixon 2003: 64)  
John hadn't studied and failed the exam and Mary considered it/that/this [anaphora] a terrible shame.
- 15) These [cataphora] are the choices available: either study and pass the exam or become a politician.
- 16) English (Dixon 2003: 67)  
I read his first novel and that (one) was boring, too.
- 17) Which cake would you like? I'll have this (one) [pointing at it].

It is evident there are different possibilities of using a nominal demonstrative and the closeness to personal pronouns.

- 18) English (personal knowledge)  
Yesterday I bought a book. This book contains many pictures.  
She is very tall. That's one reason why she plays basketball.

Example 18 presents the relationship between the noun and the coreferential phrase in the next sentence, which is the anaphorical use of demonstratives. According to Diessel (2006: 476), example 18 is a demonstrative used in discourse that “refers to the preceding propositions.” In contrast to the use of demonstratives that refer to entities, the “anaphoric and discourse deictic demonstratives [...] are usually not accompanied by a pointing gesture” Diessel (2006: 476). In addition, if demonstratives are used in “text-external reference,” they include the same “psychological mechanisms” (Diessel 2006: 476).

Apart from Quechua, Tamil and Georgian, there are many languages that do not possess anaphoric and cataphoric uses of nominal demonstratives. However, if languages have them, they correlate with the spatial forms (Dixon 2003). In Table 7, English demonstratives in the nominal form are presented, as well as their “wide range of referential and grammatical properties” (Dixon 2003: 68). Dixon lists nominal

## Demonstrative pronouns

demonstratives as well as related grammatical markers, such as personal pronouns and definite articles.

**Table 7: Properties of English demonstratives and related grammatical aspects, after Dixon (2003: 69)**

	nominal demonstratives		1 <sup>st</sup> and 2 <sup>nd</sup> person pronouns	3 <sup>rd</sup> person pronouns		definite article
	<i>this/these</i>	<i>that/those</i>	<i>I, you, we</i>	<i>he, she, they</i>	<i>it</i>	<i>the</i>
1. Can have deictic function	x	x	x	-	-	-
2. Has spatial reference	x <sup>1</sup>	x <sup>1</sup>	-	-	-	-
3. Can make up whole NP	x <sup>1</sup>	x <sup>1</sup>	x	x	x	-
4. Can occur in NP with noun	x	x	x <sup>2</sup>	- <sup>3</sup>	-	x
5. Substitution anaphora	x <sup>1</sup>	x <sup>1</sup>	-	x	x	-
6. Substitution cataphora	-	-	-	x	x	n/a <sup>4</sup>
7. Textual anaphora	x <sup>1</sup>	x <sup>1</sup>	-	-	x	n/a <sup>4</sup>
8. Textual cataphora	x <sup>1</sup>	x <sup>1</sup>	-	-	x	n/a <sup>4</sup>

<sup>1</sup> Although this is a property of nominal demonstratives in English, it is not shown by demonstratives in all languages.

<sup>2</sup> This covers NPs such as *you women*.

<sup>3</sup> It is possible to have sentences such as *They, the evil spirits, roamed around in the night*, but this is regarded as involving two NPs in apposition (*they* and *the evil spirits*) rather than a single NP.

<sup>4</sup> Not applicable; only items which make up a whole NP can have anaphoric or cataphoric function.

As already discussed, English differs from other languages in such aspects; in other languages, nominal pronouns can appear with a pronoun, which is not possible for English. (Furthermore, there are languages that do not distinguish between proximal and distal demonstratives. They only have one form.) Dixon's second category contains the adverbial demonstrative that can refer to places. This category is also used in Diessel's distribution. According to Dixon (2003: 70), there are languages in which the local adverbial demonstratives need a "local adposition or case affix." In Example 20, local adverbial demonstratives in English are illustrated by Dixon (2003).

20) English (Dixon 2003: 70)

Local NP with noun head	Adverbial demonstratives
He lives at the coast	} He lives there
He lives in the mountains	
He went to the mountains	He went there
He went from the mountains	He went from there

He further remarks that *here* and *there* are not used in combination with a local preposition. This is different from the preposition form in the last example. In English, the demonstrative forms *this/that* and locative adverbs *here* and *there* are used, but it is also possible to also use the interrogative *where*.

Unlike Diessel (1999), Dixon’s last category includes verbal demonstratives in which demonstratives refer to actions. Dixon provides an example of the language Boumaa Fijian. The verb *ene(ii)*, which can be translated as *do it like this*, contains three functions: it refers to an activity, it can be used as an anaphora, and it can be used as an introduction for direct speech. If the syntactic properties are considered, demonstratives function as “the head of a predicate [..., or] modifier to the head [... which] is then placed last in the predicate” (Dixon 2003: 73). Example 21 is presented by Dixon (2003: 73):

21) Boumaa Fijian (Dixon 2003: 73)

{e 'eneii-mayaa} PREDICATE [a 'ena iva'arau]s [i Taveuni]  
 3SG.S DO.LIKE.THIS- ART CL-3SG CUSTOM ON place  
 THAT/THERE

“That’s the way the custom (of greeting a visiting high chief) is carried out on Taveuni (island) (lit. the custom is done like this on Taveuni.)”

The final alternative is to use “two tokens [...] as head and the other as modifier” (Dixon 2003: 73). Diessel (2006: 473) argues against the verbal category because, often, there are no suitable word classes for every demonstrative:

For instance, Dixon (2003) argues that Dyirbal and Fijian employ demonstratives functioning as verbs, and Diessel (1999) shows that in many languages’ demonstratives are uninflected particles with no particular syntactic function; notably, the demonstratives in copular clauses often do not fit any of the traditional word classes.

However, the two nominal demonstratives in English *this* and *that* can be differentiated by their contrast “of the relative spatial location of their referents” (Dixon 2003: 80). Figure 17 shows John and Mary who sit at a table and talk about two bowls of strawberries x and y.

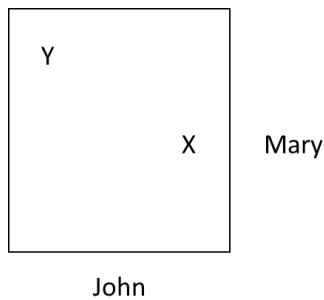


Figure 17: Mary and John talk about two bowls of strawberries (Dixon 2003: 80)

22a) English (Dixon 2003: 80)

Mary: Would you like this one? [pointing at X]

John: No, I'd rather have that one [pointing at Y]

22b) Mary: Would you like this one? [pointing at Y]

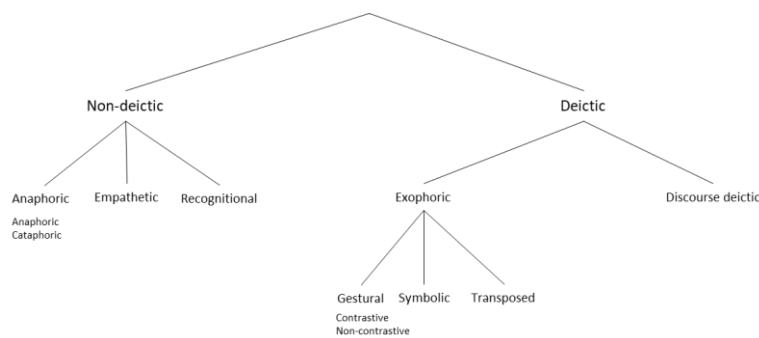
John: No, I'd rather have this one [pointing at X]

X is the nearer bowl and Y the farther one. Mary offers John the nearer bowl and uses *this*. John, on the other hand, uses *that* for Y, which is farther from both. In contrast, in the second example, Mary again uses *this* to refer to Y, which is the farther one. Regarding the distance, John uses *this* again because Bowl X, which he wants, is the closer one. It would be expected Mary to use *that* in the second example. So, why did she use *this*, instead? Dixon (2003: 81) explains:

[...] *this* is the primary nominal demonstrative in English. When only one object is being discussed, *this* is used. When there are two objects which cannot be distinguished in terms of relative distance from the speaker, *this* is used for each. When two objects vary in relative distance then *this* is used for the one nearer to the speaker and *that* for the one further off. [...] in the case of English, [this] is the use of *this* to introduce new information.

#### *Levinson's classification of demonstratives*

With respect to the classification of demonstratives, Levinson (2018) emphasizes that it is not easy to analyze the functions of demonstratives because they can be used in different ways that do not automatically only include demonstratives in discourse. In Figure 18, Levinson suggests the following distinction:



**Figure 18: A distinction of demonstratives and their use, after Levinson (2004) in (Levinson 2018)**

In this illustration, the first distinction is made between the terms *deictic* and *non-deictic*. In the latter, anaphora plays the most crucial role since the use in a text differs from the use as a determiner. The question, therefore, arises what the difference is between anaphorical use and discourse use. The former refers to the ability of picking up the meaning of a word mentioned before in a text without using the same word again. Furthermore, anaphoric demonstratives refer back to their antecedent (Fillmore 1997). The latter “refers to a chunk of discourse itself” (Levinson 2018: 10). Both phenomena differ in their reference, distribution, and orientation. First, the reference in discourse depends on the context and the referred entity, whereas the reference in an anaphora is coreferential to entities in the context. Second, deictic terms can appear at every point of the discourse; anaphora, on the other hand, stand after the antecedent. Third, as mentioned previously, the orientation of an anaphora is backwards to their antecedent already mentioned in the context, whereas discourse deictic is orientated about the utterance (Fossard et al. 2011). Returning to the division on the deictic side of this illustration, on the one side, there is the exophoric use, which can be divided into utterances that are accompanied by gestures, such as *This leg is thicker than the other*, and those that do not need a gesture like *This house is great* that is used symbolic (Levinson 2018: 10). A gesture is not necessarily the index finger pointing to the leg, as in this example. As before, there are various possibilities to indicate the reference, such as nodding with the head, a gaze, raised eyebrows etc. However, there is another quality of deixis - the transposition - which can appear in narrative texts. Transposition here can refer to another time or another place. Levinson (2018: 11) concludes:

Many uses of demonstratives are transposed, and part of the uncertainty of analysis may lie in whether a deictic ground (*origo* or anchor) is basically speaker-centric and transposed to the addressee (*This is your glass* pointing at the glass nearer to you), or whether it includes both perspectives to start with.



In addition, he highlights two possibilities for referents: first, in the speaking situation, the referent is already in the focus of attention of the addressee's whereas in the second possibility the referent is not (Levinson 2018). The important aspect is that the "key function of demonstratives is to draw the addressee's attention to an object or event in the immediate environment," as discussed at the beginning of this section (Levinson 2018: 11).

In conclusion, in English, *this* and *that* can occur in all types in the above illustration of Levinson. In some languages, there are special forms for some functions. As described, the exophoric use of demonstratives accompanied by gestures is one of the main uses since it is one of the first forms children acquire, and it is often used in communications in daily life (Levinson 2018).

*"MQD-demonstratives"*

According to König (2020: 21), there are "atypical demonstratives (e.g.) English *so*, *such*), expressing the ontological components of manner, quality and degree," the so-called 'MQD-demonstratives'. These demonstratives are rarely the focus of interest. König (2020) highlights the different functions of "adverbial and adnominal demonstratives."

23a) English (König 2020: 23)

The restaurant over **there** (+pointing gesture) is where we want to go.  
(exophoric)

23b) John has moved to Jakarta. Myself, I would not want to live **there**.  
(anaphoric)

23c) **Here** is what he said "..."  
(cataphoric)

24a) **That** (+pointing gesture) book is exactly what I want. (exophoric)

24b) He offered me some advice, but I did not want **that**. (anaphoric)

24c) Let me tell you **this**: "..."  
(cataphoric)

In this sense, the anaphoric use corresponds with the distal use of demonstratives. The cataphoric use, on the other hand, correlates with the proximal form (König 2020). König proposes additional functions of demonstratives. Due to grammaticalization processes, demonstratives have "either lost these basic deictic and/or ontological meaning or enriched their meaning in such a way that a basic anaphoric function is only marginally visible in their new use as adverbial connectives" (König 2020: 22). Furthermore, from

his point of view, the deictic function of demonstratives is the basic one, whereas the endophoric use is “derived from this basic source” (König 2020: 22). In his analysis, König (2020) illustrates that the following expressions can be used exophorically by accompanying them with gestures, which is not their typical use, but rather, they are used to express “quantification and vagueness” (König 2020: 26).

- 25) Languages exemplified (König 2020: 27)
- 25a) English: here and there, now and then, every now and again, this and that, hither and thither, so so; such and such; neither here nor there “not important, irrelevant”
- 25b) German: *so oder so*, *sowieso* „anyway”, *es gibt solche und solche* „they come in all colors/kinds “; *hin und her* „back and forth, to and fro,” *dies und das* “this and that”; *mal so, mal so* “this way no one occasion, that way on another,” *dann und wann* “now and then”
- 25c) French: *ici et là* “here and there,” *çà et là* “here and there,” *çà se fait comme-çi ou comme- çà* “you can do it like this or that”
- 25d) Spanish: *si o asa* “like this or like that,” *aquí y allí, aquí y allá* “here and there”
- 25e) Italian: *qua e lá* “here and there”; *parlare di questo e quello* “to speak about this and that,” *cosí o cosá* “in this or that way, either way, anyway”

In addition, in German, such forms can be used twice, as in *so oder so*, exemplified in the following.

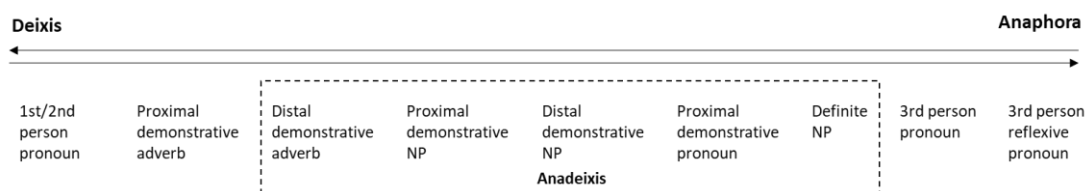
- 26) German (König 2020: 27)  
(Im Allgemeinen sind diese Leute tolerant.) Aber, es gibt solche und solche.  
„ (In general people are tolerant.) But there are good people and bad people.”

However, in German, the form *da* (there) developed a new meaning over time, which is “the destination of a journey, walk or motion in general, as well as an important subset or relevant destinations, namely one’s home” (König 2020: 29).

- 27a) German (König 2020: 29)  
 Exophoric use  
 Das Haus, das wir suchen, ist **da** drüben.  
 „The house that we are looking for is over there.”
- 27b) Non-deictic use  
 In einer Stunde sind wir **da**.  
 „ We will have reached our destination in an hour.”
- 27c) Non-deictic, non-anaphoric use  
 Karl ist nicht **da**.  
 “Karl is not home.”

*The scale of anaphoricity and deicticity*

Cornish (2007) suggests a differentiation between three types of demonstratives: deictic, anadeictic and discourse deictic. In this scale, “deixis and anaphora are not viewed as mutually exclusive indexical categories” (Fossard et al. 2011: 2). In Figure 19, the “scale of anaphoricity and deicticity coded by certain categories of indexical expressions” (Cornish 2007: 139) is illustrated.



**Figure 19: Scale of anaphoricity and deicticity coded by certain categories of indexical expressions (Cornish 2007: 139)**

On the left, deixis is one pole, which here is defined as a speech act within a referent that needs to be identified. Conversely, the anaphorical pole “consists in the retrieval from within a given ground of an already existing *figure*, together with its *ground*, the anaphoric predication acting to extend that ground” (Cornish 2007: 138 ff). In Figure 19, both types of anaphora and deixis share similarities in the categories under the scale. In the middle, under the scale, is the so-called *anadeixis* suggested by Cornish. This dimension combines both poles of anaphora and deixis since “their use implies partly anaphoric and partly deictic reference” (Fossard et al. 2011: 2). The range displays indexical expressions according to their category. One of these categories includes “third-

person demonstrative expressions,” which refers to the determiners *this/that* and *these/those*, as well as to *here/there* and *now/then* as adverbs. According to Cornish (2007), these elements have in common that they are normally contrastive since there is, for instance, the distance contrast in demonstratives. When a determiner is a demonstrative, it can “have a characterizing function” (Cornish 2007: 140), which is different for definite lexical noun phrases. In general, proximal demonstrative NPs are more likely to be found in the “characterizing function,” whereas the distal pronouns *that/those* occupy a “generalizing referential effect” (Cornish 2007: 140). In line with this point, demonstratives can be compared with lexical noun phrases to find evidence that both types can refer to all different kinds of entities (Cornish 2007: 139 ff). The anaphoric demonstrative pronoun or noun phrase are the ideal exemplars of an anadeixis form “since they permit the retrieval of an already existing referent available within a psychologically prominent discourse representation” (Fossard et al. 2011: 2).

However, expressions that are not based on demonstratives do not necessarily have a salient referent (Fossard et al. 2011; Cornish 2007). Finally, when demonstratives are used as an anaphora, they “could play a singular role in discourse construction” (Fossard et al. 2011: 3), since their reference frame is already known. Therefore, Fossard et al. (2011: 3) conclude that demonstrative expressions

are capable of orienting attention toward a referent with a somewhat lower degree of accessibility, for which an attempt at retrieval via an anaphoric pronoun (or even a definite NP) would not have been necessarily appropriate.

### *Conclusion*

Demonstratives have different functions. According to Diessel (1999, 2006, 2014), they can be subdivided into four different categories. Dixon (2003) offers a three-part distribution of demonstratives that adds verbal demonstratives. On the other hand, Levinson (2018) suggests a distinction of demonstratives in *deictic* versus *non-deictic* usage. Furthermore, demonstratives can be used in *anaphoric* or *cataphoric* function. According to Cornish (2007), there is also the category of *anadeictic* demonstratives. Moreover, there are still other possibilities to use demonstratives. One other aspect is to introduce new information, as seen in the example of Dixon in which Mary and John talk about bowls of strawberries and Mary uses *this* for near and distal space. In some languages, demonstratives show the “development of a discourse” (Dixon 2003: 85).

Most languages define demonstratives in different categories and divide them into spatial differences. However, for every language, there are different aspects regarding demonstratives that need to be considered. A small number of languages can reveal height using demonstratives, such as in Lahu or Hua (Dixon 2003). Another interesting demonstrative meaning is that some languages not only refer to visible objects, but also relate to invisible things like objects that have been moved to another place (Dixon 2003). In addition, there are other senses of meanings, such as “emotional attitude, or personal interest, or familiarity” (Dixon 2003: 91). Demonstratives can hint at mood or attitude or express that people are familiar with each other and are interested in the information (see Levinson 2018; Dixon 2003; Zandvoort 1975; Quirk and Greenbaum 1973). Most demonstrative systems possess “at least one nominal and at least two local adverbial demonstratives” (Dixon 2003: 104). Generally, languages have two or three demonstrative forms, though some have more (Dixon 2003). Diessel (2006: 474) concludes:

Thus, if we define demonstratives in terms of their semantic and syntactic features, we would exclude many expressions that are demonstratives according to my definition, and may find that the existence of demonstratives is language-specific (i.e., that some languages lack demonstratives); but if we define demonstratives in terms of their communicative function, the currently available data suggest that demonstratives are universal.

In Subchapter 3.14, the process of acquiring demonstratives is discussed. Therefore, the different stages that children undergo during the acquisition of deictic demonstratives are considered.

### 3.1.4 The process of acquisition

The acquisition of deictic expressions is a process that is mostly not mastered in one go in the development of a child; instead, it “takes several years to master” (Clark 1978: 457). According to Clark (1978), children pass three stages of acquisition to learn how to use demonstratives and contrasts of deictic terms. First, the stage of *no contrast* means that infants do not differentiate between demonstrative pairs such as *this* and *that*, *these*, and *those*, and *here* and *there*. Second, the stage of *partial contrast* indicate that the answers of the children were only right when the auditor “sat beside them or when she sat opposite” (Clark 1978: 468). These are the two possible positions of the auditor when testing the infant and sitting at a table in this study. Third, the *full contrast* stage includes the correct formation of demonstrative pairs. Clark found that the locative adverbs *here*

and *there* are easier to learn for infants, which is why they use them before demonstratives. Furthermore, she argues that the reason for this factor may be the close relatedness between *this* and *that* to the locative forms *here* and *there*, since they may trace to “which is here/there” (Clark 1978: 472).

According to Clark (1978), infants start to use deictic expressions in an early phase of language acquisition, since she counts phrases such as *ah*, *eh*, or *da* in this category, which often appear around the first year. However, we must remember that the exact start of acquiring demonstratives is difficult to define. Therefore, Clark (1978: 471) emphasizes that, “it is critical where children start from and what route they follow.” Infants begin to use at least two of the English forms of demonstratives *this/that* vs. *these/those* and the local adverbs *here/there* normally by the age of two-and-a-half (Clark 1978). In line with this point, Iverson and Goldin-Meadow (2005) presented in their study that infants used a combination of words and gestures for a few months until they entered the phase of two-word-utterances. When infants pass this stage, they can “produce gesture and speech together” (Iverson & Goldin-Meadow 2005: 369), but it is more than that. Finally, infants have “the ability to combine two different semantic elements within a single communicative act” (Iverson & Goldin-Meadow 2005: 369).

Typically, children’s first words belong to the class of content words, since nouns such as *mama* or *papa* (German for mum and dad) are easier to produce than other categories (Diessel 2006). Correspondingly, Clark (1978) considers demonstratives within the first 10 or at least the first 50 words of children in the acquisition process. Conversely, Caselli et al. (1995) investigated English and Italian language acquisition and found no demonstratives within the 50 first words. Similarly, a study by Rodrigo et al. (2004) examined deixis in Spanish language acquisition, especially gestures and verbal utterances, with a special pattern of mother attention. The results indicate that deictic expressions before the age of two rarely occur. After the age of two, infants use them more frequently (Rodrigo et al. 2004). These findings are the opposite of Clark’s results. One possibility for the different findings may lie in the different tasks used for testing young infants. However, González-Peña et al. (2020) claim that there is too little evidence in the findings of Clark, and they investigated the frequency of demonstratives of Spanish and English children’s first words. They found that *there*, *that*, and *this* are within the first 20 words in English (González-Peña et al. 2020). Thus, demonstratives seem to play an important role when they frequently occur in children’s first one- and two-word-utterances. Some infants may use them earlier, some later.

Following Diessel's (2006: 472) hypothesis, demonstratives appear this early in the acquisition process because of their "communicative function." Similarly, Iverson and Goldin-Meadow (2005: 367) emphasize "that gesture has a tight relation to the children's lexical and syntactic development." Furthermore, they explain that gestures occur earlier than speaking because it can facilitate the gap of the missing ability to already produce words (Iverson & Goldin-Meadow 2005). In the same way, infants at around one year old start with "deictic communication" by pointing to objects (González-Peña et al. 2020: 1). Moreover, gestures such as pointing to entities belongs to deixis, too (González-Peña et al. 2020). It follows that infants still produce a combination of word utterances and pointing gestures since they "precede production of two-word combinations" (Iverson & Goldin-Meadow 2005: 367). Therefore, gestures have a leading position for the language development. For instance, one of the properties of gestures is that they "offer a technique for referring to objects before they [children] have words for those objects" and this makes language learning easier for infants (Iverson & Goldin-Meadow 2005: 367). Diessel (2006: 471) also emphasizes the facilitating aspect of gestures for language acquisition: "Both demonstratives and deictic pointing function to establish joint attention, providing a prerequisite for communication and language."

In their study, Iverson, and Goldin-Meadow (2005: 368) found that infants use three types of deictic gestures: *showing*, which means that the addressee holds an object to show it to the referent; the *index point*, which is using the index finger; and the *palm point*, which involves a flat hand. They further claim that infants who start early with a pointing gesture also begin to speak early. When infants start to speak, they often use both language and gestures combined. There are two types of strategy: first, infants use a pointing gesture and say the word for this object, such as pointing to a cat and saying *cat*; second, infants point to an object and say another word, such as pointing to a cat and saying *stroke* (Iverson and Goldin-Meadow 2005: 368). These examples demonstrate that the former strategy "corresponds semantically to a one-word utterance" (Diessel 2006: 471), whereas the latter serves the same form as two-word utterances (Iverson & Goldin-Meadow 2005). In addition, Iverson, and Goldin-Meadow (2005) found that gestures "provide a way for children to refer to objects at a time when they are not producing words for those objects" (Iverson & Goldin-Meadow 2005: 369).

In addition, the effect of infants who point at objects is that their parents or other communication partner can translate their gesture and offer them verbal input. This is another language acquisition step to use language on their own. Given the above, Iverson

and Goldin-Meadow (2005: 370) call deictic gestures the “harbinger of change in child’s developing language system.” Clark (1978) points out that whether infants use a pointing gesture or a nodding head or a gaze to the referred object, they normally use this strategy to show their reference even when they accompany it with words. “Children start, then, with deictic gestures, add to them single deictic words, and then add longer utterances still, again ones that contain deictic terms” (Clark 1978: 459).

### *Conclusion*

Children start to use demonstratives early, since they use them in combination with gestures and can underline their reference in this way. There are different strategies for children using gestures: infants who point at objects and say the referred word, and children who point at an object and say another word, such as pointing at a piece of bread and saying *have*. These strategies are either forerunners of one-word utterances like pointing at objects and naming it or of two-word-utterances like pointing at an object and saying something else. The exact sequence of acquisition is difficult to define since researchers of different studies do not have common results. Some have found that demonstratives do not belong to the first words acquired by a child, others have found they do. Since there is no common ground, we cannot identify the different stages of acquisition. Although Clark suggests a three-part acquisition, this only refers to the stages infant’s pass. The last stage is that they fully master the deictic reference of demonstratives. This division seems a step-by-step acquisition. Diessel (2006: 472) states that, “(t)he combination of demonstratives and deictic pointing creates a powerful tool that allows the child to make reference to any entity in the surrounding situation without knowing the word for the referent.”

Following Küntay and Özyürek (2006: 305), in the early stages of their development, children “do not encode any distance contrasts and the adultlike use of these terms is not achieved before six or seven years of age.” The next subchapter addresses the relatedness and the grammaticalization process of demonstratives.

### **3.1.5 Diachronic perspectives**

Demonstratives possess a variety of different functions; but where do they come from? In this chapter, the diachronic perspective on demonstratives and their grammaticalization



processes into different markers are discussed, and the roots of some demonstratives are shown.

### *Grammaticalization processes*

Grammaticalization is a process that develops “from lexical to grammatical forms and from grammatical to even more grammatical forms” (Heine & Kuteva 2004: 2). In this sense, lexical forms mean content words that include “nouns, verbs, and adjectives,” whereas grammatical forms “refer to function words – that is, closed class paradigms, such as adverbs, inflections, conjunctions, adpositions, articles” (Balpınar 2019: 59). According to Heine und Kuteva (2004: 2), the four main aspects of grammaticalization processes are.

- a) desemantization (or “semantic bleaching”) – loss in meaning content,
- b) extension (or context generalization) – use in new contexts,
- c) decategorialization – loss in morphosyntactic properties characteristic of lexical or other less grammaticalized forms, and
- d) erosion (or “phonetic reduction”) – loss in phonetic substance

Nearly every process includes a loss of an aspect such as meaning or a grammatical aspect, except of the process of extension, which refers to using a word in a new context (Heine & Kuteva 2004). According to Diessel (1999), the grammaticalization processes of demonstratives have their roots in the use of demonstratives as anaphora or in a discourse-deictic function. He further assumes that “(o)ne can think of the grammaticalization of demonstratives as a line ranging from demonstratives that are used to orient the hearer in the outside world to grammatical items serving a specific syntactic function” (Diessel 1999: 19). In general, Diessel highlights that the syntactic environment of demonstratives determines their path of grammaticalization process.

Pronominal demonstratives develop into grammatical items that are either used as pronouns or that have at least some of the properties of a pronominal item. Adnominal demonstratives give rise to grammatical markers functioning as operators of nominal constituents. Adverbial demonstratives evolve into operators of verbs or verb phrases. And identificational demonstratives develop into grammatical markers that interact with constituents derived from predicate nominals (Diessel 1999: 18).

For Lehman (2015: 40), demonstratives possess three features: two semantic components and one syntactic. The first element contains a gesture such as pointing combined with definiteness. The second includes the deictic centre and refers to focusing the joint

attention on something. The last element is a noun phrase or a determiner that has the ability to perform either as a dependent or independent pronoun. He further points out that, “the deictic component will usually be segmentally expressed at the stage of the free demonstrative (otherwise it will fuse with the demonstrative one)” (Lehmann 2015: 40). Thus, one of these elements “will almost always lack expression” (Lehmann 2015: 40).

### *Grammaticalization of demonstratives*

In the following, the different developments from and of demonstratives are presented. In a first step, the marker that has developed into a demonstrative is illustrated. The representation of the paths with the sign > follows Heine and Kuteva’s (2004) to demonstrate that the first grammatical marker named is the source of grammaticalization process.

Demonstratives in a diachronic perspective can be seen as “semantic primitives” (see Diessel 1999b; Heine & Kuteva 2004), which means they are a source for an enormous number of markers, but “they themselves cannot be historically derived from other entities like lexical items” (Heine & Kuteva 2004: 159).

#### Go > Distal Demonstrative

This path illustrates that the distal demonstratives derive from the verb *go*, as observable in South! Xun ‘úú (go) + tǝ’ǎ (go) > ‘úú-tǝǎh in which *go* is source for a demonstrative (Heine & Kuteva 2004). In contrast, there is another example that reveals the contrary path, as visible in Chinese. The verb *zhi* (to go) developed from the demonstrative pronoun *zhi* (this) (Heine & Kuteva 2004). However, it is unclear which of the paths one should follow. Examples a to c, illustrate the use of the Chinese demonstrative *zhi* as a “noun phrase marker” (Ha Yap et al. 2010: 7).

- a) Classical Chinese (Ha Yap et al. 2010: 7)

之 子

*zhi* \*(*zi*)

that man

- b) 之 廣 者

*zhi* [*guang* \*(*zhe*)]

that broad NMZ

“that broad one”

c) 之 知 我 者

zhi [zhi wo zhe]

that know me NMZ

“those that know one”

Here > Demonstrative (> Relative)

A second source for the derivation of a demonstrative is the locative adverb *here*. In Hausa, the adverb *nân* (here) developed into the proximal demonstrative *nân*. Similarly, in French the locative adverb *ici* is the source for the suffix *-ci*, which functions as a demonstrative (Heine & Kuteva 2004: 172). In addition, examples are found in pidgins or creoles in which *here* is also the source for the “rise to demonstratives” (Heine & Kuteva 2004: 173). So far, only the path from the adverb to the demonstrative was considered; however, there is an alternative path for this grammaticalization process. It is also assumed that demonstratives that derived from the adverb *here* developed into a relative marker, illustrated in Examples d to f.

d) Buang (Sankoff 1979: 35–6; Heine & Kuteva 2004: 174)

Ke mdo ken

I live here

“I live here.”

e) Ke mdo byaŋ ken

I live house this

“I live in this house.”

f) Ke mdo byaŋ ken gu le vkev

I live house that you saw yesterday

“I live in the house that you saw yesterday.”

There > Demonstrative

This path illustrates the distal adverb *there*, which gives rise to a distal demonstrative like *that* in English. As mentioned previously, in French, the suffix *-là* for a distal demonstrative pronoun arises from the adverb *là* (there; Heine & Kuteva 2004: 294).

Having discussed different grammatical markers that give rise to demonstratives, now the focus is on markers derived from demonstratives.

#### *Grammaticalization from demonstratives*

##### Demonstratives > Complementizer

The first path in this development concerns complementizers that arise from pronominal demonstratives. According to Diessel (1999: 22), demonstratives “that originally occurred in the main clause referring forward to the subsequent proposition” give rise to complementizers in “North and West Germanic languages.” In English, the demonstrative *that* developed into the complementizer *that*, whereas in German, the demonstrative pronoun as well as the definite article *das* (that) developed into the complementizer form of *dass* (that), presented in Examples g and h.

- g) English (Heine & Kuteva 2004: 106)  
She said that: there is no money.
- h) She said that there is no money.

The main clause is combined with a “complement clause combination,” and the “matrix clause” includes the “demonstrative object” that refers “cataphorically to the next clause,” functioning “as a marker introducing a complement clause” (Heine & Kuteva 2004:106 ff). In addition, Heine et al. (1991) further assumes that this illustrated development of demonstratives into complementizers has mostly occurred in Germanic languages, since the examples are mostly from English and German. In his example, he displays the cataphoric use of demonstratives.

- i) English (Heine et al. 1991: 180)  
John said that: the Bakers have left.
- j) John said that the Bakers have left.

Again, the development from demonstratives into subordinating clauses is evident. This phenomenon “led to the reanalysis of the sentence structure, more particular to a boundary shift” (Heine et al. 1991: 180).

Nevertheless, Frajzyngier (2003: 221) proposes that a complementizer derives from a demonstrative “because it indicates that the following clause belongs to, or should be interpreted as belonging to, the domain *de dicto*.” He distinguishes between the pronoun *it* and the remote use of the demonstrative *that*. The Examples k to l illustrate that *it* can refer to an NP mentioned before, such as an anaphora, whereas the demonstrative has restrictions: “‘that’ is constrained in its use in reference to an NP in the clause, but it is not so constrained in its use as a propositional anaphora” (Frajzyngier 2003: 222).

- k) English (Frajzyngier 2003: 222)  
John bought a car last year. It proved to be a lemon
- l) John bought a car last year. That proved to be a disaster.  
\*That proved to be a lemon.
- m) John bought a car last year THAT proved to be a lemon.  
and another car just last  
week.

The last example demonstrates that in a situation with two antecedents the nearer one can be shown by a demonstrative. Example n shows the same development for Russian complementizer.

- n) Russian (Frajzyngier 2003: 223)  
F.ne xočet idti, no éto (\*étot, éta) menja ne volnuet.  
NEG want go but that(m)/(f) me NEG bother  
“Fred doesn’t want to go, but that doesn’t bother me.”

Interestingly, demonstratives develop into complementizers after certain verbs (e.g., *verbs of saying* [or *verba dicendi*] and others). One characteristic is that such complementizers do not have a modal function when they follow *verba dicendi*, but when they follow other verbs, they do possess these modal functions (Frajzyngier 2003: 226).

Furthermore, Frajzyngier (2003: 237) explains that demonstratives are a predominant element in “post-nominal relative clauses.” Hence, the proposition is “interrupted by the relative clause” (Frajzyngier 2003: 237). This can be considered a comment. Again, in this case, “the relative clause is a *de dicto* category” (Frajzyngier 2003: 237). Pre-nominal relative clauses differ from post-nominal relative clauses in the order of preposition, which occurs after the end of a relative clause. That is why there is no interjection. The former relative clause “may or may not have the demonstrative,” whereas the latter needs a demonstrative (Frajzyngier 2003: 237).

o) German (Keenan 1985: 144; Frajzyngier 2003: 237)

der Mann, der in seinem Büro arbeitet  
 ART man who in his study works  
 “The man who is working in his study.”

p) der in seinem Büro arbeitende Mann

ART in his study working study  
 “The man who is working in his study.”

#### Demonstrative > sentence connectives/conjunctions

Many different sentence connectives are derived from demonstratives. In the case of Turkish, a vast number of connectives evolve also. Table 8 lists these connectives developed from demonstratives (Balpınar 2019: 68).

**Table 8: Connectives in Turkish derived from demonstratives, after (Balpınar 2019: 68)**

Form		Gloss	Meaning
bu forms	o forms		
bu-n-dan dolayı/ötürü	o-n-dan dolayı/ötürü	DEM-n-ABL because of	because of this/that
bu-n-un dışında	o-n-un dışında	DEM-n-GEN apart from	apart from this/that
bu-n-un için	o-n-un için	DEM-n-GEN for	for this/that purpose
bu-n-un yerine	o-n-un yerine	DEM-n-GEN instead	instead of this/that
bu-n-un-la beraber/birlikte	-	DEM-n-GEN with together	in spite of this
bu-n-dan başka	-	DEM-n-ABL (an)other	furthermore/besides/no other
bu-n-un ötesinde	-	DEM-n-GEN beyond	beyond that
bu-n-un sonucunda	-	DEM-n-GEN consequence	as a result of this
bu-n-un üzerine	-	DEM-n-GEN upon	upon this
bu-n-un yanında/yanısira	-	DEM-n-GEN beside	beside this/that
bu-n-a rağmen/karşın	-	DEM-n-DAT though	nevertheless/despite this

Balpınar (2019: 68) explains the morphological development of demonstratives as:

(t)hey serve a discourse-internal function (i.e., they organize the information flow within the discourse) and do not indicate two different locations on a distance scale, which suggests that they have changed functionally. Furthermore, they are largely restricted to the proximal form.

According to Diessel (1999: 23), pronominal demonstratives give rise to sentence connectives combined with “some other element that indicates the semantic relationship between the two propositions joined by a connective.” Furthermore, he uses the following example from Hixkaryana to demonstrate that the demonstrative *iro* and the causal postposition *ke* connect the two sentences (Diessel 1999: 23).

p) Hixkaryana (Diessel 1999: 23)

nomokyaknano	tuna	heno.	iro	ke
it.was.coming	rain	QNT	DEM	because.of
romarain	hokohra		wehxaknano	
my.field	not.occuring.with	I was		

“It was raining heavily. Therefore, I did not work on my field.”

In this example, the connective consists of two parts: *iro* and *ke*, comparable to *so that* in English. According to Heine and Kuteva (2004: 108), many adverbs in German such as *damit* (with that) or *darum* (therefore) connects clauses. Furthermore, they point out that the pronominal demonstrative *das* (that), combined with an adposition, gives rise to these adverbs (Heine & Kuteva 2004: 108).

#### Demonstrative > Copula

Demonstratives also give rise to copula, as we can see in Egyptian, *pw* (this) evolves to the copula form of *pw* and into a personal pronoun. Example r presents the copula verb *pw* (Heine & Kuteva 2004).

r) Egyptian (Gardiner 1957: 103ff; Heine & Kuteva 2004: 108)

Nwn	pw	jt	nčrw.
Nun	this	father	gods

“The father of the gods is Nun.”

According to Heine and Kuteva (2004), pronominal demonstratives are the source for the derivation into copulas, whereas Diessel (1999) argues that this development is caused by identificational demonstratives. He further describes this path from demonstratives into personal pronoun and then into copula: Demonstratives > Personal Pronoun > Copula (see Heine & Kuteva 2004; Diessel 1999)

Demonstrative > Definite

According to Dixon (2003), demonstratives and articles are diachronically connected. He demonstrates that in German we have the same forms for articles and for demonstratives: *der* (masculinum, singular), *die* (feminine, singular), *das* (neuter, singular). The only difference is the intonation. If a definite article is used, it is not stressed. If so, it refers to the demonstrative form. A characteristic example of this process is the English definite article *the*, which derived from the demonstrative pronoun *that*. Tables 9 and 10 contain the roots for English *the* in Old and Middle English.

**Table 9: Demonstratives *the, that* and *those* in Old English, after (Catasso 2011: 19)**

	Masculine	Neuter	Feminine	Plural
Nominative	se	ƿæt	sēo	þā
Accusative	ƿone		þā	
Genitive	ƿæs		þære	þāra, þæra
Dative	þām			þām
Instrumental	þȳ, ƿon			

Table 9 lists the demonstratives *that* and *those* and the definite article *the* in Old English, which is the source for the derivation. In Table 10, the demonstratives *this* and *these* in Old English are presented.

**Table 10: Demonstratives *this* and *these* in Old English, after (Catasso 2011: 19)**

	Masculine	Neuter	Feminine	Plural
Nominative	ƿes	ƿis	þēos	þās
Accusative	ƿisne		þās	
Genitive	ƿisses		ƿisse, ƿisre	ƿisra
Dative	ƿissum			ƿissum
Instrumental	þȳs			



Definite articles have their roots in adnominal demonstratives. Diessel (1999: 25) explains that the development into definite articles is accompanied by an extension “to all kind of referents in the preceding discourse. [...] demonstratives lose their referential function and turn into a formal marker of definiteness.” According to Demske (2020: 43), the development of a demonstrative into a definite article is a “cycle, with the demonstrative in the specifier position of a functional projection being reanalyzed as the head of the respective phrase.”

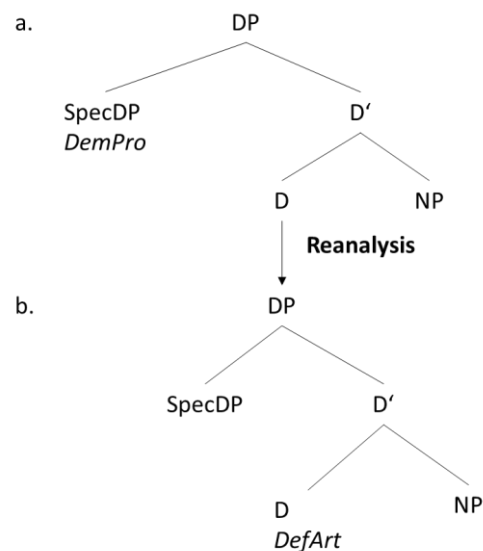


Figure 20: The reanalysis of demonstratives into the definite article, after (Demske 2020: 44)

Lehman (2015: 41) points out that, at the beginning of this derivation, the “adnominal demonstrative pronoun [...] is deictically neutral and therefore mainly used for anaphoric purposes.” To illustrate this, Lehman uses examples of Old English with the forms *sē*, *sēo* and *thæt*, as seen in the aforementioned description, as well as of Latin *ille* and Homeric *hó*, *hē* and *to*. Interestingly, he highlights that demonstratives of Persian *ān* and Japanese *sono* are moving towards this stage of the process (Lehmann 2015: 41).

The process of grammaticalization from a demonstrative to a definite article takes place in many languages. To illustrate this process, we present examples of the French articles *le* and *la* or articles in Old High German of *ther*, *thiu* and *thaz*, as well as in the Greek dialect Attic with *ho*, *hē* and *to*.

Further grammaticalization agglutinates the article to the noun. Suffixed articles occur in Romanian, Swedish, Danish, Basque, Ijo (Kwa), Koyo (Kru) and Yuman languages such as Mohave, Diegueño and Yava-pai. Prefixed articles occur in Abkhaz (Caucasian) and Arabic vernaculars. The Swedish case illustrates that while the definite article is typically in opposition to a demonstrative, a definite affix starts cooccurring with other definite elements (Lehmann 2015: 34).

However, in Hungarian, the demonstrative form for *this/that*, namely *az/a*, developed into the definite article *az/a* (the). In Haitian CF, the definite suffix *-la* is used for demonstratives, as well as for definite articles, and derived from a demonstrative. In Turku PA, the demonstrative *da* (this) evolves into a definite marker (Heine & Kuteva 2004).

Greenberg (1991) proposes that definite articles pass two stages (Stage 2 and Stage 3) when they evolve from a demonstrative. First, definite articles derive frequently from demonstratives (Stage 1). Second, they widen their meaning and syntactic categories, including definite and indefinite nouns. Often, at this stage, the article is suffixed or prefixed to the noun. “Because of the high frequency of combined definite and indefinite uses it becomes the “normal” form of the noun and the one that is usually elicited [...]” (Greenberg 1991: 304). He further explains that this phenomenon appears in common nouns or, for example, demonstratives modifiers as well as “the incorporated noun object, nominal predication, dependent genitives in compounds and adverbial, particularly locative, uses e.g., ‘at home, ‘on foot’” (Greenberg 1991: 304). On the other hand, Stage 3 is defined by the spreading of the affix to “virtually all nouns” (Greenberg 1991: 304). Thus, there are languages within the same language family in which only one of them maintains “the pre-prefix” (Greenberg 1991: 304). The first two stages are classical grammaticalization processes whereas the third stage differs in its semantic changes or functions that are renewed (Hopper & Traugott 2003). In addition, when the grammaticalization from a demonstrative into the definite article takes place, “there is neither a source proposition involved nor is there any discernible reanalysis pattern” (Heine et al. 2003: 171).

### Demonstrative > Focus

There is a debate regarding whether the grammaticalization pathway is the aforementioned one or contains more stages during this process, such as:

### Demonstrative > Personal Pronoun > Copula > Focus

Since there are languages in which focus markers do not correlate with copulas, there is evidence for the direct pathway (Heine & Kuteva 2004; Diessel 1999). Furthermore, Diessel (1999) explains that focus markers derive from demonstratives in specific

contexts, such as a cleft construction. There are two types: first, “a copular or nonverbal clause providing focal information” (Diessel 1999: 36). A characteristic of the second form is the relative clause, which requires information (Diessel 1999: 36). Despite this phenomenon proposed by Heine and Reh (1984), Diessel (1999) assumes that the category that may give rise to focus markers is identificational demonstratives, since in many languages they are related morphologically. To illustrate this point, Diessel (1999) and Heine and Kuteva (2004) use an example from Ambulas in which the focus marker *wan* derives from a demonstrative.

- s) Ambulas (Wilson 1980: 157; Diessel 1999b: 149; Heine & Kuteva 2004: 111)

véte	dé	wak	a	wan	méné
see:and	he	said	ah	FOC	you
kaapuk	yémeném.				
not	you:went				

“He saw him and said, ‘Ah, *you* did not go.’”

In addition, Diessel indicates that Ambulas possesses two forms of identificational demonstratives: first, a proximal one *ken*; and second, a distal one, namely *wan*. There is a differentiation between the aforementioned demonstratives and pronominal forms of demonstratives, but their forms are identical to the focus markers, as illustrated in Example s (Diessel 1999). Therefore, Diessel (1999: 37) argues that the focus markers *wan*, and *ken* derive from a “cleft construction formed from a nonverbal clause (i.e., BEM NP) and a presupposed (main or relative) clause.”

#### Demonstrative > Third-person pronoun

A further grammatical marker that arises from pronominal demonstratives is personal pronouns. A first step in this development is that the anaphoric demonstratives extend their meaning and use to third-person pronouns. According to Diessel (1999), this path continues to the following:

demonstrative pronoun > third-person pronoun > clitic pronoun > verb agreement

In addition, he proves this path with the example of French, with clitics derived from personal pronouns that arise from the Latin demonstrative *ille*. Today, “clitics are essentially used as agreement markers, which are commonly accompanied by a coreferential (pro)noun” (Diessel 1999: 21). As before, another example for this path is the Egyptian proximal demonstrative *pw* (this) that developed into *pw* as a personal pronoun (he/she/it/they; Heine & Kuteva 2004).

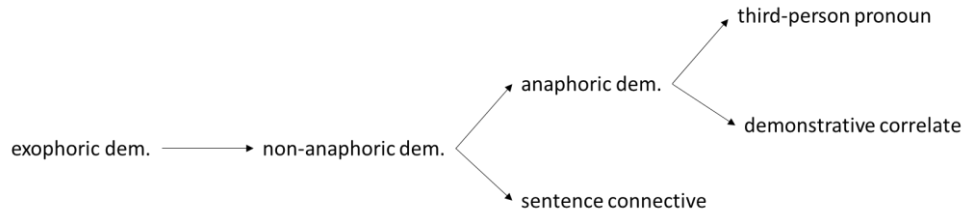


Figure 21: Grammaticalization path of Modern Turkish demonstratives, after (Balpınar 2019: 63)

Figure 21 presents the path from exophoric demonstratives into third-person pronouns. According to Balpınar (2019: 63), the different grammatical markers change their functions in a “chain-like structure,” which means, for example, “the non-anaphoric demonstratives still have some pragmatic (deictic) features of the exophoric use (i.e., presence/absence of pointing gesture),” and vice versa, with the other grammatical markers in this illustration.

#### Demonstrative > Relative pronoun

A further effect of demonstratives as a source for new grammatical markers is the pathway from demonstratives into relative pronouns. A syntactic feature of relative pronouns is that they are “coreferential with a prior noun (phrase); but [...] relative pronouns only occur in subordinate clauses” (Diessel 1999: 21). While in German demonstratives and relative pronouns cannot be distinguished regarding their morphology, they differ in their syntactic features, as illustrated in Examples t and u (Diessel 1999: 21).

t) German (Diessel 1999: 21)

Er	hat	einen	neuen	Vorschlag	gemacht,	der	mir
he	has	a	new	suggestion	made	REL	me
besser	gefallen	hat.					
better	pleased	has					

“He made a new suggestion, which I liked better.”

- u) Er hat einen neuen Vorschlag gemacht, der hat  
 he has a new suggestion made DEM has  
 mir besser gefallen.  
 me better pleased

“He made a new suggestion; this one I liked better.”

The examples look similar, but there is a difference between the second parts of both sentences. In Sentence t, there is a subordinating clause with a relative pronoun, whereas the example in u differs in the syntactic feature of the demonstrative. The second example can be treated as two separated sentences, since a demonstrative can occur in the first position followed by a verb in a sentence, whereas a relative clause needs a verb at the end of the second part. Furthermore, the relative pronoun is restricted in the first position of the subclause, while a demonstrative does not have a fixed position; it could “also occur after the finite verb” (Diessel 1999: 22). In addition, Heine et al. (1991) show the development from the demonstrative *ile* into the relative clause marker *ile* in Kenya Pidgin Swahili.

- v) Kenya Pidgin Swahili (Heine et al. 1991)

hakuna baridi sana, kwa sababu ile li-kuwa ndani ya  
 be.not cold very because REL Past-be inside  
 frich watu kwisha maliza yote  
 fridge people PFV finish all

“There is not really cold (beer) because that which was in the fridge has all been finished.”

In Example v, *ile* (that) still functions as a demonstrative, but the development into a relative clause marker has already started, and it additionally has the function to “introduce a relative clause” (Heine et al. 1991: 183).

- w) Kenya Pidgin Swahili (Heine et al. 1991)

kila mtu ile na-ambi-wa mambo  
 each person REL NF-tell-PASS matter  
 hii na-shangaa  
 this NF-be.surprised

“Everybody who was told this story was surprised.”

In Sentence w, it is the last stage of the development from *ile* as a demonstrative into the relative marker. Interestingly, there is an overlap of different grammatical markers in many languages in which the forms of “complementizer, definite marker, and relative clause marker” share similarities with demonstratives or pronouns (Frajzyngier 2003: 236). This characteristic is presented in Table 11.

**Table 11: The overlap of complementizer and marker of definite and relative clauses, after (Frajzyngier 2003: 236)**

Language	Demonstrative	Definite	Complement	Relative
German	das/die/der	das/die/der	dass	das/die/der
Yiddish			vos	vos
English	that	the<that	that	that/wh
Ge'ez	za	Ø	za	za
Amharic	ya	u/w	ya/ala	ya
Beja	ūn/ tūn	ū/tū	Ø	ū/tū
Mupun	nə	nə	nə	ɗə
Ewe	si/sia	a/lá	be/béna	sì
Toba Batak	na	na	na	
Yurok		ku/k'i		ku/k'i
K'ekchi		li		li
Drehu	la	la	la-ka	

#### Demonstratives > specific indefinite articles

While in English there is no differentiation between different indefinite nouns, other languages distinguish between two types: nouns with or without “specific referent[s]” (Diessel 1999: 30). To illustrate this, many languages use the number *one* for the former type, whereas for the latter type *zero* is used. In English, normally an indefinite article is used for indefinite nouns. However, in spoken English in colloquial forms “the unstressed *this* and *these* are commonly used to mark specific indefinite information” (Diessel 1999: 30). Concerning English, the indefinite article arises from the Old English form *an*. Since it has a long vowel, it is similarly pronounced as *stone* which derives from *stan*. In Old English, this form means *a certain, one* but it is not used as it would be today (Hopper & Traugott 2003: 119). This form only occurs in spoken language.

x) English (Hopper & Traugott 2003: 119)

Would you like *a* Mai Tai? – Yes, I'd love *one*.

Interestingly, the English proximal demonstrative *this* can be interpreted as an indefinite marker. According to Wright & Givon (1987: 9), this form is mainly found in colloquial language and by “younger or less educated people”. However, in the 1970s, this form was used in letters, too Wright & Givon (1987: 9). While the demonstrative *this* is deictic, the indefinite form has no such functions (Diessel 1999: 30). In addition, Wright, and Givon (1987: 11) point out:

‘this’ is introduced into the indefinite paradigm as a marker of pragmatically prominent indefinites, marking up first introduction those referents that are going to be important/relevant or topical in the subsequent discourse. The expansion of the functional scope of indefinite markers--as in modern English, French or German--to general indefinites, there to mark the contrast between known/accessible referents vs. those that are introduced for the first time, is a later development in the history of indefinite marking.

For additional pathways of grammaticalized demonstratives, see Diessel (1999). He further introduces the development of determinatives, temporal adverbs, directional/locational preverbs, number marker and possessives. Table 12 summarizes demonstratives as a source for grammaticalization processes and the grammatical markers they developed.

**Table 12: Grammaticalization of demonstratives, after (Diessel 1999: 39)**

Target	Source			
	Pronominal	Adnominal	Adverbial	Identificational
third person pronouns	x			
relative pronouns	x			
complementizers	x			
sentence connectives	x			
possessives	x			
verbal number markers	x			
pronominal determinatives	x			
definite articles		x		
boundary markers of attributes		x		
adnominal determinatives		x		
nominal number markers		x		
specific indefinite articles		x		
directional preverbs			x	
temporal adverbs			x	
nonverbal copulas				x
focus markers				x
expletives	x			x

In addition, Helmbrecht (2017) summarizes the results of Diessel (1999) and Heine and Kuteva (2002) in Table 13.

## Demonstrative pronouns

**Table 13: Demonstratives as sources for various grammaticalizations as a summary of Diessel (1999) and Heine and Kuteva (2002), after Helmbrecht (2017: 139)**

Source(s)	Target(s)	Some references
demonstrative pronouns	>3 <sup>rd</sup> person PRON > clitic PRON > affix	Givón (1984: 353-360); Lehmann (1995[1982]: 39-42); Heine & Kuteva (2002: 112)
	> relative pronouns	Lehmann (1984)
	> complementizer	Harris & Campbell (1995: 287); Heine & Kuteva (2002: 106)
	> subordinators (adverbial clauses)	Heine & Kuteva (2002: 114)
	> sentence connectives	Diessel (1999: 125); Heine & Kuteva (2002: 108)
adnominal demonstratives	> <b>definite articles</b> > specific/indefinite > noun class/gender markers	Greenberg (1978); Lehmann (1995[1982]: 38, 55); Heine & Kuteva (2002: 109); and many others
	> relative pronouns	Lehmann (1984: 378-383); Heine & Kuteva (2002: 113)
	> linkers	Himmelmann (1997: 172-188)
	> boundary markers of postnominal relative clauses/ <b>relative particles</b>	Diessel (1999: 132)
	> determinatives (demonstratives that function as the head of a relative clause)	Quirk et al (197: 217)
	> <b>specific indefinite articles</b>	Gundel et al. (1993)
adverbial demonstratives	> <b>temporal adverbs</b>	Diessel (1999: 139)
	> directional preverbs	Lehmann (1995[1982]: 97-104)
identificational demonstratives	> <b>non-verbal copulas</b> > focus markers	Diessel (1999: 147-148); Heine & Kuteva (2002: 108, 111)
	> expletives	Traugott (1992: 216-219)

In this chapter, the different grammaticalization processes of demonstratives were presented. It was explained how demonstratives developed from *go*, *there* and *here*, and how they gave rise to many grammatical markers. In Subchapter 3.1.6, a model for demonstrative reference is revealed.

### 3.1.6 A model for demonstrative reference

Peeters et al. (2020) provide a model for demonstrative reference, including the factors that may influence the choice of a certain demonstrative. The researchers consider three levels: first, the lexical level is a descriptive form of a demonstrative differently realised in the languages; however, the second level refers to the cognition, which means that a speaker may choose a demonstrative based on “physical, psychological, and referent-intrinsic factors” (Peeters et al. 2020: 6); the third level summarises sociocultural factors, such as characteristics in language, the cultural background of a speaker or “the affordances of the immediate physical context” (Peeters et al. 2020: 6).



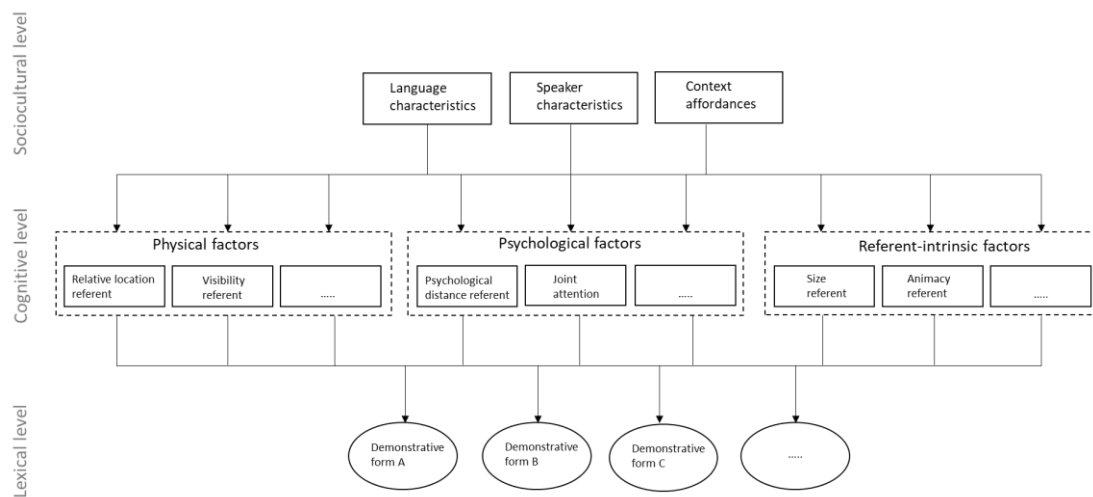


Figure 22: A model for demonstrative reference, provided by Peeters et al. (2020)

The first level in the illustration is the lexical level. On this level, the lexical form of a demonstrative in different languages is considered, which means, for example, in English, the forms *this/that* for proximal and *these/those* for distal referents; or, as in this illustration, a tripartite distinction, such as in Turkish *bu/şu/o*. As previously studies have suggested, demonstratives belong to the first words of infants and are “presented in a speaker’s long-term, lexical memory early in life” (Peeters et al. 2020: 6). The idea of Peeters et al. (2020) is that the knowledge of a speaker on the lexical level is fulfilled by the interaction of the cognitive and sociocultural levels.

The cognitive level is between the lexical and sociocultural levels and represents the choice a speaker makes regarding the demonstrative form used in an utterance. According to Peeters et al. (2020), the influence of these three illustrated factors (the physical, psychological, and referent-intrinsic) can change during a lifespan as they are ongoing processes. In addition, they point out that further factors can be considered, such as “intrinsically binary and categorial” aspects (Peeters et al. 2020: 7). According to the researchers, the speaker’s mind activates certain factors that impact the choice of demonstrative form. Nevertheless, they assume that more than one demonstrative form “may be activated at the same time in a given context” but only the one form “with the highest degree of activation will be selected and produced” (Peeters et al. 2020: 7). Moreover, these factors may have different levels of importance due to cultural differences, characteristics in language or context of a speaker. Therefore, the speaker needs “theory-of-mind capacities” (Peeters et al. 2020: 19).

The top of the model is the sociocultural level, including language and speaker characteristics, as well as context affordances. The model has a top-down design that

demonstrates that factors of the cognitive level play a certain role. Within a speaker’s mind, the importance of such roles can differ and depend on personal perception and experience. In addition, the extent of influence by certain factors can differ from speaker to speaker, since everyone, including speakers of the same native language, has personal experiences and cognitive perceptions. In addition to language and speaker characteristics, the affordance of “the immediate physical and conversational context will modulate the extent to which specific cognitive factors influence a speaker’s choice” (Peeters et al. 2020: 7) of a certain demonstrative form. Since studies that have explored factors influencing the use of demonstrative often involved infants, they mostly examined whether the position of the experimenter impacts the choice of demonstrative forms. According to Peeters et al. (2020), speakers may use such affordance in situations in which referents are easily distinguishable. The model “may to a large extent generalize to situations of endophoric reference and to the production of pointing gestures” (Peeters et al. 2020: 19). In addition, it includes several factors that may play a role in the choice of demonstratives. Due to the different levels in the model, it seems plausible and adaptable for several situations and contexts of speakers.

After briefly introducing the model, the typology of the investigated languages is presented.

### 3.2 Language typology of English, German, Russian and Turkish

Figure 23 illustrates language families and examples for each branch. The languages

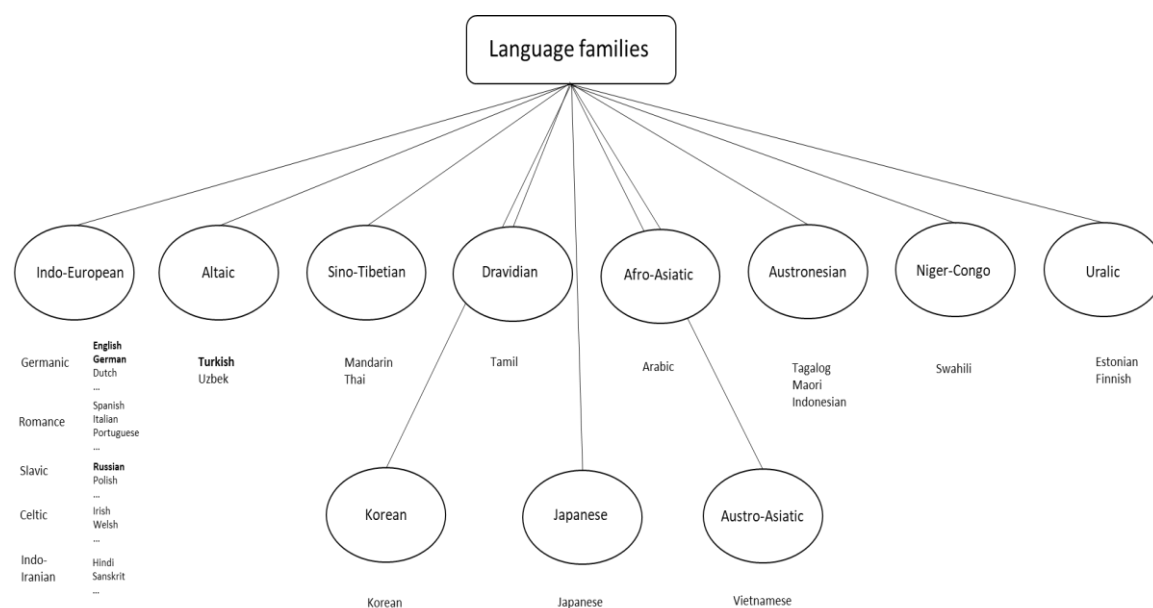
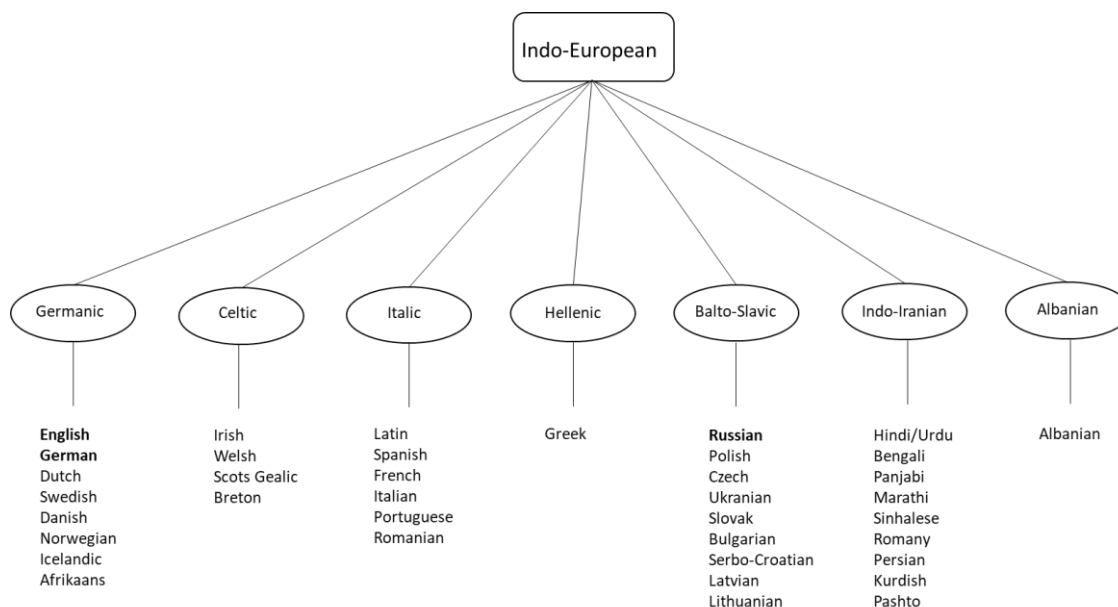


Figure 23: Language families with branches and languages

focused on are in bold type. English and German are Germanic languages and part of the Indo-European language family, as well as Russian, which is a Slavic language. As an Altaic language, Turkish is in another language family. Further aspects of the four languages are presented separately in the following. In Figure 24, the Indo-European language family, with its seven branches, is illustrated. The Germanic languages include



**Figure 24: Indo-European language family and the branches with their languages, especially English, German, and Russian**

English, German, Dutch, Swedish etc. The best-known Celtic languages are Irish and Welsh. Both the Italic and Indo-Iranian branches consist of many languages. In this case, Russian as a Balto-Slavic language is of high relevance (as well as English and German). In general, the English language has 1.5 billion speakers and is a world language. It is a lingua franca. Therefore, many pidgin and creole languages have developed based on it. Although other languages have a higher number of native speakers, English has a special importance. The number of non-native speakers is particularly high, which indicates the

### 3.2.1 Demonstratives in English

Since English is a West Germanic language, it belongs to the Indo-European language family (Baugh & Cable 2002). As previously mentioned, due to its high number of non-native speakers, English plays an important role in language acquisition. In this study, the use of English demonstratives is examined. Hence, in this subchapter the characteristics of demonstratives in English are presented.

In general, the category of demonstratives is divided into demonstrative determiners/complementizer, demonstrative pronouns and demonstrative adverbs (sometimes called demonstratives expressions). The first type contains the determiners *this* and *these* for proximal reference, and *that* and *those* for distal objects. Both proximal and distal demonstratives are combined with “countable and uncountable nouns” (Biber 1999: 272). The second type refers to demonstrative pronouns that have the exact same form as the determiners. The latter refers to adverbial expressions such as *here* and *there* or *now* and *then* (Biber et al. 1999; Cornish 2007). In older grammars, demonstratives are called “demonstrative adjectives” (Swan 2016). According to Biber (1999), the definite article and the demonstrative determiners have a close relationship, referring to their definite meaning.

*Distal and proximal demonstratives*

However, two forms of demonstratives are considered: the proximal *this* and the distal *that* (Huddleston & Pullum 2002), illustrated in Table 14. Also, demonstratives are able to “specify whether the referent is near or distant to the addressee” (Biber 1999: 347).

**Table 14: Demonstratives in English, after (Huddleston & Pullum 2002: 1504)**

	Singular	Plural
Proximal	this	these
Distal	that	those

The distal and the proximal forms are “inflect[ed] for number” (Huddleston & Pullum 2002: 1504). In addition, “the context shared by speaker/writer and hearer/reader” (Quirk et al. 1985: 372) determine the reference of the used demonstratives. Comparing demonstrative determiners with pronouns, the determiner has a close relationship with definite articles, as illustrated in Table 15.

**Table 15: Relatedness between demonstrative pronouns and personal pronouns, as well as between demonstrative determiners and the definite article (Biber 1999: 347)**

definite article	personal pronoun	demonstrative determiner	demonstrative pronouns
the book	it	this/that book	this/that
the books	they	these/those books	these/those
the girl	she	this/that girl	(this/that)
the girls	they	these/those girls	(these/those)

According to Biber (1999: 347), there is a correlation between personal pronouns and demonstrative pronouns, as well as between the definite article and demonstrative determiners. He further explains that demonstratives can refer to time, with references such as *this year* or *that day*.

However, the use of *that* can indicate “emotional distance,” whereas *this/these* display more empathy than *that/those* (Biber 1999: 273). That may reflect “negative attitude such as disapproval” (Huddleston & Pullum 2002: 1505). In addition, Huddleston and Pullum (2002) distinguish between dependent and independent demonstratives, as presented in Table 16.

**Table 16: Dependent and independent demonstratives, after (Huddleston & Pullum 2002: 1504)**

---

i Dependent:	[This milk] is sour. Where’s [that boy of yours]? [These two] are mine. Please pass [those knives]. He’s not often [this late]. It didn’t cost [that much]
ii Independent:	[All this] is mine. [That]’s not true. Can I have a few of [those]? His manner was like [that of a schoolmaster]. [Those who broke the law] could expect no leniency.

---

According to Diessel (2006: 469), the locative adverbs *here* and *there* can be classified as further demonstrative expressions or as particles. Furthermore, he explains that adverbs function to “modify the meaning of a verb” that cannot be restricted to the adverbs *here* and *there*. Normally, they are used in combination with a noun or preposition or to locate the referent. Thus, this “is not consistent with their classification as adverbs” (Diessel 2006: 474).

Since the singular form of demonstratives in the independent use is often used for inanimate objects; Examples 1 to 5 demonstrate this constraint:

- 1) English (inspired by Huddleston & Pullum 2002)  
Those who can afford a big house often have a big front yard.
- 2) \*That who can afford a big house often has a big front yard.
- 3) She/That helped me out.

- 4) The price of a new VW has exceeded that of a Mercedes.
- 5) \*The mayor of Hamburg will meet with that of Berlin.

The first example reveals that, with the use of the plural demonstrative, the sentence is grammatically correct, since *those* refers to a group of people. However, *that* does not have the same reference; hence, it cannot be used (Huddleston & Pullum 2002). Notably, *that* is “more restricted in that it cannot have a personal antecedent” (Quirk et al. 1985: 872). In this restriction, it is unsurprising that *that who* is not possible to use, whereas *those who* is commonly “acceptable” (Quirk et al. 1985: 872). It follows that this restriction should not be confused with the relative pronoun *that*. The third sentence demonstrates the difference between the personal pronoun and singular demonstrative *that*. While *she* is a person, *that* refers to an inanimate object or a thing in this case. Again, Sentences 4 and 5 present that the singular form of demonstratives is restricted to an inanimate, here referring to the price of a car, whereas the last sentence indicates that *that* cannot be used anaphorically here *for the mayor*. However, there is an exception: when *this* and *that* are used as a “subject of the verb be,” the singular forms can “have animate reference” (Huddleston & Pullum 2002: 1505). According to Biber (1999), this is different from personal pronouns. Like Huddleston and Pullum (2002), he underlines that demonstratives only refer to humans when they act as “an introductory subject” (Biber 1999: 347). In addition, only “in this position the pronoun can have both personal and nonpersonal reference” (Quirk et al. 1985: 373). This point is illustrated in the following examples inspired by Huddleston and Pullum (2002) and Biber (1999).

- 6) English (inspired by Huddleston & Pullum 2002)  
This is my mother, Sabine.
- 7) Look who is here. Isn't that your brother?
- 8) That's your friends Anna and Bella over there.

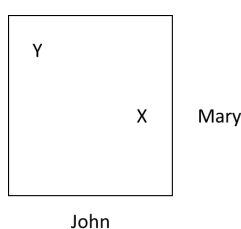
Typically, the verb *be* functions here to specify the referent. Hence, singular forms cannot be used like in 9 and 10. Note that even the singular form is used referring to two persons or groups consisting of more persons.

- 9) English (Huddleston & Pullum 2002: 1505)  
\* This isn't very well today.

- 10) \* That is President.

*The deictic use of demonstratives*

We now illustrate the deictic use of the nominal demonstratives *this* and *that* in contrast to “the relative spatial location of their referents” (Dixon 2003: 80). In Example 11, Mary and John are talking about a bowl of strawberries that Mary offers John.



**Figure 25: Deictic function of demonstratives, after (Dixon 2003: 80)**

Mary asks John, “Would you like *this one*?” but he always refuses and wants the other bowl, illustrated in Examples 11.

- 11a) English (Dixon 2003: 80)  
 Mary: Would you like this one? [pointing at X]  
 John: No, I’d rather have that one [pointing at Y]
- 11b) Mary: Would you like this one? [pointing at Y]  
 John: No, I’d rather have this one [pointing at X]

In 11a, Mary refers with *this* to the nearer bowl, which she offers John, but he wants to have the farther bowl, referring to it by using *that*. Note that John can only use *that* since Bowl Y is farther away from him than Bowl X, whereas Mary has the option to choose *this* or *that* one. Second, again, Mary uses *this*, but referring to the farther bowl, which John again refuses by saying he wants *this one*. So, the difference in 11b is that John can only use the pronoun *this* because Bowl X is closer to him than Bowl Y (Dixon 2003: 80). According to Dixon (2003: 80), “this only comes into play when there is an explicit spatial contrast between two objects, at different distances from the speaker” (Dixon 2003: 80). Furthermore, Dixon offers an example at the dentist. If the dentist asks me, pointing at a tooth, if *this one* hurt, but it is another tooth, I can still say, *No, it is this one*, because for me as a speaker there is no relevant difference in the spatial distance from me to my teeth.

Overall, *this* is used for new information, and when talking about two objects that are close to each other or, in other words, that “cannot be distinguished in terms of relative distance from the speaker, *this* is used for each” (Dixon 2003: 81). Comparing two objects, the farther one is described using *that*, the closer with *this*. Interestingly, the use of either *this* or *that* “is not determined by purely objective features of spatial location: there may be a subjective element involved” (Huddleston & Pullum 2002: 1505). In addition, this effect is “a matter of psychological rather than real distance” (Quirk et al. 1985: 374).

12a) English (Quirk et al. 1985: 374)

Have you seen this report on smoking? [‘the one I have recently been thinking about’]

12b) Have you seen that report on smoking? [‘the one I was looking at some time ago’]

As illustrated above, the subjective interpretation of the difference between *this* and *that* is abstract. Both sentences can “occur in the same situation, the only difference being the speaker’s subjective concept of ‘nearness’” (Quirk et al. 1985: 374).

Returning to the adverbial demonstratives *here* and *there*, again the scenario in which Mary offers John something is used, this time referring to a cake: X and Y stand for plates, and Mary wants to know where to put the cake.

13a) English (Dixon 2003: 81)

Mary: Shall I put it here? [pointing at X]

John: No, put it there. [pointing at Y]

13b) Mary: Shall I put here? [pointing at Y]

John: No, put it here. [pointing at X]

As before, the same deictic use and reference for *here* and *there* and *this* and *that* applies (Dixon 2003: 81). Both examples demonstrate that the use of gestures, such as pointing with the index finger or facial expressions, accompany the use of demonstratives (Huddleston & Pullum 2002). However, demonstrative adverbs do not always “have the same deictic functions as nominal demonstratives,” hence, this phenomenon needs to be analyzed for every language separately (Dixon 2003: 82).



In English, demonstratives occur with both functions: This and that and here and there may create a new joint focus of attention (e.g., Look, that's/there's Bill) or may indicate a contrast between two previously established referents (e.g., Here are two books. This one is mine, and that one is yours); but in other languages, the two uses are formally distinguished (Diessel 2006: 470).

However, adverbs can be combined with nominal demonstratives, but the demonstrative needs to agree with the postmodifier (Huddleston & Pullum 2002), as we can see in the following:

- 14) English (Huddleston & Pullum 2002: 1505)  
this book here
- 15) those flowers over there
- 16) \*this book there

In the deictic use, demonstratives can refer to abstract features in a context such as objects or actions that happen in the speaking situation.

**Table 17: Deictic demonstratives, after (Huddleston & Pullum 2002: 1505)**

- i I hadn't expected there to be this much damage.  
I've never seen a computer this small before.  
I'm not comfortable like this.  
Hold your head up like this.  
This is what he was doing.  
When we first travelled with Matthew, he was younger than this.
  - ii Stop that.  
I'm looking for something about that size.  
Don't look at me like that/that way.  
That is not how to do it.
- 

If, for example, the age of two children (as in the sentence about Matthew in Category i) or the size of two objects are compared, often gestures are used for pointing toward the referent/entity (Huddleston & Pullum 2002: 1505). Given the above, demonstratives are typically used in discourse deixis.

**Table 18: Discourse deictic use of demonstratives, after Huddleston and Pullum (2002: 1506)**

- i A: You look about fifteen. B: Is that meant to be a compliment?
  - ii I hope this conversation isn't being recorded.
  - iii Taking the Waltz first, a group of figures that really must be included are Natural Turn, Closed Change, and Reverse Turn, danced in that order.
-

Focusing on the examples in Table 18, the first *that* concerns the whole sentence of A. In ii, *this conversation* is said in an utterance of a conversation that takes place in the moment it is saying. In the last sentence, a specific order is presented, referring to it as *that order* (Huddleston & Pullum 2002). In addition, it can be distinguished between people who are close to us by using *this* or *these*, and people and things that are farther away by using *that* or *those*. The contrast is displayed in the following sentences 17-22. The first three sentences present the closer relation using *this*, whereas the last three examples present the more distant relation using *that* (Swan 2016: 144).

- 17) English (Swan 2016: 144)  
This is very nice – can I have some more?
- 18) Get this cat off my shoulder.
- 19) I don't know what I'm doing in this country.
- 20) That smells nice – is it for lunch?
- 21) Get that cat off the piano.
- 22) All the time I was in that country, I hated it.

#### *The anaphorical use of demonstratives*

Having discussed demonstratives in discourse, now the anaphorical use is illustrated. Demonstratives in anaphorical use means *this* or *that* (or *it*) are used in a context and refer back to objects or persons already mentioned (Swan 2016: 145). In addition, Huddleston and Pullum (2002: 1506) remark that the referred part of the aforementioned sentence is the antecedent to the demonstrative noun phrase that is coreferential.

- 23) English (Swan 2016: 145)  
So, she decided to paint her house pink. This/That really upset the neighbours, as you can imagine.
- 24) So, she decided to paint her house pink. This upset the neighbours so much that they took her to court, believe it or not. The case came up last week...
- 25) Then in 1917 he met Andrew Lewis. This was a turning point in his career: the two men entered into a partnership which lasted until 1964, and...
- 26) English (Biber 1999: 273)

The simplest form of chemical bond, in some ways, is the ionic bond. Bonds of this type are formed by electrostatic attractions between ions of opposite charge. This attraction is exactly of the same nature as the attraction that makes hair stand up when something synthetic is drawn over it. (ACAD)

Swan (2016: 145) points out that the use of such demonstratives indicates that “an interesting new fact has been mentioned.” In Sentence 24, Sentence 23 is expanded with more information about the anger of the neighbours. In this case, *this* is preferred. According to Swan (2016: 145), the use of *this* in the last example is “more natural.” In the example of Biber (1999), *this type* refers back to *the ionic bond* and the second anaphora *this attraction* is related to *electrostatic attractions between ions of opposite charge*. In general, both nominal demonstratives can function as anaphora, and they can be exchanged by each other “with very little effect on the meaning” (Huddleston & Pullum 2002: 1506). While demonstratives in the deictic use can be used to indicate contrast, in the anaphoric use they cannot. Either way, both “are not mutually exclusive,” as in the Example 27 (Huddleston & Pullum 2002: 1506):

27) English (Huddleston & Pullum 2002: 1506)

A: Look at the necklace she’s wearing.

B: That’s the one I gave her.

On the one hand, *that* is used anaphorically to the antecedent *the necklace she’s wearing*. On the other hand, it has a “distal deictic” function (Huddleston & Pullum 2002: 1506). In general, personal pronouns are used anaphorically more often to “coreferential NPs than [...] demonstratives” (Huddleston & Pullum 2002: 1506). A further property of demonstratives is that they can refer back to a whole sentence or clause.

28) English (Huddleston & Pullum 2002: 1507)

Harold would be absent in Salonika for some days; this made the arrangement for her own timetable much simpler.

29) He discovered that she had slept with several other boyfriends before him.

That shocked him a good deal, and they had a quarrel about it.

- 30) A fire had just been lighted, and things had been set out for drinks, and his response to these comforts was instantaneous.

While personal pronouns are more common when the antecedent is a noun phrase, demonstratives are used more frequently when the antecedent is a clause. In the aforementioned examples, there is the possibility to use the pronoun *it* instead of a demonstrative, but it is not very common.

- 31) English (Huddleston & Pullum 2002: 1507)

They had a blue rug, but that isn't the colour I wanted.

In Example 31, the antecedent can have the form of an adjective or adverbial phrase; here in example 31, it is the former case. The antecedent can be a clause, a noun phrase or adverbial or adjective phrases. In addition, it can have the form of a nominal that can be divided into two forms: first, *this* and *that* are deictically used; second, *that* is used non-deictically, which is presented in the following (Huddleston & Pullum 2002).

- 32) English (Huddleston & Pullum 2002: 1507)

[This copy] is clearer than [that].

- 33) [The wine we had yesterday] was too sweet for my taste but [this] is perfect.

- 34) English (personal knowledge)

Their names weren't on [the list of the dead], nor on [that of the missing].

If Example 27 is compared with those of 32 and 33, the difference between them is clearer. In the former example, *that* is used anaphorically and deictically, while *that* in Example 32 is deictic, and only “the head component” is anaphorical, since *that copy* is understood (Huddleston & Pullum 2002: 1507). The same situation appears in Example 33, in which *this* is deictic and only anaphorical to *the wine*. Thus, the important difference is that there is “no coreference between the bracketed NPs” (Huddleston & Pullum 2002: 1507). The last example presents *that* as non-deictic that refers to a nominal antecedent. Interestingly, if the second part of the sentence is not reduced, rather *the* instead of *that* would be used. In addition, the so-called anticipatory anaphora for *this* means that the antecedent is not integrated but separate.

- 35) English (Huddleston & Pullum 2002: 1509)  
There are still these candidates to interview: Lugton, Barnes, Airey, and Foster.
- 36) There are still Lugton, Barnes, Airey, and Foster to interview.

Particularly noteworthy is that “we can replace the anaphor by the antecedent” and get the shorter version of Example 35 in Example 36 (Huddleston & Pullum 2002: 1509).

#### *The cataphoric use of demonstratives*

The cataphoric use of demonstratives is illustrated in the following. Note that *they* cannot be used instead for *those* since “present-day English prefers the use of the plural demonstrative in such contexts” (Quirk et al. 1985: 352).

- 37) English (Quirk et al. 1985: 352, 375)  
Those who work hard deserve some reward.
- 38) He told the story like this: ‘Once upon a time...’.
- 39) These language options are open to our students: Spanish, French, and German.
- 40) English (Biber 1999: 273)  
We apologize to those readers who did not receive the Guardian on Saturday. (NEWS)

While Quirk et al. (1985) argue that the distal demonstratives *that* and *those* cannot be used cataphorically, Example 37 uses *those* but in a restrictive relative clause and postmodified (Quirk et al. 1985: 352). In Examples 38 and 39, the typical proximal demonstratives *this* and *these* can either be used cataphorically or anaphorically (Biber 1999: 273). In addition, *those* is especially used in academic contexts or in news, whereas in fiction the use of demonstratives “without postmodification” is more common (Biber 1999: 350).

#### *Further uses of demonstratives*

After introducing the use of demonstratives in deictic, anaphoric and cataphoric reference, now further uses of demonstratives are discussed. Another function of

demonstratives is that the mentioned referent, such as a noun phrase, does not have to be in the present utterance; instead, the mentioned entity can lie in the past. Normally, *that* is used in such contexts, but *this* appears as well when “the shared grounds for identification are current” (Huddleston & Pullum 2002: 1510). The Examples 41 and 42 display recognitional use.

41) English (Huddleston & Pullum 2002: 1510)

You never wore that scarf I bought you.

42) It’s time something was done about these blackouts we’ve been having.

While it seems very common in informal conversations, the use of the proximal demonstrative *this* is often used incorrect, as in,

43) English (Huddleston & Pullum 2002: 1510)

\*He’s been married and got this half-grown kid.

This is a false definite, when the information is not enough “to identify the referent” (Huddleston & Pullum 2002: 1510). In addition, *that* can refer to noun phrases that are “neither deictic nor anaphoric” (Huddleston & Pullum 2002: 1510). Thus, there is enough information in these special noun phrases that the referent can be identified by the noun phrase instead of the demonstrative. Interestingly, the formal use of the example *That which he said was nonsense* is not very common. Instead, in informal situations, *what he said was nonsense* would be preferred. This construction can only be used with *that* (Huddleston & Pullum 2002: 1510). Furthermore, *that* can be seen as a corresponding counterpart of the pronoun *it*, which can be stressed in specific situations, such as, *That’s it*. Normally, the demonstrative *that* is used when “there is a need to express contrast or emphasis” (Biber 1999: 350). In addition, there are further characteristics when using ‘that’. In conversations, *that* can be used with “reversed wh-clefts,” illustrated in the following examples, 44 - 46:

44) English (Biber 1999: 350)

Those who work hard deserve some reward.

45) He told the story like this: ‘Once upon a time...’.

- 46) These language options are open to our students: Spanish, French, and German.

What is more, a further possibility to use *that* is as a degree modifier for adjectives or adverbs (Huddleston & Pullum 2002: 1510). In such contexts, there are three possible functions in this scenario: first, *that* is deictic, such as in, *I do not want to buy a house that is that small* (pointing to the referred house); second, the demonstrative *that* can be used anaphorically, as in, *Noah is one-meter tall and Henri is almost that tall too*; third, neither of these functions apply, as in, *I'm not feeling (all) that well today* (Huddleston & Pullum 2002: 1510). The third function appears mostly in informal communication (and in British English; Huddleston & Pullum 2002).

While *which* and *that* are both relativizers and share similarities, they differ in their patterns of use. Normally, the use of *that* in non-restrictive clauses is not very common, but “it often occurs in a series of postmodifiers and is used for special stylistic effect (especially in fiction)” (Biber 1999: 615). In Examples 47 and 48, this phenomenon is illustrated.

- 47) English (Biber 1999: 615)

Here one might say to those sliding lights, those fumbling airs, that breathe and bend over the bed itself, here you can neither touch nor destroy.

- 48) I am talking about an organization that probably few of you have heard of, that can and will provide to some, perhaps to some of you, a year of travel, cultural refreshment, and excitement you'll remember a long time.

Typically, the pronoun *that* is used in indirect speech.

- 43) English (Quirk et al. 1985: 1025)

Neighbours said that as a teenager he had earned his pocket money by delivering newspapers.

#### *The combination with 'one'*

A common phenomenon that is often used in utterances is the combined use of an independent demonstrative with *one*, which can either be the head of a sentence or “fused

with a dependent” (Huddleston & Pullum 2002: 1512). The Example 50 and 51 illustrate this characteristic.

50) English (Huddleston & Pullum 2002: 1512)

These seats are still available: [Which one(s)] do you want? [one as head]

51) These seats are still available: [Which] do you want? [fused head]

The use of ‘one’ underlies some restrictions. Demonstratives can be used in both forms, with ‘one’ as a head or as a fused head, such as in the next example.

52) English (Huddleston & Pullum 2002: 1512)

These are excellent biscuits. Can I have [another]/[another one]?

According to Biber (1999: 348), demonstratives that refer “to countable entities can be clarified by the addition of one/ones.” In this sense, demonstratives are considered determiners.

53) English (Biber 1999: 348)

A: That picture of a frog, where is it?

B: I like this one.

54) English (Quirk et al. 1985: 372)

This chair is more comfortable than that one.

55) Those apples are sweeter than these ones.

In general, this form is primarily used in conversations (Biber 1999: 348). However, both *ones* and demonstrative *that/those* can be used as a substitute. The difference between them is that *that* can also be a pro-form for a noncountable noun, which does not apply to *one* (Quirk et al. 1985: 872).

56) English (Quirk et al. 1985: 872)

The victim’s own blood was of a different blood group from that (= the blood) found on the floor.



Demonstratives can be used in various forms. The use of singular forms is more common than that of plural forms. Since the pronoun *that* can also be used as a complementizer, it possesses special features. In Subchapter 3.2.2, demonstratives in German are presented.

### 3.2.2 Demonstratives in German

As a West Germanic language, German belongs to the Indo-European language family. German possesses a particular article system with three genders and definite and indefinite articles, as well as four different cases that need to agree with noun and adjectives. Like English, German has two numbers. In main clauses, the verb is on the second position, whereas in subclauses the verb is in the final position.<sup>11</sup> Demonstrative pronouns, possessive pronouns and indefinite pronouns belong to the class of determinatives (Eisenberg 2004). In general, determinative pronouns can be classified using either definiteness or indefiniteness. In Figure 26, this classification is illustrated after Eisenberg (2004).

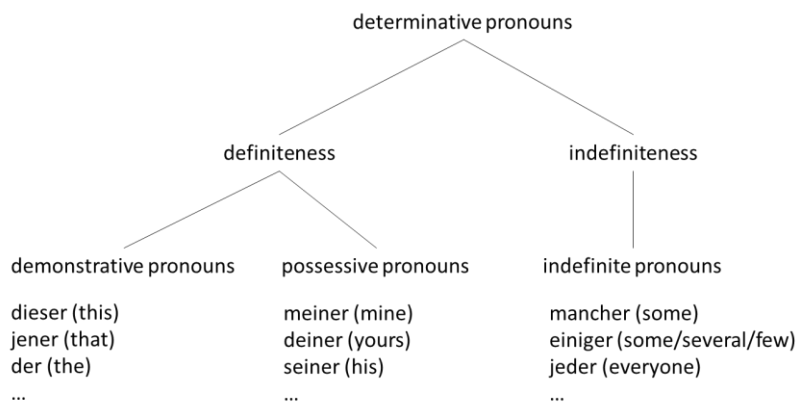


Figure 26: Determinative pronouns, after (Eisenberg 2004: 180)

According to Hentschel (2010: 291), the root of the word *demonstratives* is the Latin *demonstrare*, which means *to indicate* something. In German, the following pronouns are considered demonstratives: *der/die/das*, which have the same form as the definite articles, *dies/dieser/diese/dieses* and *jener/jene/jenes*. In addition, there are further forms that belong to demonstrative pronouns, such as *derjenige/diejenige/dasjenige*, *ein* and *solcher* (Helbig & Buscha 2001: 229). The difference between the article *der* (the) and its demonstrative counterpart is that in the former case the pronoun is followed by the noun,

---

<sup>11</sup> Besides, in subclauses with past perfect the finite verb is in front of the two verbs that are in infinitive. For example: Ich hatte gestern keine Zeit, weil ich meinen Mann vom Bahnhof **habe** abholen müssen. (I did not have time yesterday, because I had to pick up my husband from the train station.)

whereas in the latter case the substantive can be omitted (Helbig & Buscha 2001). In recent studies, there has been a tendency to distinguish between the so-called *die-paradigm* and *diese-paradigm*. According to Patil et al. (2020: 2), *die* refers to the demonstrative *die/der/das*, whereas in earlier grammars the order of pronouns is *der/die/das*. The same occurs with *diese/dieser/dieses*, which earlier was ordered by *dieser/diese/dieses* (Patil et al. 2020: 2). This change may be traced to the gender debate. Eisenberg (2004; 2013) states that the inflection of demonstratives mostly follows that of pronominal inflection, as illustrated in the Table 19.

**Table 19: Pronominal inflection of demonstratives, after (Eisenberg 2013: 164)**

	Masculine	Feminine	Neuter	Plural
Nominative	dies er	e	es	e
Genitive	es	er	es	er
Dative	em	er	em	en
Accusative	en	e	es	e

The demonstrative pronoun *der* differs in its inflection from that of a definite article, as illustrated in the Table 20.

**Table 20: Declension of the demonstrative pronouns *der/die/das*, after (Helbig & Buscha 2001: 229)**

	Masculine	Feminine	Neuter	Plural
Nominative	der	die	das	die
Genitive	dessen	deren	dessen	deren/derer
Dative	dem	der	dem	denen
Accusative	den	die	das	die

In comparison with demonstrative pronouns, the declension of articles has different forms for dative and genitive. In the plural, either *deren* or *derer* can be used depending on the position in the sentence. The former is used when the pronoun is followed by the noun, the latter when the noun is followed by the pronoun in a post-substantival position (Eisenberg 2004).

- 1) German (Eisenberg 2004: 182)
 

deren	Ansicht
their	view
- 2)
 

die	Ansicht	derer
the	view	those

The view of those

The forms *dieser* and *jener* can either be used as pronouns or as articles. Moreover, they can be independent phrases. In general, pronouns need to be identified as subjects, attributes or objects. The longer forms of demonstratives, such as *derjenige*, reduced over time. While the relative pronoun *der* has the same form as the demonstrative pronoun *der*, their syntactic features are different. In relative clauses, the verb has always the final position, whereas in sentences with a following demonstrative *der* the position of the verb is on the second position, as in main clauses, illustrated Example 3. (Eisenberg 2004: 182)

3) German (Eisenberg 2004: 182)

Es war einmal ein Mann, der hatte sieben Söhne.  
it was once a man DEM.Nom had seven sons.  
“Once upon a time there was a man who had seven sons.”

Example 3 involves the phoric use. The pronouns *dieser* (this one) and *jener* (that one) are less common in conversation. In German, *der hier* (this one here) or *der dort* (that one over there) are frequently used in spoken language (Eisenberg 2004: 182ff).

*The anaphoric and cataphoric use of demonstratives*

In anaphoric use, the demonstratives refer back to a person or an entity mentioned earlier in the context. Like in English, they can refer to a whole sentence, such as the neutral forms *das* and *dies*. In Example 5, *das* is presented, which generally summarises the verbal utterance.

4) German (personal knowledge)

Kennst du seine Freundin? Nein, die  
know you his girlfriend No, DEM.Nom  
kenne ich nicht.  
know I not.  
“Do you know his girlfriend? No, I don’t know her.”

5) German (Helbig & Buscha 2001: 230)

Er wollte kommen. Das hat er versprochen.  
He wanted come DEM.Nom has he promised.  
“He wanted to come. He promised that.”

In cataphoric use, the demonstrative is anticipatory as in the Example 6.

6) German (Helbig & Buscha 2001: 229)

Wir	gedenken	derer,	die	ihr	Leben	für
We	remember	DEM.Gen	the.RELPr.	their	lives	for
die	Befreiung	vom	Faschismus	gaben.		
the	liberation	of	facism	gave		

“We remember those who gave their lives to be liberated from fascism.”

Since it is not very common to use the forms *der* or *dieser* cataphorically, normally the singular pronoun *derjenige* and the plural form *derjenigen* are used followed by a relative clause (Eisenberg 2004: 183). In some cases, there is the possibility to use *derjenige* (those) directly before a genitive attribute. In addition, the pronoun *solche* can be used (Helbig & Buscha 2001: 230). The stem *jen* refers morphologically to specify something or someone (Eisenberg 2004: 183).

7) German (personal knowledge)

Wir	wollen	diejenigen	finden,	die	am
We	want	DEM.Acc.Pl	find	the.RELPr.	at the
besten	singen	können.			
best	sing	can			

“We want to find those who can sing best.”

8) Wir	grüßen	alle	Handballspieler	und	solche,
We	greet	all	handball player	and	DEM.Nom
die	es	werden	wollen.		
the.RELPr.	it	become	want		

“We greet all handball players and those who want to become one.”

*Further characteristics of German demonstratives*

In addition, *dieser* and *jener* are used to compare two things. The former is used for the nearer object, the latter for the farther (Helbig & Buscha 2001: 230).

9) German (Helbig & Buscha 2001: 230)

Hier	sind	zwei	Wege.	Dieser	führt	zum
Here	are	two	ways	DEM.Nom	lead	to
						the
Schloss,	jener	zur	Stadt.			
castle	DEM.Nom	to	city			
		the				

“Here are two ways. This one leads to the castle, that one to the city.”

In written language, commonly *erstere/r* (the former) and *letztere/r* (the latter) are used for this phenomenon. In addition, the combination of *der/die/das eine* (this one) and *der/die/das andere* (that one) is usually used in communication, as illustrated in Example 10 (Helbig & Buscha 2001: 230).

- 10) German (personal knowledge)
- |         |        |       |            |              |
|---------|--------|-------|------------|--------------|
| Ich     | habe   | zwei  | neue       | Freundinnen. |
| I       | have   | two   | new        | friends      |
| Die     | eine   | kommt | aus        | Peru,        |
| D       | one    | come  | from       | Peru         |
| die     | andere | aus   | Australien |              |
| DEM.Nom | other  | from  | Australia. |              |
- “I have two new friends. One is from Peru, the other from Australia.”

A special case is the use of the pronoun (*ein*) *solcher* with an adjunction that is following the noun (Helbig & Buscha 2001: 230).

- 11) German (Helbig & Buscha 2001: 230)
- |      |              |     |      |     |          |
|------|--------------|-----|------|-----|----------|
| Mich | interessiert | der | Fall | als | solcher. |
| Me   | interested   | the | case | as  | DEM      |
- “I am interested in the case (as such).”

- 12) German (personal knowledge)
- |      |         |        |       |      |      |           |
|------|---------|--------|-------|------|------|-----------|
| Ben  | ist     | zwei   | Jahre | lang | nur  | gereist.  |
| Ben  | is      | two    | years | long | just | travelled |
| So   | etwas   | möchte | ich   | auch | mal  | machen.   |
| Such | a thing | want   | I     | too  | once | make      |
- “Ben (only) travelled for two years. I would like to do something like that, too.”

Interestingly, instead of *ein solches*, sometimes the form *so etwas* (such a thing) can occur (Helbig & Buscha 2001: 230), illustrated in Example 12.

Since genitive demonstratives can also belong to possessive pronouns, there is still a difference in meaning when using either *sein/ihr* (her/his) or *dessen/deren* (its) (König & Gast 2012: 62), illustrated in Example 13:

- 13) German (König & Gast 2012: 62)
- |           |     |      |        |        |      |
|-----------|-----|------|--------|--------|------|
| Plötzlich | sah | Otto | seinen | Freund | mit  |
| Suddenly  | saw | Otto | his    | friend | with |

seiner Frau.  
his wife  
dessen Frau.  
DEM.Gen wife  
“Suddenly Otto saw his friend with his wife.”

In English, there is no apparent difference between both sentences. Either way, in German, they differ in meaning and reference. In the first example, the referent *his wife* can either be Otto’s wife or the wife of his friend, whereas in the second example, the only possible referent is the wife of his friend (König & Gast 2012: 62). Due to the “fact that English does not have monomorphemic demonstrative pronouns for animate reference” (König & Gast 2012: 62), there is no such differentiation as that in Example 13. In addition, Hinterwimmer (2014: 62) states that German demonstrative pronouns “have a strong bias against being resolved to antecedents that are the subject of the immediately preceding sentence.”

In addition, there is a tendency to sometimes use the demonstrative pronoun instead of a personal pronoun. This leads to a difference in use between them. On the one hand, personal pronouns have “a weak preference to refer to the most prominent antecedent in the discourse”; on the other hand, demonstrative pronouns refer to “less prominent antecedent[s]” (Patil et al. 2020: 1). To illustrate this point, personal pronouns refer to the subject, whereas demonstrative pronouns tend to relate to the less common or prominent object, as illustrated in Example 14.

- 14) German (Patil et al. 2020: 1)
- |       |        |      |              |        |        |      |
|-------|--------|------|--------------|--------|--------|------|
| Peter | wollte | mit  | Paul         | joggen | gehen, | aber |
| Peter | wanted | with | Paul         | joggen | go     | but  |
| er/   | der    | war  | erkältet.    |        |        |      |
| he    | DEM    | was  | catch a cold |        |        |      |
- “Peter wanted to go jogging with Paul, but he had a cold.”

A particularity of German demonstratives is that the pronoun *das* can either be used for singular or plural reference, “regardless of the gender and number properties of the referent” (Diessel 2006: 473).

- 15) German (personal knowledge)
- |     |      |       |         |
|-----|------|-------|---------|
| Das | sind | meine | Schuhe. |
| DEM | are  | my    | shoes.  |
- “These/Those are my shoes.”

According to Hinterwimmer (2014: 103), demonstratives in German “always signal that a non-default interpretation is intended”. If there is a potential for binding, the “most salient antecedent” determiner phrase is used as a “subject” determiner phrase, and vice versa (Hinterwimmer 2014: 103). Hence, if there is no binding potential, the “most salient antecedent is the most recent DP [determiner phrase] functioning as an aboutness topic” (Hinterwimmer 2014: 103).

In sum, German demonstratives have the same form as German articles but differ in their inflection. Some forms, such as *jener* or *ein solcher* are less common. Like English, German demonstratives can be used deictically, anaphorically, and cataphorically. In the following chapter, Russian demonstratives are in the focus.

### 3.2.3 Demonstratives in Russian

Like English and German, Russian belongs to the Indo-European language family, since it is a Balto-Slavic language. While English and German are written in Latin script, Russian uses Cyrillic. The Russian language “is highly inflected” and “known for its complexity,” which refers to different categories in grammar, such as “number, gender, person, tense, case, voice, animacy etc.” (Sadykov & Zhukov 2017: 1). If a word is inflected, it may change “its prefix, root and ending” (Sadykov & Zhukov 2017: 1). Compared with English, the word order is more flexible and may show “emphasis rather than meaning” (Wade 2011: 521). Russian possesses four patterns of noun declension. While English contains three noun cases (nominative, accusative and genitive), Russian has three more (genitive, instrumental and prepositional; Wade 2011). Unlike English and German, Russian lacks an article system. Therefore, sometimes demonstratives pronouns are used instead, which are presented in the following.

Russian distinguishes between two neuter nominative demonstrative pronouns: *eto* and *to*. The former is used for proximal spatial or temporal referents, and the latter for distal ones (Tauscher & Kirschbaum 1974; Wade 2011; Siemund et al. 2018). In addition, “*tot* tends to be used when there is an explicit contrast or when indicating something that is far away” (Dunn & Khairov 2009: 157). Furthermore, the pronoun *takoj* stands for *such* or *like this/that* (Wade 2011: 153).

## Demonstrative pronouns

**Table 21: Declension of Russian *eto* (Wade 2011: 150)**

	Masc.	Fem.	Neut.	Plural
English	This			
Nominative Case	etot	eta	eto	eti
Accusative Case (animate)	etot etogo	etu	eto	eti etih
Genitive Case	etogo	etoj	etogo	etih
Dative Case	etomu	etoj	etomu	etim
Instrumental Case	etim	etoj	etim	etimi
Prepositional Case	ob etom	ob etoj	ob etom	ob etih

In Russian, demonstratives are morphologically distinguished in the forms of *etot* (этот) for masculine, *eta* (эта) for feminine and *eti* (эти) for plural (Siemund et al. 2018: 6).

**Table 22: Declension of Russian *tot* (Wade 2011: 150)**

	Masc.	Fem.	Neut.	Plural
English	That			
Nominative Case	tot	ta	to	te
Accusative Case (animate)	tot togo	tu	to	te teh
Genitive Case	togo	toj	togo	teh
Dative Case	tomu	toj	tomu	tem
Instrumental Case	tem	toj	tem	temi
Prepositional Case	o tom	o toj	o tom	o tem

In the following is an example for the use of *etot* and *tot*, as well as for *takoe* and *to*.

1) Russian (Tauscher & Kirschbaum 1974: 226)

ranshe	v	etom	zdanii	byla	shkola
early	in	this	building	was	school
a	v	tom	obshezhitie		
and	in	that	hostel		

“There used to be a school in this building, and a dormitory in that one.”

2) Russian (Wade 2011: 151)

eto	derevo	takoe	zhe	bolshoe
this	wood	such	the same	big
kak	i	to		
as	and	that		

“This tree is just as big as that one.”



Note that there is an indeclinable form of *eto* that can be used for phrases such as *this is* or *that is*, as in the Examples 3 and 4.

- 3) Russian (Wade 2011: 151)  
eto byli moi knigi  
those were my books  
“Those were my books”
- 4) etot dom eto dom  
this house vs. this is a house

Unlike English and German, Russian lacks an article system. Instead, the demonstrative pronoun *tot* can be used for definiteness, “especially when the pronoun is part of the antecedent to a relative clause” (Wade 2011: 151). Example 5 involves *tot* as a definite article.

- 5) Russian (Wade 2011: 152)  
ja smotrel v tu storonu otkuda  
I watched in that side from where  
dolzhna byla pojavitsja lodka  
must was appear a boat  
“I was looking in the direction from which the boat was expected to appear.”

Like German, the forms of *tot/ta/to/te* can be used in combinations with relative clauses, as illustrated in Example 6.

- 6) Russian (Tauscher & Kirschbaum 1974: 227)  
kto mnogo govorit tot malo delaet  
who many he speaks that one few does  
“Who talks a lot, does little.”

In addition, *tot* can be an “antecedent to a relative pronoun” (Wade 2011: 152), as in Example 7:

- 7) Russian (Wade 2011: 152)  
arkadij pozhal odnim plechom, ne tem,  
arkady shook one shoulder not that  
na kotorom lezhala ruka irunchika  
on which lay hand Irunchik  
“Arkady shrugged one shoulder, not the one on which Irunchik’s arm lay.”

The pronoun *tot* and *ne* can be combined to *ne tot*, which means *the wrong* and *tot zhe/ tot zhe samyj/ tot samyj* means *the same* (Tauscher & Kirchbaum 1974; Wade 2011). What is noteworthy is that the pronoun *sej* (сей) means *this* or *that* and normally occurs in phrases (Wade 2011). The pronoun is mostly used in church language or in formal language but is still found in some colloquial phrases (Dunn & Khairov 2009).

8) Russian (Wade 2011: 154)

na	sej	raz	v	turnire	ne
on	this	time	in	tournament	not
uchastvoval	nash	silnejshij	tennist		
reigned	our	strongest	tennis player		

“This time round our best tennis player did not take part in the championship.”

Table 23 compares Russian demonstrative pronouns and their meaning with that in English, which is modified from Wade (2011).

**Table 23: Comparison of Russian demonstrative pronouns and the English meaning**

	Masc.	Fem.	Neut.	English meaning
Singular	etot	eta	eto	= this/that is/these/those are
	tot	ta	to	= that
	takoj	takaja	takoe	= such/like this/like that/so
Plural	eti			= these/those
	te			= those
	takie			= such

Furthermore, they can vary depending on the case.

9) Russian (Siemund et al. 2018: 6)

Eto pravda?	Eto ne vozmoshno.
this true	this not possible

“Is this true? This is not possible.”

Interestingly, Russian demonstratives can also be used for personal pronouns, which hereby function anaphorically. In Example 10, Russian “simple pronouns (on *he*, ona *she*, ono *it*) would be perceived as ungrammatical” (Siemund et al. 2018: 7). The pronoun in this example refers to an entity or a situation.

10) Russian (Tauscher & Kirschbaum 1974: 227)

Ya etogo ne znayu.

I this not know

“I do not know this.”

Sometimes, the pronoun *tot* can be “used as a third person pronoun; it is used in a narrative sequence when reference is made not to the subject of the preceding sentence, but to someone else involved in the event” (Dunn & Khairov 2009: 158), illustrated in Example 11.

11) Russian (Wade 2011: 152)

o priezde bratjev liza uznala

about arrival brothers Lisa learned

ot anki. ta pribezhala k

from Anka that came running to

totke kak tol'ko prishla telegramma

aunt as only came telegram

“Liza learnt of her brothers’ arrival from Anka. She (Anka) came running to her aunt as soon as the telegram arrived.”

Moreover, the demonstrative pronoun *takoj* (такой) can have a “generalizing meaning” (Wade 2011: 153). It only changes its number and gender and follows the declension of adjectives, whereas *etot* has its own declension (Tauscher & Kirschbaum 1974). If *takoj* is used with adjectives, it means *such* (Wade 2011).

12) Russian (Wade 2011: 153-154)

pogoda takaja horoshaja

weather so good

“The weather is so fine.”

13) takih marok kakie on sobiraet ochen malo

such stamps what kind is he collects highly few

“There are very few stamps of the kind that he collects.”

14) v takom sluchae

in this case

The pronoun *takoj* can “correspond to English [...] indefinite article[s]” (Dunn & Khairov 2009: 159). In Examples 16 and 17, the different uses of *takoj* and *etot* are presented.

15) Russian (Dunn & Khairov 2009: 159)

eti	filmi	ja	vsegda	smotrju	s
these	movies	I	always	look	from
bolshim	udovolstviemm				
big	pleasure				

“I always enjoy watching these (specific) films.”

16) *takie* film ja vsegda smotrju s  
such movies I always look from  
bolshim udovolstviem  
big pleasure  
“I always enjoy watching films like these/those.”

For subordination, in Russian there is no such demonstrative pronoun as there is in English. Instead “the interrogative pronoun “*chto*” (what)” is used (Siemund et al. 2018: 7).

*The anaphoric and cataphoric use of Russian demonstratives*

Like in German and English, Russian demonstratives can refer back to entities or whole sentences as an anaphora, as illustrated in Example 17.

17) Russian (Dunn & Khairov 2009: 158)

on	sprosil	menja	o	poslednih	sobytijah
is he	asked	me	about	the last	events
na	kavkaze	no	ja	priznalsja	chto
on	Caucasus	but	I	confessed	what
nichego	ob	etom	ne	znaju	
nothing	about	this	not	know	

“He asked me about recent events in the Caucasus, but I admitted that I knew nothing about it.”

Since there is anaphoric use of Russian demonstratives, the cataphoric use is realized by *takoj*.

18) Russian (Mehlig 2001: 116)

Kto	uze	osuScestvljal	hotja	by
who	uze	took place	although	would
raz	takuju	situaciju	kak	"zapolnenie

time        such        the situation        as        filling  
 takuju    etoj        anket”?  
 such        this        questionnaire  
 “Who has already at least once realized such a situation as ‘filling out  
 this form’?”

19) Russian (Tauscher & Kirschbaum 1974: 228)

takoj      rabotnik      nam                      nuzhen  
 such      worker      us                      needed  
 “We need such workers.”

In this subchapter, demonstrative pronouns in Russian were shown and compared to that in English and German. Turkish demonstratives are presented in Subchapter 3.2.4.

### 3.2.4 Demonstratives in Turkish

In contrast to English, German and Russian as Indo-European languages, Turkish belongs to Turkic languages. Unlike the Indo-European languages, Turkish is an agglutinative language and has a complex system of tenses (Kornfilt 2018). Like Russian, Turkish lacks an article system. Furthermore, Turkish follows a word order of SOV, which differs from the other presented languages. Interestingly, demonstrative pronouns can also be used as adjectives, but without being variable (Lewis 1991). A further particularity of Turkish is vowel harmony. Normally, Turkish is a suffixing language, with only one exception, “namely reduplication” (Kornfilt 2018: 544).

In general, Turkish possesses three demonstratives. Unlike the aforementioned languages of English, German and Russian, Turkish demonstratives have “three degrees of distance” (Kornfilt 2010: 311), presented in Table 24.

**Table 24: Distant stages of Turkish demonstrative pronouns modified, after (Kornfilt 2010: 311)**

Pronoun	English meaning	Distance
bu(n)	this one	close to the speaker or hearer
şu(n)	that one	further away from the speaker and hearer
o(n)	that one	far away from the speaker and hearer

In contrast to English demonstrative pronouns, Diessel (2006: 472) points out that the demonstrative form of *şu* “does not indicate the relative distance between the referent and the *origo* (i.e., the deictic centre).” On the one hand, the speaker-based position of Kornfilt (2010), who proposes that the pronouns are used according to their distance, which is illustrated in the table above, especially *şu*, which is, according to her, used for medial

reference. However, there is the opposite assumption that the three pronouns are distinguished by their distance to speaker and addressee, such as *bu*, for reference close to the speaker, and *şu* is used when proximal to the addressee, whereas *o* refers to distance to both speaker and addressee (Lyons 1977). Additionally, Küntay and Özyürek (2006: 307) claim that *şu* sometimes has been considered a variant of *bu* that has an “empathetic function.” As is evident, there is no consensus about the meaning of this three-part division.

In the plural, the demonstrative forms are *bunlar* (these), *şunlar* (these/those) and *onlar* (those) (Kornfilt 2010; Göksel & Kerslake 2011). Interestingly, these pronouns “are not marked for class or gender,” which also occurs for nouns (Kornfilt 2010: 314). In Tables 25 and 26, the declension for both the singular and plural forms of demonstrative pronouns in Turkish are shown.

**Table 25: Singular forms of demonstrative pronouns, after (Kornfilt 2010: 311)**

Singular	This one	That one	That one (yonder)
Nominative	bu	şu	o
Accusative	bu-u	şun-u	on-u
Genitive	bun-un	şun-un	on-un
Dative	bun-a	şun-a	on-a
Locative	bun-da	şun-da	on-da
Ablative	bun-dan	şun-dan	on-dan

**Table 26: Plural forms of demonstrative pronouns, after (Kornfilt 2010: 311)**

Plural	First	Second	Third
Nominative	bun-lar	şun-lar	on-lar
Accusative	bun-lar-ı	şun-lar-ı	on-lar-ı
Genitive	bun-lar-ın	şun-lar-ın	on-lar-ın
Dative	bun-lar-a	şun-lar-a	on-lar-a
Locative	bun-lar-da	şun-lar-da	on-lar-da
Ablative	bun-lar-dan	şun-lar-dan	on-lar-dan

According to Göksel and Kerslake (2011: 120), the so-called *demonstrative word* derived from such demonstrative pronouns. Two different types belong to this group, as listed in the Table 27.

**Table 27: Demonstrative words, modified after Göksel & Kerslake (2011: 120)**

Group	Pronoun	English meaning
Place pronouns (inflected for person and/or case)	bura-	here
	şura-	here; over there
	ora-	there
Adverbial/determiner forms	böyle	like this; thus; such
	şöyle	like this; like that
	öyle	like that; such

According to Kornfilt (2010: 312), the adverbial/determiner forms in the aforementioned table are based on “suffixing the third person singular possessive suffix **-(s)I** to the items.” Furthermore, *böyle* means *thus, in this way*, *şöyle* is used in the meaning of *thus, in that way* and *öyle* refers to the meaning *thus, in that (other) way* (Kornfilt 2010: 312).

Interestingly, the forms for place pronouns usually occur “as subjects or subject complements” (Göksel & Kerslake 2011: 124). In the Tables 28 and 29, the declension of the adverbial/determiner forms are illustrated:

**Table 28: Declension of the singular adverbial/determiner forms, after (Kornfilt 2010: 312)**

Singular	This kind	That kind	That other kind
Nominative	böyle-si	şöyle-si	öyle-si
Accusative	böyle-sin-i	şöyle-sin-i	öyle-sin-i
Genitive	böyle-sin-in	şöyle-sin-in	öyle-sin-in
Dative	böyle-sin-e	şöyle-sin-e	öyle-sin-e
Locative	böyle-sin-de	şöyle-sin-de	öyle-sin-de
Ablative	böyle-sin-den	şöyle-sin-den	öyle-sin-den

**Table 29: Declension of the plural adverbial/determiner forms, after (Kornfilt 2010: 312)**

Plural	First	Second	Third
Nominative	böyle-ler-i	şöyle-ler-i	öyle-ler-i
Accusative	böyle-ler-in-i	şöyle-ler-in-i	öyle-ler-in-i
Genitive	böyle-ler-in-in	şöyle-ler-in-in	öyle-ler-in-in
Dative	böyle-ler-in-e	şöyle-ler-in-e	öyle-ler-in-e
Locative	böyle-ler-in-de	şöyle-ler-in-de	öyle-ler-in-de
Ablative	böyle-ler-in-den	şöyle-ler-in-den	öyle-ler-in-den

In addition, note that *öyle* is used for the reference “to a manner of doing something, or to a kind or category, that belongs to a context outside the speech situation” (Göksel & Kerslake 2011: 125).

#### *The anaphoric and cataphoric use of demonstratives*

Both *bu* and *o* normally “refer to objects or states of affairs mentioned before in the discourse” (Göksel & Kerslake 2011: 123). These pronouns can also be used as an anaphora; that is, if an object is “not present in the locality of the discourse” (Kornfilt 2010: 312). Usually, the pronouns *bu* and *o* are used, but if the referred meaning is “the following (one), *şu* is used” instead (Kornfilt 2010: 312). According to Göksel and Kerslake (2011: 123), the use of *şu* is normally “accompanied by a gesture, pointing to or otherwise indicating the object to which the speaker wants to draw the attention.” The first example illustrates the differences in distance.

- 1) Turkish (Kornfilt 1997: 315)  
 Bu gazete -yi, şu ekmeğ -i ve  
 this newspaper -Acc. that bread -Acc. and  
 o küçük pasta -yı al -acağ -ım  
 that small cake -Acc buy -Fut. -1.sg.  
 “I will buy this paper, that bread, and that small cake.”

The Examples 2 and 3 concerns the use of the nominative and the accusative form of *bu*.

- 2) Turkish (Kornfilt 2018: 547)  
 (Ben) bu makale -yi yarın bitir  
 I this article -Acc. tomorrow finish  
 -eceğ -im  
 -Fut. -1.sg.  
 “I shall finish this article tomorrow.”

- 3) Turkish (Kornfilt 2010: 312)  
 Hasan Ali -nin araba -sın -1  
 Hasan Ali -Gen. car -3.sg. -Acc.  
 yak -muş. Ali bun -u  
 burn -Rep.Past Ali this -Acc.  
 unut -a -mı -yor  
 forget -Abil. -Neg. -Pr.Prog.  
 “Hasan is said to have burned Ali’s car. Ali is unable to forget that.”

Interestingly, in this context, the pronouns can also be used as what is typically called cataphora, which is illustrated in Example 4.

- 4) Turkish (Kornfilt 2010: 312)  
 iş -e şun -lar -1 getir:  
 work -Dat. that -pl. -Acc. bring  
 radyo -n -u, bilgi -sayar -ın  
 radio -2.sg. -Acc. information -counter -2.sg.  
 -1 ve araba -n -1  
 -Acc. and car -2.sg. -Acc.  
 “Bring the following (things) to work: your radio, your computer and your car.”

According to Balpınar (2019: 24), in most studies this sense of *cataphoric use* is called *text deictic use*.



5) Turkish (Balpınar 2019: 24)

Hasan	-a	{*bun/ şun/*on}	-u	söyle	-yeceğ	-im:
Hasan	-Dat.	this		-Acc.	say	-Fut. -1.sg.
“ol	-mak	ya da		ol	-ma	-mak!”
be	-Inf.	or		be	-Neg.	-Inf.

“I will say this to Hasan: ‘to be or not to be!’”

Balpınar (2019) states that normally only *şun* occurs in text deictic situations, but also *bu* and *o* can occur.

6) Turkish (Balpınar 2019: 19)

{bu/ *şu/*o}	kravat	-ı	nere	-den	al	-dı	-n?
this	necktie	-Acc.	where	-Abl.	buy	-Past	-2.sg.

“Where did you buy this necktie?”

Since *şu* is used to establish new referents, this example indicates that here *bu* is used in the same sense. According to Balpınar (2019), it is, therefore, possible to also use *bu* and *o* to mark a new referent in a context. This example “involve[s] the speaker as the deictic centre” (Balpınar 2019: 19). In this sense, *the necktie* is introduced using *bu*. Furthermore, *şu* can also be used to refer to “quotational clauses or a phrase” (Balpınar 2019: 24), instead of a whole sentence.

7) Turkish (Balpınar 2019: 24)

Hasan	-a	sadece	{*bun/ şun/*on}	-u	söyle	-yeceğ
Hasan	-Dat.	only	that		-Acc.	-say -Fut.
-im:		güzel	kız!			
-1.sg.		nice	girl			

“I will say this to Hasan: nice girl!”

Thus, *bu* and *o* normally refer anaphorically to referents, whereas *şu* is used “to introduce a referent into the discourse” (Balpınar 2019: 19). Additionally, *şu* also indicates “the absence of the addressee’s visual attention on the referent” (Küntay & Özyürek 2006: 304). The same distinction can be made for *böylesi* and *öylesi* and their plural forms for anaphoric use, as well as for *şöylesi* (and its plural forms) for cataphoric use (Kornfilt 2010). In Example 8, the use of the plural form is illustrated.

8) Turkish (Kornfilt 2010: 313)

ömr	-üm	-de	çok	kitap	oku
-----	-----	-----	-----	-------	-----

life	-1.sg.	-Loc.	many	book	read
-du	-m	ama	böyle	-sin	-i
-Past	-1.sg.	but	thus	-3.sg.	-Acc.
hiç	oku	-ma	-dı	-m	
not-	read	-Neg.	-Past	-1.sg.	
at-all					

“I have read many books in my lifetime but never one like this (one thus).”

*Further characteristics*

Focusing on the word structure, normally, when more than one modifier is used, a typical structure is the following: “demonstrative pronoun + cardinal number + adjective attribute” [as in]” bu üç mavi kuş” (these three blue birds)” (Johanson 2013: 33).

What is more, there is a demonstrative pronoun based on the form *öte*, meaning *other, yonder; the further or other side of* and suffixing the form *ki(n)* resulting in the pronoun *öteki* (Kornfilt 2010: 313). In this sense, *öteki beriki* means *this one and that one, anybody and everybody* (Lewis 1991: 72).

9) Turkish (Kornfilt 2010: 313).

bu	pasta	-yı	beğen	-me	-di
this	cake	-Acc.	like	-Neg.	-Past
-m;	ötekin	-i	isti	-yor	-um
-1.sg.	the-other-one	-Acc.	want	-Pr.Prog.	-1.sg.

“I don’t like this cake, I want the other one.”

Unlike German and English, in Turkish there is no such subordinator as counterpart to English *that*. Instead, Turkish possesses different words, suffixes, or particles to indicate subordination or conjunctions that may occur at the end of a sentence. For example, *demek ki* means *that means* or *so*, whereas *öylese* refers to *in that case* (Göksel & Kerslake 2011). In relative clauses, there are three specific forms added to the stem of the verb, as illustrated in Example 10.

10) Turkish (Göksel & Kerslake 2011: 241)

-(y)en	köpeği kovalayan kedi	the cat that chased the dog
-diği	köpeğin kovaladığı kedi	the cat that the dog chased
-(y)eceği	köpeğin kovalayacağı kedi	the cat that the dog will chase

The relationship between the verb and the noun determines the use of the suffix. In the first example, the subject is the cat as the chaser, whereas the second example demonstrates that the object is the cat being chased (Göksel & Kerslake 2011: 241). In the former case, the suffix *-(y)en* is used, in the latter the suffix *-diği* or *-(y)eceği*, but this depends “on the tense of the clause” (Göksel & Kerslake 2011: 241). In Table 30, Balpınar (2019) presents the various conjunctions that derived from demonstrative pronouns. In the table, the stem of the demonstrative pronoun is still used and is changed by adding various suffixes to it, which happens to the pronouns of *bu* and *o*.

**Table 30: Conjunctions in Turkish derived from demonstratives, after (Balpınar 2019: 68)**

Form		Gloss	Meaning
bu forms	o forms		
bu-n-dan dolayı/ötürü	o-n-dan dolayı/ötürü	DEM-n-ABL because of	because of this/that
bu-n-un dışında	o-n-un dışında	DEM-n-GEN apart from	apart from this/that
bu-n-un için	o-n-un için	DEM-n-GEN for	for this/that purpose
bu-n-un yerine	o-n-un yerine	DEM-n-GEN instead	instead of this/that
bu-n-un-la beraber/birlikte	-	DEM-n-GEN with together	in spite of this
bu-n-dan başka	-	DEM-n-ABL (an)other	furthermore/besides/no other
bu-n-un ötesinde	-	DEM-n-GEN beyond	beyond that
bu-n-un sonucunda	-	DEM-n-GEN consequence	as a result of this
bu-n-un üzerine	-	DEM-n-GEN upon	upon this
bu-n-un yanında/yanısira	-	DEM-n-GEN beside	beside this/that
bu-n-a rağmen/karşın	-	DEM-n-DAT though	nevertheless/despite this

Unlike English, German and Russian, Turkish has a three-part distinction of distance. It also contains different plural forms and two groups of *demonstrative words*. Furthermore, demonstrative pronouns can either be used anaphorically or introduce new referents to a discourse. Like Russian, Turkish lacks a definite article. Therefore, “the adnominal demonstrative “şu” can be associated with the definite article *the* in English” (Balpınar 2019: 26). In general, it is not possible to use *şu* for generic meaning, such as, *The Bahamas are very beautiful* (Balpınar 2019: 27). In Example 11, the use of *şu* does not function to direct the hearer’s attention to a specific object or entity.

11) Turkish (Balpınar 2019: 27)

şu tuz -u uzat -ır mı -sın  
 that salt -Acc. pass -Aor Q -2.sg.  
 lütfen?  
 please  
 “Could you pass me the salt shaker please?”

If “there is no previous joint attention between the interlocutors regardless of the distance of the object,” the demonstrative pronoun *şu* is used (Zhao 2007: 420). Hence, if there is joint attention, then the differences in distance are indicated using *bu* for proximal reference and *o* for distal ones (Zhao 2007). However, there is no consensus about the three-part system of distance in Turkish demonstrative pronouns.

Regarding the different systems, Subchapter 3.2.5 compares demonstratives in English, German, Russian, and Turkish.

### 3.2.5 Comparison of demonstratives

In the preceding subchapters, the investigated language and their demonstrative pronouns were shown separately. In the following, the characteristics of demonstratives in English and German, as well as in the heritage languages of Russian and Turkish are compared.

In general, English, German and Russian belong to the Indo-European language group, but in different branches. While German and English belong to Germanic languages, Russian is a Slavonic language (Baugh & Cable 2002). In contrast, Turkish is a Turkic language and belongs to the Altaic branch (Kornfilt 2018). English, German, and Turkish use Latin script, whereas Russian uses Cyrillic. Furthermore, Turkish is an agglutinative language with a high level of suffixing.

The first similarity is that all the aforementioned languages possess demonstrative pronouns. What is more, they share the distinction between singular and plural forms, as well as the aspect of distance (Comrie 2018). In English, the forms *this* and *that* are used for proximal referents, and *these* and *those* are their plural counterparts (Huddleston & Pullum 2002). Like Turkish, German possesses three pronouns for spatial reference. Typically, the pronouns *dieser* for proximal space and *jener* for referents farther away are employed as well as *der* (Hentschel 2010). Unlike English, German regards the pronouns *der/die/das* as demonstratives that have the same form as the German definite articles (Helbig & Buscha 2001). Similarly, Turkish possesses more than two forms of demonstratives. Hence, the language has the singular forms *bu* for close referents, *şu* for speakers and hearers farther away and *o* for referents that are far away. This three-part distinction is a particularity of Turkish, which differentiates it from English and Russian (Kornfilt 2010). In contrast to Turkish, German demonstratives refer either to proximal or to distal reference including *der* that can be used for both. Instead, Turkish distinguishes between three different distances.

Interestingly, Turkish has more than the additional plural forms for *bu/şu/o*. In particular, Turkish distinguishes between demonstrative words, too (see Göksel & Kerslake 2011), which can be divided into two subgroups of place pronouns and adverbial/determiner forms. In line with this, German also considers further forms of demonstratives; for example, the form *ein solcher*, which can be used cataphorically (Eisenberg 2013). What is noteworthy is that Russian has two nominal demonstrative forms: *etot* and *tot*. Both are distinguished by distance. The former is used for proximal hearer and speaker, the latter for distal referents (Wade 2011).

While English and German have a subordinator form, such as the English *that* and the German counterpart *dass*, which derives from a demonstrative pronoun, Russian and Turkish do not have such forms. Russian's equivalent is *çto*, an interrogative pronoun (Siemund et al. 2018). Unlike the aforementioned languages, Turkish has three suffixes that function as subordinators: *-(y)en*, *-diđi* and *-(y)eceđi*, which can be compared in their function with the English *that*. Furthermore, the use of these Turkish suffixes is determined by the relationship between the verb and the noun in the sentence (Göksel & Kerslake 2011).

To illustrate additional demonstrative forms in Turkish, consider the form *öteki*, which means *this one and that one, anybody and everybody* (see Kornfilt 2010; Lewis 1991). Interestingly, Turkish adds a third-person singular possessive suffix to demonstratives that results in new demonstrative forms of *böyle*, meaning *thus, in this way*, *şöyle* means *thus, in that way* and *öyle* means *thus, in that (other) way* (Kornfilt 2010: 312).

Like English, Turkish possesses demonstrative adverbial forms for indicating distance, such as *bura-* for the English *here*, *şura-* meaning *here; over there* and *ora-* for the English *there*, except for the forms *burası*, *şurası/ orası* (Göksel & Kerslake 2011: 120). The former shorter forms are used when referring to a part of someone's body (Göksel & Kerslake 2011). These pronouns are part of the category *demonstrative words* (Göksel & Kerslake 2011). Again, there is the three-part distinction in Turkish demonstrative forms. Similarly, English has such forms as *here/over here* or *there/over there* (Diessel 2006). In German, there are also additional demonstrative forms, such as *derjenige/diejenige/dasjenige*, *ein* and *solcher* (Helbig & Buscha 2001: 229). The first is usually used in cataphoric reference combined with a relative clause, whereas the last two forms can either be used as anaphora or cataphora (Eisenberg 2004; Helbig & Buscha 2001). Russian does not have such forms. In Russian, the form *sej*, meaning *this/that*, is

usually used in phrases. Particularly noteworthy is the demonstrative pronoun *takoj*, which can be used for general meanings or *such; like this/that; so* (Wade 2011).

All languages have forms of anaphoric and cataphoric use (see Patil 2020; Balpınar 2019; Kornfilt 2018; Swan 2016; Wade 2011; Göksel & Kerslake 2011; Hentschel 2010; Kornfilt 2010; Dunn & Khairov 2009; Eisenberg 2004; Huddleston & Pullum 2002; Helbig & Buscha 2001; Biber 1999; Quirk 1985).

While German and English have an article system, Turkish and Russian lack one. Instead, they use a demonstrative pronoun to express the meaning of an English definite article. In Russian, the form *takoj* is used for such situations (Wade 2011), whereas in Turkish the pronoun *şu* is employed (Balpınar 2019). German possesses three definite and three indefinite articles, whereas English has one definite article and one indefinite article, which has a *n* suffixed when the following word starts with a vowel. In general, the definite article is used when a situation, object or referent is already known to the speaker. If unknown, then the indefinite article is used instead. In general, the indefinite article is used when introducing a new topic.

This chapter revealed that all four languages share some similarities, since all possess demonstrative pronouns. Unlike Turkish, the Indo-European languages discussed here have a two-part distinction for distance. All pronouns can be used in an anaphoric or cataphoric manner. Since Russian and Turkish do not have an article system, they instead use demonstrative or personal pronouns. The former language uses *takoj*, the latter *şu*. Even though the word order is different, all the languages considered use their demonstratives in a determinative and identificational sense, including anaphoric and predicative use. In Subchapter 3.3, studies on the acquisition of demonstratives are presented.

### **3.3 Studies on the use of demonstratives**

In this subchapter, an overview of recent studies on the acquisition of demonstrative pronouns in different languages is shown. Studies mostly focus on the acquisition of demonstratives among native speakers. Therefore, these are presented first, followed by studies on non-native speakers, namely L2 and L3 learners.

*The acquisition of demonstratives of native speakers*

It has often been claimed that demonstratives belong to the first words that children learn in language acquisition. However, there is a hypothesis that suggests that, instead of demonstratives, this function can be realised by using gestures in the early stages of acquisition. To illustrate, González-Peña et al. (2020: 1) investigated whether “the role of demonstratives may have been overestimated.” Therefore, they used the CHILDES<sup>12</sup> corpora and a CDI<sup>13</sup> database of McArthur-Bates. Monolingual Spanish- and English-speaking infants between the ages of 18 and 24 months were the focus of attention. To examine “the acquisition and use of demonstrative[s]” (González-Peña et al. 2020: 3), infants interacted spontaneously with their mother or father. The transcriptions were saved in the aforementioned corpora. The results of the study indicate that, normally, demonstratives do not occur within the first 50 words. Rather, they appear and are used more frequently when infants start to use two-word utterances. Moreover, González-Peña et al. (2020) could not find evidence of significant differences between Spanish and English regarding the acquisition of demonstratives. Interestingly, the parents reported that English-speaking children master demonstratives later than their Spanish counterparts (González-Peña et al. 2020). The study was conducted to verify the assumptions of Clark (1978), who claims that demonstratives usually belong to the first 10 words infants produce and always occur within the first 50 words. In two experiments, she examined how children master the differences in distance between *here/there* and *this/that*. The children (36 participants) attended nursery school and were divided into three age groups, and a control group with 10 students from the University of Stanford was given the same test. With an experimenter sitting next to them, the participants were given instructions to do something with two objects on a table, one closer to them, one farther away. The experimenter sat next to the participant for 16 instructions, then changed position to the opposite side of the table, so he was sitting in front of the participant, for another 16 instructions. In a second experiment, the instructions were almost the same, but instead of testing the ability to differentiate between *this/that*, the difference between *here/there* was investigated. Again, two objects were on a table with a single object between them. The participant received instructions such as, “Make the lion run over here” or “[...]over there” (Clark 1978: 466). The results indicate that children

---

<sup>12</sup> CHILDES means Child Language Data Exchange System

<sup>13</sup> The McArthur-Bates CDI database means Communicative Development Inventories that includes parental reports

go through three developmental stages: *no contrast*, *partial contrast*, and *full contrast*. The first stage refers to children not yet able to differentiate between demonstrative pairs such as *this/that*, *these/those*, or *here/there*; hence, yet they cannot recognize the speaker as a point of reference” (Clark 1978: 472). Second, the children displayed only the correct linking between objects and distance when the experimenter was sitting next to them or opposite. Interestingly, this finding demonstrates that children understand that there are two main principles, but not yet fully master them in every situation. The third stage is that infants fully master the use of demonstrative pairs, including the speaker-centred point of reference. Clark found evidence in her study that children easily learn demonstrative adverbs since they use them earlier than demonstrative pronouns. In general, infants have to master that demonstratives are deictic terms that point to referents. Furthermore, they learn the “speaker principle and the distance principle in three stages” (Clark 1978: 473).

With the focus on the German demonstrative *diese* (this), Patil et al. (2020: 1) investigated, in three experiments, whether this pronoun is restricted to formal language and if it “prefer[s] the most recent or the last-mentioned antecedent.” The experiments investigated “language formality, order of mention and prominence through subjecthood” (Patil et al. 2020: 1). The first two experiments focused on formal and informal language. In both tests, the participants were given sentences with gaps and a drop-down menu, from which they could select an answer. The third experiment examined the preferred antecedent of the pronoun *diese*. A situation was explained in a sentence. Two possible continuations were given, either canonical or non-canonical. As expected, the use of *diese* is restricted to formal language. Notably, instead of the assumption that the most prominent or last-mentioned antecedent is preferred, it is the non-prominent one. These findings are like those for the German demonstrative *die* (Patil et al. 2020).

Rocca and Wallentin (2020) aimed to determine which English demonstrative is used when speakers must combine it with a noun without having a context. The idea was that *this* is usually used when objects are manipulable, whereas *that* is used for those that are not. The former point relates to objects that are “small, harmless, and inanimate”; the latter to “large, harmful, and animate” objects (Rocca & Wallentin 2020: 1). More than 2000 English native speakers were given one of 11 subsets that contained, in sum, 535 words. Each subset included 48 or 49 words. The participants had either to combine the words with the proximal *this* or the distal *that*. This demonstrative choice task “map[s] demonstrative use along a wide spectrum of semantic features” (Rocca & Wallentin 2020:



1). The findings suggest that the proximal demonstrative *that* is used for manipulability. Surprisingly, this characteristic is not the decisive finding of the study. Furthermore, the researchers assume that demonstratives can more than show the relative distance between speaker and referent; they can show relative distance in semantic space. Given these results, the findings indicate that, “demonstrative choices are evaluated both in physical and conceptual, psychological, and imaginary hyperspaces” (Rocca & Wallentin 2020: 8). In addition, the study deduced that demonstrative use can be impacted by several “semantic dimensions [such as] [...] spatial, bodily, and emotional features” (Rocca & Wallentin 2020: 9).

In the process of language acquisition, deixis plays a crucial role. It involves three parts: gestures, eye-gazes and speech, and these can particularly be combined with demonstratives to interact with others. In their study, Todisco et al. (2020) outline the strategies used to coordinate joint attention in communication. To identify the behaviour, eight infants were videotaped for 30 minutes when playing with their mother, including a reading task with a picture story. The data suggest that the initiation of deictic communication by adults occurs more often than that of infants. What is more, the adults combined pointing gestures with their deictic speech, which the infants did not. Synchronously, an eye gaze highlights the speech and gestures used in an utterance, which appeared both in the adults’ and infants’ utterances and establishes the multimodality of infant’s deictic use in communication (Todisco et al. 2020).

In a study about Estonian demonstratives, Reile et al. (2020) explored two systems in Estonian: first, the dialect used in the south that contains two demonstratives, namely *see* (this) and *too* (that); second, the system in the north that only possesses one demonstrative for both proximal and distal use *see* (this/that). The investigation focused on the distance and interpretation of demonstratives, rather than whether a salient referent impacts the use of demonstratives and their understanding. The researchers note whether there were differences between the use of demonstratives in the south and the north. Thirty participants undertook an interpretation task. Interestingly, the paper found that, on the one hand, no evidence for an “effect of visual” salience, but, on the other hand, the interpretation of demonstratives is influenced by “the distance of the referent” (Reile et al. 2020: 1). However, speakers using the dialect of the south also interpreted semantic aspects of demonstratives, whereas speakers of the northern dialect only focused on pronouns and adverbs that belong to demonstratives. In addition, the use of demonstrative

adverbs that are used by languages that only have a neuter demonstrative for indicating distance “enforce the spatial meaning of a referring utterance” (Reile et al. 2020: 1).

However, spatial demonstratives belong to the group of words that appears within a child’s first words (Diessel 1999; Clark 1978). Therefore, Caldano and Coventry (2019: 1) examined “the relationship between spatial demonstratives [...] and perceptual space.” Thirty-one left-handed and 32 right-handed English native speakers participated in a memory game. The findings suggest a relationship between “demonstratives and the reachability of objects” (Caldano & Coventry 2019: 1). The participants used *this* when referring to objects in the same place and when they could reach them by hand. According to Caldano and Coventry (2019: 1), the effect of “mapping between perceptual space and the use of demonstratives” could be proven.

Morford et al. (2019) examined the use of pointing signs in American Sign Language (ASL) by testing four deaf participants in a puzzle-completion task. In addition to the “four demonstratives’ signs” (Morford et al. 2019: 1) in the literature, the findings suggest that, almost the whole time, the referents used pointing signs for demonstrative functions. The study proved that in ASL there is no distinction between proximal and distal demonstratives via separate signs. In addition, these signs were accompanied by facial expressions to underline the meaning of the signed demonstrative function (Morford et al. 2019).

Levinson (2018) published a book about demonstratives in 15 different languages and 14 different language families examining meaning and use of the demonstrative form by using Wilkins’ *Demonstrative questionnaire: “THIS” and “THAT”- task* (Wilkins 2018). In the investigation, the following languages were examined: Lao, Goemai, Yucatec, Tzeltal, Warao, Brazilian Portuguese, Saliba, Trumai, Tiriyo, Dalabon, Chukchi, Lavukaleve, Yélfí, Todire and Jahai. Different parameters were focused on, such as “the nature of setting (bounded or unbounded), the relative locations of speaker, addressee and referent and sometimes a bystander, the current attentional focus of speaker and addressee” (Levinson 2018: 14); gestures used in the utterances; the mentioning of referents earlier in communication etc. The results indicate the diversity of demonstrative forms (e.g., whether they occur as “affixes, clitics or free forms, whether they are fundamentally nominal, adverbial or otherwise” [Levinson 2018: 15]). Demonstrative forms differ in their number referring to the combined category, for example, an adverb or a noun. Furthermore, the semantic meaning of demonstratives can differ regarding the deictic centre and whether it is speaker- or addressee anchored. In

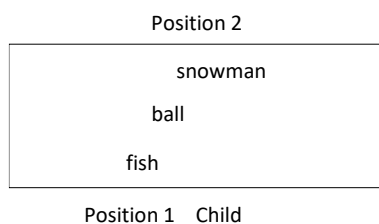
addition, there is a wide “range of usage” (Levinson 2018: 15) regarding exophoric, endophoric, and anaphoric functions. However, all the investigated languages have in common that they identify the referent irrespective of whether it is a human or an entity (Levinson 2018).

However, Chu and Minai (2018) compared the development of the English demonstratives *this/that* and the Mandarin Chinese demonstratives *zhe/na*. Their participants were between the ages of three and six and had to do different comprehension tasks for their demonstratives to be examined. The researchers also tested the theory of mind and executive function (Chu & Minai 2018: 3). Interestingly, the monolingual Mandarin Chinese speakers had better results in most of the tasks than the English speakers. According to Chu and Minai (2018), this finding is due to the age of the children, since the English infants were younger. In addition, the results indicate that children perform better on *this* than *that* in both groups. Furthermore, the findings suggest that children struggle with the comprehension of demonstratives when the perspective of the other speaker is different from that of the child. In summary, the study found evidence that “the successful demonstrative comprehension is related to their development of Theory of Mind and Executive function” (Chu & Minai 2018: 3). In general, the researchers point out that their results also demonstrate that the development of demonstratives is correspondingly accompanied by the development of “non-linguistic cognitive abilities” (Chu & Minai 2018: 3).

In an earlier study, memories regarding the placement of objects were tested using two types of possible impact: demonstratives and possessives. In three different experiments, 36 native speakers of English were given instructions “to place objects at different locations, and then to recall those object locations” (Gudde et al. 2016: 99). The paper found support for the expectation model, which means that the location expected “cued by language and the actual location are concatenated to (mis)memory for object location” (Gudde et al. 2016: 99). It was found that demonstratives and possessives impact the memory regarding the location of objects (Gudde et al. 2016).

Another study was conducted by Muşlu (2015) who considered the developmental stages for using Turkish demonstratives. Twelve participants had to make sentences to express the correct distance by using a certain demonstrative pronoun. In the first trial, the children and the experimenter had the same perspective to the object by sitting next to each other. In the second trial, the observer sat on the opposite side of the child to have a “different perspective” (Muşlu 2015: 421). The child had to make 18

sentences, six sentences for each demonstrative. Therefore, three toys were put on the table and set clearly apart.



**Figure 27: Muşlu’s comprehension task for testing the use of demonstrative pronouns in Turkish (Muşlu 2015: 422)**

The participants had better results when a “physical cue was provided” (Muşlu 2015: 424). What is more, the performance of four-year-old children was better than that of the three-year-olds. According to Muşlu (2015), this finding was expected, since the “control over DPs improves steadily with age” (Muşlu 2015: 424). Surprisingly, however, the five-year-olds performed worse than the four-year-olds. Muşlu (2015: 424) points out that this finding could be traced to the “U-shaped pattern of development,” which indicates that children initially start to use structures correctly, then struggle with using them and mismatch the forms before finally mastering them. It is not possible to generalize this phenomenon, however, since further studies that include six-year-olds are necessary. Nevertheless, the results for the use of *şu* differ. The participants had a better performance when using *bu* and *o* (Muşlu 2015: 425). Furthermore, children under the age of six struggled with different perspectives to objects; hence, the shifting of the deictic centre is not easy for them (Muşlu 2015).

By and large, in written texts, the differentiation between *this/that* tends to cause difficulties. However, Çokal et al. (2014) tested 52 English native students between the ages of 21 and 24 with two eye-tracking stimuli to examine whether *this* occurs more often at the “adjacent/right frontier of a preceding chunk of text” (Çokal et al. 2014: 201) and *that* more to the left. In this sense, *this* was defined as long and *that* as short events. To find evidence for these hypotheses, the participants had to complete sentences and participate in a corpus study. The model for the experiment is presented in the figure, below, with the discourse tree for the structure of left and right frontiers (Çokal et al. 2014). The findings suggest that the right or adjacent frontier is more easily accessed than the left. In other words, both *this/that* “access the adjacent frontier more easily than the distant” (Çokal et al. 2014: 201). Thus, the researchers found evidence for the assumptions of Cornish (2010) that “the trace of the text is short-lived in memory, and

effortful processing was seen when *this/that* referred to the distal frontier” (Çokal et al. 2014: 223).

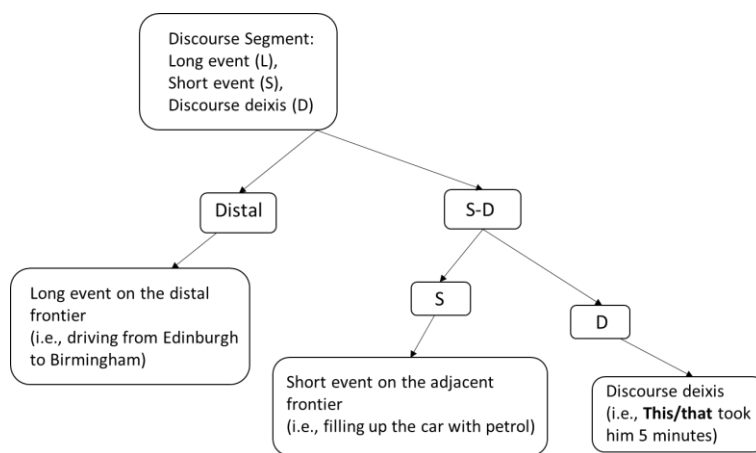


Figure 28: Discourse structure as a tree for left and right frontiers, after (Çokal et al. 2014: 210)

Çokal et al. (2014) point out that *this/that* is more complex than it is generally assumed, and they do not “simply mirror the use of distal and proximal deictic markers in spoken discourse” (Çokal et al. 2014: 223).

In a study by Enikő (2014), the hypothesis was that factors other than distance impact the use of either proximal or distal demonstratives. Twenty-seven adult English native speakers participated in a scripted dialogue technique. The study found that, “[i]n non-contrastive contexts distance plays a crucial role, but in contrastive contexts the pattern of demonstratives changes” (Enikő 2014: 600), which means that in such situations distance was more relevant than in the former. These findings correspond with those of Luz and van der Sluis (2011), who examined native speakers of English, Dutch, and Portuguese by giving them a scripted dialogue and a scenario. As with Enikő, they explored the distance participants chose for agent and referent from their scenario. Furthermore, their aim was to discover whether the referents were accessible for the participants. The findings indicate that the participants distinguished the aspects *close to the speaker* and *farther away from to speaker* when choosing a demonstrative. In addition, all the language groups corresponded in their findings (Luz & van der Sluis 2011).

However, a similar study aimed to explore whether the traditional point of view can be confirmed regarding demonstratives typically being distinguished by proximal and distal objects concerning the speaker. To discover whether “visual joint attention, physical proximity of a referent, and use of a pointing gesture” (Peeters et al. 2014: 1) impacts the use of demonstratives in 20 Dutch native speakers, the researchers used an

elicitation task. They found that the choice of demonstratives is influenced by an interaction of “different context-dependent factors as a function of both speaker- and addressee-anchored perspectives” (Peeters et al. 2014: 1). The participants used proximal demonstratives to refer to objects close to the speaker and in a “speaker-anchored way” (Peeters et al. 2014: 1), whereas distal demonstratives were used when the referent was still in the visual joint attention of the speaker, but not as close as in the former case. Nevertheless, this investigation proved also that gestures are closely related to the use of demonstratives (Peeters et al. 2014).

The study led us to another study, by Fossard et al. (2011), which suggested the idea to examine the discourse use of *this/that* via eye-tracking experiments that Çokal et al. (2014) used. However, Fossard et al. (2011) assumed that the noun phrase *that N* usually “refers to the less salient referent in a discourse representation when used anaphorically” (Fossard et al. 2011: 1). They compared this use with that of personal pronouns, which they suggest is linked to the “highly-focused referent” (Fossard et al. 2011: 1). Twenty English native speakers between the ages of 18 and 23 participated in a sentence-completion task and two experiments about reading time. The findings indicate that the less-salient subordinate referent is the preferred referent, especially “when there is no gender cue discriminating between different possible referents” (Fossard et al. 2011: 1). Ultimately, the results contribute to the importance of the anaphoric use in discourses (Fossard et al. 2011).

Zhao (2007) investigated the two Mandarin Chinese demonstratives *zhege* (this) and *nage* (that). Zhao examined a correlation between the age and the developmental stage of children. Eight monolingual Chinese-speaking children between the ages of three and six participated. There were four age groups with two participants each. The children had to make 12 sentences, four with *zhege* (this), further four with *nage* (that) and four sentences as fillers. In the study, the stimuli included two cartoons and 12 puppets. The experimenter sat next to the child in the first trial and opposite in the second. The results indicate that physical cues play an important role. The children performed better when they had the same perspective on objects as the observer. Interestingly, in the study, the children tended to “perform[...] better on the marked term ‘zhege’ than the unmarked member ‘nage’” (Zhao 2007: 417). According to Zhao (2007), the results underline Piaget’s egocentrism hypothesis (see Piaget 1929).

Krasavina and Chiarcos (2007) investigated the use of demonstratives in German, English and Russian in written texts of newspaper articles. The focus is on

demonstrative noun phrases and pronouns. The researchers followed two hypotheses. First, the medium activation level is activated when using demonstratives. Second, in conversations, topics are introduced by demonstratives. The basis for the study was written texts from corpora of newspapers in the languages investigated. The results underline that, “middle activation [...] specifies a necessary condition for demonstratives” (Krasavina & Chiarcos 2007: 11). To illustrate the particularity, the study found that demonstratives “do not mark the shift itself, but rather underline referent identity whenever a shift occurs” (Krasavina & Chiarcos 2007: 11). Moreover, the second hypothesis is not supported by the data from the study. In conclusion, the study found evidence for demonstratives establishing new discourses and being general “shift-markers in discourse” (Krasavina & Chiarcos 2007: 1).

Demonstratives can be used in different ways. Therefore, Cornish (2007) developed a three-part distribution: deictic, anadeictic and discourse-deictic use. In her study, she used written informal utterances collected from the *Radio Times*, a British magazine. According to Cornish (2007: 138), deixis has the function of “draw[ing] the addressee’s attention to focus on a new object of discourse [...] that is derived by default via the situational context of utterance.” In her analysis, she found that in both the second case of anadeictic use and that of discourse-deictic use of demonstratives, the referent in the utterance “is present” (Cornish 2007: 150). Cornish illustrated her findings in Table 31, which distinguishes between canonical anadeictic use and discourse-deictic use.

**Table 31: English demonstratives in the use of an anadeixis or discourse deixis (Cornish 2007: 152)**

Parameters	Canonical anadeictic use	Discourse-deictic use
Referent is a determinate entity already bearing a minimal level of saliency	+	-
Requires understander to operate on immediate discourse context, in order to construct a new discourse entity	-	+
Possible introduction by a variety of syntactic types of antecedent-trigger	-	+
Can be replaced by a definite NP where denotation of NP’s lexical component is presupposed	+	-
Substitutable by an unaccented 3rd person pronoun	+?	-

Küntay and Özyürek (2006) compared the use of demonstratives of monolingual Turkish children at the age of four and six with that of monolingual adults. Each group consisted of six participants divided into pairs. Each pair had to reconstruct a Lego model, which

was videotaped, and their utterances analyzed. The researchers investigated the encoding of the three-part system of distance (*bu/şu/o*) and the “presence and absence of the addressee’s visual attention on the referent” (Küntay & Özyürek 2006: 306). They found that the four- and six-year-olds displayed the correct use of demonstratives in marking spatial contrasts in conversations. Their behaviour was like that of the adults when using the demonstrative pronouns *bu* and *o*. At the same time, the children rarely used *şu*, and if they did, they could not “yet mark the attentional contrasts at adult levels and initially use it to refer to proximal referents” (Küntay & Özyürek 2006: 316). Interestingly, the adults frequently used *şu*, which indicates a “conversational management of mutual attention” (Küntay & Özyürek 2006: 316). These findings confirm that adults use *bu* for objects that are proximal to the speaker, whereas *o* is used when objects are farther away from the speaker. In general, adults use *şu* as a neutral distance form (Küntay & Özyürek 2006). In conclusion, the study suggests that children master the differences of *bu* and *o* earlier than the use of *şu*, which is not learned by the age of six.

Rodrigo et al. (2004) observed infants and their mothers in a longitudinal study for a year. The aim of the study was to discover if the link between gestures and verbal deictic expressions is related to motherly attention. Eight monolingual Spanish children between the ages of one and two and their mothers were videotaped by an instructor every three months at daily activities such as dinner, bathing or playing. The results indicate that one-year-olds tend to point to objects without using a combined word but with a vocalization. The older infants used either a combination of pointing and saying a content or deictic word, or they only used a deictic word, when the referred object was close to them. Moreover, the support of their mother played a crucial role in the children’s development. The mothers looked at both the referred object and then into the child’s face. Interestingly, the infants tended to refer “more frequently to external objects rather than to themselves” (Rodrigo et al. 2004: 84). The infants displayed five deictic categories: “two unimodal (gestural or verbal) forms and three crossmodal (gestural plus verbal) forms” (Rodrigo et al. 2004: 85). Generally, the findings support that gestures such as pointing are important in the early stages of language acquisition. Younger infants usually use a combination of pointing and vocalization, whereas older infants combine pointing with a content word instead. What is also noteworthy is that “the use of pointing plus a deictic word continued during the third year, even when children are able to use a deictic word alone” (Rodrigo et al. 2004: 86). This finding may be traced to the accuracy



that can be achieved by using pointing in combination with deictic words, rather than with deictic expressions only (Rodrigo et al. 2004).

In a study conducted by Gundel et al. (2004), who used the Santa Barbara Corpus of American English, aimed to discover whether the antecedent and the demonstrative or personal pronoun have the same referent. The results reveal that personal pronouns more frequently have NP antecedents than non-NP antecedents, whereas for demonstratives it is the opposite situation. Furthermore, the researchers claim that non-NP antecedents are mostly indirect, which explains that they “are more accessible to reference with demonstratives because demonstratives only require the referent to be activated” (Gundel et al. 2004: 1). In addition, a referent of a demonstrative does not have to be the focus (Gundel et al. 2004).

Correspondingly, Botley and McEnery (2001) examined the coreference of demonstratives in English written articles. They aimed to examine the different functions of demonstratives in discourse. As a basis for their data, they used three corpora with 100,000 words in total of different types of texts, such as religious or historical texts, biographies, fictional texts, debates, and news: the American Printing House for the Blind corpus (APHB); the Associated Press corpus (AP); and the Hansard corpus. The first results appeared unsurprising since the use of the singular demonstratives *this/that* was more common than their plural counterparts. In their study, five features of demonstratives were assumed: recoverability of antecedent, direction of referent, phoric type, syntactic function, and antecedent type. The first type concerns the link between a demonstrative and its antecedent. If an antecedent is used anaphorically, it is “recoverable” (Botley & McEnery 2001: 9) and, usually, occurs as a noun phrase. Second, the direction of referent summarises the two types of cataphoric and anaphoric use. Third, the phoric type refers to the two types that can be distinguished, namely substitution and reference. The former means a linguistic relationship of different forms, whereas the latter is linked to the differentiation between linguistic meanings, both of which are suggested by Halliday and Hasan (1976). Fourth, syntactic functions of demonstratives include the function “either as a head of a noun phrase or as a noun modifier” (Botley & McEnery 2001: 11). The last type of antecedent is divided into three sub-types: “nominal, clausal and adjectival” (Botley & McEnery 2001: 11). The paper found that demonstratives functioned anaphorically in most of the cases. Only in some cases they were used nonphorically. Furthermore, the investigation highlights that in all the corpora, demonstrative features occurred, mainly the recoverable, anaphorical type and

“referential cases with nominal antecedents” (Botley & McEnery 2001: 29). Moreover, a high number of nonphorical demonstratives with a “high degree of deixis” were found (Botley & McEnery 2001: 29). Overall, the study found no clear boundaries to distinguish deixis from anaphora and exophora; instead, in indirect speech, “demonstratives appear to refer both textually and situationally” (Botley & McEnery 2001: 29).

*The acquisition of demonstratives of non-native speakers in L2 learning*

Shin and Morford (2021) investigated bilingual English-Spanish adults and children in a study about the use of demonstratives. Their idea was that children are sensitive about spatial demonstratives before they can master them. Ten adult and eight child bilinguals were examined using a puzzle task in which the position of the experimenter changed several times. In the task, the participant could neither touch the puzzle nor use gestures to communicate with the experimenter. Instead, the experimenter used two types of questions: first, he used a *find it* question; and second, a *misunderstanding question* to discover whether the participant corrects the experimenter by using the correct form. The findings suggest that the question type and the position of the experimenter impacted the choice of demonstrative for adults. In contrast, children were not affected by the question type. However, the researchers also found that the choice of demonstratives “among fully proficient adults is highly variable” (Shin & Morford 2021: 293). This finding is in line with other studies since speakers tend to use “a proximal rather than a distal referent” when a referent is “less accessible” (Shin & Morford 2021: 294). Furthermore, the youngest participants, who were between the ages of three and five, used demonstratives but without evaluating the distance of the referent, whereas the older children, between six and eight, were highly impacted by the position of the experimenter, and hence, by their shared joint attention, but were not yet able to master them. On the other hand, the adults were highly influenced by “spatial distance and by intersubjectivity” (Shin & Morford 2021: 297).

However, Lechner (2020) aimed to find evidence of whether typological proximity or structural complexity impacts CLI effects of spatial demonstratives in the oral data of L2 learners. The focus of interest was SLA. In the study, a comparison of speakers with the L1 of English, German and Japanese were examined, their counterparts of L2 learners of English, German and Japanese and an English control group. In two experiments, the first considered spontaneous language production, whereas the second evaluated responses to the questions of the interviewer. Lechner (2010: 247) found “that

it is structural complexity rather than typological proximity that influences L2 spoken language production.”

However, generally, children can have issues using demonstratives. In Indonesia, Paturusi (2016) examined the difficulties in students mastering the use of demonstratives in English as an additional language. Twenty-six second-year students at the University of SMP Aisyiyah Sungguminasa took a multiple-choice test and a questionnaire. Unfortunately, there is no detailed information about the students' backgrounds. However, the results indicate that for proximal reference, the students generally had issues using the pronoun *that*. In addition, most of the students also struggled with the use of *these*. According to Paturusi (2016), the reason for these difficulties may be traced to too little knowledge about demonstratives.

Ionin et al. (2012) explored the differences in use of the definite article and demonstratives. The participants were English L2 learners with a Korean background. The focus was to determine whether the participants distinguished between the use of *the book* instead of *that book*. Two experiments were conducted: first, a written elicited production task; and second, a comprehension task using a picture sequence. The hypothesis of Ionin et al. (2012: 69) was that definites and demonstratives share “the same central semantics of uniqueness but differ in the domain relative to which uniqueness is computed.” Note that the definite article is used for uniqueness in a discourse, whereas demonstratives are used when the uniqueness refers to an “immediately salient situation” (Ionin et al. 2012: 69). However, the results indicate that the learners did differentiate between definites and demonstratives, but not on the same level as native speakers of English do. Furthermore, L2 learners of English with a low proficiency level tend not to distinguish between definite articles and demonstratives (Ionin et al. 2012).

#### *The acquisition of demonstratives of non-native speakers in L3 learning*

Siemund et al. (2018) dealt with the use of demonstrative pronouns in learners of English as an additional language who are heritage speakers of one of the minority languages of Vietnamese, Russian or Turkish and the dominant language German, as well as a German control group. The participants included 172 students aged either 12 or 16. Based on a picture story, a questionnaire, and an interview, they examined the use of oral and written demonstratives in English. Three categories were considered: determinative, identificational, and the subordinating use of demonstratives. The results indicate that, for oral data, monolingual Germans achieved the highest score, whereas in written data it

was the Russian-German group. Furthermore, the Russian-Germans displayed highly academic language by using the highest number of subordinating demonstratives in both categories. The lowest number of words and of subordinating demonstratives was used by the Turkish-German group. In addition, CLI effects could only be detected in the Russian-German group. Since Russian allows the use of demonstratives in contexts that in English personal pronouns would be used instead, they found evidence for negative influence from the heritage language of Russian. Hence, the results support the TPM of Rothman (2011) and the LPM of Westergaard et al. (2016) since Russian “is typologically and psychotypologically closer to English than Turkish and Vietnamese” (Siemund et al. 2018: 400).

### 3.4 Research Questions

In this chapter, the predictions and research questions were presented. Although the heritage speakers in this study are dominant in German, their heritage language can still influence the third language English. Therefore, it is assumed that 1) all language groups use demonstratives, because all background languages possess demonstrative pronouns. The research questions are: Is the use of demonstrative pronouns similar distributed in all language groups? If not, what differences between the language groups occur?

2) Heritage speakers of Russian and Turkish are expected to show differences from their monolingual peers in using demonstratives instead of definite and indefinite articles. Since Russian and Turkish lack an article system and instead use demonstrative pronouns in certain structures, it is possible that this may lead to a higher use of determinative demonstratives or articles in English sentences (Balpinar 2019; Wade 2011; Lewis 1991). The questions arise: Do heritage speakers use generally more articles compared with their monolingual peers? Do heritage speakers use more determinative demonstratives than the monolingual German speakers?

3) For *that as a subordinator*, both Russian and Turkish do not have the same form, but equivalents. In Russian, an interrogative can be used instead (Siemund et al. 2018; Göksel & Kerslake 2011) and in Turkish, three affixes function as subordinators (Göksel & Kerslake 2011). Compared with their monolingual peers, it is possible that non-facilitative transfer from the heritage languages might occur. The research question is: Do heritage speakers use less *that as a subordinator*?

4) In Russian, it is possible to use demonstrative pronouns in contexts where personal pronouns would be expected (Siemund et al. 2018). Hence, if this would be

found in texts of heritage speakers of Russian, it could be identified as non-facilitative transfer. Therefore, the research question is: Do Russian heritage speakers use demonstrative pronouns instead of personal pronouns?

5) In various English texts, the use of demonstrative pronouns or articles was combined with German nouns. Besides, German verbs were also found. Hence, the question arises: What differences do we find regarding lexical transfer from German between the heritage speakers and the monolingual German group?

In Chapter 4.11, examples of possible cli effects from the heritage languages are presented.

### 3.5 Conclusion

Since demonstratives are part of deixis, we first provided an overview of different definitions of deixis (see Diessel 1999; Gundel et al. 1988; Bühler 1982; Lakoff, 1974). To understand an utterance, the context and the referents are important. Hence, the point of view also plays an important factor in communication (see Diessel & Coventry 2020; Diessel 2019; Levinson 2018; Müller et al. 2014; Cornish 2007; Levinson 2003;). Traditionally, deixis is divided into three types: personal, spatial/place and temporal. According to Diessel (2019), discourse and social deixis also belong to the group of deictic categories. In language acquisition, a combination of deixis and gestures is part of the first words/utterances made by infants (see González-Peña et al. 2020; Zhao 2007; Tomasello et al. 2007;). Furthermore, the concept of space and time was proposed by Lakoff and Johnson (1980), which consists of different metaphors, such as the time-as-space metaphor, which includes deictic terms such as *in/before/then* (Diessel 2019). The concepts of deictic centre and joint attention are important to locate the speaker and the reference (Bazzanella 2019; Diessel 2019; Danziger 2010; Fricke 2002; Clark 1978; Lyons 1977). In the second subchapter, we concentrated on joint attention, since it plays a crucial role in communication, since it is one of the main functions of demonstratives (see Battich & Geurts 2020; Sümer et al. 2020; Elian et al. 2011; Diessel 2006; Kaplan & Hafner 2006; Campbell 2005; Moore & Dunham 1995; Bruner 1974).

In addition, we presented functions of demonstratives. On the one hand, Diessel (1999) categorizes demonstratives into pronominal, adnominal, adverbial and identificational. Dixon (2003), on the other hand, distinguishes between nominal, local adverbial, and verbal demonstratives. To differentiate demonstratives and their use, Levinson (2018) offers a distinction between non-deictic and deictic aspects into further

subgroups, whereas Cornish (2007) suggests a scale of anaphoricity and deicticity coded by certain categories of indexical expressions.

In a study about strategies regarding the acquisition process of deictic expression, Clark (1978) suggests three steps for how infants learn demonstrative pronouns. Hence, the fourth subchapter addressed the process of acquiring demonstratives. These strategies can be considered forerunners for one- and/or two-word-utterances. However, demonstratives have given rise to various other grammatical markers, such as relative pronouns, complementizers, specific indefinite articles, temporal adverbs etc. Demonstratives themselves derive from *go*, *there* and *here*, presented in subchapter five.

After illustrating the typological relations of English, German and the heritage languages of Russian and Turkish, we outlined demonstratives in the investigated languages and then compared them. Interestingly, Russian and Turkish do not have an article system, using demonstratives instead. Compared with English, German, and Russian, Turkish has a particular tripartite distance system, and thus, has three demonstratives. Note that German also has three demonstratives, but the third form can be used for both proximal and distal reference.

Overall, all the languages possess demonstratives with certain restrictions. To understand how the acquisition of demonstratives occurs, it is always worth reviewing studies on demonstratives in L1 acquisition. There are many such studies, mostly examining the steps infants master in using demonstratives or about antecedents of demonstratives in comparison with those of personal pronouns. We only found four studies that investigate demonstratives in L2/TLA, namely Shin and Morford (2021), Lechner (2020), Ionin et al. (2012) and Siemund et al. (2018). Note that the first three studies focus on SLA, whereas the last is the only study exploring L3 learners.

Now, after briefly summarizing Chapter 3, we can draw a preliminary conclusion. From a general perspective, several studies on the acquisition of demonstratives have stressed how important they are in the first years of language acquisition. However, these studies only provide insights into the acquisition of an L1. Hence, there is a need for further research that explores the acquisition of demonstratives in different languages in children or adults who have already acquired one or more L1(s). To determine the exact role of the languages previously acquired in the acquisition of additional languages, the main interest of further research should be the comparison of learners with a certain language background that includes more than one language.

Nevertheless, the studies on demonstratives we reviewed are important for understanding how demonstratives are acquired and which steps are necessary for infants to master them. If we conduct further research into bilinguals or heritage speakers of different languages, we can draw more conclusions to apply to multilingual classrooms and their teachers.

## **4 Methodology - English learner corpus**

This chapter is the first section of the empirical part. The research design of the current study is presented and the methodology in preparation for the analysis of our data in the next chapter stated. The first step is to emphasize the motivation for this research. Then the learner corpus research (LCR) is explained, followed by a subchapter about the target language use of learners and further concepts. The fourth step is to present the project that supports this study: the MEZ project. The final step of this first part is to mention studies also based on the MEZ project. In the second part of this chapter, the focus lies on the data that was collected for the written task. In addition, the questionnaires that were used during data collection for the participants and their parents are presented.

### **4.1 Motivation**

Our research explores whether the background languages (the heritage languages) affect the acquisition of an additional language. In previous studies, the results correlate either with Rothman's (2011) TPM or Westergaard et al.'s (2017) LPM. According to Lorenz and Siemund (2020), two major factors play a crucial role in the acquisition of additional languages: "different types of bilingual learners" (Lorenz & Siemund 2020: 19) and the status and dominance of the languages involved. In addition, if there is no evidence for CLI, either positive or negative, then we expect the null hypothesis, which is also called the cumulative effect (Siemund 2020) and the CEM (Flynn et al. 2004).

Previous studies have explored different aspects of language dominance and its role with the minority language. While some results differ, Lorenz et al. (2018) and Hopp (2019) found "that the order of acquisition does not play a decisive role but that the dominant language is either the only source for CLI or at least the major source" (Lorenz 2019: 153). In this study, we examine this finding and want to investigate, first, whether German as the dominant language impacts the subsequent languages; and second, which role the heritage languages play in the acquisition of an L3. To validate our data, we also collected data from monolingual speakers of German and English. We want to prove that our bilingual heritage speakers differ from the monolinguals when writing in English. Moreover, we also aim to find evidence concerning whether bilingual heritage speakers have advantages over monolinguals in school contexts regarding additional language learning. Hence, we concentrate on linguistic aspects such as CLI effects, demonstrative use, article use, subordinators and language transfer (from German). To clarify, our focus lies on unbalanced bilingual speakers, which is important to mention since bilinguals can



be classified into several subgroups. Again, we specify this here since language dominance plays a crucial role in L3 learners. Generally, we want to find evidence for L2 and L3 learners and their patterns in CLI effects. Therefore, we also researched additional background information on both the monolingual and bilingual group. Our basis is a written task in English that helps to identify patterns in additional language learning. In the following, we describe research on our learner corpora.

## 4.2 Learner corpus research

To analyze and compare data of L2 and L3s, it is necessary to validate which is a suitable method of collecting data. In this sense, learner corpus research (LCR) developed as an important possibility. First, it is determined what an LCR is defined as and then the settings are considered. In addition, we reveal why learner corpora are helpful in language acquisition studies.

In general, there are different types of learner corpora. An LCR is defined as “corpora representing written and/or spoken ‘interlanguage’, that is language produced by learners of that language” (Gilquin 2021: 1). In addition, LCR can also include “video corpora record[ing] paralinguistic features such as gesture [...] and corpora of sign language” (McEnery & Hardie 2012: 3). To clarify the definition of a corpus, McEnery and Hardie (2012: 1-2) explain that it “is a collection of digitalized or machine-readable texts that could include spoken or written material,” which are normally transcribed and individually stored in extra files. Studies including learner corpora are “nearly always done computationally as virtually all corpora are text collections stored in the form of [...] Unicode text files” (Gries 2009: 1230). According to Granger (2008: 259), LCR contains “all the characteristics commonly attributed to corpora [...] the only difference being that the data comes from language learners.” On the other hand, Gries (2009) concludes there is no consensus about the terminology of LCR. Interestingly, he finds similarities between cognitive linguistics and corpus research. In both disciplines, the units consist of elements such as “morphemes, words, etc. Such symbolic units or constructions are often defined broadly enough to match nearly all the relevant corpus-linguistic notions” (Gries 2009: 1226). Furthermore, Gries (2009) highlights that, ultimately, all studies using LCR tend to analyze frequencies of, for example, lexical or grammatical phenomena. Frequencies in this sense refer either to the “occurrence of linguistic elements” or to the “co-occurrence of these elements” (Gries 2009: 1226). There is also the assumption that corpus-driven linguistics does not accept LCR and that “the corpus itself should be the

sole source of our hypotheses about language” (McEnery & Hardie 2012: 5). As Lorenz (2019: 155) highlights, LCR “stand[s] in direct opposition to general reference corpora.” Such general corpora for English are “BNC [...] or COCA” (Lorenz 2019: 155).

Gilquin (2021) outlines that an LCR refers to the learning of additional languages as well as that of L2s. This situation occurs when a language is not the dominant one in a country, as well as “in situations in which the target language is learned by immigrants in a country where it is the dominant native language” (Gilquin 2021: 1). Interestingly, Granger (2008: 2) refers to “foreign language learners,” which implies that, as Gilquin (2021) points out, the learner neither speaks the investigated languages as a native nor as an official language in their currently situated country. This distinction is apparently difficult for English, since English is a widespread language, but it is commonly accepted that learner corpora can include English learners in Germany, for example, or any other country where neither English nor a variety of it is an official language (Granger 2008: 260). Most studies have focused on English as additional language since it is a lingua franca and has global attention (Lorenz 2019). In our study, we also focus on English learners. To analyze the data (English demonstratives), it is crucial to include metadata, which include all components regarding the texts, such as text type, total amount of words, etc., as well as the background information on the learners, such as age, background languages, learning situation, motivation etc. (Gilquin 2021). Therefore, statistical methods are integrated to validate and compare the given data. Using such methods means the results of studies “become more comprehensive and more precise,” and at the same time this “makes it easier to relate corpus-based findings to experimental findings” (Gries 2009: 1228). Information about the L1 and/or L2 is usually considered to find evidence for lexical transfer or positive or negative influence (Gilquin 2021).

Figure 29 provides an overview of the relevant variables in a learner corpus design. According to Granger (2008), a typical design concerns the distinction between learner and task variables. Figure 29 is only an example of a learner corpus and offers an idea of which further aspects need to be included in an LCR analysis (Granger 2008). However, according to Gilquin (2021: 6) there are three typical methods of analysis: computer-aided error analysis, contrastive-interlanguage analysis (CIA); and integrated contrastive model. The latter method is now briefly introduced since it affects our study. To compare data, the CIA validates learner data in comparison with that of native

speakers on topics such as “high frequency vocabulary, modals, connectors and phraseological units” (Granger 2008: 265). The reviewed studies did not generally

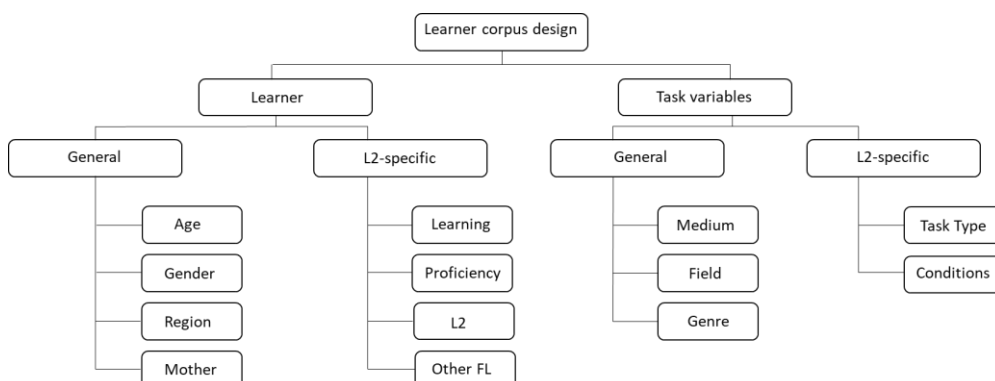


Figure 29: An LCR design after (Granger 2008: 162)

annotate the data. Nevertheless, they “all helped to bring light [to] the words, phrases, grammatical items and syntactic structures that are over- and underused by learners” (Granger 2008: 265). The second approach is the comparison between learner corpora regarding interlanguage (Lorenz 2019). Lorenz (2019: 158) emphasizes that there is also a tendency of some researchers “to rely on novice writing, i.e., language samples that do not come from academically trained, expert native speakers”. Such participants concern younger groups, like students (Lorenz 2019: 158). According to Granger (2008), LCR is used because it provides insights into the understanding of L2 or additional language learners and helps with questions regarding transfer from the background language(s). However, she also claims that LCR “has failed to arouse great enthusiasm from SLA researchers so far” because of the lack of longitudinal studies (Granger 2008: 266).

In comparison with recent studies, in the past the settings for learners were more controlled, and tasks such as reading something aloud or exercises to fill in something were mainly conducted. Testing in these ways makes it is easier to control the data one wants to validate, and hence, the analysis is easier, too. In such experiments, it is possible to decide whether an answer is target-like or not. However, in the past, the number of examined learners was small in comparison with more recent studies, which led to the issue of the results not being representative (Gilquin 2021; Lorenz 2019). According to Granger (2008), the size of a corpus is not as important as their meaning and value, since a longitudinal study of only a small number of participants can also help illustrate development of an individual. Gilquin (2021: 11) underlines that, “learner corpora have grown in number, size and diversity.” Given the above, LCR has developed, and recent studies have tended to use larger samples in more natural settings to produce more natural

language that at least approaches that of a spontaneous authentic situation in which native speakers talk.

In general, there are various types of annotation that can be included in the LCR regarding semantic and pragmatic aspects, tagging in part-of-speech, or phonetic aspects in spoken LCR. Typical for adult and child corpora is “error tagging” (Gilquin 2021: 5). The annotation of errors “is particularly relevant for interlanguage studies and is becoming increasingly popular” (Granger 2008: 264).

Some researchers have criticized the approach of LCR because the standard is a native-like use of language. However, Granger (2008) countered this criticism by stating that a comparison to native speaker language is not necessary and not the *norm* per se; instead, the “learner language can simply be studied in its own right or in comparison to other L2 varieties (L2 vs. L2)” (Granger 2008: 265). However, we examine such interlanguages of the heritage speakers and monolingual German speakers. It is more complex to define such norms for an EFL<sup>14</sup> learner due to the numerous varieties of English (Lorenz 2019). Nevertheless, the use of LCR is crucial, and several studies have demonstrated that, “advanced interlanguage is the result of a highly complex interplay of factors: developmental, teaching-induced and transfer-related” (Granger 2008: 265). It would have been more precise to compare interlanguages between several L1s with those of monolingual or native speakers of these L1s to consider whether age plays a role in language learning as novice native speakers are not as advanced as their adult counterparts. However, the pandemic meant it is not possible to visit schools for such data collection. There was only the possibility to conduct an online survey. Nevertheless, to examine the performance of native speakers in written tasks, we used data from adult native speakers. Our focus is the identification of possible interactions and patterns between and of the languages. Therefore, we consider an error analysis to be able to trace possible interactions to the native and/or heritage languages. As mentioned previously, we also use metadata of the participants in our study to interpret the results of our analysis of the written tasks. Such information is analyzed using statistical tests. We then define whether the background information of students influences the production of a written text. As illustrated in the LCR design, several should be considered for such analysis.

In sum, learner corpus research is a helpful method for understanding the interaction between languages during language acquisition. As described, LCR combines different linguistic fields. Granger (2008: 268) emphasizes that LCR “opens up exciting

---

<sup>14</sup> EFL = English as a Foreign Language

pedagogical perspectives in a wide range of areas of language teaching pedagogy.” Our study examines the use of demonstratives in EFL in language groups, with more than 300 participants and including written English texts of novice and intermediate learners of English as an L2 or additional L3.

### **4.3 Target language use and further concepts**

To validate our data and to classify whether there are transfer effects of the background languages, we need to compare the data with that of a native speaker. The term native speaker and the concept of target language use are approaches based on an idealized speaker. The concept of such a speaker has been criticized and, thus, the use of a learner corpus. However, Granger (2008) emphasizes that, in a learner corpus, the interlanguages between different L1s can be analyzed without being compared to such a *speaker norm*. Nevertheless, we now introduce the concept of a target-like language use and that of a native speaker norm or the so-called native-speakerism. In recent discussions about the standard of a native speaker, the definitions and meanings have varied greatly (see McKay and Brown 2016; Holliday 2015; Davies 2003). However, we demonstrate that the idea of the acquisition of a standard spoken language is normally the basis for teaching foreign languages. In his book about the myth and reality of native speakers, Davies (2003: 200) argues that native speakers have several facets in terms of their variability in language: they “have a wide range of syntactic and semantics alternatives,” they are able to speak fluently and spontaneously, they learn their native language as a child, and they have great knowledge about several features of the standard language, in our case English. McKay and Brown (2016: xiv), on the other hand, emphasize that a native speaker is an “idealized [...] construct, not a real person.” This construct includes the idea that such a speaker can speak grammatically correct standard language intuitively, is educated, and can speak different sociolects. The combination of these features results in a constructed native speaker. Since every person speaks their own idiolect, this standard of native speaker cannot refer to a real person (McKay & Brown 2016). In our study, we compare the use of demonstratives of speakers with different language backgrounds. We validate whether the produced written texts are used target-like. Hence, we assume that there is a standard of writing such as a text, in our case to describe a picture sequence. Although we do not want to focus too much on the discussion about the term *standard*, we have a certain concept in mind that, from our point of view, is preferred by a native speaker. This

concept is the starting point for our analysis in order to compare the English written texts of the participants.

Studies on EFL teaching have found that there is a belief or an ideology that foreign language learners should only use the target language, since in the teachers' belief the classroom is the only possibility for most students to talk in the foreign language (Shabir 2017; Degi 2016). The aim is to train and teach students to speak like a native speaker, but ultimately this is impossible to achieve for learners, since we have seen that the idealized native speaker competency is just a construct (Degi 2016).

According to Mair (2013), there are different varieties of English that need to be differentiated, represented in Table 32:

**Table 32: Mair's division of English into varieties (Mair 2013: 10)**

World System of Standard Englishes	
hyper-central variety/"hub"	American English
super-central varieties	British English, Australian English, South African English, Nigerian English, Indian English, and a very small number of others
central varieties	Irish English, Scottish (Standard) English, Jamaican English, Ghanaian English, Kenyan English, Sri Lankan English, Pakistani English, New Zealand English, and others
peripheral varieties	Maltese English, St. Kitts English, Cameroonian English, Papua New Guinea English, and others

According to Mair (2013), American English especially impacts other varieties of English. In addition, he emphasizes that, "[t]raffic in lexical borrowings will generally be 'downward'," whereas the opposite way occurs less frequently (Mair 2013: 261). However, since in German, instructions in schools are influenced by both American and British Standard English, we also assume that, mostly, the materials used in EFL classrooms concern both, whereas students in their leisure time may be more influenced by American English. Therefore, we accept both varieties. For further discussion, see Lorenz (2019).

In our study, we explore CLI between the different L1s and L2s. Therefore, several factors play a crucial role when comparing such languages. Proficiency level, language dominance and age are important and need to be considered, as well as several other aspects that can influence the use of a background language and certain transfer effects. In a first step, we use text length as a factor to compare students' written performances. Following Crossley (2020), text length can provide insights into text quality and proficiency in writing. He highlights how "higher rated essays include more sophisticated lexical items, more complex syntactic features, and greater cohesion"

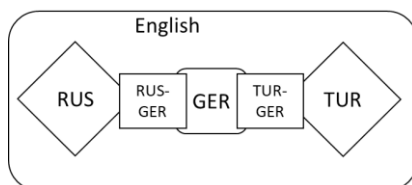
(Crossley 2020: 427). However, Fleckenstein et al. (2020: 8) consider that, “text length as a criterion of quality cannot be generalized over different text types at random.” Nevertheless, in our study, we hypothesize that the older the student, the more complex and longer the written texts. Furthermore, the text production of students is from a certain point (Wave 1a) of a longitudinal study. Hence, we do not compare performance over time; rather, we compare them regarding different age groups and language groups, using a cross-sectional study with two cohorts. In addition, we are interested in the proficiency level of students with different background languages. Therefore, we consider different time points in the acquisition process by choosing two age groups to identify the differences between the participants.

To identify CLI effects in the English text production, we need to determine the “copying of linguistic representations from one language to another” (González Alonso et al. 2021: 26). We compare monolinguals with bilingual heritage speakers, as well as a small number of adult native speakers. Unfortunately, due to the COVID-19 pandemic, we could not collect data from native speakers aged either 12 or 16 as their monolingual and bilingual counterparts. We are aware that age plays a role, and we need to remember that adult native speakers with an academic background may perform differently than a younger group of novice native speakers. Nevertheless, we compare the data provided. According to Jarvis and Pavlenko (2008), three ways can be determined to identify CLI effects: first, intragroup homogeneity, which is defined as, “[e]vidence that the behavior in question is not an isolated incident but is instead a common tendency of individuals who know the same combination of languages” (Jarvis & Pavlenko 2008: 35). In our study, this first type can be determined because the bilingual heritage speakers share at least some features with monolingual Germans and/or with Russian or Turkish native speakers. What is particularly noteworthy is that the two monolingual groups are not, overall, equally comparable to a bilingual heritage speaker group, but it is possible that the bilingual group may display positive and/or negative transfer from one of the shared languages. Clearly, the latter type is easier to determine since it means that the copying of grammatical or lexical knowledge from one language to the other fails. If we can detect such negative transfer between, for example, the monolingual Germans and the Turkish-German group, we can assume that it is negative transfer from German.

The second type is intergroup heterogeneity, which implies that, “the behavior in question is not something that all language users do regardless of the combinations of L1s and L2 that they know” (Jarvis & Pavlenko 2008: 35). Again, this category is also

found in our study, since we have four language groups and assumed that we would find patterns in some language groups that do not occur in all English learners.

The third type is cross-linguistic performance congruity, which is described as, “[e]vidence that a language user’s behavior in one language is motivated by her use [...] of another language” (Jarvis & Pavlenko 2008: 35). In this sense, we need to detect whether there are patterns only concerning two groups (e.g., Russian-German speakers and monolingual Russians). Then, we can determine the construction, or the lexis borrowed from Russian and reveal the Russian influence. Although not every error that occurs is necessarily a CLI effect. It can also mean that the student master’s a step in the learning process of English. However, we need to determine whether all language groups with the combination of German display this certain pattern to detect German transfer, as previously mentioned. Following Lorenz (2019), we sum up the presented interactions between the different languages with the following illustration.



**Figure 30: Connection between German monolinguals and German heritage speakers of Russian and Turkish, after (Lorenz 2019: 166)**

In this illustration, German monolinguals are connected to the bilingual heritage speakers, who are further connected to Russian and Turkish native speakers. Both the Russian and the Turkish heritage speakers use their minority language at least at home with their parents. However, the participants speak the dominant language German, and their heritage language is not as developed as the dominant language. Therefore, we examine unbalanced bilinguals. What we cannot determine is which features they do not know in their minority language.

Having introduced the concept of a native speaker norm and further concepts, we now present the MEZ project, the basis of our study.

#### **4.4 Mehrsprachigkeitsentwicklung im Zeitverlauf (MEZ)-project**

The database for this study was compiled in the MEZ project (multilingual development: a longitudinal perspective) carried out by the University of Hamburg between 2015 and 2018. The aim of the MEZ study was to provide insights into the multilingual competence levels of individuals and their development. Therefore, different levels of multilingualism



were considered, such as contextual, personal and linguistic factors relevant for indicating the development of a student. Furthermore, the students' conditions are highlighted. Receptive and productive skills (reading/listening and written/oral) in academic language and in the heritage languages of Russian and Turkish were investigated (MEZ-Project 2016). The key questions of the study were as follows:

- (1) Which language-based, personal, and contextual conditions influence multilingual development positively or negatively?
- (2) How do these conditions change over time, and in what relationship do they stand to each other?
- (3) What is the relationship to other dimensions of educational success? (MEZ-Project 2016)

#### 4.4.1 Data collection

Public schools participated in the MEZ project throughout Germany. The study was longitudinal, with two parallel cohorts in general schools where students had a Russian, Turkish, or monolingual German language background. The students were in Grades 7 and 9 and were tested at four different times, see the following diagram.

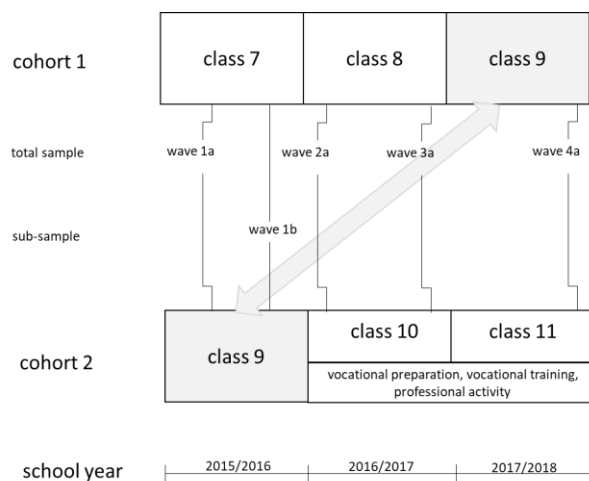


Figure 31: Survey waves and cohorts in the project MEZ (Gogolin et al. 2017: 15)

As illustrated in Figure 31, the measurement period was three years. The diagram also clearly illustrates the two cohorts investigated in this longitudinal study. The first cohort consisted of students of the seventh grade who were examined until the end of ninth grade. During this period, the development in terms of the students' heritage language, German

and English is highlighted. Thus, at the end of the three-year period, the prospects of the students according to their language ability for their working life and possible consequences could be determined. The second cohort began in ninth grade, and during the study period it transitioned to an education phase in which students prepare for professional activities. Thus, it was possible to investigate whether the students' prospects impacted their investment behaviour in their language abilities. Due to the examination of the ninth grade in both cohorts, the effects of the cohorts and their influence on the results can be considered (Gogolin et al. 2017).

In the first survey period, 900 students of each age group participated. As a condition, students had to have attended school in Germany since third grade and had to learn English as their first foreign language (Gogolin et al. 2017).

#### 4.4.2 Data collection: Wave 1a

In this thesis, the data from the first data collection wave (1a) are used. Table 33 lists the participation of schools according to the year and the state. A total of 72 schools participated in survey Wave 1a. As displayed in this table, seven schools participated only with the seventh grade, and six schools only with the ninth grade.

**Table 33: Distribution of the participated states according to year in the project MEZ (Hellrung et al. 2017: 10)**

State	Participating year			Total
	only 7	only 9	both 7 and 9	
Baden-Württemberg	-	-	2	2
Bremen	-	2	1	3
Hamburg	1	-	9	10
Hessen	-	-	1	1
Niedersachsen	3	1	13	17
Nordrhein-Westfalen	2	2	27	31
Rheinland-Pfalz	1	-	2	3
Schleswig-Holstein	-	1	4	5
Total	7	6	59	72

During data collection, students were either aged 12 or 16. The participants can be divided into monolingual Germans, bilingual German-Russian's, and bilingual German-Turkish's. The students' environmental language was German. In school, they learned English as their first foreign language and French or Russian as their second.

About half the students attended high school, the other half did not. In the MEZ study, the data collection included different factors, such as contextual, linguistic, and personal, which are important for tracing the development of the students'

multilingualism. Therefore, the division of the students into one group who attended high school and the other group that did not is significant to highlight the variety of relevant characteristics, such as language ability in German or socioeconomic background. In Table 34, the column *No High School* refers to students who attended any other school than a high school.

**Table 34: Distribution of the participated states according to the type of school in the project MEZ (Hellrung et al. 2017: 13)**

State	Type of school			Total
	No High School	High School	Unknown	
Baden-Württemberg	15	59	-	59
Bremen	278	-	35	35
Hamburg	192	130	121	251
Hessen	-	-	23	23
Niedersachsen	84	181	23	396
Nordrhein-Westfalen	-	472	169	919
Rheinland-Pfalz	-	43	-	58
Schleswig-Holstein	-	50	-	134
Total	569	935	371	1,875

In the sample, 57.3% of the participating students had a monolingual language background (German); 16.7% were bilingual Russian-German; and 26% were bilingual Turkish-German (Hellrung et al. 2017). Table 35 shows the languages and states of the participants.

**Table 35: Distribution of the participated states according to heritage languages in the project MEZ (Hellrung et al. 2017: 13)**

State	Languages			Total
	German	Russian	Turkish	
Baden-Württemberg	33	9	17	59
Bremen	16	6	13	35
Hamburg	118	60	73	251
Hessen	17	1	5	23
Niedersachsen	234	92	70	396
Nordrhein-Westfalen	525	130	264	919
Rheinland-Pfalz	39	4	15	58
Schleswig-Holstein	92	12	30	134
Total	1,074	314	487	1,875

In Table 36, the three language groups are presented according to the type of school.

**Table 36: Distribution of the heritage language of the students according to the type of school in the project MEZ (Hellrung et al. 2017: 14)**

Languages	Type of school			Total
	No High School	High School	Unknown	
German	334	553	187	1,074
Russian	74	149	91	314
Turkish	161	233	93	487

Total	569	935	371	1,875
-------	-----	-----	-----	-------

In Wave 1a, the students were tested for two days. The first day, tasks in German and English, as well as basic cognitive competencies, were assessed using different tests, as listed in Table 37.

**Table 37: Test Day one in Wave 1a (n = test groups; Hellrung et al. 2017: 22)**

Instrument	Time allocated (in minutes)	the required number of evaluable times from the test session log	Time allocated according to test reports (n)		
			Fall below	Fulfilled	Exceeded
Testheft 1, part 1: written task German	30	145	21	124	--
Testheft 1, part 2: reading task German	6	143	--	140	3
Testheft 1, part 3: written task English	30	144	55	88	1
Testheft 1, part 4: C-Test English	20	143	16	126	1
Testheft 1, part 5: basic cognitive competencies test	8	142	2	140	--
Student questionnaires	ca. 40	131	23	87	21

#### 4.4.3 Written Task

In this study, we use one of the English written tasks to analyze different types of demonstrative pronouns. The first written task was to write an article for a travel journal, like a journalist, within 30 minutes. The topic was *Breakfast in Germany*. In addition, the students were shown nine pictures of different stages of preparing a typical German breakfast, such as buying coffee, cheese etc. in a supermarket, cooking eggs at home, setting the table and so on. The picture sequence was produced within the project.

The second written task was to complete C-Tests within 20 minutes. Furthermore, a cognitive test helped reveal the basic cognitive skills of the students. In addition to these three tasks, students and parents were given a language background questionnaire addressing matters of language onset, attitudes, and use. The results of these tasks were transcribed, digitalized, and stored as text documents for each student. The texts of *Breakfast in Germany* are the basis of the current study.



Figure 32: Picture sequence for the English written task *Breakfast in Germany*

As listed in Table 38, on Day 2, tasks in the heritage languages and in foreign languages were conducted. Additionally, every student was given a questionnaire for their parents about, for example, the school career of the child, the child's career aspirations, the heritage language and mother tongue, the parents' professional activity and the language skills and language use in the family (Hellrung et al. 2017).

Table 38: Test Day 2 in Wave 1a (Hellrung et al. 2017: 22)

Instrument	Time allocated (in minutes)	the required number of evaluable times from the test session log	Time allocated according to test reports (n)		
			Fall below	Fulfilled	Exceeded
Testheft 2, part 1: written task Russian/Turkish	10	135	40	87	9
Testheft 2, part 2: reading task Russian/Turkish	30	131	65	66	--
Testheft 3, part 1: written task French/Russian	6	122	--	122	--
Testheft 3, part 2: C-Test French/Russian	30	111	62	49	--
Testheft 1, part 5: basic cognitive competencies test	20	97	22	75	--
Student questionnaires 2 (network request)	ca. 10	112	15	93	4

The pure survey phase on Day 1 took 134 minutes, and on Day 2 a maximum of 117 minutes. Each survey was conducted with paper and pen. Students were divided into test groups - partially in inter-year groups. Thirty students per year were provided. Due to different language tests, the division of the test groups on Day 2 was different; they were divided into three groups. The first group included students with a Russian-German or Turkish-German language background who were tested in the heritage languages. As a

condition, students in the second group had to have been learning one of the foreign languages of Russian or French for at least a year to be tested in these languages. The last group included a network request to all students who participated in a test on that second day. Each group had a test coordinator and, per test session, a teacher as a supervisor was present.

Regarding the comparison of the collected data, it is necessary to consider native speakers of English who participated in this study as well. Therefore, the picture sequence was adapted to a *typical (American) English breakfast*. The participants also had 30 minutes to write a text about a typical English breakfast based on the picture sequence.

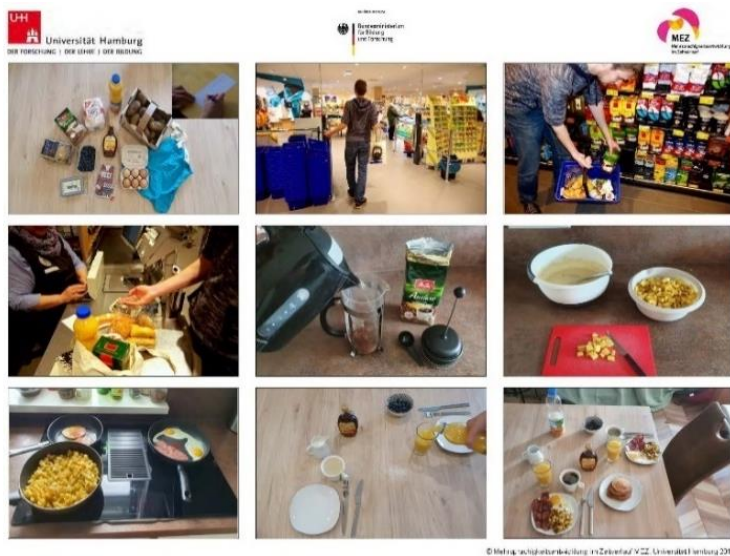


Figure 33: Picture Sequence *A typical English Breakfast* for native speakers of English

#### 4.4.4 Background questionnaire

In addition to the description of the picture sequence, the participants had to fill in two questionnaires. The first included questions about personal information such as gender, age, foreign languages, school and teaching, colleagues and friends, motivation to learn English, profession of their parents and country of origin. The other questionnaire concerned social networks, linguistic skills, attitude toward school and learning additional languages. This background information is important for comparing the different language groups with each other and to analyze their data. The questionnaires were filled in using pen and paper, which enabled a rapid transmission of the handwritten answers into a digital format in an Excel spreadsheet. For this study, the following variables were taken from the questionnaires and analyzed in Chapter 5:

- a) Gender

- b) Age
- c) Language Group
- d) Language use at home: Which language do the parents speak with each other?  
Which language do the participants use with their siblings, mother, and father?
- e) School type
- f) School grades in English and German
- g) Socioeconomic status of mother and father, and the highest SES per family
- h) Motivation to learn English: it is useful, it is boring
- i) Age of onset learning the heritage language and German
- j) Number of books

Unfortunately, not every participant answered every question in the questionnaires, which means some information is missing. Nevertheless, we kept the entire dataset and analyzed it, but we are aware that the missing data cannot support the findings of the written tests.

#### **4.4.5 Native speakers of English, Turkish and Russian**

To compare the data of our bilingual participants, we needed control groups of the additional language English, as well as of the heritage languages of Turkish and Russian. Due to the COVID-19 pandemic, it was not possible to collect data in schools personally. The idea, therefore, was to provide the written task for native speakers online, as well as questions about their language use via *SoSciSurvey*, a professional tool for online surveys. We found an International School in Weimar that helped us spread the link via their English native students. In addition, Turkish and Russian researchers helped as well. We customized the questionnaire for native speakers, since we do not need information about their motivation etc. The following variables are from our questionnaire for native speakers.

- a) Gender
- b) Year of birth
- c) Country of birth
- d) Nationality
- e) Mother tongue
- f) Further or additional languages
- g) Use of further or additional languages
- h) Language use at home

- i) School type
- j) Family background
- k) Profession

As mentioned before, since there were too few participants with either Russian natives or Turkish natives, we only have access to texts of English native speakers. Since we have different age groups in these native speaker data, we separated the ages into two groups: first, monolinguals up to the age of 40; and second, monolinguals older than 40. Then, we get two groups of nine participants each. This approach enabled us to compare the data of bilingual teenagers with two different age groups of monolingual adults.

As mentioned previously, the participants did not answer every question. Nevertheless, we analyzed and compared the findings we do have in Chapter 5.

## 4.5 Transcription

In this subchapter, the transcription process of the handwritten texts of English L3 learners is described. For the linguistic analysis, it was necessary to transcribe the students' handwritten texts and make them accessible to compare the data within each language group. This process was done using Word. It was important during this process that the automatic correcting function was switched off, so the texts were copied and saved as exactly as possible. The paragraphs the students wrote were not considered, and we excluded them from the transcribing process. The spelling of the words was copied as well, and if a letter was not readable, we used *x* for that and *xxx* for the whole word. We wanted to compare the word count. The idea is *the more words, the higher the proficiency level*. Each text was saved with an ID in a file system. The language groups were divided into Grades 7 and 9. In each file of the language groups, we made subfolders with the Word document saved with the ID of the student. All the words were counted and placed into an Excel spreadsheet. The corpus size is 47,920-word tokens of the handwritten texts. To compare the language groups with each other, the occurrences of demonstratives, articles etc. were normalised per 100 words and stored in the Excel sheets. In all statistical analyses, the normalised occurrences were used.

The data set of the MEZ-project compiled 1800 students. Hence, we had to go manually through the data set, to search for texts with demonstrative pronouns.



### *Coding*

After transcribing, different factors were highlighted, and then we analyzed the written texts. This corpus was not tagged because it is small. As Lorenz (2019: 183) points out “a well-known weakness in corpus linguistics” is that we can only analyze what the students wrote in their texts and we cannot assume something that was not written by the students, such as structural aspects of the sentences, lexical forms, etc.

Each demonstrative was coded and split into the general occurrence of the pronoun, target-like and non-target-like use. The same was done with articles, which were also split into definite, indefinite and zero and their target-like and non-target-like usage. Below is a list of all the variables we analyzed in this study.

- |  |  |
|--|--|
| a) Number of words                                       | l) Number of non-target-like use of                    |
| b) Number of sentences                                   | indefinite articles                                    |
| c) Number of demonstratives                              | m) Null articles                                       |
| d) Number of target-like use of<br>demonstratives        | n) Subclauses  |
| e) Number of non-target-like use of<br>demonstratives    | o) Lexical transfer: German as a<br>source of transfer |
| f) Number of articles                                    | p) Number of types                                     |
| g) Number of definite articles                           | q) Type-token-ratio                                    |
| h) Number of target-like use of<br>definite articles     |  |
| i) Number of non-target-like use of<br>definite articles |  |
| j) Number of indefinite articles                         |  |
| k) Number of target-like use of<br>indefinite articles   |  |

Crossed-out words are not considered important in our analysis. We counted the number of sentences, which is crucial, because the students had to describe a picture sequence comprising nine pictures. Therefore, the expectation was that every student wrote at least nine sentences, which did not happen. By sentences, we refer to a noun and a verb phrase, but also focus on sentences that do not contain a verb and can be seen as an addition to the preceding sentence, such as in the following example:

1) (GER9\_1200339106): Everyone eats something to put their food on, a cup, a spoon and a knife. Also a glass for the juice.

Furthermore, the students often used the conjunction *and* instead of a new sentence, which is why, for some students, we only counted a few sentences despite them technically writing more. Therefore, we used the online lexical profiling tool *text inspector* (Bax 2019), which analyses texts.

The next step was to consider demonstrative pronouns. We first counted every demonstrative pronoun that occurred in a text. Then, we sorted them according to their category, which are displayed in the following examples. The categories are divided into determinative, identifying and subordinating classes. Examples are included here, and the classifications are explained in greater detail in the next section. The first sentence includes two of the categories. First, the subordinating *that* is used to combine the main clause and subclause. The second demonstrative pronoun is an example of the determinative category, which is adnominal.

2) (GER7\_2300287105): They are made so, that the egg can't fell out of this special cup.

In Sentence three, the identifying category is used anaphorically and refers to the sentence before by using *After that*, whereas *all these things* are, again, the plural form of the determinative category. The final demonstrative pronoun is a subordinating one.

3) (RUS9\_1300389149): After that we took all these things that we bought on the table.

Example four includes the predicative form of identifying pronouns. Both forms (the anaphorical and the predicative) are summarized in the identifying category.

4) (GER9\_1500469103): Thats the way we make breakfast in Germany.

The final step was to decide whether the use of the pronoun was target-like or non-target-like. Therefore, the number and the context agreement were considered. The agreement

of the singular determinative pronoun does not correspond to the plural noun in the next example, which indicates a non-target-like use.

5) (TUR7\_1302547113): You need this things: six eggs, bred, butter, cafe, chees, marmalade, a sausage and orange juice.

The following sentence displays a target-like use of an identifying demonstrative pronoun.

6) (GER9\_1500469101): Then search for the coffee and after that go and buy the stuff and get your rest money back!

After having counted the sentences, we focused on the use of articles. Articles and demonstratives are closely related. In some cases, the definite article can be replaced by a demonstrative. In the current study, the determiner demonstratives can replace articles like in *the book is boring* vs. *this book is boring*. Hence, we included articles in the study, to analyze whether students used demonstratives or whether they instead use more articles. However, the first step was to determine how many articles were written in the texts. We counted every article before dividing them into two subgroups. Again, the number of articles was counted manually and saved in an Excel spreadsheet. After that, we divided the articles into definite and indefinite articles. We also counted and stored them. In the following, the sentences 7 and 8 display the target-like use of definite articles.

7) (RUS9\_1302939124): For the eggs you need salt and pepper. The orange juis is in a glass and the coffee in a mug.

8) (TUR9\_1700639119): Then we put salt and pepper for the eggs onto the table. Also the sugar for the coffee.

In these sentences, both participants refer to things they previously bought, and which are directly referenced.

9) (TUR7\_1302547113): First you go to the market.

Sentence 9 presents the use of the definite article *the*, which does not initially seem wrong. The sentence is grammatically correct, but the participant uses *the market* the first time and does not use a special name of a supermarket or discounter; they refer generally to any market. Therefore, we consider this sentence as non-target like because we would expect, if we speak or write the first time about a subject, to use an indefinite article.

We then focused on the subgroup of indefinite articles. First, we counted all the indefinite articles and saved them in the Excel spreadsheet. Then, the target like and non-target like uses of this subgroup were considered. The next example includes the phenomenon we previously described. The participant also refers to a supermarket to buy all the things they need for the breakfast. This time, however, the participant uses an indefinite article because they refer to the supermarket as a newly introduced subject. Hence, we consider the next sentence to be target like.

10) (GER9\_1306049103): Write them down and then you have to drive to a supermarket near you.

In contrast, the next example presents a non-target like use of an indefinite article. The participant refers to water and uses the indefinite *a*. However, water is not countable and does not need any article. Therefore, we consider this sentence as non-target like.

11) (GER7\_1700757101): At home we take the cafe in a cup and we made the eggs hot in a water.

For articles, the last category is zero articles where an article is missing like in the following two examples. The first sentence in Example 12 is one of the most common cases. We need here an indefinite article because normally it is the first time we talk about a supermarket. In Example 13, the indefinite or definite article before the noun *machine* is missing. Note that we do not focus on spelling mistakes. Both articles would be expectable, since with an indefinite article it would be referred to as a coffee machine in general and with the definite article to the one on the picture.

12) (TUR7\_1304167117): Go to supermarket.

13) (RUS9\_1302939125): You can also use mashine and instant coffee

In an extra category, we decided to investigate the use of subclauses. As already mentioned, we included the use of subordinating demonstratives, because students showed a high use of it and in German, the same structure can be used, to connect main and subclauses. However, we are interested in the use of other subclauses, to pin down whether students use subordinating demonstratives or other subclauses instead. We believe that when participants do not use a subordinating *that*, it does not necessarily mean that they do not use subclauses at all; they may use other subordinators to structure their clauses. Hence, we examined whether the participants used one or more of the following subordinators:

- |            |           |
|------------|-----------|
| a) while   | g) when   |
| b) because | h) if     |
| c) who     | i) but    |
| d) which   | j) where  |
| e) why     | k) before |
| f) what    | l) how    |

We first counted the general occurrence of subclauses and then divided them according to the list above. We then counted the subgroups. The following examples display the use of the different subordinators.

14) (TUR9\_1700759112): While the eggs are cooking you will prepare the table for your breakfast.

15) (TUR7\_1302547121): And in Germany the people enjoyed the breakfast, because it's so healthy and delishess.

16) (RUS7\_2300577150): At home you make at first the coffee for these who wants, and if they want milk or sugar in the coffee you put milk or sugar in there.

17) (GER9\_1400459101): First you need a peace piece of paper, where you can write, which products you need for a breakfast.

18) (TUR7\_1304417113): this is perfect for the Famely why? Here

In Sentence 18, the structure differs from the other sentences. In it, the conjunction *why* is used as an interrogative pronoun. Since we only detect the occurrence of an interrogative *why*, we did not find a subordinating *why*.

19) (RUS7\_1304127157): We go to a supermarket and buy us, what we need.

20) (GER9\_1400459103): But you must take them, after a few minutes, out of the water, because when they are too long in the water the eggs splash up. [...] When you want you can put is your coffee sugar and milk.

21) (TUR9\_1500389125): .... and make the watter hot if the watter kocht put the eggs in the watter.

22) (TUR7\_1401877117): You can ask the personal, when you need help to find something, but when not you can find it yourself.

23) (GER7\_1600027103): Then they go to the supermarket \*<sup>15</sup>, search the things they need, and ask the shop assistants if they don't know where they can find it.

24) (TUR9\_2300579111): Before you begin to do breakfast, you should go to a markt and buy typical german breakfasts essentials.

25) (RUS7\_1601207115): Hey guys to day I say you how we eat in Germany.

In the examples, some students exhibited lexical transfer from German. In some cases, the participants used brackets, or brackets with question marks to indicate the lexical transfer. Some did not use any kind of marker, and others mixed an English word with a German word into a new word, as in Example 29.

26) (TUR7\_1302547125): The cheese is in the (kuehlschrankabteilung).

---

<sup>15</sup> \* This sign was used by the participant in order to add new information

27) (GER7\_1401877105): For a german breakfast do you need: coffe powder, orange juce, marmalade, "fleischwurst," ches, eggs, butter and bread. You take some coffe poweder in an "ich weiß nicht einmal wie der Gegenstand auf Deutsch heist," and some hot water and hold the "ich weiß nicht einmal wie..." oder a cup.

28) (TUR7\_1304417113): I go to the ... (Kasse?) and give a money. [...] I'm tuhen? Orange juice on the Table.

29) (TUR7\_1601167121): I go to the drinkabteilung and I nehme for my Breakfast Orangesaft.

30) (GER7\_1302547107): You go to the cheesetheke and buy gouda.

We assume that the students were aware of their strategy to use lexical transfer because they highlight the words in almost every case. In Sentences 26, 27, and 29, it is conspicuous that the respective participant uses a German noun but writes it in small letters, and in Sentence 26 the participant does not use the umlaut *ü*; instead, *ue* was used. Sentences 29 and 30 display a mix of English words with German without using any of the illustration strategies used in the previous examples. These particularities were also analyzed in an Excel spreadsheet. The number of occurrences of lexical transfer per student was counted manually.

The focus of interest is also on the type/token count. With the online lexical profiling tool *text inspector* (Bax 2019), every text can be analyzed very quickly. You copy and paste the text and the *text inspector* analyses different aspects, such as the type count, the token count and the type/token ratio, as well as the sentence count. Based on the type/token ratio, the students' texts can be compared according to vocabulary, the range of different words and the number of sentences.

Spelling mistakes were not considered. Every form that could be recognized as, for example a demonstrative, was analyzed.

After counting all the different linguistic aspects, the software RStudio was used, which is a project for statistical computing and free software. With different statistical tests such as t-tests, ANOVAs combined with multiple regression models as well as association plots, the relation between the linguistic and background information was analysed.

## 4.6 The aim of this study

In this chapter, grammar aspects that are important for the case studies are presented in several subchapters. First, demonstrative categories for the first case study are shown, followed by articles for case study two and subordinators for case study three. The last case study focused on possible lexical transfer. This subchapter will end with research objectives and possible cli effects from the heritage languages Russian and Turkish.

### 4.6.1 Demonstrative categories

For the subsequent linguistic analysis, we distinguished between determinative and identifying demonstrative pronouns as well as demonstratives as subordinators. In the following, these categories are briefly illustrated. The characteristic of the determinative category is the function of pre-modification, see Example (1). Furthermore, determinative demonstratives are adnominal - in Example (1a) the coreferential noun is *cheese*, and in (1b) it is *things*.

- (1) a) This cheese is good. That cheese is not.  
b) These things are easy to find. Those things are not.

We also considered the correct use of distance. While *this/these* or *here* refer to objects close to the speaker, *that/those* or *there/over there* are related to objects farther away. Hence, we indicate the correct link between the objects described in the pictures and their distance to the writer (in this case, since we analyzed only written texts).

In contrast, the identifying category does not accompany a coreferential noun. Moreover, it replaces a noun or a whole situation mentioned previously in the context or discourse. Their pronominal function means an identifying demonstrative can refer back to a specific context. It can occur as a subject or an object. In Examples 2a and b, the predicative and the anaphorical usage of identifying demonstratives is illustrated.

- (2) a) You bought coffee from Argentina. This is a very good one.  
b) Some of my friends do not like chocolate. I cannot understand this.  
c) After that you can boil the eggs.



While Example 2a contains predicative use of identifying demonstrative pronouns, the Examples 2b and 2c represent anaphoric use.

Since the subordinator *that* derives from the demonstrative pronoun *that*, as mentioned in Chapter 3.1.5 about the diachronic perspectives of demonstrative pronouns, it is included in our analysis. Obviously, this category differs from the others, but the students displayed quite a large and interesting use of *that as a subordinator*, hence, it is included in this analysis.

(3) It is important that you buy fresh cheese for a typical German breakfast.

The classification of this study is equivalent to Siemund et al. (2018) and Diessel (1999). In his study, Diessel (1999) uses the distinction between pronominal, adnominal, adverbial and identificational demonstrative pronouns. In contrast to Diessel, we combine in the study of Siemund et al. (2018) and in this current study the categories pronominal and identificational demonstratives into the identifying category, and we do not consider adverbial usage of demonstratives as an own category. Instead, we examined whether demonstrative adverbs in general were used. Furthermore, the use of articles is examined in this study. In German, the use of a demonstrative instead of an article is typical. The sentence *Diese Frau kenne ich* (I know this woman) could also be used with a definite article instead of a demonstrative pronoun. This article can also be accompanied by the adverb *da/dort* (there/over there), as in *Die Frau da kenne ich* (I know the woman over there). The combination of *Die Frau da* is still referential, like a demonstrative, but looks like a normal article. Therefore, we can assume that if we find a frequent use of such patterns, it may be traced to German transfer.

#### **4.6.2 Articles**

In this subchapter, articles in the investigated languages are presented. The west Germanic languages English and German possess definite and indefinite articles, whereas Turkish and Russian do not have an article system. Since articles are often used and especially definite articles determine the noun, like demonstratives, they are included in a separate case study, to find out whether bilingual students are influenced by their background languages when using articles in English.

*English*

Like demonstratives, articles belong to the class of determinatives (Huddleston & Pullum 2002: 368). In English, the most basic definite indicator is *the* (Huddleston & Pullum 2002: 368); it can be combined “with all types of common noun: count singular, count plural, and non-count” (Huddleston & Pullum 2002: 368). According to Biber et al. (2000: 69), the definite article “specifies that the referent is assumed to be known to the speaker and the addressee”.

Since its origin is the numeral *one*, the indefinite article *a/an* is incompatible with plurals (Huddleston & Pullum 2002: 371). Before consonants, the indefinite article is unstressed and used as *a* and before vowels its *an* (Quirk et al. 1985:254). Table 39 shows the use of both the indefinite and definite article and their (in-)compatibility with count and noncount nouns (Quirk et al. 1985:253).

**Table 39: The use of articles according to Quirk et al. (1985:253)**

		count	noncount
Singular	definite	the book	the furniture
	indefinite	a book	furniture
Plural	definite	the books	
	indefinite	books	

However, definite articles are used to express identifiability (Huddleston & Pullum 2002: 368), as in Example 1. The referent assumes that the addressee is familiar with the referent of this noun phrase (the car). It is not necessary that the addressee asks the referent *which car* he is referring to (Huddleston & Pullum 2002: 368).

1) Where did you park the car? (Huddleston & Pullum 2002: 368)

In this Example 1, the car is unique, because it is the only one relevant in this context. Furthermore, for the addressee it is possible to identify the existence of the car which is a presupposition of the use of definite articles (Huddleston & Pullum 2002: 369). In addition, these characteristics can be extended to the plural form, as in Example 2.

2) Where did you put the keys? (Huddleston & Pullum 2002: 369)

In Example 2, the “uniqueness applies now to a set or quantity rather than to an individual” (Huddleston & Pullum 2002: 369); it concerns the totality of those keys.

Normally, the definite article is used unstressed; only with certain proper names or nouns it is possible to stress the definite article, as in Example 3 and 4.

3) Was it **THE** Bill Gates that he was talking about?

4) Is that **THE** book you're looking for? (Huddleston & Pullum 2002: 371)

For indefiniteness, the use of *a/an* is typical “when the referent has not been mentioned before and is assumed to be unfamiliar to the speaker or hearer” (Quirk et al. 1985:272).

5) A house on the corner is for sale.

6) The house on the corner is for sale. (Quirk et al. 1985:272)

The Examples 5 and 6 differ in their presupposition: in Example 6 it is presupposed that the hearer knows the referred house and can identify it, whereas in Example 5 there is no reference to only one specific house (Quirk et al. 1985:272); hence, the addressee is not “expected to be able to identify anything” (Huddleston & Pullum 2002: 371).

With an indefinite article, it is possible to express quantitative and non-quantitative indefiniteness.

7) She has just bought a new car.

8) Jill is a doctor. (Huddleston & Pullum 2002: 372).

Example 7 shows quantitative indefiniteness which implies that she just bought one car and no more than that. In Example 8, non-quantitative indefiniteness shows membership, as Jill is member of doctors (Huddleston & Pullum 2002: 372).

Furthermore, the indefinite article *a* can be used in certain “kinds of expression which can in general function as either determiner or modifier, notably cardinal numbers and genitives” (Huddleston & Pullum 2002: 372); but normally, *a* cannot be a modifier itself. In this case, the indefinite article *a* replaces *one*, only “when the numeral or genitive NP is in determiner function, but not when it's a modifier” (Huddleston & Pullum 2002: 372). Instead, *a* is omitted (Huddleston & Pullum 2002: 372).

**Table 40: The use of a in determiner function according to (Huddleston & Pullum 2002: 372)**

Determiner	Modifier
<i>a</i> colleague's house	the dollar's worth of coins

*German*

In German, the definite and indefinite articles are inflected by number (singular and plural), gender (feminine, masculine, neuter) and case (nominative, genitive, dative, accusative). In Table 41, the declension of the three definite articles *der*, *die*, *das* is shown.

**Table 41: Inflection of German definite articles and nouns (König & Gast 2018: 57)**

Number	Case	Feminine	Masculine	Neuter
Singular	Nominative	die Puppe	der Mann	das Haus
	Genitive	der Puppe	des Mann-es	des Haus-es
	Dative	der Puppe	dem Mann-(e)	dem Haus-(e)
	Accusative	die Puppe	den Mann	das Haus
Plural	Nominative	die Puppe-n	die Männ-er	die Häus-er
	Genitive	der Puppe-n	der Männ-er	der Häus-er
	Dative	den Puppe-n	den Männ-ern	den Häus-ern
	Accusative	die Puppe-n	die Männer	die Häus-er

As Table 41 shows, there are “six different forms of the definite article for the twelve cells in the table” (König & Gast 2018: 57). Like in English, the definite article is used for something specific or already familiar, whereas the indefinite article refers to something new or general (Voit 2011: 8-9).

**Table 42: German indefinite articles according to (Eisenberg 2013:169)**

Case	Feminine	Masculine	Neuter	Plural
Nominative	eine	ein	ein	eine
Genitive	einer	eines	eines	einer
Dative	einer	einem	einem	einen
Accusative	eine	einen	ein	eine

In Example 9, a definite article in nominative singular determines the noun and the indefinite article is in accusative because of the verb. In addition, it is new information.

- 9) German (Eisenberg 2013: 166)
- |          |       |       |               |         |
|----------|-------|-------|---------------|---------|
| Die      | Frau  | kauft | einen         | Mantel. |
| The-     | woman | buys  | a- indef.art. | coat    |
| def.art. |       |       | accusative    |         |

In Example 10, the first definite article again determines the preceding noun, the second definite article is in accusative. In this example, it is presupposed that the umbrella is familiar for the subject. Hence, this is specific knowledge, whereas in Example 9, the coat needs an indefinite article, because it is not specific, it has a general meaning.

- 10) German (Eisenberg 2013: 166)
- |          |      |          |              |             |
|----------|------|----------|--------------|-------------|
| Der      | Mann | vergisst | den          | Regenschirm |
| The-     | man  | forgets  | the-def.art. | umbrella    |
| def.art. |      |          | accusative   |             |

### *Turkish*

In general, there is no corresponding item in Turkish to the English definite article *the*. But there are several indefinite determiners, like the indefinite article *bir*, shown in Example 12 (Göksel & Kerslake 2006: 57). However, Turkish distinguishes between definite and indefinite noun phrases. A definite noun phrase refers to “something that the speaker expects the hearer to identify” (Göksel & Kerslake 2006: 56), whereas in an indefinite noun phrase the hearer knows someone/something the speaker refers to, but the hearer is not able to identify him/it (Göksel & Kerslake 2006: 56). In addition, the indefinite noun phrase can refer to an unspecified person/thing which is unknown to the hearer. The distinction between these two types of noun phrases is important because it “affects word order” and for direct objects, it affects case marking (Göksel & Kerslake 2006: 56). According to Göksel & Kerslake (2006:56), “[d]efinite direct objects have to be accusative-marked, whereas indefinite ones are usually left without case marking”. Furthermore, normally, most of the indefinite noun phrases are followed by the predicate; definite noun phrases tend to be “at or near the beginning of the sentence” (Göksel & Kerslake 2006: 56), as in Example 11 and 12.

- 11) Turkish structure for definite nouns (Göksel & Kerslake 2006: 56)

Turkish	<b>Mektuplar</b>	masanın	üstünde	duruyor		
	noun -	on the	adverb	verb -		
	letters	table	- on	stands		
English	The	letters	are	on	the	table.

- 12) Turkish **bir** for indefinite marking (Göksel & Kerslake 2006: 56)

Turkish	Masanın	üstünde	herkes	için	<b>birer</b>
	on the	adverb - on	pronoun -	prepositi	indef. Art.
	table		everyone	on - for	
Turkish	mektup	duruyor			
	noun -	verb -			
	letter	stands			
English	There is a letter for each person on the table.				

*Russian*

Like in Turkish, in Russian there is no definite article and no indefinite article. Sometimes the distal demonstrative pronoun *TOT* may be used as a definite article, “especially when the pronoun is part of the antecedent to a relative clause” (Wade 2011: 151) or it determines the noun in different specific combinations, as in Example 13.

13) Russian *TOT* used as a definite article (Wade 2011: 152)

Russian	On	vzyal	nay	<b>too</b>	krigu
	3.	verb -	adverb -	demonstrative	noun
	pers.pronoun	simple	not	pronoun	-book
		past - take			
English	He	took	the	wrong	book.
	3.	verb -	definite	adjective	noun
	pers.pronoun	simple	article		
		past			

In this chapter, the different items for definite and indefinite articles were shown. In Subchapter 4.6.6, possible cli effects from the heritage languages are presented.

### 4.6.3 Subordinator *that*

Subordinating conjunctions or subordinators connect two sentences and introduce the subordinating parts (Aarts et al. 2014). As explained in Chapter 3.1.5, in English and German, the pronoun *that* developed into a complementizer. However, Russian and Turkish do not possess the same form for *that* as a subordinator, but they have equivalents (Siemund et al. 2018; Göksel & Kerslake 2011). In a separate case study, the use of *that* as subordinator is investigated. When bilingual heritage students use less frequently the conjunction *that*, it can be interpreted as non-facilitative influence of the heritage languages.

*English*

In general, a *that*-clause has different characteristics. According to Swan (2016: 265), it can function as “a complement after be” (Example 14), it can be a subject which rarely occurs, and it can be an object (Example 15). Also, it may follow adjectives or nouns (Example 16).

14) The main thing is **that you’re happy**.

15) We **knew that** the next day would be difficult.

16) I admire your **belief that** you are always right. (Swan 2016: 265)

In English, it is also possible to leave out *that* (Swan 2016: 265-266):

17) I thought (that) you are in Ireland.

18) I'm glad (that) you're alright.

19) I was having such a nice time (that) I didn't want to leave.

20) Do it the way (that) I showed you.

21) I did not believe his claim that he was ill.

The aforementioned examples show that in indirect speech (17), after adjectives (18), conjunctions (19), or relative sentences (20) it is possible “to leave out the conjunction *that*, especially in an informal style” (Swan 2016: 265). However, normally, after nouns *that* cannot be dropped (Swan 2016: 265).

### *German*

In German *that*-clauses, the verb has the final position. In many cases, a *that*-clause replaces an accusative object. To separate it from the subordinate clause, a comma is used. (Fandrych & Tallowitz 2014: 126)

22) German (personal knowledge)  
In Ich wusste nicht, dass es heute regnet. final clauses,  
a I know not that it today rains purpose or  
I didn't know that it would rain today.  
goal of an action is described.

23) German (Voit 2014: 116)  
Ich beeile mich, dass ich pünktlich bin.  
I hurry reflexive that I on time am  
I hurry to be on time.

### *Turkish*

In Turkish, there is no corresponding item for *that*-clauses. Instead, there are suffixes that can be attached to verbs and used as adjectives, such as -(y)en, -diği and -(y)eceği (Göksel & Kerslake 2006: 242):

24) **yanan** evler - the houses that are burning/have burnt down

### Russian

Like Turkish, Russian has no corresponding item for *that*-clauses, but they use the interrogative pronoun *chto* (Siemund et al. 2018).

25) Russian (Wade 2011: 490)

on	skazal	chto	on	mne	pomozhet
3.pers.pronoun	verb -	interrogative	3.pers.	pronoun-	verb -
- he	said	pronoun -	pronoun -	me	help
		that	he		

He said that he would help me.

#### 4.6.4 Lexical transfer

In this study, it was apparent that students used German lexis often combined with English articles or demonstratives. According to Lorenz et al. (2021: 794), lexical transfer is described as “the effect of vocabulary knowledge in one language on the lexical system in another language”. In addition, it is distinguished between form-based and meaning-based transfer (Ringbom 2001). The former means that the lexical form and meaning of one of the background languages is transferred into the new language. The latter means that the meaning of an item is not used appropriate in each context (Lorenz et al 2014: 794), for example when an item exists identically or similarly in one of the background languages and the new target language, it may happen that they are used differently in both languages. Different factors might influence the occurrence of lexical transfer, like the proficiency level and the order of acquisition (Dewaele 1998) or (psycho-)typology between the languages (Kellerman 1983). According to Lindqvist (2009: 294), lexical transfer decreases when the proficiency level in the target language increases. In this study, form-based lexical transfer is investigated. Examples 26-28 show typical lexical transfer in the English texts:

26) (RUS7\_1700177138): Then you go to **the Kasse** and buy this.

27) (GER9\_1300729103): Later you make **the "Eier"** in a **"Topf"**.

28) (GER7\_2300287105): We fill in **this Topf** the water.



Therefore, these shown examples were included in a separate case study. Interestingly, only German lexis was transferred.

#### 4.6.5 Research objectives and predictions

In this subchapter, we concentrate on the possible interactions between the languages and the expected outcomes of the study. The main research objective is to identify the use of demonstrative pronouns of unbalanced bilinguals who grew up in Germany and learned English as an additional language in school. In addition, we examine whether the language acquisition of English as an additional language was influenced by the majority language German and/or the heritage languages of Russian and Turkish of bilinguals. We compare the results with those of monolinguals. Therefore, in the following figures, we illustrated the German monolinguals as the control group in the middle of the circle between their bilingual peers. In this study, we focus on English as a foreign language. Outside the circle, the heritage languages of Russian and Turkish are presented. However, we do not have monolingual speakers of these heritage languages, which is why they are not in the circle.

Figure 34 displays the possible interactions of the languages of our bilinguals. The first illustrates the possibility that the influence comes from the majority language of German.

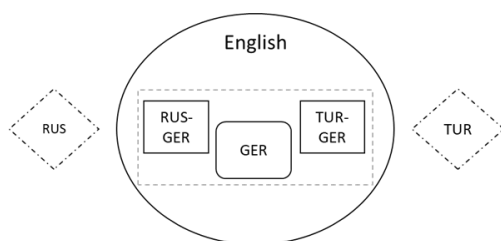
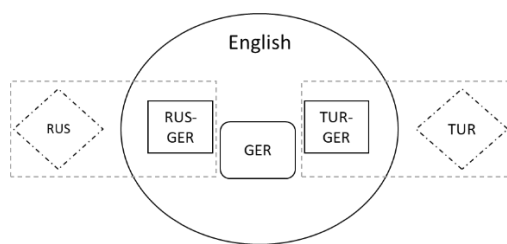


Figure 34: CLI effects from German as the majority language (after Lorenz 2019)

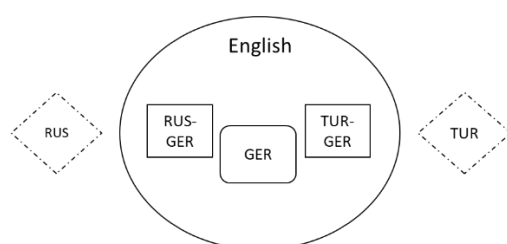
If transfer takes place from the majority language, then we would see conforming patterns with three language groups: the German monolinguals, the Russian-German bilinguals, and Turkish-German bilinguals.

Another possibility is CLI effects from the heritage languages of Russian and Turkish, illustrated in Figure 35. We can identify them by finding similarities between Russian-German bilinguals and Russian monolinguals, as well as between Turkish-German bilinguals and Turkish monolinguals. In addition, the German monolinguals would be expected to show different patterns.



**Figure 35: CLI effects from the heritage languages of Russian and Turkish (after Lorenz 2019)**

In a third scenario, we assume that German monolinguals would display similar patterns to their bilingual counterparts. The following figure presents the last possible case, which is we would find no CLI between the different languages. This scenario is less probable than the previous cases because the research on SLA and TLA has mostly indicated that the L1 impacts the L2.



**Figure 36: No CLI effects (after Lorenz 2019)**

We assumed that CLI may take place between all previously learned languages, which means that German and both heritage languages of Russian and Turkish could be sources of transfer. We furthermore assumed we would find evidence for the LPM of Westergaard (2017), with the result of positive and negative transfer. In addition, we expected that the investigated grammatical aspects would differ in their CLI effects. We envisaged the majority language German as dominant in our study, as well as a typological relationship between English and German. These factors could significantly impact our results. We therefore predicted that German would have a greater impact than the heritage languages of the bilingual counterparts.

In Chapter 3, we presented the different systems of demonstratives of the languages involved in our study. Thus, we predicted similarities between demonstrative pronouns in English and in German. Furthermore, demonstratives in the heritage languages of Russian and Turkish should share fewer similarities with German and English because they differ in structure and have some differences regarding the meaning and use of these pronouns. Hence, the heritage languages have less in common with German and English.

The different categories of demonstratives we predicted are determinative, identifying, and subordinating demonstrative pronouns. Again, we consider an overlap

between these categories in concept and structure in German and English, more than between the heritage languages (Russian and Turkish) and English. We therefore predicted that German would be used more often as a source of transfer than the other languages involved.

Furthermore, that German is the majority language for all our participants plays a crucial role as they are more proficient in this language. Both the structural concept of demonstratives in the investigated languages and the more frequent use of German as the majority language led us to expect lexical transfer from German. Different studies have suggested that this phenomenon of lexical transfer will take place (Hopp 2019; Siemund et al. 2018).

In addition, we predicted that as a background factor, age played an important role in our study. The question we address here is whether age impacts the use of demonstratives. We assume that older students use more demonstratives than younger ones because we suspect that they have a higher awareness of meta-language and a higher capacity to use different types of clauses when writing a text. We suggested that the participants would use more demonstratives or more connectors in the older cohorts. Other studies have demonstrated the influence of the age of participants (Lorenz et al. 2018; Sahingöz 2014).

In addition, we also predicted different variables of the background information as influencing factors in our study. We therefore examined the HISEI of the participant's families, the type of school, the age of onset learning German, and the motivation for learning English, which are discussed in Chapter 6. We also examined the type-token-ratio, as well as the word-token longitude.

#### **4.6.6 Possible cli effects from the heritage languages Russian and Turkish**

This subchapter will show the possible interactions from the heritage languages on the performance in English as the third language.

As was shown in subchapter 3.2.5, Russian and Turkish share some similarities. First, both languages lack an article system (Balpınar 2019; Wade 2011; Lewis 1991). For that, in both languages demonstrative pronouns can be used instead. In Russian, the pronoun *takoj* or *TOT* is used (Wade 2011): in Turkish, it is *şu* (Balpınar 2019). Hence, we can predict that if the heritage languages affect the performance in English, it may

lead to transfer, that is, an overuse or a higher use of determinative demonstratives and/or a higher use of definite articles. Since we cannot compare this possible pattern with a control group of monolingual Russian or Turkish speakers, we can compare their performance to that of L2 learners of English with German as L1 who are expected to show different patterns due to the similarities between German and English.

Second, as mentioned, the Russian demonstrative pronoun *takoj* can be used as an article. According to Dunn & Khairov (2009:159), it is used in contexts where an indefinite article would occur. Again, this might lead to a higher occurrence of the determinative category or a higher use of indefinite articles.

Third, both languages do not possess the same form for *that* as a subordinator which distinguishes them from German and English (Siemund et al. 2018; Göksel & Kerslake 2011). Nevertheless, Russian, and Turkish have equivalents. For the former language that is the interrogative pronoun *çto* (Siemund et al. 2018), and for the latter three affixes can function as subordinators, namely *-(y)en*, *-diği* and *-(y)eceği* (Göksel & Kerslake 2011). If transfer takes place, it may happen that both groups of heritage speakers use less *that* as a subordinator which can be interpreted as non-facilitative influence of the heritage languages.

In addition, in Russian demonstrative pronouns can be used in contexts where personal pronouns would be expected (Siemund et al. 2018). Hence, if Russian heritage speakers use demonstrative pronouns instead of personal pronouns in their English texts as in the following example, this shows non-facilitative transfer from Russian.

- 1) They tries to catch fishes and they succeed that. (Siemund et al. 2018: 399).

### Examples

Example 2: Missing articles in Russian and Turkish					
Russian		pogoda noun - weather	<b>takaya</b> demonstrative pronoun - such	prekrasnaya adjective - wonderful	
Turkish		Hava noun - weather	çok adverb -very	güzel adjective - beautiful	
English	The definite article	weather noun	is verb	so adverb	fine adjective
German	Das definite article	Wetter noun	ist verb	so adverb	gut adjective - good

In Russian, the demonstrative pronoun *TOT* can be used in contexts where in English a definite article would be expected (Wade 2011). Typically, this happens when “the pronoun is part of the antecedent to a relative clause” (Wade 2011: 151), like in Example 3.

Example 3: Russian <i>TOT</i> used as a definite article (Wade 2011: 152)							
Russian	ya 1. personal pronoun	smotrel preteritu m looked	vie prepositi on	<b>too</b> dem.prono un	storon noun - direction	otkuda prepositi on - where	
English	I 1. Personal pronoun	was looking past progressi ve	in prepositi on	the definite article	direction noun	from prep.	which relativ e pronou n
German	Ich 1. Personal pronoun	sah simple past - looked	in prepositi on	die definite article	Richtung noun	aus prep.	der relativ e pronou n

Example 3: Russian <i>TOT</i> used as a definite article					
Russian	dolzna modal verb - should	byla verb - simple past - was	poyavitsya verb appear	lodka. noun boat	
English	the definite article	boat noun	was expected past perfect	to preposition	appear. verb
German	das definite article	Boot noun	erwartet wurde processual passive	zu preposition	erscheinen. verb

Example 4: Russian <i>TOT</i> used as a definite article (Wade 2011: 152)					
Russian	On 3. pers.pronoun	vzyal verb – simple past - take	nay adverb - not	<b>too</b> demonstrative pronoun	krigu noun -book
English	He 3. pers.pronoun	took verb – simple past	the definite article	wrong adjective	book. noun
German	Er 3. pers.pronoun	nahm verb – simple past -take	das definite article	falsche adjective	Buch. noun

In Turkish, the distinction between definite and indefinite marking affects the case of the direct objects, namely that nouns are accusative when the direct object is definite, and the direct object is without a case marker when its indefinite (Göksel & Kerslake 2006: 56). In addition, the word order is affected by using either indefinite or definite nouns or noun phrases. Typically, definite nouns are “at the beginning of the sentence”, whereas indefinite nouns are mostly used “before the predicate” (Göksel & Kerslake 2006: 56).

Example 6: Turkish structure for definite nouns (Göksel & Kerslake 2006: 56)

Turkish	<b>Mektuplar</b> noun - letters	masanın on the table	üstünde adverb - on	duruyor verb - stands		
English	The definite article	letters noun plural	are verb	on preposition	the definite article	table. noun
German	Die definite article	Briefe noun plural	liegen verb	auf preposition	dem definite article	Tisch. noun

Example 7: Turkish **bir** for indefinite marking (Göksel & Kerslake 2006: 56)

Turkish	Masanın on the table	üstünde adverb - on	herkes pronoun - everyone	için preposition - for	<b>birer</b> indefinite	mektup noun - letter	duruyor verb - stands
English	There adverb	is verb	a indefinite article	letter noun	for preposition	each adverb	person noun
German	Dort adverb	ist verb	ein indefinite article	Brief noun	für preposition	jede adverb	Person noun

Example 7: Turkish **bir** for indefinite marking

English	on preposition	the definite article	table. article
	auf preposition	dem definite article	Tisch. article

In both languages, the counterpart to the subordinator *that* is not existing. Instead, in Russian, the interrogative pronoun *çhto* can be used (Siemund et al. 2018) and in Turkish, the affixes *-(y)en*, *-diđi* and *-(y)eceđi* (Göksel & Kerslake 2011). The Examples 8 and 9 show a subtype of subordinating clauses, namely relative clauses.

Example 8: Russian interrogative pronoun *çhto* as subordinator (Wade 2011: 490)

Russian	on 3.personal pronoun – he	skazal verb – said	çhto interrogative pronoun - that	on 3.personal pronoun – he	pomozhet verb – help	mne pronoun- me
---------	-------------------------------------	--------------------------	--	-------------------------------------	----------------------------	-----------------------

English	He	said	that	he	would	help	me
	3.personal pronoun	verb - simple past	subordinator	3.personal pronoun	modal verb	verb	personal pronoun
German	Er	sagte,	dass	er	mir	helfen	würde
	3.personal pronoun	verb - simple past	subordinator	3.personal pronoun	personal pronoun	verb infinitive	modal verb

Example 9: Turkish suffix *-(y)en* in a relative clause (Göksel & Kerslake 2011: 244)

Turkish	Yemeği	<b>pişiren</b>	kadın	birazdan	gelecek			
	noun - dinner	verb - simple past - cook	noun - woman	adverb - soon	verb - future - coming			
English	The	woman	who	cooked	the	meal	will	be
	definite article	noun	relative pronoun	verb - simple past	definite article	noun	verb - future	verb infinitive
German	Die	Frau	die	das	Essen	kochte	wird	bald
	definite article	noun	relative pronoun	definite article	noun - meal	verb - simple past - cook	verb - future	adverb - soon

Example 9: Turkish suffix *-(y)en* in a relative clause

English	here	soon
	adverb	adverb
German	hier	sein
	adverb - here	verb infinitive- be

In sum, there are interactions between the heritage languages Russian and Turkish expectable, even though German is the dominant language and is expected to have a higher influence. Nevertheless, this subchapter showed that these interactions might lead to a higher use of the determinative category and/or definite and indefinite articles, a lower use of the subordinating *that* and an overuse of demonstratives, namely the use of demonstratives instead of personal pronouns.

## 4.7 Participants

The participants of this study have a migration background. They are bilingual students who learn English as their first foreign language. The participants speak German as the majority language and one of the heritage languages Russian or Turkish. They are unbalanced bilinguals; some are subtractive bilinguals, and the age of onset differs. Most frequently they use the majority language German, and their heritage language is often used at home with their families or with at least one parent.

The sample also includes a German control group which can be seen in Table 43. Every language group consists of 100 students whereas 50 students are in the 7th grade and the other 50 are in the 9th grade. Thus, in total the cohort comprises 300 written texts.

**Table 43: The language sample of the present study**

Language Groups	12-year-olds	16-year-olds	Total
Turkish-German	50	50	100
Russian-German	50	50	100
German Monolinguals	50	50	100
Total	150	150	300

In this study, the students were selected out of a sample of 1.800 students who participated in the MEZ-project. In addition, an online survey was conducted which adapted the written task *English breakfast* on SoSciSurvey.com. The link was spread via LinguistList and friends, colleagues etc. 18 English adult monolinguals participated. Unfortunately, only four Turkish native speakers and six Russian natives took part in the online survey. These are too small to include it in our analysis.

### *Background Information*

In this section, some of the background information of the participants are presented. As a basis, we use the information the students gave us via the background questionnaire.

### *Gender*

In Table 44, the cohorts are unbalanced with more female participants (61,9 percent) than male (38,1 percent). There are more 16-year-old female students than 12-year-old females. But we have more males in the 12-year-old cohort than in the 16-year-old cohort. In addition, we have two cohorts that include adult native speakers of English, because due to the pandemic we could not collect data from teenage English natives. We divided the adults into two groups, namely into *Age 20* and *Age 40*. The former includes participants between the ages 21 and 33, the latter groups is aged between 41 and 79. In the younger English native group, two participants stated that they are *non-binary* which will be included in some association plots, when this is relevant for the analysis. Note that the other language groups could either indicate that they are female or male. However, in the native speaker cohort we have 66,67 percent female participants, which is more



unbalanced than the bilingual 12-16-year-old cohorts. In the background questionnaire, two participants of the English native group did not fill in their age.

**Table 44: Gender of German monolinguals and bilingual speakers**

Language group	12-year-old students		16-year-old students		Grand total
	female	male	female	male	
German monolingual	20	29	22	29	100
Russian-German	31	19	40	10	100
Turkish-German	35	15	35	15	100
Grand total	86	63	97	54	300

**Table 45: Gender of English natives**

Language group	Age 20			Age 40		N.A.		Total
	female	male	non-binary	female	male	female	male	
English natives	5	1	2	7	1	1	1	18
Total	5	1	2	7	1	1	1	18

### *Age of onset of learning German*

As Grosjean & Byers-Heinlein (2018) state, the younger bilinguals learn their first languages, the more likely is it that they achieve a high proficiency. In Table 46, it is illustrated that only 22,5 percent of the bilinguals learned German in their early years until the age of two. These heritage speakers are considered early bilinguals. Note that nearly twice as many Russian bilinguals started to learn German in this period. However, most of the students started to learn German between the ages three and five (34,5 percent). In addition, most of the Turkish-Germans acquired the majority language German between the ages three and five, whereas only half of this number can be found in the Russian-German group. Only six students are represented in the age group between six and nine years and only one Turkish heritage speaker learned German at an older age between 10 and 15 years. Unfortunately, we lack the information of almost 40 percent of the bilingual participants.

**Table 46: Age of onset of learning German**

Language group	Age of onset acquiring German					Total
	until 2	between 3-5	between 6-9	between 10-15	N.A.	
Russian-German	29	23	6	0	42	100
Turkish-German	16	46	0	1	37	100
Total	45	69	6	1	79	200

Only a small number of students migrated to Germany in their early years. Most of both language groups started to learn German early in childhood until the age of five. In the Turkish cohort, more students started to learn German between the ages three to five. In general, only a small number of students started learning German later than the age of five. In line with Grosjean & Byers-Heinlein (2018), we assume that the earlier the students learned German, the higher is their proficiency in German which can also correlate with the students' school type.

In the association plot of Figure 37, the first two bars in the Russian-German group fall below the baseline and, therefore, are negative residuals.

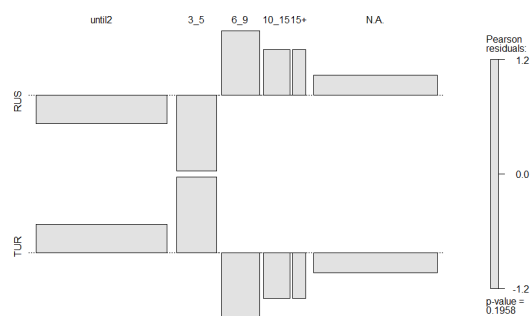


Figure 37: Association plot of the bilingual language groups and the age of onset of learning German

It means that the frequency we observed is smaller than expected. In the same bilingual group, the further bars fall above the baseline and indicate that the observed frequencies are higher than expected. The bars of the Turkish-German group show a different picture. Interestingly, the residuals for the classification of learning German early in childhood (until two, or between three and five) is positive which means that more Turkish-German students than expected started to learn German so early. Again, the bars that indicate that students start learning German later than the age of six fall below the baseline and are smaller than expected.

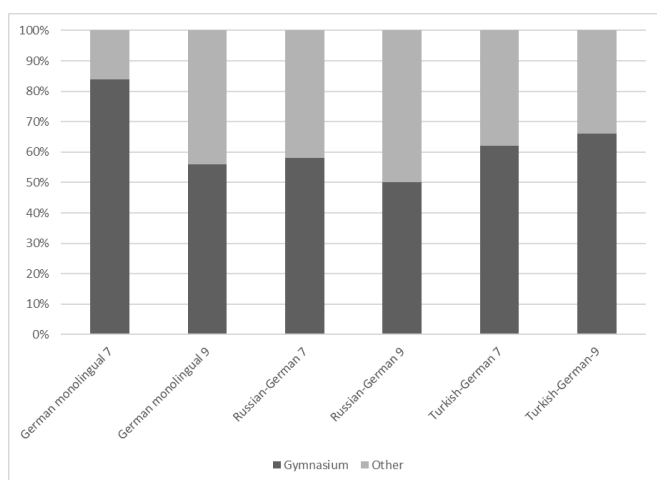
### *The educational system in Germany*

In Table 47, the distribution of the students per language group and school type is presented. Most German monolinguals attend the *Gymnasium*. A similar situation can be observed for bilingual Turkish-German students where most of the students in both grades join this university-bound school type. For Russian-German students, the picture is different.

**Table 47: School type**

School type	German monolinguals		Russian-German		Turkish-German		Total
	Grade 7	Grade 9	Grade 7	Grade 9	Grade 7	Grade 9	
Gymnasium	42	28	29	25	31	33	188
Other	8	22	21	25	19	17	112
Total	50	50	50	50	50	50	300

Almost the same number of these bilingual students join either the *Gymnasium* or another school type, that is not enabling them to study at a university. Compared with the bilingual groups, the German monolingual students of grade seven attend less frequently other school types than the university-bound type. The following figure illustrates the school type per language groups in percentages.



**Figure 38: School type versus language group**

More than 80 percent of the monolingual German group in grade seven attend the school type *Gymnasium*. At least 50 percent of the other language groups attend this school type, too. However, it is crucial to analyse the background variables of participants because:

The language background alone cannot be taken to explain the performance in another language. Language acquisition-or more precisely the success of it, be it first, second or third language acquisition-depends heavily on the social background of the learner and other (personal) factors (Pavlenko 2002; Hoff and Tian 2005) (Lorenz & Siemund 2020: 17).

However, other background variables are considered, too. In the following, we will concentrate on the school grades in German and English of the monolingual and bilingual groups that are directly connected with the use of demonstratives and the school types presented above. Table 48 and 49 show the school grades in German and in English. Fortunately, the majority of the participants indicate their grades which gives us an almost complete overview of the performances.

**Table 48: School grades in German**

School grade	German monolinguals		Russian-German		Turkish-German		Total
	Grade 7	Grade 9	Grade 7	Grade 9	Grade 7	Grade 9	
German							
1	6	3	2	-	2	2	15
2	28	24	14	17	10	8	101
3	14	16	14	17	24	19	104
4	2	7	17	12	13	20	71
5	-	-	-	-	1	1	2
N.A.	-	-	3	4	-	-	7
Total	50	50	50	50	50	50	300

**Table 49: School grades in English**

School grade	German monolinguals		Russian-German		Turkish-German		Total
	Grade 7	Grade 9	Grade 7	Grade 9	Grade 7	Grade 9	
English							
1	5	1	1	5	-	2	14
2	20	22	14	12	17	11	96
3	21	15	14	19	17	21	107
4	4	11	15	10	16	11	67
5	-	-	3	-	-	5	8
6	-	1	-	-	-	-	1
N.A.	-	-	3	4	-	-	7
Total	50	50	50	50	50	50	300

To compare the three language groups, Table 50 illustrates the mean values of the grades in German and English as well as the standard deviation. In both subjects, the German monolingual group in class seven received the highest grades, closely followed by their monolingual peers in class nine for German grades and by bilingual Russians of class nine for English.

**Table 50: The average school grades in German and English and their standard deviation**

Language group	Grade	German	sd	English	sd
Turkish-German	7	3,02	0,84	2,98	0,82
Turkish-German	9	3,20	0,88	3,12	1,00
Russian-German	7	2,98	0,92	3,11	0,98
Russian-German	9	2,89	0,80	2,74	0,93
German monolinguals	7	2,24	0,72	2,48	0,79
German monolinguals	9	2,54	0,81	2,80	0,95

However, for both subjects it is noteworthy that on average only the younger cohort of German monolinguals achieved grades that would be rounded down to a two, whereas the other groups received scores that would be rounded up to a three.<sup>16</sup> These results may influence the performance in the written task in English. Note that we do not have any

<sup>16</sup> Grades in Germany are divided into 1-6. 1 is the best score to achieve and 6 the worst. The differentiation can also be shown by using a plus or a minus like in 1+ or 1-. The range to get a one is from 1.0 - 1.5, to get a two it is 1.5-2.5 and so on and so forth. In this study, we have a range from grades between 1-6 and included all of them.

information about the grades or school types of the monolingual English speakers. The association plots 39 and 40 underline the results of the Tables 48-50.<sup>17</sup> In these two plots, we see a high association between school grades in German/English and the language groups. It is also striking that the bars are coloured in blue or red, which indicates that the values for the observed frequencies are much higher than expected. Compared with the bilingual groups, it is apparent that more monolingual Germans than expected achieve the grade two in the subject German. Another picture is drawn by the bilingual Turkish group. Fewer students than expected did not achieve grade two and more than expected

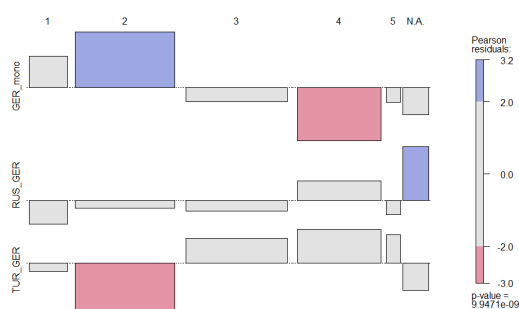


Figure 39: Association plot of the school grade in German per language group

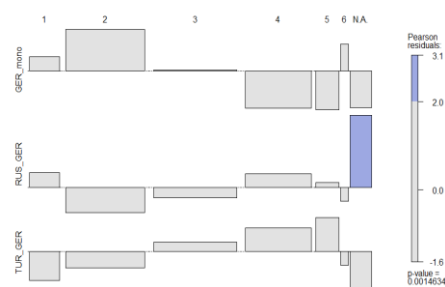


Figure 40: Association plot of the grade in English per language group

get results that are scored in a three or four in German. For the subject English, it is almost the same situation, only the bars have different heights and width. The bilingual Russian group achieved less ones in German, but more than expected in English. However, it must be kept in mind that only the monolingual German group in grade seven received the grade two in German and in English. All other language and age groups receive a three in both subjects.



Figure 41: Association of school type and grade in German

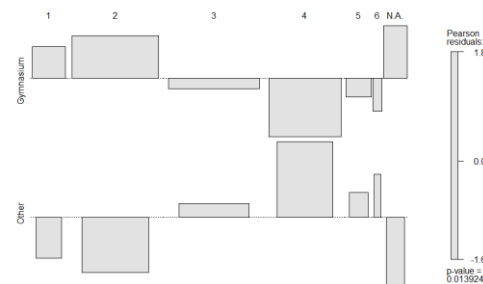


Figure 42: Association of school type and grade in English

17

In Figure 41, the plot shows that the association between school type and grades in the subject German is statistically significant, but as the bars shows the residuals do not reach values higher than 1.8 which indicates that the attraction between school type and grade in German is not very high. In Figure 42, we have a similar situation. There is an association between school type and grades in English, but the values are not higher than 1.8 or -1.8 which indicate a small attraction between the variables that is still statistically significant. In Figure 42, more students than expected received grade one and two, and less than expected grades worse than a three. Students who attend another school track than the *Gymnasium* show a contradicting behaviour. Less students than expected achieved grades like a one or a two, but more than expected grades like three and worse.

### *The socio-economic status*

In Table 51, the averages of the socio-economic status (HISEI) per language group and the standard deviation are presented. Note that it is crucial to consider the number of

**Table 51: The socio-economic status (HISEI) per language group**

	Grade	HISEI	sd	No. of students
German	7	67,04	18,07	41
German	9	61,07	17,52	33
Russian-German	7	40,88	19,31	28
Russian-German	9	45,76	20,05	26
Turkish-German	7	41,83	17,37	25
Turkish-German	9	35,98	14,83	25

students who filled out the information in the background questionnaire. It is noteworthy that only 40 % of the participants made an entry. The monolingual German groups received the highest averages of the HISEI, followed by the bilingual Russian-Germans. The rear of the ranking is brought up by the Turkish-German language group. The lowest HISEI of the absolute numbers is 13,34 and the highest is 88,96. To get more insights, the HISEI was divided into three subtypes: low (10-30), middle (30-60) and high SES (60-90).

The association plot 43 underlines the observation we made before. There is a clear association between the highest HISEI and the German monolinguals. Again, the bars are coloured in red and blue which shows that the frequencies we observed are much higher than is expected. Hereby, we reach values higher than 5.5 and below -3.4. Both bilingual groups have less participants with a high HISEI than expected. Compared with the monolingual German group, both bilingual groups have more participants with a low

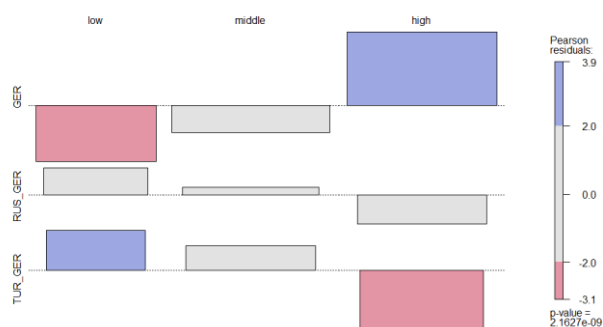


Figure 43: HISEI per language groups

HISEI than expected ( $\chi^2(4) = 46.27, p < .001$ ). Another diagram that shows the different ranges of the HISEI is the boxplot in Figure 44. Again, the German monolingual group in grade seven has the highest median followed by their monolingual peers of grade nine. In the bilingual Russian group, the median of the HISEI gets higher in grade nine. Compared with the German monolingual group, the Turkish bilinguals also have a higher median in grade seven than in grade nine.

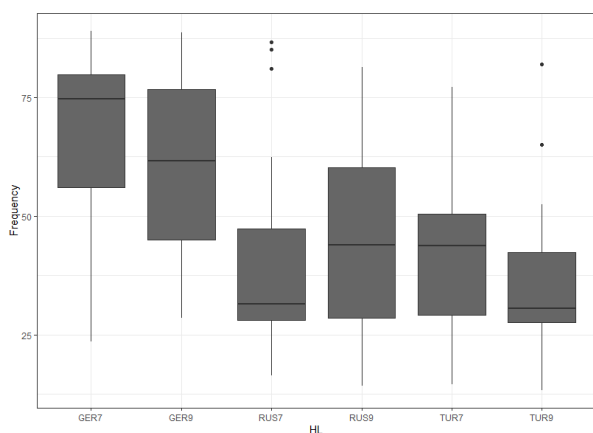


Figure 44: Boxplot of the socio-economic status per language group

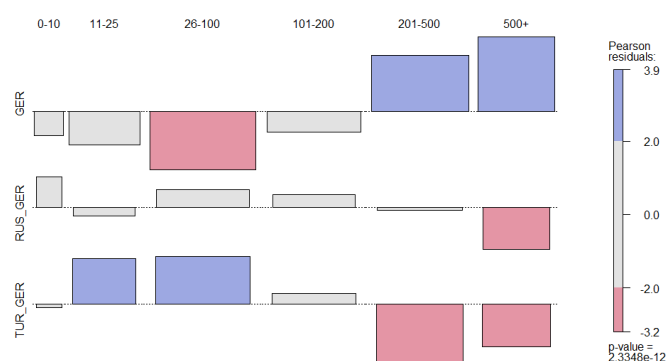
### *Books per household*

Another variable that might influence the performance in written English is the number of books per household, presented in Table 52. The number of books per household differ between the language groups. It is apparent that most of the German monolinguals participants in both age groups reported to have more than a hundred books. Most of the bilinguals possess between 26 and 100 books. Note that in the bilingual groups almost half of the participants did not report the number of books they possess at home.

**Table 52: Number of books per household and language group**

No. of books per household	German monolinguals		Russian-German		Turkish-German		Total
	Grade 7	Grade 9	Grade 7	Grade 9	Grade 7	Grade 9	
0-10	0	0	3	0	1	0	4
11-25	3	1	5	1	6	8	24
26-100	3	4	11	9	16	11	54
101-200	3	9	7	8	7	8	42
201-500	15	15	4	9	0	2	45
500+	18	6	0	2	2	0	28
N.A.	8	15	20	21	18	21	103
Total	50	50	50	50	50	50	300

In Figure 45, the association between books per household and language group is shown  $\chi^2(10) = 76.59, p < .01$ ). In this association plot, we reach values above 5.0 and below -3.5. More German monolinguals than expected have more than 200 books at home. In addition, less Russian bilinguals than expected reported to have more than 500 books and less Turkish bilinguals than expected have more than 200 and 500 books.



**Figure 45: Association plot of language groups and books per household**

*Language use at home*

In this study, it is assumed that the frequency of use of the heritage language and the majority language can also influence the performance in English. Table 53 presents the languages the students use at home with their family members.

**Table 53: Languages the students use at home**

Communication partner	Language used	Russian-German	Turkish-German	Total		
		7	9	7		
		9	7	9		
Mother	HL	11	6	7	6	30
	mostly HL	6	11	17	17	51
	both	16	12	16	14	58
	German	7	6	1	4	18
	mostly German	6	11	6	5	28
	N.A.	4	4	3	4	15
Total		50	50	50	50	200



## Methodology - English learner corpus

---

Father	HL	12	5	10	8	35
	mostly HL	9	16	20	13	58
	both	12	9	12	8	41
	German	6	9	0	1	16
	mostly German	5	4	5	14	28
	N.A.	6	7	3	6	22
	Total	50	50	50	50	200
Sibling(s)	HL	2	2	1	0	5
	mostly HL	5	1	2	1	9
	both	7	7	18	13	45
	German	17	18	8	10	53
	mostly German	12	14	18	17	61
	N.A.	6	7	3	9	25
	Total	50	50	50	50	200

---

15 percent of the students speak the heritage language at home with their mother and 25,5 percent stated that they mostly use the heritage language with their mothers. Interestingly, most of the students speak the heritage language and German with their mothers. The communication with the father shows a similar picture. There is quite a big difference for the communication between the students and their sibling(s). 26,5 percent of the students speak German and 30,5 percent speak mostly German with them. Only 2,5 percent report to speak the heritage language to their sister(s) and/or brother(s). Hence, these numbers show that German as the dominant language is more important in the communication between siblings, but the heritage language is more frequently used when communicating with the parents.

We tested the statistical difference between the two language groups (Russian-German and Turkish-German bilinguals) for the communication with the mother. The outcome of the chi-squared test revealed no statistical difference between these groups (language with mother:  $\chi^2(15) = 17.682$ ,  $p = .279$ ). Furthermore, we tested the same for the language with the father and the siblings and the difference between the two bilingual language groups is in both cases statistically significant (language with father:  $\chi^2(15) = 33.349$ ,  $p=.004$ ; language with sibling(s):  $\chi^2(15) = 35.892$ ,  $p=.001$ ).

### *Attitudes towards English*

The last variable that may be an influencing factor in the written performance in English is the attitude the students have towards English. In Table 54, almost all students find English useful, but still 18 percent think English is boring. However, it is important that most of the students are motivated to learn English and relate a general importance to the language. A chi-squared test returns no statistical significance between the language

groups for the attitude *English is useful* ( $\chi^2(5) = 6.8314, p=.233$ ). We did not include the missing values, since the number of students who did not report their attitude, here is one and for the second attitude it is two. Compared with the first attitude, there is a statistical significance for the second attitude *English is boring* between the three language groups ( $\chi^2(5) = 11.429, p=.043$ ).

**Table 54: Attitudes towards English per language groups**

Attitudes towards English		German monolinguals		Russian-German		Turkish-German		Total
		Grade 7	Grade 9	Grade 7	Grade 9	Grade 7	Grade 9	
English is useful	Yes	49	45	46	48	49	48	285
	No	1	5	4	2	1	1	14
	N.A.	0	0	0	0	0	1	1
	Total	50	50	50	50	50	50	300
English is boring	Yes	6	6	15	13	5	10	55
	No	44	44	35	37	44	39	243
	N.A.	0	0	0	0	1	1	2
	Total	50	50	50	50	50	50	300

In this subchapter, we presented an overview of variables regarding the background of the participants of this study. This is important for the further analysis of the written texts because there are more possible influencing factors than the order of acquisition or the similarity between languages. The background variables we have shown here regard the motivation of learning English, the language use at home with family members as well as school type, the HISEI, school grades in the subjects German and English, books per household etc. In Appendix 1, there are additional tables with the background variables of every participant of this study.

## 5 Data analysis – English learner corpus

In this chapter, the learner corpus based on written texts is analysed. We examine the use of demonstratives in the different language groups and whether the heritage languages impact the performance in English.

### 5.1 Case study 1 - The use of Demonstratives

This first case study is subdivided into the four English demonstrative pronouns: *this*, *that*, *these*, *those*. We will first provide an overview of the general data and then concentrate on the use of demonstratives in written texts. In addition, we will compare the different pronouns within their categories of demonstratives. Note that all numbers are normalized to a basis of 100 words.

In order to have a general summary of the data, it is necessary to consider the frequency of produced words, the number of sentences and its average, the types, the sentences that were produced without using a verb and the type-token-ratio. Note that the English native speakers are summarized into one group, because they only consist of 18 participants. Since the type-token-ratio is a controversial variable to compare the text quality (see Mc Carthy & Jarvis, 2010), it is not included in this analysis, but it is shown in Table 55. In this discussion, it has been questioned whether text length correlates with a higher proficiency in writing. When the text gets longer and the produced words increase, at the same time the diversity of words decreases (McCarthy & Jarvis 2010: 382). Due to the fact that it is necessary to concentrate more on the language, the ability of writing in a foreign language is considered to be “limited [...] and may be hampered” (Fleckenstein et al. 2020: 2). According to Fleckenstein et al. (2020:2-3), a high text length can, nevertheless, be an indicator of a high proficiency in a foreign language.

In this study, it is assumed that a high proficiency results in longer texts and a lower competence in shorter texts. Hence, the native English speakers are expected to produce the longest texts. With this starting point, language groups can be compared within and with each other. In addition, it is also expected that the text length differs within the two age groups: the older the students, the longer the texts. This can be traced back to the assumption, that the older the students are, the more complex are their texts and the more words they can produce within a written task. In addition, the older students have four years more experience in learning English as a foreign language. In sum, a correlation between the written performance of the students and their text length and, moreover, with their performance of using demonstratives is expected.

**Table 55: Frequency of words, sentences, types, sentences without verbs and the type-token-ratio**

Language Group	Grade	No. of sentences	$\bar{\phi}$ of sentences	No. of words	No. of types	Sentences without verb	type-token-ratio
GER	7	653	8.61	7785	3565	3	0.48
GER	9	664	7.73	8825	4168	4	0.48
RUS-GER	7	497	8.33	5990	2865	14	0.50
RUS-GER	9	580	7.23	8090	3940	6	0.50
TUR-GER	7	480	8.31	5948	2820	13	0.51
TUR-GER	9	539	7.68	6998	3470	8	0.53
ENG	20	189	23.63	2988	1337	0	0.5
ENG	40	133	16.63	1993	973	0	0.5
ENG	N.A.	20	10	303	175	0	0.59
Total		3755	10.9	48920	23313	48	0.50

Table 55 shows the absolute frequencies regarding sentences and text length, types and type-token-ratio. Note that each language group consists of 50 participants, but the English native speakers only include 18 participants. It is also crucial that the English natives are adults. Hence, it is expected that the text length of adult native speakers is even longer than that of teenage native speakers due to their life experience and knowledge about language. The task was to write about a typical German or English breakfast and to use nine pictures as a basis. At least nine sentences per text would be expected. Clearly, almost all language groups wrote between seven and nine sentences, except the English native speakers who wrote on average more than 19 sentences. Since we know that they are adults, this number is not surprising. In the bilingual and the monolingual German cohorts, we can see that the younger students produced more than eight sentences on average, whereas the older cohorts performed slightly different and wrote less sentences. The results for the number of words differ from that of the average number of sentences. The numbers demonstrate that the older cohorts produced more words than their younger counterparts. Due to the smaller cohort, the English native speakers produced less words than the other groups. Moreover, we counted the numbers of sentences that did not include a verb. The numbers show that the younger cohorts produced generally more sentences, but less words than the older cohorts. However, the English native speakers did not produce sentences without using a verb. Table 55 provides also an overview of the absolute number of types. It is striking that the monolingual German cohort aged 16 has the highest number of types. Compared with the bilingual groups and the monolingual Germans, the English native speakers did not produce much less types, although their group consists of 32 less participants. We find in all groups with two age cohorts that the younger participants produced less types. In addition, the overall type-token-ratios do not differentiate greatly. In the table, we see an ascending order from the German monolinguals to the Turkish-German group. The English native speakers

have the same type-token-ratio than the bilingual Russian-Germans. In sum, we observe differences between the language groups, but except the number of tokens produced by the English native speakers, the groups are comparable. However, Table 56 provides an overview of lexical transfer that refers to words that are taken from German and used in the English text. In some cases, these German words are marked.

1) (TUR7\_1601167121): I *lege* my *Teller* my *Glas* my *Besteck* on the Table an my cheese my *Organedrink* my *caffee* my meat my butter on the Table My *brot* I *lege* in the *Teller* an than in the Table. Than I eat is an *räume es weg*.<sup>18</sup>

**Table 56: Transfer from German (absolute frequencies)**

Language group	Grade	Lexical Transfer
GER	7	110
GER	9	88
RUS-GER	7	82
RUS-GER	9	52
TUR-GER	7	106
TUR-GER	9	80
Total		518

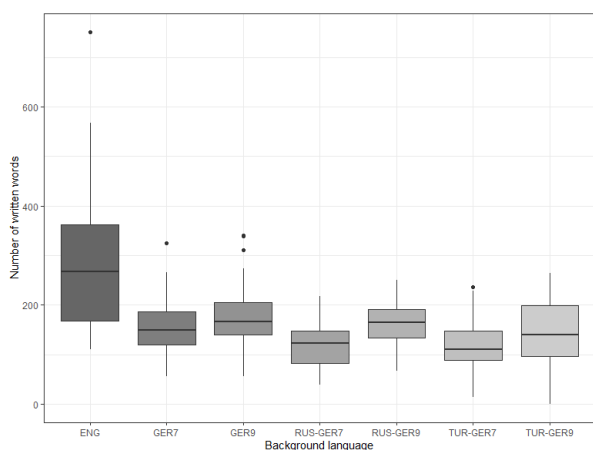
Interestingly, the younger cohorts used more German words than the older cohorts. This is expectable, since we assume that at a younger age and a lower proficiency different languages in a learner’s mind are more likely to influence each other than at an older age. Particularly noteworthy is that all language groups used German words, when they did not know the English vocabulary. In addition, Russian-Germans in class nine used the least German words. There were no other languages used for transfer effects in this task. This might show that German as the majority language is very representative in all language groups.

Figure 46 illustrates the number of words that were produced in the written task visualized in a boxplot that present the internal variation. In boxplots, the corpus for a certain variable can be illustrated more detailed than with a histogram. Gries (2021:109) states that boxplots “contain[...] a lot of valuable information.”<sup>19</sup>

---

<sup>18</sup> The words written in italic are the German words. In the original text, they were not marked. In this example, the italic font is used to distinguish between English and German words

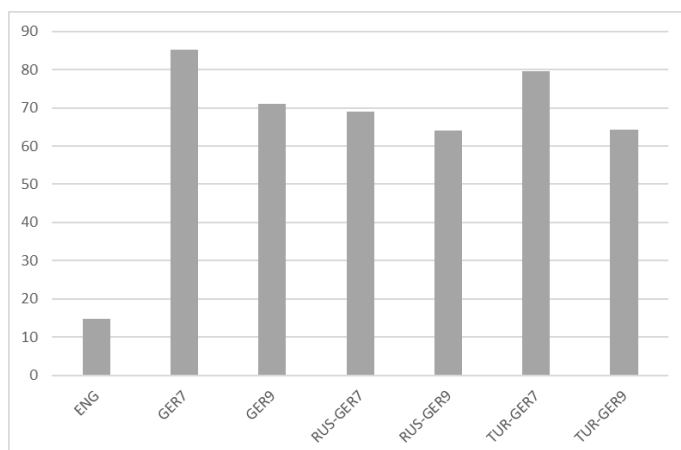
<sup>19</sup> A boxplot contains a line that is inside the box which is called the median. The box has 50 percent of the data inside it, the upper and the lower line represents the third and the first quartile. In addition, the whiskers are the thin dashed lines. The dots over or under the whiskers are outliers. (see Levshina 2015:58)



**Figure 46: Number of words per written text (boxplot)**

As expected, the English native adult group produced on average more words than the other groups. Compared with the younger cohorts, the older cohorts produced on average more words per written text. It is scarcely surprising that the longer the students learn a foreign language, the longer their texts get and their proficiency increases.

In Figure 47, the use of demonstratives that were produced within each language and age group is illustrated. The monolingual German and the bilingual groups consist of 50 students per age group. However, the English native group included 18 adults. Hence, they produced fewer demonstratives compared with the other groups, due to the different number of participants.



**Figure 47: The use of demonstratives (mean values)**

German monolinguals in grade seven produced the highest number of demonstratives followed by the Turkish-German bilinguals of the same grade. Compared to the number of words, an increasing use of demonstratives is not visible when the students are getting older. Instead, the older the students, the less they use demonstratives. In case study three, we analyse whether they use instead more subclauses. Interestingly, the older cohorts do not differ significantly from each other. For a more detailed overview, we will now

visualize the number of demonstratives used per text in form of boxplots, presented in Figure 48. The results of the boxplots demonstrate that almost all language groups have similar mean values for the use of demonstratives per text. Only the German monolinguals in grade seven reach a higher mean value and the English native speakers have the lowest mean value.

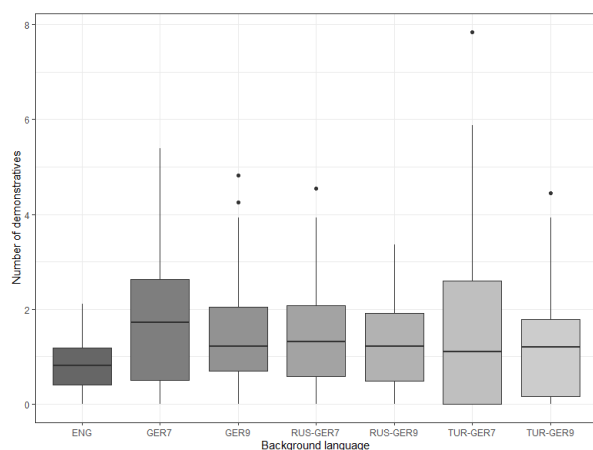


Figure 48: Number of demonstratives per written text (boxplot)

### *Formal correctness*

In Figure 49, the target like and non-target like hits of demonstratives are illustrated. All

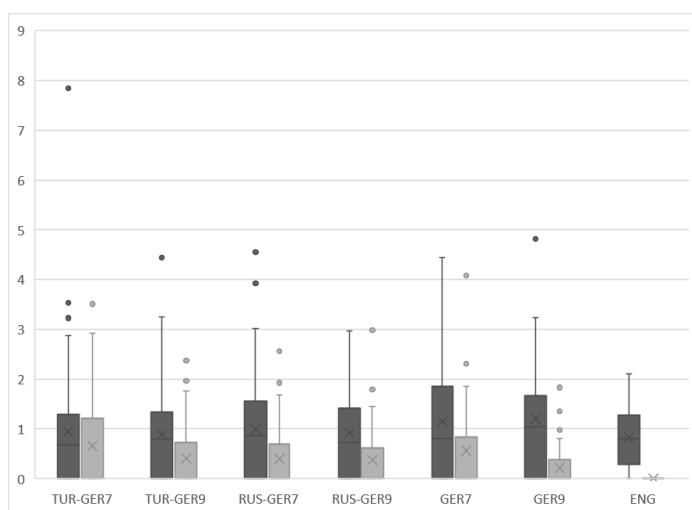


Figure 49: Formal correctness of demonstratives (boxplot)

language groups use more correct forms. With increasing age, the students use more target like demonstratives. Although monolingual Germans and bilingual Turkish use less incorrect demonstratives with increasing age, bilingual Russians use more incorrect demonstrative pronouns. Not surprisingly, the English native speakers do not use any demonstrative incorrect. In general, only slight differences are found between the

language groups, namely that both monolingual groups use more demonstratives target like.

**Table 57: t-tests for the number of words, demonstratives, and their target like and non-target like hits**

		Age 12/20 <sup>20</sup>	Age 16/40 <sup>21</sup>	t-test	dCohen
No. of words	GER	155.7(54.70)	176.5(62.53)	t(95.882)=-1.7544, p=.9587	0.3508
	RUS-GER	119.8(44.86)	161.8(41.89)	t(97.544)0-4.8389, p=1	0.9678
	TUR-GER	118.96(50.97)	139.96(69.81)	t(89.688)=-1.718, p=.955	0.3436
	ENG	373.5(166.35)	249.13(135.41)	t(13.43)= 1.531, p=.075	0.77
Demonstratives	GER	1.7(1.41)	1.42(1.16)	t(94.708)=1.1035,p=.1363	0.2207
	RUS-GER	1.38(1.16)	1.28(1.03)	t(96.683)=0.4407, p=.3302	0.0882
	TUR-GER	1.59(1.80)	1.29(1.13)	t(82.343)=1.0073, p=.1584	0.2014
	ENG	0.8(0.61)	0.95(0.67)	t(13.88)=-0.44, p=.67	0.22
Demonstratives target like	GER	1.14(1.19)	2.2(1.09)	t(97.767)=-0.2398, p=.5945	0.0480
	RUS-GER	0.98(1.1)	0.91(0.89)	t(93.83)=0.3606, p=.3596	0.0721
	TUR-GER	0.94(1.37)	0.88(0.93)	t(86.068)=0.2428, p=.4044	0.0485
	ENG	0.8(0.61)	0.95(0.67)	t(13.88)=-0.44, p=.67	0.22
Demonstratives non-target like	<b>GER</b>	<b>0.56(0.82)</b>	<b>0.22(0.43)</b>	<b>t(74.273)=2.5846, p=.0059</b>	<b>0.5169</b>
	RUS-GER	0.39(0.64)	0.37(0.58)	t(97.101)=0.1911, p=.4244	0.0382
	TUR-GER	0.65(0.92)	0.4(0.63)	t(86.603)=1.557, p=.0616	0.3114
	ENG	0(0)	0(0)	0(0)	0

The question arises whether they do not show any learning effects within these four years of learning English. In Table 57, we tested whether there are statistical differences between the age groups. Neither for *words* nor for *demonstratives* and their *target like use*, the values reach statistical significance. With increasing age, the German monolinguals use significantly less non-target like hits of demonstratives.

To compare the monolingual and the two bilingual groups with the English native speakers, a one-way ANOVA test was conducted. We measured if there is a statistical difference between the heritage languages and the number of produced words. The results reach statistical significance with a p-value below the threshold of 0.05 (F(6,308)=17.84, p=<.001). Especially, the differences between English native speakers and the other language groups reach values below the threshold of 0.05 which again

<sup>20</sup> Note that Age 12 refers to the German monolinguals as well as the two bilingual groups, whereas Age 20 refers to the younger English native speaker group.

<sup>21</sup> Again, Age 16 refers to the participants aged 16 of the German monolingual group and the two bilingual groups, whereas Age 40 refers to the older English native speakers.



demonstrate that the mean values reach high significant differences. This was confirmed by a Tukey HSD test<sup>22</sup>.

In Figure 50, the four demonstratives are illustrated. We expected that the most used demonstrative form is *that* which is confirmed in this figure. As we have already

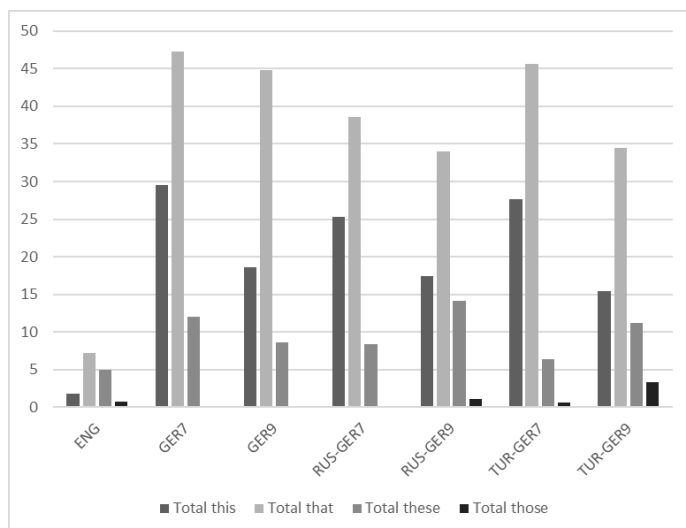


Figure 50: Demonstrative categories (mean values)

mentioned, *that* has developed from the demonstrative form into the complementizer (see Heine & Kuteva, 2004); hence, we included it in our study. However, *that* is followed by *this* which can also be expected, due to the determiner function and the use as an identifier, except for the English native speakers who use *these* the second most frequently. Every demonstrative is analysed in a separate subsection. The plural forms *these* and *those* are used less frequently, whereas *those* almost does not occur. However, when we compare the different language groups with each other, it is apparent that there is a decrease of using the form *that* within the age groups. Since the complementizer *that* is also in German one of the early forms' students learn in order to connect main and subclauses, it is not surprising that the older the students the less frequently they use *that* as a complementizer. It can be assumed that they instead use other subclauses or prepositions to show more lexical diversity. We will come back to this in Chapter 5.5, when we analyse case study three. For the demonstrative form *this*, a similar decrease with an increasing age can be obtained. Compared with the monolingual Germans, the bilingual

<sup>22</sup> A Tukey Honest Significant Differences (HSD) test is a post hoc test for one-way ANOVAs. The output shows the "differences between the group means" (Levshina 2015:180), the p-value as well as the lower and upper end points of the intervals. Note that a zero in the lower or upper column means that there are no sure differences between the groups. In addition, this test is "robust to violations of the normality assumption" (Levshina 2015: 179).

groups show an increasing use of the plural form *these*. Furthermore, we observed that some participants used demonstratives where they are not expected. Instead, often personal pronouns would be more suitable.

2) (TUR7\_1302547114): Then I go to a supermarket and buy all this what I write on the shopping list.

The examples were reviewed by an American English native speaker who suggested that they would not say a sentence like that. Instead, they would rather say: “Then I go to a supermarket and buy all I need.” If such sentences and structures were detected, we counted the frequencies, and the results are shown in Figure 52 as an *overuse of demonstratives*. In addition, we also found sentences where a demonstrative would be expected but another structure was used.

3) (RUS9\_1401809126): So you go in a supermarkt and buy all the things what is on the list.

In this example, the subordinating part with *what is on the list* is not expectable. Instead, the demonstrative *that* is more suitable as in, *So you go in a supermarket and buy all the things that are on the list*. These sentences were counted and are presented as *underuse of demonstratives* in Figure 51.

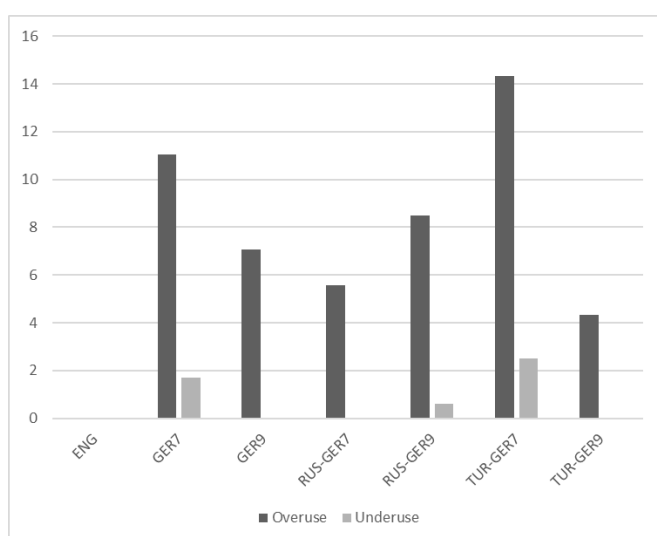


Figure 51: Overuse and underuse of demonstratives (mean values)

The highest *overuse* of demonstratives is produced by bilingual Turkish-German students in grade seven followed by German monolinguals of the same age group. In both groups, there is a decrease from the younger to the older cohort. Compared with these two groups, the bilingual Russian-Germans show a different picture. They show an increase of the overuse of demonstratives which is surprising, since we would expect a positive synergy after four years more experience in learning English as a foreign language. Next, we used one-tailed t-tests<sup>23</sup> in order find out whether these differences between the age groups are significant. For the overuse of demonstratives, it can be noticed that there is a significant difference between the bilingual Turkish-German group from the younger to the older students. For the other groups, there is no such increase observable.

**Table 58: Mean values of the over- and underuse of demonstratives, the standard deviation in parenthesis, t-tests and Cohen's d**

		Grade 7	Grade 9	t-test	dCohen <sup>24</sup>
Overuse	GER	0.221(0.560)	0.141(0.354)	t(82.766)=0.85209, p= .198	0.17
	RUS-GER	0.111(0.424)	0.170(0.516)	t(94.383)=-0.621, p= .732	0.12
	<b>TUR-GER</b>	<b>0.287(0.660)</b>	<b>0.087(0.404)</b>	<b>t(81.161)=1.8244, p=.0359</b>	<b>0.36</b>
Underuse	GER	0.034(0.193)	0(0)	t(49)=1.2458, p= .1094	0.25
	RUS-GER	0(0)	0.012(0.086)	t(49)=-1, p=.8389	0.2
	TUR-GER	0.050(0.250)	0(0)	t(49)=1.4143, p=.0818	0.28

The English native speakers were not included in this analysis, because neither an *overuse* nor an *underuse of demonstrative* could be detected. In the next subchapter, the analysis of the linguistic marker is combined with the background variables we presented in Chapter 4.9. As statistical methods, an ANOVA is combined with a multiple regression analysis.

### 5.1.1 This

The first singular pronoun we will focus on is *this*. In the analysis, the pronouns were divided into different categories as described in Chapter 4.6.

<sup>23</sup> A t-test is used for normal distributions, for information values that are numeric (and not ordinal) and when the data set is larger than 30 (Gries 2021: 209), in order to test differences or independence. this test “involves testing two groups of values with regard to whether they differ in their central tendency” (Gries 2021: 209).

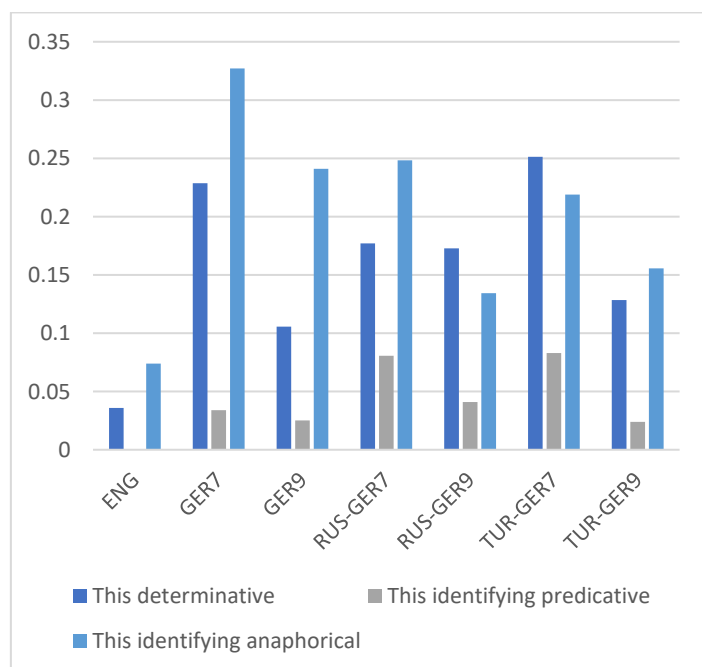
<sup>24</sup> Cohen's d measures effect size and shows how large it is. It estimates the standard differences between the means of two groups. Also, it accompanies t-tests or ANOVAs. A d of 1 means that the groups differ by one standard deviation. 0.2 is considered small, 0.5 medium and 0.8 large effect size. (see the help function in R)

Table 59 provides an overview of the mean values of *this* and its categories. In the determinative function, a decrease from the younger to the older cohorts is visible. The smallest number was produced by the English native speakers. Furthermore, they did not use any pronoun in the identifying predicative function. In the German monolingual group, the numbers in these categories stay the same, whereas in the bilingual groups' students use more pronouns when they are younger. The same is visible in the anaphorical use.

**Table 59: Mean values of the categories of the demonstrative pronoun *this***

Language group	Determinative	Ident. predicative	Ident. anaphorical
ENG	0.04	0.00	0.07
GER7	0.23	0.03	0.33
GER9	0.11	0.03	0.24
RUS-GER7	0.18	0.08	0.25
RUS-GER9	0.17	0.04	0.13
TUR-GER7	0.25	0.08	0.22
TUR-GER9	0.13	0.02	0.16
Total	1.11	0.28	1.4

In Figure 52, the use of the different categories in combination with *this* is illustrated. The English native speakers produce almost no demonstrative *this*. Compared with the



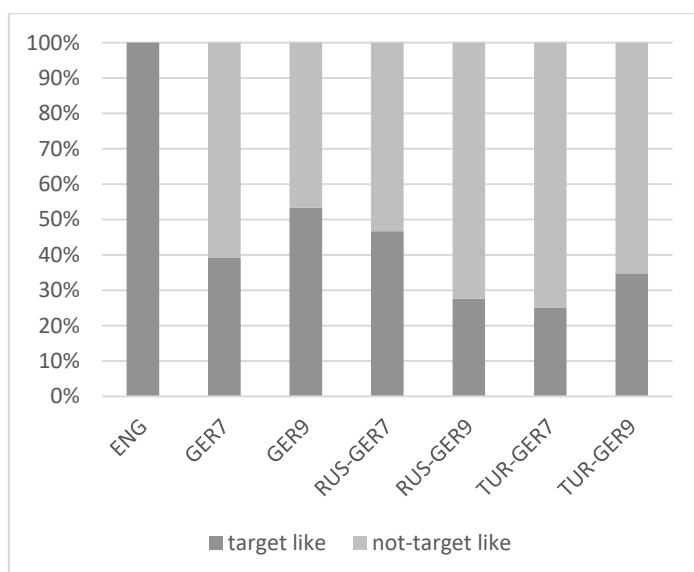
**Figure 52: The subdivision of the demonstrative pronoun *this* (mean values)**

other language groups, this is a great difference. It may be that the English native speakers used instead more definite articles. In this overview, it is striking that the identifying

anaphorical category reach the highest frequencies, but in the Russian-German older cohort and the Turkish-German younger cohort it is the determinative category. What is also apparent for the anaphorical use of *this*, there is a decrease in use from the younger to the older cohort. For the determinative category, German monolinguals and the bilingual Turkish-German group show a similar distribution. They produce a much higher number of determinative *this* in the younger cohort, whereas this number is almost half as small in the older cohort. Note that the Russian-German students almost produce the same number of *this* in the determinative function in both age groups. For the identifying predicative use of *this*, a decrease can also be detected from the older to the younger cohort, but German monolinguals almost show the same number in both age groups. For the bilingual cohorts, the number of the predicative *this* is similar.

### *Formal correctness*

In the Figures 53-54, the formal correctness is illustrated. The former presents the proportions. As expected, the English natives only use the pronoun *this* target like. With



**Figure 53: Formal correctness of the pronoun *this* (proportions)**

increasing age, the German monolinguals and Turkish bilinguals use increasingly more target like forms of *this*. Instead, a decrease is visible in the Russian bilingual group. Although the younger bilingual Russians use more correct forms, an increasing incorrect use is found in the older group. Except for the English natives, there is an overall higher use of non-target like forms of the pronoun *this*. Figure 54 shows a more detailed

comparison of the formal correctness. Expectedly, the English natives clearly show a higher performance. What is striking is that in the other language groups the target like

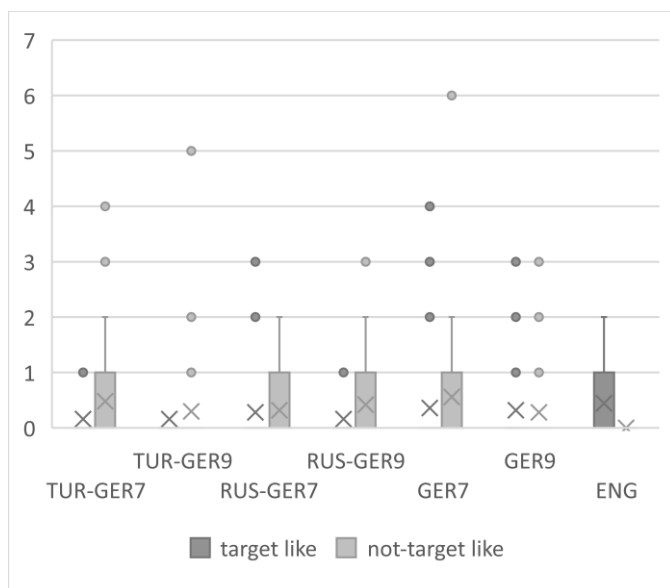


Figure 54: Formal correctness of the pronoun *this* (boxplot)

use of *this* is comparably low. Also, we found extreme outliers in all language groups, except the English natives. These outliers are more apparent for the incorrect use. Hence, the low performance of the monolingual Germans and bilingual groups show that the differentiation of *this* from *that* is more complicated for them, because for the formal correctness of the pronoun *that* the results are the opposite (see section 5.1.2).

In a second step, the categories are analysed by their agreement, their context agreement and whether they are used target like or non-target like. The results are shown

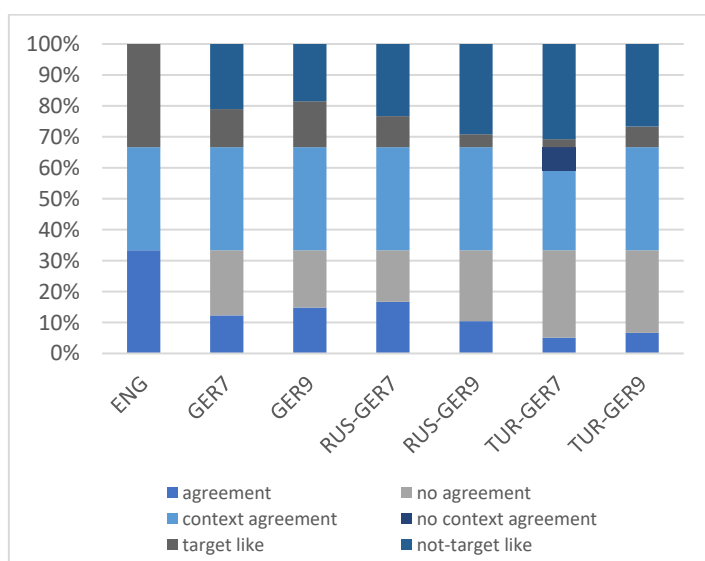


Figure 55: The use of *this* as a determiner (proportions)

in the Figures 55-58. In Figure 55, the determinative category is illustrated. It is not surprising that the English native speakers show only *agreement*, *context agreement* and *target like* hits. The bilingual language groups and the monolingual German groups show a similar picture. Compared with the bilingual Russian-German cohort in grade seven, the number of the correct *agreement* is in all language groups smaller than the number of *no agreement*. For the monolingual Germans, there is an increase of the correct *agreement* from grade seven to grade nine, whereas in the Turkish-German group a decrease can be detected. The number of *agreement* stays the same in both age groups of the bilingual Turkish-Germans. Only the Turkish-German younger cohort shows a small number of *no context agreement*. In addition, the number of *non-target like* hits predominate in all language groups, except the English natives. The monolingual German groups show a higher number of *target like* hits in grade nine, which is expectable, since a higher awareness of grammar is assumed after having four years more experience in learning English. The same effect can be found in the Turkish-German group, but the increase is only slightly. However, in the Russian-German cohorts a small decrease is observable.

In Table 60, a correlation between grade seven and grade nine within the different language groups was tested. For the English native speakers, a statistical significance is found between the two age groups regarding *the agreement*, *the context agreement*, and *the target like use* of the determinative *this*. For *no context agreement*, the Turkish bilinguals reach statistically significant values slightly below the threshold of 0.05.

**Table 60: Overview of determinative *this*, the mean values, standard deviation in parentheses, t-tests, and Cohen's d**

This determinative		Age12/20	Age 16/40	t-test	dCohen
agreement	GER	0.059(0.220)	0.044(0.156)	t(88.204)=0.4127, p=.3404	0.08
	RUS-GER	0.098(0.326)	0.055(0.207)	t(82.879)=0.77495, p=.2203	0.15
	TUR-GER	0.039(0.196)	0.018(0.089)	t(68.408)=0.6869, p=.2472	0.14
	<b>ENG</b>	<b>0.08(0.12)</b>	<b>0(0)</b>	<b>t(7)=1.94, p=.047</b>	<b>0.97</b>
no agreement	GER	0.169(0.424)	0.062(0.228)	t(75.154)=1.5736, p=.0599	0.31
	RUS-GER	0.079(0.298)	0.118(0.293)	t(97.97)=-0.64399, p=.7395	0.13
	TUR-GER	0.213(0.488)	0.111(0.385)	t(93.013)=1.1611, p=.1243	0.23
	ENG	0(0)	0(0)	0(0)	0
context agreement	GER	0.229(0.471)	0.106(0.266)	t(77.443)=1.6086, p=.05589	0.32
	RUS-GER	0.177(0.424)	0.173(0.366)	t(95.991)=0.053942, p=.4785	0.01
	TUR-GER	0.178(0.437)	0.128(0.390)	t(96.781)=0.600, p=.2749	0.12

	<b>ENG</b>	<b>0.08(0.12)</b>	<b>0(0)</b>	<b>t(7)=1.94, p=.047</b>	<b>0.97</b>
no context agreement	GER	0(0)	0(0)	t(0)=0, p=0	0
	RUS-GER	0(0)	0(0)	t(0)=0, p=0	0
	<b>TUR-GER</b>	<b>0.073(0.309)</b>	<b>0(0)</b>	<b>t(49)=1.6783, p=.0498</b>	<b>0.34</b>
target like	ENG	0(0)	0(0)	0(0)	0
	GER	0.059(0.220)	0.043(0.156)	t(88.204)=0.4127, p=.3404	0.08
	RUS-GER	0.038(0.156)	0.022(0.108)	t(87.257)=0.60763, p=.2725	0.12
	TUR-GER	0.015(0.108)	0.018(0.089)	t(94.665)=-0.12947, p=.5514	0.03
	<b>ENG</b>	<b>0.08(0.12)</b>	<b>0(0)</b>	<b>t(7)=1.94, p=.047</b>	<b>0.97</b>
not-target like	GER	0.169(0.424)	0.062(0.228)	t(75.157)=1.5736, p=.0599	0.31
	RUS-GER	0.139(0.407)	0.151(0.359)	t(96.5)=-0.15719, p=.5623	0.03
	TUR-GER	0.236(0.558)	0.111(0.385)	t(87.024)=1.309, p=.09699	0.26
	ENG	0(0)	0(0)	0(0)	0

Figure 56 illustrates the identifying predicative category. Surprisingly, the English natives did not use this category. In general, neither a *this* that is used *non-target like* nor one that is used without showing *context agreement* could be found. In grade seven, both bilingual groups produce the same number of identifying predicative *this* that is decreasing in grade

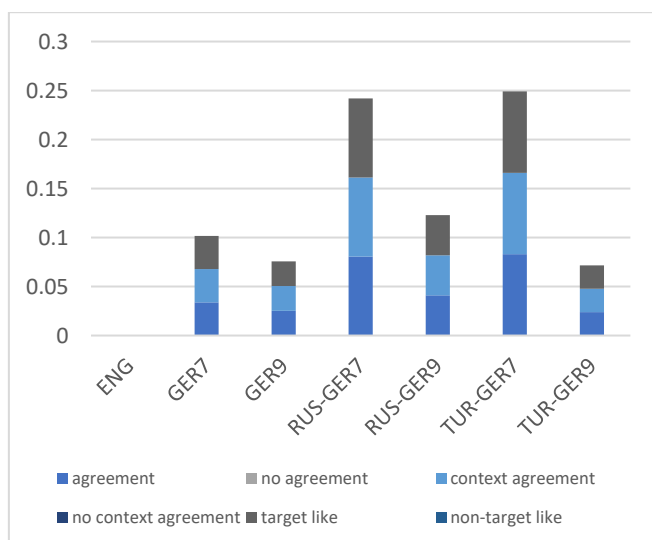


Figure 56: The category identifying predicative *this* (mean values)

nine. In both age groups, the monolingual Germans reach the same number of identifying predicative *this*. In Table 61, t-tests are presented. Again, the categories *no agreement*, *no context agreement* and *non-target like* use of the identifying predicative *this* could not be observed. However, the numbers in the other three categories do not reach significant values. Hence, there is no correlation between the younger and the older cohorts.



**Table 61: Overview of predicative *this*, the mean values, standard deviation in parentheses, t-tests and Cohen's d**

This identifying predicative		Age 12/20	Age16/40	t-test	dCohen
agreement	GER	0.034(0.169)	0.025(0.125)	t(90.525)=0.29225, p=.3854	0.06
	RUS-GER	0.08(0.249)	0.041(0.164)	t(84.822)=0.93894, p=.1752	0.19
	TUR-GER	0.083(0.255)	0.024(0.119)	t(69.252)=1.4851, p=.07103	0.3
	ENG	0(0)	0(0)	0(0)	0
no agreement	GER	0(0)	0(0)	t(0)=0, p=0	0
	RUS-GER	0(0)	0(0)	t(0)=0, p=0	0
	TUR-GER	0(0)	0(0)	t(0)=0, p=0	0
	ENG	0(0)	0(0)	0(0)	0
context agreement	GER	0.034(0.169)	0.025(0.125)	t(90.525)=0.29225, p=.3854	0.06
	RUS-GER	0.081(0.249)	0.041(0.164)	t(84.822)=0.93894, p=.1752	0.19
	TUR-GER	0.083(0.255)	0.024(0.119)	t(69.252)=1.4851, p=.07103	0.3
	ENG	0(0)	0(0)	0(0)	0
no context agreement	GER	0(0)	0(0)	t(0)=0, p=0	0
	RUS-GER	0(0)	0(0)	t(0)=0, p=0	0
	TUR-GER	0(0)	0(0)	t(0)=0, p=0	0
	ENG	0(0)	0(0)	0(0)	0
target like	GER	0.034(0.169)	0.025(0.125)	t(90.525)=0.29225, p=.3854	0.06
	RUS-GER	0.081(0.249)	0.041(0.164)	t(84.822)=0.93894, p=.1752	0.19
	TUR-GER	0.083(0.255)	0.024(0.119)	t(69.252)=1.4851, p=.07103	0.3
	ENG	0(0)	0(0)	0(0)	0
not-target like	GER	0(0)	0(0)	t(0)=0, p=0	0
	RUS-GER	0(0)	0(0)	t(0)=0, p=0	0
	TUR-GER	0(0)	0(0)	t(0)=0, p=0	0
	ENG	0(0)	0(0)	0(0)	0

The last category that is presented is the identifying anaphorical use of *this* in Figure 57. The lowest number in this category is produced by the English native speakers. Yet, there is a decrease from the younger to the older cohorts in all language groups, except the English native speakers. The bilingual groups show almost the same numbers of agreement. However, the highest number of *this* in the function of anaphorical identifier is found in the German younger cohort. In the older cohort, the numbers are comparable to the bilingual cohorts of grade seven. *No context agreement* can only be found in the bilingual Turkish-German group, the older German monolingual group, and the Russian-Germans of grade seven. Furthermore, the context agreement reaches high values in all language groups. Only a small number of *no context agreement* can be observed in German monolingual younger students as well as a higher number in the Turkish-German group aged 12 that decreases until the age 16. While the English native speakers show

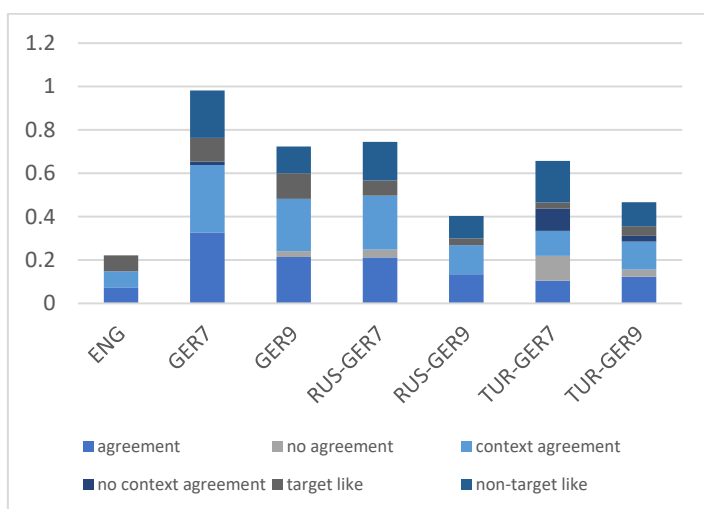


Figure 57: The category identifying anaphorical *this* (mean values)

generally, a small number of anaphorical *this* that is used with the right *agreement/context agreement* and *target like*, the number of *non-target like* hits are predominantly in the other groups, although the number of *target like* and *non-target like* hits in the German older group is almost equal. The highest number of non-target like hits is produced by the German monolinguals in grade seven closely followed by the Turkish-German and Russian-German bilinguals of the same age group.

To analyse whether there are significant differences between the younger and older age cohorts, t-tests were conducted and are illustrated in Table 62. For the target like use of the anaphorical *this*, only the bilingual Russian-German students reach a statistically significant value with 0.015 which lies below the relevant threshold of 0.05.

Table 62: Overview of anaphorical *this*, the mean values, standard deviation in parentheses, t-tests, and Cohen's d

This identifying anaphorical		Age 12/20	Age 16/40	t-test	dCohen
agreement	GER	0.327(0.730)	0.214(0.466)	t(83.262)= 0.92382, p= .1791	0.18
	RUS-GER	0.212(0.509)	0.134(0.300)	t(79.375)= 0.92908, p= .1778	0.19
	TUR-GER	0.105(0.440)	0.123(0.314)	t(88.588)= -0.23408, p=.5923	0.05
	ENG	0.833(0.145)	0.50(0.12)	t(13.56)= 0.63, p=.27	0.32
no agreement	GER	0(0)	0.027(0.1911)	t(49)= -1, p= .8389	0.2
	RUS-GER	0.036(0.183)	0(0)	t(49)= 1.4043, p= .08327	0.28
	TUR-GER	0.114(0.353)	0.033(0.161)	t((68.606)= 1.481, p=.07159	0.3
	ENG	0(0)	0(0)	0(0)	0
context agreement	GER	0.31(0.728)	0.241(0.492)	t(86.055)= .55809, p= .2891	0.11
	RUS-GER	0.248(0.549)	0.134(0.300)	t(82.561)= 0.22182, p= .4125	0.04
	TUR-GER	0.115(0.463)	0.129(0.298)	t(83.73)= -0.18369, p=.5727	0.04
	ENG	0.833(0.145)	0.50(0.12)	t(13.56)= 0.63, p=.27	0.32
no context agreement	GER	0.017(0.119)	0(0)	t(49)= 1, p= .1611	0.2
	RUS-GER	0(0)	0(0)	t(0)=0, p=0	0

	TUR-GER	0.104(0.354)	0.026(0.185)	t(73.925)= 1.376, p=.08649	0.28
	ENG	0(0)	0(0)	0(0)	0
target like	GER	0.109(0.312)	0.118(0.325)	t(97.849)= -0.14651, p= .5581	0.03
	<b>RUS-GER</b>	<b>0.07(0.234)</b>	<b>0.031(0.127)</b>	<b>t(75.638)= 1.0404, p= .01507</b>	<b>0.21</b>
	TUR-GER	0.027(0.133)	0.045(0.158)	t(95.37)= -0.61775, p= .7309	0.12
	ENG	0.833(0.145)	0.50(0.12)	t(13.56)= 0.63, p=.27	0.32
not-target like	GER	0.218(0.660)	0.123(0.336)	t(72.755)= 0.91172, p= .1825	0.18
	RUS-GER	0.178(0.483)	0.103(0.284)	t(79.196)= 0.94421, p= .174	0.19
	TUR-GER	0.192(0.535)	0.111(0.319)	t(79.866)= 0.92361, p= .1792	0.18
	ENG	0(0)	0(0)	0(0)	0

In a last step, the *target like* and *non-target like* hits of all categories are compared in Figure 58. The results show that the *non-target like* hits in the determinative category are predominant. Likewise, in the identifying anaphorical category the differences between *target like* and *non-target like* are big whereas again the *non-target like* hits outweigh. On the contrary, there are only *target like* hits, when *this* is used as a predicative.

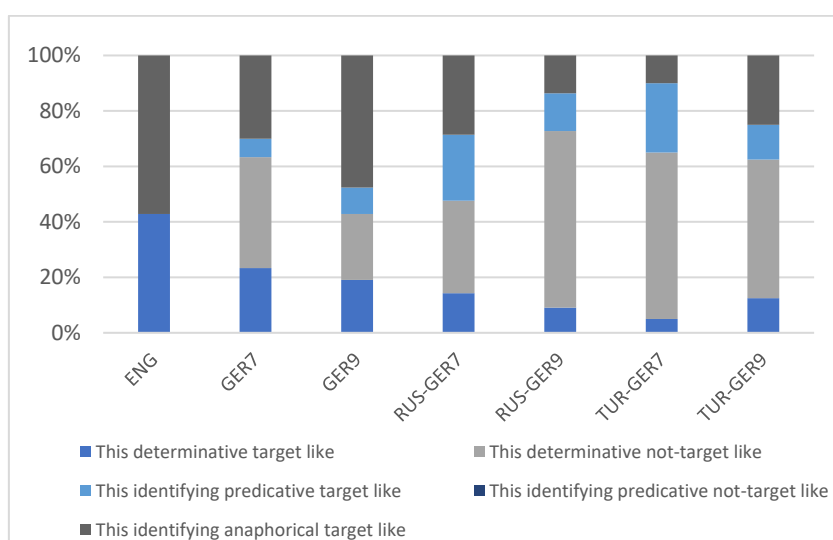


Figure 58: Formal correctness of *this* in its categories

## 5.1.2 That

As we have seen in Chapter 3.1.5, the pronoun *that* is of particular importance, since it developed from a demonstrative pronoun into a complementizer that is often used in written and in oral text productions. Hence, we included the complementizer *that* in this analysis, to find out whether students often use it or whether they tend to use other subclasses instead.

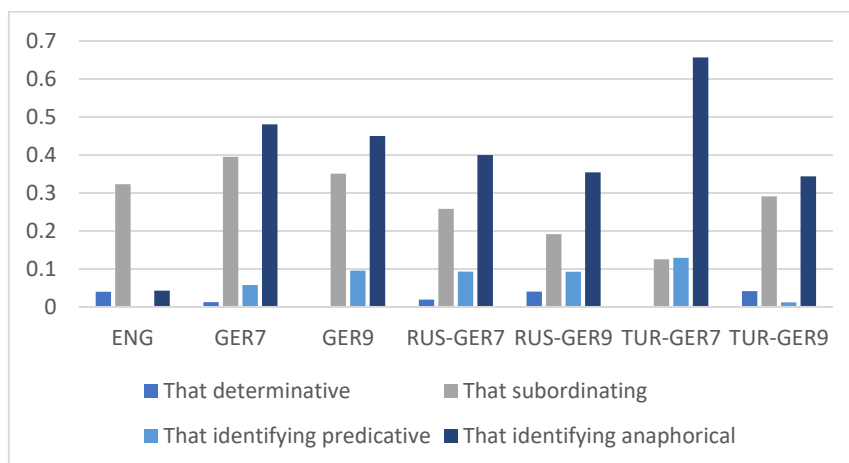
In Table 63, the mean values of the pronoun *that* according to its categories are presented. English native speakers produced mostly *that* as a subordinator and only rarely

**Table 63: Mean values of the pronoun *that* and its categories**

Language group	Determinative	Subordinating	Ident. predicative	Ident. anaphorical
ENG	0.00	0.25	0.00	0.00
GER7	0.01	0.40	0.06	0.48
GER9	0.00	0.35	0.10	0.45
RUS-GER7	0.02	0.26	0.09	0.40
RUS-GER9	0.04	0.19	0.09	0.35
TUR-GER7	0.00	0.13	0.13	0.66
TUR-GER9	0.04	0.29	0.01	0.34
Total	0.11	1.87	0.48	2.68

other categories. In the determinative function, two groups did not use *that*, namely the older cohort of the German monolinguals and the younger cohort of the bilingual Turkish-German group. In general, the numbers are small, because they lie below one. In the subordinating group, the German monolinguals produced the highest number. For identifying predicates, bilingual Turkish-Germans aged 12 and monolingual Germans aged 16 almost produce the same number of pronouns. In the bilingual Russian-German cohort, the values stay the same. In the last category, the numbers within the language groups are similar. German monolinguals and bilingual Russian's produced similar numbers of identifying anaphorical *that*, whereas there is a decrease from the younger to the older cohort in the bilingual Turkish-German cohort.

Figure 59 shows the mean values of *that* and its categories. It is striking that the identifying anaphorical category is used the most. Furthermore, we see a decrease from

**Figure 59: The use of *that* and its categories (mean values)**

the younger to the older students in this category, except for the Russian-German group. What is also noteworthy is that the bilingual Turkish-German group in grade seven produced the highest number of anaphorical *that*. This category is followed by the subordinating category that is more frequently used by the monolingual German group.

This could be traced back to the high impact of German as the environmental language and the same use of *that* (German *dass*) as a complementizer. Again, there is a decrease observable from the younger to the older cohorts, but for the bilingual Turkish-German students. *that* as a predicative identifier is used similar frequently by all language groups, except the English native speakers.

### Formal correctness

In Figure 60, the boxplot presents the formal correctness of the pronoun *that*. Although there are a few outliers for the non-target like use, this pronoun is overall used target like. Except for the German monolinguals, all language groups show similar results. In the older cohort, German monolinguals use more target like pronouns than the others. Hence, this pronoun occurs more often in this age and language group which may be traced back to the influence of their first language German. In this language, the same pronoun is used as an article as well as a demonstrative pronoun. However, for the pronoun *that* we find a high performance in all language groups, opposite to the overall low performance for the pronoun *this*.

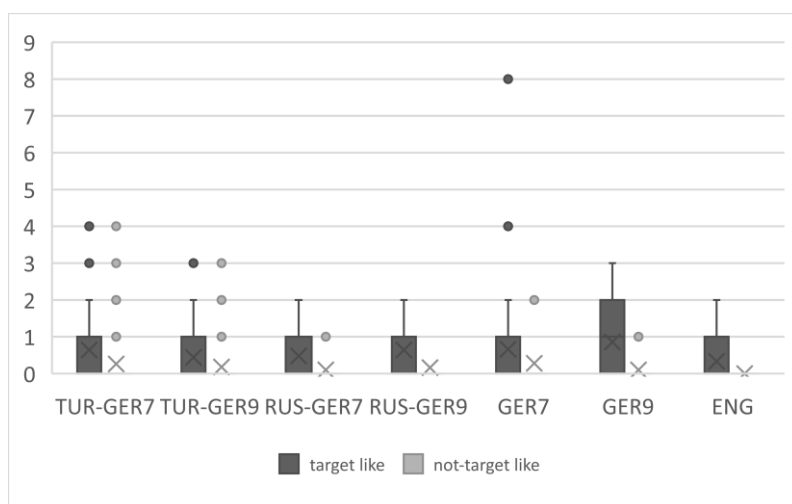


Figure 60: Formal correctness of the pronoun *that* (boxplot)

Next, we illustrate the results for the determinative category. The German monolinguals in grade nine and the bilingual Turkish-German in grade seven did not use this category.

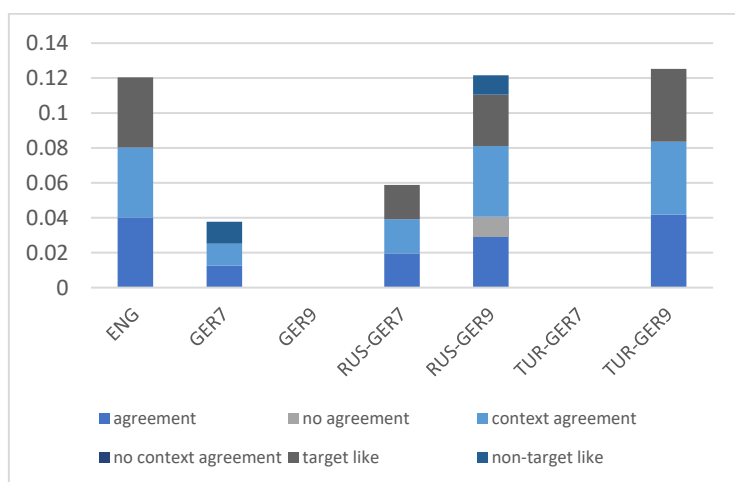


Figure 61: *that* as a determiner (mean values)

In contrast to the English natives, the German monolinguals did not use this category *target like*. Although bilingual Russian students at the age of 12 used the determinative *that* correct, some participants of the older cohort did not use this category *target like* nor with *context agreement*. This is surprising because we expected more incorrect forms in the younger cohorts.

Table 64: Mean values of the determinative category of *that*, the standard deviation in parenthesis, t-tests, and Cohen's d

That determinative		Age 12/20	Age 16/40	t-test	dCohen
agreement	GER	0.0125(0.089)	0(0)	t(49)=1, p= .1611	0.2
	RUS-GER	0.02(0.139)	0.029(0.154)	t(96.904)= -0.33285, p=.63	0.07
	TUR-GER	0(0)	0.041(0.186)	t(68.631)= 1.2911, p=.1005	0.26
	ENG	0.28(0.08)	0.06(0.12)	t(12.15)=-0.65	0.33
no agreement	GER	0(0)	0(0)	0(0)	0
	RUS-GER	0(0)	0.011(0.079)	t(49)= -1, p= .8389	0.2
	TUR-GER	0(0)	0(0)	0(0)	0
	ENG	0(0)	0(0)	0(0)	0
context agreement	GER	0.0125(0.0889)	0(0)	t(49)=1, p= .1611	0.2
	RUS-GER	0.0196(0.1386)	0.0401(0.1714)	t(93.906)= -0.67159	0.13
	TUR-GER	0(0)	0.0418(0.1859)	t(67.537)= 1.4686, p=.07329	0.29
	ENG	0.28(0.08)	0.06(0.12)	t(12.15)=-0.65	0.33
no context agreement	GER	0(0)	0(0)	0(0)	0
	RUS-GER	0(0)	0(0)	0(0)	0
	TUR-GER	0(0)	0(0)	0(0)	0
	ENG	0(0)	0(0)	0(0)	0
target like	GER	0(0)	0(0)	0(0)	0
	RUS-GER	0.0196(0.139)	0.0293(0.1542)	t(96.904)= -0.33285, p=.63	0.07
	TUR-GER	0(0)	0.0418(0.1859)	t(64.947)= 1.3591, p=.08941	0.27
	ENG	0.28(0.08)	0.06(0.12)	t(12.15)=-0.65	0.33

not-target like	GER	0.0126(0.0889)	0(0)	t(49)=1, p= .1611	0.2
	RUS-GER	0(0)	0.111(0.079)	t(49)= -1, p= .8389	0.2
	TUR-GER	0(0)	0(0)	0(0)	0
	ENG	0(0)	0(0)	0(0)	0

However, with t-tests, a correlation between the younger and older students was analysed. In Table 64, the results of the t-tests and the Cohen’s d are presented. The values did not reach a significant level below the threshold of 0.05. Hence, there are no significant differences between the age groups, when they use *that* in the determinative category.

In Figure 59, subordinating *that* was the second most frequent category. In the following plot 62, the results are striking. The only group that has a median above zero is the English native speaker group. For all the other language groups, we have a zero median which means that the first quartile is zero.

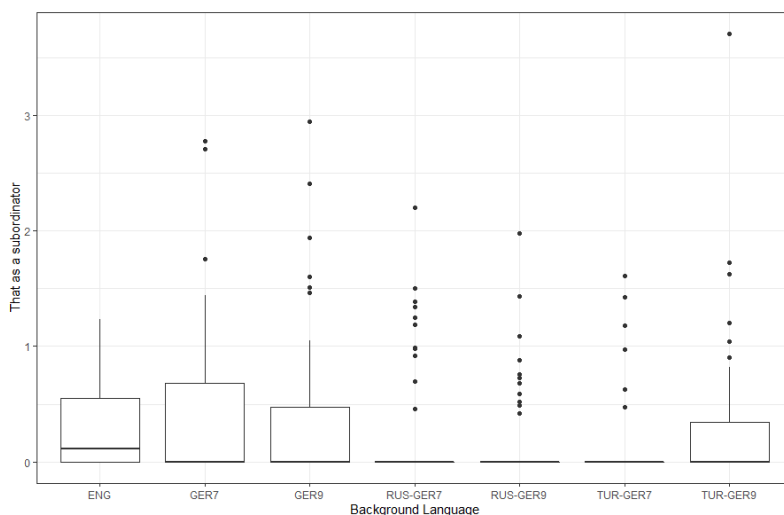


Figure 62: Boxplot of *that* as subordinator

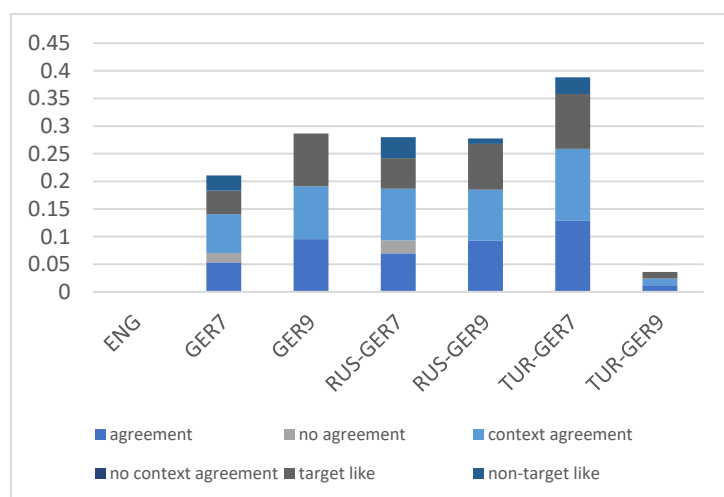
The German monolinguals have third quartiles around 0.5. A similar picture can be seen by the Turkish-German older cohort. However, three of four bilingual groups do neither have a box nor a whisker. Instead, they have a lot of outliers. The highest outlier is visible in the older Turkish-German group.

In Table 65, the results for the t-tests are shown. The aim was to examine whether there is a difference between the age groups. However, the results could not confirm a difference, since the p-values did not reach a significant level, except for the English native group who has a statistically significant difference between the two age groups.

**Table 65: Mean values of the subordinating category of *that*, the standard deviation in parenthesis, t-tests and Cohen's d**

That subordinating	Age 12/20	Age 16/40	t-test	d <sub>Cohen</sub>
GER	0.395(0.686)	0.351(0.687)	t(98)= 0.32124, p= .3744	0.06
RUS-GER	0.258(0.534)	0.192(0.422)	t(93.037)= 0.69551, p= .2442	0.14
TUR-GER	0.126(0.372)	0.291(0.659)	t(77.387)= -1.5455, p= .9368	0.31
ENG	0.3(0.36)	0.31(0.47)	t(13.08)= -0.03	0.02

Figure 63 illustrates the predicative identifying category. English native speakers did not use a pronoun in this category followed by the older cohort of the bilingual Turkish-German speakers who show the second smallest number of *that* as a predicative identifier. However, the other language groups reach similar values. The German monolingual group shows a more frequent use of the pronoun *that* in grade nine than in grade seven. In the bilingual Russian-German group, both age groups used the same number of pronouns. Compared with the older cohorts, a small number of students in the monolingual Germans and the Russian-Germans of grade seven used antecedents and

**Figure 63: *that* as a predicative identifier (mean values)**

pronouns that showed *no agreement*. All groups used the right agreement to the context. In addition, the older cohorts of the German monolinguals and the bilingual Turkish-Germans used these pronouns *target like*. However, the *non-target like* hits in this category were reduced or disappeared completely in grade nine.

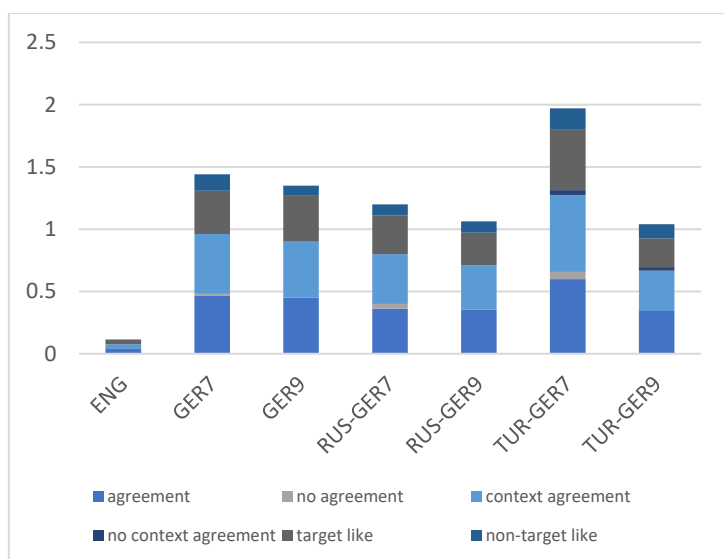
For the predicative category, we used t-tests to find out whether the younger students show differences to the older, presented in Table 66. In this analysis, the values for the bilingual Turkish-German group reach a significant level for the *agreement*, *context agreement* and *target like use* with p-values of 0.02 and 0.03. Hence, there is a difference between the students in grade seven and in grade nine.



**Table 66: Mean values of the identifying predicative category of *that*, the standard deviation in parenthesis, t-tests, and Cohen's d**

That ident. predicative		Age 12/20 7	Age 16/40	t-test	dCohen
agreement	GER	0.053(0.188)	0.096(0.250)	t(90.997)= -0.95031, p= .8278	0.19
	RUS-GER	0.069(0.218)	0.092(0.219)	t(97.999)= -0.5263, p= .7001	0.11
	<b>TUR-GER</b>	<b>0.129(0.387)</b>	<b>0.012(0.085)</b>	<b>t(53.734)= 2.0934, p= .02053</b>	<b>0.42</b>
	ENG	0(0)	0(0)	0(0)	0
no agreement	GER	0.0167(0.119)	0(0)	t(49)= 1, p= .1611	0.2
	RUS-GER	0.0238(0.168)	0(0)	t(49)= 1, p= .1611	0.2
	TUR-GER	0(0)	0(0)	0(0)	0(0)
	ENG	0(0)	0(0)	0(0)	0
context agreement	GER	0.07(0.218)	0.096(0.25)	t(96.244)= -0.53796, p= .7041	0.11
	RUS-GER	0.093(0.269)	0.092(0.219)	t(94.038) = 0.01652, p= .4934	0.0033
	<b>TUR-GER</b>	<b>0.129(0.387)</b>	<b>0.012(0.085)</b>	<b>t(53.734)= 2.0934, p= .02053</b>	<b>0.42</b>
	ENG	0(0)	0(0)	0(0)	0
no context agreement	GER	0(0)	0(0)	0(0)	0(0)
	RUS-GER	0(0)	0(0)	0(0)	0(0)
	TUR-GER	0(0)	0(0)	<b>0(0)</b>	<b>0(0)</b>
	ENG	0(0)	0(0)	0(0)	0
target like	GER	0.043(0.175)	0.096(0.250)	t(87.728)= -1.2204, p= .8872	0.24
	RUS-GER	0.055(0.198)	0.083(0.211)	t(97.583)= -0.66755, p= .747	0.13
	<b>TUR-GER</b>	<b>0.099(0.319)</b>	<b>0.012(0.085)</b>	<b>t(55.954)= 1.8684, p= .03347</b>	<b>0.37</b>
	ENG	0(0)	0(0)	0(0)	0
not-target like	GER	0.027(0.139)	0(0)	t(49)= 1.3927, p= .085	0.28
	RUS-GER	0.038(0.194)	0.01(0.069)	t(61.1)= 0.96912, p= .1682	0.19
	TUR-GER	0.03(0.151)	0(0)	t(49)= 1.4091, p= .08256	0.28
	ENG	0(0)	0(0)	0(0)	0

The last category for the pronoun *that* is illustrated in Figure 64. It is used more frequently than the other categories. Again, English native speakers used less *that* in the anaphorical



**Figure 64: *that* as anaphorical identifier (mean values)**

identifier function. What is striking is that the monolingual Germans and the bilingual Russian-German group almost reach the same number of frequencies for the anaphorical identifying category. In addition, in the bilingual Turkish-German group, the difference between the younger and the older cohort is greater. Furthermore, it is not surprising that a small number of younger students did not use the right *agreement* of the antecedent and the pronoun, but after four years of learning English this mistake disappears. However, the *context agreement* was linked correctly in all language groups, except in the bilingual Turkish-German group in grade seven. Particularly noteworthy is that all age groups have *non-target like* hits which means that this number at least grows smaller but does not disappear completely. Hence, this category may be more difficult to deal with than the others.

Again, we used t-tests to find a correlation between the age groups. However, one statistically significant value could be detected in the bilingual Turkish-German group and the category *no agreement*. Since p is smaller than 0.05, the value reaches a statistically significant level.

**Table 67: Mean values of the identifying anaphorical category of *that*, the standard deviation in parenthesis, t-tests, and Cohen's d**

That ident. anaphorical		Grade 7	Grade 9	t-test	dCohen
agreement	GER	0.469(0.796)	0.45(0.552)	t(87.285)= 0.13509, p= .4464	0.03
	RUS-GER	0.361(0.630)	0.354(0.487)	t(92.149)= 0.063788, p= .4746	0.01
	TUR-GER	0.6(1.274)	0.344(0.583)	t(68.631)= 1.2911, p= .1005	0.26
	ENG	0.51(0.12)	0.18(0.06)	t(10.58)=0.89, p=.19	0.44
no agreement	GER	0.0119(0.084)	0(0)	t(49)= 1, p= .1611	0.2
	RUS-GER	0.038(0.272)	0(0)	t(49)= 1, p= .1611	0.2
	TUR-GER	0.057(0.232)	0(0)	t(49)= 1.7495, p= .04323	0.35
	ENG	0(0)	0(0)	0(0)	0
context agreement	GER	0.48(0.812)	0.45(0.552)	t(86.369)= 0.21911, p= .4135	0.04
	RUS-GER	0.4(0.665)	0.354(0.487)	t(89.799)= 0.3916, p= 0.08	0.08
	TUR-GER	0.618(1.299)	0.322(0.576)	t(67.537)= 1.4686, p= .07329	0.29
	ENG	0.51(0.12)	0.18(0.06)	t(10.58)=0.89, p=.19	0.44
no context agreement	GER	0(0)	0(0)	0(0)	0
	RUS-GER	0(0)	0(0)	0(0)	0
	TUR-GER	1.943 (0.195)	1467(0.158)	t(93.909)= 0.26896, p= 0.3943	
	ENG	0(0)	0(0)	0(0)	0
target like	GER	0.348(0.699)	0.374(0.537)	t(91.934)= -0.20735, p= .5819	0.04
	RUS-GER	0.312(0.587)	0.263(0.411)	t(87.737)= 0.48398, p= .3148	0.1
	TUR-GER	0.485(1.219)	0.231(0.499)	t(64.947)= 1.3591, p= .08941	0.27
	ENG	0.51(0.12)	0.18(0.06)	t(10.58)=0.89, p=.19	0.44
not-target like	GER	0.132(0.328)	0.076(0.273)	t(94.881)= 0.93305, p= .1766	0.19
	RUS-GER	0.088(0.392)	0.091(0.278)	t(88.325)= -0.050055, p= .5199	0.01
	TUR-GER	0.172(0.488)	0.112(0.355)	t(78.309)= 0.9218, p= .1797	0.17

---

ENG	0(0)	0(0)	0(0)	0
-----	------	------	------	---

---

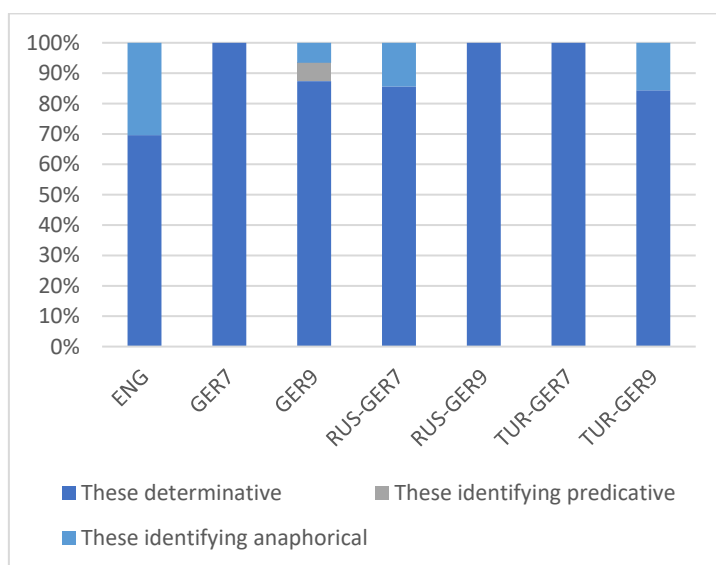
### 5.1.3 These

In this section, the demonstrative pronoun *these* is presented. Therefore, Table 68 presents the mean values of *these* and its categories.

**Table 68: Mean values of the demonstrative pronoun *these* and its categories**

Language group	Age	Determinative	Ident. predicative	Ident. anaphorical
ENG		0.19	0.00	0.08
GER	12	0.24	0.00	0.00
GER	16	0.15	0.01	0.01
RUS-GER	12	0.14	0.00	0.02
RUS-GER	16	0.28	0.00	0.00
TUR-GER	12	0.13	0.00	0.00
TUR-GER	16	0.19	0.00	0.04
Total		0.19	0.00	0.02

The highest number of pronouns in the determinative category is reached by the bilingual Russian-German students of grade nine. The English native speakers show similar results than the bilingual Turkish-German group of grade nine. The identifying predicative category is almost not used, only by a small number of German monolinguals aged 16. The last category namely the identifying anaphorical is also used less frequently than the determinative category, but mostly by the English native speakers followed by the bilingual older cohorts.



**Figure 65: *these* and its categories (proportional)**

In Figure 65, the mean values of *these* in its categories are illustrated. It is striking that the pronoun *these* is mostly used by the older bilingual students and the younger German monolingual students. As we have previously seen, the most frequently used category is the determinative one. Although English native speakers consist of a smaller sample than the other language groups, there are only few differences between all language groups.

#### Formal correctness

In Figure 66, the formal correctness for the pronoun *these* is presented. Since there are only two boxes observable in this plot, this pronoun rarely occurs in the written texts. Also, for most language groups the *target like* and *non-target like* use is only presented by outliers. Expectably, the English natives show a high performance by using this pronoun only *target like*. Compared with the other language groups, the younger cohort of German monolinguals used *these* more frequently *target like*. Although we mostly find outliers instead of boxes in this plot, it is striking that this pronoun is mostly used *target like*.

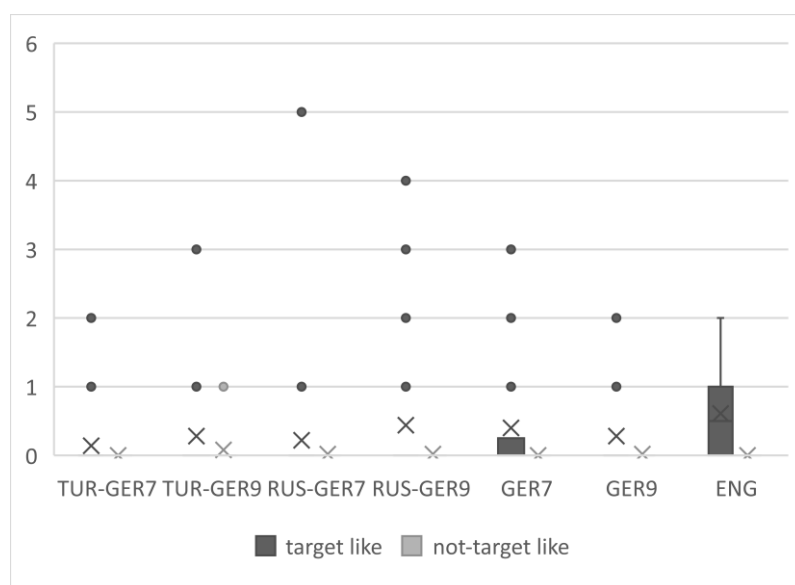


Figure 66: Formal correctness of the pronoun *these* (boxplot)

In Figure 67, we focus on the category the students used mostly, namely the determinative one. All language groups produced *these* in the determinative function, mostly the bilingual Russian-German group followed by German monolinguals aged 12 and bilingual Turkish-German students aged 16. As expected, the English native speakers used *these* with the right agreement, context agreement and formally correct.

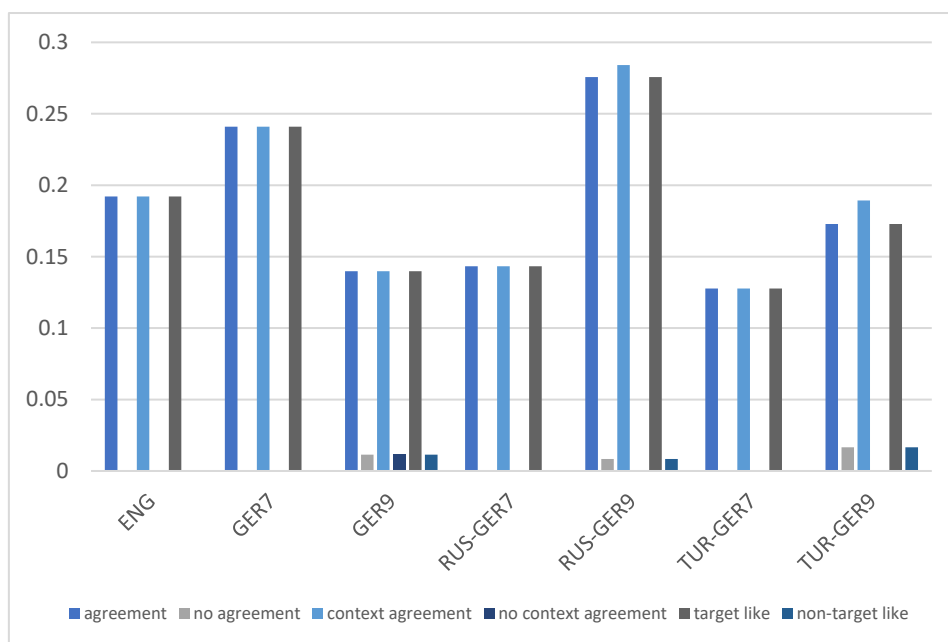


Figure 67: The determinative use of *these* (mean values)

Surprisingly, the same outcome is observable in the other younger cohorts of the monolingual and bilingual groups, whereas in the older cohorts, there are small numbers of the wrong *agreement*, *context agreement* as well as *non-target like* hits. In addition, in the monolingual German groups a decrease from grade seven to grade nine is observable. Compared with the monolinguals, the bilingual groups show the opposite behaviour.

Next, we tested whether there are statistical differences between the age groups. In Table 69, the results of the mean values, the t-tests and Cohen's d are presented for the determinative category. As we can see, no values reach a statistical significance. Hence,

Table 69: Mean values of the determinative category of *these*, the standard deviation in parenthesis, t-tests, and Cohen's d

These determinative		Age 12/20	Age 16/40	t-test	dCohen
agreement	GER	0.241(0.510)	0.14(0.348)	t(86.521)= 1.1579, p= .1251	0.23
	RUS-GER	0.143(0.518)	0.276(0.615)	t(95.248)= -1.1656, p= .8767	0.23
	TUR-GER	0.128(0.404)	0.173(0.447)	t(97.037)= -0.52892, p= .701	0.11
	ENG	0.17(0.31)	0.26(0.27)	t(13.66)= -0.66, p= .74	0.33
no agreement	GER	0(0)	0.011(0.081)	t(49)= -1, p= .8389	0.2
	RUS-GER	0(0)	0.008(0.059)	t(49)= -1, p= .8389	0.2
	TUR-GER	0(0)	0.017(0.117)	t(49)= -1, p= .8389	0.2
	0(0)	0(0)	0(0)	0	0
context agreement	GER	0.241(0.51)	0.14(0.348)	t(86.521)= 1.1579, p= .1251	0.23
	RUS-GER	0.143(0.518)	0.284(0.614)	t(95.296)= -1.2407, p= .8911	0.25
	TUR-GER	0.128(0.404)	0.189(0.540)	t(90.845)= -0.64606, p= .7401	0.13
	ENG	0.17(0.31)	0.26(0.27)	t(13.66)= -0.66, p= .74	0.33

no context agreement	GER	0(0)	0.011(0.081)	t(49)= -1, p= .8389	0.2
	RUS-GER	0(0)	0(0)	0(0)	0
	TUR-GER	0(0)	0(0)	0(0)	0
	ENG	0(0)	0(0)	0(0)	0
target like	GER	0.241(0.51)	0.14(0.348)	t(86.521)= 1.1579, p= .1251	0.23
	RUS-GER	0.143(0.518)	0.276(0.615)	t(95.248)= -1.1656, p= .8767	0.23
	TUR-GER	0.128(0.404)	0.173(0.447)	t(97.037)= -0.52892, p= .701	0.11
	ENG	0.17(0.31)	0.26(0.27)	t(13.66)=-0,66, p=.74	0.33
not-target like	GER	0(0)	0.011(0.081)	t(49)= -1, p= .8389	0.2
	RUS-GER	0(0)	0.008(0.059)	t(49)= -1, p= .8389	0.2
	TUR-GER	0(0)	0.017(0.117)	t(49)= -1, p= .8389	0.2
	ENG	0(0)	0(0)	0(0)	0

there are no relevant differences between the ages 12 and 16. As we have seen in Table 68 and Figure 65, the second category of *these* as an identifying predicative is rarely used by all language groups. Hence, we only find the German monolinguals in grade nine to use this category with the *right agreement*, *context agreement* and the pronoun is used *target-like*. Due to this result, it is not necessary to illustrate it.

Since in this category most of the subcategories consist of values of zero, Table 70 only illustrates the subcategories that have values other than zero which can only be found in the German monolinguals. However, these values do not reach a statistical significance below the threshold of 0.05. Hence, again there is no difference between the younger and the older cohort.

**Table 70: Mean values of the identifying predicative category of ‘these’, the standard deviation in parenthesis, t-tests, and Cohen's d**

These Ident. predicative	Age 12/20	Age 16/40	t-test	dCohen	
agreement	GER	0(0)	0.0104 (0.074)	t(49)= -1, p= .8389	0.2
	RUS-GER	0(0)	0(0)	0(0)	0
	TUR-GER	0(0)	0(0)	0(0)	0
	ENG	0(0)	0(0)	0(0)	0
context agreement	GER	0(0)	0.0104 (0.074)	t(49)= -1, p= .8389	0.2
	RUS-GER	0(0)	0(0)	0(0)	0
	TUR-GER	0(0)	0(0)	0(0)	0
	ENG	0(0)	0(0)	0(0)	0
target like	GER	0(0)	0.0104 (0.074)	t(49)= -1, p= .8389	0.2
	RUS-GER	0(0)	0(0)	0(0)	0
	TUR-GER	0(0)	0(0)	0(0)	0
	ENG	0(0)	0(0)	0(0)	0

The last category is presented in Figure 68. It shows the proportions for *these* as an anaphorical identifier. It is noteworthy that the number of occurred pronouns here varies

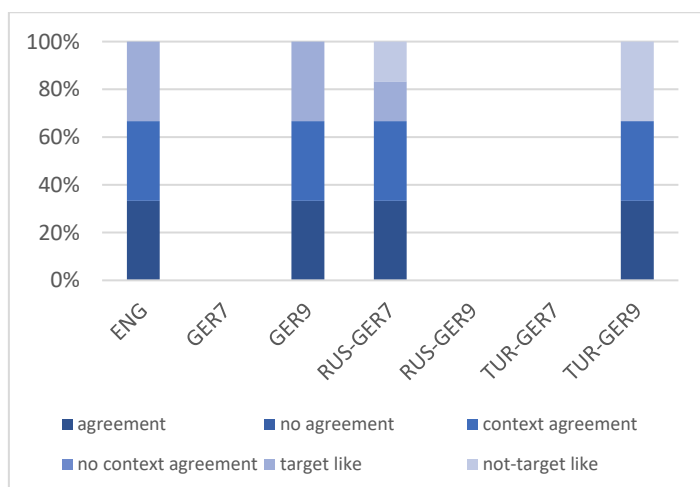


Figure 68: The identifying anaphorical category of *these* (proportions)

from two to three. Nevertheless, the English native speakers as well as the older cohort of German monolinguals used the plural form *these* in an anaphorical sense correctly. On the contrary, the two bilingual groups did not, instead, the younger bilingual Russian-German students produced more than half of the pronouns *non-target like*. In the bilingual Turkish-German group of grade nine even all pronouns are not used *target like*. Furthermore, we tested whether there is a correlation between the age groups with t-tests that are presented in Table 71. Again, no statistical difference between the younger and older cohorts reaches a statistically significant value with  $p < 0.05$ .

Table 71: Mean values of the identifying anaphorical category of *these*, the standard deviation in parenthesis, t-tests, and Cohen's d

These ident. anaphorical		Grade 7	Grade 9	t-test	dCohen
agreement	GER	0(0)	0.011(0.081)	t(49)= -1, p= .8389	0.2
	RUS-GER	0.024(0.122)	0(0)	t(49)= 1.3901, p= .08539	0.28
	TUR-GER	0(0)	0.035(0.142)	t(49)= -1.7391, p= .9559	0.35
	ENG	0.03(0.09)	0.16(0.32)		
no agreement	GER	0(0)	0(0)	0(0)	0
	RUS-GER	0(0)	0(0)	0(0)	0
	TUR-GER	0(0)	0(0)	0(0)	0
	ENG	0(0)	0(0)	0(0)	0
context agreement	GER	0(0)	0.011(0.081)	t(49)= -1, p= .8389	0.2
	RUS-GER	0.024(0.122)	0(0)	t(49)= 1.3901, p= .08539	0.28
	TUR-GER	0(0)	0.035(0.142)	t(49)= -1.7391, p= .9559	0.35
	ENG	0.03(0.09)	0.16(0.32)		
no context agreement	GER	0(0)	0(0)	0(0)	0

	RUS-GER	0(0)	0(0)	0(0)	0
	TUR-GER	0(0)	0(0)	0(0)	0
	ENG	0(0)	0(0)	0(0)	0
target like	GER	0(0)	0.011(0.081)	t(49)= -1, p= .8389	0.2
	RUS-GER	0.009(0.065)	0(0)	t(49)= 1, p= .1611	0.2
	TUR-GER	0(0)	0(0)	0(0)	0
	ENG	0.03(0.09)	0.16(0.32)		
not-target like	GER	0(0)	0(0)	0(0)	0
	RUS-GER	0.0148(0.105)	0(0)	t(49)= 1, p= .1611	0.2
	TUR-GER	0(0)	0.035(0.142)	t(49)= -1.7391, p= .9559	0.35
	ENG	0(0)	0(0)	0(0)	0

### 5.1.4 Those

The last pronoun presented in this case study is the plural form *those*. As we can see in Table 72, it is rarely used. In the determinative function, the pronoun *those* is mostly used by the bilingual Turkish-Germans and the English native speakers. In contrast, no language group used the identifying predicative function. Again, the pronoun *those* as an anaphora is only produced by the older bilingual cohorts and the English native speakers. Furthermore, the German monolingual groups did not produce any pronoun of this plural form.

**Table 72: Mean values of the pronoun *those* and its categories**

Language group	Determinative	Ident. predicative	Ident. anaphorical
ENG	0.03	0.00	0.01
GER7	0.00	0.00	0.00
GER9	0.00	0.00	0.00
RUS-GER7	0.00	0.00	0.00
RUS-GER9	0.01	0.00	0.01
TUR-GER7	0.01	0.00	0.00
TUR-GER9	0.05	0.00	0.02
Total	0.1	0.00	0.04

In Figure 69, the results in mean values are illustrated. The highest number of the plural form *those* is reached by the older cohort of bilingual Turkish-German students followed by the bilingual Russian-Germans of grade nine. However, the results are not surprising, since the picture sequence show more products and things that are in the focus and close to the viewer. Hence, the singular forms are more natural to use in these situations.



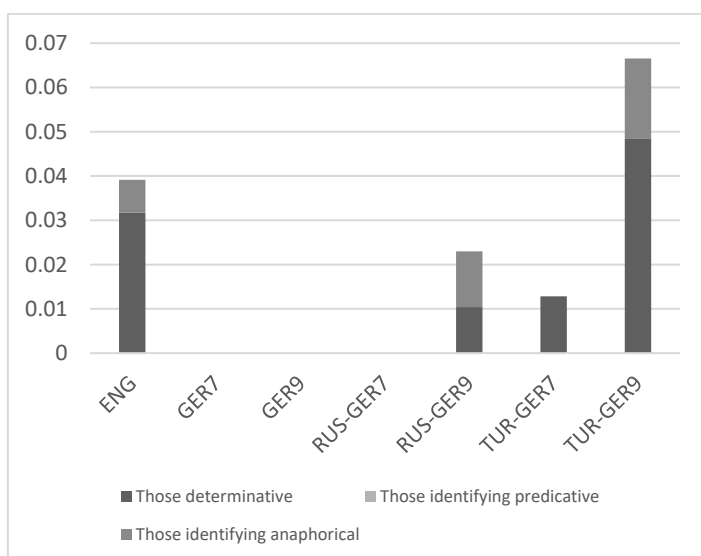


Figure 69: *those* in its three categories (mean values)

### Formal correctness

Figure 70 presents the formal correctness of the plural pronoun *those*. As before, the English native speakers show a high performance, because they only use this pronoun

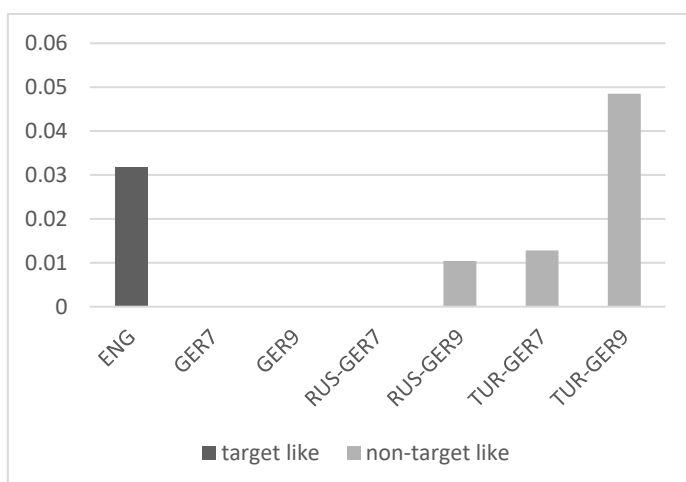


Figure 70: Formal correctness of the pronoun *those*

correct. Instead, both age groups of the bilingual Turkish-German's show a low performance by using only incorrect pronouns, which is increasing with increasing age. In the bilingual Russian group at the age of sixteen, one correct and one incorrect form occurred. Hence, an overall low frequency of the pronoun *those* is observable in this plot. In Figure 71, the determinative category is illustrated. As for the other demonstrative pronouns, the English native speakers use *those* with the right *agreement*, *context agreement* and *target like*. Compared with them, the bilinguals show another picture. The antecedent and the demonstrative pronoun of both older bilingual cohorts agree in general

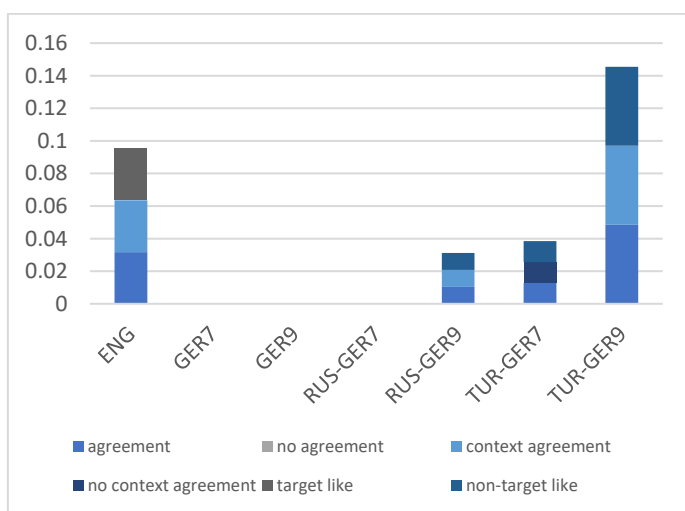


Figure 71: The determinative category of *those*

and in the context, but they are not used *target-like*, whereas the younger Turkish-German students do neither show *context agreement* nor a *target like* use. What is noteworthy is that a learning effect from grade seven to nine in the bilingual Turkish-German group could explain why the students in grade nine could make the right *context agreement* which they did not at a younger age.

Table 73: Mean values of the determinative category of *those*, the standard deviation in parenthesis, t-tests, and Cohen's d

Those determinative		Grade 7	Grade 9	t-test	dCohen
agreement	GER	0(0)	0(0)	0(0)	0
	RUS-GER	0(0)	0.01(0.074)	t(49)= -1, p= .8389	0.2
	TUR-GER	0.013(0.091)	0.049(0.229)	t(64.038)= -1.026, p= .8456	0.21
	ENG	0(0)	0.07(0.20)	t(7)=-1, p=.82	0.5
no agreement	GER	0(0)	0(0)	0(0)	0
	RUS-GER	0(0)	0(0)	0(0)	0
	TUR-GER	0(0)	0(0)	0(0)	0
	ENG	0(0)	0(0)	0(0)	0
context agreement	GER	0(0)	0(0)	0(0)	0
	RUS-GER	0(0)	0.01(0.074)	t(49)= -1, p= .8389	0.2
	TUR-GER	0(0)	0.049(0.229)	t(49)= -1.5002, p= .93	0.3
	ENG	0(0)	0.07(0.20)	t(7)=-1, p=.82	0.5
no context agreement	GER	0(0)	0(0)	0(0)	0
	RUS-GER	0(0)	0(0)	0(0)	0
	TUR-GER	0.013(0.091)	0(0)	t(49)= 1, p= .1611	0.2
	ENG	0(0)	0(0)	0(0)	0
target like	GER	0(0)	0(0)	0(0)	0
	RUS-GER	0(0)	0(0)	0(0)	0
	TUR-GER	0(0)	0(0)	0(0)	0
	ENG	0(0)	0.07(0.20)	t(7)=-1, p=.82	0.5

not-target like	GER	0(0)	0(0)	0(0)	0(0)
	RUS-GER	0(0)	0.01(0.074)	t(49)= -1, p= .8389	0.2
	TUR-GER	0.013(0.091)	0.049(0.229)	t(64.038)= -1.026, p= .8456	0.21
	ENG	0(0)	0(0)	0(0)	0

As we have seen for the first plural form *those*, the results for the t-tests of *those* in Table 73 show a similar picture. Thus, we do not find a correlation between the age groups, since no values reach a statistically significant threshold.

Next, the demonstrative pronoun *those* as an anaphora is presented in Figure 72. It is striking that only the older bilingual students and the English native speakers produced sentences with an anaphorical function of *those*.

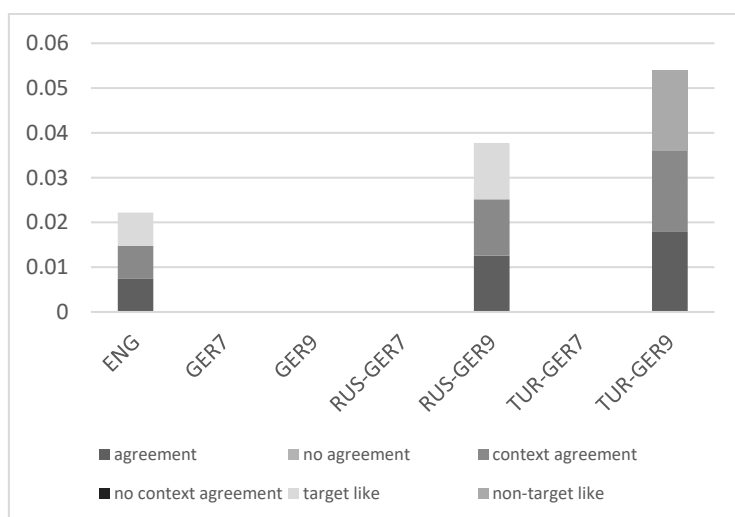


Figure 72: *those* as identifying anaphora

Compared with the bilingual Turkish-German students who are 16 years old, their Russian-German peers and the English native speakers used *those target like* in an identifying anaphorical function. The highest value is reached by the Turkish-German students in grade nine.

In Table 74, the results for the t-tests regarding the identifying anaphorical category of *those* are illustrated. Like for all plural demonstrative forms of *these* and *those*, a correlation between the younger and older cohorts could not be proven, because no value was below 0.05.

Table 74: Mean values of the identifying anaphorical category of *those*, the standard deviation in parenthesis, t-tests, and Cohen's d

Those Ident. anaphorical		Grade 7	Grade 9	t-test	dCohen
agreement	GER	0(0)	0(0)	0(0)	0

## Data analysis – English learner corpus

	RUS-GER	0(0)	0.0126(0.089)	t(49)= -1, p= .8389	0.2
	TUR-GER	0(0)	0.018(0.127)	t(49)= -1, p= .8389	0.2
	ENG	0.02(	0(0)	t(7)=1, p=.18	0.5
no agreement	GER	0(0)	0(0)	0(0)	0
	RUS-GER	0(0)	0(0)	0(0)	0
	TUR-GER	0(0)	0(0)	0(0)	0
	ENG	0(0)	0(0)	0(0)	0
context agreement	GER	0(0)	0(0)	0(0)	0(0)
	RUS-GER	0(0)	0.0126(0.089)	t(49)= -1, p= .8389	0.2
	TUR-GER	0(0)	0.018(0.127)	t(49)= -1, p= .8389	0.2
	ENG	0.02(	0(0)	t(7)=1, p=.18	0.5
no context agreement	GER	0(0)	0(0)	0(0)	0
	RUS-GER	0(0)	0(0)	0(0)	0
	TUR-GER	0(0)	0(0)	0(0)	0
	ENG	0(0)	0(0)	0(0)	0
target like	GER	0(0)	0(0)	0(0)	0(0)
	RUS-GER	0(0)	0.0126(0.089)	t(49)= -1, p= .8389	0.2
	TUR-GER	0(0)	0(0)	0(0)	0
	ENG	0.02(	0(0)	t(7)=1, p=.18	0.5
not-target like	GER	0(0)	0(0)	0(0)	0(0)
	RUS-GER	0(0)	0(0)	0(0)	0(0)
	TUR-GER	0(0)	0.018(0.127)	t(49)= -1, p= .8389	0.2
	ENG	0(0)	0(0)	0(0)	0

### *Multiple regression models combined with ANOVAs*

Since language is “one of the most complex phenomena resulting from human evolution” (Gries 2021:235), a model that includes various aspects of language is needed. Therefore, two models are combined. First, independent one-way ANOVAs (Analysis of Variance) will be used. In contrast to t-tests, ANOVAs are “not limited to two groups only” (Levshina 2015: 172). According to Levshina (2015: 171), this analysis is “a special case of linear regression with binary or categorical independent variables”. In addition, Gries (2021: 239) states that if “predictors can be categorical with 3 or more levels, and with just one such predictor, this kind of linear model amounts to what is traditionally called a one-way ANOVA”. In this study, there are predictors with more than three levels, that is, for example *language with siblings/father/mother* or *number of books*. Second, a multiple linear regression model “allows one to estimate the effect of each individual independent variable in your model while controlling for the other independent variables” (Levshina 2015: 141). In a last step, a post hoc test is used, namely the Tukey Honest Significant

Differences test (Tukey HSD test). According to Levshina (2015: 179), it “requires an `aov`<sup>25</sup> object. The function returns the adjusted ‘honest’ p-values.[...] The test is quite robust to violations of the normality assumption”. Two conditions need to be fulfilled: “homogeneous variances and independence of observations (Levshina 2015: 180). To perform a Tukey HSD test, it is necessary to first run a linear regression model and then fit an ANOVA on this data. In the following, different ANOVAs, multiple regression models and Tukey HSD tests are performed to find out whether the background variables influence the underlying dependent variable. Note that the result of the Tukey HSD tests is only reported when they reach statistical significance.

In Table 75, the first one-way ANOVA was performed to compare the effect of several background variables such as the heritage languages, the social economic status of the father, the school type, the English grade, the motivation, and the number of books on *the use of demonstratives*. It revealed that there is a statistically significant difference in English grades [ $F(1, 1)=5.23, p=.023$ ] and the motivation *English is useful* [ $F(1, 6)=5.35, p=.022$ ] on demonstratives. Hence, students with good grades in English and a high motivation to learn English use more demonstratives. In Table 76, the first multiple regression model was performed by using the same variables as in the first ANOVA. In addition to the mentioned two statistically significant predictors for the use of demonstratives, being a bilingual Turkish-German student in grade 7 reveals to a higher use of demonstratives compared to monolingual Germans in grade 7. This variable was almost significant in the first ANOVA. However, the three predictors explain only 7 % of the variance ( $R^2=.07, p=.04$ ).

**Table 75: Analysis of Variance 1: The use of demonstratives versus background variables (heritage languages, socio-economic status of the father, school type, English grade, the motivation, number of books):**

Analysis of Variance Table						
Response: Demonstratives						
	Df	Sum Sq	Mean Sq	F value	Pr(>F)	
HL	5	15.520	3.1040	2.1684	0.06109	.
SES_father	1	0.485	0.4849	0.3387	0.56152	
School_type	1	0.752	0.7522	0.5254	0.46976	
<b>English_grade</b>	<b>1</b>	<b>7.499</b>	<b>7.4994</b>	<b>5.2389</b>	<b>0.02361</b>	<b>*</b>
<b>English_is_useful</b>	<b>1</b>	<b>7.668</b>	<b>7.6682</b>	<b>5.3569</b>	<b>0.02212</b>	<b>*</b>
No_of_books	6	6.608	1.1013	0.7694	0.59526	
Residuals	138	197.544	1.4315			
---						
Signif. codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1						

<sup>25</sup> In order to perform an ANOVA, an `aov()` object is traditionally used (Levshina 2015: 178). In this study, a second option is used, namely an `anova()` output.

**Table 76: Linear Model 1: The use of demonstratives versus background variables (heritage languages (reference level: GER7), socio-economic status of the father of bilinguals (numeric), school type (reference level: Gymnasium), English grade (numeric), English is boring (numeric), number of books (reference level: 0-10)):**

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	-2.117162	1.153873	-1.835	0.06868 .
HLGER9	0.015394	0.306041	0.050	0.95996
HLRUS-GER7	0.029700	0.397347	0.075	0.94053
HLRUS-GER9	-0.589329	0.403540	-1.460	0.14645
<b>HLTUR-GER7</b>	<b>0.824404</b>	<b>0.380145</b>	<b>2.169</b>	<b>0.03182 *</b>
HLTUR-GER9	-0.075052	0.393013	-0.191	0.84883
SES_father	0.002799	0.005683	0.493	0.62315
School_typeOther	-0.182911	0.233879	-0.782	0.43551
<b>English_grade</b>	<b>0.325081</b>	<b>0.119019</b>	<b>2.731</b>	<b>0.00713 **</b>
<b>English_is_useful1</b>	<b>1.477622</b>	<b>0.646077</b>	<b>2.287</b>	<b>0.02371 *</b>
No_of_books11_25	1.206298	0.779660	1.547	0.12410
No_of_books26_100	1.103154	0.737439	1.496	0.13696
No_of_books101_200	1.063645	0.746807	1.424	0.15663
No_of_books201_500	1.439397	0.767778	1.875	0.06294 .
No_of_books500+	1.092223	0.801515	1.363	0.17520
No_of_booksNA	0.945455	1.138155	0.831	0.40758

---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Multiple R-squared: 0.1632  
 F-statistic: 1.795 on 15 and 138 DF, p-value: 0.04107

In Table 77, the second ANOVA compared the effect of the background variables heritage languages, the highest socio-economic status (HISEI), English grade, age of onset of learning the heritage language, the motivation, and the language with siblings on *the use of demonstratives*. This ANOVA reveals a significant effect of the *heritage language* [F(3, 1)= 3.51, p=.018], the *English grade* [F(1,5)= 6.83, p=.01] and the motivation *English is useful* [F(1,5)=5.87, p=.017] on the use of demonstratives. In Table 78, the second multiple regression model was performed. The results show that being a Turkish bilingual in grade 7 leads to a higher use of demonstratives compared to Russian bilinguals of the same age group. Again, good grades in English and a high motivation to learn this language led to an increasing use of demonstratives. For bilinguals, the age of onset of learning the heritage language between the ages six and nine decreases the use of demonstratives. Also, when bilinguals mostly speak the heritage language with their

**Table 77: Analysis of Variance 2: The use of demonstratives versus background variables (heritage languages, highest socio-economic, school type, English grade, Age of onset of learning the heritage language, the motivation, language with siblings):**

Analysis of Variance Table						
Response: Demonstratives						
	Df	Sum Sq	Mean Sq	F value	Pr(>F)	
HL	3	<b>13.898</b>	<b>4.6325</b>	<b>3.5178</b>	<b>0.01891 *</b>	
HISEI	1	0.002	0.0025	0.0019	0.96545	
<b>English_grade</b>	<b>1</b>	<b>8.998</b>	<b>8.9975</b>	<b>6.8324</b>	<b>0.01074 *</b>	
Age_of_onset_hs	5	14.740	2.9480	2.2386	0.05862 .	
<b>English_is_useful</b>	<b>1</b>	<b>7.738</b>	<b>7.7385</b>	<b>5.8763</b>	<b>0.01766 *</b>	
Language_with_siblings	5	9.474	1.8948	1.4389	0.21975	
Residuals	78	102.717	1.3169			

---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

**Table 78: Linear Model 2: The use of demonstratives versus background variables (heritage language (reference level: RUS-GER7), highest socio-economic status (numeric), English grade (numeric), age of onset of learning the heritage language (reference level: until 2), English is useful (numeric), language with siblings (reference level: German)):**

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	-1.7720035	0.9446837	-1.876	0.06443 .
HLRUS-GER9	-0.0037730	0.3607157	-0.010	0.99168 .
<b>HLTUR-GER7</b>	<b>0.9871131</b>	<b>0.3769779</b>	<b>2.618</b>	<b>0.01061 *</b>
HLTUR-GER9	0.1036824	0.3825013	0.271	0.78706 .
HISEI	0.0002267	0.0073224	0.031	0.97538 .
<b>English_grade</b>	<b>0.5166106</b>	<b>0.1513902</b>	<b>3.412</b>	<b>0.00102 **</b>
Age_of_onset_hsbetween_3_5	0.5786870	0.4465461	1.296	0.19883 .
<b>Age_of_onset_hsbetween_6_9</b>	<b>-1.3191733</b>	<b>0.6369608</b>	<b>-2.071</b>	<b>0.04166 *</b>
Age_of_onset_hsbetween_10_15	0.5886138	0.7945970	0.741	0.46106 .
Age_of_onset_hsoldier_than_15	-1.9513210	1.2035453	-1.621	0.10899 .
Age_of_onset_hsNA	-0.7527001	0.6190782	-1.216	0.22771 .
<b>English_is_useful1</b>	<b>1.6536103</b>	<b>0.6777917</b>	<b>2.440</b>	<b>0.01697 *</b>
Language_with_siblingsmore_German	0.4425906	0.9791622	0.452	0.65252 .
Language_with_siblingsmostly_German	0.0159655	0.3245163	0.049	0.96089 .
Language_with_siblingsHL	0.4889988	0.7188910	0.680	0.49838 .
<b>Language_with_siblingsmostly_HL</b>	<b>1.7866910</b>	<b>0.8772509</b>	<b>2.037</b>	<b>0.04507 *</b>
Language_with_siblingsboth	-0.4235427	0.3757603	-1.127	0.26313 .

---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Multiple R-squared: 0.3481  
 F-statistic: 2.603 on 16 and 78 DF, p-value: 0.002706

siblings, they use more demonstratives. The predictor variables explain 34% of the variance ( $R^2=0.34$ ,  $p=.0027$ ). The age of onset of the heritage language between the ages six to nine and between the ages three to five are significantly different at the 95 percent confidence level, according to the Tukey HSD test ( $p=.04$ ).

To compare the effects of the background variables heritage languages, HISEI, the school type, the English grade, the motivation and the number of books on the *target like use of demonstratives*, ANOVA Model 3 was performed, presented in Table 79. There is a statistically significant effect of the motivation *English is useful* [ $F(1,6)=5.33$ ,  $p=.02$ ] on the correct use of demonstratives. The summary of the multiple regression model of this comparison is presented in Table 80 [ $R^2=.05$ ,  $p=.048$ ]. As before, the two variables *English grade* and *English is useful* lead to an increase of target like demonstratives. In addition, possessing between 201 and 500 books increases a correct use of demonstratives.

**Table 79: Analysis of Variance 3: The use of demonstratives target like versus background variables (heritage languages, highest socio-economic, school type, English grade, motivation, number of books):**

Analysis of Variance Table					
Response: Dem_t1	Df	Sum Sq	Mean Sq	F value	Pr(>F)
HL	5	5.281	1.0562	1.1297	0.34684 .
HISEI	1	0.624	0.6241	0.6676	0.41513 .
School_type	1	2.611	2.6105	2.7921	0.09670 .
English_grade	1	2.169	2.1692	2.3201	0.12970 .
<b>English_is_useful</b>	<b>1</b>	<b>4.985</b>	<b>4.9848</b>	<b>5.3316</b>	<b>0.02223 *</b>
No_of_books	6	8.738	1.4563	1.5576	0.16294 .
Residuals	159	148.658	0.9350		

---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

**Table 80: Linear Model 3: The use of demonstratives target like versus background variables (heritage language (reference level: GER7), highest socio-economic status (numeric), school type (reference level: Gymnasium), English grade (numeric), English is useful (numeric), number of books (reference level: 0-10)):**

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	-1.363270	0.785430	-1.736	0.0846 .
HLGER9	0.428427	0.238422	1.797	0.0742 .
HLRUS-GER7	0.449911	0.291656	1.543	0.1249 .
HLRUS-GER9	-0.047725	0.271291	-0.176	0.8606
HLTUR-GER7	0.469645	0.288738	1.627	0.1058
HLTUR-GER9	0.137001	0.300725	0.456	0.6493
HISEI	-0.001721	0.004686	-0.367	0.7139
School_typeother	-0.320645	0.175598	-1.826	0.0697 .
<b>English_grade</b>	<b>0.189279</b>	<b>0.089192</b>	<b>2.122</b>	<b>0.0354 *</b>
<b>English_is_useful1</b>	<b>0.984673</b>	<b>0.419101</b>	<b>2.349</b>	<b>0.0200 *</b>
No_of_books11_25	0.779452	0.557919	1.397	0.1643
No_of_books26_100	0.837935	0.528594	1.585	0.1149
No_of_books101_200	0.664691	0.537017	1.238	0.2176
<b>No_of_books201_500</b>	<b>1.283625</b>	<b>0.557040</b>	<b>2.304</b>	<b>0.0225 *</b>
No_of_books500+	1.084181	0.590292	1.837	0.0681 .
No_of_booksNA	0.948971	0.878773	1.080	0.2818

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Multiple R-squared: 0.141  
F-statistic: 1.74 on 15 and 159 DF, p-value: 0.04811

The next ANOVA Model 4 was performed to compare the effect of the heritage languages, the school type, the German and English grade, HISEI and the motivation on the *non-target like use of demonstrative*. Model 4 reveals that the heritage language has a statistically significant difference in the heritage languages between at least two groups [F(5,1)=5.3, p=.00015]. Linear Model 4 confirms differences between the language groups. Compared with the younger monolingual Germans, the older group performed better, because they used less non-target like demonstratives. For the younger group of Turkish bilinguals, a lower performance was found compared to their monolingual German counterparts. Surprisingly, a good English grade leads to an increasing use of non-target like demonstratives. This model explains 18% of the variance ( $R^2=.18$ , p=.0004).

**Table 81: Analysis of Variance 4: The use of demonstratives non-target like versus background variables (heritage languages, school type, German/English grade, highest socio-economic, motivation):**

Analysis of Variance Table					
Response: Dem_nt1	Df	Sum Sq	Mean Sq	F value	Pr(>F)
HL	5	11.770	2.35397	5.3046	0.0001525 ***
School_type	1	0.393	0.39254	0.8846	0.3483464
German_grade	1	0.033	0.03335	0.0752	0.7843140
English_grade	1	1.264	1.26379	2.8479	0.0934054 .
HISEI	1	0.399	0.39911	0.8994	0.3443509
English_is_boring	2	2.097	1.04837	2.3625	0.0974062 .
Residuals	163	72.333	0.44376		

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1



**Table 82: Linear Model 4: The use of demonstratives non-target like versus background variables (heritage language (reference level: GER7), school type (reference level: Gymnasium), German/English grade (numeric), highest socio-economic status (numeric), English is boring (numeric)):**

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	0.125345	0.308235	0.407	0.6848
<b>HLGER9</b>	<b>-0.461981</b>	<b>0.159112</b>	<b>-2.903</b>	<b>0.0042 **</b>
HLRUS-GER7	-0.239816	0.195281	-1.228	0.2212
HLRUS-GER9	-0.235340	0.185443	-1.269	0.2062
<b>HLTUR-GER7</b>	<b>0.444666</b>	<b>0.192833</b>	<b>2.306</b>	<b>0.0224 *</b>
HLTUR-GER9	0.018738	0.197556	0.095	0.9246
School_typeOther	0.162537	0.123815	1.313	0.1911
German_grade	-0.054197	0.079378	-0.683	0.4957
<b>English_grade</b>	<b>0.143920</b>	<b>0.069461</b>	<b>2.072</b>	<b>0.0398 *</b>
HISEI	0.002665	0.002983	0.893	0.3729
English_is_boring1	-0.230904	0.151454	-1.525	0.1293
English_is_boringNA	-1.103061	0.692889	-1.592	0.1133

---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Multiple R-squared: 0.1807

F-statistic: 3.269 on 11 and 163 DF, p-value: 0.0004588

In addition, there was a statistical difference between Turkish bilinguals in grade 7 and English monolinguals at the 95 percent confidence level, according to the Tukey HSD test ( $p=.008$ ) as well as between Turkish bilinguals in grade 7 and German monolinguals in grade 9 ( $p=.02$ ).

Table 83 shows the results for the fifth ANOVA which compares the effects of the heritage languages, the school type, the English grade, HISEI, the motivation and the number of books on the use of the demonstrative pronoun *this*. As previously seen, the variables *heritage language* [ $F(5,1)=4.11$ ,  $p=.001$ ], *English grade* [ $F(1,1)=4.15$ ,  $p=.04$ ] and the motivation *English is boring* [ $F(2,6)=3.12$ ,  $p=.04$ ] affect the use of *this*. In Table 84, the results of the multiple regression reveal that Turkish bilinguals in grade 7 use significantly more *this* than German monolinguals in the same grade. Furthermore, a better grade in English increases the use of the pronoun *this*. However, this model explains 20% of the variation. Note that most of the multiple  $R^2$ s may be so low, because a considerable number of answers is missing.

**Table 83: Analysis of Variance 5: The use of *this* versus background variables (heritage languages, school type, English grade, highest socio-economic, motivation, number of books):**

Analysis of Variance Table						
Response: This						
	Df	Sum Sq	Mean Sq	F value	Pr(>F)	
<b>HL</b>	<b>5</b>	<b>9.599</b>	<b>1.91974</b>	<b>4.1191</b>	<b>0.001524</b>	<b>**</b>
School_type	1	0.772	0.77170	1.6558	0.200054	
<b>English_grade</b>	<b>1</b>	<b>1.937</b>	<b>1.93717</b>	<b>4.1565</b>	<b>0.043142</b>	<b>*</b>
HISEI	1	1.217	1.21650	2.6102	0.108173	
<b>English_is_boring</b>	<b>2</b>	<b>2.917</b>	<b>1.45854</b>	<b>3.1295</b>	<b>0.046462</b>	<b>*</b>
No_of_books	6	2.041	0.34017	0.7299	0.626193	
Residuals	158	73.637	0.46606			

---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

**Table 84: Linear Model 5: The use of *this* versus background variables (heritage language (reference level: GER7), school type (reference level: Gymnasium), English grade (numeric), highest socio-economic status (numeric), English is boring (numeric), number of books (reference level: 0-10)):**

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	-0.624217	0.457150	-1.365	0.1741
HLGER9	-0.326940	0.168528	-1.940	0.0542 .
HLRUS-GER7	-0.098976	0.207743	-0.476	0.6344
HLRUS-GER9	-0.326315	0.192053	-1.699	0.0913 .
<b>HLTUR-GER7</b>	<b>0.428679</b>	<b>0.205786</b>	<b>2.083</b>	<b>0.0389 *</b>
HLTUR-GER9	-0.256470	0.210600	-1.218	0.2251
School_typeOther	0.242757	0.126621	1.917	0.0570 .
<b>English_grade</b>	<b>0.161873</b>	<b>0.062863</b>	<b>2.575</b>	<b>0.0109 *</b>
HISEI	0.006113	0.003329	1.836	0.0682 .
English_is_boring1	-0.283215	0.160028	-1.770	0.0787 .
English_is_boringNA	-1.200980	0.709597	-1.692	0.0925 .
No_of_books11_25	0.415840	0.399929	1.040	0.3000
No_of_books26_100	0.560009	0.379179	1.477	0.1417
No_of_books101_200	0.451702	0.386568	1.168	0.2444
No_of_books201_500	0.374783	0.403192	0.930	0.3540
No_of_books500+	0.235508	0.426971	0.552	0.5820
No_of_booksNA	0.450315	0.629390	0.715	0.4754
---				
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1				
Multiple R-squared: 0.2006				
F-statistic: 2.479 on 16 and 158 DF, p-value: 0.002162				

The second analysis for the pronoun *this* is presented in Table 85. This ANOVA compares the same variables presented in ANOVA Model 5, but the motivation is different and additionally the variables age of onset learning the heritage language, language with father and siblings are included. It revealed that there is a statistically significant difference in the heritage languages between at least two groups [ $F(3,1)= 6.06, p=.001$ ]. The results of the Regression Model 6 are different from that of the ANOVA except for the variable heritage language. This may be because of interactions and the different levels of the factor variables. However, in Regression Model 6 the reference level is the bilingual Russian group in grade 7. So, being a Turkish bilingual in this grade leads to an increasing use of the pronoun *this*. As before, a good English grade has a positive effect on the use of *this*. Also, a high socio-economic status leads to a higher use of *this*, too.

**Table 85: Analysis of Variance 6: The use of *this* versus background variables (heritage languages, school type, English grade, highest socio-economic, motivation, language with father/siblings, number of books):**

Analysis of Variance Table						
Response: This						
	Df	Sum Sq	Mean Sq	F value	Pr(>F)	
<b>HL</b>	<b>3</b>	<b>8.1368</b>	<b>2.71225</b>	<b>6.0645</b>	<b>0.001038</b>	<b>**</b>
School_type	1	0.6523	0.65231	1.4585	0.231474	
English_grade	1	1.6274	1.62736	3.6387	0.060804	.
Age_of_onset_hs	5	2.5279	0.50557	1.1304	0.353096	
HISEI	1	1.1566	1.15662	2.5861	0.112576	
English_is_useful	1	0.5438	0.54381	1.2159	0.274168	
Language_with_father	5	2.9392	0.58785	1.3144	0.268780	
Language_with_siblings	5	4.5822	0.91644	2.0491	0.083069	.
No_of_books	6	3.1245	0.52075	1.1644	0.336067	
Residuals	66	29.5177	0.44724			
---						
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1						

**Table 86: Linear Model 6: The use of *this* versus background variables (heritage language (reference level: RUS-GER7), school type (reference level: Gymnasium), English grade (numeric), highest socio-economic status (numeric), English is useful (numeric), language with father/siblings (reference level: German), number of books (reference level: 0-10)):**

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	-2.380304	0.773973	-3.075	0.00306 **
HLRUS-GER9	0.079959	0.236453	0.338	0.73632
<b>HLTUR-GER7</b>	<b>0.873718</b>	<b>0.239387</b>	<b>3.650</b>	<b>0.00052 ***</b>
HLTUR-GER9	0.129246	0.244879	0.528	0.59941
School_typeOther	0.255299	0.164999	1.547	0.12658
<b>English_grade</b>	<b>0.307761</b>	<b>0.096309</b>	<b>3.196</b>	<b>0.00214 **</b>
Age_of_onset_hsbetween_3_5	-0.094725	0.273343	-0.347	0.73004
Age_of_onset_hsbetween_6_9	-0.456090	0.383591	-1.189	0.23870
Age_of_onset_hsbetween_10_15	0.532881	0.506484	1.052	0.29658
Age_of_onset_hsoldr_than_15	-0.489450	0.758837	-0.645	0.52116
Age_of_onset_hsNA	-0.132181	0.430391	-0.307	0.75972
<b>HISEI</b>	<b>0.009340</b>	<b>0.004629</b>	<b>2.018</b>	<b>0.04768 *</b>
English_is_usefull	0.574135	0.438687	1.309	0.19516
Language_with_fathermostly_German	-0.043087	0.341158	-0.126	0.89988
Language_with_fatherHL	0.687670	0.412397	1.667	0.10015
Language_with_fathermostly_HL	0.286259	0.350736	0.816	0.41734
Language_with_fatherboth	0.422879	0.341913	1.237	0.22054
Language_with_fatherNA	-0.216156	0.576486	-0.375	0.70890
Language_with_siblingsmore_German	0.629941	0.644603	0.977	0.33201
Language_with_siblingsmostly_German	-0.089768	0.212445	-0.423	0.67400
Language_with_siblingsHL	-0.264325	0.529184	-0.499	0.61909
Language_with_siblingsmostly_HL	0.533273	0.586050	0.910	0.36616
Language_with_siblingsboth	-0.527706	0.271016	-1.947	0.05577
No_of_books11_25	0.665915	0.471933	1.411	0.16293
No_of_books26_100	0.694320	0.461904	1.503	0.13757
No_of_books101_200	0.660051	0.444773	1.484	0.14256
No_of_books201_500	0.532904	0.503536	1.058	0.29377
No_of_books500+	-0.114081	0.609709	-0.187	0.85215
No_of_booksNA	0.281493	0.891820	0.316	0.75327

---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Multiple R-squared: 0.4614  
 F-statistic: 2.02 on 28 and 66 DF, p-value: 0.01015

Table 87 presents ANOVA 7 which compares the variable heritage language, HISEI and English and German grades on the use of *this as determiner*. The results show that there is a statistical significance for the *heritage languages* [ $F(5,1)=2.38$ ,  $p=.04$ ] and the *HISEI* [ $F(1,1)=5.68$ ,  $p=.01$ ]. The same results can be found in Table 88. Again, being a bilingual Turkish speaker in grade 7 leads to a higher use of *this a determiner* compared with German monolinguals in the same age group. Also, the HISEI is statistically significant and affects the use of determining *this* positively.

**Table 87: Analysis of Variance 7: The use of *this as determiner* versus background variables (heritage languages, highest socio-economic, English/German grade):**

Analysis of Variance Table					
Response: This_Det	Df	Sum Sq	Mean Sq	F value	Pr(>F)
<b>HL</b>	<b>5</b>	<b>1.9073</b>	<b>0.38145</b>	<b>2.3878</b>	<b>0.04019 *</b>
<b>HISEI</b>	<b>1</b>	<b>0.9081</b>	<b>0.90807</b>	<b>5.6843</b>	<b>0.01825 *</b>
English_grade	1	0.3137	0.31371	1.9637	0.16298
German_grade	1	0.1950	0.19503	1.2208	0.27079
Residuals	166	26.5189	0.15975		

---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

**Table 88: Linear Model 7: The use of *this as determiner* versus background variables (heritage language (reference level: GER7), highest socio-economic status (numeric), English/German grade (numeric)):**

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	-0.164239	0.179658	-0.914	0.36195
HLGER9	-0.102364	0.094183	-1.087	0.27867
HLRUS-GER7	0.001282	0.113233	0.011	0.99098
HLRUS-GER9	0.090695	0.108784	0.834	0.40564
<b>HLTUR-GER7</b>	<b>0.328923</b>	<b>0.113754</b>	<b>2.892</b>	<b>0.00435 **</b>
HLTUR-GER9	0.056760	0.118390	0.479	0.63226
<b>HISEI</b>	<b>0.004309</b>	<b>0.001737</b>	<b>2.480</b>	<b>0.01414 *</b>
English_grade	0.071889	0.040902	1.758	0.08066 .
German_grade	-0.051547	0.046653	-1.105	0.27079
---				
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1				
Multiple R-squared: 0.1114				
F-statistic: 2.601 on 8 and 166 DF, p-value: 0.01052				

To compare the effects of the background variables heritage languages, socio-economic status of the father, motivation, English and German grades, school type and family language on the use of *that*, the ANOVA Model 8 was performed. This model did not find a statistically significant difference. The same results are presented in Linear Model 8 in Table 90.

**Table 89: Analysis of Variance 8: The use of *that* versus background variables (heritage languages, socio-economic status of the father, motivation, English/German grade, school type, family language):**

Analysis of Variance Table					
Response: That					
	Df	Sum Sq	Mean Sq	F value	Pr(>F)
HL	5	6.632	1.32635	1.9080	0.09677 .
SES_father	1	2.007	2.00733	2.8875	0.09150 .
English_is_useful	1	1.018	1.01828	1.4648	0.22822
English_is_boring	2	1.223	0.61162	0.8798	0.41716
English_grade	1	2.097	2.09741	3.0171	0.08460 .
German_grade	1	1.573	1.57251	2.2621	0.13485
School_type	1	0.747	0.74720	1.0748	0.30165
Family_language	2	2.710	1.35516	1.9494	0.14623
Residuals	139	96.628	0.69517		
---					
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1					

**Table 90: Linear Model 8: The use of *that* versus background variables (heritage language (reference level: GER7), socio-economic status of the father (numeric), English is useful/boring (numeric), English/German grade (numeric), school type (reference level: Gymnasium), family language (reference level: German)):**

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	-1.042118	0.619743	-1.682	0.0949 .
HLGER9	0.372222	0.206641	1.801	0.0738 .
HLRUS-GER7	-0.015329	0.282873	-0.054	0.9569
HLRUS-GER9	-0.183615	0.298245	-0.616	0.5391
HLTUR-GER7	0.418842	0.273643	1.531	0.1281
HLTUR-GER9	0.093419	0.279469	0.334	0.7387
SES_father	0.005653	0.003848	1.469	0.1441
English_is_useful1	0.776605	0.447687	1.735	0.0850 .
English_is_boring1	0.304379	0.207520	1.467	0.1447
English_is_boringNA	0.049429	0.870782	0.057	0.9548
English_grade	0.057369	0.095652	0.600	0.5496
German_grade	0.160588	0.109237	1.470	0.1438
School_typeOther	-0.174272	0.167949	-1.038	0.3012
Family_languageHL	0.007154	0.196786	0.036	0.9711
Family_languageNA	0.320499	0.169081	1.896	0.0601 .
---				

Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Multiple R-squared: 0.1571

F-statistic: 1.85 on 14 and 139 DF, p-value: 0.03706

The next analysis focuses on the use of *that as subordinator*. In ANOVA Model 9 the effect of the background variables heritage languages, grade, socio-economic status of the father, school type and the motivation on the use of *that as subordinator* is compared. The model reveals that there are two statistically significant differences in the *heritage languages* [F(2,1)=3.89,p=.02] and the motivation *English is boring* [F(2,148)=3.75,p=.02]. Linear Model 9 in Table 92 show similar results. Bilingual Russian speakers show a lower performance when using *that as subordinator* than their German counterparts. Hence, the heritage language has a negative effect on the use of this category. Furthermore, students who did not find English boring use more *subordinating that*.

**Table 91: Analysis of Variance 9: The use of *that as subordinator* versus background variables (heritage languages, grade, socio-economic status of the father, school type, motivation):**

Analysis of Variance Table

Response: That\_sub

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
<b>HL</b>	2	<b>1.897</b>	<b>0.94851</b>	<b>3.8926</b>	<b>0.02251 *</b>
GRADE	1	0.101	0.10111	0.4149	0.52047
SES_father	1	0.627	0.62716	2.5738	0.11078
School_type	1	0.039	0.03886	0.1595	0.69022
English_is_useful	1	0.077	0.07708	0.3163	0.57468
<b>English_is_boring</b>	2	<b>1.831</b>	<b>0.91536</b>	<b>3.7565</b>	<b>0.02562 *</b>
Residuals	148	36.063	0.24367		

Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

**Table 92: Linear Model 9: The use of *that as subordinator* versus background variables (heritage language (reference level: GER), grade (reference level: 7), socio-economic status of the father (numeric), school type (reference level: Gymnasium), English is useful/boring (numeric)):**

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	-0.142767	0.281912	-0.506	0.61331
<b>HLRUS-GER</b>	<b>-0.248615</b>	<b>0.111653</b>	<b>-2.227</b>	<b>0.02748 *</b>
HLTUR-GER	-0.052986	0.106823	-0.496	0.62062
GRADE9	0.076356	0.081457	0.937	0.35009
SES_father	0.003282	0.002205	1.488	0.13875
School_typeOther	-0.002711	0.095893	-0.028	0.97749
English_is_useful1	0.245735	0.255786	0.961	0.33827
<b>English_is_boring1</b>	<b>0.321500</b>	<b>0.118133</b>	<b>2.722</b>	<b>0.00728 **</b>
English_is_boringNA	-0.105326	0.507271	-0.208	0.83580

Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Multiple R-squared: 0.1125

F-statistic: 2.345 on 8 and 148 DF, p-value: 0.02109

A second model for the use of *that as a subordinator* can be seen in ANOVA Model 10 and Linear Regression Model 10 in Table 93 and 94. The former compares the variables heritage languages, socio-economic status of the father, motivation, language with

siblings and number of books and their effects on *that as subordinator*. Both *English is boring* [ $F(2,5)=3.24, p=.04$ ] and *language with siblings* [ $F(5,6)=2.98, p=.017$ ] are significant predictors for the subordinating use of *that*. The results in the latter table are similar, although additionally the heritage language Turkish in grade 9 positively affects the use of *that as subordinator* compared with Russian bilinguals in grade 7. What is more, surprisingly a negative motivation increases the use of *that as subordinator*.

**Table 93: Analysis of Variance 10: The use of *that as subordinator* versus background variables (heritage languages, socio-economic status of the father, motivation, language with siblings, number of books):**

Analysis of Variance Table

Response: That\_sub

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
HL	3	0.4078	0.13594	1.1714	0.32764
SES_father	1	0.1723	0.17233	1.4849	0.22748
<b>English_is_boring</b>	<b>2</b>	<b>0.7540</b>	<b>0.37698</b>	<b>3.2483</b>	<b>0.04533 *</b>
<b>Language_with_siblings</b>	<b>5</b>	<b>1.7311</b>	<b>0.34623</b>	<b>2.9833</b>	<b>0.01753 *</b>
No_of_books	6	1.3475	0.22458	1.9352	0.08852 .
Residuals	64	7.4275	0.11605		

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

**Table 94: Linear Model 10: The use of *that as subordinator* versus background variables (heritage language (reference level: RUS-GER7), socio-economic status of the father (numeric), English is boring (numeric), language with siblings (reference level: German), number of books(reference level: 0-10)):**

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	-0.068035	0.241474	-0.282	0.779044
HLRUS-GER9	0.015172	0.121587	0.125	0.901084
HLTUR-GER7	0.198948	0.130352	1.526	0.131878
<b>HLTUR-GER9</b>	<b>0.258580</b>	<b>0.125928</b>	<b>2.053</b>	<b>0.044125 *</b>
SES_father	0.001998	0.002609	0.766	0.446455
<b>English_is_boring1</b>	<b>0.307577</b>	<b>0.114545</b>	<b>2.685</b>	<b>0.009220 **</b>
English_is_boringNA	-0.130759	0.359706	-0.364	0.717418
Language_with_siblingsmore_German	0.127303	0.362186	0.351	0.726378
Language_with_siblingsmostly_German	0.067919	0.105013	0.647	0.520095
<b>Language_with_siblingsHL</b>	<b>0.955651</b>	<b>0.258980</b>	<b>3.690</b>	<b>0.000465 ***</b>
Language_with_siblingsmostly_HL	0.147312	0.368849	0.399	0.690942
Language_with_siblingsboth	0.056457	0.116109	0.486	0.628461
No_of_books11_25	0.192026	0.234337	0.819	0.415575
No_of_books26_100	-0.091961	0.223208	-0.412	0.681718
No_of_books101_200	-0.201315	0.221439	-0.909	0.366697
No_of_books201_500	-0.046772	0.255825	-0.183	0.855510
No_of_books500+	-0.333534	0.345829	-0.964	0.338452
No_of_booksNA	-0.311947	0.426421	-0.732	0.467114

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Multiple R-squared: 0.3727

F-statistic: 2.237 on 17 and 64 DF, p-value: 0.01086

The last ANOVA in this section focuses on the effects of the background variables heritage languages, grade, school type, HISEI, English and German grade, motivation and number of books on an *overuse of demonstratives*, presented in Table 95. This model reveals that three differences were statistically significant, namely *heritage language* [ $F(2,1)=3.16, p=.04$ ], *grade* [ $F(1,1)=4.3, p=.03$ ] and *English grade* [ $F(1,1)=5.31, p=.02$ ]. The results for Regression Model 11 in Table 96 are divers. With increasing age, students in grade 9 perform better than in grade 7. Also, the school type *other* leads to a better

performance, because less demonstratives that are overused are found in texts of students who attend this school type. What is more is that good school grades in English surprisingly lead to an increasing overuse of demonstratives.

**Table 95: Analysis of Variance 11: The overuse of demonstratives versus background variables (heritage languages, grade, school type, highest socio-economic status, motivation, English/German grade, motivation, number of books):**

Analysis of Variance Table

Response: DEM\_OVER

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
HL	2	1.402	0.70116	3.1693	0.04468 *
GRADE	1	0.973	0.97322	4.3990	0.03753 *
School_type	1	0.732	0.73235	3.3103	0.07072 .
HISEI	1	0.065	0.06456	0.2918	0.58981
English_grade	1	1.175	1.17537	5.3128	0.02245 *
German_grade	1	0.450	0.44988	2.0335	0.15582
English_is_useful	1	0.072	0.07223	0.3265	0.56853
No_of_books	6	1.401	0.23344	1.0552	0.39192
Residuals	160	35.398	0.22123		

---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

**Table 96: Linear Model 11: The overuse of demonstratives versus background variables (heritage language (reference level: GER), grade (reference level: 7), school type (reference level: Gymnasium), highest socio-economic status (numeric), English/German grade (numeric), English is useful (numeric), number of books(reference level: 0-10)):**

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	-0.308912	0.380685	-0.811	0.41830
HLRUS-GER	-0.028750	0.103204	-0.279	0.78093
HLTUR-GER	0.199826	0.114303	1.748	0.08234 .
GRADE9	-0.174500	0.074519	-2.342	0.02043 *
School_typeother	-0.173404	0.085327	-2.032	0.04379 *
HISEI	0.002396	0.002281	1.051	0.29502
English_grade	0.145124	0.049440	2.935	0.00382 **
German_grade	-0.098946	0.056640	-1.747	0.08257 .
English_is_useful1	0.155906	0.204099	0.764	0.44607
No_of_books11_25	0.144637	0.268266	0.539	0.59053
No_of_books26_100	0.213143	0.254351	0.838	0.40329
No_of_books101_200	0.145868	0.258537	0.564	0.57341
No_of_books201_500	0.216629	0.266061	0.814	0.41674
No_of_books500+	-0.046518	0.279486	-0.166	0.86802
No_of_booksNA	-0.123555	0.424632	-0.291	0.77145

---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Multiple R-squared: 0.1505  
F-statistic: 2.025 on 14 and 160 DF, p-value: 0.01895

Summary

The performed ANOVAs, multiple regression models and Tukey HSD tests revealed that there are three variables that occur as predictors for the use of demonstratives, namely *English school grades, the motivation, and the heritage language*. Differences between the language groups were found in several ANOVAs and regression models such as bilingual Turkish speakers in grade 7 use more *demonstratives* than their bilingual counterparts in grade 7 and more *this* and more *this as determiner* than monolingual

Germans in grade 7. Also, Turkish bilinguals in grade 9 use more *that as subordinator* than their younger bilingual counterparts. Being a Russian bilingual leads to a statistically significant lower use of *that as subordinator* which shows influence from Russian as a heritage language and will be discussed in Chapter 5.5. In addition, being a German monolingual turned out to be a benefit in grade nine, because they used demonstratives less *non-target like*. Other background variables that occur in some models as predictors were number of books, HISEI, language with siblings, grade, and school type. Furthermore, two Tukey HSD tests found differences on the 95 percent confidence level between the heritage language and the use of *non-target like demonstratives*, namely that there is a difference between Turkish-German in grade 7 and English monolinguals as well as between Turkish-German in grade 7 and German monolinguals in grade 9. The second Tukey HSD test reveals that there is a difference between the use of demonstratives and the age of onset of learning the heritage language between 6 to 9 and between 3 to 5.

## 5.2 Case study 2 - The use of articles

The second case study examines the use of definite and indefinite articles as well as zero articles. In order to find out whether students use articles instead of, e.g., determinative demonstratives, the frequencies of use are compared in general, and it is tested whether there are differences between the age and language groups. Furthermore, it is examined whether there is a correlation between the use of either articles or demonstratives.

In Table 97, the absolute frequencies, and the mean values of articles in general, definite, indefinite and zero articles are presented. Note that the English native speakers

**Table 97: Absolute frequencies and mean values of articles, definite, indefinite and zero articles**

Language groups	Abs. freq. articles	Mean value articles	Abs. freq. def. article	Mean value def. article	Abs. freq. indef. article	Mean value indef. article	Abs. freq. zero articles	Mean value zero articles
ENG	545	30.28	398	22.11	148	8.22	0	0.00
GER 7	960	19.2	672	13.44	288	5.76	4	0.08
GER 9	984	19.68	684	13.68	291	5.82	1	0.02
RUS-GER 7	627	12.54	462	9.24	164	3.28	2	0.04
RUS-GER 9	801	16.02	572	11.44	229	4.58	4	0.08
TUR-GER 7	668	13.36	497	9.94	172	3.44	13	0.26
TUR-GER 9	719	14.38	532	10.64	186	3.72	6	0.12
Total	5304	16.68	3817	7.69	1478	4.65	30	0.09



consist of 18 participants, whereas the other language groups contain 50 students per age group. Hence, while the absolute frequencies can differ, the mean values should be more similar. In general, more than 5.300 articles were produced within the written task. More than 71 percent are definite articles, 28 percent are indefinite articles and only 0.8 percent refer to zero articles.

Figure 73 presents an overview of articles per written texts. Surprisingly, the frequencies of all articles are very similar. All language groups use between almost 10 to 12 articles per text. In Figure 74, the distribution of the different articles is illustrated. In general, more definite articles were used. Again, there is a very similar picture of using articles by all language groups.

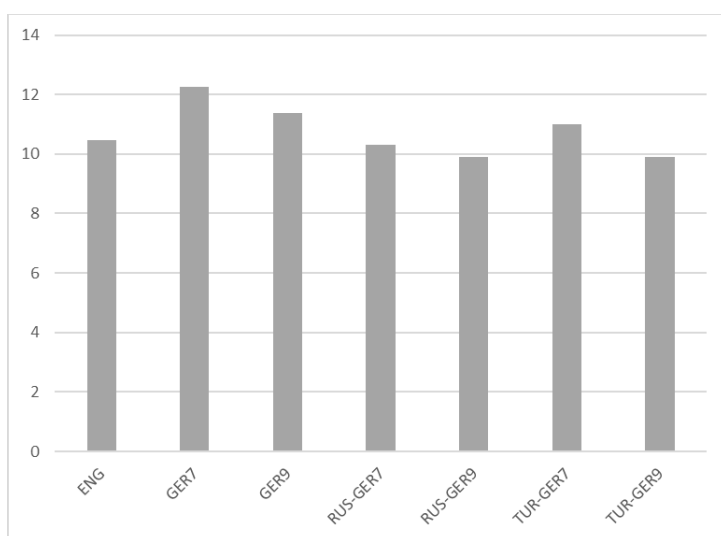


Figure 73: The use of articles per written text (mean values)

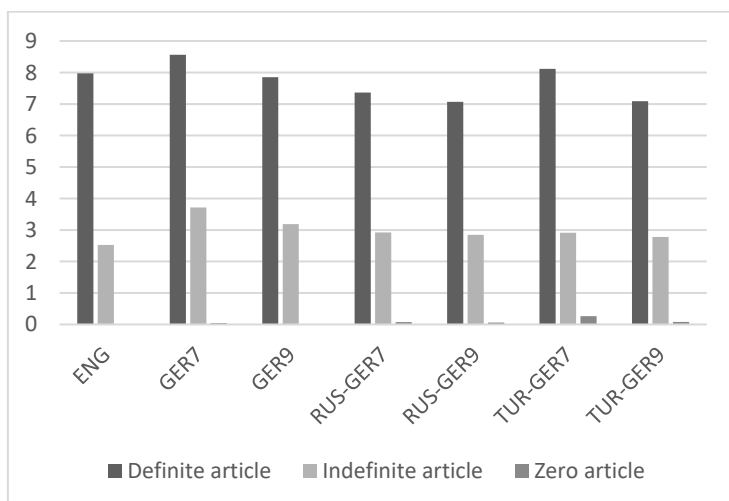


Figure 74: Different types of articles in written texts (mean values)

In order to analyse whether there is a statistical difference, t-tests are used, and the results are shown in Table 76. As expected, there is no correlation between the younger and older

students, but for zero articles. The bilingual Turkish-German students reach a significant value of 0.016 which is below the threshold of 0.05. Hence, only for zero articles and this group we find a significant difference between the 12-years and 16-years old students.

**Table 98: Mean values of articles, definite, indefinite and zero articles, the standard deviation in parenthesis, t-tests, and Cohen's d**

		Age 12/20	Age 16/40	t-test	dCohen
Articles	GER	12.27(3.47)	11.37(3.18)	t(97.282)= 1.3531, p= .08958	0.27
	RUS-GER	10.3(4.32)	9.91(3.39)	t(92.708)= 0.49624, p= .3104	0.1
	TUR-GER	11.01(3.46)	9.89(3.64)	t(97.761)= 1.5809, p= .05856	0.32
	ENG	10.7(1.85)	11.07(2.35)	t(13.27)=-0.35, p=.63	0.17
Definite articles	GER	8.56(2.99)	7.85(3.17)	t(97.671)= 1.1506, p= .1263	0.23
	RUS-GER	7.36(3.89)	7.07(3.01)	t(92.223)= 0.41957, p= .3379	0.08
	TUR-GER	8.12(3.37)	7.09(3.27)	t(97.924)= 1.5449, p= .0628	0.31
	ENG	7.96(2.61)	8.73(1.94)	t(13.92)=-0.57, p=.71	0.28
Indefinite articles	GER	3.71(1.64)	3.19(1.60)	t(97.944)= 1.6302, p= .05314	0.33
	RUS-GER	2.92(2.72)	2.84(1.78)	t(84.66)= 0.1721, p= .4319	0.03
	TUR-GER	2.91(2.14)	2.78(2.27)	t(97.696)= 0.29655, p= .3837	0.06
	ENG	2.77(1.05)	2.34(1.40)	t(12.96)=0.71, p=.24	0.36
Zero articles	GER	0.05(0.16)	0.01(0.07)	t(65.964)= 1.4614, p= .07433	0.29
	RUS-GER	0.08(0.40)	0.06(0.24)	t(79.953)= 0.25094, p= .4013	0.05
	<b>TUR-GER</b>	<b>0.26(0.54)</b>	<b>0.08(0.24)</b>	<b>t(67.063)= 2.1819, p= .01631</b>	<b>0.44</b>
	ENG	0(0)	0(0)	0(0)	0

### *Formal correctness*

The similar performances appear again in the target like and non-target like use of both definite and indefinite articles. Not surprisingly, the English native speakers show the highest performance, since they mostly used their articles correct. Only one participant used a definite instead of an indefinite article when describing the pictures. Although in both Figures 75 and 76 the distribution is slightly different, the median values show no great differences. In the bilingual groups, a decrease of incorrect definite articles with increasing age is observable. What is striking is that the indefinite articles are rarely used incorrect. Unexpectedly, the heritage speakers used similar often articles. In contrast, the students with Russian as the heritage language were expected to use more articles, since in Russian there are no articles which could have led to an over-generalization of this grammatical category or the opposite, namely a rare use of articles. However, since the frequencies for German monolinguals and bilinguals are so similar, the influence of German as the dominant language could be a predictor for the performance in English.

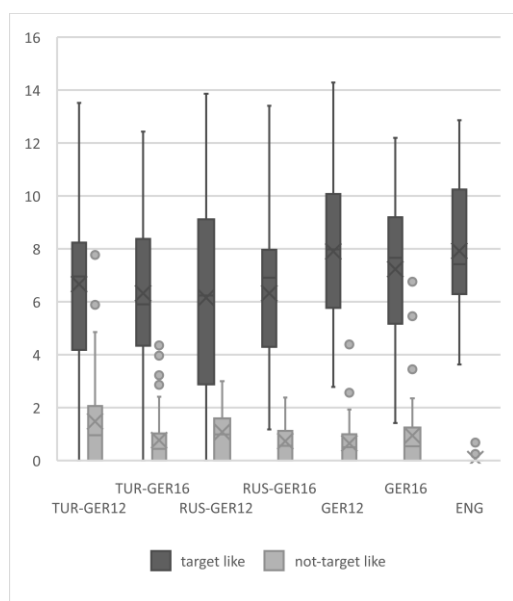


Figure 75: Formal correctness of definite articles (mean values normalized)

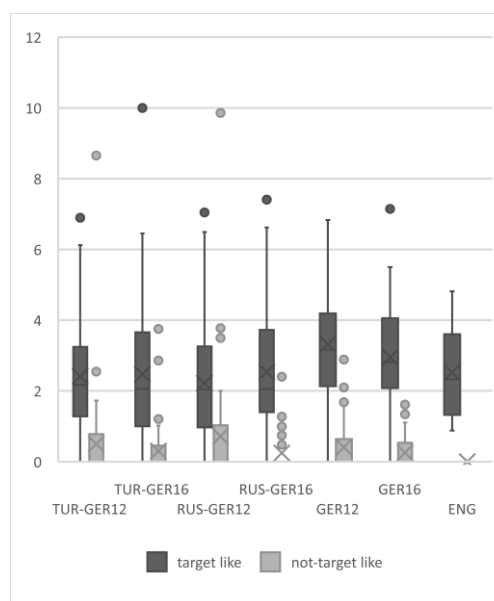


Figure 76: Formal correctness of indefinite articles (mean values normalized)

Table 99: Mean values of the target like and not-target like use of definite and indefinite articles, the standard deviation in parenthesis, t-tests and Cohen's d

		Age 12/20	Age 16/40	t-test	dCohen
Definite articles tl	GER	7.91(3.01)	7.23(2.73)	t(97.088)= 1.1771, p= .121	0.24
	RUS-GER	6.15(3.84)	6.32(2.84)	t(90.275)= -0.25079, p= .5987	0.05
	TUR-GER	6.67(3.07)	6.32(3.15)	t(97.934)= 0.5589, p= .2888	0.11
	ENG	7.93(2.58)	8.65(2.85)	t(13.86)=-0.53, p=.70	0.26
Definite articles ntl	GER	0.644(0.84)	0.0944(1.36)	t(81.72)= -1.3261, p= .9057	0.27
	<b>RUS-GER</b>	<b>1.08(0.98)</b>	<b>0.73(0.79)</b>	<b>t(93.788)= 1.9525, p= .02693</b>	<b>0.39</b>
	<b>TUR-GER</b>	<b>1.48(1.67)</b>	<b>0.77(1.06)</b>	<b>t(82.893)= 2.5305, p= .006641</b>	<b>0.51</b>
	ENG	0(0)	0(0)	0(0)	0
Indefinite articles tl	GER	3.32(1.56)	2.95(1.50)	t(97.836)= 1.2125, p= .1141	0.24
	RUS-GER	2.22(1.65)	2.53(1.75)	t(97.702)= -0.9152, p= .8188	0.18
	TUR-GER	2.41(1.58)	2.472(1.01)	t(92.959)= -0.17845, p= .5706	0.04
	ENG	2.77(1.05)	2.34(1.40)	t(12.96)=0.71, p=.24	0.36
Indefinite articles ntl	GER	0.41(0.64)	0.25(0.43)	t(85.957)= 1.4006, p= .08246	0.28
	<b>RUS-GER</b>	<b>0.72(1.57)</b>	<b>0.24(0.53)</b>	<b>t(59.981)= 2.0162, p= .02413</b>	<b>0.4</b>
	TUR-GER	0.5(1.31)	0.31(0.71)	t(75.369)= 0.92896, p= .1779	0.19
	ENG	0(0)	0(0)	0(0)	0

In Table 77, the results of t-tests are presented. For the target like use of definite articles, no statistical differences could be detected. However, when definite articles were not used target like statistically significant differences between the younger and older cohorts of both bilingual groups are found with a p below the threshold of 0.05 ( $p_{Rus} = .02693$ ,  $p_{Tur} = .006641$ ). For the non-target like use of indefinites, the bilingual Russian-German group reach a statistically significant value with  $p = .02413$ . Hence, it confirms a difference

between the two age groups of Russian-German bilinguals, namely that with increasing age Russian bilinguals use less incorrect indefinite articles.

*Multiple regression models combined with ANOVAs*

Table 100 presents the ANOVA Model 12 that compares the effects of the background variables heritages languages, the socio-economic status of the father, school type, the motivation and language with siblings on the use of *articles*. It reveals that there was a statistically significant difference in the *school type* [ $F(1,1)=6.51, p=.012$ ] and *language with siblings* [ $F(5,70)=3.49, p=.007$ ]. Table 101 shows the results of Regression Model 12. Compared with Russian-Germans in grade 7, being a Turkish-German bilingual in grade 9 leads to a decreasing use of articles in written texts. The variable *language with siblings* has a positive and a negative effect, namely when bilinguals *mostly* speak German with their siblings, they use more articles, whereas the use of the *heritage language* decreases the use of articles.

**Table 100: Analysis of Variance 12: The use of *articles* versus background variables (heritage languages, grade, socio-economic status of the father, school type, motivation, language with siblings):**

Analysis of Variance Table						
Response: ART						
	Df	Sum Sq	Mean Sq	F value	Pr(>F)	
HL	3	65.27	21.757	1.9550	0.128715	
SES_father	1	0.21	0.214	0.0193	0.890000	
<b>School_type</b>	<b>1</b>	<b>72.55</b>	<b>72.548</b>	<b>6.5188</b>	<b>0.012856</b>	<b>*</b>
English_is_useful	1	31.21	31.212	2.8046	0.098459	.
<b>Language_with_siblings</b>	<b>5</b>	<b>194.27</b>	<b>38.853</b>	<b>3.4912</b>	<b>0.007106</b>	<b>**</b>
Residuals	70	779.03	11.129			
--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1						

**Table 101: Linear Model 12: The use of *articles* versus background variables (heritage language (reference level: RUS-GER7), socio-economic status of the father (numeric), school type (reference level: Gymnasium), English is useful (numeric), language with siblings(reference level: German)):**

	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	6.07318	2.13145	2.849	0.00575	**
HLRUS-GER9	0.23665	1.14637	0.206	0.83705	
HLTUR-GER7	-1.45987	1.12958	-1.292	0.20047	
<b>HLTUR-GER9</b>	<b>-3.47653</b>	<b>1.15271</b>	<b>-3.016</b>	<b>0.00357</b>	<b>**</b>
SES_father	0.01057	0.02326	0.454	0.65093	
School_typeOther	1.56890	0.80315	1.953	0.05477	.
English_is_useful1	3.32233	2.03817	1.630	0.10758	
Language_with_siblingsmore_German	-1.50390	3.49872	-0.430	0.66863	
<b>Language_with_siblingsmostly_German</b>	<b>3.11269</b>	<b>0.98131</b>	<b>3.172</b>	<b>0.00225</b>	<b>**</b>
<b>Language_with_siblingsHL</b>	<b>-5.66330</b>	<b>2.50386</b>	<b>-2.262</b>	<b>0.02682</b>	<b>*</b>
Language_with_siblingsmostly_HL	-1.11236	3.50030	-0.318	0.75159	
Language_with_siblingsboth	1.76138	1.07105	1.645	0.10455	
--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1					
Multiple R-squared: 0.3182					
F-statistic: 2.969 on 11 and 70 DF, p-value: 0.00276					

In line with this, the ANOVA model 13 in Table 102 revealed that there is a statistically significant difference in *language with siblings* [ $F(5,6)=2.43, p=.04$ ] on the use of *definite articles*. The other variables heritage languages, school type, socio-economic status of the father and number of books did not influence articles.

**Table 102: Analysis of Variance 13: The use of *definite articles* versus background variables (heritage languages, school type, socio-economic status of the father, language with siblings, number of books):**  
Analysis of Variance Table

Response: DEF_ART						
	Df	Sum Sq	Mean Sq	F value	Pr(>F)	
HL	3	64.36	21.4537	2.3112	0.08438	.
School_type	1	21.82	21.8181	2.3504	0.13010	
SES_father	1	4.41	4.4106	0.4751	0.49308	
<b>Language_with_siblings</b>	<b>5</b>	<b>113.14</b>	<b>22.6277</b>	<b>2.4376</b>	<b>0.04361</b>	<b>*</b>
No_of_books	6	92.94	15.4896	1.6687	0.14291	
Residuals	65	603.37	9.2826			
---						
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1						

**Table 103: Linear Model 13: The use of *definite articles* versus background variables (heritage language (reference level: RUS-GER7), school type (reference level: Gymnasium), socio-economic status of the father (numeric), language with siblings (reference level: German), number of books (reference level: 0-10)):**

	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	5.98435	2.00668	2.982	0.004025	**
HLRUS-GER9	-0.97204	1.08111	-0.899	0.371911	
<b>HLTUR-GER7</b>	<b>-2.26839</b>	<b>1.09331</b>	<b>-2.075</b>	<b>0.041970</b>	<b>*</b>
<b>HLTUR-GER9</b>	<b>-3.87460</b>	<b>1.09347</b>	<b>-3.543</b>	<b>0.000737</b>	<b>***</b>
School_typeOther	0.77395	0.76979	1.005	0.318425	
SES_father	-0.02561	0.02311	-1.108	0.271887	
Language_with_siblingsmore_German	-2.80065	3.22016	-0.870	0.387652	
<b>Language_with_siblingsmostly_German</b>	<b>2.23017</b>	<b>0.93776</b>	<b>2.378</b>	<b>0.020347</b>	<b>*</b>
Language_with_siblingsHL	-3.55671	2.30906	-1.540	0.128335	
Language_with_siblingsmostly_HL	-2.06567	3.27356	-0.631	0.530243	
Language_with_siblingsboth	0.29282	1.02643	0.285	0.776338	
No_of_books11_25	2.27476	2.06696	1.101	0.275158	
No_of_books26_100	2.61156	1.94237	1.345	0.183452	
No_of_books101_200	3.59749	1.93299	1.861	0.067253	.
No_of_books201_500	3.73731	2.19997	1.699	0.094139	.
<b>No_of_books500+</b>	<b>7.77500</b>	<b>3.05980</b>	<b>2.541</b>	<b>0.013449</b>	<b>*</b>
No_of_booksNA	6.36781	3.81040	1.671	0.099497	.
---					
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1					
Multiple R-squared: 0.3296					
F-statistic: 1.997 on 16 and 65 DF, p-value: 0.02647					

In Table 103, the results of Linear Model 13 are shown. Compared to the younger Russian bilingual cohort, both Turkish bilinguals in grades 7 and 9 use significantly less definite articles. Hence, the heritage language Turkish has a negative effect on the use of definite articles. As in Model 12, the variable *language with siblings* has a positive effect when the siblings *mostly* use *German*. In addition, possessing more than 500 books increases the use of definite articles. This model explains 32% of the variations ( $R^2=0.32, p=.02$ ).

The last ANOVA Model 14 in this case study investigates the use of *indefinite articles* compared with the effects of the background variables heritage languages, gender, school type, German grade, HISEI and language with siblings. Again, there is a statistically significant difference in the *school type* [ $F(1,1)=6.46, p=.01$ ] and the *HISEI*

[F(1,5)=4.36,p=.03]. Both predictors are also confirmed by the Linear Model 14 in Table 105. What is more is that the *language with siblings* affects the use of indefinite articles, when *both the heritage language and German* are used.

**Table 104: Analysis of Variance 14: The use of *indefinite articles* versus background variables (heritage languages, gender, school type, German grade, highest socio-economic status, language with siblings):**  
Analysis of Variance Table

Response: INDEF_ART						
	Df	Sum Sq	Mean Sq	F value	Pr(>F)	
HL	3	18.675	6.2251	1.8342	0.14739	
Gender	1	0.237	0.2373	0.0699	0.79211	
<b>School_type</b>	<b>1</b>	<b>21.937</b>	<b>21.9373</b>	<b>6.4636</b>	<b>0.01289</b>	*
German_grade	1	0.049	0.0487	0.0144	0.90492	
<b>HISEI</b>	<b>1</b>	<b>14.804</b>	<b>14.8038</b>	<b>4.3618</b>	<b>0.03986</b>	*
Language_with_siblings	5	23.042	4.6084	1.3578	0.24879	
Residuals	82	278.305	3.3940			
---						
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1						

**Table 105: Linear Model 14: The use of *indefinite articles* versus background variables (heritage language (reference level: RUS-GER7), gender (reference level: feminine), school type (reference level: Gymnasium), German grade (numeric), highest socio-economic status (numeric), language with siblings(reference level: German)):**

	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	0.064371	1.092437	0.059	0.95316	
HLRUS-GER9	0.918145	0.564018	1.628	0.10739	
HLTUR-GER7	0.884056	0.585626	1.510	0.13499	
HLTUR-GER9	0.658102	0.589476	1.116	0.26750	
Gendermale	0.003313	0.518831	0.006	0.99492	
<b>School_typeother</b>	<b>1.143832</b>	<b>0.421060</b>	<b>2.717</b>	<b>0.00804</b>	**
German_grade	0.084280	0.270019	0.312	0.75574	
<b>HISEI</b>	<b>0.027281</b>	<b>0.011401</b>	<b>2.393</b>	<b>0.01901</b>	*
Language_with_siblingsmore_German	2.217518	1.378753	1.608	0.11160	
Language_with_siblingsmostly_German	0.755213	0.488065	1.547	0.12563	
Language_with_siblingsHL	-0.429990	1.159706	-0.371	0.71176	
Language_with_siblingsmostly_HL	0.734546	1.418062	0.518	0.60586	
<b>Language_with_siblingsboth</b>	<b>1.153471</b>	<b>0.579641</b>	<b>1.990</b>	<b>0.04993</b>	*
---					
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1					
Multiple R-squared: 0.2205					
F-statistic: 1.933 on 12 and 82 DF, p-value: 0.04183					

### Summary

The performed analyses show that predictors for the use of articles are the school type, the language with siblings, number of books and the HISEI. In addition, there were differences between the bilingual groups, namely that being a Turkish bilingual in grade 9 leads to a lower use of articles. Also, Turkish bilinguals used less definite articles than Russian bilinguals.

### 5.3 Case study 3 - The use of subordinators

In this section, the use of subclauses is analysed. In general, it shows the ability to structure complex sentences. In the current study, the focus lies on demonstratives. As we have seen, demonstratives can link sentences with the special case of *that* which has been a demonstrative and developed into a complementizer (see Chapter 3.1.5). Hence, it is assumed that subclauses may be used instead of the subordinating *that*.

In Figure 77, the normalized mean values of subclauses are presented. Although the English native speakers are the smallest group in this study, the younger bilingual Turkish group show the similar results, namely 1.27 subclauses per 100 words. However, noteworthy is that with increasing age more subclauses are used. As we have seen before, this is expectable, because students in grade nine are more experienced in English and usually have more knowledge about complex structures. However, the highest number of subclauses were produced by the bilingual Russian-German speakers in grade nine, followed by the same age group of German monolingual students. In addition, the Turkish-German bilinguals in grade nine reach almost the same number of frequencies as the younger bilingual Russian-German speakers. Compared with the other bilingual speakers, Turkish-German bilinguals show a lower performance.

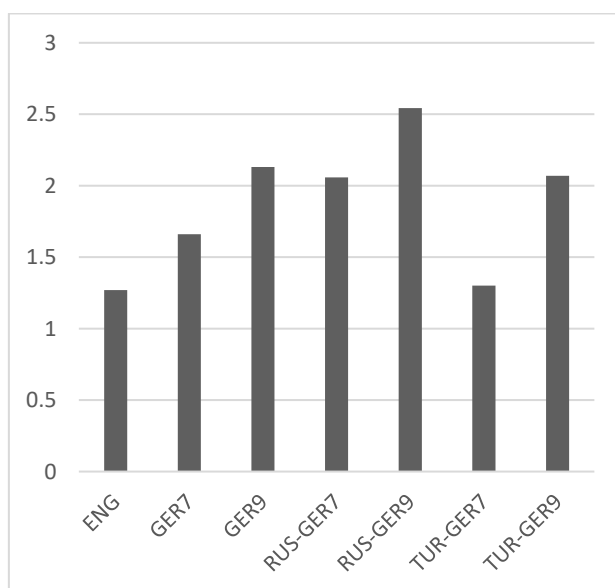


Figure 77: Mean values of subclauses (normalized)

#### *Comparison of demonstratives and subclauses*

In order to compare the occurrence of subclauses with that of the subordinating *that*, Figure 78 illustrates the mean values of both phenomena.

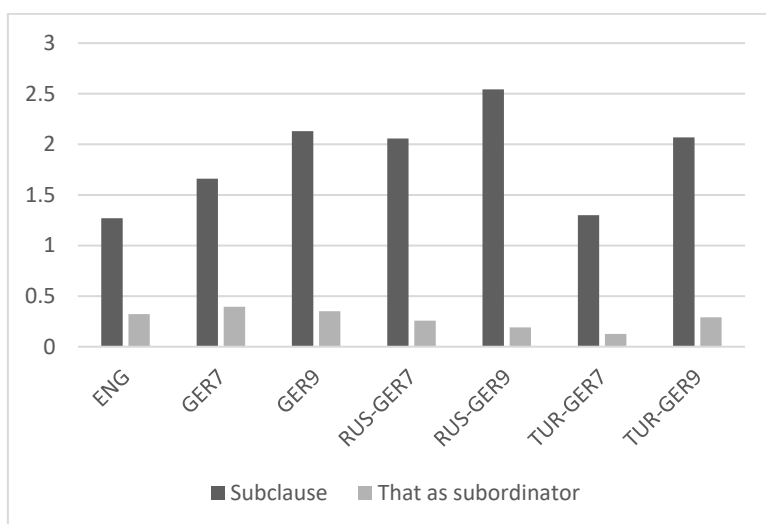


Figure 78: The use of subclauses and demonstratives per language group (mean values)

If the smaller number of speakers are considered, the English natives show only slight differences in the production of subclauses and subordinating *that*. The use of *that* as a subordinator decreases with increasing age, besides in the Turkish bilingual group. In contrast, subclauses are used more frequently at an older age. In all language groups, more subclauses are used.

By and large, the complementizer *that* is comparable to subclauses. Hence, the following plot compares demonstratives, subclauses, and *that* as a subordinator. Hereby, only two language groups use more demonstratives than subclauses, namely the German monolingual and the Turkish bilingual younger cohorts. However, we still find extreme

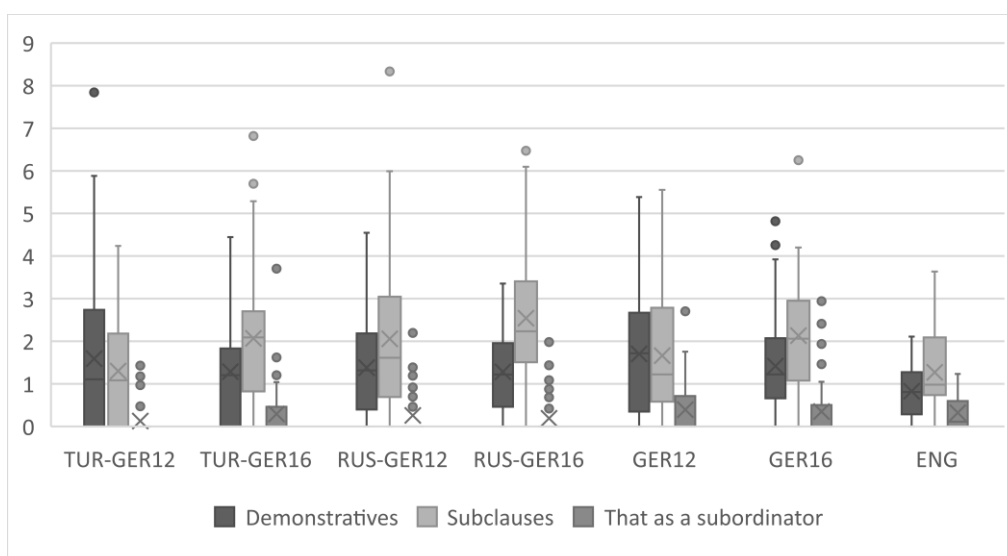


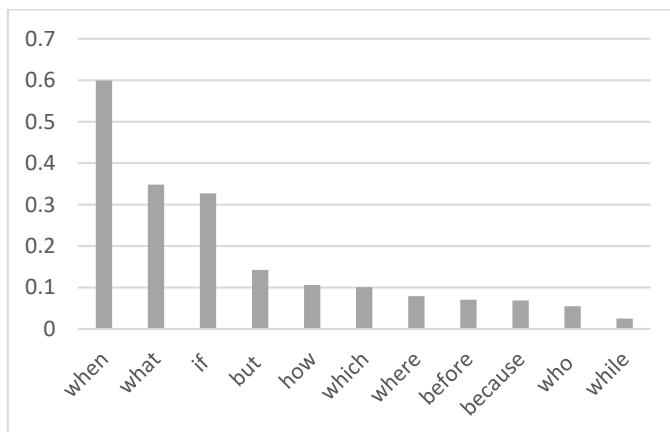
Figure 79: Comparison of demonstratives, subclauses, and *that* as subordinator (normalized)



outliers for some of the groups. Compared to the use of subordinating *that*, both other grammatical phenomena are used more frequently. Unexpectedly, the use of *that* as a subordinator occurs less often, whereas all language groups show a higher performance in the use of other subclauses. Hence, demonstratives in general and subclauses play a more important role in the written performance in English than subordinating *that*. Except the bilingual Turkish cohort in grade nine, the values for subordinating *that* are outliers and no boxes in the other bilingual cohorts.

### *Different types of subclauses*

In Figure 80, different types of subclauses are illustrated. The three most common types are *when*, *what* and *if*. The other subordinators occurred less often in the written texts.



**Figure 80: Types of subclauses (mean values)**

However, a wide range of subclauses were used by all language groups which again confirms that students in grade seven and grade nine can link their sentences in different ways. Since in grade nine the use of subclauses increases, students show that their ability of writing complex texts increases with increasing age. In Figure 81, the distribution of the three most used subclauses is presented in a boxplot. Again, a lot of outliers can be found mostly for the subclause *if*. Due to the smaller group, the results for the English natives are comparably lower for the use of *what*. In the monolingual and bilingual older cohorts, the distribution of all three subclauses is higher and hence, the performance. In the younger cohorts, the use of *when* is similar, but for the other two subclauses they differ. Although the Russian bilinguals at the age of twelve use more frequently *what*, the Turkish bilinguals and German monolinguals have more outliers in this age group and

therefore, their performance is lower. The subclause *when* is used by all language groups similarly, but there are differences in the use of the other two subclauses.

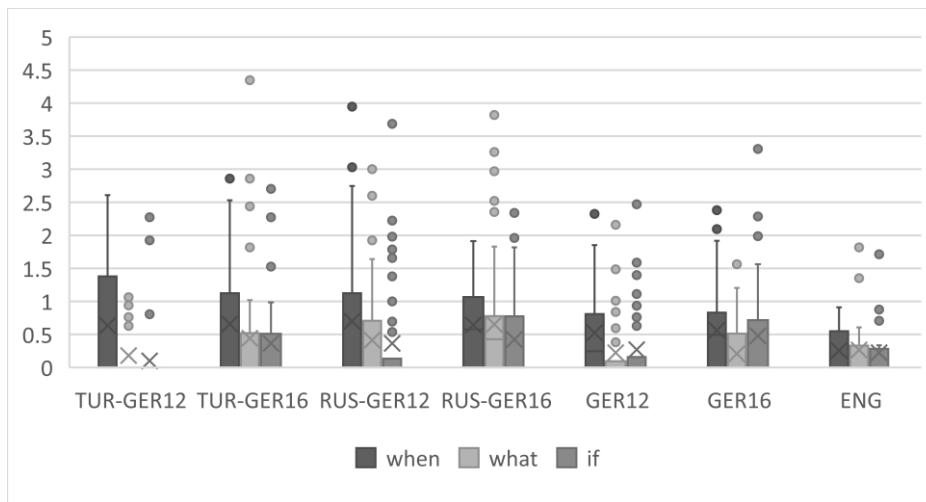


Figure 81: The subclauses *when*, *what* and *if* (normalized)

With t-tests, a correlation between the age groups and different types of subclauses was examined. The values did not reach a significant threshold below 0.05. Hence, no differences between the age groups within the language groups could be found. An overview of the results can be found in the appendix in Table 135. Although we can see an increase of the use of subclauses from the younger to the older cohort, the difference is statistically not significant.

Table 106 shows whether students used demonstratives and/or subclauses in their written task. More precisely, we want to examine whether students used subclauses instead of demonstratives. In this table, the observation is intriguing because the frequencies of demonstratives and subclauses seem to correlate. When students used demonstratives, they used subclauses, too and vice versa. The number of occurrences of demonstratives and subclauses correlate with the age. Hence, the use of both grammatical domains increased with an increasing age. For the absolute frequencies, this observation differs, since the use of demonstratives in the younger cohorts is smaller than that in the older cohorts.

Table 106: Overview of whether students used either demonstratives and/or subclauses (absolute frequencies)

	Demonstratives		Subclauses	
	yes	no	yes	no
ENG	14	4	16	2
GER7	38	12	40	10
GER9	41	9	46	4

RUS-GER7	38	12	39	11
RUS-GER9	39	11	48	2
TUR-GER7	33	17	31	19
TUR-GER9	37	13	42	8

With ANOVAs, a correlation between the use of demonstratives and the use of subclauses is found to be statistically significant ( $F(1, 5)=60.15, p<.001$ ). In addition, it was tested whether the lack of demonstratives correlates with the lack of subclauses which could be confirmed ( $F(1, 5)= 9.727, p=.026$ ).

*Multiple regression models combined with ANOVAs*

Table 107 presents ANOVA Model 15 which was performed to compare the effects of the heritage languages, school type, HISEI, age of onset learning the heritage language, language with mother and motivation on the use of *subclauses*. This model reveals that

**Table 107: Analysis of Variance 15: The use of *subclauses* versus background variables (heritage languages, gender, school type, highest socio-economic status, age of onset learning the heritage language, language with mother, motivation):**

Analysis of Variance Table					
Response: subclauses					
	Df	Sum Sq	Mean Sq	F value	Pr(>F)
<b>HL</b>	<b>5</b>	<b>23.282</b>	<b>4.6565</b>	<b>2.6389</b>	<b>0.02539 *</b>
School_type	1	5.844	5.8437	3.3117	0.07067 .
HISEI	1	1.816	1.8161	1.0292	0.31189
Age_of_onset_hs	5	3.078	0.6156	0.3489	0.88239
<b>Language_with_mother</b>	<b>5</b>	<b>22.470</b>	<b>4.4939</b>	<b>2.5468</b>	<b>0.03012 *</b>
English_is_useful	1	5.227	5.2266	2.9620	0.08719 .
Residuals	159	280.560	1.7645		
---					
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1					

**Table 108: Linear Model 15: The use of *subclauses* versus background variables (heritage language (reference level: GER7), school type (reference level: Gymnasium), highest socio-economic status (numeric), age of onset learning the heritage language (reference level: until 2), language with mother (reference level: German), English is useful (numeric)):**

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	0.463656	1.276603	0.363	0.71694
<b>HLGER9</b>	<b>0.694091</b>	<b>0.316656</b>	<b>2.192</b>	<b>0.02984 *</b>
HLRUS-GER7	1.826050	1.045425	1.747	0.08262 .
HLRUS-GER9	1.543712	1.082872	1.426	0.15595
HLTUR-GER7	0.967706	1.080570	0.896	0.37185
HLTUR-GER9	1.089322	1.058326	1.029	0.30491
School_typeOther	-0.386325	0.247922	-1.558	0.12116
HISEI	0.007467	0.005884	1.269	0.20630
Age_of_onset_hsbetween_3_5	0.305095	0.518653	0.588	0.55720
Age_of_onset_hsbetween_6_9	0.640213	0.666985	0.960	0.33858
Age_of_onset_hsbetween_10_15	0.238376	0.815856	0.292	0.77053
Age_of_onset_hsolder_than_15	2.668494	1.415902	1.885	0.06130 .
Age_of_onset_hsNA	0.435622	0.656448	0.664	0.50790
<b>Language_with_mothermostly_German</b>	<b>1.312470</b>	<b>0.508029</b>	<b>2.583</b>	<b>0.01068 *</b>
<b>Language_with_motherHL</b>	<b>1.697511</b>	<b>0.553036</b>	<b>3.069</b>	<b>0.00252 **</b>
Language_with_mothermostly_HL	0.607316	0.509441	1.192	0.23499
Language_with_motherboth	0.706814	0.480476	1.471	0.14325
Language_with_motherNA	1.280250	1.073376	1.193	0.23475
English_is_useful1	-0.986368	0.573120	-1.721	0.08719 .
---				

Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Multiple R-squared: 0.1803

F-statistic: 1.943 on 18 and 159 DF, p-value: 0.01595

the *heritage language* [F(5,1)=2.63,p=.02] as well as the *language with mother* [F(5,1)=2.54,p=.03] are predictors for the use of subclauses. The results for the Regression Model 15 can be seen in Table 108. In line with ANOVA Model 15, both the *heritage language* and the *language with the mother* positively affects the use of subclauses. First, being a German monolingual in grade 9 leads to an increase of subclauses. Second, when bilinguals either use *mostly German* or the *heritage language* they increasingly use subclauses.

A second model on subclauses was performed in ANOVA Model 16, in Table 109. The effects of the background variables heritage languages, English grade, socio-economic status of the father and the language with siblings on the use of subclauses were compared. A statistically significant difference could be found in *language with siblings* [F(5,69)=5.68,p=.0001].

**Table 109: Analysis of Variance 16: The use of *subclauses* versus background variables (heritage languages, English grade, socio-economic status of the father, language with siblings):**

Analysis of Variance Table

Response: Subclauses

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
HL	3	10.838	3.6126	2.1765	0.0986061 .
English_grade	1	2.112	2.1118	1.2723	0.2632415
SES_father	1	0.005	0.0049	0.0029	0.9569931
<b>Language_with_siblings</b>	<b>5</b>	<b>47.164</b>	<b>9.4328</b>	<b>5.6831</b>	<b>0.0001905 ***</b>
Residuals	69	114.526	1.6598		

---  
Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

**Table 110: Linear Model 16: The use of *subclauses* versus background variables (heritage language (reference level: RUS-GER7), English grade (numeric), socio-economic status of the father (numeric), language with siblings (reference level: German)):**

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	3.301449	0.758302	4.354	4.54e-05 ***
HLRUS-GER9	-0.107593	0.448272	-0.240	0.8110
HLTUR-GER7	-0.307413	0.444902	-0.691	0.4919
HLTUR-GER9	-0.178419	0.447360	-0.399	0.6913
English_grade	-0.227275	0.169092	-1.344	0.1833
SES_father	-0.008522	0.009182	-0.928	0.3566
Language_with_siblingsmore_German	0.207961	1.350599	0.154	0.8781
Language_with_siblingsmostly_German	-0.736284	0.382759	-1.924	0.0585 .
Language_with_siblingsHL	1.189168	0.963319	1.234	0.2212
<b>Language_with_siblingsmostly_HL</b>	<b>6.234122</b>	<b>1.351511</b>	<b>4.613</b>	<b>1.78e-05 ***</b>
Language_with_siblingsboth	-0.457055	0.413525	-1.105	0.2729

---  
Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Multiple R-squared: 0.3442

F-statistic: 3.622 on 10 and 69 DF, p-value: 0.0006526

In Linear Model 16, the variable *language with siblings* was statistically highly significant, presented in Table 110. So, when bilinguals *mostly* use *the heritage language*,

they increasingly use subclauses in the English written texts. This model explains 34 percent of the variance ( $R^2=0.34$ ,  $p=-0006$ ). In addition, between Turkish-German bilinguals in grade 7 and Russian-German bilinguals in grade 9 there is a statistically significant difference at the 95 percent confidence level, according to the Tukey HSD test.

### *Summary*

The two different ANOVAs and regression models revealed that the heritage language and language with mother or siblings are predictors for the use of subclauses. What is more is that German monolinguals in grade 9 outperformed the bilingual groups by using statistically significant more subclauses. A Tukey HSD test showed that on the 95 percent confidence level there is a difference between the language groups and subclauses, namely between Turkish bilinguals in grade 7 and Russian bilinguals in grade 9.

## **5.4 Case study 4 - Form based lexical transfer**

The last case study focuses on lexical transfer from German. Since this is the language of environment, it can be assumed that it may influence the writing skills in English. For that, it is shown how often transfer took place, it is analysed whether there are correlations between the age groups and whether there are associations between background variables and the occurrence of lexical transfer.

In Table 111, the absolute frequencies and the normalized mean values are presented. In all language groups, lexical transfer occurs more often in the younger cohorts. In the younger cohort of bilingual Turkish groups, lexis from German can be found almost twice per 100 words. In the other younger groups, the number is slightly smaller. Hence, a lower performance is visible in the bilingual Turkish texts. What is striking is that the bilingual Russian German group shows the highest decrease of lexical

**Table 111: Absolute frequencies and normalized mean values of lexical transfer**

Language group	Abs. freq.	Mean values(norm.)
German monolinguals 7	110	1.81
German monolinguals 9	88	1.51
Russian-German 7	82	1.76
Russian-German 9	52	0.73
Turkish-German 7	106	1.98
Turkish-German 9	80	1.68
Total	518	1.58

transfer with increasing age. Thus, this is an advantage over the other groups which must be confirmed by a regression model.

It is noteworthy that the bilingual Russian-German group in grade nine produced the lowest number of transfer effects. With t-tests, it is analysed whether this difference is statistically significant. Although the bilingual Russian-German students in grade seven show similar frequencies like the other groups, their peers in grade nine differ with a value less than a half from that in grade seven.

First, it is analysed whether students used an article or demonstrative before a noun. This is almost balanced in all language and age groups, except for the German monolinguals aged 12 and Turkish bilinguals aged 16. A mix of German and English nouns like *the cheese regal* (cheese counter; *regal* is a shelf) occurred in all language groups, but in the older Russian-German group. Apart from younger German monolinguals, the German spelling of nouns, hence, a capital letter at the beginning, overweighed in the investigated language groups. In the following, some examples of the occurrence of German lexis are presented.

- 1) (1302547124\_TUR7:) Then you buy the foods and drinks by the **kasse**.[...]Then you (**gießen**) the coffe in the glas and the orange juice.
- 2) (1302937132\_RUS7): At home you take a (**Tasse**) and you have cook the coffe. Then you take six eggs and put it in the (**Topf**) and you have to cook it 5 Minutes.
- 3) (1401379113\_TUR9): This all you can buy in a supermarkt make befor you go to the supermarkt a **Einkaufsliste**. You can make a "**Spiegeleier** or **gekochte Eier**" You can cut a sausage and chesse ina **stücke**.
- 4) (1500329104\_GER9): You go in the Mall and **kaufst dir** the **wichtigsten** Eats and Drinks. You **packst** all in a **Korb** and **bezahlst** it. to home make you your Coffe and **kochst** eggs one of the day is **gesund**. You **schneidest** your Cheese and your sausages **schenkst** orange juice in the glas. **Danach zucker** and Milk dazustellen. a **Teller**. Salt and Pepper **dürfen** not **fehlen**. Breads and **Teller dazustellen** and finish is the breakfast.

The examples show how differently lexical transfer occurred. In example one, there is a mixed version of transfer. One word is not marked, the second is written in parenthesis. In addition, the second example illustrates that again the transfer is marked, and the

German spelling is maintained which can be seen in German nouns that are written with a first capital letter. In the following example, marked and unmarked transfer as well as the German spelling is partially adopted. The German words *Einkaufsliste* (shopping list) and *Stücke* (pieces) are nouns and need to be written in capital letters in German, but the student here has adopted the English spelling for the second noun. However, in the same sentence again a German noun (*Spiegeleier* for fried eggs) and an adjective with a corresponding noun (*gekochte Eier* for boiled eggs) are marked this time and written again in capital letters, except the adjective. However, the last example has different realisations of transfer, namely the conjugation of German verbs is used here with alternating English or German personal pronouns. Surprisingly, the ending for the German adjective is adopted, too, like in *the wichtigsten Eats*. Mostly verbs are transferred from German here, but also the temporal adverb *danach* (then/after (that)). The capital spelling for German nouns is inconsistent, which can be seen in the sentence *Danach zucker and Milk dazustellen*. This time the German noun is written in the English spelling and the English noun in the German spelling, whereas in the beginning of the last sentence *Breads and Teller dazustellen* both nouns are written in the German spelling. The first sentence in between only consists of the English indefinite article *a* and the German noun *Teller* (plate). The penultimate sentence shows a mix of English and German. The verbs are written in German, but the negation in English as in *dürfen not fehlen*. These examples show that students use transfer in different ways, but they are creative when they do not know words in English. Instead of using gaps for missing words, they transfer lexis from German. In addition, the use of adjectives, adverbs, prepositions, conjunctions, articles, and personal pronouns were analysed, too, but they rarely occurred and therefore, were not included here.

In a next step, t-tests will show whether there are statistical differences between the age groups that are significant. Table 112 shows the mean values and results of the t-tests for lexical transfer. Surprisingly, the p-values of the German monolingual group and the bilingual Turkish-German group are almost the same, but they did not reach a significant threshold. However, there is a significant difference within the bilingual Russian-German group, namely between the seventh and ninth grade students use significantly less transfer which confirms a p-value below the threshold of 0.05.

**Table 112: Mean values of lexical transfer, the standard deviation in parenthesis, t-tests, and Cohen's d**

		Grade 7	Grade 9	t-test	dCohen
Lexical Transfer	GER	1.77(3.70)	1.48(3.63)	t(97.97)= 0.4, p= .345	0.08

RUS-GER	1.76(2.94)	0.73(1.38)	$t(69.68) = 2.26, p = .0135$	0.45
TUR-GER	1.99(2.66)	1.71(3.84)	$t(87.22) = 0.415, p = .34$	0.08

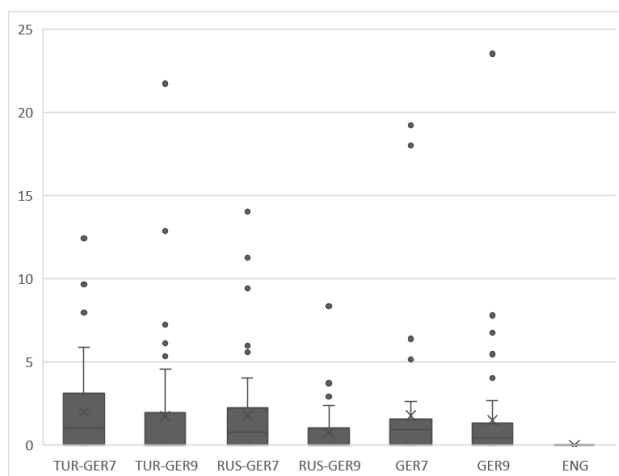


Figure 82: Boxplot of lexical transfer per language group (mean values)

In Figure 82, a boxplot illustrates lexical transfer from German per language group. The median values only differ slightly between the language groups, although the tendency is remarkable namely that the medians for the younger students are slightly higher than that for the older students. As previously mentioned, lexical transfer decreases until grade nine. In addition, there are outliers that are high for the German monolingual groups as well as for the Turkish-German bilinguals in grade nine.

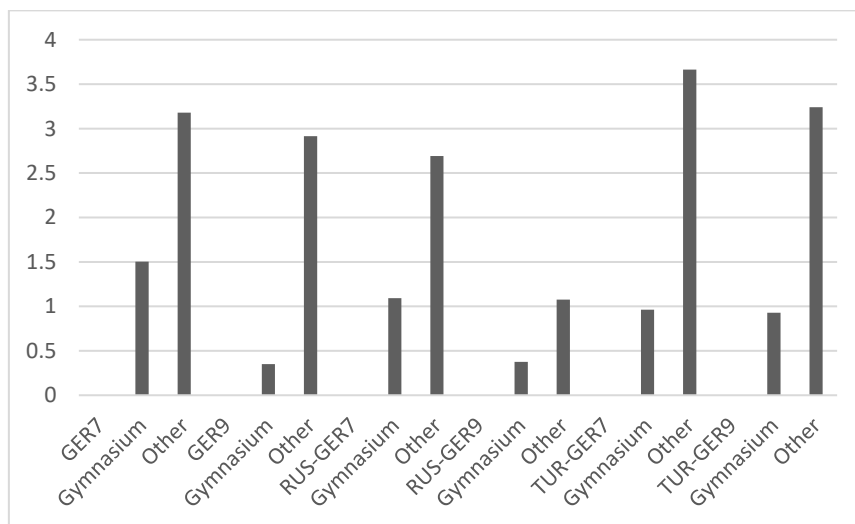


Figure 83: Lexical transfer per school type and language group (mean values)

In Figure 83, lexical transfer depending on the school type is presented. Expectedly, lexical transfer occurs more frequently in monolinguals as well as in bilinguals attending the school type *other*. In addition, with increasing age lexical transfer in German



monolinguals decreases for the school type *Gymnasium*, whereas this effect is only slightly visible for the other school type. Like German monolinguals, bilingual Russian speakers show less transfer from German with increasing age. The lowest performance can be seen in the Turkish bilinguals in both age groups and school types. Only a slight decrease from grade seven to nine is observable.

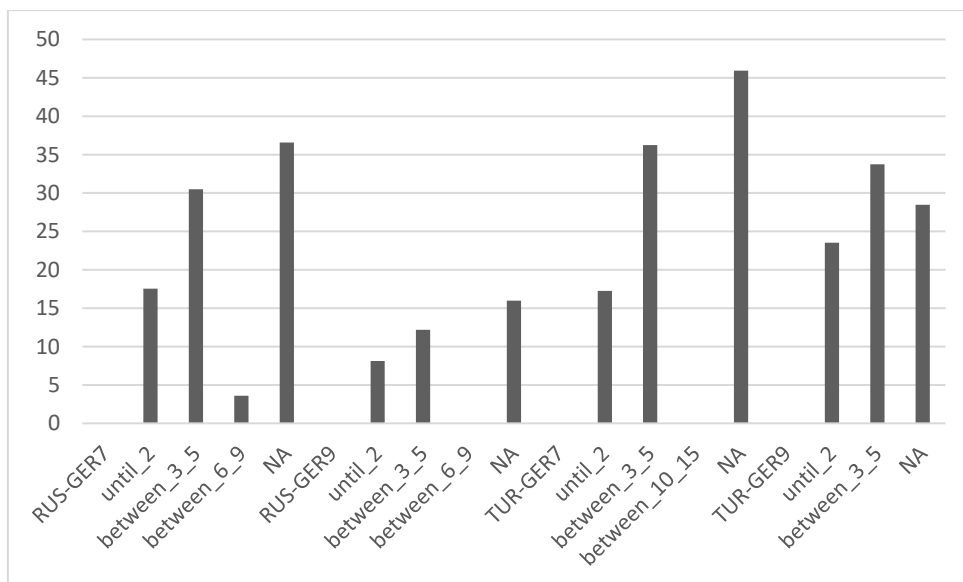


Figure 84: Lexical transfer and age of onset of German (mean values)

In Figure 84, lexical transfer corresponding with the age of onset of learning German is illustrated. In both language groups, more lexical transfer can be found when German is acquired between the ages three and five. Hence, the earlier German is acquired the less transfer occurs.

#### *Multiple linear regression models combined with ANOVAs*

In Table 113, ANOVA Model 17 is presented. It compares the effects of the background variables heritage language, grade, gender, school type, German grade, HISEI and the motivation on *lexical transfer* in the English written texts. A statistically significant difference was found in *grade* [ $F(1,1)=4.22$ ,  $p=.04$ ], *school type* [ $F(1,1)=23.18$ ,  $p=3.3e-06$ ] and *German grade* [ $F(1,1)=6.11$ ,  $p=.01$ ]. In addition, in Linear Model 17 the variables heritage language and motivation English is boring were found to be statistically significant for the occurrence of lexical transfer. Hence, Russian bilinguals performed better compared with their German counterparts, because lexical transfer occurred less often in their texts. In line with this, being in grade 9 leads to a decrease of lexical transfer,

Table 113: Analysis of Variance 17: *Lexical transfer* versus background variables (heritage languages, grade, gender, school type, German grade, highest socio-economic status, motivation):

Analysis of Variance Table

Response: Lex_T					
	Df	Sum Sq	Mean Sq	F value	Pr(>F)
HL	2	3.42	1.710	0.3605	0.69787
<b>GRADE</b>	<b>1</b>	<b>20.06</b>	<b>20.063</b>	<b>4.2293</b>	<b>0.04131</b> *
Gender	1	8.88	8.883	1.8725	0.17305
<b>School_type</b>	<b>1</b>	<b>109.99</b>	<b>109.989</b>	<b>23.1860</b>	<b>3.306e-06</b> ***
<b>German_grade</b>	<b>1</b>	<b>29.03</b>	<b>29.026</b>	<b>6.1187</b>	<b>0.01439</b> *
HISEI	1	0.11	0.113	0.0238	0.87761
English_is_boring	2	27.88	13.941	2.9388	0.05570 .
Residuals	165	782.72	4.744		

---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Table 114: Linear Model 17: *Lexical transfer* versus background variables (heritage language (reference level: GER), grade (reference level: 7), gender (reference level: feminine), school type (reference level: Gymnasium), German grade (numeric), highest socio-economic status (numeric), English is useful (numeric)):

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	0.3245069	0.9408353	0.345	0.7306
<b>HLRUS-GER</b>	<b>-0.9480988</b>	<b>0.4795373</b>	<b>-1.977</b>	<b>0.0497</b> *
HLTUR-GER	-0.5356422	0.5059413	-1.059	0.2913
<b>GRADE9</b>	<b>-0.8449619</b>	<b>0.3361852</b>	<b>-2.513</b>	<b>0.0129</b> *
Gendermale	-0.7155035	0.3757584	-1.904	0.0586 .
<b>School_typeOther</b>	<b>1.6920511</b>	<b>0.3994310</b>	<b>4.236</b>	<b>3.77e-05</b> ***
<b>German_grade</b>	<b>0.5733367</b>	<b>0.2403024</b>	<b>2.386</b>	<b>0.0182</b> *
HISEI	-0.0009232	0.0096953	-0.095	0.9243
<b>English_is_boring1</b>	<b>0.9956708</b>	<b>0.4850845</b>	<b>2.053</b>	<b>0.0417</b> *
English_is_boringNA	3.0491201	2.2470718	1.357	0.1767

---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Multiple R-squared: 0.203

F-statistic: 4.67 on 9 and 165 DF, p-value: 1.594e-05

too, whereas the school type *other*, good grades in *German* and students who find *English boring* are predictors for lexical transfer.

### Concluding remarks

By and large, only transfer from German was found. What is striking is that there was no influence from the heritage languages visible neither for lexis nor for grammar. Although the Russian demonstrative *etot* can either be used for distal or proximal distance, transfer from Russian in the English written texts was not found. In general, we found different types of transfer, namely transfer of a verb, or noun that is adapted to English in the writing style (no capital letter for noun) etc. The regression model confirmed that the school type *other* negatively affects the occurrence of lexical transfer as well as a lower motivation to learn English. The analyses also found that lexical transfer decreases over time and occurs less often in grade 9. A difference between the language groups could be found in Linear Model 17, namely that Russian bilinguals outperformed the other two language groups by almost using one German token per text less than the other groups.

## 5.5 Results: Are there any cli effects?

As shown in subchapter 4.6.6, different possible cli effects could be expected. In this section, the results of the ANOVAS and multiple regression models are discussed regarding the four possible cli scenarios. Since both Russian and Turkish lack an article system, a cli effect could be shown when

- 1) bilinguals *overuse demonstratives* or use more *determinative this* or *definite articles*.

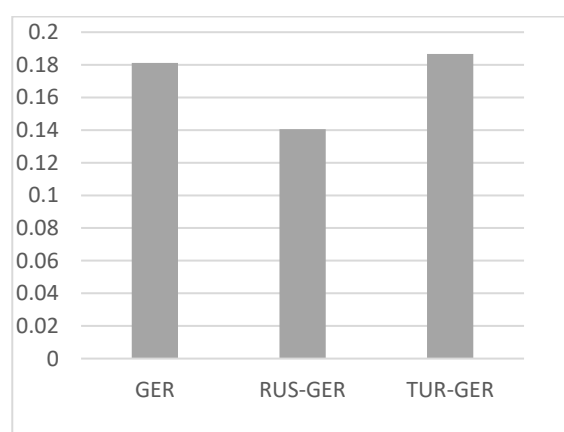


Figure 85: Overuse of demonstratives (mean values)

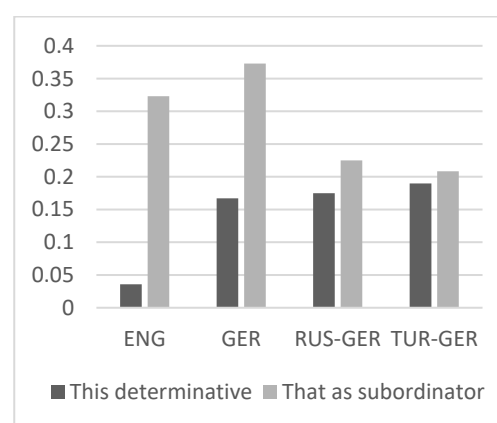


Figure 86: Comparison of *this* as determinator and *that* as subordinator (mean values)

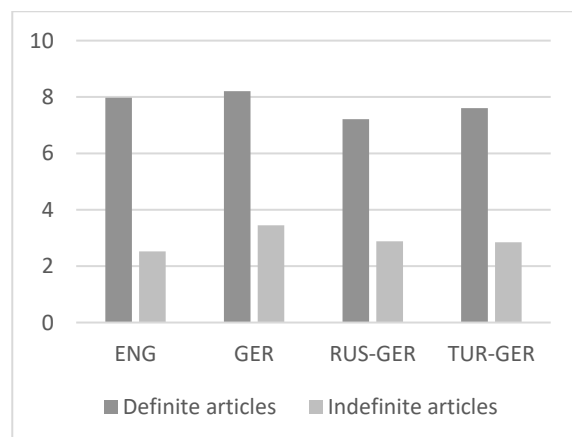


Figure 87: The use of definite and indefinite articles (mean values)

In Figure 85, the mean values of an overuse of demonstratives are shown. The lowest overuse is found in the Russian bilinguals, whereas the other two groups show almost the same number of frequencies. ANOVA Model 11 revealed differences in the heritage languages, but in the corresponding regression model neither language group reached a statistically significant threshold, only the p-value for the Turkish bilinguals was close to a significant p-value. So, a bilingual overuse of demonstratives cannot be confirmed. In

Figure 86, a comparison between the use of *this as determiner* and *that as subordinator* is illustrated. Except for the English natives, the category *this as determiner* is similar in all language groups, the bilinguals use this category slightly more often. In both the ANOVA Model 7 and Linear Model 7 the variable heritage language reaches a p-value below the threshold of .05. The latter model shows that being a Turkish bilingual in grade 7 leads to an increasing use of *this as determiner* compared to German monolinguals of the same age group. Hence, this confirms an influence of the heritage language Turkish. As shown in Figure 87, the use of definite articles is very similar in all language groups. In addition, none of the used statistic models could confirm an influence from the heritage languages regarding the use of articles.

In Russian, the demonstrative pronoun *takoj* can be used as an article in contexts, where indefinite articles would occur (Dunn & Khairov 2009:159). Hence, this might lead to

2) a higher use of *this as determiner* or *indefinite articles*

As shown in Figures 86 and 87, there is no great difference between Russian bilinguals and the other language groups regarding *this as a determiner* and *indefinite articles*. In line with this, none of the statistical methods confirmed such an influence from Russian.

In this study, the special case of *that as subordinator* is investigated. Since both Russian and Turkish do not possess the same form for this category, it may be that both groups use

3) less *that as subordinator*.

In Figure 86, German monolinguals used almost twice as much *that as subordinator* as the bilinguals. In Table 91 and 92, ANOVA Model and Linear Model 9 are illustrated. Both show that there is a statistically significant difference between the language groups, namely that bilingual Russians use significantly less *that as subordinator* which shows non-facilitative influence from the heritage language Russian. For Turkish bilinguals, negative influence could not be confirmed. Instead, Linear Model 10 revealed a statistically significant difference between bilingual Turkish-Germans in grade 9 and Russian bilinguals in grade 7. So, the older cohort of Turkish bilinguals used significantly more *that as subordinator*.

In Russian, demonstrative pronouns can be used in contexts where personal pronouns would be expected (Siemund et al. 2018). Hence, if Russian heritage speakers use demonstrative pronouns instead of personal pronouns in their English texts, this would be interpreted as an

4) overuse of demonstratives.

A non-facilitative influence from Russian could not be found in ANOVA Model and Linear Model 11.

In sum, two cli effects could be found, namely that Turkish bilinguals are positively influenced by their heritage language Turkish when using *this as determiner*, interpreted as facilitative influence from Turkish. The second cli effect was found in Russian bilinguals who use significantly less *that as subordinator* which is interpreted as non-facilitative influence from the heritage language Russian.

## **6 Discussion and further research**

The main results of this study, especially of the four case studies, are discussed in this chapter and the findings will be related to the previously presented main theories about cross-linguistic influence as well as certain models in TLA. The different aspects and variables discussed in this chapter will be divided and presented in subchapters. The first subchapter concentrates on CLI effects provoked by the heritage languages and German. In Chapter 2.7, we presented the latest models in TLA, and we will here discuss whether they may explain our findings. Then, the dominant language status presented by i.e., Hopp (2019) is addressed and the differentiation of heritage speakers as a special type of bilingualism is considered in Subchapter 6.2. As we have previously mentioned, the background variables of the participants can impact the results of the grammatical phenomenon that is examined. Hence, we comment in Subchapter 6.3 on the school type and school grades in German and English, in Subsection 6.4 on the variable age/grade and in 6.5 on the socio-economic status. In addition, the age of onset of learning the heritage language and German is discussed in Subchapter 6.6, followed by the motivation and attitudes towards learning English (6.7) and the language use at home (6.8). The focus of this current study was the use of demonstratives. In Subchapter 6.9, we will discuss the findings. Subsequently, we comment on advantages by bilingual heritage speakers in Subchapter 6.10 and finally, we will discuss the environmental setting of learning English in school (6.11). The last part focuses on limitations of this study, an outlook and concluding remarks.

### **6.1 CLI effects in third language acquisition of bilingual heritage speakers**

At the beginning of this study, we introduced the question, which background language impact the learning of English as the third language. In this study, the heritage speakers as a special type of bilingualism are in the main focus. Hence, we will here discuss whether the introduced models in TLA are consistent with the current findings.

The *Absolute LI Transfer* was proposed by Na Ranong and Leung in 2009. This model claims that the first language is the main source of transfer, when cross-linguistic interactions occur between first, second and third language. Hence, the second language has no influence on learning a third language according to this model. But whether and to what extent bilingual heritage speakers can be included in this model remains unclear. As pointed out before, the differentiation between first and second language of a heritage

speaker is difficult since the status of the second language can change into a second first language or vice versa. This depends on the geographical situation of the heritage speaker and the recency of language use. In our study, we examine heritage speakers of Russian and Turkish. We have seen that for both heritage speakers German is more dominant, even at home, but following the classic labelling, German would be considered the second language. If we follow this path, then we could argue that two results could be explained in favour of the absolute L1 transfer, namely that Turkish bilinguals used more *this as determiner* which shows influence of the *first language* Turkish and second, that Russian bilinguals used less *that as subordinator* which is interpreted as non-facilitative influence from Russian. But generally speaking, the recency of use may have an impact on the proficiency level of the heritage language. When bilingual heritage speakers rarely use the heritage language, the proficiency level may be different to those speakers who constantly use it. Hence, in the former case we may talk about a second language for the heritage language, but in the latter case, the heritage language may be more of a second first language than a second language. We previously mentioned that the terms *dominant language* or *majority language* are used in this study for German and *heritage language* to refer to Russian or Turkish. This model cannot be considered in order to explain our results, since we cannot clearly define Russian or Turkish as the first and German as the second language.

The second model that we want to discuss is that of Williams & Hammarberg, namely the *L2 Status Factor Model*. Here, the situation is like that of the previously presented model. Hence, it is still unclear which language can be defined as the L1 and which as the L2. This model claims that the second language impacts CLI effects and is the main source of transfer. At the same time, it hinders transfer from the L1.

The third model that we already presented in Chapter 2.7 is the *Typological Primacy Model* proposed by Rothman in 2011 which mainly focuses on the initial stages of language development. Here, the idea is that transfer is based on typological closeness between the language that is currently learned and the background languages. Hence, in our study, English is the language that is currently learned in school that is typological closer to German than the other two background languages Russian and Turkish. This means that cross-linguistic interactions mainly come from German, because we find conforming patterns between German monolinguals and the two bilingual groups. Hence, we can indeed identify German as source of transfer, i.e., a lower use of non-target like

demonstratives and a higher use of subclauses and therefore, argue in favour of this model (Rothman 2011), but we also find that the heritages languages have an impact on English.

Since facilitative transfer from Turkish was identified, we find evidence for the *Cumulative Enhancement Model* (CEM) by Flynn et al. (2004). This model claims that transfer is always possible from all background languages. In accordance with the CEM, transfer is always facilitative and not negative. For our study, this would mean that CLI effects would be visible from Russian, or Turkish and German. For the Turkish bilinguals, facilitative transfer was found when using *this as determiner*. Hence, this is in accordance with the CEM. In line with this, German monolinguals were found to use less *non-target like demonstratives* as well as more *subclauses*. This is facilitative transfer and argues for the CEM. On the other hand, a cli effect was found in the Russian bilingual group, namely that they used statistically significant less *that as subordinator* which is non-facilitative transfer from the heritage language Russian, since Russian lacks the same form for *subordinating that*. Since the CEM negates non-facilitative transfer, this finding rejects this model.

Another model in L3 acquisition is the *Linguistic Proximity Model* (LPM) proposed by Westergaard et al. (2017). The basic idea of this model is that CLI may either come from the first background language or the second. In addition, transfer is identified as selective which is a difference to the TPM which proposes that CLI is wholesale. Furthermore, transfer takes place due to the similarity between the background languages. This means that one CLI effect may come from the first language, because the structure of phenomenon x is like that of the L3. However, a second CLI effect may be caused by the similarity of phenomenon y that is like the second language and the L3. The same idea is proposed by Slabakova (2017) in the *Scalpel Model*, but she modified the LPM and added additional factors that may influence CLI effects such as background variables of the learners.

In addition, we introduced different transfer scenarios from Lorenz (2019) who either suggests that there is no visible transfer from the background languages or that it comes only from the first language or only from the second language. Furthermore, she predicts both background languages to be sources of transfer. In our study, the investigated grammatical phenomenon is demonstratives. Here, English, and German share more similarities than Russian or Turkish like their division of demonstratives. The two latter languages have different divisions. First, Russian has two demonstratives and the first (*etot*) which is like *this* in English can be used for either proximal or distal



referents, whereas the second, namely *tot* can be compared to *that* and is only used for distal referents. However, in Turkish we find a threefold division, namely *bu* for proximal, *şu* for medial and *o* for distal objects. Hence, we expect that if transfer takes place, it mainly comes from German, since the similarity and the typological closeness is stronger between these languages. The results reveal that there are differences between the language groups, either facilitative or non-facilitative. First, German monolinguals in grade 9 use significantly less non-target like demonstratives (Linear Model 4) which is a benefit. Second, the same model shows that Turkish bilinguals in grade 7 use significantly more non-target like demonstratives, hence, non-facilitative transfer from the heritage language Turkish, but this effect cannot be found in grade 9. So, it disappears with increasing age. Third, Linear Model 9 reveals that Russian bilinguals used statistically significant less *that as subordinator*, identified as non-facilitative transfer from Russian. Though evidence for differences regarding demonstratives were found, for articles German is identified as the main source of influence. For subclauses, German monolinguals used significantly more subclauses, which also indicates positive transfer from German (Linear Model 15). In addition, Russian bilinguals benefit from their heritage language by using less lexical transfer from German, shown in Linear Model 17.

As mentioned before, it is difficult to identify the first and second language for heritage speakers, we rather prefer to identify German as the dominant language and hence, due to this status it is predictable that German is predominant compared with the heritage languages. Except the LPM, the previously discussed models refer to learners who acquired their second language in a formal setting. In addition, when bilinguals are considered, too, this means that the bilinguals are balanced speakers. However, in this study, the bilingual heritage speakers are unbalanced and hence, one language is more dominant than the other. We previously presented the studies of Hopp (2019), Lorenz (2019) and Fallah and Jabbari (2018). They have in common that their participants are unbalanced bilinguals. Both Hopp (2019) and Lorenz (2019) have a similar study like ours. In the former study, the participants join the primary school and are unbalanced bilingual heritage speakers of Russian-German which are compared with monolingual Germans. Both language groups grow up in Germany and started to learn English in school as their third (or second) language. Lorenz (2019) compared unbalanced heritage speakers of Russian-German, Turkish-German and Vietnamese-German who grow up in Germany, too and who learn English as their second or third language in school. In addition, she compared the performance of the bilingual speakers with that of

monolingual Russian, Turkish, Vietnamese, English, and German speakers. In the study of Fallah and Jabbari (2018), unbalanced heritage speakers of either Mazandarani-Persian or Persian-Mazandarani who attend school are examined. All studies find out that the main source of transfer is the dominant language. The findings of our study find strong evidence for the status of the dominant language, too, in the current study it is German as well as in Lorenz' (2019) and Hopp's (2019) study. At the same time, we also find evidence for transfer from the heritage languages, namely that Turkish bilinguals use more non-target like demonstratives in grade 7 which cannot be found in grade 9. Also, that they significantly use more *this as determiner*, traced back to the heritage language Turkish that lacks an article system and a higher use of *determining this* or *definite articles* was expected. Furthermore, there was non-facilitative influence from Russian as heritage language, too, that is a lower use of *that as subordinator*. Again, Russian do not possess an identical form. Lexical transfer occurred less often in texts of Russian bilinguals. German monolinguals outperformed their bilingual counterparts regarding a lower use of non-target like demonstratives.

Due to missing background data of the English monolinguals, they were mostly excluded in the statistical analyses. Maybe a larger context and a younger cohort would have shown different results. A second possibility for different findings is a comparison between oral and written data that would give more insights into the use of demonstratives in bilingual heritage speakers. Furthermore, since MEZ is a longitudinal design, it would be possible to use data from the other data collective points to identify changes in the use of demonstratives over time. A further crucial factor is that, due to the corona pandemic, we were not able to collect data from Russian and Turkish native speakers. This, however, would be necessary to compare the language behaviour of the bilinguals with their monolingual peers. Background variables are important, too, i.e., if we consider the school type, it would be more suitable to have balanced groups, namely the same number of participants who attend the school type *Gymnasium* and *other*, with a balanced number of students who have a low/middle/high socio-economic status. The same counts for gender, school grades in English and German etc. A last point refers to the heritage speakers who are unbalanced. This means that they may be less proficient in their heritage language Russian or Turkish and more proficient in their dominant language German. Hence, it is expectable that the heritage speakers did not acquire all grammatical phenomena in their heritage language. Therefore, it may be that the heritage speakers did not acquire the knowledge about demonstratives completely and hence, are not able to

fully master them in Russian or Turkish in written texts. Even more, then transfer in this certain area is not predictable, moreover, it is more predictable from their dominant language where they master demonstratives in written as well as oral production. We cannot take that for granted, but we assume that demonstratives are easier for the heritage speakers in oral production, since they are normally used very early in language development. We have to keep in mind, that the heritage speakers did not get any instructions in their heritage language. Hence, we are convinced that they are more used to write in their dominant language than in their heritage language.

Finally, we identified different findings. In accordance with Lorenz & Siemund (2020), we find evidence for German as source of transfer. But we also find that the heritage languages impact English as a third language. However, there is no linguistic model that is in line with the results. As mentioned, the *absolute L1 transfer* and the *L2 status factor model* are difficult to include, because the heritage speakers in this study are unbalanced. But if we assume that the heritage languages are the L1 and German is the L2, then we could argue for transfer from the L1, that is negative transfer from Russian visible in less *that as subordinator*, as well as negative transfer from Turkish regarding a higher use of *non-target like demonstratives* in grade 7 and a higher use of *this as determiner*. Then, the result that German monolinguals use less *non-target like demonstratives* in grade 9 and more *subclauses* would be in favour with the L2 status factor model. Regarding the TPM, German is typological closer to English and would explain its influence. The CEM proposes that there is either positive or no transfer. The positive findings could therefore be in line with the CEM, but the negative influence from both Russian and Turkish reject this model.

In the following subchapters, we will concentrate on open questions and further limitations in this study. The statistical analysis for demonstratives reveals that there are statistical differences between all language groups. Variables that impact the use of demonstratives are the heritage languages, school grades in English, the motivation and the HISEI. For the second case study, namely the use of articles, we found variables like the school type, language with siblings and the HISEI that contribute to the use of articles. The third case studies focused on the use of subclauses. The outcome of the ANOVAs and regression models indicate that the heritage language and the language with the mother or siblings are predictors for subclauses. For lexical transfer, the heritage language, grade, school type, school grades in German and the motivation are crucial. The subsequent subchapters will explain each variable in more detail.

## 6.2 Dominance of languages

In this chapter, we concentrate separately on language dominance. Therefore, it is necessary to focus on the participants and their languages. In the beginning, we presented that the bilinguals in the current study are unbalanced. Hence, we focus on a special type of bilingualism because they have different proficiency levels in their two languages. In Chapter 2.3, the definition of such heritage speakers was presented, and we will again repeat it here: a heritage speaker has “been exposed to an immigrant or a minority language since childhood and [is] also very proficient in the majority language spoken in the wider speech community” (Montrul 2014: 168). Lorenz & Siemund (2020) noticed that these bilinguals are mostly unbalanced since they have a varying proficiency level. In addition, it is also possible to identify such speakers as “subtractive bilinguals, which implies more than an unbalanced status” (Lorenz & Siemund 2020: 7). Furthermore, they argue that “the L2 takes over the role of the L1, it replaces it and becomes the stronger language” (Lorenz & Siemund 2020: 7). As we mentioned previously, this is the reason why it is not easy to define which language is the current L1 and the L2. By that, we identify German as the dominant language and the heritage languages Russian and Turkish that are used less frequently and mostly in family contexts as the minority or heritage language. Note that German is the predominant language at home, especially between siblings.

Another point worth mentioning is that “we cannot consider heritage language speakers to be native speakers” (Polinsky 2015: 17) In general, it means that heritage speakers mostly have a limited knowledge about grammar in their heritage language. More precisely, their understanding about grammar “arises from intuition” (Polinsky 2015: 18). Normally, they do not think about how they speak or which grammar they use, because they learn the heritage language in a natural setting, mostly in a family context. This needs to be kept in mind when we compare the language groups. A heritage language speaker who is not aware about how demonstratives are used in his heritage language will probably not show transfer effects from his heritage language in this certain domain. This is crucial for the results of our study. Due to missing proficiency test’s, we have no knowledge about their abilities in the heritage languages which affect the use of demonstratives. For future research, it would be more suitable to test the same grammatical domain in both the dominant and moreover, in the heritage language. Then, we are able to identify CLI effects. Nevertheless, cli effects from either Russian or Turkish were found. Furthermore, Polinsky (2015: 20) points out that heritage language

speakers have a “linguistic insecurity” which again supports the assumptions that heritage speakers are aware about their limitations in the minority language.

However, Ruhl et al. (2020) examined bilingual heritage speakers of Russian who were born and grow up in Italy but acquired their heritage language at home. Their findings reveal that the bilingual heritage group performed better in their dominant language Italian. Compared with their monolingual peers, they have a smaller linguistic repertoire referring to lexis and grammar (Ruhl et al. 2020:12).

What this means for research, shows a study of Brehmer and Mehlhorn (2017) who observed heritage language speakers and the role of the minority languages Russian or Polish. Interestingly, the dominant language German replaces more and more the heritage language at home as a family language. More precisely, this happens in the communication between siblings. What is more, the parents reported that they notice a decreasing proficiency in their heritage language. In general, this observation supports the naturally ongoing process that the competences in the heritage languages will decrease which then influences CLI effects less and less. In our study, we made a similar observation (in Table 53). While children tend to use the heritage language to their mother or father, especially siblings use German for communication with each other. The younger generation uses the heritage language less frequently. Hence, these facts let assume that the proficiency level in German is higher than it is in Russian or Turkish due to the frequency of use and the use at school as language of instruction in most of the subjects. This is another point worth mentioning. The teaching style in German schools is mostly monolingual. Hence, CLI effects from German as the predominant language are still more predictable.

However, we still assume that the heritage languages in this current study influence the written use in English, but we admit that the impact of German is higher. As Polinsky (2015: 17) stated, heritage speakers have not the same competences than native speakers, but Lorenz (2019: 330) assumes that heritage languages even with a lower proficiency level than that in the dominant language will still have an impact on third language acquisition, visible in CLI effects.

In conclusion, although we observed similar performances of bilingual and monolingual speakers which supports that German as the dominant language has a high impact on English in written tasks (case study 2), we also find evidence that there is indeed influence from the heritage languages (case study 1,3,4), but they mostly fade over time. German has a particular role for the heritage speakers in the current study, since the

younger generation uses it more frequently than their parents who may also notice a loss of proficiency, when they rarely use their heritage language and more frequently communicate in German with their children.

### 6.3 School type and school grades in English and German

In the current investigation, the students attend a secondary school. In Chapter 2.9, we explained the school system in Germany. For the English native speakers, data about their school type is missing due to the fact they are adult speakers. However, the monolingual German and bilingual heritage speakers can be compared. Following Lechner & Siemund (2014), we divided the various school types into high school (needed for university) *Gymnasium* and summarised all other school types into *other*.

As illustrated in Table 47, the distribution between the two school types is not evenly. German monolingual students are more represented in the school type *Gymnasium* that enables them to study at a university. A comparable situation can be found in the bilingual Turkish-German group that has a similar distribution. The Russian-German bilinguals have an almost equally distribution between the vocational- and the university-bound school type. We do not have any cases of unknown information for school types. This overview is especially intriguing because we showed that bilingual Turkish-German speakers have a comparably low socio-economic status, but unexpectedly, they do not attend less frequently the university-bound school type. Instead, they can be compared with the German monolinguals who are associated with a high socio-economic status.

In Linear Model 11, the school type *other* leads to an *overuse of demonstratives*. For indefinite articles, the same school type was found to be significant in ANOVA Model 12, presented in Table 100. In addition, ANOVA Model 14, and Linear Model 14 (presented in Tables 104-105) showed that this school type leads to an increasing use of *indefinite articles*. In ANOVA Model 17 in Table 113, the school type is highly significant for the dependent variable *lexical transfer*. In the corresponding Linear Model 17 (Table 114), the school type *other* leads to an increase of *lexical transfer*. For case study 3, no influence could be found.

The variable English grade is a predictor in the use of *demonstratives*. In the ANOVA Models 1-6 as well as the Linear Models 1-6 (Tables 75-86), good English grades lead to an increasing use of *demonstratives* in general, to a *target like use* and an increasing use of *this*. Surprisingly, it is also a predictor for the use *non-target like*

*demonstratives*. However, in ANOVA Model 11 and Linear Model 11 (Tables 95-96), good grades in English increase an *overuse of demonstratives*. On the other hand, good school grades in German increase the occurrence of *lexical transfer*, presented in Tables 113 and 114 (ANOVA Model/Linear Model 17).

#### **6.4 Age/Grade**

Within this study, the participants were divided into language groups as well as according to their age. Here, we have two cohorts: one group of 12-year-old, and a second of 16-year-old students. The English native speakers were divided into the younger cohort of 20-year-olds and the older of 40-year-olds. The former includes English natives who were between the ages of 18 and 35, the latter for natives who were 40 and older. However, the variable *age* did not turn out to be a consistent predictor for the written performance in the investigated language English. Therefore, in most of the regression models, we combined the variable *language group* with the variable *age*, because the variable *age* alone mostly had no values in the performed statistical models.

Based on our knowledge, we assumed that *age* indeed would be a strong predictor, since the older cohorts have been studying English for four years longer (except for the English natives). Also, the variable *grade* was included. In the Tables 95 and 96, ANOVA Model and Linear Model 11 were performed, in order to find out which effect the background variables have on an *overuse of demonstratives*. Both models reveal *grade* as an influencing factor. However, the aforementioned regression model showed that with increasing age in grade 9 an *overuse of demonstratives* decreases. The same effect can be found in ANOVA Model and Linear Model 17, presented in Tables 113-114. *Lexical transfer* occurs less often in grade 9 than in grade 7.

In sum, both *age* and *grade* only have slight effects on the investigated dependent variables.

#### **6.5 Socio-economic status**

The socio-economic status (HISEI) is a variable that was found to be a predictor for the performance in a second or third language (see Hopp 2019; Lechner & Siemund 2014). Since the HISEI was clearly found to contribute to the performance in an additional language, we cannot confirm this indication, due to our results. In this study, the HISEI ranges from 13 as the lowest index to 89 as the highest and we divided it into low, middle and high values. Note that the higher the HISEI is, the higher is the social status of the

family. By now, we only have access to the HISEI index for the German monolinguals and the bilingual heritage speakers. Hence, the English native speakers cannot be included in the discussion about this variable. This should be controlled for in further research.

If we compare the mean values in Table 51, the monolingual German speakers have a higher HISEI than the bilingual Russian group who reach slightly higher mean values than the bilingual Turkish speakers. More precisely, the association between monolingual Germans and a high HISEI is established in Figure 43.

In general, the mean values show that there are differences between the HISEI among the different language groups. Lorenz (2019: 334) states that adults with a migration background, i.e., their families migrated to Germany, have lower HISEI's than monolingual Germans.

In this study, the HISEI did not turn out to be a consistent predictor. However, in Table 86, Linear Model 6 analysed the use of *this*, and the results show that with increasing HISEI the number of *this* per text increased, too. In ANOVA Model and Linear Model 7 presented in Tables 87-88, a high HISEI leads to an increasing use of the subcategory *this as determiner*. The last impact was found in the analyses for *indefinite articles*. Again, the HISEI turned out to have a beneficial impact on the use of *indefinite articles*, presented in ANOVA Model and Linear Model 14.

In conclusion, the findings reveal that the *HISEI* is not a general predictor for the performance in written English by monolingual and bilingual heritage speakers.

## 6.6 Age of onset learning the heritage language or German

We have shown in the previous chapters (especially Chapter 2.3) that there are different types of bilingual speakers. In the current study, we differentiated between early and late, simultaneous, and sequential bilinguals. Especially for heritage speakers, this is important, too, since some of them acquire a majority language and the heritage language simultaneously, others start to acquire the majority language of the country later, i.e., with five or six years. The age of acquisition might influence the performance; hence, we included this variable in the current investigation, more precisely, in the multiple regression models.

In Table 46, we have a similar uneven distribution as we have seen for the variable *school type*. Many Russian-German bilinguals (n= 45) were already born in Germany and almost 65 percent of them started to acquire German until the age of two (n= 29) (see Table 151 in the Appendix). In addition, even more Turkish bilinguals (n= 61) were born



and raised in Germany, but only 26 percent (n= 16) started to acquire the majority language of the country of residence until they were two. Yet, the majority of these bilinguals, namely more than 75 percent (n= 46) acquired German as the L2 between three and five years. Quite a small number started to acquire the official language German between the ages six and nine and only one bilingual student between the ages of 10 and 15 years which can be seen as a later bilingual compared with the early bilinguals who learned German until the age of three. By and large, more than half of the bilingual students were born in Germany and the majority started to learn German between the ages three to five.

In the statistical analyses, the variables for both the *age of onset of learning the heritage language and German* were included. The former influenced the use of demonstratives, namely that an acquisition of the heritage language *between the ages six and nine* lead to a lower use of *demonstratives*, presented in Table 78. However, a Tukey HSD test revealed that on the 95 percent confidence level there is a statistically significant difference between the age of onset of the heritage language between *six to nine* and *between 3 to 5*. For the acquisition of German, no influence was found.

These results show that the *age of acquisition of either the heritage language or German* only have a small or no effect on the investigated variable in the English written text.

## **6.7 Motivation and attitudes towards English**

In the current investigation, two attitudes towards English were analysed, namely whether students considered English as a useful language or whether it is boring. Again, the English native speakers are not included in this discussion. In Chapter 5.2, Table 54 showed that almost all students regarded *English as useful*. For the second attitude, only a small number of students perceived *English as boring*, namely 18 percent. Compared with the other language groups, more Russian-German bilinguals considered English as boring. When students think that *English is boring*, this attitude might negatively impact the motivation to learn English and hence, it might result in a lower proficiency level than of students who regard English as useful.

For the first attitude, three different results were found. The use of *demonstratives* was analysed in the first two analyses, presented in the Tables 75-78. In both cases, the number of *demonstratives* per text was higher, when students agree that *English is useful*.

For the *target like* use of *demonstratives*, again a beneficial effect of the positive attitude was found to be a predictor for the correct use of *demonstratives* (Tables 79-80).

For the negative attitude, namely that *English is boring*, we also found different results in the statistical analyses. The first result of ANOVA Model 5 reveals that a negative attitude impacts the use of *this*. In the corresponding Linear Model 5, the estimate for this variable was negative, hence, it lowers the use of the pronoun *this*. In Tables 91-94, the effect of the background variables on *that as subordinator* was analysed. Surprisingly, a negative motivation to learn English increases the use of *that as subordinator*. In the last ANOVA and Linear Model 17, the occurrence of *lexical transfer* was higher when students find *English is boring* which is expectable. Both attitudes have an impact on the overall performance in written English, either positive or negative.

## 6.8 Language use at home

For bilinguals in this study, we analysed four different background variables regarding the language use at home, namely the language of communication with the *mother*, the *father*, the *siblings*, and the *family language*.

In Table 53, the bilinguals reported in the background questionnaire about their language use at home. For the communication with the *mother* and *father*, the picture is clear. Most bilinguals speak mostly the heritage language or both languages with them. Instead, the language used mostly with *siblings* is either both the heritage language and German or only German. But the majority uses German or mostly German with their siblings. This means that there is a change visible between the generations of heritage speakers, namely that the parents more often use the heritage language than the dominant language German, whereas their children speak more frequently German. This may be traced back to the fact that German is the language of instructions in school settings and that it may very well be that German is mostly used with their friends, too. Hence, the influence of the heritage language is lowered. However, we performed several ANOVAS and regression models and included these variables. The reference level was always *German*. For the communication with the *mother*, ANOVA Model and Linear Model 15 reveal that the use of subclauses increases when children use *mostly German* or *the heritage language* with their *mother*. In contrast, the communication with the *father* did not turn out to be a significant variable.

The highest impact could be found in the communication with *siblings*. The first result was found in the analysis of *demonstratives* in Table 78. When siblings use *mostly*

*the heritage language*, the use of *demonstratives* increases. For *that as subordinator*, the use of *the heritage language* was highly significant (ANOVA and Linear Model 10). Regarding the use of *articles*, the use of *mostly German* increases the use of articles in written texts, whereas the use of *the heritage language* leads to a decrease (Tables 100-101). Another finding revealed that when *mostly German* was used by the siblings, more *definite articles* were found (Tables 102-103). However, when siblings use *both* the heritage language and German, *indefinite articles* occurred more often in the English written text (Table 105). Another beneficial impact was found in the analysis of *subclauses*, namely that if *mostly the heritage language* is used between the siblings, more *subclauses* can be found in the texts (Tables 109-110).

In sum, most of the results reveal a beneficial effect of the use of either (*mostly*) *the heritage language* or *mostly German* on the investigated variables. Regarding the use of *articles*, the only negative influence of the use of *the heritage language* was found in Table 101.

## 6.9 The use of demonstratives

Within this investigation, the focus was the use of demonstratives by bilingual heritage speakers and monolingual German and English speakers. We differentiated the English demonstratives *this*, *that*, *these*, and *those* into different categories, namely *determinative*, *identifying and subordinating* (see Chapters 4.6.1 and 5.1). The second category is further split into *predicative* and *anaphorical identifying* demonstratives.

### *The general use of demonstratives*

In Figure 47, the mean values show that German monolinguals at the age of twelve used the most demonstratives in their written texts followed by the same age group of Turkish bilinguals. The differences between the language groups are comparably small. Due to a smaller sample, the English native speakers used the smallest number of demonstratives. However, with increasing age less demonstratives are used. In Figure 48, a boxplot summarizes the use of demonstratives and presents that German monolinguals and Turkish bilinguals aged twelve have the most variation in their groups. Except the English natives, the other groups show similar results. This is surprising and shows that between L2 and L3 learners of English are no great differences. One explanation may be that the bilinguals are unbalanced and acquired the heritage language in a natural setting. Hence,

they did not get instructions in this language which might have a higher influence on the performance in written English.

Table 57 provides an overview of the mean values and results for the t-tests. Unexpectedly, the mean values show that all language groups, except English natives, use more demonstratives per written text in the younger cohorts. The most demonstratives can still be found in the German texts of the twelve-year-olds, followed by the Turkish and Russian bilinguals.

Linear Model 1 analysed the general use of *demonstratives*. It turned out that Turkish bilinguals in grade 7 used statistically significant more *demonstratives* than German monolinguals in the same grade. In the Tables 77 and 78, the bilinguals were compared with each other when using demonstratives. Again, the Turkish bilinguals in grade 7 outperformed their bilingual counterpart. Background variables that turned out to be predictors for the use of demonstratives were *the heritage language*, *English grade* and the motivation *English is useful*.

#### *The target like use*

In Figure 49, a boxplot showed that with increasing age students use more *target like demonstratives*, except for the Russian bilinguals. Unsurprisingly, English monolinguals used all demonstrative target like. The statistical analyses revealed that in ANOVA Model 3 the motivation *English is useful* turned out to be a predictor, which is confirmed in Linear Model 3. Hence a higher motivation to learn English leads to more correct demonstratives in the written texts. In line with this, good *English grades* and students who possess *between 201 and 500 books* increasingly use demonstratives target like.

#### *The non-target like use*

As for the target like use, German monolinguals and Turkish bilinguals use less incorrect demonstratives with increasing age, but for Russian bilinguals this number increases over time. In Table 57, the t-tests revealed that there is a statistically significant difference between German monolinguals in grade seven and nine, namely that they use significantly less demonstratives non-target like. ANOVA Model 4 reveals that the effect of the heritage language is highly statistically significant on the use of *non-target like demonstratives*. Linear Model 4 shows that compared with monolingual Germans in grade seven, in grade nine they use statistically significant less incorrect forms. In

contrast, Turkish bilinguals in grade seven use statistically significant more incorrect forms which cannot be found in these bilinguals in grade nine. Hence, this effect disappears over time. Surprisingly, the background variable *English grade* significantly impacts incorrect demonstratives, namely that with a better grade in English more non-target like demonstratives occurred in the written texts. A Tukey HSD test confirmed that on the 95 percent confident level there are differences between Turkish bilinguals in grade seven and English monolinguals as well as between Turkish bilinguals in grade seven and German monolinguals in grade nine.

### *The use of this*

Table 59 reveals that the identifying anaphorical category is used the most, followed by determinative *this*. Interestingly, the least used category is identifying predicative *this* which was not found in texts of English native speakers. In addition, the older cohort of Russian bilinguals used more determiners than anaphorical identifiers. Figure 53 showed the formal correctness of *this* in proportions. It is apparent that except for Russian bilinguals, German monolinguals and Turkish bilinguals use *this* more target like with increasing age. Again, no incorrect form was found in English monolinguals. Nevertheless, the performances in the use of *this* are comparably low. Only German monolinguals in grade nine use slightly more than 50 percent correct. Hence, the use of *this* in general seems to be more challenging than that of *that*.

For this study, the demonstrative pronouns were divided into *agreement*, *no agreement*, *context agreement*, *no context agreement* and *target like* and *non-target like* use. In Figure 55, this division for *this as determiner* is shown in proportions. For all language groups, the *context agreement* was not challenging, but the right agreement between pronoun and antecedent and the correct use. The t-tests revealed that there is a statistically significant difference between the younger and older English monolinguals in the use of *agreement*, *context agreement* and *target like* use. In addition, for *no context agreement*, there is a statistically significant difference in the Turkish bilingual group.

For *this as predicative identifier*, only the *right agreement*, *context agreement* and *target like use* was found in all language groups, presented in Figure 56. Note that the English monolinguals did not use this subcategory. In Table 61, the t-tests did not find any differences between the younger and older cohorts.

Figure 57, the mean values for *this as anaphorical identifier* are shown. English monolinguals used this category the least. For the other language groups, a decrease from

the younger to the older group was found. The bilingual groups show almost the same numbers of *agreement*. However, the highest number of *this as anaphorical identifier* is found in the younger German cohort. In the older cohort, the numbers are comparable to the bilingual cohorts of grade seven. *No context agreement* can only be found in the bilingual Turkish-German group, the older German monolingual group and the Russian-Germans of grade seven. Furthermore, the *context agreement* reaches high values in all language groups. Only a small number of *no context agreement* can be observed in German monolingual younger students as well as a higher number in the Turkish-German group aged 12 that decreases until the age 16. In addition, the number of *non-target like* hits are predominantly in the German monolinguals and bilingual groups, although the number of *target like* and *non-target like* hits in the German older group is almost equal. The highest number of *non-target like hits* is produced by the German monolinguals in grade seven closely followed by the Turkish-German and Russian-German bilinguals of the same age group. In Table 62, the t-tests found a statistically significant difference between younger and older Russian-German bilinguals for the *target like* use of *this as anaphorical identifier*.

In ANOVA Model 5, predictor for the use of *this* were the *heritage language*, *English grade* and the motivation *English is boring*. Linear Model 5 reveals that Turkish bilinguals in grade seven use statistically significant more *this* than German monolinguals in the same grade. Also, this model confirms *English grade* being a predictor for the use of *this*. In a second statistical analysis of *this*, again the *heritage language* was an influencing variable (see ANOVA Model 6). However, in Linear Model 6, Turkish bilinguals in grade seven use statistically significant more *this* than their bilingual counterpart. Next to *English grade*, the variable *HISEI* turned out to be a predictor, namely that with a higher *HISEI* more *this* is used. The last analysis focused on the use of *this as determiner*. As before, *heritage language* and *HISEI* were found to be influencing variables (see ANOVA Model 7). Linear Model 7 confirmed that the younger cohort of Turkish bilinguals uses statistically significant more *this as determiner* than monolingual Germans in the same age group.

#### *The demonstrative pronoun that*

Figure 59 shows that the category *that as anaphorical identifier* is used the most by all language groups followed by the *subordinating*, *predicative* and *determining categories*. The highest number of *that as anaphorical identifier* is found in the Turkish bilingual

group in grade seven followed by *predicative that* and *that as subordinator*. In contrast, English monolinguals used mostly *that as subordinator*. German monolinguals as well as Russian bilinguals used *that as anaphorical identifier* followed by *that as subordinator* and *that as predicative identifier*. In general, *that as determiner* is the least used category. Figure 60 showed that the pronoun *that* was mostly used *target like*. Only a few outliers were found in all language groups in the boxplot.

However, the category *that as determiner* was not found in German monolinguals in grade nine and Turkish bilinguals in grade seven. English monolinguals and Turkish bilinguals in grade nine used similar often this category with the *correct agreement*, *context agreement* and *target like*. Instead, the smallest number of *that as determiner* was used by German monolinguals in grade seven, but with *correct agreement*, *context agreement* and *target like*. In grade nine, a small number of Russian bilinguals used the wrong *context agreement* as well as some pronouns *non-target like*. In Table 64, the t-tests did not found differences between the younger and older cohorts that were statistically significant.

For *that as subordinator*, monolingual Germans and bilingual Russians use less *subordinating that* with increasing age. The opposite can be found in Turkish bilinguals. English and German monolinguals used the highest number of this category. Again, no differences between the age groups were found in the t-tests in Table 65.

The category *that as predicative identifier* was not used by English monolinguals. In the other language groups, in grade seven, there were a few numbers of *no agreement* as well as *non-target like* uses that disappeared over time. The lowest number of *that as predicative identifier* was found in the Turkish bilingual group in grade nine. The t-tests in Table 66 revealed that in the Turkish bilingual group there are statistically significant differences in the *agreement*, *context agreement* and *target like* uses.

The last category is *that as anaphorical identifier*, which is used more frequently than the other subcategories of *that*. Figure 64 showed that English monolinguals rarely used this category. However, in German monolinguals and both bilingual groups, a small number of *no agreement* and *non-target like* uses occurred. In addition, in the Turkish bilingual group a small number of *no context agreement* appeared in both age groups. Turkish bilinguals used the highest number of this category. In the German monolinguals as well as both bilingual groups the younger cohorts use slightly more *that as anaphorical identifier*, but the difference in the Turkish age group is higher than that in the other language groups. In Table 67, the t-tests did not find any differences between the cohorts.

Surprisingly, in ANOVA and Linear Model 8 no variables were found to be predictors for the use of *that*. The use of *that as subordinator* was analyzed in ANOVA and Linear Model 9. Both reveal that the *heritage language* as well as the motivation *English is boring* are statistically significant, namely that being a Russian bilingual leads to a lower use of *that as subordinator* and when students find *English boring*, they use more *that as subordinator*. In the additional ANOVA Model 10, the motivation *English is boring* and the *language with siblings* turned out to impact the use of *that as subordinator* for bilinguals. The corresponding linear model showed that Turkish bilinguals in grade nine use more *that as subordinator* than Russian bilinguals in grade seven. Again, the motivation *English is boring* increases the use of *that as subordinator*, as well as when siblings use the *heritage language* which each other.

#### *The plural demonstratives these and those*

Unsurprisingly, the plural demonstratives *these* and *those* occurred less frequently than the singular pronouns. In general, the highest frequency in absolute values was found in texts of bilingual Russians at the age of sixteen who, in total, used *these* fourteen times. For this pronoun, the *determinative* followed by the *anaphorical identifying category* were used the most, whereas *these as predicative identifier* was only found 0.01 on average in German monolingual texts.

By and large, the demonstrative *those* was rarely used. Hence, the *determinative category* mostly occurred followed by the *anaphorical identifying category* which was only used by older bilinguals and English natives. In general, the *predicative identifying category* was not used. In general, the German monolinguals as well as the younger Turkish bilinguals did not use the demonstrative pronoun *those* in their written texts. The t-tests for both pronouns did not find differences between the younger and older cohorts. Due to the rare occurrence of both pronouns, no further statistical analyses were performed.

#### *Conclusion*

In sum, as expected the singular demonstrative pronouns *this/that* were more frequently used. This may be traced back to the task which used a picture story as basis for a text about a typical German/English breakfast. All written texts consist of 47.920-word tokens that include 688 demonstratives, 3 304 articles and 983 subclauses. Not surprisingly, articles can be found the most. The higher number of subclauses show that the students



can write complex sentences. However, this also illustrates that demonstratives are important in the acquisition of English and the written performance. In the comparison between the language groups, we found differences. First, Turkish bilinguals in grade seven used statistically significant more *demonstratives*, in general. Hence, *the heritage language* is a predictor for the use of *demonstratives*. Also, German monolinguals in grade nine used statistically significant less *non-target like demonstratives* which is a benefit compared to the bilingual groups. At the same time, Turkish bilinguals in grade seven used more *non-target like demonstratives* in the same Linear Model 4 which is a disadvantage. What is more is that Turkish bilinguals use more *this* (Linear Model 6) in general and *this as determiner* which shows an enhancing effect from Turkish, because Turkish lacks an article system and it was expected that if Turkish bilinguals use more *determining this* or more *articles*, this shows influence from the heritage language Turkish, which could be confirmed in Linear Model 7. In contrast, an influence from Russian could also be found, namely that Russian bilinguals used statistically significant less *that as subordinator*. This can be traced back to the lack of the corresponding form in Russian. In general, Russian has a similar form, but it differs from that in English. However, it was expected that if students use less *that as subordinator* this shows non-facilitative influence from the heritage language Russian which was confirmed in Linear Model 9. In conclusion, we indeed found differences between second and third language learners of English. Various background variables like *English grade*, *the motivation*, *the HISEI* or *the school type* impact the use of demonstratives.

### **6.10 Advantages of bilingual heritage speakers**

A central debate regards whether bilingual or multilingual speakers perform better and have advantages over monolinguals in the acquisition of additional languages. Siemund & Müller (2020: 234) explain that there are differences between both types of learners, namely the ability of multilingual speakers to understand and use more than their first language. Several studies found multilingual speakers to outperform their monolingual peers (see Siemund & Müller 2020; Bialystok 2018; Augustín-Llach 2017; Maluch et al. 2016). In Chapter 2.8, we showed that there are studies that found no such evidence (see Ghezlou et al. 2018; Goldsmith & Morton 2019; Schroeder 2019; Hopp 2019). Hence, a bilingual or multilingual advantage cannot be generalized.

With respect to the number of word tokens, the monolingual Germans produced in both age groups more words than the bilingual groups. Due to this result, however, we could argue for a monolingual advantage regarding these word tokens in the written task.

Regarding the statistical analyses, the results of this study confirm differences between the language groups, except for the use of *articles* as no ANOVA or Linear Model found a statistical significance for the variable *heritage language*. For the use of *demonstrative* as for the use of *subordinators*, a *monolingual advantage* is found, namely that German monolinguals in grade nine use statistically significant *less non-target like demonstratives* and *more subordinators*. For the former advantage, a *bilingual disadvantage* is also found in the Turkish bilingual group in grade seven, that is a higher use of *incorrect demonstratives*. A Tukey HSD test confirmed these differences between Turkish bilinguals in grade seven and English monolinguals as well as between Turkish bilinguals in grade seven and German monolinguals in grade nine. However, the monolingual advantages could be traced back to the typology between German and English, since they are closer than Russian and Turkish to English. What is more is that both advantages occurred in the older cohorts. We cannot consider this a general advantage, as we cannot distinguish this difference from the variable *age/grade*. Hence, we can indeed confirm a difference, but whether it is a general advantage is difficult, but we can interpret this as an advantage at this certain stage in language development (see Lorenz et al. 2020). Also, the *bilingual disadvantage* of the Turkish younger cohort disappears over time. According to Lorenz et al. (2020:187), such differences are “more easily detectable in younger cohorts, though they fade as students grow older” (see (Hopp 2019; Maluch et al. 2016). In line with this, in Chapter 5.5. the results for the possible cli effects reveal that there is another *bilingual disadvantage* in the Russian group, because they use statistically significant *less that as subordinator*. Russian do not possess the same form for this category. Hence, this shows non-facilitative transfer from Russian as heritage language. Although Turkish bilinguals do not possess a corresponding form for *that as subordinator* either, there was no non-facilitative effect observable.

In addition, bilingual advantages were found, too. First, Turkish bilinguals in grade seven used more *demonstratives* and second, more *this as a determiner*. Note that the former disappeared in grade nine. Again, this may be an observable advantage at this early stage of language development, which fade in grade nine. The latter shows a facilitative influence of the heritage language Turkish. In Chapter 4.6.6 and 5.5, possible cli effects and the results of the ANOVAs and regression models were shown. The first

assumption was that both groups of heritage speakers might *overuse demonstratives* in general or use more *this as determiner* or *definite articles*. However, since Linear Model 7 confirms this cli effect, we argue for a bilingual advantage. Both findings disappeared over time, as they were not found in the older cohort. However, a last bilingual advantage was observed in Russian bilinguals that used *less lexical transfer* in their written texts. These findings reveal that they are differences between the groups mostly in the use of demonstratives, but they fade over time (see Hopp et al. 2019; Maluch et al. 2016). As Lorenz et al. (2020) state, this is a typical effect in language development. In regard to the dominant language, it seems to have a stronger effect on the L3 acquisition of English (Lorenz et al. 2020).

We have mentioned earlier that the type of bilingualism is a decisive factor that might impact the result of a study. However, in our study the bilinguals are heritage speakers who have a dominant language, German, and a heritage language, either Russian or Turkish. Hence, these are unbalanced bilinguals. In the study of Augustín-Llach (2017), balanced bilinguals outperformed their unbalanced peers. This outcome cannot be compared with our context. In general, unbalanced bilinguals do not have necessarily better performances in additional language learning.

Other factors seem to affect an advantage of heritage speakers over monolinguals, instead. The frequency of language use is intriguing, i.e., when bilingual speakers use both languages frequently, they perform better than unbalanced bilinguals, like the heritage speakers (see Blanco-Elorrieta & Pykkänen 2018). This cannot be found in the heritage speakers of the current study. Instead, they use the dominant language German more frequently than Russian or Turkish. The language use at home can also affect a bilingual advantage in additional language production. Within this investigation, the heritage speakers use the heritage language either mostly with their mother or their father, but with their siblings German is predominant. In addition, the family language at home is not necessarily the heritage language which also impacts additional language learning and the proficiency level in the heritage language, i.e., when the heritage speakers do not use the heritage language frequently, this might result in a lower proficiency level. Maluch et al. (2016) could show that mostly the proficiency level affects a bilingual advantage over monolinguals. Furthermore, they found a decreasing bilingual advantage of heritage speakers who live and grow up in Germany (Maluch et al. 2016: 116). In accordance with this finding, the outcome of this study does not seem surprising.

However, Maluch & Kempert (2017: 112) found evidence that bilinguals who frequently use their two languages and who may switch between them outperform monolinguals. In addition, their findings reveal that further decisive factors are the type of bilingualism namely simultaneous or sequential bilinguals, whereas the former type had visible advantages over monolinguals, the frequency of use, and moreover, bilinguals who received instructions in their minority language (Maluch & Kempert 2017: 112).

In line with Maluch & Kempert (2017) and Maluch et al. (2016), Hopp et al. (2019: 106) agree that the proficiency level of the dominant language positively result in a bilingual advantage. However, Hopp et al. (2019) found the same decreasing advantage of bilinguals as Maluch et al. (2016). Especially, there is a visible change from grade three to four for bilinguals. The previously mentioned advantage over monolinguals disappears then (Hopp et al. 2019: 107). In accordance with the former studies, Siemund & Lechner (2015: 11) found the same decreasing bilingual advantage over time. Hence, such an outperformance of bilinguals over monolinguals disappears in older students and is not visible any longer which is also observable in our findings.

In Lloyd-Smith et al. (2017: 159), bilingual experience is mentioned to be an enhancing factor for a bilingual advantage, precisely because they have strategies for learning additional languages. This can also be found in Cenoz (2013: 76), who argues that these strategies can be used for learning a new language. Yet, this finding might not be applicable for the heritage speakers of our study, since they acquired their heritage language in a family context and not in an instructional setting.

For our study, the intriguing factor of a decreasing bilingual advantage seems decisive. Nevertheless, there are findings that confirm advantages, namely that *less lexical transfer* was found in the *Russian bilingual group* which is a bilingual advantage. As Lorenz et al. (2021: 16) found, German is the main source language for lexical transfer. In addition, they argue that typological distance may helped the heritage speakers to have lower ratios of lexical transfer compared with German monolinguals. Second, non-facilitative transfer was found again in the Russian group that used *less that as subordinator*. So, this is a bilingual disadvantage. These two findings were found independent from the variables *age* and *grade*. In line with this disadvantage, Siemund et al. (2018: 399) found similar differences between heritage speakers of Russian and German monolinguals. Russian heritage speakers tend to use demonstratives in structures where personal pronouns were expected. Although this was identified as non-facilitative transfer, it is only weak one. In addition, Diessel and Monakhov (2022) found that the

use of demonstratives in child speech decreases with increasing age and mean-length-of-utterance. Also, children tend to use other types of spatial expressions when they are older. Although this study examines oral data and compares the acquisition of spontaneous child speech in cross-linguistic perspectives, it is in accordance with the result of this study, namely that with increasing age less demonstratives are used. Rodina et al. (2023: 9) found that Russian heritage speakers either growing up in Norway, Germany or the United Kingdom score lower than their monolingual peers from Russia, but that “speaking a heritage language has no adverse effects on the development on the majority language”. In this study, the heritage speakers are exposed to their heritage language at home and according to Rodina et al. (2023: 9), this is “beneficial for its development across domains.”

Regarding demonstratives and subordinators, monolingual advantages were found, too. First, German monolinguals used less incorrect demonstratives and second, more subordinators than their bilingual peers. For further research, a comparison of data from a longitudinal setting which is possible in the MEZ data would shed more light into the question whether these (dis)advantages disappear over time. Bohnacker and Karakoç (2020:194) compared subordination in Turkish heritage speakers growing up in Sweden. They did not find a development with increasing age and stated, “it would be premature, however, to interpret this lack of a clear age-related increase in subordinate constructions as a sign of stagnation.” In addition, they claim that the reason for such findings may be the cross-sectional data. Hence, they argue that a longitudinal setting could show different results.

In general, we assume that the bilingual heritage speakers benefit from their knowledge in German which is their dominant language, and which could be an influencing factor of impeding transfer from the heritage languages. In addition, the heritage speakers did not learn their minority language in a formal setting and therefore, they lack the impact of getting instructions in this certain language.

The results of our research are intriguing for English classrooms. In most of the countries, the monolingual habitus in EFL classrooms is predominant (Cummins 2009: 317). This principle leads to “the exclusion of students’ home language (L1), with the goal of enabling learners to think in the TL [target language] with minimal interference from the L1” (Cummins 2009: 317). However, for bilingual learners it would be advantageous, to get support in their heritage language in language classrooms. Cummins (2019: 3) states that teachers “have actively discouraged students from using their

languages in school”. In accordance with Cummins, Hopp (2019: 1018) argues that the material for foreign language classrooms in Germany is mostly designed for monolingual speakers, although the diversity and multilingualism are increasing, due to migration and mixed marriages, as we have seen in the beginning. Instead, we should encourage bilinguals to actively use their background languages for enhancing transfer in multilingual contexts. By and large, languages should no longer be seen as separated continuums, instead, they are dynamic and interact with each other which supports processes in language learning as well as skills that derive from such interaction (Cummins, 2017: 103). In line with this, Lorenz (2019: 346) argues that more multilingual approaches should be included in EFL teaching, to “raise awareness and to foster transfer”. With respect to the teachers, Lorenz et al. (2022: 323) state, that they “play a critical role in either hindering or supporting the multilingual development of the students.” What is more, Cummins (2019:14) supports the use of background languages of bilinguals and multilinguals in language classrooms which enables them to learn additional languages and, more precisely, which is the “foundation to their future learning”. Furthermore, teachers should endeavour to encourage students’ talents. We have seen that heritage speakers may not have the same awareness and skills in the heritage language than in the dominant language (Polinsky 2015). Hence, students may simply not know about their resources. So, the teachers can draw the attention to the students’ background languages and encourage language transfer and instructions in these languages. Moreover, students can activate their knowledge and repertoire to improve language skills in additional language learning (see Cummins 2019; Cenoz & Gorter 2017; Polinsky 2015)

### **6.11 Environmental setting in EFL classrooms**

The last subsection in this chapter deals with the influence of the learning environment in EFL classrooms and the teaching style in Germany that may affect the performance in English of various types of learners. The participants of this current study are second and third language learners of English as the foreign language. So far, we did not address the context in which they learn English.

First, the type of learners is crucial. In our study, we have monolingual Germans as second language learners of English and unbalanced heritage speakers who learn English as their third language. The heritage speakers did not get any instructions in the heritage language. Instead, they acquired this language in a natural environment. This is

crucial because it can impact the acquisition of further languages. Students who learned a second language with a teacher developed learning strategies which can help them for additional language learning. However, since the heritage speakers did not have such experiences, the influence of their minority language may be smaller. In Chapter 2.1.3, we have seen that this is also affected by various other variables like frequency of use, the context the language is used in, input etc. However, with the age 12 and 16, our participants are still young learners. Hereby, it is important that our participants barely use English outside the classroom. This language contact would be another influencing factor in learning English as additional language like, for example, college students or participants who use English in social media or who watch films in English. However, our monolingual and bilingual groups only have the instructional setting at school which differs from a natural setting of learning additional languages, for instance in another country outside a school. Furthermore, our English learners attend two different types of school, namely the vocational-bound and the university-bound school track which may alter the teaching style and plans and the learning environment.

In Germany, the monolingual habitus in EFL classrooms is predominant (Chlopek 2015). Nevertheless, in Europe we see an “increased international mobility” (Abney & Krulatz 2015: 1) that influences the EFL classrooms, due to bi- and multilingual students. With this increasing immigration, students bring their background languages into the English classrooms. Even though the “belief that multilingualism should be viewed as an asset rather than a hindrance” (Abney & Krulatz 2015: 1), in most of the classrooms the monolingual habitus is still the norm. Teachers often still believe that interlingual transfer is “a negative phenomenon” (Chlopek 2015: 33). However, this cultural background of the immigrants is crucial for our participants, because the heritage speakers come from Europe and Asia and may very well be influenced by these cultural settings. Hence, the small differences we found in our study may be traced back to their cultural background. Within the limitations of this study, we are not able to pin down this variable further. In addition, we have seen in Chapter 5 where we presented the results of this study, that the variables of the background questionnaire are limited and cannot explain most of the variation found in this study. As mentioned before, the attitude towards learning English needs to be complemented as well as variables that concern the motivation and the learning environment of the participants, among these could be for instance the role of the teacher, the teaching style, the atmosphere in the classroom, the dealing with interlingual transfer, the personal motivation towards additional languages, the ambition,

personality (teacher/student), performance pressure etc. Admittedly, the groups are heterogenous. Hence, there will always be some variation that cannot be explained by these personal variables. It may very well be that even the students are not aware of some personal settings or ambitions.

In fact, the motivation to learn a language plays a role in EFL classrooms (see Gilakjani et al. 2012). Nevertheless, these personal variables and settings cannot be responsible for the overall outcome of this study. By and large, this study is limited, and further limitations will be shown in the following chapter.

## **6.12 Limitations**

In this section, we will briefly discuss the limitations of the current study. Although the outcome of this study contributes to the understanding of second and third language learners of English in unbalanced heritage speakers, there are some deficiencies that might impact the outcome on a certain level which will be shown in the following.

The number of participants is not equally distributed, due to the smaller group of English native speakers. This means that we have the bilingual and monolingual German group that is equally divided into a hundred speakers per group and 50 per age group, on the one hand, and the English native group that contains 18 participants. Furthermore, we mentioned that we divided these groups into a twelve and a sixteen-year-old group. Since the English natives are younger and older adults between the ages 21 up to the oldest at the age of 79, it is not an ideal situation to compare these adults with the older cohorts of the bilingual and monolingual Germans, because old here refers to the age of sixteen. However, we separated the English natives into two cohorts to be able to compare them with the other language groups. Hence, these differences may explain the lack of statistical power when the English natives are included in the regression models. Two extensions are needed: first, the data set of the English natives needs to be larger and second, since the English natives are already adults, we lack a lot of information regarding variables like the type of school, the socio-economic status, school grades etc. Hence, this also contributes to such a lack of power which we have seen in comparably lower  $R^2$  ratios.

In addition, we did not manage to collect data from Turkish and Russian native speakers, due to the Corona pandemic. The number of those who participated in the online survey were too small with less than ten participants, that we decided to not include them in the current study. Thus, a data set that includes native speakers of Russian and Turkish



would result in a more significant comparison between the language groups and would enhance to detect lexical transfer effects on the one hand, and bilingual advantages, on the other.

Furthermore, the quality of the written texts varied, for instance some participants only took notes by using indents, others wrote long complex texts. In the current investigation, these different text qualities were not included in the analysis which shows that we had methodological problems. This means that we measured the text length without evaluating the task accomplishment. We admit that this needs to be controlled for in future research by using additional variables for measuring the text complexity that can be used in the statistical analysis.

In addition, the type of task might alter the results. Hence, the picture sequence about a typical breakfast in Germany might not be ideally to investigate the use of demonstratives, since participants did not need to distinguish between the distance, for instance. Another task would be more ideally and a comparison to the oral use of demonstrative would enable us to detect differences between written and oral data as well as of different developmental stages in learning English and the use of demonstratives.

Since this investigation used data from one certain time period during the data collection of the project *MEZ*, we are not able to compare the language groups on their developmental stages and find equalities and differences during the acquisition of demonstratives. It is possible that the participants develop differently due to the background languages or other background variables that might influence this language development in third language acquisition. Furthermore, there might be differences between these stages in second and third languages learners of English. In a follow up study, this longitudinal design would enable us to show leaps in unbalanced heritage speakers who learn English demonstratives.

Another variable that was not considered in this study is metalinguistic awareness. As we have shown in Chapter 2.4, there is no clear tendency that bi- or multilinguals have a higher metalinguistic awareness than monolinguals. Hence, since we did not test this with a certain instrument, we can neither confirm nor reject any of the results. This would be significant for future projects, since the L3 learners in the current study are unbalanced heritage speakers and they did not get any instructions in the minority language.

Unfortunately, we did not include the proficiency level of the participants, neither for English or German nor for the heritage languages. As we have seen in former studies (see Hopp et al. 2019; Maluch & Kempert 2017), the proficiency level of the background

languages may impact the acquisition and performance of English as the second or third language. Since we explained that the heritage speakers are unbalanced bilinguals who speak German as the dominant language and the heritage language as the minority language, the knowledge about their proficiency in these languages would enable us to analyse how it influences the performance in the third language. Therefore, we assume that the proficiency level in German as the dominant language is higher and that of the heritage language lower, because most of the bilinguals use the heritage language with their mother of father, but with their siblings they use German, instead. Besides, German is the language of instruction in the school setting. Due to the missing proficiency level, we can neither support the findings of earlier studies nor deny them. The proficiency could be tested, i.e., with a C-Test or other instruments.

As we already have shown in the previous chapter, we used the school grades and the type of school to measure the proficiency. However, this might be problematic because the school type determines the value of school grades. Nevertheless, we used this information, and we find differences between the monolingual German group and the bilingual groups, namely that the former group achieved better grades. Yet, we lack this data for the English native speakers. With the information about the proficiency level measured by a standardized test, we would have been able to explain such differences in the English performance. Again, we used the background information about the language use of the heritage speakers which we included in the statistical analysis. However, we took this information from the background questionnaire, but not everyone completed it. We still decided to include these variables. Otherwise, the data set would have been too small. In general, there were more missing data in the background questionnaire which refers to the background variables. This is represented by the code N.A. (not available) or in the regression models that excluded incomplete data sets. Admittedly, a complete background questionnaire would have been more informative and revealing.

In the following section, we will show additional extensions of this study for future research. Some are based on the represented limitations.

### **6.13 Outlook**

As we have seen in the previous discussion, we can add several extensions to this study that we were not able to include here. In Chapter 4.6.1, we explained the different demonstrative categories. What is missing here is that we can also divide them regarding their distance. Unfortunately, in the task about a typical breakfast in Germany, students

had no chance to show whether they can distinguish between the correct distances and demonstrative forms. This might be another point worth changing to test students about their knowledge of demonstratives. We acknowledge that it would also be better to test this orally like Shin et al. (2021).<sup>26</sup> As acknowledged, in this study we used written data which is helpful to examine the different categories demonstratives can be used in. But it would be helpful to compare the written with oral data. This could be done by a puzzle completion task, as explained before, or with different stimuli like cartoons and puppets, depending on the age of the participants, (see Zhao 2007) or sentence completion tasks with different perspectives of the experimenter and the participants to the objects (see Muşlu 2015). Another creative possibility would be to follow Küntay and Özyürek (2006) who used a reconstruction of a Lego model to examine the use of demonstratives compared by monolingual children with that of adults. However, the examination of oral data including distance would add a different perspective on the use of demonstrative and the developmental stage of the participants.

In addition, the current study could be extended to a longitudinal setting in which we compare the developmental stages of the exact same participants at different stages of their experience with learning English (see Hopp 2019, Hopp et al. 2019). This longitudinal setting could be extended to much younger participants which would help to detect the different developmental stages to learn demonstratives, since they belong to the first words children learn. Since MEZ is a longitudinal study, data from the other data collections could be used. However, this could also help to detect bilingual advantages at the different stages and in general.

In line with this, a potential extension of the language groups would be to include native speakers of Turkish and Russian and a larger group of English natives' who ideally are at the same age as the participants of the current study. It would be interesting to compare the written and oral performances in the heritage languages and in German and English. Then, we would be able to pin down transfer effects and interlanguage uses, following the Contrastive Interlanguage Analysis of Gilquin & Granger (2015). The English native speakers in this current investigation are divided into younger and older participants, but the older group are adults at the age of 45 or older. In the regression

---

<sup>26</sup> They examined the development of demonstratives in heritage speakers of Spanish who speak English as the dominant language. However, they used a puzzle completion task in order to test children between the ages of three, four to eight and seven. An experimenter sat across them, and the children were not allowed to touch a puzzle piece. Hence, they had to say precisely which puzzle piece they want etc. This differentiation between distal and proximal demonstratives helps us to examine whether students developed the different demonstratives.

models, we did not find big differences between the English native speakers and the other investigated groups, but to add more precise comparisons and insights on the development of demonstratives, similar age groups would be a better option. Therefore, we could use the same tasks in all languages.

The recent discussion has shown that the background variables were missing for most of the English native speakers. Hence, it would be better to have completed background questionnaires and interviews. In order to test, for instance metalinguistic awareness, which was not in the focus of the current investigation, structured and semi-structured interviews or further test instruments would complete the picture of the development of demonstratives.

Another suggestion refers to the statistical analysis. We used several ANOVAs combined with multiple linear regression models to test differences between the language groups. However, the tables and boxplots have shown that we also have variations within the language groups which cannot be analysed in an ANOVA and a linear regression model. Hence, models that include mixed-effects are needed which means that also random effects can be analysed with such a model. However, since we admit that most of the background data of the English native speakers are missing, we suggest that with additional interviews the missing data can be avoided.

In this current chapter, we explained that we did not have an equal distribution of students who attend the university-bound school track *Gymnasium* and the vocational-bound school track *other*. Hence, this equal distribution might add more clear results in the analysis of background variables and their influence on the use of demonstratives.

In addition, the proficiency level of the students either in German, English or the heritage languages is missing. We acknowledge that this is an important variable to compare the language groups and analyse the data of the current study. Thus, the last suggestion would be to measure their proficiency levels in all investigated languages.

## **6.14 Concluding remarks**

In this study, we aimed to find evidence for differences between monolingual and bilingual learners of English as additional language. Researchers found these differences between the acquisition of a second and a third language (see Siemund 2017; Cenoz 2013; De Angelis 2007). In Chapter 2.1.2, we presented that in the former case of second language learning mostly during the initial stages grammatical domains can be transferred to the new language which can either have an enhancing or impeding effect. In the latter

case, the sources for possible transfer are the first and the second language. Hence, two languages can affect the acquisition of a third language and at the same time be sources for cross-linguistic transfer. In this study, we examined which language is significant for the performance in written English, either the heritage or the dominant language German or both.

Furthermore, we presented several studies that focused on such cli-effects in third language acquisition, and we discussed models that argue for different sources of transfer. The first model that was presented is the *Absolute L1 transfer* that sees the L1 as the only source of transfer. It can either block the L2 or structural representations of the L1 are fully transferred to the L2 (see Jabbari & Salimi 2015; Hermas 2014; Na Ranong & Leung 2009). Compared with this, the *L2 Status Factor Model* proposed by Williams & Hammarberg (1998) predicts that the L2 is the main source, either facilitative or not, for transfer effects. Another model that is proposed by Flynn et al. (2004) is the *Cumulative Enhancement Model* that predicts only facilitative cli-effects from both previously acquired languages. Hence, it excludes negative cli-effects from both the L1 and the L2. Rothman (2011) mainly finds cli-effects due to their typological closeness in the *Typological Primacy Model*. This means that source of transfer is the language that is typologically closer to the new acquired one. However, Westergaard et al. (2017) proposed the *Linguistic Proximity Model* that predicts selective transfer from any languages that were previously acquired. They argue against the *Typological Primacy Model* because they suggest that transfer occurs due to linguistic proximity rather than real typology. An extension of the *Linguistic Proximity Model* is the *Scalpel Model* of Slabakova (2017) that predicts a property-by-property transfer and that further includes variables that affects the outcome and are excluded in the *Linguistic Proximity Model*.

In our study, secondary-school students participated, and they were either 12 or 16. In total, we have four different language groups: monolingual Germans, monolingual English speakers, Russian-German bilinguals and Turkish-German bilinguals.

Based on a picture story, the task was to write as a journalist about a typical German breakfast. For the English natives, we adapted this picture story and changed some of the pictures. Hence, they had to write about a typical (American) English breakfast. These texts were the basis for our corpus. For the statistical analysis, we coded demonstratives, articles, subclauses, and lexical transfer for target like and non-target like use. In addition, the demonstrative categories were further coded for agreement and context agreement. In a first step, we compared the absolute frequencies and mean values

of the investigated domains per language group and used t-tests in order to examine whether there are statistically significant differences between the age and language groups. In a second step, we included extralinguistic variables such as social variables of the background questionnaire like the attitudes towards learning English, the languages used at home, the school type, the socio-economic status etc.

The outcome of the ANOVAs combined with the regression models show that we clearly have differences between the language groups. Nevertheless, we still have to differentiate between the types of learners in the current study, namely second and third language learners of English as a foreign language. As we have seen, the type of bilingualism is crucial for the acquisition of additional languages. In this study, we have unbalanced heritage speakers which means that they speak a dominant language, German, and a heritage language, Russian or Turkish. The proficiency level was not tested in either the dominant or the minority language, but we assume that the proficiency level of a dominant language is higher, because it is also used in school for instructions. Hence, the heritage speakers are used to speak the majority language as the official language in the country they live in and in the learning environment in school. However, their knowledge about the heritage language is limited since they mostly use this language in a family context at home. Due to the mostly oral input of the heritage language, the heritage speakers may be less advanced in writing skills in the minority language. Unfortunately, we cannot exactly classify the proficiency level in both the majority and the minority language. But we assume that the influence of the heritage language in writing is less strong than in oral communication. With this characterization, we can shed more light into the acquisition of English as a third language by unbalanced heritage speakers. This is crucial because we have to clearly differentiate between balanced and unbalanced bilinguals. The former type is classified by having equal proficiency levels and competencies in both languages.

By and large, we found cross-linguistic interactions from the dominant language, on the one hand. This is, due to the presented differentiation between unbalanced heritage speakers and balanced bilinguals, no surprise and in line with previous studies (see Lorenz 2019; Hopp 2019; Fallah & Jabbari 2018). Hence, language dominance plays an important role for these unbalanced bilinguals. In accordance with language dominance, the typological closeness between German as the dominant language and English as the investigated language also facilitates cross-linguistic influence. Therefore, we favour the *Typological Primacy Model* (Rothman 2011) and due to our results, we agree with it. On

the other hand, we found influence from the heritage languages, too (Ntakarutimana et al. 2023; Shin et al. 2022; Siemund et al. 2018), but they fade with increasing age (Hopp et al. 2019; Maluch et al. 2016). We acknowledge that monolingual control groups of Russian and Turkish natives would give more insights. However, we have seen in Chapter 6.11 that we still have a monolingual habitus as a teaching style in German schools which may also support German as the dominant language to be the main source of transfer. Again, in this study, one of the limitations is that we do not know how proficient the heritage speakers are in Russian or Turkish which would give more insights into the status of the two languages. Since this study only focussed on written texts, the proficiency level in the written (and oral) competences would further shed light into their linguistic abilities in these languages. Furthermore, heritage speakers could profit from instructional settings in the heritage language because most of them grow up in Germany. Even though in Germany a lot of students have a migration background, and the language classrooms are multicultural and multilingual, German is still predominant, and the heritage languages are mostly not seen as resources.

With respect to advantages, the German monolinguals outperformed their bilingual peers in two cases: first, in grade nine they produced less *non-target like demonstratives* and second, more *subordinators*. Due to language proximity and typology, we argue for both the LPM and the TPM, because German and English are either in the same language family and share similarities in using demonstratives and subordinators. In addition, some bilingual advantages and disadvantages fade with increasing age. Nevertheless, less *lexical transfer* was found in texts of Russian heritage speakers which is beneficial. As Lorenz et al. (2021) state, typological distance may help the heritage speakers to have lower ratios of lexical transfer compared with German monolinguals. At the same time, Russian speakers used less *that as subordinator* which shows non-facilitative influence from Russian. As mentioned before, it is difficult to determine the L1 and L2 in unbalanced heritage speakers, but if Russian is the L1 and German the L2, the disadvantage of the Russian bilinguals do not offer support for the absolute L1 transfer, because the transfer is highly selective and is only found in the Russian bilingual group. In accordance with Siemund et al. (2018: 400), it can either be argued for Rothmans TPM, since Russian is typologically closer to English than Turkish or for the LPM, in the sense of linguistic proximity.

In addition, social variables from the background questionnaire were found to influence the use of demonstratives, articles, and subclauses such as the HISEI, the

motivation, the school type and grades as well as the language with the siblings for bilinguals.

In sum, we identified differences between the language groups of second and third language learners of English which mostly fade with increasing age. Due to the dominant status, we argue that German is the main source for cli-effects, visible in lexical transfer. Furthermore, the proficiency in the heritage language is probably lower. Another variable that explains the results is the typological similarity between German and English. We found a monolingual advantage in the use of formal correctness of demonstratives which occurred in the older cohort and a bilingual advantage in the occurrence of lexical transfer. In the Russian group, an advantage as well as a disadvantage were found, too. In general, the acquisition of a third language is not automatically facilitative when someone is an unbalanced heritage speaker .



## 7 Bibliography

- Aarts, B., Chalker, S., & Weiner, E. (2014). *Oxford Dictionary of English Grammar*. Oxford: Oxford University Press.
- Abney, S., & Krulatz, A. (2015). Fostering multilingual competence in the EFL classroom. *Nordic Journal of Modern Language Methodology*, 3(2), 1-9.
- Ahrenholz, B. (2007). *Verweise mit Demonstrativa im gesprochenen Deutsch. Grammatik, Zweitspracherwerb und Deutsch als Fremdsprache*. Berlin; New York: Walter de Gruyter.
- Altman, C., Goldstein, T., & Armon-Lotem, S. (2018). Vocabulary, Metalinguistic Awareness and Language Dominance Among Bilingual Preschool Children. *Frontiers in Psychology*, 9, 1-16.
- Angelis, D. (2019). Cross-linguistic Influence and Multiple Language Acquisition and Use. In Singleton, Daviv, & L. Aronin (Hrsg.), *Twelve Lectures on Multilingualism* (S. 163-178). Bristol, Blue Ridge Summit : Multilingual Matters.
- Antonova-Ünlü, E., & Sağın-Şimşek, Ç. (2015). The use of verbal morphology in Turkish as a third language: The case of Russian–English–Turkish trilinguals. *The International Journal of Bilingualism*, 19(3), S. 347-362.
- Aronin, L. (2019). What is Multilingualism? In S. David, & L. Aronin (Hrsg.), *Twelve Lectures on Multilingualism* (S. 3-34). Bristol: Multilingual Matters.
- Augustín-Llach, M. P. (2017). The impact of bilingualism on the acquisition of an additional language: Evidence from lexical knowledge, lexical fluency, and (lexical) cross-linguistic influence. *International Journal of Bilingualism*, 23(5), 1-13.
- Balpınar, M. (2019). *Demonstratives and Gramaticalization. A Perspective from Modern Turkish*. New York: Routledge.
- Bardel, C. (2015). Lexical cross-linguistic influence in third language development. In H. Peukert (Hrsg.), *Transfer Effects in Multilingual Language Development* (S. 111-128). Amsterdam/Philadelphia: John Benjamin Publishing Company.
- Bardel, C., & Falk, Y. (2007). The role of the second language in third language acquisition: the case of Germanic syntax. *Second Language Research*, 23(4), S. 459–484.
- Bardel, C., & Falk, Y. (2012). The L2 status factor and the declarative/procedural distinction. In J. Cabrelli Amaro, S. Flynn, & J. Rothman (Hrsg.), *Third Language Acquisition in Adulthood*. (S. 61-78). Amsterdam: Benjamins.

- Bassetti, B., & Lu, M. (2016). Effects of interword spacing on native English readers of Chinese as a second language. *IRAL*, 54(1), S. 1-22.
- Bates, E., Camaioni, L., & Voltera, V. (1976). The acquisition of performatives prior to speech. *Merrill-Palmer Quarterly*, S. 205-226.
- Battich, L., & Geurts, B. (05. March 2020). Joint attention and perceptual experience. *Synthese*.
- Baugh, A. C., & Cable, T. (2002). *A history of the English Language* (5th Ausg.). London: Routledge.
- Bax, S. (2019). *TEXT INSPECTOR: The professional web tool for analysing texts*. Abgerufen am 17. 04 2019 von <https://textinspector.com/>
- Bazzanella, C. (2019). The Complex Process of Mis/Understanding Spatial Deixis in Face-To-Face Interaction. In *Pragmática Sociocultural / Sociocultural Pragmatics*. 7(1) (S. 1-18). Berlin/Munich/Boston: deGruyter.
- Berkes, É., & Flynn, S. (2012). Further evidence in support of the Cumulative-Enhancement Model: CP structure development. In S. F. J. Cabrelli Amaro (Hrsg.), *Third Language Acquisition in Adulthood* (S. 43-164). Philadelphia/Amsterdam: John Benjamins Publishing Company.
- Bialystok, E. (2013). The Impact of Bilingualism on Language and Literacy Development. In T. K. Bhatia, & W. C. Ritchie (Hrsg.), *The Handbook of Bilingualism and Multilingualism. Second Edition* (S. 624-648). Malden, Oxford, Chichester: Wiley Blackwell .
- Biber, D. (1999). *Grammar of spoken and written English* . London: Longman.
- Biber, D. (1999). *Longman Grammar of Spoken and Written English*. England: Pearson Education Limited.
- Bloomfield, L. (1933). *Language*. London: Allen and Unwin.
- Bonnet, A., & Siemund, P. (2018). *Foreign Language Education in Multilingual Classrooms* (Volume 7 Ausg.). Amsterdam/Philadelphia: John Benjamin Publishing Company.
- Botley, S., & McEnery, T. (2001). Demonstratives in English. *Journal of English Linguistics*,, 29(1), 7-33.
- Brehmer, B., & Mehlhorn, G. (2015). Russisch als Herkunftssprache in Deutschland. Ein holistischer Ansatz zur Erforschung des Potenzials von Herkunftssprachen. *Zeitschrift für Fremdsprachenforschung*, 26(1), 85-123.

- Brehmer, B., & Usanova, I. (2015). Word order patterns in heritage Russian. In H. Peukert (Hrsg.), *Transfer Effects in Multilingual Language Development* (S. 161-190). Amsterdam/ Philadelphia: John Benjamins Publishing Company.
- Bright, P., & Filippi, R. (2019). Editorial: Perspectives on the “Bilingual Advantage”: Challenges and Opportunities. In P. Bright, & R. Filippi (Hrsg.), *Perspectives on the ‘Bilingual Advantage’: Challenges and Opportunities*. (S. 6-8). Lausanne: Frontiers Media.
- Brohy, C. (2001). Generic and/or specific advantages of bilingualism in a dynamic plurilingual situation: The case of French as official L3 in school of Samedan (Switzerland). *International Journal of Bilingual Education and Bilingualism*, 4, 38-49.
- Bruner, J. (1974). From communication to language: A psychological perspective. *Cognition*, 3(3), S. 255-287.
- Bühler, K. (1934). *Sprachtheorie. Die Darstellungsform der Sprache*. Jena: Fischer.
- Bühler, K. (1982). The deictic field of language and deictic words. Speech, place, and action. In R. Jarvella, & W. Klein (Hrsg.), *Speech, place, and action* (S. 9-30). Chichester, NY: John Wiley & Sons.
- Burbiené, D., & Sabaliauskiené, M. (2018). Temporal Deixis as a Participation Marker: A Case Study of the Russian News Media. In O. Andreica, & A. Olteanu (Hrsg.), *Readings in Humanities. Volume 3* (S. 49-65). Switzerland: Springer International Publishing.
- Burge, T. (2005). Disjunctivism and perceptual psychology. *Philosophical Topics*, 33(1), 1-78.
- Butler, Y. G. (2013). Bilingualism/Multilingualism and Second-Language Acquisition. In T. K. Bhatia, & W. C. Ritchie (Hrsg.), *The Handbook of Bilingualism and Multilingualism. Second Edition* (S. 109-136). Malden, Oxford, Chichester: Blackwell Publishing.
- Butler, Y. G., & Hakuta, K. (2006). Bilingualism and Second Language Acquisition. In T. B. Ritchie (Hrsg.), *Handbook of Bilingualism* (S. 114-145). Malden, MA: Blackwell.
- Cabrelli Amaro, J. &. (2018). Third language acquisition. In K. Geeslin (Hrsg.), *Handbook of Spanish Linguistics* (S. 737-757). Cambridge: Cambridge University Press.

- Cabrelli, J., Amaro, F., & Rothman, J. (2015). The relationship between L3 transfer and structural similarity across development: Raising across an experimenter in Brazilian Portuguese. In H. Peukert (Hrsg.), *Transfer Effects in Multilingual Language Development* (S. 1-35). Amsterdam: John Benjamins.
- Caldano, M., & Coventry, K. R. (2019). Spatial demonstratives and perceptual space: To reach or not to reach? *Cognition*, 191(Article 103989), 1-6.
- Callies, M. (2015). Effects of cross-linguistic influence in word formation: A comparative learner-corpus study of advanced interlanguage production. In H. Peukert (Hrsg.), *Transfer Effects in Multilingual Language Development* (S. 129-146). Amsterdam/Philadelphia: John Benjamin Publishing Company.
- Camaioni, L., Perucchini, P., & Bellagamba, P. (1998). The role of declarative pointing in developing a theory of mind. *Infancy* 5, 291-308.
- Campbell, J. (2005). Joint attention and common knowledge. In N. M. Eilan, C. Hoerl, T. McCormack, & J. Roessler (Hrsg.), *Joint attention: Communication and other minds* (S. 648-662). Oxford: Oxford University Press.
- Campbell, J. (2010). Demonstrative Reference, the Relational View of Experience, and the Proximity Principle. In R. Jeshion (Hrsg.), *New Essays on Singular Thought*. Oxford Scholarship Online.
- Carpenter, M., Nagell, K., Tomasello, M., Butterworth, G., & Moore, C. (1998). Social Cognition, Joint Attention, and Communicative Competence from 9 to 15 Months of Age. *Monographs of the Society for Research in Child Development*, 63(4. serial no.255).
- Caselli, M. C., Bates, E., Casadio, P., Fenson, J., Sanderl, L., & Weir, J. (1995). A cross-linguistic study of early lexical development. *Cognitive Development*, 10(2), 159-199.
- Catasso, N. (2011). The Grammaticalization of Demonstratives: A Comparative Analysis. *Journal of Universal Language*, 12(1), 7-46.
- Cenoz, J. (2003). Cross-linguistic influence in third language acquisition: Implications for the organization of the multilingual mental lexicon. *Bulletin VALS-ASLA*. 78, S. 1-11.
- Cenoz, J. (2003). The additive effect of bilingualism on third language acquisition: A review. *The International Journal of Bilingualism*, 7(1), S. 71-87.
- Cenoz, J. (2003). The successive effect of bilingualism on third language acquisition. A review. *International Journal of Bilingualism*, 7, S. 71-87.

- Cenoz, J. (2009). *Towards Multilingual Education. Basque Educational Research from an International Perspective*. Bristol/Buffalo/Toronto: Multilingual Matters.
- Cenoz, J. (March 2013). Defining Multilingualism. *Annual Review of Applied Linguistics*, 33(2013), 3-18.
- Cenoz, J. (Januar 2013). The influence of bilingualism on third language acquisition: Focus on multilingualism. *Language Teaching*, 46(1), S. 71-86.
- Cenoz, J., & Gorter, D. (2011). Fpcus on Multilingualism: a Study of Trilingual Writing. *The Modern Language Journal*, 95, 3, S. 356-369.
- Cenoz, J., & Hoffmann, C. (2003). Acquiring a third language: What role does bilingualism play? *The International Journal of Bilingualism*, 7(1), 1-5.
- Cenoz, J., & Valencia, J. (1994). Additive trilingualism: Evidence from the Basque Country. *Applied Psycholinguistics*, 15, 157-209.
- Cenoz, J., & Valencia, J. F. (1994). Additive Trilingualism: Evidence from the Basque Country. *Applied Psycholinguistics* , 15(2), 195-207.
- Cenoz, J., Hufeisen, B., & Jessner, U. (2001). Cross-Linguistic Influence in third language acquisition: psycholinguistic perspectives. *Multilingual Matters. Applied Linguistics*, S. 256-260.
- Cenoz, J., Hufeisen, B., & Jessner, U. (2003). The Role of Typology in the Organization of the Multilingual Lexicon. In J. Cenoz, B. Hufeisen, & U. Jessner (Hrsg.), *The Multilingual Lexicon* (S. 103-116). Dordrecht/Boston/London: Kluwer Academic Publisher.
- Chamot, A. (1973). Phonological Problems in Learning English as a Third Language. *International Review of Applied Linguistics*, 11, 243-250.
- Chlopek, Z. (2015). Der zwischenmenschliche Transfer beim Drittspracherwerb - Einstellungen der DeutschlehrerInnen zum Transfer aus dem Englischen ins Deutsche. *Glottodidactica*, 1, 33-48.
- Chu, C.-Y., & Minai, U. (2018). Children's Demonstrative Comprehension and the Role of Non-linguistic Cognitive Abilities: A Cross-Linguistic Study. *Journal of Psycholinguistic Research*, 47, 1343-1368.
- Clark, E. V. (1978). Strategies in the acquisition of deixis. *Journal of Child Language*, 5, 457-475.
- Cohen, C. (2013). Effect of degree of bilingualism on metalinguistic awareness in English-Frenchbilingual children. Poster presentation at The International

- Workshop for Bilingualism and Cognitive Control. Krakow, Poland: Available online at <<https://hal.archives-ouvertes.fr/hal-01079079>>.
- Çokal, D., Sturt, P., & Ferreira, F. (2014). Deixis: This and That in Written Narrative Discourse. *Discourse Processes*, 51(3), 201-229.
- Comrie, B. (2018). Russian. In B. Comrie (Hrsg.), *The World's Major Languages* (S. 282-297). New York: Routledge.
- Comrie, B. (2018). *The World's Major Languages* (3 Ausg.). New York: Routledge.
- Cook, V., & Bassetti, B. (2011). Relating language and cognition: The second language user. In V. Cook, & B. Bassetti (Hrsg.), *Language and Bilingual Cognition* (S. 143-190). New York: Psychology Press.
- Cornish, F. (2007). English Demonstratives: Discourse Deixis and Anaphora. A Discourse-Pragmatic Account. In N. A. R.A. Nilson (Hrsg.), *Interpreting Utterances: Pragmatics and its Interfaces. Essays in honour of Thorstein Fretheim* (S. 137-156). Novus Press.
- Croft, W. (1990). *Typology and Universals*. Cambridge: Cambridge University Press.
- Crossley, S. (2020). Crossley, S.A. (2020). Linguistic features in writing quality and development: An overview. *Journal of Writing Research*, 11(3), 415-443. doi: xx Contact:Scott A. Crossley, Department of Applied Linguistics/ESL, Georgia State University, 25 Park Place, Sui. *Journal of Writing Research*, 11(3), 415-443.
- Cummins, J. (2001). Linguistic interdependence and the educational development of bilingual children. *Review of Educational Research*, 49(2), 222-251.
- Cummins, J. (2009). Multilingualism in the English-Language Classroom: Pedagogical Considerations. *TESOL Quarterly*, 43(2), 317-321.
- Cummins, J. (2017). Teaching for Transfer in Multilingual School Contexts. In O. García, A. M. Lin, & S. May (Hrsg.), *Bilingual and Multilingual Education. Encyclopedia of Language and Education* (3rd ed.) (S. 103-115). Cham: Springer.
- Czapka, S., Klassert, A., & Festman, J. (2019). Executive Functions and Language: Their Differential Influence on Mono- vs. Multilingual Spelling in Primary School. In P. Bright, & R. Filippi (Hrsg.), *Perspectives on the 'Bilingual Advantage': Challenges and Opportunities*. (S. 9-26). Lausanne: Frontiers Media.
- Danziger, E. (2010). Deixis, gesture, and cognition in spatial Frame of Reference typology. In *Studies in Language* 34(1) (S. 167-185). Amsterdam: John Benjamins.

- Davies, A. (2003). *The Native Speaker: Myth and Reality*. Clevedon, Buffalo, Toronto, Sydney: Multilingual Matters LTD.
- De Angelis, G. (2007). *Third or Additional Language Acquisition*. Clevedon/Buffalo/Toronto: Multilingual Matters.
- de Bot, K. (2017). The future of the bilingual advantage. In S. Pfenninger, & J. Navracscics (Hrsg.), *Future Research Directions for Applied Linguistics* (S. 15-32). Bristol/Nlue Ridge Summit: Multilingual Matters.
- De Houwer, A. (2005). Early bilingual acquisition: Focus on morphosyntax and theseparate development hypothesis. In J. F. Kroll, & A. M. de Groot (Hrsg.), *Handbook of bilingualism: Psycholinguistic approaches* (S. 30-48)). New York: Oxford University Press.
- De Houwer, A. (2006). Bilingual Language Development: Early Years. In K. Brown (Hrsg.), *Encyclopedia of Language & Linguistics, Second Edition, volume 1* (S. 780-786). Oxford: Elsevier.
- Degi, Z. (2016). Teachers' beliefs regarding non-target language use in the EFL classroom. *The Journal of Linguistic and Intercultural Education*, 9(1), 7-18.
- Dehaene, S., Changeux, J.-P. L., Sackur, J., & Sergent, C. (2006). Conscious, preconscious, and subliminal processing: a testable taxonomy. *TRENDS in Cognitive Sciences, Vol.10*(No.5), 204-211.
- Demske, U. (2020). The grammaticalization of the definite article in German. From demonstratives to weak definites. In R. Szczepaniak, & J. Flick (Hrsg.), *Walking in Grammaticalization Path of the Definite Article* (S. 43-73). Amsterdam, Philadelphia: John Benjamins .
- Dewaele, J.-M. (1998). Lexical Inventions: French Interlanguage as L2 versus L3. *Applied Linguistics* , 19(4), 471-490.
- Dewaele, J.-M. (2015). Bilingualism and Multilingualism . In C. I. K. Tracy (Hrsg.), *The International Encyclopedia of Language and Social Interaction* (S. 79-89). Oxford UK: Wiley & Sons.
- Dewaele, J.-M. (2017). Why the Dichotomy 'L1 Versus LX User' is Better than '\*Native Versus Non-native speaker'. *Applied Linguistics. Oxford University Press*, 1-6.
- Diessel, H. &. (2022). Acquisition of demonstratives in cross-linguistic perspective. *Journal of Child Language*, 1-32.
- Diessel, H. (1999). *Demonstratives: Form, Function, and Grammaticalization*. [Typological Studies in Languages 42]. Amsterdam: John Benjamins.

- Diessel, H. (1999). The morphosyntax of demonstratives in synchrony and diachrony .  
*Linguistic Typology* 3, S. 1-49.
- Diessel, H. (2006). Demonstratives, joint attention, and the emergence of grammar.  
*Cognitive Linguistics* 17-4, 463-489.
- Diessel, H. (2011). Grammaticalization and Language Acquisition. In H. N. Bernd Heine  
(Hrsg.), *Handbook of Grammaticalization* (S. 130-141). Oxford: Oxford Press.
- Diessel, H. (2012). Deixis and Demonstratives. In C. Maienborn, K. von Heusinger, & P.  
Portner (Hrsg.), *Semantics (HSK 33.3)* (S. 1-25). Berlin/Munich/Boston: De  
Gruyter.
- Diessel, H. (2013). In: *Dryer, Matthew S.; Haspelmath, Martin (eds): The world atlas of  
language structures online*. Abgerufen am 05. Decembre 2020 von  
<https://wals.info/chapter/42>
- Diessel, H. (2014). Demonstratives, Frames of Reference, and Semantic Universals of  
Space. *Language and Linguistics Compass*, 8(3), 116-132.
- Diessel, H., & Coventry, K. R. (25. November 2020). Demonstratives in Spatial  
Language and Social Interaction: An Interdisciplinary Review. *Frontiers in  
Psychology*, S. 1-14.
- Dinh-Hoa, N. (1998). *London Oriental and African Language Library. Vietnamese  
(Volume 9 Ausg.)*. Amsterdam/Philadelphia: John Benjamins.
- Dita, S. (2009). The metalinguistic awareness of Filipino bilingual children. *The  
Philippine ESL Journal*, 3, 6-37.
- Dixon, R. M. (2003). Demonstratives. A cross-linguistic typology. *Studies in Language*,  
27(1), 61-112.
- Duarte, J. (2011). *Bilingual Language Proficiency. A Comparative Study*. Münster et al.:  
Waxmann.
- Dunn, J., & Khairov, S. (2009). *Modern Russian Grammar: A practical Guide*. New  
York: Routledge.
- Eberhard, D. M., & Simons, G. F. (2020). *Ethnologue. Languages of the World.  
Twentythird edition*. Abgerufen am 2020. 04 30 von  
<https://www.ethnologue.com/>
- Ecke, P. (2001). Lexical Retrieval in a Third Language: Evidence from Errors and Tip-  
of-the-Tongue States . In J. Cenoz, B. Hufeisen, & U. Jessner (Hrsg.), *Cross-  
linguistic Influence in Third Language Acquisition: Psycholinguistic Perspectives*  
(S. 90-114). Clevedon/Buffalo/Toronto/Sydney: Multilingual Matters .



- Ecke, P., & Hall, C. J. (2000). Lexikalischer Fehler in Deutsch als Drittsprache: Translexikalischer Einfluss auf 3 Ebenen der mentalen Repräsentation. *Deutsch als Fremdsprache*, 1(1), 31–37.
- Eisenberg, P. (2004). *Grundriß der deutschen Grammatik. Band 2: Der Satz* (2. Ausg.). Stuttgart/Weimar: Metzler.
- Eisenberg, P. (2013). *Das Wort. Grundriss der deutschen Grammatik* (4. Auflage Ausg.). Weimar: J. B. Metzler.
- El Euch, S., & Huot, A. (2015). Strategies to develop metalinguistic awareness in adult learners. Cuba: WEFLA Proceedings.
- Elian, N., Hoerl, C., McCormack, T., & Roessler, J. (2011). *Joint Attention Communication and Other Minds: Issues in Philosophy and Psychology*. Oxford: OUP Oxford.
- Enikő, T. (2014). Gestural demonstrative sin English: an experiment. *Argumentum* 10, 60-610.
- Fabbro, F. (2001). The bilingual brain: Bilingual aphasia. *Brain and Language* , 79(2), 201–210.
- Fabbro, F., & Paradis, M. (1995). Differential impairments in four multilingual patients with subcortical lesions. In M. Paradis (Hrsg.), *Aspects of bilingual aphasia* (S. 139–176.). Oxford Pergamon Press.
- Falk, Y., & Bardel, C. (2010). Object pronouns in German L3 syntax: Evidence for the L2 status factor. *Second Language Research*, 27(1), S. 59–82.
- Falk, Y., & Bardel, C. (2010). The study of the role of the background languages in third language acquisition. The state of the art. *IRAL*, 48, S. 185–219.
- Falk, Y., & Lindqvist, C. (2018). L1 and L2 role assignment in L3 learning. Is there a pattern? . *International Journal of Multilingualism* , 16(4), 1-14.
- Fallah, N., & Jabbari, A. A. (2018). L3 acquisition of english attributive adjectives. Dominant language of communication matters for syntactic cross-linguistic influence. *Linguistic Approaches to Bilingualism* , 8(2), 193-216.
- Fallah, N., Jabbari, A. A., & Fazilatfar, A. M. (2016). Source(s) of syntactic cross-linguistic influence (CLI): The case of L3 acquisition of English possessives by Mazandarani–Persian bilinguals. *Second Language Research*, 32(2), S. 225–245.
- Fandrych, C., & Tallowitz, U. (2014). *Grammatiktrainer Deutsch*. Stuttgart: PONS.

- Fernandez-Dalona, I. M., & Dalona, A. (2019). Metalinguistic Awareness of Multilingual First Graders: An Exploratory Study . *English Language Teaching Educational Journal (ELTEJ)*, 2(3), 102-111.
- Fillmore, C. J. (1975). *Santa Cruz lectures on deixis*. Indiana University Linguistics Club. Bloomington : Indiana University Linguistics Club.
- Fillmore, C. J. (1997). *Lectures on deixis*. Stanford: CSLI Publications.
- Fleckenstein, J., Meyer, J., Jansen, T., & Köller, O. (2020). Is a Long Essay Always a Good Essay? The Effect of Text Length on Writing Assessment. *Frontiers in Psychology*, 11, 1-10.
- Flynn, S., Foley, C., & Vinnitskaya, I. (2004). The Cumulative-Enhancement Model for Language Acquisition: Comparing Adults' and Children's Patterns of Development in First, Second and Third Language Acquisition of Relative Clauses. *International Journal of Multilingualism*, 1(1), 3-16.
- Foley, C., & Flynn, S. (2013). The role of the native language. In M. Y.-S. Julia Herschensohn (Hrsg.), *The Cambridge Handbook of Second Language Acquisition* (S. 97-113). Cambridge: Cambridge University Press.
- Fossard, M., Garnham, A., & Wind Cowles, H. (2011). Between anaphora and deixis ... The resolution of the demonstrative noun phrase "that N". *Language and Cognitive Processes* , 27(9), 1-20.
- Frajzyngier, Z. (2003). The de dicto domain in languages. In E. C. Traugott, & B. Heine (Hrsg.), *Approaches to Grammaticalization. Volume 1. Focus on Theoretical and Methodological Issues* (S. 219-252). Amsterdam/Philadelphia: John Benjamins.
- Franceschini, R., Zappatore, D., & Nitsch, C. (2003). Lexicon in the brain: What neurobiology has to say about languages. In J. Cenoz, B. Hufeisen, & U. Jessner (Hrsg.), *The multilingual lexicon* (S. 153-166). Dordrecht: Kluwer.
- Fricke, E. (2002). Origo, Pointing, and Speech: The Impact of Co-Speech Gestures on Linguistic Deixis Theory. *Gesture*, 2(2), 207-226.
- Gagarina, N. (2008). Anaphoric pronominal reference in Russian and German narratives: bilingual and monolingual settings. *ZfSl*, 53(3), S. 326-338.
- Gallado, F. (2007). Is L3 phonological competence affected by the learner's level of bilingualism? *International Journal of Multilingualism*, 4, 1-16.
- Garcia-Mayo, M. d. (2012). Cognitive approaches to L3 acquisition. *International Journal of English Studies*, 12(1), S. 129-146.

- Gardiner, A. (1957). *Egyptian grammar: Being an introduction to the study of Hieroglyphs* (3rd Ausg.). Oxford: Oxford University Press.
- Ghezlou, M., Koosha, M., & Lotfi, A. R. (2018). Acquisition of Adjective Placement by L3 Learners of English: Evidence for the L2 Status Factor. *International Journal of Applied Linguistics & English Literature*, 7(2), 175-184.
- Ghezlou, M., Koosha, M., & Lotfi, A. R. (2019). Cross-linguistic Influence in the L3 Acquisition of English Adjective Properties by Azeri-Persian Bilinguals. *International Journal of Instruction*, 12(1), 1299-1318.
- Gilakjani, A. P., Leong, L.-M., & Sbouri, N. B. (2012). A Study on the Role of Motivation in Foreign Language Learning and Teaching. *I.J. Modern Education and Computer Science*, 7, 9-16.
- Gilquin, G. (2021). Learner Corpora. In M. Paquot, & S. T. Gries (Hrsg.), *A Practical Handbook fo Corpus Linguistics* (S. 1-13). Springer.
- Gogolin, I. (2021). Multilingualism: A threat to public education or a resource in public education? - European histories and realities. *European Educational Research Journal*, 1-14.
- Gogolin, I., Klinger, T., Lagemann, M., & Schnoor, B. (2017). *Indikation, Konzeption und Untersuchungsdesign des Projekts Mehrsprachigkeitsentwicklung im Zeitverlauf (MEZ)*. Hamburg: Universität Hamburg.
- Gogolin, I., Klinger, T., Schnoor, B., & Usanova, I. (2021). Multilingual Development - a Longitudinal Study. *Revista de 15 Investigación Educativa*, 39(1), 15-29.
- Gogolin, I., Siemund, P., Schuld, M., & Davydova, J. (2013). Multilingualism, language contact, and urban areas. An introduction. In P. Siemund, I. Gogolin, M. Schuld, & J. Davydova (Hrsg.), *Multilingualism and Language Contact in Urban Areas. Acquisition - Identities - Space - Education*. (S. 1-15). Amsterdam: Benjamins.
- Göksel, A., & Kerslake, C. (2011). *Turkish. An Essential Grammar*. London and New York: Routledge.
- Goldsmith, S., & Morton, B. J. (2019). Sequential Congruency Effects in Monolingual and Bilingual Adults: A Failure to Replicate Grundy et al. (2017). In P. Bright, & R. Filippi (Hrsg.), *Perspectives on the 'Bilingual Advantage': Challenges and Opportunities*. (S. 27-32). Lausanne : Frontiers Media.
- González Alonso, J., Puig-Mayenco, E., Fábregas, A., Chaouch-Orozco, A., & Rothman, J. (2021). On the status of transfer in adult third language acquisition of early bilinguals. *PLoS ONE*, 16(3), 1-26.

- González-Peña, P., Doherty, M. J., & Guijarro-Fuentes, P. (2020). Acquisition of Demonstratives in English and Spanish. *Frontiers in Psychology, 11*, 1778 (1-13).
- Granger, S. (2008). Learner corpora. In A. Lüdeling, & M. Kytö (Hrsg.), *Corpus Linguistics. An International Handbook. Volume 1* (S. 259-275). Berlin & New York: Walter de Gruyter.
- Green, D. W. (2016). Trajectories to third-language proficiency. *The International Journal of Bilingualism*, S. 1-16.
- Greenberg, J. H. (1991). The Last Stages of Grammatical Elements: Contractive and Expansive Desemanticization. In E. C. Traugott, & B. Heine (Hrsg.), *Approaches to Grammaticalization. Volume 1. Focus on Theoretical and Methodological issues* (S. 301-314). Amsterdam/Philadelphia: John Benjamins.
- Gries, S. T. (2009). *Statistics for linguistics with R: a practical introduction*. Berlin: de Gruyter.
- Gries, S. T. (2009). What is Corpus Linguistics? *Language and Linguistics Compass*, 3(5), 1225-1241.
- Gries, S. T. (2021). *Statistics for Linguistics with R* (3rd Ausg.). Berlin/Boston: DeGruyter.
- Grosjean, F. (2010). *Bilingual. Life and Reality*. Cambridge, Massachusetts, and London: Harvard University Press.
- Grosjean, F., & Byers-Heinlein, K. (2018). Bilingual adults and children: A short introduction. In G. &.-H. (Eds.) (Hrsg.), *The listening bilingual: Speech perception, comprehension, and bilingualism* (S. 4-24). Hoboken, NJ: John Wiley & Sons.
- Gudde, H. B., Coventry, K. R., & Engelhardt, P. E. (2016). Language and memory for object location. *Cognition, 153*, 99-107.
- Gundel, J. K., Hedberg, N., & Zacharski, R. (2004). Demonstrative Pronouns in Natural Discourse.
- Gundel, J., Hedberg, N., & Zacharski, R. (15. July 1988). On the generation and interpretation of demonstrative expressions. *Proceedings of the 12th conference on Computational linguistics (COLING)- Volume 1*, S. 216-221.
- Ha Yap, F., Wang, J., & Sakurai, K. (2010). On the grammaticalization of demonstratives: A crosslinguistic perspective. Korea University, Seoul: Seoul International Conference on Linguistics.

- Håkansson, G., Pienemann, M., & Sayehli, S. (2002). Transfer and Typological Proximity in the Context of Second Language Processing. *Second language Research*, 18(3), 250-273.
- Halliday, M. A., & Hasan, R. (1976). *Cohesion in English*. *English Languages Series*. London: Longman.
- Hamers, J. F., & Blanc, M. H. (2000). *Bilinguality and Bilingualism* (Second edition Aug.). Cambridge: Cambridge University Press.
- Hammarberg, B. (2001). Roles of L1 and L2 in L3 production and acquisition. In J. Cenoz, B. Hufeisen, & U. Jessner (Hrsg.), *Cross-linguistic influence in third language acquisition*: (S. 21-41). Clevedon: Multilingual Matters.
- Hammarberg, B. (2009). *Processes in Third Language Acquisition*. Edinburgh: Edinburgh University Press.
- Hammarberg, B. (2010). The languages of the multilingual: Some conceptual and terminological issues. *IRAL - International Review of Applied Linguistics in Language Teaching*, 48(2), 91-104.
- Hammarberg, B. (2014). Problems in Defining the Concepts of L1, L2 and L3. In A. Otwinowska, & G. De Angelis (Hrsg.), *Teaching and Learning in Multilingual Contexts. Sociolinguistic and Educational Perspectives* (S. 3-18). Bristol/ Buffalo/ Toronto: Multilingual Matters.
- Hammarberg, B. (2017). Becoming multilingual: The macro and the micro time perspective. *IRAL - International Review of Applied Linguistics in Language Teaching*, 55(1), 3-22.
- Hammarberg, B. (2018). L3, the tertiary language. In A. Bonnet, & P. Siemund (Hrsg.), *Foreign Language Education in Multilingual Classrooms. Hamburg Studies on Linguistic Diversity 7* (S. 127-150). Amsterdam/Philadelphia: John Benjamins .
- Hammarberg, B., & Hammarberg, B. (2009). Re-setting the basis of articulation in the acquisition of new languages: A third language case study. In B. Hammarberg (Hrsg.), *Processes in Third Language Acquisition* (S. 74-85). Edinburgh: Edinburgh University Press.
- Haugen, E. (1953). *The Norwegian Language in America*. Philadelphia: University of Pennsylvania Press.
- Heine, B., & Kuteva, T. (2004). *World Lexicon of grammaticalization*. Cambridge: Cambridge University Press.

- Heine, B., & Song, K.-A. (2011). On the grammaticalization of personal pronouns. *Journal of Linguistics*, 47(3), S. 587-630.
- Heine, B., Claudi, U., & Hünnemeyer, F. (1991). *Grammaticalization. A conceptual Framework*. Chicago & London: The University of Chicago Press.
- Heine, B., Claudi, U., & Hünnemeyer, F. (2003). From cognition to grammar. Evidence from African languages. In E. C. Traugott, & B. Heine (Hrsg.), *Approaches to Grammaticalization. Volume 1. Focus on theoretical and Methodological Issues* (S. 149-188). Amsterdam/Philadelphia: John Benjamins.
- Helbig, G., & Buscha, J. (2001). *Deutsche Grammatik. Ein Handbuch für den Ausländerunterricht*. Berlin/München: Langenscheidt.
- Hellrung, M., Hugk, N., Mora, O., Waschk, A., Penon, K., & Hillen, P. (2017). *Methodenbericht. MEZ – Mehrsprachigkeitsentwicklung im Zeitverlauf Erhebung in den Jahrgangsstufen 7 und 9 1. Messzeitpunkt – Januar bis März 2016*. Hamburg.
- Helmbrecht, J. (2017). On the grammaticalization of demonstratives in Hoocak and other Siouan languages. In W. Bisang, & A. Malchukov (Hrsg.), *Unity and diversity in grammaticalization scenarios* (S. 137-172). Berlin: Language Science Press.
- Henschel, E. (2010). *Deutsche Grammatik*. Berlin/New York: Walter de Gruyter.
- Hermas, A. (2014). Multilingual transfer: L1 morphosyntax in L3 English. *International Journal of Language Studies*, 8(2), 1-24.
- Hinterwimmer, S. (2014). A Unified Account of the Properties of German Demonstrative Pronouns. Cambridge: NELS 40 Volume: The Proceedings of the Workshop on Pronominal Semantics at NELS 40.
- Hofer, B. (2015). *On the dynamics of early Multilingualism. A psycholinguistic Study* (13. Aufl.). Berlin/Boston: De Gruyter.
- Holliday, A. (2015). Native-speakerism: Taking the Concept Forward and Achieving Cultural Belief. In A. Holliday, P. Aboshiha, & A. Swan (Hrsg.), *(En)Countering Native-speakerism* (S. 11-25). New York: palgrave macmilan.
- Hopp, H. (2019). Cross-linguistic influence in the child third language acquisition of grammar: Sentence comprehension and production among Turkish-German and German learners of English. *International Journal of Bilingualism*, 23(2), 567-583.
- Hopp, H., Kieseier, T., Vogelbacher, M., & Thoma, D. (2018). L1 effects in the early L3 acquisition of vocabulary and grammar. In A. Bonnet, & P. Siemund (Hrsg.),

- Foreign Language Education in Multilingual Classrooms* (S. 305-330). Amsterdam/ Philadelphia: John Benjamins.
- Hopper, P. J., & Traugott, E. C. (2003). *Grammaticalization* (2. Ausg.). Cambridge: Cambridge University Press.
- Huddleston, R. D., & Pullum, G. (2002). *The Cambridge grammar of the English language*. Cambridge: Cambridge University Press.
- Hufeisen, B. (2005). Multilingualism: Linguistic Models and Related Issues. In H. B., & R. J. Fouser (Hrsg.), *Introductory Readings in L3* (S. 31-45). Tübingen: Stauffenburg Verlag.
- Hufeisen, B., & Marx, N. (2007). How can DaFmE and EuroComGerm contribute to the concept of receptive multilingualism? Theoretical and practical considerations. In J. D. Zeevaert (Hrsg.), *Receptive Multilingualism*, (S. 307-322). Amsterdam: John Benjamins.
- Hussain, I. (2017). Distinction Between Language Acquisition and Language Learning: A Comparative Study. *Journal of Literature, Languages and Linguistics*, 39, 1-6.
- Ionin, T., Ko, H., & Wexler, K. (2012). That's not so different from the: definite and demonstrative descriptions in second language acquisition. *Second Language Research*, 28(1), 69-101.
- Ishiyama, I. (2012). The diachronic relationship between demonstratives and first/second person pronouns. *Journal of Historical Pragmatics*, 13(1), 50-71.
- Iverson, J., & Goldin-Meadow, S. (2005). Gesture Paves the Way for Language Development. *Psychological Science*, 16, 367-371.
- Jabbari, A. A., Achard-Bayle, G., & Ablali, D. (2018). Acquisition of L3 French wh-question structure by Persian-English bilinguals. *Cogent Education*, 5, 1-18.
- Jabbari, A., & Salimi, H. (2015). L3 Acquisition of Simple and Present Progressive Tenses by Iranian EFL Learners. *SAGE Open*, 5(4), 1-9.
- Jarvis, S., & Pavlenko, A. (2008). *Crosslinguistic Influence in language and cognition*. London: Routledge.
- Jessner, U. (2006). *Linguistic Awareness in Multilinguals. English as a Third Language*. Edinburgh: Edinburgh University Press.
- Jessner, U. (2008). A DST Model of Multilingualism and the Role of Metalinguistic Awareness. *The Modern Language Journal*, 92(2), 270-283.
- Johanson, L. (2013). *Structural Factors in Turkic Language Contacts*. New York: Routledge.

- Kaplan, F., & Hafner, V. V. (2006). The challenges of joint attention. *Interaction studies*, 7(2), 135-169.
- Kellerman, E. (1983). Now you see it, now you don't. In u. G. Selinker (Hrsg.), *Language Transfer in Language Learning* (S. 112-134). Rowley: Newbury House.
- Khachaturyan, M. (2020). Common Ground in Demonstrative Reference: The case of Mano (Mande) . *Frontiers in Psychology*, 11, 1-15.
- Klassen, R., Kolb, N., Hopp, H., & Westergaard, M. (2022). Interactions between lexical and syntactic L1-L2 overlap: Effects of gender congruency on L2 sentence processing in L1 Spanish-L2 German speakers. *Applied Psycholinguistics*, 43(6), 1221-1256.
- Klassert, A., Gagarina, N., & Kauschke, C. (2014). Object and action naming in Russian and German-speaking monolingual and bilingual children. In J. Abutalebi, & H. Clahsen (Hrsg.), *Bilingualism: Language and Cognition*. 17(1) (S. 73-88). Cambridge: Cambridge University Press.
- Klein, D., Milner, B., Zatorre, R. J., Meyer, E., & Evans, A. C. (1995). The neural substrates underlying word generation: A bilingual functional-imaging study. *Proceedings of the National Academy of Sciences USA*, 92, 2899–2903.
- Klein, D., Milner, B., Zatorre, R. J., Zhao, V., & Nikelski, J. (1999). Cerebral organization of bilinguals: A PET study of Chinese-English verb generation. *NeuroReport*, 10(13), 2841–2846.
- Klein, E. C. (1995). Second versus Third Language Acquisition: Is There a Difference? *Language Learning*, 45(3), S. 419-465.
- Klein, E. C. (2006). Second versus Third Language Acquisition: Is There a Difference? *Language Learning*, 45(3), 419-466.
- König, E. (2020). Beyond exophoric and endophoric uses: Additional discourse functions of demonstratives. In A. Naes, A. Margetts, & Y. Treis (Hrsg.), *Demonstratives in discourse* (S. 21-42). Berlin: Language Science Press.
- König, E., & Gast, V. (2012). *Understanding English-German contrasts*. (3rd Ausg.). Berlin: Erich Schmidt Verlag.
- Kornfilt, J. (1997). *Turkish*. USA/Kanada: Routledge.
- Kornfilt, J. (2010). *Turkish*. New York: Routledge.
- Kornfilt, J. (2018). Turkish and the Turkic Languages. In B. Comrie (Hrsg.), *The World's Major Languages* (S. 536-561). New York: Routledge.



- Krasavina, O., & Chiarcos, C. (01 2007). *www.researchgate.com*. Abgerufen am 01. 03 2021 von [https://www.researchgate.net/publication/228947784\\_A\\_Corpus-Based\\_Study\\_of\\_Demonstratives\\_in\\_German-Russian\\_and\\_English](https://www.researchgate.net/publication/228947784_A_Corpus-Based_Study_of_Demonstratives_in_German-Russian_and_English)
- Krashen, S. D. (1981). *Second Language Acquisition and Second Language Learning*. Oxford: Pergamon Press.
- Kroll, J. F., & Navarro-Torres, C. A. (2018). Bilingualism. In S. L. Thompson-Schill, & J. T. Wixted (Hrsg.), *Stevens' Handbook of Experimental Psychology and Cognitive Neuroscience. Fourth Edition. Volume 3: Language and Thought* (S. 245-274). New York: John Wiley & Sons.
- Krulatz, A., & Abney, S. (2015). Fostering multilingual competence in the EFL classroom. *Nordic Journal of Modern Language Methodology*, 3(2), 1-9.
- Küntay, A. C., & Özyürek, A. (2006). Learning to use demonstratives in conversation: what do language specific strategies in Turkish reveal? *Journal of Child Language*, 33, S. 303-320.
- Kupisch, T. (2018). Introduction: Recent developments in early bilingualism. *Bilingualism: Language and Cognition*, 21(4), 653-655.
- Kupisch, T. (2019). 2L1 simultaneous bilinguals as heritage speakers in morphosyntax and phonology. In B. K. Monika S. Schmid (Hrsg.), *The Oxford Handbook of Language Attrition* (S. 458-469). Oxford: Oxford University Press.
- Kupisch, T., Barton, D., Lein, T., Schröder, D. J., Stangen, I., & Stöhr, A. (2014). Acquisition outcomes across domain in adult heritage speakers of French. *Journal of French Language Studies*, 24(3), 347-376.
- Lakoff, G., & Johnson, M. (1980). *Metaphors we live by*. Chicago/London: The University of Chicago Press.
- Lakoff, R. (1974). Remarks on this and that. . In M. LeGaly, R. Fox, & A. Bruck (Hrsg.), *Papers from the Tenth Regional Meeting of the Chicago Linguistics Society* (S. 345-356). Chicago: Chicago Linguistics Society.
- Lechner, S. (2020). *Second Language Acquisition of Demonstratives. A cross-linguistic, multi-directional study of L1 English, L1 German and L1 Japanese learners of L2 German, L2 English and L2 Japanese*. Hamburg: Staatsbibliothek Hamburg.
- Lechner, S., & Siemund, P. (2014). The role of language external factors in the acquisition of English as an additional language by bilingual children in Germany. In J. Paulasto, L. Meriläinen, Riionheimo, H., & M. Kok (Hrsg.), *Language Contacts*

- at the Crossroads of Disciplines*, (S. 319-345). Cambridge: Cambridge Scholars Publishing.
- Lehmann, C. (2015). *Thoughts on Grammaticalization* (3rd Ausg.). Berlin: Language Science Press.
- Lehtonen, M., Soveri, A., Laine, A., Järvenpää, J., de Bruin, A., & Antfolk, J. (2018). Is Bilingualism Associated With Enhanced Executive Functioning in Adults? A Meta-Analytic Review. *Psychological Bulletin*, 144(4), 394-425.
- Leivada, E., Mitrofanova, N., & Westergaard, M. (2021). Bilinguals are better than monolinguals in detecting manipulative discourse. *PLOS ONE*, 16(9), 1-19.
- Letica, S. &. (2007). Cross-linguistic transfer in L2 and L3 production. In J. H. (Eds.) (Hrsg.), *UPRT 2007: Empirical studies in English applied linguistics* (S. 307-318). Pécs: Lingua Franca Csoport.
- Leung, C. (2009). Second Language Teacher Professionalism. In &. J. A. Burns (Hrsg.), *Cambridge Guide to Second Language Teacher Education* (S. 49-58). Cambridge: Cambridge University Press.
- Leung, Y.-k. I. (2005). Second vs. Third Language Acquisition of Tense and Agreement in French by Vietnamese Monolinguals and Cantonese-English Bilinguals. In K. T. James Cohen (Hrsg.), *ISB4: Proceedings of the 4th International Symposium on Bilingualism* (S. 1344-1352). Somerville: Cascadilla Press.
- Leung, Y.-k. I. (2007). Third language acquisition: Why it is interesting to generative linguists. *Second Language Research* 23(1), S. 95-114.
- Levinson, S. C. (1996). Frames of reference and Molyneux's question: Crosslinguistic evidence . In P. Bloom, M. A. Peterson, L. Nadel, & M. F. Garrett (Hrsg.), *Language and Space* (S. 109-169). Cambridge: MIT Press.
- Levinson, S. C. (2003). *Space in Language and Cognition*. . Cambridge: University Press.
- Levinson, S. C. (2018). Introduction: demonstratives: Patterns in Diversity. In S. C. Levinson, S. Cutfield, M. J. Dunn, & N. M. Enfield (Hrsg.), *Demonstratives in Cross-Linguistic Perspective. Language, culture and cognition* 14 (S. 1-42). Cambridge: Cambridge University Press .
- Levshina, N. (2015). *How to do Linguistics with R. Data exploration and statistical analysis*. . Amsterdam/ Philadelphia: John Benjamins.
- Lewis, G. L. (1991). *Turkish Grammar* (4 Ausg.). Oxford: Oxford University Press.
- Lewis, M. P., Simons, G. F., & Fennig, C. D. (2016). *Ethnologue. Languages of the World*. Abgerufen am 22. Juni 2016 von <http://www.ethnologue.com>

- Lindqvist, C. (2009). The use of the L1 and the L2 in French L3: Examining crosslinguistic lexemes in multilingual learners' oral production. *International Journal of Multilingualism*, 6(3), 281-297.
- Lindqvist, C., & Bardel, C. (2010). Approaches to third language acquisition: Introduction. *International Review of Applied Linguistics in Language Teaching*, 48, S. 87–90.
- Lionnet, F. (January 2012). *www.princeton.edu*. Abgerufen am 15. December 2020 von [http://www.princeton.edu/~flionnet/papers/Lionnet\\_MApaper.pdf](http://www.princeton.edu/~flionnet/papers/Lionnet_MApaper.pdf)
- Liskin-Gasparro, J. E. (2011). Modern Language Journal Reviews. *The Modern Language Journal*, 95, S. 455-478.
- Lloyd-Smith, A., Bayram, F., & Iverson, M. (2020). The effects of heritage language experience on lexical and morphosyntactic outcomes. In F. Bayram (Hrsg.), *Studies in Turkish as a Heritage Language* (S. 63-84). Amsterdam: John Benjamins.
- Lloyd-Smith, Gyllstad, H., & Kupisch, T. (2017). Transfer into L3 English. Global accent in German-dominant heritage speakers of Turkish. *Linguistic Approaches to Bilingualism*, 7(2), 131-162.
- Lorenz, E. (2019). *The Use of Tense and Aspect in the Additional Language English by Monolingual Speakers and Bilingual Heritage Speakers*. Hamburg.
- Lorenz, E., & Siemund, P. (2019). Differences in the Acquisition and Production of English as a Foreign Language. A Study of Bilingual and Monolingual Students in Germany. In U. J. Eva Vetter (Hrsg.), *International Research on Multilingualism: Breaking with the Monolingual Perspective*. (S. 81-102). Berlin: Springer.
- Lorenz, E., & Siemund, P. (2020). The acquisition of English as an additional language by multilingual heritage speakers. In P. Lang (Hrsg.), *Der Einfluss der Migration auf Sprach- und Kulturräume - The Impact of Migration on Linguistic and Cultural Areas*. Edition: Kieler Forschungen zur Sprachwissenschaft.
- Lorenz, E., Bonnie, R. J., Feindt, K., & Rahbari, S. S. (2019). Cross-linguistic influence in unbalanced bilingual heritage speakers on subsequent language acquisition: Evidence from pronominal object placement in ditransitive clauses. *International Journal of Bilingualism*, 23(6), 1410-1430.
- Lorenz, E., Hasai, Y., & Siemund, P. (2021). Multilingual lexical transfer challenges monolingual educational norms: not quite! *Multilingua*, 1-23.

- Lorenz, E., Rahbari, S., Schackow, U., & Siemund, P. (2020). Does bilingualism correlate with or predict higher proficiency in L3 English? A contrastive study of monolingual and bilingual learners. *Journal of Multilingual Theories and Practices*, 1(2), 185-217.
- Lozano, C. (2003). *Focus, pronouns and word order in the acquisition of L2 and L3 Spanish*. Unpublished doctoral dissertation. University of Essex.
- Luz, S., & van der Sluis, I. (2011). Production of Demonstratives in Dutch, English and Portuguese Dialogues. (C. Gardent and K. Striegnitz, Hrsg.) *Proceedings of the 13th European Workshop on Natural Language Generation*, S. 181-186.
- Lyons, J. (1977). *Semantics* (1 & 2 Ausg.). Cambridge: CUP.
- Mackey, W. F. (2014). Bilingualism and Multilingualism in North America. In T. K. Bhatia, & W. C. Ritchie (Hrsg.), *The Handbook of Bilingualism and Multilingualism. Second Edition* (S. 707-724). Malden, Oxford, Chichester: Wiley Blackwell.
- Macnamara, J. (1967). The bilinguals' linguistic performance. *Journal of Social Issues*(23), 58-77.
- Mair, C. (2013). The World System of Englishes: Accounting for the Transnational Importance of Mobile and Mediated Vernaculars. *English World Wide*, 34, 253-278.
- Majid, A., Bowerman, M., Kita, S., Haun, D. B., & Levinson, S. C. (2004). Can language restructure cognition? The case for space. *Trends in Cognitive Science*, 8, 108-114.
- Malakoff, M. (1992). Translation ability: A natural bilingual and metalinguistic skill. In R. Harris (Hrsg.), *Cognitive processing in bilinguals* (S. 515-530). Hillsdale, NJ: Lawrence Erlbaum.
- Maluch, J. T., & Kempert, S. (2017). Bilingual profiles and third language learning: the effects of the manner of learning, sequence of bilingual acquisition, and language use practices. *International Journal of Bilingual Education and Bilingualism*, 22(2), 1-13.
- Maluch, J. T., Kempert, S., Neumann, M., & Stanat, P. (2015). The effect of speaking a minority language at home on foreign language learning. *Learning and Instruction*, 36, 76-85.
- Maluch, J. T., Neumann, M., & Kempert, S. (2016). Bilingualism as a resource for foreign language learning of language minority students? Empirical evidence from a

- longitudinal study during primary and secondary school in Germany. *Learning and Individual Differences*, 51, 111-118.
- March, E. G., & Patisson, P. (2014). The role of language system in context-dependent language use in Turkish-speaking versus English-speaking older adults. *Applied Psycholinguistics*, 35, S. 1087-1108.
- Mattheus, S., Starr, A., & Kornadt, A. E. (2017). *Documentation TwinLife Data: Report Cards. TwinLife Technical Report Series, 04*. Bielefeld.
- McCarthy, P. M., & Jarvis, S. (2010). MTL D, vocd-D, and HD-D: A validation study of sophisticated approaches to lexical diversity assessment. *Behavior Research Methods*, 42(2), 381-392.
- McEnery, T., & Hardie, A. (2012). *Corpus Linguistics. Method, Theory and Practice*. New York: Cambridge University Press.
- McKay, S. L., & Brown, J. D. (2016). *Teaching and Assessing EIL in Local Contexts Around the World*. New York & London: Routledge.
- Mehlig, H. R. (2001). Verbal Aspect and the Referential Status of Verbal Predicates: On Aspect Usage in Russian Who-Questions. *Journal of Slavic Linguistics*, 9(1), 99-125.
- Meisel, J. (1983). Transfer as a second language strategy. *Language and Communication*, 3(1), 11-46.
- Meisel, J. (1989). Early differentiation of languages in bilingual children. In K. Hyltenstam, & L. Obler (Hrsg.), *Bilingualism across the lifespan. Aspects of acquisition, maturity and loss* (S. 13-40). Cambridge: Cambridge University Press.
- MEZ-Project. (2016). *Multilingual Development: A Longitudinal Perspective*. Abgerufen am 22. March 2019 von <https://www.mez.uni-hamburg.de/en/>
- Moltmann, F. (2013). Identificational sentences. *Natural Language Semantics*, 21, S. 43-77.
- Montrul, S. (2014). Bilingualism and the Heritage Language Speaker . In T. K. Bhatia, & W. C. Ritchie (Hrsg.), *The Handbook of Bilingualism and Multilingualism. Second Edition* (S. 168-190). Malden/Oxford/West Sussex: Wiley Blackwell.
- Montrul, S., & Polinsky, M. (2011). Why Not Heritage Speakers? *linguistic Approaches to Bilingualism*, 1(1), 58-62.
- Moore, C., & Dunham, P. (1995). Current themes in research of joint attention. In C. M. Dunham (Hrsg.), *Joint attention: Its origins and role in development* (S. 15-28). Hillsdale: Lawrence Erlbaum.

- Morales, J., Calvo, A., & Bialystok, E. (2013). Working memory development in monolingual and bilingual children. *Journal of Experimental Child Psychology*, *114*(2), 187-202.
- Morales, J., Gomez-Ariza, C. J., & Bajo, M. T. (2013). Dual mechanisms of cognitive control in bilinguals and monolinguals. *Journal of Cognitive Psychology*, *25*(5), 531-546.
- Morford, J. P., Shaffer, B., Shin, N., Twitchell, P., & Petersen, B. T. (2019). An Exploratory Study of ASL Demonstratives. *Languages*, *19*(4(4)), 1-8.
- Müller, C., Cienki, A. F., Ladewig, S., McNeill, D., & Bressemer, J. (2014). Deixis, gesture, and embodiment from a linguistic point of view . In *Body-Language-Communication. HSK 38.2* (S. 1803-1823). Berlin/Munich/ Boston: de Gruyter.
- Murphy, S. (kein Datum). *Second Language Transfer During Third Language Acquisition*.
- Muşlu, M. (2015). Acquisition of Turkish demonstrative pronouns in children. *International Journal of Human Sciences*, *1*(12), 417-426.
- Myers-Scotton, C. (2002). *Contact Linguistics. Bilingual Encounters and Grammatical Outcomes*. Oxford: Oxford University Press.
- Na Ranong, S., & Leung, Y.-k. I. (2009). Null objects in L1 Thai-L2 English-L3 Chinese: An empirical take on a theoretical problem. In Y.-K. I. Leung (Hrsg.), *Third Language Acquisition and Universal Grammar* (S. 162-191). Bristol: Multilingual Matters.
- Naeem, K., Filippi, R., Periche-Thomas, E., Papageorgiou, A., & Bright, P. (2019). The Importance of Socioeconomic Status as a Modulator of the Bilingual Advantage in Cognitive Ability. In P. Bright, & R. Filippi (Hrsg.), *Perspectives on the 'Bilingual Advantage': Challenges and Opportunities* (S. 138-146). Lausanne: Frontiers Media.
- Nanay, B. (2014). Empirical problems with anti-representationalism. In B. Brogaard (Hrsg.), *Does perception have content?* (S. 39-50). Oxford: Oxford University Press.
- Neumann, U. (2003). Mehrsprachigkeit als Ressource: Plädoyer für eine Umorientierung der Schule. In H.-J. Kerner, & E. Marks (Hrsg.), *Internetdokumentation Deutscher Präventionstag* (S. 1-12). Hannover.
- Ntakarutimana, J., Jabbari, A., & Fazilatfar, A. (2023). Acquisition of L3 English Past Perfect, Present Progressive, and Present Perfect Tenses by L1 Kirundi-L2 French

- Bilinguals. *Journal of Foreign Language Teaching and Translation Studies*, Vol. 8(1), 1-40.
- Nübling, D. e. (2010). *Historische Sprachwissenschaft des Deutschen. Eine Einführung in die Prinzipien des Sprachwandels*. Tübingen: Narr Studienbücher.
- Oh, S.-Y. (2001). A Focus-Based Study of English Demonstrative Reference. *Journal of English Linguistics*, 29(2), 124-148.
- Ohser, E. (2000). *Vater und Sohn Band 2*. Konstanz: Südverlag GmbH.
- O'Rourke, B., & Pujolar, J. (2013). From native speakers to 'new speakers' - problematizing nativeness in language revitalization contexts. *Histoire Épistémologie Langage*, S. 47-67.
- Özer, D., Karadöller, D., Özyürek, A., & Göksun, T. (2023). Gestures Cued by Demonstratives in Speech Guide Listeners' Visual Attention During Spatial Language Comprehension. *Journal of Experimental Psychology: General*, 1-13.
- Paap, K. R. (2019). The bilingual advantage debate: Quantity and quality of the evidence. In J. W. Schwieter (Hrsg.), *The Handbook of Neuroscience of Multilingualism* (S. 701-735). London: Wiley-Blackwell.
- Paap, K. R., Anders-Jefferson, R., Mason, L., Alvarado, K., & Zimiga, B. (2019). Bilingual Advantages in Inhibition or Selective Attention: More Challenges. In P. Bright, & R. Filippi (Hrsg.), *Perspectives on the 'Bilingual Advantage': Challenges and Opportunities*. Lausanne: (S. 185-194). Lausanne: Frontiers Media.
- Paradis, M. (2004). *A Neurolinguistic Theory of Bilingualism*. Amsterdam: John Benjamins.
- Paradis, M. (2009). *Declarative and Procedural Determinants of Second Languages*. Amsterdam: John Benjamins.
- Patil, U., Bosch, P., & Hinterwimmer, S. (2020). Constraints on German demonstratives: a language formality and subject-avoidance. *Glossa: a journal of general linguistics*, 5(1), 1-22.
- Paturusi, M. A. (2016). The students' difficulties in using demonstrative pronoun. *Exposure Journal*, 5(2), 90-109.
- Peeters, D., Azar, Z., & Özyürek, A. (2014). The Interplay between Joint Attention, Physical Proximity, and Pointing Gesture in Demonstrative Choice. Conference: 36th Annual Meeting of the Cognitive Science Society.

- Peeters, D., Krahmer, E., & Maes, A. (2020). A conceptual framework for the study of demonstrative reference. <https://doi.org/10.3758/s13423-020-01822-8>.
- Peukert, H. (2015). Transfer Effects in multilingual language development. In H. Peukert (Hrsg.), *Transfer Effects in Multilingual Language Development* (S. 1-20). Amsterdam/Philadelphia: John Benjamin Publishing Company.
- Phong, N. P. (1992). Vietnamese Demonstratives Revisited. *Mon-Khmer Studies Journal*, 20, S. 127-136.
- Piaget, J. (1929). *The Child's Concept of the World*. London: Routledge and Kegan Paul.
- Pienemann, M. (1998). *Language processing and Second Language Development. Processability Theory*. Amsterdam/Philadelphia: John Benjamin Publishing.
- Pienemann, M., & Håkansson, G. (2007). Response article Full transfer vs. developmentally moderated transfer: a reply to Bohnacker. *Second Language Research*, 23(4), 485-493.
- Polinsky, M. (2015). Heritage languages and their speakers: state of the field, challenges, perspectives for future work, and methodologies. *Zeitschrift für Fremdsprachenforschung*, 26(1), 7-27.
- Puig-Mayenco, E., Cunnings, I., Bayram, F., Miller, D., & Tubau, S. R. (2018). Language Dominance Affects. *Frontiers in Psychology*, 9, 1-16.
- Puig-Mayenco, E., González Alonso, J., & Rothman, J. (2020). A systematic review of transfer studies in third language acquisition. *Second language Research*, 36(1), 31-64.
- Quirk, R., & Greenbaum, S. (1973). *A university grammar of English*. London: Longman.
- Quirk, R., Greenbaum, S., Leech, G., & Svartvik, J. (1985). *A comprehensive grammar of the English language*. London, New York: Longman.
- Rabadi, R. I. (26. Februar 2016). Demonstrative Pronouns in English and Arabic: Are they Different or Similar? . *English Language and Literature Studies, Volume 6 (1)*, S. 16-27.
- Rabinovitch, M. S., & Parver, L. M. (1966). Auditory Discrimination in Monolinguals and Polyglots. Paper presented at Meeting of Canadian Psychological Association. Montreal.
- Rahbari, S., Gabriel, C., Krause, M., Siemund, P., Bonnie, R., Dittmerns, T., . . . Topal, S. (2017). *Methodenbericht MEZ - Mehrsprachigkeitsentwicklung im Zeitverlauf. Linguistische MEZ-Erhebung in den Jahrgangsstufen 7 und 9 Messzeitpunkt 1 b - Juni 2016 bis Mai 2017*. Hamburg.



- Rahbari, S., Siemund, P., & Schackow, U. (2019). The impact of the reading skills of bilingual heritage speakers in their background languages on the acquisition of English as an additional language. Hamburg.
- Rauch, D. P., Naumann, J., & Jude, N. (2011). Metalinguistic awareness mediates effects of full biliteracy on third-language reading proficiency in Turkish-German bilinguals. *International Journal of Bilingualism*, 16(4), 402-418.
- Reile, M., Averin, K., & Pöldver, N. (2020). Interpreting Estonian Demonstratives: The Effects of Referent's Distance and Visual Salience. *Frontiers in Psychology*, 11, 1-13.
- Ringbom, H. (1987). *The Role of the First Language in Foreign Language Learning*. University of Michigan: Multilingual Matters.
- Ringbom, H. (2001). Lexical transfer in L3 production. In J. Cenoz, & B. Hufeisen (Hrsg.), *Cross-linguistic influence in third language acquisition: Psycholinguistic perspectives* (S. 59-68). Clevedon: Multilingual Matters.
- Rizal, F. M. (2020). A deixis analysis of online newspaper in Jakarta Post. *PROJECT*, 3(6), 689-696.
- Robinson Anthony, J. J., Blumenfeld, H. K., Potapova, I., & Pruitt-Lord, S. L. (2020). Language dominance predicts cognate effects and metalinguistic awareness in preschool bilinguals. *International Journal of Bilingual Education and Bilingualism*, 1-20.
- Rocca, R., & Wallentin, N. (2020). Demonstrative Reference and Semantic Space: A Large-Scale Demonstrative Choice Task Study. *Frontiers Psychology*, 11(629), 1-10.
- Rodina, Y., Bogoyavlenskaya, A., Mitrofanova, N., & Westergaard, M. (2023). Russian heritage language development in narrative contexts: Evidence from pre- and primary-school children in Norway, Germany, and the UK. *Frontiers in Psychology* 14:1101995.
- Rodrigo, M. J., de Vega, M., Muñetón Ayala, M., & Rodríguez, G. (2004). From Gestural to Verbal Deixis: a Longitudinal Study with Spanish Infants and Toddlers. *First Language*, 24(1), 71-90.
- Rodrigo, M. J., Gonzalez, A., de Vega, M., Muñetòn-Ayala, M., & Rodriguez, G. (2004). From gestural to verbal deixis: a longitudinal study with Spanish infants and toddlers. *First Language*, 24(1), 71-90.

- Rohlfing, K. J., Grimminger, A., & Lüke, C. (2017). An interactive View on the Development of Deictic Pointing in Infancy. *Frontiers in Psychology*, 8, 1-6.
- Rothman, González Alonso, J., & Puig-Mayenco, E. (2018). *Third language acquisition and linguistic transfer*. Cambridge: Cambridge University Press.
- Rothman, J. (2011). L3 syntactic transfer selectivity and typological determinacy: The typological primacy model. *Second Language Research*, 27(1), 107–127.
- Rothman, J., & Cabrelli, J. (2009). What Variables Condition Syntactic Transfer? A Look at the L3 Initial State. *Second Language Research*, 25, 1-30.
- Rothman, J., Amaro, J. C., & Bot, K. d. (2013). Third Language Acquisition. In M. Y.-S. Julia Herschensohn (Hrsg.), *The Cambridge Handbook of Second Language Acquisition* (S. 373-393). Cambridge: The Cambridge University Press.
- Rothman, J., González Alonso, J., & Puig-Mayenco. (2019). *Third Language Acquisition and Linguistic Transfer*. Cambridge: Cambridge University Press.
- Ruhl, N., Polkina, D., Gorobets, E., Ozbič, M., & Marini, A. (2020). A characterization of language development in heritage speakers. *International Journal of Bilingual Education and Bilingualism*, 1-17.
- RussianLearn-team. (2021). *RussianLearn.com*. Abgerufen am 02. 03 2021 von [http://russianlearn.com/grammar/category/demonstrative\\_pronouns](http://russianlearn.com/grammar/category/demonstrative_pronouns)
- Sadykov, T. M., & Zhukov, T. A. (08. 06 2017). *The Algorithmic Inflection of Russian and Generation of Grammatically Correct Text*. Abgerufen am 01. 03 2021 von [https://www.researchgate.net/publication/317425628\\_The\\_Algorithmic\\_Inflection\\_of\\_Russian\\_and\\_Generation\\_of\\_Grammatically\\_Correct\\_Text](https://www.researchgate.net/publication/317425628_The_Algorithmic_Inflection_of_Russian_and_Generation_of_Grammatically_Correct_Text)
- Safont, M. P. (2005). *Third language learners. Pragmatic production and awareness*. Clevedon: Multilingual Matters.
- Sagasta, M. P. (2003). Acquiring writing skills in a third language: The positive effects of bilingualism. *International Journal of Bilingualism*, 7, 27-42.
- Salmon, S. (2020). The relevance of joint attention for collaborative work in inclusive setting. In A. M. Sangiorgio (Hrsg.), *Creative interactions. Dynamic processes in group music activities* (S. 39-46). Munich: University of Music and Performing Arts.
- Sampson, A. (November 2011). Learner code-switching versus English only. *ELT Journal Volume 66(3)*, S. 293-303.

- Sánchez, L. (2020). Multilingualism from a language acquisition perspective. In C. Bardel, & L. Sánchez (Hrsg.), *Third language acquisition. Age, proficiency and multilingualism (Eurosla Studies 3)* (S. 15-42). Berlin: Language Science Press.
- Sankoff, G. (1979). The genesis of a language. In Hill (Hrsg.).
- Sanz, C. (2000). Multilingualism and metalinguistic awareness. In C. Chapelle (Hrsg.), *The Encyclopedia of Applied Linguistics* (S. 3933-3942). Oxford: Wiley-Blackwell.
- Sanz, C. (2007). The role of bilingual literacy in the acquisition of a third language. In C. Perez-Vidal, A. Bel, & M. Garau (Hrsg.), *A portrait of the young in the new multilingual Spain* (S. 220-240). Clevedon: Multilingual Matters.
- Sarilar, A., Mathews, D., & Küntay, A. C. (2015). Hearing relative clauses boosts relative clause usage (and referential clarity) in young Turkish language learners. *Applied Psycholinguistics*, 36, S. 175-202.
- Schönberger, M. (2014). The acquisition of determiners in child L2 German. *Folia Linguistica*, 48(1), 169-223.
- Schönenberger, M. (2014). The acquisition of determiners in child L2 German. *Folia Linguistica*, 48(1), 169-223.
- Schoonen, R., van Gelderen, A., De Glopper, K., Hulszajn, J., Snellings, P., Simis, A., & Stevenson, M. (2002). Linguistic knowledge, metacognitive knowledge and retrieval speed in L1, L2 and EFL writing. In S. Ransdell, & M.-L. Barbier (Hrsg.), *New directions for research in L2 writing* (S. 101-122). Dordrecht: Kluwer Academic Publishers.
- Schroeder, S. R. (2019). Do Bilinguals Have an Advantage in Theory of Mind? A Meta-Analysis. In P. Bright, & R. Filippi (Hrsg.), *Perspectives on the 'Bilingual Advantage': Challenges and Opportunities*. (Bd. 3, S. 177-184). Lausanne: Frontiers Media.
- Schwartz, B. D., & Sprouse, R. A. (1996). L2 cognitive states and the full transfer/full access hypothesis. *L2 cognitive states and the full transfer/full access hypothesis*, 12, 40-72.
- Sebastián-Gallés, N., Echeverría, S., & Bosch, L. (2005). The influence of initial exposure on lexical representation: Comparing early and simultaneous bilinguals. *Journal of Memory and Language*, 52(2), 240-255.

- Sebastián-Gallés, N., Echeverría, S., & Bosch, L. (2005). The influence of initial exposure on lexical representation: Comparing early and simultaneous bilinguals. *Journal of Memory and Language*, 52(2), 240-255.
- Shabir, M. (2017). Student-Teachers' Beliefs on the Use of L1 in EFL Classroom: A Global Perspective. *English Language Teaching*, 10(4), 45-52.
- Sharwood Smith, M., & Kellerman, E. (1986). Crosslinguistic influence in second language acquisition: An introduction. In *Crosslinguistic Influence in Second Language Acquisition* (S. 1-9). New York: Pergamon Press.
- Sharwood Smith, M., & Truscott, J. (2006). Full transfer full access. In S. Unsworth, T. Parodi, A. Sorace, & M. Yound-Scholten (Hrsg.), *Paths of Development in L1 and L2 acquisition* (S. 201-2016). Amsterdam: John Benjamins Publishing Company.
- Shin, N. L., & Morford, J. P. (2021). Demonstratives in Spanish. Children's developing conceptualization of interactive space. In J. J. Colomina-Almiñana, & S. (. Sessarego (Hrsg.), *Language patterns in Spanish and Beyond* (S. 285-301). London/New York: Routledge.
- Shin, N., Cuza, A., & Sánchez, L. (2022). Structured variation, language experience, and crosslinguistic influence shape child heritage speakers' Spanish direct objects. *Bilingualism: Language and Cognition*, 1-13.
- Shin, N., Vines Marchesi, M., & Morford, J. (2021). Pathways of Development in Child Heritage Speakers' Use of Spanish Demonstratives. *Spanish as a Heritage Language*, 1(2), 1-18.
- Siemund, P. (2020). On the advantages of multilingualism: Towards a more realistic assessment. Poland: Conference: Poznań Linguistic Meeting.
- Siemund, P. (2022). *Multilingual Development: English in a Global Context*. Cambridge: Cambridge University Press.
- Siemund, P. (Forthcoming). *Multilingual Development: English as an Additional Language*.
- Siemund, P., & Lechner, S. (2015). Transfer effects in the acquisition of English as an additional language by bilingual children in Germany. In H. Peukert (Hrsg.), *Transfer Effects in Multilingual Language Development* (S. 147-160). Amsterdam/Philadelphia: John Benjamin Publishing Company.
- Siemund, P., & Müller, J. T. (2020). Are multilinguals the better academic ELF users? Evidence from a questionnaire study measuring self-assessed proficiencies. In A.

- Mauranen, & S. Vetchinnikova (Hrsg.), *Language Change: The Impact of English as a Lingua Franca* (S. 234-266). Cambridge: Cambridge University Press.
- Siemund, P., Gogolin, I., Schulz, M. E., & Davydova, J. (2013). *Multilingualism and Language Diversity in Urban Areas. Acquisition, identities, space, education*. Amsterdam/Philadelphia: John Benjamins.
- Siemund, P., Schröter, S., & Rahbari, S. (2018). Learning English demonstrative pronouns on bilingual substrate. Evidence from German heritage speakers of Russian, Turkish and Vietnamese. In A. Bonnet, & P. Siemund (Hrsg.), *Foreign Language Education in Multilingual Classrooms* (S. 381-404). Hamburg: John Benjamins Publishing Company.
- Siewierska, A. (2013). Gender Distinctions in Independent Personal Pronouns. . In <http://wals.info/chapter/44> (Hrsg.), *The World Atlas of Language Structures Online*. . Leipzig: Dryer, Matthew S. & Haspelmath, Martin. Von <https://wals.info/chapter/44> abgerufen
- Šimić, A. (2019). Non-verbal clauses with demonstrative identifiers in the history of Croatian. *FLUMINENSIA*, 31(1), 85-101.
- Slabakova, R. (2017). *Interantional Journal of Bilingualism. The scalpel model of third language acquisition*, 21(6), 651-665.
- Smith, M. S., Truscott, J., & Hawkins, R. (2013). Explaining change in transition grammars . In J. Herschensohn, & M. Young-Scholten (Hrsg.), *The Cambridge Handbook of Second Language Acquisition* (S. 560-647). Cambridge: The Cambridge University Press.
- Solís, J. P. (2015). *Third Language Acquisition: Cross-Linguistic Influence from L1 and L2*. Barcelona: Universidad Autonoma de Barcelona.
- Sorace, A. (2011). Pinning down the concept of “interface” in bilingualism. *Linguistic Approaches to Bilingualism*, 1(1), 1-33.
- Spellerberg, S. M. (2016). Metalinguistic awareness and academic achievement in a linguistically diverse school setting: a study of lower secondary pupils in Denmark. *International Journal of Multilingualism*, 13(1), 19-39.
- Stassen, L. (1997). *Intransitive Predication*. Oxford: Calendron Press.
- Statistisches Bundesamt. (2019). [https://www.destatis.de/DE/Home/\\_inhalt.html](https://www.destatis.de/DE/Home/_inhalt.html).  
Abgerufen am 19. 05 2020 von [364](https://www.destatis.de/DE/Themen/Gesellschaft-</a></p></div><div data-bbox=)

- Umwelt/Bevoelkerung/Migration-Integration/Tabellen/migrationshintergrund-staatsangehoerigkeit-staaten.html
- Stedje, A. (1977). Tredjespråksinterferens i fritt tal – en jämförande studie [Third language interference in spontaneous speech – a comparative study]. In R. P. Ringbom (Hrsg.), *Papers from the Conference on Contrasted Linguistics and Error Analysis*. (S. 141-158). Åbo: Åbo Akademi.
- Sümer, Ö., Gerjets, P., & Trautwein, U. E. (2020). Attention Flow: End-to-End Joint Attention Estimation. Aspen.
- Swan, M. (2005). *Practical English Usage* (3rd Ausg.). Oxford: Oxford University Press.
- Swan, M. (2016). *Practical English Usage. Fully Revised International Edition* (4th Ausg.). Oxford: Oxford University Press.
- Szczepaniak, R. (2011 ). *Grammatikalisierung im Deutschen. Eine Einführung. 2. Auflage*. Tübingen: Narr Francke Attempto Verlag.
- Talmy, L. (2020). Targeting in Language: Unifying Deixis and Anaphora. *Frontiers Psychology, 11*(2016), 1-14.
- Tauscher, E., & Kirschbaum, E.-G. (1974). *Grammatik der russischen Sprache* (10. Ausg.). Düsseldorf: Brücken-Verlag.
- Thiery, C. (1978). True Bilingualism and Second-language Learning. In D. Gerver, & H. Wallace Sinaiko (Hrsg.), *Language Interpretation and Communication* (S. 145-153). New York and London: Plenum Press.
- Thompson, L. C. (1965). *A Vietnamese Grammar*. Seattle: The University of Washington Press.
- Todisco, E., Guijarro-Fuentes, P., Collier, J., & Coventry, K. R. (2020). The temporal dynamics of deictic communication. *First Language, 1-25*.
- Tomasello, M., Carpenter, M., & Lizkowski, U. (2007). A New Look at Infant Pointing. *Child Development, 78*(3), 705-722.
- Tremblay, M.-C. (2006). Cross-Linguistic Influence in third language acquisition: The role of L2 Proficiency and L2 Exposure. *CLO/OPL, 34*, S. 109-119.
- Underhill, R. (1976). *Turkish grammar*. Cambridge: MIT Press.
- Valdés, G., & Figueroa, R. A. (1994). *Bilingualism and Testing: A Special Case of Bias*. Norwood: Ablex Publishing.
- Vedder, I., & Benigno, V. (2016). Lexical richness and collocational competence in second-language writing. *IRAL, 54*(1), S. 23-42.
- Vildomec, V. (1963). *Multilingualism*. Netherlands: A. W. Sythoff-Leyden.

- Voit, H. (2011). *Grammatik kurz und bündig. Deutsch.* . Stuttgart: PONS.
- Wade, T. (2011). *A comprehensive Russian Grammar* (3rd Ausg.). Chichester: Wiley-Blackwell.
- Westergaard, M., Mitrofanova, N., Mykhaylyk, R., & Rodina, Y. (2017). Crosslinguistic influence in the acquisition of a third language: The Linguistic Proximity Model. *International Journal of Bilingualism*, 21(6), 666-682.
- Wilkins, D. P. (2018). The Demonstrative Questionnaire: "THIS" and "THAT" in Comparative Perspective. In S. C. Levinson, S. Cutfield, M. J. Dunn, N. Enfield, & S. MEira (Hrsg.), *Demonstratives in Cross-Linguistic Perspective* (S. 43-71). Cambridge: Cambridge University Press.
- Williams, S., & Hammarberg, B. (1998). Language Switches in L3 Production: Implications for a Polyglot Speaking Model. *Applied Linguistics*, 19, 295-333.
- Williams, S., & Hammarberg, B. (2009). Language switches in L3 production: Implications for a polyglot speaking model. In B. Hammarberg (Hrsg.), *Processes in Third Language Acquisition* (S. 28-73). Edinburgh: Edinburgh University Press.
- Williams, T., Bussing, M., & Cabrol, S. L. (2020). Toward Allocentric Mixed-Reality Deictic Gesture. Conference: Computer Ethics-Philosophical Enquiry (CEPE) Proceedings.
- Wilson, P. R. (1980). *Ambulas grammar*. Ukarumpa, Papa New Guinea: Summer Institute of Linguistics.
- Wright, S. E., & Givon, T. (1987). The Pragmatics of Indefinite Reference: Quantified Text-Based Studies. *Studies in Language* , 11(1), 1-33.
- Zandvoort, R. W. (1975). *A handbook of English grammar*. London: Longmans.
- Zhao, Y.-j. (2007). Children's Acquisition of Demonstrative Pronouns in Mandarin Chinese. PACLIC 21 - The 21st Pacific Asia Conference on Language, Information and Computation, Proceedings.

## 8 Appendix

### 8.1 Supplementary Tables

**Table 115: Background Information German monolinguals**

ID	HL	Grade	Age	School type	Gender	Language parents	School grade GER
1302547102	GER mono	7	12	Gymnasium	male	German	3
1302547103	GER mono	7	12	Gymnasium	male	German	3
1302547105	GER mono	7	12	Gymnasium	female	German	2
1302547106	GER mono	7	12	Gymnasium	female	German	3
1302547107	GER mono	7	12	Gymnasium	female	German	2
1200067103	GER mono	7	12	Other	male	German	2
1600027104	GER mono	7	12	Gymnasium	male	German	2
1200067104	GER mono	7	12	Other	male	German	4
1200337101	GER mono	7	12	Gymnasium	male	German	3
1200337102	GER mono	7	12	Gymnasium	male	German	2
1401877105	GER mono	7	12	Gymnasium	male	German	4
1401877104	GER mono	7	12	Gymnasium	female	German	2
1200337103	GER mono	7	12	Gymnasium	male	German	3
1401877102	GER mono	7	12	Gymnasium	male	German	2
1401877101	GER mono	7	12	Gymnasium	male	German	2
1306047105	GER mono	7	12	Gymnasium	male	German	2
1306047102	GER mono	7	12	Gymnasium	male	German	2
1306047101	GER mono	7	12	Gymnasium	male	German	1
1700757110	GER mono	7	12	Gymnasium	female	German	2
1700757106	GER mono	7	12	Gymnasium	female	German	2
1700757104	GER mono	7	12	Gymnasium	male	German	2
1700757103	GER mono	7	12	Gymnasium	female	German	2
1302547112	GER mono	7	12	Gymnasium	female	German	2
1200337104	GER mono	7	12	Gymnasium	male	German	3
1700757101	GER mono	7	12	Gymnasium	female	German	2
1306047106	GER mono	7	12	Gymnasium	female	German	2
1306047103	GER mono	7	12	Gymnasium	female	German	1
1302547110	GER mono	7	12	Gymnasium	female	German	1
1302547109	GER mono	7	12	Gymnasium	female	German	2
1302547108	GER mono	7	12	Gymnasium	female	German	2
2300577112	GER mono	7	12	Gymnasium	female	German	3
2300577110	GER mono	7	12	Gymnasium	male	German	2
2300577109	GER mono	7	12	Gymnasium	male	German	3
2300577108	GER mono	7	12	Gymnasium	male	German	2
2300287105	GER mono	7	12	Gymnasium	female	German	1
2300287103	GER mono	7	12	Gymnasium	male	German	3
2300287102	GER mono	7	12	Gymnasium	male	German	1



## Appendix

2300287101	GER mono	7	12	Gymnasium	male	German	3
2300577107	GER mono	7	12	Gymnasium	female	German	3
2300577106	GER mono	7	12	Gymnasium	male	German	2
2300577105	GER mono	7	12	Gymnasium	female	German	3
2300577104	GER mono	7	12	Gymnasium	male	German	2
2300577103	GER mono	7	12	Gymnasium	male	German	1
2300577102	GER mono	7	12	Gymnasium	female	German	2
2400997107	GER mono	7	12	Other	female	German	2
2400997106	GER mono	7	12	Other	male	German	2
2400997104	GER mono	7	12	Other	male	German	2
2400997103	GER mono	7	12	Other	male	German	3
2400997102	GER mono	7	12	Other	male	German	3
2400997101	GER mono	7	12	Other	male	German	2
1400459101	GER mono	9	16	Gymnasium	female	German	3
1400459102	GER mono	9	16	Gymnasium	female	German	2
1400459103	GER mono	9	16	Gymnasium	male	German	2
1402099101	GER mono	9	16	Gymnasium	male	German	2
1200339101	GER mono	9	16	Gymnasium	female	German	3
1500469105	GER mono	9	16	Other	female	German	1
1500469104	GER mono	9	16	Other	male	German	3
1500469103	GER mono	9	16	Other	male	German	3
1200339102	GER mono	9	16	Gymnasium	male	German	2
1500329107	GER mono	9	16	Other	male	German	2
1500329106	GER mono	9	16	Other	male	German	4
1500329104	GER mono	9	16	Other	female	German	4
1500329103	GER mono	9	16	Other	male	German	4
1500329102	GER mono	9	16	Other	female	German	2
1500329101	GER mono	9	16	Other	female	German	2
1200339103	GER mono	9	16	Gymnasium	female	German	2
1306049101	GER mono	9	16	Gymnasium	female	German	1
1200339106	GER mono	9	16	Gymnasium	male	German	3
1200339109	GER mono	9	16	Gymnasium	female	German	3
1300729108	GER mono	9	16	Other	male	German	2
1300729104	GER mono	9	16	Other	female	German	3
1300729103	GER mono	9	16	Other	female	German	3
1402099108	GER mono	9	16	Gymnasium	female	German	2
1402099105	GER mono	9	16	Gymnasium	male	German	3
1300169101	GER mono	9	16	Other	male	German	4
1306049103	GER mono	9	16	Gymnasium	female	German	1
1304169107	GER mono	9	16	Other	female	German	2
1304169105	GER mono	9	16	Other	female	German	2
1304169103	GER mono	9	16	Other	female	German	2
1300729107	GER mono	9	16	Other	male	German	2

## Appendix

1700639104	GER mono	9	16	Gymnasium	male	German	2
1700639102	GER mono	9	16	Gymnasium	male	German	2
1700639101	GER mono	9	16	Gymnasium	male	German	3
1700759109	GER mono	9	16	Gymnasium	male	German	3
1700759106	GER mono	9	16	Gymnasium	female	German	2
1700759105	GER mono	9	16	Gymnasium	male	German	2
1700759104	GER mono	9	16	Gymnasium	male	German	2
1700759102	GER mono	9	16	Gymnasium	female	German	2
1700759101	GER mono	9	16	Gymnasium	female	German	3
2300289105	GER mono	9	16	Gymnasium	female	German	2
2300289104	GER mono	9	16	Gymnasium	male	German	4
2300289103	GER mono	9	16	Gymnasium	male	German	3
2300289102	GER mono	9	16	Gymnasium	male	German	3
2300289101	GER mono	9	16	Gymnasium	male	German	4
2300579101	GER mono	9	16	Gymnasium	female	German	2
2400999109	GER mono	9	16	Other	male	German	4
2400999108	GER mono	9	16	Other	male	German	3
2400999105	GER mono	9	16	Other	male	German	2
2400999104	GER mono	9	16	Other	male	German	2
2400999103	GER mono	9	16	Other	male	German	3

**Table 116: Background Information German monolinguals 2**

ID	HL	School grade ENG	HISEI	SES-mother	SES-father	English is boring	English is useful	No. of books
1302547102	GER mono	3	44.08	44.08	41.27	no	yes	101-200
1302547103	GER mono	3	N.A.	N.A.	N.A.	no	yes	201-500
1302547105	GER mono	1	76.65	57.00	76.65	no	yes	201-500
1302547106	GER mono	2	N.A.	N.A.	N.A.	no	yes	26-100
1302547107	GER mono	2	43.33	43.33	25.23	no	yes	201-500
1200067103	GER mono	4	N.A.	N.A.	N.A.	no	yes	N.A.
1600027104	GER mono	3	75.54	75.54	72.94	no	yes	500+
1200067104	GER mono	3	N.A.	N.A.	N.A.	no	yes	N.A.
1200337101	GER mono	3	81.92	75.54	81.92	yes	yes	201-500
1200337102	GER mono	2	85.85	85.85	85.41	no	yes	500+
1401877105	GER mono	4	N.A.	N.A.	N.A.	no	yes	N.A.
1401877104	GER mono	3	66.42	NA	66.42	no	yes	101-200
1200337103	GER mono	2	85.85	50.37	85.85	no	yes	201-500
1401877102	GER mono	3	N.A.	N.A.	N.A.	no	yes	N.A.
1401877101	GER mono	3	88.70	88.70	77.10	no	yes	500+
1306047105	GER mono	2	76.65	76.65	75.54	yes	yes	500+
1306047102	GER mono	3	62.39	62.39	22.16	no	yes	500+
1306047101	GER mono	2	76.65	76.65	N.A.	no	no	201-500
1700757110	GER mono	3	74.66	N.A.	74.66	no	yes	N.A.

## Appendix

1700757106	GER mono	2	28.48	28.48	N.A.	no	yes	11-25
1700757104	GER mono	3	44.92	44.92	40.54	no	yes	201-500
1700757103	GER mono	3	44.14	44.14	36.35	no	yes	500+
1302547112	GER mono	4	52.40	49.30	52.40	no	yes	500+
1200337104	GER mono	2	57.38	57.38	54.55	no	yes	101-200
1700757101	GER mono	2	85.85	85.85	73.91	no	yes	500+
1306047106	GER mono	1	65.42	60.93	65.42	no	yes	500+
1306047103	GER mono	2	76.65	76.65	76.65	no	yes	500+
1302547110	GER mono	1	71.55	70.50	71.55	no	yes	500+
1302547109	GER mono	4	79.31	48.10	79.31	no	yes	500+
1302547108	GER mono	2	45.76	44.94	45.76	no	yes	201-500
2300577112	GER mono	3	56.00	56.00	29.81	yes	yes	201-500
2300577110	GER mono	2	77.10	39.02	77.10	no	yes	500+
2300577109	GER mono	3	74.66	24.98	74.66	no	yes	11-25
2300577108	GER mono	3	74.66	24.98	74.66	yes	yes	11-25
2300287105	GER mono	2	88.70	88.70	85.41	no	yes	201-500
2300287103	GER mono	2	80.78	79.74	80.78	no	yes	500+
2300287102	GER mono	1	88.96	86.72	88.96	no	yes	500+
2300287101	GER mono	1	79.74	50.73	79.74	no	yes	201-500
2300577107	GER mono	3	85.85	85.85	85.85	no	yes	500+
2300577106	GER mono	2	82.41	82.41	51.35	no	yes	500+
2300577105	GER mono	2	43.33	43.33	N.A.	no	yes	201-500
2300577104	GER mono	2	72.30	48.66	72.30	no	yes	500+
2300577103	GER mono	2	73.91	73.91	35.70	no	yes	201-500
2300577102	GER mono	3	65.12	28.48	65.12	no	yes	201-500
2400997107	GER mono	3	62.45	24.98	62.45	yes	yes	201-500
2400997106	GER mono	3	N.A.	N.A.	N.A.	yes	yes	N.A.
2400997104	GER mono	2	N.A.	N.A.	N.A.	no	yes	N.A.
2400997103	GER mono	2	N.A.	N.A.	N.A.	no	yes	N.A.
2400997102	GER mono	3	23.57	N.A.	23.57	no	yes	26-100
2400997101	GER mono	3	28.48	28.48	21.82	no	yes	26-100
1400459101	GER mono	3	N.A.	N.A.	N.A.	no	yes	N.A.
1400459102	GER mono	4	30.78	28.48	30.78	no	no	101-200
1400459103	GER mono	4	59.89	57.38	59.89	no	yes	101-200
1402099101	GER mono	2	65.12	54.55	65.12	no	yes	11-25
1200339101	GER mono	4	80.46	80.46	29.47	no	yes	101-200
1500469105	GER mono	1	56.64	16.50	56.64	no	yes	201-500
1500469104	GER mono	3	61.60	61.60	N.A.	no	yes	201-500
1500469103	GER mono	2	43.33	43.33	24.49	no	yes	101-200
1200339102	GER mono	2	70.09	70.09	65.01	no	yes	201-500
1500329107	GER mono	4	N.A.	N.A.	N.A.	no	yes	N.A.
1500329106	GER mono	6	N.A.	N.A.	N.A.	no	yes	N.A.
1500329104	GER mono	3	N.A.	N.A.	N.A.	no	yes	N.A.

## Appendix

1500329103	GER mono	3	N.A.	N.A.	N.A.	no	yes	N.A.
1500329102	GER mono	3	N.A.	N.A.	N.A.	no	yes	N.A.
1500329101	GER mono	2	N.A.	N.A.	N.A.	no	yes	N.A.
1200339103	GER mono	2	29.14	16.50	29.14	no	yes	101-200
1306049101	GER mono	2	88.70	88.70	80.78	no	yes	500+
1200339106	GER mono	2	56.00	56.00	32.50	no	yes	201-500
1200339109	GER mono	4	79.49	24.98	79.49	no	yes	201-500
1300729108	GER mono	2	N.A.	N.A.	N.A.	no	yes	101-200
1300729104	GER mono	3	44.92	44.92	32.50	no	yes	201-500
1300729103	GER mono	3	51.92	43.33	51.92	no	yes	201-500
1402099108	GER mono	3	65.01	65.01	58.07	no	yes	201-500
1402099105	GER mono	2	N.A.	N.A.	N.A.	no	yes	N.A.
1300169101	GER mono	4	N.A.	N.A.	N.A.	yes	no	N.A.
1306049103	GER mono	2	65.12	54.55	65.12	no	yes	26-100
1304169107	GER mono	2	44.92	44.92	40.54	yes	yes	26-100
1304169105	GER mono	2	56.35	56.35	36.92	no	yes	500+
1304169103	GER mono	2	66.42	56.00	66.42	no	yes	201-500
1300729107	GER mono	2	N.A.	N.A.	N.A.	no	yes	101-200
1700639104	GER mono	3	79.74	79.74	24.68	no	yes	201-500
1700639102	GER mono	3	80.92	80.92	61.60	yes	yes	101-200
1700639101	GER mono	4	88.31	47.83	88.31	no	yes	500+
1700759109	GER mono	4	44.08	24.98	44.08	no	yes	201-500
1700759106	GER mono	2	59.89	50.90	59.89	no	yes	201-500
1700759105	GER mono	2	43.33	43.33	43.33	no	yes	26-100
1700759104	GER mono	2	28.48	28.48	25.26	no	yes	26-100
1700759102	GER mono	2	75.13	56.35	75.13	no	yes	500+
1700759101	GER mono	2	30.90	30.90	28.48	no	yes	500+
2300289105	GER mono	2	73.91	73.91	39.02	no	yes	500+
2300289104	GER mono	3	N.A.	N.A.	N.A.	no	yes	N.A.
2300289103	GER mono	2	76.65	76.65	55.25	yes	yes	201-500
2300289102	GER mono	3	77.10	56.00	77.10	no	yes	101-200
2300289101	GER mono	4	N.A.	N.A.	N.A.	no	yes	N.A.
2300579101	GER mono	3	N.A.	N.A.	N.A.	no	yes	N.A.
2400999109	GER mono	3	N.A.	N.A.	N.A.	no	no	N.A.
2400999108	GER mono	4	N.A.	N.A.	N.A.	yes	no	N.A.
2400999105	GER mono	3	61.60	61.60	55.03	no	yes	201-500
2400999104	GER mono	2	79.49	75.54	79.49	no	yes	201-500
2400999103	GER mono	4	N.A.	N.A.	N.A.	yes	no	N.A.

## Appendix

**Table 117: Background Information Russian-German bilinguals 1**

ID	HL	Grade	School type	Gender	Age	School grade GER	School grade ENG
1300387143	RUS-GER	7	Other	female	12	2	2
1300387144	RUS-GER	7	Other	male	12	2	2
1300727127	RUS-GER	7	Other	female	12	2	3
1302667124	RUS-GER	7	Gymnasium	male	12	4	4
1302937131	RUS-GER	7	Gymnasium	male	12	3	2
1304127157	RUS-GER	7	Other	female	12	4	4
1304127156	RUS-GER	7	Other	female	12	4	4
1304127154	RUS-GER	7	Other	female	12	4	4
1304127153	RUS-GER	7	Other	female	12	4	4
1303147121	RUS-GER	7	Gymnasium	male	12	3	3
1303107174	RUS-GER	7	Gymnasium	male	12	4	3
1303107173	RUS-GER	7	Gymnasium	female	12	3	2
1301377168	RUS-GER	7	Other	female	12	3	4
1200377118	RUS-GER	7	Gymnasium	female	12	3	3
1200337122	RUS-GER	7	Gymnasium	male	12	2	2
1200067174	RUS-GER	7	Other	male	12	4	4
1700037123	RUS-GER	7	Other	male	12	4	2
1700037122	RUS-GER	7	Other	female	12	2	4
1700037120	RUS-GER	7	Other	female	12	3	2
1601207115	RUS-GER	7	Other	male	12	4	5
1601207114	RUS-GER	7	Other	female	12	4	4
1601167146	RUS-GER	7	Other	female	12	4	2
1600027126	RUS-GER	7	Gymnasium	female	12	2	2
1600027125	RUS-GER	7	Gymnasium	male	12	4	3
1600027124	RUS-GER	7	Gymnasium	female	12	2	2
1600027123	RUS-GER	7	Gymnasium	male	12	4	5
1600027122	RUS-GER	7	Gymnasium	female	12	4	3
1500387135	RUS-GER	7	Other	female	12	1	1
1302937134	RUS-GER	7	Gymnasium	female	12	N.A.	N.A.
1302937133	RUS-GER	7	Gymnasium	male	12	3	3
1700177146	RUS-GER	7	Other	male	12	4	5
1700177144	RUS-GER	7	Other	female	12	3	4
1700177139	RUS-GER	7	Other	female	12	2	4
1700177138	RUS-GER	7	Other	male	12	2	3
1700417113	RUS-GER	7	Gymnasium	female	12	N.A.	N.A.
1700417112	RUS-GER	7	Gymnasium	female	12	N.A.	N.A.
1700637119	RUS-GER	7	Gymnasium	female	12	3	3
1700747113	RUS-GER	7	Gymnasium	female	12	3	3
1700757118	RUS-GER	7	Gymnasium	female	12	3	2
1700757117	RUS-GER	7	Gymnasium	female	12	2	2
1700757116	RUS-GER	7	Gymnasium	female	12	3	4

## Appendix

---

1700757115	RUS-GER	7	Gymnasium	female	12	3	4
2300287133	RUS-GER	7	Gymnasium	female	12	2	3
2300577150	RUS-GER	7	Gymnasium	female	12	2	4
2300577149	RUS-GER	7	Gymnasium	male	12	2	3
2300577148	RUS-GER	7	Gymnasium	male	12	4	3
2300577147	RUS-GER	7	Gymnasium	male	12	4	4
2300577146	RUS-GER	7	Gymnasium	male	12	3	2
2400997127	RUS-GER	7	Other	male	12	2	3
1302937132	RUS-GER	7	Gymnasium	female	12	1	2
1300389146	RUS-GER	9	Other	female	16	3	4
1300729122	RUS-GER	9	Other	female	16	3	3
1300389147	RUS-GER	9	Other	female	16	2	3
1300389148	RUS-GER	9	Other	female	16	3	3
1300389149	RUS-GER	9	Other	female	16	4	2
1300729120	RUS-GER	9	Other	male	16	4	3
1303409130	RUS-GER	9	Gymnasium	female	16	3	3
1303409129	RUS-GER	9	Gymnasium	female	16	4	4
1303409128	RUS-GER	9	Gymnasium	female	16	2	1
1303409127	RUS-GER	9	Gymnasium	female	16	3	3
1303409126	RUS-GER	9	Gymnasium	female	16	2	2
1303409125	RUS-GER	9	Gymnasium	female	16	3	3
1303109153	RUS-GER	9	Gymnasium	male	16	4	4
1301389123	RUS-GER	9	Other	female	16	2	2
1301389106	RUS-GER	9	Other	male	16	4	4
1301379161	RUS-GER	9	Other	female	16	3	4
1700179128	RUS-GER	9	Other	female	16	2	3
1700179127	RUS-GER	9	Other	female	16	3	3
1601209119	RUS-GER	9	Other	female	16	3	3
1601169155	RUS-GER	9	Other	female	16	4	3
1500389159	RUS-GER	9	Other	female	16	2	4
1500389158	RUS-GER	9	Other	female	16	2	2
1302939125	RUS-GER	9	Gymnasium	female	16	3	3
1302939124	RUS-GER	9	Gymnasium	female	16	2	2
1302939123	RUS-GER	9	Gymnasium	female	16	2	2
1302669123	RUS-GER	9	Gymnasium	female	16	2	2
1300909155	RUS-GER	9	Other	female	16	3	3
1300909154	RUS-GER	9	Other	female	16	2	3
1300909153	RUS-GER	9	Other	female	16	4	4
1300729121	RUS-GER	9	Other	male	16	4	3
1401599126	RUS-GER	9	Other	female	16	3	3
1401809127	RUS-GER	9	Other	female	16	4	4
1401809126	RUS-GER	9	Other	male	16	4	4
1700179131	RUS-GER	9	Other	female	16	2	3

## Appendix

1700179130	RUS-GER	9	Other	male	16	4	3
1700179129	RUS-GER	9	Other	female	16	2	2
1700419121	RUS-GER	9	Gymnasium	male	16	N.A.	N.A.
1700419120	RUS-GER	9	Gymnasium	male	16	N.A.	N.A.
1700419119	RUS-GER	9	Gymnasium	female	16	N.A.	N.A.
1700419118	RUS-GER	9	Gymnasium	female	16	N.A.	N.A.
1700469141	RUS-GER	9	Gymnasium	female	16	2	1
1700749124	RUS-GER	9	Gymnasium	male	16	3	1
1700749123	RUS-GER	9	Gymnasium	female	16	3	2
1700749122	RUS-GER	9	Gymnasium	female	16	3	2
1700749121	RUS-GER	9	Gymnasium	female	16	3	3
1700759117	RUS-GER	9	Gymnasium	female	16	2	1
1700759116	RUS-GER	9	Gymnasium	female	16	2	1
2300289123	RUS-GER	9	Gymnasium	male	16	2	2
2300289122	RUS-GER	9	Gymnasium	female	16	4	2
2300579123	RUS-GER	9	Gymnasium	female	16	3	4

**Table 118: Background Information Russian-German bilinguals 2**

ID	Age of onset Russian	Age of onset German	HISEI	SES-mother	SES-father	English is boring	English is useful	No. of books
1300387143	6-9	6-9	N.A.	N.A.	N.A.	no	yes	26-100
1300387144	until 2	3-5	31.08	31.08	30.34	yes	yes	101-200
1300727127	N.A.	N.A.	30.78	28.48	30.78	yes	yes	0-10
1302667124	until 2	3-5	25.95	17.55	25.95	yes	yes	0-10
1302937131	until 2	3-5	24.98	24.98	N.A.	no	yes	26-100
1304127157	6-9	until 2	43.51	43.51	25.95	yes	yes	26-100
1304127156	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
1304127154	until 2	3-5	26.85	26.85	25.23	yes	yes	11-25
1304127153	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
1303147121	until 2	3-5	61.07	44.14	61.07	no	yes	101-200
1303107174	until 2	until 2	28.48	28.48	24.49	no	yes	26-100
1303107173	6-9	until 2	43.33	43.33	36.35	no	yes	101-200
1301377168	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
1200377118	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
1200337122	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
1200067174	N.A.	N.A.	N.A.	N.A.	N.A.	yes	yes	N.A.
1700037123	until 2	until 2	85.13	85.13	NA	no	yes	201-500
1700037122	N.A.	N.A.	N.A.	N.A.	N.A.	yes	no	N.A.
1700037120	until 2	3-5	23.47	23.47	N.A.	no	yes	101-200

## Appendix

160120 7115	until 2	until 2	28.48	28.48	26.6 0	yes	no	26-100
160120 7114	until 2	3-5	16.36	16.36	N.A.	yes	yes	0-10
160116 7146	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
160002 7126	until 2	6-9	86.72	70.50	86.7 2	no	yes	201-500
160002 7125	10-15	until 2	24.98	24.98	16.3 6	no	yes	26-100
160002 7124	10-15	until 2	28.48	28.48	20.9 1	no	yes	26-100
160002 7123	until 2	until 2	31.72	24.98	31.7 2	no	yes	101-200
160002 7122	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
150038 7135	until 2	until 2	55.25	55.25	51.5 6	no	yes	26-100
130293 7134	until 2	3-5	31.08	31.08	30.3 4	no	yes	11-25
130293 7133	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
170017 7146	N.A.	N.A.	N.A.	N.A.	N.A.	yes	no	N.A.
170017 7144	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
170017 7139	until 2	6-9	housewife/h usband	housewife/h usband	N.A.	no	yes	11-25
170017 7138	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
170041 7113	until 2	until 2	32.50	32.50	30.7 8	no	yes	26-100
170041 7112	until 2	3-5	24.98	24.98	21.9 6	no	yes	101-200
170063 7119	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
170074 7113	N.A.	N.A.	N.A.	N.A.	N.A.	yes	yes	N.A.
170075 7118	until 2	6-9	81.05	55.25	81.0 5	no	yes	26-100
170075 7117	until 2	until 2	62.45	54.55	62.4 5	yes	yes	201-500
170075 7116	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
170075 7115	until 2	3-5	43.76	17.69	43.7 6	yes	no	26-100
230028 7133	until 2	until 2	54.55	54.55	NA	no	yes	11-25
230057 7150	N.A.	N.A.	N.A.	N.A.	N.A.	yes	yes	N.A.
230057 7149	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
230057 7148	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
230057 7147	until 2	3-5	31.08	31.08	22.3 6	no	yes	11-25
230057 7146	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
240099 7127	N.A.	until 2	44.92	44.92	30.3 4	yes	yes	101-200
130293 7132	until 2	until 2	41.63	27.52	41.6 3	no	yes	201-500
130038 9146	N.A.	N.A.	N.A.	N.A.	N.A.	yes	yes	N.A.
130072 9122	until 2	3-5	N.A.	N.A.	N.A.	no	yes	26-100
130038 9147	until 2	3-5	25.95	NA	25.9 5	no	yes	26-100
130038 9148	until 2	until 2	81.40	81.40	NA	no	yes	26-100



## Appendix

130038 9149	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
130072 9120	N.A.	N.A.	N.A.	N.A.	N.A.	yes	yes	N.A.
130340 9130	until 2	3-5	28.48	28.48	24.8 5	no	yes	101-200
130340 9129	until 2	6-9	N.A.	N.A.	N.A.	no	yes	101-200
130340 9128	until 2	until 2	23.57	23.57	N.A.	no	yes	26-100
130340 9127	until 2	3-5	56.00	56.00	26.6 0	no	yes	201-500
130340 9126	until 2	3-5	51.35	51.35	31.7 2	no	yes	101-200
130340 9125	N.A.	N.A.	N.A.	N.A.	N.A.	yes	yes	N.A.
130310 9153	older than 15	until 2	31.08	31.08	22.3 6	no	yes	26-100
130138 9123	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
130138 9106	N.A.	until 2	31.72	26.64	31.7 2	no	yes	201-500
130137 9161	3-5	3-5	56.00	56.00	N.A.	yes	yes	500+
170017 9128	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
170017 9127	until 2	3-5	14.21	14.21	N.A.	yes	no	26-100
160120 9119	6-9	until 2	28.48	28.48	22.1 6	no	yes	11-25
160116 9155	N.A.	N.A.	N.A.	N.A.	N.A.	yes	yes	N.A.
150038 9159	N.A.	N.A.	N.A.	N.A.	N.A.	yes	no	N.A.
150038 9158	until 2	until 2	56.00	56.00	25.9 5	yes	yes	101-200
130293 9125	3-5	until 2	77.10	54.27	77.1 0	no	yes	201-500
130293 9124	until 2	3-5	65.01	65.01	24.6 8	no	yes	26-100
130293 9123	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
130266 9123	until 2	3-5	76.65	76.65	N.A.	no	yes	500+
130090 9155	until 2	until 2	57.64	24.98	57.6 4	no	yes	101-200
130090 9154	6-9	until 2	28.48	28.48	25.2 3	no	yes	201-500
130090 9153	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
130072 9121	6-9	3-5	36.35	17.55	36.3 5	no	yes	101-200
140159 9126	until 2	until 2	23.47	23.47	N.A.	no	yes	201-500
140180 9127	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
140180 9126	N.A.	N.A.	N.A.	N.A.	N.A.	yes	yes	N.A.
170017 9131	N.A.	N.A.	N.A.	N.A.	N.A.	yes	yes	N.A.
170017 9130	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
170017 9129	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
170041 9121	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
170041 9120	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
170041 9119	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.

## Appendix

170041 9118	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
170046 9141	until 2	until 2	70.50	70.50	N.A.	no	yes	201-500
170074 9124	10-15	3-5	61.18	31.08	61.18	yes	yes	26-100
170074 9123	until 2	3-5	51.35	51.35	N.A.	no	yes	101-200
170074 9122	until 2	until 2	30.90	30.90	17.69	no	yes	201-500
170074 9121	until 2	6-9	26.85	17.69	26.85	no	yes	201-500
170075 9117	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
170075 9116	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
230028 9123	until 2	until 2	68.88	68.88	N.A.	yes	yes	201-500
230028 9122	until 2	until 2	N.A.	N.A.	N.A.	no	yes	101-200
230057 9123	until 2	until 2	31.08	31.08	30.34	yes	yes	26-100

**Table 119: Background Information Russian-German bilinguals 3**

ID	Language parents	Family language	Language with mother	Language with father	Language with siblings
1300387143	HL	HL	mostly HL	both	mostly German
1300387144	German/HL	HL	mostly HL	mostly HL	mostly German
1300727127	German/HL	HL	both	both	German
1302667124	HL	HL	mostly HL	mostly HL	mostly German
1302937131	HL	N.A.	HL	HL	mostly HL
1304127157	German/HL	German	both	mostly HL	N.A.
1304127156	German/HL	HL	N.A.	N.A.	N.A.
1304127154	German/HL	HL	both	mostly HL	both
1304127153	German/HL/other	HL	both	both	mostly HL
1303147121	German/HL	N.A.	HL	HL	mostly HL
1303107174	German/HL	German	mostly German	mostly German	German
1303107173	German/HL	German	both	mostly HL	mostly German
1301377168	German/HL	HL	HL	HL	both
1200377118	German/HL	NA	mostly German	German	German
1200337122	HL	German	mostly German	mostly HL	mostly German
1200067174	HL	N.A.	HL	HL	both
1700037123	German/HL	NA	mostly HL	German	German
1700037122	German/HL	HL	both	both	German
1700037120	German/HL	HL	both	both	mostly German
1601207115	HL	German	mostly German	German	German
1601207114	German/HL	German	mostly HL	mostly HL	mostly German
1601167146	German/HL	German	both	N.A.	mostly German
1600027126	German/HL	HL	HL	HL	both
1600027125	German/HL	HL	mostly HL	mostly HL	more German
1600027124	German/HL	German	German	mostly German	German
1600027123	German/HL	German	German	German	German

## Appendix

---

1600027122	German/HL	HL	HL	HL	HL
1500387135	German/HL	HL	both	both	German
1302937134	German/HL	N.A.	N.A.	N.A.	N.A.
1302937133	German/HL	German	German	both	German
1700177146	German/HL	N.A.	German	HL	mostly HL
1700177144	German/HL	N.A.	HL	HL	both
1700177139	German/HL	N.A.	HL	HL	both
1700177138	German/HL	HL	both	both	mostly German
1700417113	German/HL	HL	both	both	German
1700417112	German/HL	German	both	mostly HL	German
1700637119	German/HL	HL	mostly German	N.A.	N.A.
1700747113	German/HL	German	both	both	German
1700757118	German/HL	HL	HL	HL	HL
1700757117	German/HL	HL	both	both	both
1700757116	German/HL	German	both	both	German
1700757115	German/HL	HL	German	German	German
2300287133	HL	German	German	mostly German	mostly German
2300577150	HL	HL	HL	HL	mostly HL
2300577149	German/HL	German	both	German	mostly German
2300577148	HL	HL	N.A.	N.A.	N.A.
2300577147	German/HL	N.A.	mostly German	mostly German	mostly German
2300577146	German/HL	HL	N.A.	N.A.	N.A.
2400997127	German/HL	HL	HL	HL	German
1302937132	German/HL	German	German	mostly German	German
1300389146	German/HL	N.A.	HL	HL	both
1300729122	German/HL	N.A.	both	mostly German	mostly German
1300389147	German/HL	HL	mostly German	mostly German	German
1300389148	German/HL	German	mostly German	N.A.	German
1300389149	German/HL	HL	mostly HL	mostly HL	mostly German
1300729120	German/HL	HL	mostly HL	mostly HL	mostly HL
1303409130	German/HL	HL	HL	HL	both
1303409129	German/HL	HL	N.A.	N.A.	N.A.
1303409128	German/HL	HL	mostly German	N.A.	mostly German
1303409127	German/HL	HL	mostly German	mostly HL	both
1303409126	German/HL	HL	mostly German	mostly HL	German
1303409125	German/HL	HL	both	mostly HL	German
1303109153	HL	German	German	German	German
1301389123	German/HL	German	mostly German	mostly German	mostly German
1301389106	German	German	German	German	German
1301379161	German/HL	German	both	German	German
1700179128	HL	N.A.	mostly HL	mostly HL	German
1700179127	German/HL	HL	mostly German	N.A.	more German
1601209119	German/HL	HL	both	both	German

## Appendix

1601169155	German	HL	mostly HL	mostly HL	German
1500389159	HL	HL	mostly HL	mostly HL	mostly German
1500389158	German/HL	German	German	German	German
1302939125	German	German	German	German	German
1302939124	German/HL	HL	mostly German	mostly HL	German
1302939123	German/HL	HL	both	both	mostly German
1302669123	German/HL	HL	HL	HL	HL
1300909155	HL	N.A.	both	both	mostly German
1300909154	German/HL	N.A.	German	German	mostly German
1300909153	German/other	other languages	NA	N.A.	N.A.
1300729121	German/HL	HL	both	both	mostly German
1401599126	German/HL	German	mostly German	mostly German	German
1401809127	German/HL	HL	mostly HL	mostly HL	mostly German
1401809126	German/HL	HL	both	both	mostly German
1700179131	HL	N.A.	HL	mostly HL	mostly German
1700179130	HL	HL	N.A.	N.A.	N.A.
1700179129	German/HL	other languages	mostly HL	mostly HL	mostly German
1700419121	German/HL	HL	both	both	German
1700419120	German/HL	HL	mostly HL	mostly HL	both
1700419119	German/HL	German	N.A.	N.A.	N.A.
1700419118	HL	German	HL	German	both
1700469141	German/HL	German	mostly German	mostly HL	N.A.
1700749124	German/HL	German	mostly German	both	German
1700749123	German/HL	HL	both	mostly HL	mostly German
1700749122	German/HL	HL	German	German	German
1700749121	HL	HL	HL	HL	HL
1700759117	German/HL	HL	both	both	NA
1700759116	German/HL	HL	mostly HL	HL	both
2300289123	HL	German	mostly HL	German	N.A.
2300289122	HL	HL	mostly HL	mostly HL	both
2300579123	German/HL	HL	both	both	German

**Table 120: Background Information Turkish-German bilinguals 1**

ID	HL	Grade	School type	Gender	Age	School grade GER	School grade ENG
1302547113	TUR-GER	7	Gymnasium	male	12	4	3
1302547114	TUR-GER	7	Gymnasium	female	12	3	3
1302547115	TUR-GER	7	Gymnasium	female	12	3	4
1302547116	TUR-GER	7	Gymnasium	male	12	3	4
1302547118	TUR-GER	7	Gymnasium	female	12	3	3
1302547119	TUR-GER	7	Gymnasium	female	12	3	3
1302547121	TUR-GER	7	Gymnasium	female	12	2	3
1302547122	TUR-GER	7	Gymnasium	female	12	2	2
1302547117	TUR-GER	7	Gymnasium	male	12	2	2

## Appendix

1302547123	TUR-GER	7	Gymnasium	female	12	3	4
1302547124	TUR-GER	7	Gymnasium	female	12	4	4
1302547125	TUR-GER	7	Gymnasium	female	12	4	4
1304937107	TUR-GER	7	Other	female	12	1	2
1305747113	TUR-GER	7	Gymnasium	female	12	3	4
1306047115	TUR-GER	7	Gymnasium	female	12	3	2
1306047116	TUR-GER	7	Gymnasium	female	12	3	2
1700757111	TUR-GER	7	Gymnasium	female	12	3	4
1700757113	TUR-GER	7	Gymnasium	male	12	3	2
1301907125	TUR-GER	7	Other	female	12	3	2
1401877116	TUR-GER	7	Gymnasium	male	12	2	3
1401877117	TUR-GER	7	Gymnasium	male	12	2	4
1401877118	TUR-GER	7	Gymnasium	male	12	4	3
1304167116	TUR-GER	7	Other	female	12	2	3
1304167117	TUR-GER	7	Other	female	12	2	3
1304167118	TUR-GER	7	Other	female	12	3	3
1304417111	TUR-GER	7	Other	female	12	3	2
1304417113	TUR-GER	7	Other	female	12	3	4
1304167119	TUR-GER	7	Other	female	12	3	4
1304417112	TUR-GER	7	Other	male	12	5	4
1304967110	TUR-GER	7	Other	female	12	4	3
2400997116	TUR-GER	7	Other	female	12	2	2
2400997117	TUR-GER	7	Other	female	12	2	2
2300577123	TUR-GER	7	Gymnasium	male	12	4	4
2300577124	TUR-GER	7	Gymnasium	female	12	3	2
2300577129	TUR-GER	7	Gymnasium	female	12	4	3
2300577133	TUR-GER	7	Gymnasium	female	12	1	2
1700757112	TUR-GER	7	Gymnasium	male	12	3	2
1700747109	TUR-GER	7	Gymnasium	female	12	2	2
1700637114	TUR-GER	7	Gymnasium	female	12	3	2
1700467120	TUR-GER	7	Gymnasium	male	12	4	3
1700467123	TUR-GER	7	Gymnasium	male	12	3	3
1700467124	TUR-GER	7	Gymnasium	female	12	3	2
1601167118	TUR-GER	7	Other	male	12	3	3
1601167119	TUR-GER	7	Other	male	12	4	4
1601167120	TUR-GER	7	Other	female	12	4	4
1601167121	TUR-GER	7	Other	female	12	3	3
1600027114	TUR-GER	7	Gymnasium	female	12	4	4
1200067127	TUR-GER	7	Other	female	12	3	4
1200067128	TUR-GER	7	Other	female	12	4	3
1200067133	TUR-GER	7	Other	male	12	4	2
1300729110	TUR-GER	9	Other	female	16	2	1
1305729117	TUR-GER	9	Gymnasium	male	16	4	4

## Appendix

1305729118	TUR-GER	9	Gymnasium	female	16	4	3
1305729119	TUR-GER	9	Gymnasium	female	16	3	3
1305729120	TUR-GER	9	Gymnasium	female	16	3	3
1600029115	TUR-GER	9	Gymnasium	female	16	2	3
1600029114	TUR-GER	9	Gymnasium	female	16	4	3
1500389126	TUR-GER	9	Other	female	16	5	5
1500389125	TUR-GER	9	Other	female	16	3	4
1500389124	TUR-GER	9	Other	female	16	2	2
1401509113	TUR-GER	9	Other	female	16	2	2
1401509112	TUR-GER	9	Other	female	16	4	4
1401379113	TUR-GER	9	Other	female	16	2	3
1400389116	TUR-GER	9	Gymnasium	male	16	3	3
1304169125	TUR-GER	9	Other	male	16	3	3
1700749115	TUR-GER	9	Gymnasium	female	16	4	5
1304169124	TUR-GER	9	Other	female	16	2	3
1304129127	TUR-GER	9	Other	female	16	4	4
1303409116	TUR-GER	9	Gymnasium	female	16	2	3
1303409115	TUR-GER	9	Gymnasium	female	16	3	2
1303409114	TUR-GER	9	Gymnasium	male	16	4	4
1303409113	TUR-GER	9	Gymnasium	female	16	4	5
1304169123	TUR-GER	9	Other	female	16	1	2
1700639120	TUR-GER	9	Gymnasium	male	16	3	3
1700759114	TUR-GER	9	Gymnasium	female	16	3	2
1700639119	TUR-GER	9	Gymnasium	male	16	4	3
1700639118	TUR-GER	9	Gymnasium	female	16	3	3
1700639116	TUR-GER	9	Gymnasium	female	16	3	3
1306049114	TUR-GER	9	Gymnasium	male	16	4	4
2300579111	TUR-GER	9	Gymnasium	female	16	4	4
1601169130	TUR-GER	9	Other	male	16	4	3
1601169120	TUR-GER	9	Other	male	16	4	3
1601169116	TUR-GER	9	Other	female	16	4	5
1200379111	TUR-GER	9	Gymnasium	male	16	3	3
1200379110	TUR-GER	9	Gymnasium	female	16	1	1
1700469122	TUR-GER	9	Gymnasium	female	16	3	4
1700469120	TUR-GER	9	Gymnasium	female	16	4	5
1700469117	TUR-GER	9	Gymnasium	male	16	4	2
1700639124	TUR-GER	9	Gymnasium	female	16	3	3
1700639122	TUR-GER	9	Gymnasium	female	16	2	2
1700639117	TUR-GER	9	Gymnasium	female	16	4	2
1700759112	TUR-GER	9	Gymnasium	male	16	3	2
1700759111	TUR-GER	9	Gymnasium	male	16	3	3
2300289116	TUR-GER	9	Gymnasium	female	16	4	2
2300289115	TUR-GER	9	Gymnasium	female	16	3	2

## Appendix

2300579113	TUR-GER	9	Gymnasium	female	16	3	3
2400999115	TUR-GER	9	Other	female	16	3	4
1305749116	TUR-GER	9	Gymnasium	female	16	4	3
1300169121	TUR-GER	9	Other	male	16	3	4
1300169125	TUR-GER	9	Other	male	16	4	4

**Table 121: Background Information Turkish-German bilinguals 2**

ID	Age of onset Turkish	Age of onset German	HISEI	SES-mother	SES-father	English is boring	English is useful	No. of books
1302547113	until 2	3-5	50.37	50.37	30.32	no	yes	26-100
1302547114	until 2	3-5	20.91	14.21	20.91	no	yes	26-100
1302547115	until 2	3-5	43.76	23.47	43.76	no	yes	26-100
1302547116	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
1302547118	until 2	3-5	56.00	56.00	30.34	no	yes	11-25
1302547119	until 2	3-5	43.76	28.48	43.76	no	yes	101-200
1302547121	N.A.	N.A.	N.A.	N.A.	N.A.	yes	yes	N.A.
1302547122	until 2	3-5	39.04	39.04	30.34	no	yes	26-100
1302547117	until 2	3-5	31.72	housewife/husband	31.72	no	yes	11-25
1302547123	3-5	3-5	57.04	57.04	44.08	no	yes	26-100
1302547124	until 2	3-5	N.A.	N.A.	N.A.	no	yes	26-100
1302547125	until 2	until 2	N.A.	N.A.	N.A.	no	yes	26-100
1304937107	until 2	3-5	44.92	44.92	28.70	no	yes	101-200
1305747113	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
1306047115	3-5	3-5	47.83	47.83	22.36	no	yes	26-100
1306047116	until 2	until 2	43.76	43.33	43.76	no	yes	101-200
1700757111	until 2	until 2	33.76	23.47	33.76	no	yes	101-200
1700757113	until 2	3-5	75.54	75.54	75.54	no	yes	500+
1301907125	until 2	3-5	25.95	23.88	25.95	no	yes	101-200
1401877116	6-9	until 2	N.A.	N.A.	N.A.	no	yes	26-100
1401877117	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
1401877118	until 2	3-5	44.92	44.92	N.A.	no	yes	11-25
1304167116	until 2	3-5	17.69	14.21	17.69	N.A.	yes	26-100
1304167117	until 2	3-5	43.19	43.19	16.80	yes	yes	101-200
1304167118	until 2	3-5	75.13	housewife/husband	75.13	no	yes	26-100
1304417111	until 2	3-5	50.37	50.37	25.95	no	yes	11-25
1304417113	until 2	3-5	31.72	22.03	31.72	no	yes	11-25
1304167119	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.

## Appendix

1304417112	3-5	until 2	14.57	housewife/husband	14.57	no	yes	26-100
1304967110	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
2400997116	10-15	10-15	housewife/husband	housewife/husband	N.A.	no	yes	26-100
2400997117	6-9	until 2	N.A.	N.A.	N.A.	no	yes	26-100
2300577123	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
2300577124	until 2	3-5	25.45	14.21	25.45	no	yes	26-100
2300577129	until 2	3-5	22.16	N.A.	22.16	no	no	101-200
2300577133	3-5	3-5	housewife/husband	housewife/husband	N.A.	no	yes	26-100
1700757112	N.A.	until 2	29.14	14.21	29.14	no	yes	0-10
1700747109	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
1700637114	until 2	until 2	77.10	77.10	65.01	no	yes	500+
1700467120	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
1700467123	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
1700467124	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
1601167118	until 2	3-5	housewife/husband	housewife/husband	NA	yes	yes	11-25
1601167119	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
1601167120	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
1601167121	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
1600027114	N.A.	N.A.	N.A.	N.A.	N.A.	yes	yes	N.A.
1200067127	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
1200067128	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
1200067133	N.A.	N.A.	N.A.	N.A.	N.A.	yes	yes	N.A.
1300729110	until 2	3-5	housewife/husband	housewife/husband	N.A.	no	yes	26-100
1305729117	until 2	until 2	N.A.	N.A.	N.A.	no	yes	201-500
1305729118	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
1305729119	until 2	3-5	44.94	44.94	16.50	no	yes	101-200
1305729120	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
1600029115	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
1600029114	until 2	3-5	24.49	N.A.	24.49	no	yes	101-200
1500389126	N.A.	N.A.	N.A.	N.A.	N.A.	yes	yes	N.A.
1500389125	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
1500389124	until 2	until 2	31.72	housewife/husband	31.72	no	yes	26-100
1401509113	3-5	3-5	19.08	16.50	19.08	no	yes	26-100
1401509112	until 2	3-5	N.A.	N.A.	N.A.	yes	no	26-100
1401379113	until 2	3-5	52.40	N.A.	52.40	no	yes	11-25



## Appendix

1400389116	N.A.	until 2	44.92	44.92	36.35	no	yes	11-25
1304169125	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
1700749115	until 2	3-5	44.92	44.92	24.80	yes	yes	11-25
1304169124	until 2	3-5	25.45	21.24	25.45	no	yes	101-200
1304129127	until 2	3-5	N.A.	N.A.	N.A.	no	yes	11-25
1303409116	until 2	3-5	28.48	28.48	22.36	no	yes	101-200
1303409115	until 2	3-5	41.63	housewife/housband	41.63	yes	yes	26-100
1303409114	until 2	3-5	13.34	N.A.	13.34	no	yes	201-500
1303409113	until 2	until 2	30.47	30.47	28.70	no	yes	26-100
1304169123	until 2	3-5	39.04	39.04	32.50	no	yes	N.A.
1700639120	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
1700759114	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
1700639119	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
1700639118	3-5	until 2	28.48	28.48	N.A.	no	yes	26-100
1700639116	until 2	3-5	65.01	65.01	65.01	no	yes	101-200
1306049114	until 2	3-5	81.92	43.33	81.92	no	yes	26-100
2300579111	until 2	3-5	23.47	23.47	23.47	no	yes	26-100
1601169130	N.A.	N.A.	N.A.	N.A.	N.A.	yes	yes	N.A.
1601169120	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
1601169116	N.A.	N.A.	N.A.	N.A.	N.A.	yes	yes	11-25
1200379111	3-5	3-5	29.14	23.47	29.14	no	yes	101-200
1200379110	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
1700469122	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
1700469120	until 2	3-5	N.A.	N.A.	N.A.	no	yes	N.A.
1700469117	until 2	until 2	36.92	24.98	36.92	no	yes	11-25
1700639124	until 2	3-5	28.48	N.A.	28.48	no	yes	26-100
1700639122	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
1700639117	N.A.	N.A.	N.A.	N.A.	N.A.	yes	yes	N.A.
1700759112	N.A.	N.A.	N.A.	N.A.	N.A.	no	yes	N.A.
1700759111	N.A.	N.A.	N.A.	N.A.	N.A.	yes	yes	N.A.
2300289116	until 2	3-5	42.30	42.30	N.A.	no	yes	101-200
2300289115	until 2	3-5	27.57	27.57	27.57	no	yes	101-200
2300579113	until 2	until 2	28.48	28.48	25.45	no	yes	11-25
2400999115	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
1305749116	until 2	3-5	25.23	16.36	25.23	no	yes	26-100

## Appendix

130016912 1	until 2	3-5	41.63	26.64	41.63	yes	yes	11-25
130016912 5	N.A.	N.A.	N.A.	N.A.	N.A.	yes	yes	N.A.

**Table 122: Background Information Turkish-German bilinguals 3**

ID	Language parents	Family language	Language with mother	Language with father	Language with siblings
1302547113	German/HL	HL	both	mostly HL	mostly German
1302547114	German/HL	HL	both	HL	both
1302547115	German/HL	N.A.	both	both	both
1302547116	German/HL	HL	mostly German	HL	mostly German
1302547118	German/HL	HL	mostly German	mostly HL	mostly German
1302547119	German/HL	German	mostly HL	mostly German	both
1302547121	German/HL	N.A.	both	mostly HL	both
1302547122	German/HL	N.A.	HL	mostly German	German
1302547117	German/HL	German	mostly HL	mostly German	mostly German
1302547123	German/HL	HL	mostly HL	mostly HL	both
1302547124	German/HL	HL	HL	mostly HL	mostly HL
1302547125	German/HL	N.A.	mostly HL	both	mostly German
1304937107	German/HL	German	mostly German	mostly HL	mostly German
1305747113	German/HL	HL	mostly HL	mostly HL	mostly German
1306047115	German/HL	HL	German	mostly HL	mostly German
1306047116	German/HL	German	both	both	mostly German
1700757111	German/HL	HL	mostly German	both	German
1700757113	German/HL	HL	both	mostly HL	both
1301907125	German/HL	N.A.	both	mostly HL	mostly German
1401877116	German/HL	N.A.	mostly HL	mostly HL	mostly German
1401877117	German/HL	German	mostly HL	mostly HL	mostly German
1401877118	German/HL	N.A.	mostly HL	HL	both
1304167116	German/HL	HL	mostly HL	mostly HL	both
1304167117	German/HL	HL	mostly HL	HL	both
1304167118	German/HL	NA	mostly HL	mostly German	both
1304417111	German/HL	German	both	HL	both
1304417113	German/HL	HL	HL	both	both
1304167119	German/HL	N.A.	both	both	mostly German
1304417112	German/HL	N.A.	mostly HL	mostly HL	German
1304967110	German/HL	N.A.	both	both	both
2400997116	German/HL	German	HL	both	both
2400997117	German/HL	N.A.	mostly HL	both	German
2300577123	German/HL	HL	HL	mostly HL	both
2300577124	German/HL	HL	both	mostly HL	both
2300577129	German/HL	HL	both	both	mostly German
2300577133	German/HL	HL	mostly HL	both	German
1700757112	German/HL	HL	mostly HL	both	mostly German

## Appendix

1700747109	German/HL	German	mostly German	mostly German	German
1700637114	German/HL	NA	mostly German	mostly HL	mostly German
1700467120	HL	NA	mostly HL	mostly HL	both
1700467123	German/HL	HL	both	mostly HL	mostly German
1700467124	German/HL	HL	N.A.	N.A.	N.A.
1601167118	German/HL	German	both	mostly German	mostly German
1601167119	German/HL	NA	mostly HL	HL	mostly HL
1601167120	HL	German	both	HL	German
1601167121	German/HL	other languages	HL	HL	German
1600027114	German/HL	HL	HL	HL	both
1200067127	HL	other languages	N.A.	N.A.	N.A.
1200067128	German/HL	N.A.	both	HL	HL
1200067133	German/HL	German	N.A.	N.A.	N.A.
1300729110	German/HL	HL	HL	both	both
1305729117	German/HL	N.A.	both	mostly HL	both
1305729118	German/HL	HL	N.A.	N.A.	N.A.
1305729119	German/HL	HL	both	mostly HL	both
1305729120	German/HL	HL	mostly HL	mostly German	both
1600029115	German/HL	German	mostly HL	HL	both
1600029114	German/HL	HL	HL	mostly HL	both
1500389126	HL	German	HL	both	mostly German
1500389125	German/HL	German	mostly HL	mostly German	N.A.
1500389124	German/HL	HL	mostly HL	both	mostly German
1401509113	German/HL	HL	mostly German	both	mostly German
1401509112	German/HL	N.A.	both	HL	both
1401379113	German/HL/other	N.A.	HL	both	mostly German
1400389116	German/HL/other	German	N.A.	N.A.	N.A.
1304169125	German/HL	N.A.	mostly HL	mostly German	N.A.
1700749115	German/HL	HL	mostly HL	German	N.A.
1304169124	German/HL	HL	both	mostly German	German
1304129127	HL	HL	mostly HL	HL	German
1303409116	German/HL	German	both	mostly HL	mostly German
1303409115	German/HL	German	both	mostly German	German
1303409114	German/HL	HL	mostly HL	HL	both
1303409113	German/HL	German	mostly HL	mostly German	mostly German
1304169123	German/HL	HL	mostly German	HL	both
1700639120	HL	N.A.	both	mostly HL	both
1700759114	German/HL	German	mostly German	mostly HL	mostly German
1700639119	German/HL	HL	both	N.A.	both
1700639118	German/HL	HL	mostly HL	mostly German	German
1700639116	German/HL	HL	mostly HL	N.A.	N.A.
1306049114	German/HL	German	German	mostly German	German

## Appendix

2300579111	German/HL	HL	both	HL	both
1601169130	German/HL	German	German	mostly HL	mostly HL
1601169120	German/HL	other languages	both	both	mostly German
1601169116	German/HL	German	German	mostly German	mostly German
1200379111	German/HL	German	mostly HL	mostly German	mostly German
1200379110	German/HL	German	German	mostly HL	German
1700469122	German/HL	HL	mostly HL	mostly German	N.A.
1700469120	German/HL	N.A.	mostly German	mostly HL	mostly German
1700469117	German/HL	German	mostly German	mostly German	German
1700639124	German/HL	HL	HL	mostly German	mostly German
1700639122	German/HL	German	N.A.	N.A.	N.A.
1700639117	German/HL	HL	mostly HL	mostly HL	both
1700759112	HL	HL	mostly HL	HL	mostly German
1700759111	German/HL	HL	mostly HL	mostly German	German
2300289116	HL	HL	both	HL	mostly German
2300289115	HL	HL	both	mostly HL	mostly German
2300579113	German/HL	N.A.	both	mostly HL	German
2400999115	German/HL	N.A.	N.A.	N.A.	N.A.
1305749116	German/HL	N.A.	mostly HL	both	mostly German
1300169121	German/HL	HL	both	mostly HL	mostly German
1300169125	HL	HL	HL	both	German

**Table 123: Background Information English monolinguals**

ID	HL	Year of birth	Exact age	Age group	Gender
231	ENG Mono	1988	33	20	male
251	ENG Mono	1997	24	20	female
295	ENG Mono	1993	28	20	female
366	ENG Mono	1950	71	40	female
558	ENG Mono	1972	49	40	female
589	ENG Mono	1986	53	40	female
616	ENG Mono	1980	41	40	female
626	ENG Mono	1942	79	40	female
671	ENG Mono	1987	54	40	female
702	ENG Mono	1988	33	20	female
704	ENG Mono	1988	33	20	female
708	ENG Mono	1959	62	40	male
712	ENG Mono	1964	57	40	female
901	ENG Mono	N.A.	N.A.	N.A.	female
902	ENG Mono	N.A.	N.A.	N.A.	male
927	ENG Mono	1995	26	20	female
928	ENG Mono	1993	28	20	non-binary
929	ENG Mono	2000	21	20	non-binary

## 8.2 Supplementary Tables 2

Table 124: Analysis of written texts - absolute frequencies 1

ID	HL	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1302547113	TUR-GER7	124	4	3	1	17	11	10	1	6	5	1	0	1	1	0	0	0	0	0	0	1	0	1	1	0	1
1302547114	TUR-GER7	91	2	1	1	10	7	7	0	3	3	0	0	0	1	0	0	1	0	0	0	1	0	1	0	0	0
1302547115	TUR-GER7	85	5	3	2	4	2	2	0	2	2	0	1	5	2	0	0	0	0	0	0	2	0	2	2	1	1
1302547116	TUR-GER7	111	0	0	0	11	10	9	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547118	TUR-GER7	139	6	4	2	15	10	9	1	5	5	0	0	3	2	0	0	0	1	0	0	3	1	2	1	0	1
1302547119	TUR-GER7	88	1	0	1	4	2	1	1	2	2	0	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0
1302547121	TUR-GER7	93	1	0	1	7	6	3	3	1	1	0	0	2	0	1	0	0	0	0	0	1	0	1	1	0	1
1302547122	TUR-GER7	130	0	0	0	7	4	4	0	3	2	1	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547117	TUR-GER7	210	4	4	0	19	12	12	0	7	7	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
1302547123	TUR-GER7	164	5	2	3	19	13	12	1	6	6	0	1	0	0	0	0	0	0	0	1	3	0	3	3	0	3
1302547124	TUR-GER7	125	2	1	1	17	16	14	2	1	1	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0
1302547125	TUR-GER7	124	6	4	2	18	16	13	3	2	1	1	0	0	2	0	0	0	0	0	5	0	0	0	0	0	0
1304937107	TUR-GER7	140	0	0	0	18	16	15	1	3	3	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0
1305747113	TUR-GER7	217	6	2	4	33	28	26	2	5	5	0	0	0	4	0	0	0	1	0	0	0	0	0	0	0	0
1306047115	TUR-GER7	212	1	1	0	26	19	14	5	7	5	2	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0
1306047116	TUR-GER7	95	1	1	0	12	8	4	4	4	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700757111	TUR-GER7	142	5	1	4	14	12	9	3	2	2	0	0	3	4	0	0	0	0	0	0	5	1	4	0	0	0
1700757113	TUR-GER7	110	3	3	0	16	13	11	2	3	2	1	1	0	0	0	0	0	0	0	5	0	0	0	0	0	0
1301907125	TUR-GER7	131	4	2	2	19	12	10	2	7	7	0	0	0	0	0	0	0	0	0	5	3	1	2	2	1	1
1401877116	TUR-GER7	115	0	0	0	13	11	10	1	2	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
1401877117	TUR-GER7	236	3	2	1	25	19	17	2	6	6	0	0	6	1	0	0	0	1	0	1	1	0	1	0	0	0
1401877118	TUR-GER7	160	2	2	0	22	14	14	0	8	7	1	0	6	0	0	0	0	0	0	2	1	1	0	0	0	0
1304167116	TUR-GER7	159	1	1	0	15	7	7	0	8	8	0	0	2	0	0	0	0	0	0	9	0	0	0	0	0	0
1304167117	TUR-GER7	68	1	0	1	8	5	5	0	3	2	1	1	0	0	0	0	0	0	0	3	1	0	1	1	0	1
1304167118	TUR-GER7	104	2	1	1	13	1	1	0	12	3	9	1	4	0	0	0	0	0	0	1	2	1	1	0	0	0
1304417111	TUR-GER7	103	4	1	3	20	15	7	8	5	4	1	0	0	0	0	0	0	0	0	4	3	1	2	0	0	0
1304417113	TUR-GER7	157	1	1	0	17	10	5	5	7	3	4	1	3	0	0	0	8	0	0	4	1	1	0	0	0	0
1304167119	TUR-GER7	51	4	4	0	4	4	1	3	0	0	0	1	4	0	0	0	0	0	0	3	0	0	0	0	0	0
1304417112	TUR-GER7	114	6	2	4	11	8	8	0	3	3	0	0	1	0	0	0	0	0	0	3	2	1	1	0	0	0
1304967110	TUR-GER7	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
2400997116	TUR-GER7	148	0	0	0	22	20	20	2	2	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0

Appendix

2400997117	TUR-GER7	108	0	0	0	19	17	13	4	2	2	0	0	0	0	0	0	0	0	3	0	0	0	0	0		
2300577123	TUR-GER7	98	0	0	0	12	6	4	2	6	6	0	0	1	0	0	0	0	0	3	0	0	0	0	0		
2300577124	TUR-GER7	213	3	3	0	15	14	13	1	1	1	0	0	1	0	0	0	1	1	0	0	0	0	0	0		
2300577129	TUR-GER7	94	2	1	1	12	11	10	1	1	1	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1	
2300577133	TUR-GER7	73	0	0	0	8	6	5	1	2	1	1	0	3	0	0	0	0	0	0	0	0	0	0	0		
1700757112	TUR-GER7	154	0	0	0	9	5	4	1	4	3	1	0	10	0	0	0	1	0	0	5	0	0	0	0	0	
1700747109	TUR-GER7	156	1	0	1	17	13	12	1	4	4	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	
1700637114	TUR-GER7	228	2	2	0	28	23	22	1	5	5	0	0	0	0	0	0	0	1	0	6	0	0	0	0	0	
1700467120	TUR-GER7	54	1	1	0	7	6	4	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1700467123	TUR-GER7	58	0	0	0	7	6	5	1	1	1	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	
1700467124	TUR-GER7	103	1	1	0	14	12	7	5	2	2	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	
1601167118	TUR-GER7	88	0	0	0	6	6	5	1	0	0	0	2	0	0	0	0	1	0	0	7	0	0	0	0	0	
1601167119	TUR-GER7	31	0	0	0	3	2	1	1	1	1	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	
1601167120	TUR-GER7	63	0	0	0	7	5	5	0	2	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	
1601167121	TUR-GER7	145	0	0	0	12	10	10	0	2	1	1	1	14	0	0	0	0	0	0	19	0	0	0	0	0	
1600027114	TUR-GER7	101	0	0	0	10	9	8	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
1200067127	TUR-GER7	58	1	0	1	8	3	2	1	5	4	1	0	0	0	0	0	0	0	0	1	1	0	1	1	0	1
1200067128	TUR-GER7	68	2	1	1	9	5	5	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1200067133	TUR-GER7	96	0	0	0	9	7	6	1	2	1	1	0	2	0	0	0	0	0	0	1	0	0	0	0	0	
1300729110	TUR-GER9	211	6	1	5	26	17	17	0	9	8	1	0	1	0	0	0	0	0	0	5	0	5	4	0	4	
1305729117	TUR-GER9	110	0	0	0	19	14	13	1	5	5	0	0	2	0	0	0	0	0	0	4	0	0	0	0	0	
1305729118	TUR-GER9	150	1	1	0	9	5	3	2	4	3	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0	
1305729119	TUR-GER9	161	0	0	0	11	9	8	1	2	2	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	
1305729120	TUR-GER9	123	1	1	0	8	6	5	1	2	2	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	
1600029115	TUR-GER9	158	1	1	0	9	7	7	0	2	1	1	0	7	0	0	0	0	0	0	0	0	0	0	0	0	
1600029114	TUR-GER9	111	0	0	0	4	1	1	0	3	3	0	0	4	0	0	0	0	1	0	0	0	0	0	0	0	
1500389126	TUR-GER9	23	0	0	0	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	
1500389125	TUR-GER9	131	2	0	2	9	7	6	1	2	1	1	0	11	0	0	0	0	0	0	7	1	0	1	0	0	
1500389124	TUR-GER9	215	3	3	0	21	15	15	0	6	6	0	0	3	0	0	0	0	0	0	0	1	1	0	0	0	
1401509113	TUR-GER9	116	1	0	1	9	7	5	2	2	2	0	0	3	0	0	0	0	0	0	1	1	0	1	0	0	
1401509112	TUR-GER9	20	0	0	0	3	1	1	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1401379113	TUR-GER9	80	1	0	1	9	2	2	0	7	4	3	0	1	0	0	0	0	0	0	5	1	0	1	0	0	
1400389116	TUR-GER9	236	2	1	1	30	25	24	1	5	5	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	
1304169125	TUR-GER9	203	0	0	0	19	18	16	2	1	1	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	
1700749115	TUR-GER9	96	2	1	1	9	8	7	1	1	1	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	
1304169124	TUR-GER9	98	0	0	0	7	6	5	1	1	0	1	0	0	0	0	0	0	0	0	6	0	0	0	0	0	
1304129127	TUR-GER9	35	0	0	0	4	1	0	1	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1303409116	TUR-GER9	200	5	2	3	25	22	19	3	3	3	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	

Appendix

1303409115	TUR-GER9	83	1	1	0	10	7	5	2	3	2	1	0	0	0	0	0	0	0	6	0	0	0	0	0
1303409114	TUR-GER9	121	4	3	1	11	5	5	0	6	6	0	0	1	0	0	0	0	0	2	0	0	0	0	0
1303409113	TUR-GER9	153	6	3	3	19	13	13	0	6	5	1	0	0	4	0	0	0	0	5	3	1	2	0	0
1304169123	TUR-GER9	264	3	3	0	28	23	22	1	5	5	0	1	5	0	0	0	1	0	5	0	0	0	0	0
1700639120	TUR-GER9	208	4	3	1	12	6	6	0	6	6	0	0	3	0	0	0	1	1	0	0	0	0	0	0
1700759114	TUR-GER9	74	1	1	0	9	8	8	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700639119	TUR-GER9	228	2	1	1	25	23	23	0	2	2	0	1	0	0	0	0	0	1	0	0	1	1	0	0
1700639118	TUR-GER9	185	6	6	0	26	24	23	1	2	2	0	0	6	0	0	0	0	0	4	0	0	0	0	0
1700639116	TUR-GER9	195	3	2	1	24	16	16	0	8	8	0	0	1	0	0	0	1	0	0	0	1	1	0	1
1306049114	TUR-GER9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300579111	TUR-GER9	122	1	1	0	11	8	7	1	3	2	1	1	4	0	0	0	0	0	5	0	0	0	0	0
1601169130	TUR-GER9	31	0	0	0	4	2	1	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1601169120	TUR-GER9	86	1	1	0	10	10	8	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
1601169116	TUR-GER9	101	0	0	0	16	12	8	4	3	2	1	1	0	0	0	0	3	0	0	13	0	0	0	0
1200379111	TUR-GER9	218	3	1	2	31	19	18	1	12	12	0	0	1	0	0	0	0	2	0	0	0	0	0	0
1200379110	TUR-GER9	264	2	2	0	32	20	19	1	12	11	1	0	2	0	0	0	1	1	0	0	1	0	1	1
1700469122	TUR-GER9	171	3	2	1	22	17	16	1	5	5	0	0	1	0	0	0	0	1	0	1	1	0	1	0
1700469120	TUR-GER9	114	3	1	2	7	5	5	0	2	2	0	0	2	0	0	0	0	0	0	1	2	0	2	1
1700469117	TUR-GER9	111	2	1	1	2	2	2	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0
1700639124	TUR-GER9	185	4	4	0	17	10	9	1	7	7	0	0	2	0	0	0	0	2	0	0	1	1	0	0
1700639122	TUR-GER9	253	0	0	0	35	26	25	1	9	9	0	0	4	0	0	0	0	1	0	2	0	0	0	0
1700639117	TUR-GER9	184	3	3	0	18	14	14	0	4	4	0	0	4	0	0	0	1	0	0	0	0	0	0	0
1700759112	TUR-GER9	143	2	2	0	18	17	16	1	1	1	0	0	4	0	0	0	0	0	0	0	0	0	0	0
1700759111	TUR-GER9	135	6	6	0	20	18	16	2	2	2	0	0	0	0	0	0	0	1	0	0	1	1	0	0
2300289116	TUR-GER9	224	2	1	1	21	13	10	3	8	7	1	0	3	0	0	0	0	1	0	6	1	0	1	1
2300289115	TUR-GER9	225	3	3	0	18	13	13	0	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0
2300579113	TUR-GER9	147	2	1	1	9	8	8	0	1	1	0	0	3	1	0	0	0	0	0	1	0	0	0	0
2400999115	TUR-GER9	44	1	1	0	2	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1305749116	TUR-GER9	166	2	2	0	21	14	13	1	7	6	1	0	0	0	0	0	0	1	0	0	1	1	0	0
1300169121	TUR-GER9	58	2	1	1	6	3	3	0	3	3	0	0	1	0	0	0	0	0	0	1	0	1	1	0
1300169125	TUR-GER9	28	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300387143	RUS-GER7	133	1	0	1	19	12	12	0	7	5	2	0	0	0	0	0	0	0	0	1	0	1	1	0
1300387144	RUS-GER7	91	1	1	0	12	11	11	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300727127	RUS-GER7	97	1	1	0	10	7	5	2	3	3	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1302667124	RUS-GER7	109	1	1	0	10	9	8	1	1	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0
1302937131	RUS-GER7	135	4	2	2	13	11	1	1	2	2	0	0	0	0	0	0	0	0	0	1	0	1	0	0
1304127157	RUS-GER7	154	3	3	0	18	6	6	0	12	10	2	0	2	0	0	0	2	3	0	3	3	3	0	0
1304127156	RUS-GER7	76	0	0	0	9	7	6	1	2	2	0	1	0	0	0	0	0	0	0	2	0	0	0	0

Appendix

1304127154	RUS-GER7	107	0	0	0	17	16	14	2	1	1	0	0	0	0	0	0	0	0	15	0	0	0	0	0	0	
1304127153	RUS-GER7	84	2	1	1	11	7	7	0	4	4	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	
1303147121	RUS-GER7	168	5	4	1	15	10	10	0	5	4	1	0	1	1	0	0	0	0	3	3	2	1	1	1	0	
1303107174	RUS-GER7	135	0	0	0	23	20	17	3	2	2	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	
1303107173	RUS-GER7	124	0	0	0	9	9	8	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	
1301377168	RUS-GER7	149	4	4	0	16	16	14	2	0	0	0	0	4	0	0	0	1	0	0	0	0	0	0	0	0	
1200377118	RUS-GER7	64	2	1	1	7	5	5	0	2	2	0	0	0	0	0	0	1	0	0	0	1	0	1	1	1	0
1200337122	RUS-GER7	171	0	0	0	20	14	14	0	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200067174	RUS-GER7	81	0	0	0	12	10	8	2	2	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
1700037123	RUS-GER7	122	1	1	0	6	0	0	0	6	4	2	0	1	0	0	0	0	0	0	1	1	0	1	1	0	0
1700037122	RUS-GER7	50	0	0	0	3	2	1	1	1	0	1	0	4	0	0	0	0	0	2	0	0	0	0	0	0	0
1700037120	RUS-GER7	52	1	0	1	0	0	0	0	0	0	0	0	5	0	0	0	0	0	1	0	0	0	0	0	0	0
1601207115	RUS-GER7	51	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
1601207114	RUS-GER7	53	0	0	0	6	3	2	1	3	1	2	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0
1601167146	RUS-GER7	70	1	1	0	6	4	3	1	2	2	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0
1600027126	RUS-GER7	128	1	1	0	10	9	7	2	1	0	1	0	5	0	0	0	1	0	0	1	0	0	0	0	0	0
1600027125	RUS-GER7	186	5	3	2	15	10	10	0	5	5	0	0	5	0	0	0	0	1	1	0	3	1	2	0	0	0
1600027124	RUS-GER7	184	2	2	0	12	8	8	0	4	4	0	0	5	0	0	0	0	0	0	1	1	0	0	0	0	0
1600027123	RUS-GER7	154	7	7	0	16	11	11	0	5	5	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
1600027122	RUS-GER7	144	2	2	0	4	3	2	1	1	1	0	0	6	0	0	0	3	2	0	4	0	0	0	0	0	0
1500387135	RUS-GER7	145	2	1	1	21	15	14	1	6	6	0	0	4	0	0	0	0	1	0	0	1	0	1	0	0	0
1302937134	RUS-GER7	181	3	3	0	15	8	8	0	7	7	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1302937133	RUS-GER7	182	6	5	1	25	22	20	2	3	2	1	0	0	0	0	0	1	0	0	2	2	1	1	1	0	1
1700177146	RUS-GER7	70	1	0	1	10	5	2	3	5	4	1	0	0	0	0	0	0	0	2	1	0	1	0	0	0	0
1700177144	RUS-GER7	79	0	0	0	7	4	2	2	3	2	1	0	0	0	0	0	2	0	0	0	1	0	1	0	0	0
1700177139	RUS-GER7	71	1	0	1	14	2	0	2	12	5	7	0	0	1	0	0	0	0	0	2	1	0	1	1	1	0
1700177138	RUS-GER7	39	1	0	1	1	1	0	1	0	0	0	1	0	1	0	0	0	0	0	1	1	0	1	0	0	0
1700417113	RUS-GER7	165	0	0	0	21	16	14	2	5	4	1	0	3	0	0	0	0	2	0	2	0	0	0	0	0	0
1700417112	RUS-GER7	188	1	0	1	17	15	14	1	2	2	0	0	4	1	0	0	0	0	0	1	1	0	1	0	0	0
1700637119	RUS-GER7	119	2	0	2	20	16	14	2	4	4	0	0	0	0	0	0	0	0	0	2	0	2	2	0	2	2
1700747113	RUS-GER7	101	1	0	1	17	15	14	1	2	2	0	0	0	0	0	0	0	0	1	1	0	1	1	0	1	1
1700757118	RUS-GER7	202	3	3	0	9	8	6	2	1	1	0	0	5	0	0	0	0	0	0	1	1	0	1	1	0	0
1700757117	RUS-GER7	143	1	1	0	25	17	15	2	8	3	5	0	3	0	0	0	2	0	0	8	0	0	0	0	0	0
1700757116	RUS-GER7	142	1	0	1	15	12	10	2	3	2	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
1700757115	RUS-GER7	104	0	0	0	8	4	3	1	4	3	1	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0
2300287133	RUS-GER7	129	2	2	0	13	11	10	1	2	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2300577150	RUS-GER7	217	3	2	1	27	26	23	3	1	1	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0
2300577149	RUS-GER7	133	4	4	0	12	9	8	1	3	3	0	0	4	0	0	0	0	0	0	1	1	0	0	0	0	0



Appendix

2300577148	RUS-GER7	80	1	1	0	6	2	2	0	4	3	1	0	4	0	0	0	0	0	9	0	0	0	0	0
2300577147	RUS-GER7	85	2	2	0	8	5	4	1	3	3	0	0	2	0	0	0	0	0	0	0	0	0	0	0
2300577146	RUS-GER7	102	4	4	0	4	3	2	1	1	1	0	0	3	0	0	0	0	0	0	1	1	0	0	0
2400997127	RUS-GER7	100	1	1	0	12	10	7	3	2	2	0	0	0	0	0	0	0	0	2	1	1	0	0	0
1302937132	RUS-GER7	141	3	3	0	20	16	14	2	4	2	2	0	0	0	0	0	1	0	0	3	0	0	0	0
1300389146	RUS-GER9	184	3	2	1	11	5	4	1	6	6	0	0	2	1	0	0	0	0	0	1	0	0	0	0
1300729122	RUS-GER9	189	5	3	2	17	15	14	1	2	2	0	0	2	0	0	0	0	0	0	1	2	0	2	1
1300389147	RUS-GER9	140	1	1	0	20	11	11	0	9	7	2	0	1	0	0	0	0	0	0	1	1	1	0	0
1300389148	RUS-GER9	136	1	0	1	12	3	3	0	9	9	0	0	2	1	0	0	0	1	0	0	0	0	0	0
1300389149	RUS-GER9	137	4	4	0	7	5	3	2	2	2	0	0	4	0	0	0	0	0	0	4	0	0	0	0
1300729120	RUS-GER9	165	0	0	0	19	14	13	1	5	3	2	0	2	0	0	0	0	1	0	1	1	0	1	1
1303409130	RUS-GER9	161	3	2	1	23	13	13	0	10	10	0	0	0	0	0	0	0	0	0	1	0	1	1	0
1303409129	RUS-GER9	127	3	2	1	11	9	8	1	2	2	0	0	3	1	0	0	0	1	0	0	1	0	1	1
1303409128	RUS-GER9	203	2	2	0	16	11	11	0	5	4	1	0	3	0	0	0	0	1	0	0	0	0	0	0
1303409127	RUS-GER9	192	1	0	1	16	7	7	0	9	9	0	0	2	0	0	0	1	0	0	0	0	0	0	0
1303409126	RUS-GER9	225	3	0	3	20	15	15	0	5	5	0	0	8	0	0	0	0	1	0	0	3	0	3	0
1303409125	RUS-GER9	171	1	1	0	16	12	12	0	4	4	0	0	2	0	0	0	1	1	0	1	1	1	0	1
1303109153	RUS-GER9	102	0	0	0	9	7	6	1	2	2	0	0	2	0	0	0	0	0	0	2	0	0	0	0
1301389123	RUS-GER9	146	3	2	1	18	11	11	0	7	7	0	0	0	1	0	0	0	3	0	0	1	0	1	0
1301389106	RUS-GER9	175	3	2	1	19	16	15	1	3	3	0	0	0	1	0	0	0	1	0	0	1	1	0	0
1301379161	RUS-GER9	183	5	5	0	13	9	9	0	4	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1700179128	RUS-GER9	157	1	0	1	12	7	4	3	5	3	2	0	6	0	0	0	0	1	0	1	1	0	1	0
1700179127	RUS-GER9	125	0	0	0	20	13	11	2	7	4	3	0	0	0	0	0	0	0	0	2	0	0	0	0
1601209119	RUS-GER9	85	0	0	0	4	3	2	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1601169155	RUS-GER9	170	1	1	0	6	3	2	1	3	1	2	0	2	0	0	0	0	2	0	0	0	0	0	0
1500389159	RUS-GER9	168	5	2	3	15	15	11	4	0	0	0	0	2	3	0	0	0	0	0	4	3	1	2	2
1500389158	RUS-GER9	116	0	0	0	14	10	10	0	4	0	0	0	4	0	0	0	0	0	0	1	0	0	0	0
1302939125	RUS-GER9	195	5	5	0	27	17	14	3	10	10	0	1	0	0	0	0	0	0	2	0	0	0	0	0
1302939124	RUS-GER9	208	4	1	3	21	14	13	1	7	7	0	1	0	0	0	0	0	0	0	3	0	3	3	1
1302939123	RUS-GER9	238	4	3	1	24	19	18	1	5	5	0	0	2	0	0	0	0	0	0	0	0	0	0	0
1302669123	RUS-GER9	197	3	3	0	21	11	10	1	10	9	1	0	3	0	0	0	0	1	0	2	1	1	0	1
1300909155	RUS-GER9	179	3	1	2	29	26	24	2	3	3	0	1	2	0	0	0	0	1	1	0	1	0	1	1
1300909154	RUS-GER9	122	0	0	0	17	12	10	2	5	5	0	0	1	0	0	0	1	0	0	0	0	0	0	0
1300909153	RUS-GER9	191	2	1	1	31	27	25	2	4	4	0	0	3	0	0	0	0	0	0	3	1	0	1	0
1300729121	RUS-GER9	120	0	0	0	20	15	10	5	5	5	0	0	0	0	0	0	0	1	0	10	0	0	0	0
1401599126	RUS-GER9	101	3	3	0	13	11	10	1	2	1	1	0	1	0	0	0	0	0	0	1	0	0	0	0
1401809127	RUS-GER9	135	0	0	0	17	6	6	0	11	10	1	0	0	0	0	0	0	0	0	5	0	0	0	0
1401809126	RUS-GER9	164	3	2	1	15	13	13	0	2	2	0	0	1	0	1	0	0	1	0	0	2	1	1	0

Appendix

1700179131	RUS-GER9	67	2	0	2	3	2	1	1	1	0	1	1	0	2	0	0	0	0	0	1	1	0	1	0	0	0
1700179130	RUS-GER9	132	3	3	0	11	11	10	1	0	0	0	0	4	0	0	0	0	1	0	0	0	0	0	0	0	0
1700179129	RUS-GER9	149	5	4	1	10	4	2	2	6	6	0	0	5	0	0	0	0	0	0	1	0	1	0	0	0	0
1700419121	RUS-GER9	209	6	5	1	15	9	9	0	6	5	1	0	0	0	0	0	1	0	0	1	0	1	1	0	1	1
1700419120	RUS-GER9	163	0	0	0	18	15	12	3	3	3	0	0	3	0	0	0	0	1	0	0	0	0	0	0	0	0
1700419119	RUS-GER9	188	0	0	0	11	8	8	0	3	3	0	0	12	0	0	0	1	0	0	2	0	0	0	0	0	0
1700419118	RUS-GER9	206	3	2	1	14	10	10	0	4	4	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0
1700469141	RUS-GER9	159	1	1	0	9	8	7	1	1	1	0	0	5	0	0	0	1	0	0	2	0	0	0	0	0	0
1700749124	RUS-GER9	250	3	2	1	23	18	17	1	5	5	0	0	1	1	0	0	0	2	0	0	1	1	0	0	0	0
1700749123	RUS-GER9	119	1	1	0	12	10	9	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700749122	RUS-GER9	229	1	1	0	26	21	20	1	5	5	0	0	3	0	0	0	0	1	0	1	0	0	0	0	0	0
1700749121	RUS-GER9	114	2	2	0	5	4	3	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1700759117	RUS-GER9	212	1	1	0	19	10	9	1	9	9	0	0	7	0	0	0	0	1	0	1	0	0	0	0	0	0
1700759116	RUS-GER9	177	3	3	0	27	21	19	2	6	6	0	0	3	0	0	0	0	2	0	0	0	0	0	0	0	0
2300289123	RUS-GER9	81	1	1	0	10	8	8	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300289122	RUS-GER9	138	1	1	0	16	11	10	1	5	5	0	0	0	0	0	0	0	2	0	0	1	1	0	0	0	0
2300579123	RUS-GER9	190	0	0	0	19	17	14	1	2	2	0	0	4	0	0	0	0	0	0	3	0	0	0	0	0	0
1302547102	GER7	150	0	0	0	22	15	15	0	7	6	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0
1302547103	GER7	225	9	8	1	36	22	22	0	14	14	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
1302547105	GER7	119	2	1	1	12	8	8	0	5	3	2	0	2	1	0	0	0	0	0	2	1	0	1	0	0	0
1302547106	GER7	114	4	2	2	13	12	7	5	1	1	0	0	0	0	0	0	0	0	0	3	2	0	2	2	0	2
1302547107	GER7	99	0	0	0	10	6	5	1	4	4	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
1200067103	GER7	74	0	0	0	7	4	3	1	3	3	0	0	4	0	0	0	0	0	0	1	0	0	0	0	0	0
1600027104	GER7	202	2	0	2	20	16	14	2	4	3	1	0	1	2	0	0	0	1	0	2	0	0	0	0	0	0
1200067104	GER7	130	7	4	3	10	5	4	1	5	4	1	0	1	1	0	0	0	0	0	0	6	3	3	2	0	2
1200337101	GER7	159	6	6	0	21	14	12	2	7	7	0	0	2	0	0	0	0	0	0	4	0	0	0	0	0	0
1200337102	GER7	180	8	8	0	12	8	7	1	4	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1401877105	GER7	104	1	1	0	12	6	4	2	6	3	3	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0
1401877104	GER7	215	1	0	1	21	14	14	0	6	7	1	0	0	0	0	0	0	0	0	3	1	0	1	1	0	1
1200337103	GER7	213	0	0	0	22	19	18	1	3	3	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
1401877102	GER7	214	7	7	0	22	18	17	1	4	4	0	0	0	0	0	0	0	0	0	0	2	2	0	1	1	0
1401877101	GER7	188	4	1	3	35	24	21	3	11	8	3	0	0	0	0	0	0	0	0	12	2	0	2	1	0	1
1306047105	GER7	265	2	2	0	27	19	17	2	8	7	1	1	8	0	0	0	0	1	0	3	0	0	0	0	0	0
1306047102	GER7	108	2	1	1	13	10	9	1	3	3	0	0	0	0	0	0	0	0	0	1	2	1	1	1	0	1
1306047101	GER7	168	3	1	2	22	14	13	1	8	7	1	0	1	1	0	0	0	0	0	2	0	0	0	0	0	0
1700757110	GER7	175	2	1	1	32	23	23	0	9	8	1	0	2	0	0	0	0	0	0	2	2	1	1	2	1	1
1700757106	GER7	161	1	1	0	25	14	14	0	11	11	0	0	1	0	0	0	0	1	0	0	1	1	0	0	0	0
1700757104	GER7	159	4	3	1	24	17	16	1	7	6	1	0	1	1	0	0	0	1	0	4	2	2	0	0	0	0

Appendix

1700757103	GER7	203	0	0	0	12	7	7	0	5	3	2	0	10	0	0	0	1	0	0	4	0	0	0	0	0	0
1302547112	GER7	154	3	2	1	25	13	12	1	12	10	2	0	1	0	0	0	0	0	0	3	1	0	1	1	0	1
1200337104	GER7	139	3	2	1	14	7	6	1	7	7	0	1	0	1	0	0	0	2	0	2	1	0	1	0	0	0
1700757101	GER7	149	2	1	1	23	15	15	0	8	6	2	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0
1306047106	GER7	262	2	2	0	30	21	21	0	9	9	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
1306047103	GER7	228	4	3	1	32	26	24	2	6	6	0	0	4	0	0	0	0	0	0	3	1	0	1	1	0	1
1302547110	GER7	144	2	2	0	23	15	15	0	8	8	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0
1302547109	GER7	126	0	0	0	21	18	18	0	3	2	1	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0
1302547108	GER7	143	0	0	0	12	9	8	1	3	0	3	0	9	0	0	0	1	0	0	1	0	0	0	0	0	0
2300577112	GER7	103	2	2	0	10	6	6	0	4	3	1	0	2	0	0	0	1	0	0	1	0	0	0	0	0	0
2300577110	GER7	148	4	3	1	16	12	12	0	4	4	0	0	4	1	0	0	0	0	0	1	0	0	0	0	0	0
2300577109	GER7	94	0	0	0	18	12	11	1	6	5	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
2300577108	GER7	162	5	3	2	11	6	5	0	5	5	0	0	2	2	0	0	0	2	0	0	0	0	0	0	0	0
2300287105	GER7	324	8	6	2	52	39	38	1	13	11	2	0	1	2	0	0	0	1	0	3	6	4	2	4	4	0
2300287103	GER7	138	0	0	0	20	12	12	0	8	8	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2300287102	GER7	235	3	3	0	33	26	22	4	7	7	0	0	8	0	0	0	0	2	0	1	1	1	0	0	0	0
2300287101	GER7	171	4	3	1	14	11	11	0	3	3	0	0	0	1	0	0	0	2	0	3	0	0	0	0	0	0
2300577107	GER7	139	1	1	0	11	6	4	2	5	5	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0
2300577106	GER7	126	3	0	3	18	16	15	1	2	2	0	0	0	0	0	0	0	0	0	0	2	0	2	2	0	2
2300577105	GER7	169	4	4	0	20	12	12	0	8	8	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0
2300577104	GER7	152	2	0	2	24	15	15	0	9	9	0	0	1	0	2	0	0	0	0	2	0	0	0	0	0	0
2300577103	GER7	147	6	0	6	25	19	17	2	6	6	0	0	0	5	0	0	0	0	0	0	6	0	6	0	0	0
2300577102	GER7	188	5	5	0	18	14	13	1	4	3	1	0	3	0	0	0	0	0	0	0	1	1	0	0	0	0
2400997107	GER7	61	0	0	0	7	6	6	0	1	1	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0
2400997106	GER7	98	3	3	0	13	12	12	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2400997104	GER7	55	0	0	0	5	3	2	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2400997103	GER7	108	3	1	2	7	3	3	0	4	4	0	0	7	0	0	0	0	0	0	1	2	0	2	0	0	0
2400997102	GER7	78	0	0	0	13	11	9	2	2	2	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0
2400997101	GER7	119	4	3	1	15	12	12	0	3	3	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0
1400459101	GER9	205	4	4	0	14	7	7	0	7	7	0	1	3	1	0	0	0	1	0	0	1	1	0	1	1	0
1400459102	GER9	99	0	0	0	8	7	7	0	1	1	0	0	4	0	0	0	0	0	0	1	0	0	0	0	0	0
1400459103	GER9	185	3	3	0	22	18	17	1	4	4	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0
1402099101	GER9	151	2	2	0	11	6	4	2	5	4	1	0	3	0	0	0	1	0	0	0	1	1	0	1	1	0
1200339101	GER9	135	4	4	0	10	8	7	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500469105	GER9	187	3	3	0	28	23	22	1	5	5	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
1500469104	GER9	131	0	0	0	12	9	8	1	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500469103	GER9	151	3	2	1	20	13	13	0	7	7	0	0	2	0	0	0	0	0	0	1	1	0	1	1	0	1
1200339102	GER9	126	1	1	0	11	2	2	0	9	9	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix

1500329107	GER9	164	3	0	3	31	22	20	2	9	8	1	0	0	0	0	0	0	0	5	3	0	3	2	0	2
1500329106	GER9	149	0	0	0	20	11	8	3	9	7	2	0	5	0	0	0	0	0	4	0	0	0	0	0	0
1500329104	GER9	85	0	0	0	8	6	4	2	2	2	0	0	3	0	0	0	1	0	0	20	0	0	0	0	0
1500329103	GER9	124	1	1	0	22	15	15	0	7	5	2	0	0	1	0	0	1	1	0	5	1	1	0	0	0
1500329102	GER9	140	0	0	0	22	17	15	2	5	5	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
1500329101	GER9	209	1	0	1	15	7	6	1	8	8	0	0	4	1	0	0	0	1	0	0	0	0	0	0	0
1200339103	GER9	192	4	4	0	13	9	8	1	4	4	0	0	6	0	0	0	0	1	0	0	0	0	0	0	0
1306049101	GER9	341	4	4	0	40	30	29	1	10	8	2	0	3	0	0	0	0	1	0	1	0	0	0	0	0
1200339106	GER9	200	2	2	0	30	19	17	2	11	11	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
1200339109	GER9	175	3	3	0	15	9	8	1	6	5	1	0	3	0	0	0	0	3	0	0	3	3	0	0	0
1300729108	GER9	243	4	3	1	27	16	16	0	11	10	1	0	9	0	0	0	0	0	0	1	0	1	1	0	1
1300729104	GER9	261	2	2	0	32	24	19	4	8	7	1	0	5	0	0	0	0	2	1	0	0	0	0	0	0
1300729103	GER9	167	1	1	0	22	19	13	6	3	2	1	0	0	0	0	0	0	0	0	13	0	0	0	0	0
1402099108	GER9	192	5	5	0	28	19	19	0	9	9	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
1402099105	GER9	311	3	3	0	32	19	19	0	13	13	0	0	6	0	0	0	0	1	0	0	2	2	0	1	1
1300169101	GER9	74	1	0	1	9	9	4	5	0	0	0	0	2	0	0	0	0	0	0	5	1	0	1	0	0
1306049103	GER9	273	2	1	1	24	15	15	0	9	9	0	0	13	1	0	0	0	1	0	0	0	0	0	0	0
1304169107	GER9	155	5	5	0	18	14	13	1	4	4	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0
1304169105	GER9	145	3	3	0	21	18	13	5	3	3	0	0	1	0	0	0	0	0	0	6	2	1	1	0	0
1304169103	GER9	217	3	3	0	16	10	9	1	6	6	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0
1300729107	GER9	243	1	0	1	24	17	17	0	7	7	0	0	7	1	0	0	0	1	0	1	0	0	0	0	0
1700639104	GER9	233	2	2	0	32	20	19	1	12	12	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0
1700639102	GER9	245	2	2	0	28	19	19	0	9	9	0	0	6	0	0	0	0	0	0	1	0	0	0	0	0
1700639101	GER9	124	3	2	1	12	11	10	1	1	1	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1
1700759109	GER9	121	3	3	0	15	11	10	1	4	4	0	0	0	0	0	0	0	0	2	2	2	0	0	0	0
1700759106	GER9	166	8	8	0	19	16	14	2	3	3	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0
1700759105	GER9	152	0	0	0	21	14	14	0	7	7	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1700759104	GER9	206	0	0	0	20	13	13	0	7	7	0	0	1	0	0	0	0	3	0	0	0	0	0	0	0
1700759102	GER9	147	1	1	0	17	16	15	1	1	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
1700759101	GER9	139	1	1	0	18	15	14	1	3	2	1	0	1	0	0	0	0	1	0	1	0	0	0	0	0
2300289105	GER9	238	3	3	0	25	19	18	1	6	5	1	0	3	0	0	0	0	3	0	1	1	1	0	0	0
2300289104	GER9	156	0	0	0	12	8	8	0	4	4	0	0	3	0	0	0	0	0	0	1	0	0	0	0	0
2300289103	GER9	196	2	2	0	19	13	13	0	6	6	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0
2300289102	GER9	191	3	2	1	24	18	15	3	6	6	1	0	1	0	0	0	0	0	0	1	0	1	0	0	0
2300289101	GER9	64	2	2	0	6	4	3	1	2	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
2300579101	GER9	181	4	3	1	27	21	20	1	6	4	2	0	2	1	0	0	0	0	0	3	2	1	1	0	0
2400999109	GER9	102	4	3	1	14	12	10	2	2	1	1	0	1	1	0	0	0	0	0	2	0	0	0	0	0
2400999108	GER9	55	0	0	0	9	0	6	3	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0

## Appendix

2400999105	GER9	199	5	3	2	33	21	20	1	12	10	3	0	0	0	0	0	1	0	2	2	0	2	0	0	0
2400999104	GER9	339	4	4	0	18	13	12	1	5	5	0	0	17	0	0	0	1	3	0	0	1	1	0	0	0
2400999103	GER9	141	6	4	2	10	2	2	0	8	7	1	0	1	2	0	0	0	0	0	4	2	2	1	1	0
231	ENG	401	5	5	0	46	42	41	1	4	4	0	0	7	0	0	0	0	0	0	2	2	0	1	1	0
251	ENG	312	3	3	0	43	37	37	0	6	6	0	0	3	0	0	0	0	0	0	1	1	0	0	0	0
295	ENG	264	1	1	0	25	16	16	0	9	9	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
366	ENG	175	3	3	0	16	12	12	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
558	ENG	114	1	1	0	15	14	14	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
589	ENG	241	0	0	0	34	31	31	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
616	ENG	270	2	2	0	33	20	20	0	13	13	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
626	ENG	148	2	2	0	14	12	11	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
671	ENG	567	11	10	0	64	41	41	0	23	23	0	0	4	0	0	0	0	0	0	0	1	0	0	0	0
702	ENG	441	2	2	0	45	33	33	0	12	12	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0
704	ENG	751	4	4	0	55	28	28	0	27	27	0	0	11	0	0	0	0	0	0	1	1	0	1	1	0
708	ENG	313	3	3	0	22	15	15	0	7	7	0	0	21	0	0	0	0	0	0	1	1	0	0	0	0
712	ENG	165	0	0	0	20	17	17	0	3	3	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0
901	ENG	110	1	1	0	8	7	7	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
902	ENG	193	0	0	0	14	7	7	0	7	7	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
927	ENG	298	0	0	0	32	19	19	0	13	13	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
928	ENG	142	1	1	0	16	12	12	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
929	ENG	379	8	8	0	43	35	35	0	9	9	0	0	6	0	0	0	0	0	0	2	2	0	1	1	0

**Table 125: Labels for Table 124**

<b>A</b>	Words total	<b>J</b>	Indefinite articles target like	<b>S</b>	Demonstrative adverb plus demonstrative
<b>B</b>	Demonstratives total	<b>K</b>	Indefinite articles not-target like	<b>T</b>	Lexical transfer
<b>C</b>	Demonstratives target like	<b>L</b>	Zero articles	<b>U</b>	This
<b>D</b>	Demonstratives not-target like	<b>M</b>	Possessives	<b>V</b>	This target like
<b>E</b>	Articles total	<b>N</b>	Demonstrative overuse	<b>W</b>	This not-target like
<b>F</b>	Definite articles	<b>O</b>	Demonstrative underuse	<b>X</b>	This determinative
<b>G</b>	Definite articles target like	<b>P</b>	Demonstrative other	<b>Y</b>	This determinative agreement
<b>H</b>	Definite articles not-target like	<b>Q</b>	Sentences without a verb	<b>Z</b>	This determinative no agreement
<b>I</b>	Indefinite articles	<b>R</b>	Demonstrative adverbs		

Appendix

**Table 126: Analysis of written texts - absolute frequencies 2**

ID	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ
1302547113	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0
1302547114	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	1	1	1	0	0	0	0	0	0
1302547115	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	0	0	0
1302547116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547118	1	0	0	1	0	0	0	0	0	0	0	2	1	1	2	0	1	1	3	3	0	0	0	0	0	0
1302547119	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
1302547121	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547122	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547117	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0
1302547123	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0
1302547124	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	0	0	0	0	0
1302547125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	2	2	0	0	0	0	0
1304937107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1305747113	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	2	4	0	0	0	0	0
1306047115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
1306047116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700757111	0	0	0	0	1	1	0	1	0	1	0	4	4	0	4	0	0	4	0	0	0	0	0	0	0	0
1700757113	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
1301907125	1	1	1	1	0	0	0	0	0	0	0	1	0	1	0	1	0	1	1	1	0	0	0	0	0	0
1401877116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1401877117	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	1	1	0	0	0	0	0	0
1401877118	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	1	0	0	0	0	0	0	0
1304167116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
1304167117	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1304167118	0	0	0	0	1	1	0	1	0	1	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0
1304417111	0	0	0	0	1	1	0	1	0	1	0	2	0	2	0	2	0	2	1	0	0	0	0	0	0	0
1304417113	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1304167119	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0
1304417112	0	0	0	0	1	1	0	1	0	1	0	1	0	1	1	0	0	1	4	1	3	0	0	0	0	0
1304967110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2400997116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2400997117	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300577123	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300577124	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0

Appendix

2300577129	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
2300577133	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700757112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700747109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700637114	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0
1700467120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700467123	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700467124	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
1601167118	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1601167119	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1601167120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1601167121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600027114	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200067127	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200067128	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	0	0	0	0
1200067133	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300729110	4	0	0	4	0	0	0	0	0	0	0	1	1	0	1	0	0	1	1	0	0	0	0	0
1305729117	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1305729118	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
1305729119	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1305729120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
1600029115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600029114	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500389126	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500389125	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	1	0	1	0	0	0
1500389124	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	2	2	0	0	0	0
1401509113	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	0	0	0	0	0	0
1401509112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1401379113	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0
1400389116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	0	0	0	0
1304169125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700749115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0
1304169124	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1304129127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1303409116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0
1303409115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
1303409114	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1303409113	0	0	0	0	1	1	0	1	0	1	0	2	2	0	0	2	0	2	3	0	3	0	0	0

Appendix

1304169123	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1700639120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	1	1	0	1	0
1700759114	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700639119	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0
1700639118	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	3	0	0	0	0	0	0
1700639116	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	0	0	0	0	0
1306049114	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300579111	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
1601169130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1601169120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	1	0
1601169116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200379111	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	2	0	0	0	0	0
1200379110	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700469122	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0
1700469120	1	0	0	1	0	0	0	0	0	0	0	1	1	0	1	0	0	1	1	1	0	0	0	0	0
1700469117	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
1700639124	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0
1700639122	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700639117	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0
1700759112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
1700759111	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	5	0	0	0	0	0	0
2300289116	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300289115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	1	0
2300579113	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2400999115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
1305749116	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	1	1	0	0	0	0	0
1300169121	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
1300169125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300387143	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300387144	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
1300727127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
1302667124	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
1302937131	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	2	2	0	0	0	0	0
1304127157	0	0	0	0	1	1	0	1	0	1	0	2	2	0	2	0	2	0	0	0	0	0	0	0	0
1304127156	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1304127154	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1304127153	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0
1303147121	1	0	1	0	0	0	0	0	0	0	0	2	2	0	2	0	1	1	2	2	0	0	0	0	0



Appendix

1303107174	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1303107173	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1301377168	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	0	0	0	0	0
1200377118	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
1200337122	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200067174	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700037123	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700037122	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
1700037120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
1601207115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1601207114	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1601167146	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600027126	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
1600027125	0	0	0	0	0	0	0	0	0	0	0	3	1	2	3	0	1	2	1	1	0	0	0	0
1600027124	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	1	1	0	0	0	0
1600027123	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0
1600027122	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
1500387135	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0
1302937134	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0
1302937133	1	0	0	1	0	0	0	0	0	0	0	1	1	0	1	0	1	0	4	0	0	0	0	0
1700177146	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0
1700177144	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0
1700177139	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700177138	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0
1700417113	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700417112	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0
1700637119	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700747113	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700757118	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
1700757117	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
1700757116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
1700757115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300287133	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0
2300577150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0
2300577149	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	3	1	0	0	0	0	0
2300577148	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
2300577147	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0
2300577146	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	3	2	0	1	1	0	1

Appendix

2400997127	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1302937132	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0
1300389146	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0	0	0	0	0	0
1300729122	1	0	0	1	0	0	0	0	0	0	1	1	0	1	0	0	1	3	3	0	0	0	0	0	0
1300389147	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300389148	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
1300389149	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0
1300729120	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0
1303409130	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0
1303409129	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	0	0	0	0	0	0
1303409128	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0
1303409127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1303409126	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1303409125	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1303109153	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1301389123	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	2	1	0	0	0	0	0
1301389106	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	2	2	0	0	0	0	0
1301379161	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0
1700179128	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0
1700179127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1601209119	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1601169155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
1500389159	2	0	0	2	0	0	0	0	0	0	1	1	0	1	0	1	0	2	1	1	0	0	0	0	0
1500389158	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1302939125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0
1302939124	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1302939123	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0
1302669123	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0
1300909155	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	0	1	1	0	0
1300909154	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300909153	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	1	0	0	0	0	0	0	0
1300729121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1401599126	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	1	1	0	1	0	0
1401809127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1401809126	0	0	0	0	1	1	0	1	0	1	0	1	1	0	1	0	0	1	0	0	0	0	0	0	0
1700179131	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	1	0	1	0	0	0	0	0
1700179130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
1700179129	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0	0

Appendix

1700419121	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5	2	0	1	1	0	1	0
1700419120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700419119	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700419118	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
1700469141	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700749124	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	1	0	1	0	0	0	0	0
1700749123	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
1700749122	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
1700749121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0
1700759117	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
1700759116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0
2300289123	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300289122	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300579123	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	8	1	0	0	0	0	0
1302547105	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	1	1	0	0	0	0	0	0	0
1302547106	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
1302547107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200067103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
1600027104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0
1200067104	2	0	0	2	1	1	0	1	0	1	0	3	3	0	3	0	2	1	1	0	0	0	0	0	0
1200337101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0
1200337102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	3	0	0	0	0	0	0
1401877105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
1401877104	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200337103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
1401877102	1	0	1	0	0	0	0	0	0	0	1	1	0	1	0	1	0	4	1	0	0	0	0	0	0
1401877101	1	0	0	1	0	0	0	0	0	0	1	1	0	1	0	0	1	2	0	1	0	0	0	0	0
1306047105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1306047102	1	0	0	1	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1306047101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	2	0	0	0	0	0
1700757110	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700757106	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0
1700757104	0	0	0	0	0	0	0	0	0	0	2	2	0	2	0	2	0	1	0	1	1	1	0	1	0
1700757103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547112	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
1200337104	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	2	0	0	0	0	0	0	0

Appendix

1700757101	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	1	1	0	0	0	0	0
1306047106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1306047103	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0
1302547110	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
1302547109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300577112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300577110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	0	0	0	0	0
2300577109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300577108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	2	1	0	0	0	0	0
2300287105	4	0	4	0	0	0	0	0	0	0	2	2	0	2	0	0	2	1	0	0	0	0	0	0	0
2300287103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300287102	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	2	2	0	0	0	0	0
2300287101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	1	0	0	0	0	0
2300577107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
2300577106	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
2300577105	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0
2300577104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0
2300577103	0	0	0	0	0	0	0	0	0	0	6	6	0	6	0	0	6	0	0	0	0	0	0	0	0
2300577102	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	3	2	0	0	0	0	0	0
2400997107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2400997106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	0	0	0
2400997104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2400997103	0	0	0	0	0	0	0	0	0	0	2	2	0	2	0	0	2	1	1	0	0	0	0	0	0
2400997102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2400997101	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	1	0	1	0	0	0	0	0
1400459101	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0
1400459102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400459103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	0	0	0
1402099101	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
1200339101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	3	0	0	0	0	0	0
1500469105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0
1500469104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500469103	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
1200339102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
1500329107	2	0	0	2	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0
1500329106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500329104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix

1500329103	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0
1500329102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500329101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
1200339103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0
1306049101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0
1200339106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0
1200339109	0	0	0	0	1	1	0	1	0	1	0	2	2	0	2	0	2	0	0	0	0	0	0	0	0
1300729108	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
1300729104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0
1300729103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
1402099108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0
1402099105	1	0	1	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	1	0	0	0	0	0	0
1300169101	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	0	0	0	0	0	0	0
1306049103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	0	0	0	0
1304169107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	2	0	0	0	0	0
1304169105	0	0	0	0	1	1	0	1	0	1	0	1	1	0	1	0	0	1	1	1	0	0	0	0	0
1304169103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0
1300729107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
1700639104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
1700639102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0
1700639101	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0
1700759109	0	0	0	0	0	0	0	0	0	0	0	2	2	0	2	0	2	0	1	1	0	0	0	0	0
1700759106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	2	0	0	0	0	0
1700759105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700759104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700759102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700759101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
2300289105	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	2	2	0	0	0	0	0
2300289104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300289103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0
2300289102	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	2	0	0	0	0	0	0
2300289101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
2300579101	0	0	0	0	0	0	0	0	0	0	0	2	2	0	2	0	1	1	2	2	0	0	0	0	0
2400999109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1	0	0	0	0
2400999108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2400999105	0	0	0	0	0	0	0	0	0	0	0	2	2	0	2	0	0	2	3	0	0	0	0	0	0
2400999104	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	2	2	0	0	0	0	0
2400999103	1	0	1	0	0	0	0	0	0	0	0	3	3	0	3	0	1	2	2	2	0	0	0	0	0

## Appendix

231	1	0	1	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	3	1	0	0	0	0	0	0
251	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0
295	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
366	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
558	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
589	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
616	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
671	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	9	2	0	1	1	0	1	0
702	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	1	1	0	1	0	
704	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	
708	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	1	1	0	1	1	0	1	0
712	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
901	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
902	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
927	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
928	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
929	1	0	1	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	5	1	0	0	0	0	0	0

**Table 127: Labels for Table 126**

<b>AA</b>	This determinative context agreement	<b>AJ</b>	This identifying predicative target like	<b>AS</b>	That
<b>AB</b>	This determinative no context agreement	<b>AK</b>	This identifying predicative not-target like	<b>AT</b>	That target like
<b>AC</b>	This determinative target like	<b>AL</b>	This identifying anaphorical	<b>AU</b>	That not-target like
<b>AD</b>	This determinative not-target like	<b>AM</b>	This identifying anaphorical agreement	<b>AV</b>	That determinative
<b>AE</b>	This identifying predicative	<b>AN</b>	This identifying anaphorical no agreement	<b>AW</b>	That determinative agreement
<b>AF</b>	This identifying predicative agreement	<b>AO</b>	This identifying anaphorical context agreement	<b>AX</b>	That determinative no agreement
<b>AG</b>	This identifying predicative no agreement	<b>AP</b>	This identifying anaphorical no context agreement	<b>AY</b>	That determinative context agreement
<b>AH</b>	This identifying predicative context agreement	<b>AQ</b>	This identifying anaphorical target like	<b>AZ</b>	That determinative no context agreement
<b>AI</b>	This identifying predicative no context agreement	<b>AR</b>	This identifying anaphorical not-target like		

**Table 128: Analysis of written texts - absolute frequencies 3**

ID	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ
1302547113	0	0	0	0	0	0	0	0	0	0	3	3	0	3	0	3	0	0	0	0	0	0	0	0	0	0
1302547114	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0











Appendix

1300389149	0	0	1	0	0	0	0	0	0	0	1	1	0	1	0	1	0	2	2	0	2	2	0	2	0	2
1300729120	0	0	0	1	1	0	1	0	1	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0
1303409130	0	0	0	1	1	0	1	0	1	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0
1303409129	0	0	0	0	0	0	0	0	0	0	2	2	0	2	0	1	1	0	0	0	0	0	0	0	0	0
1303409128	0	0	1	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1303409127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1303409126	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1303409125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1303109153	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1301389123	0	0	1	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0
1301389106	0	0	0	1	1	0	1	0	1	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0
1301379161	0	0	0	0	0	0	0	0	0	0	2	2	0	2	0	2	0	3	3	0	3	3	0	3	0	3
1700179128	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700179127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1601209119	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1601169155	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500389159	0	0	0	0	0	0	0	0	0	0	2	2	0	2	0	1	1	0	0	0	0	0	0	0	0	0
1500389158	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1302939125	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	4	4	0	4	4	0	4	0	4
1302939124	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	1	0	1	
1302939123	0	0	1	0	0	0	0	0	0	0	2	2	0	2	0	2	0	1	0	1	1	0	1	1	0	0
1302669123	0	0	0	0	0	0	0	0	0	0	2	2	0	2	0	2	0	0	0	0	0	0	0	0	0	0
1300909155	0	1	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0
1300909154	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300909153	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300729121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1401599126	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1401809127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	1	0	1	1
1401809126	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	1	0	1	1
1700179131	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0
1700179130	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	2	2	0	2	0	2	2
1700179129	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	4	4	0	4	0	4	4
1700419121	1	0	3	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700419120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700419119	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700419118	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0	2	2	0	2	2	0	2	0	2	2
1700469141	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700749124	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	1	1	0	1	1	0	1	0	1



Appendix

2300577112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	2	2	0	2	0	2	
2300577110	0	0	0	0	0	0	0	0	0	2	2	0	2	0	1	1	2	2	0	2	2	0	2	0	2	
2300577109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2300577108	0	0	2	0	0	0	0	0	0	3	3	0	3	0	2	1	0	0	0	0	0	0	0	0	0	
2300287105	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	1	0	1	
2300287103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2300287102	0	0	0	0	0	0	0	0	0	2	2	0	2	0	2	0	0	0	0	0	0	0	0	0	0	
2300287101	0	0	0	1	1	0	1	0	1	0	2	2	0	2	0	1	1	1	1	0	1	1	0	1	0	1
2300577107	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	
2300577106	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	
2300577105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	3	3	0	3	0	3	
2300577104	0	0	0	0	0	0	0	0	0	2	2	0	2	0	0	2	0	0	0	0	0	0	0	0	0	
2300577103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2300577102	0	0	1	0	0	0	0	0	0	2	2	0	2	0	2	0	1	1	0	1	1	0	1	0	1	
2400997107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2400997106	0	0	1	0	0	0	0	0	0	2	2	0	2	0	2	0	0	0	0	0	0	0	0	0	0	
2400997104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2400997103	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2400997102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2400997101	0	0	0	1	0	1	1	0	0	1	0	0	0	0	0	0	2	2	0	2	2	0	2	0	2	
1400459101	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1400459102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1400459103	0	0	1	0	0	0	0	0	0	2	2	0	2	0	2	0	0	0	0	0	0	0	0	0	0	
1402099101	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	
1200339101	0	0	1	0	0	0	0	0	0	3	3	0	3	0	3	0	0	0	0	0	0	0	0	0	0	
1500469105	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1500469104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1500469103	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	0	1	1	0	1	0	1	
1200339102	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	
1500329107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1500329106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1500329104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1500329103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1500329102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1500329101	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	
1200339103	0	0	0	0	0	0	0	0	0	3	3	0	3	0	3	0	1	1	0	0	0	0	0	0	0	
1306049101	0	0	0	2	2	0	2	0	2	0	1	1	0	1	0	1	1	0	1	1	0	1	0	1	1	
1200339106	0	0	1	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	

Appendix

1200339109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	0	1	0	1	0	
1300729108	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	2	2	0	2	2	0	2	0	2	
1300729104	0	0	1	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	
1300729103	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	
1402099108	0	0	0	2	2	0	2	0	2	0	1	1	0	1	0	1	0	2	2	0	2	2	0	2	0	2
1402099105	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1300169101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1306049103	0	0	0	1	1	0	1	0	1	0	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	
1304169107	0	0	3	0	0	0	0	0	0	2	2	0	2	0	2	0	0	0	0	0	0	0	0	0	0	
1304169105	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1304169103	0	0	2	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	
1300729107	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	
1700639104	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	1	1	0	1	1	0	1	0	1	
1700639102	0	0	0	0	0	0	0	0	0	2	2	0	2	0	2	0	0	0	0	0	0	0	0	0	0	
1700639101	0	0	0	0	0	0	0	0	0	2	2	0	2	0	2	0	0	0	0	0	0	0	0	0	0	
1700759109	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1700759106	0	0	4	1	1	0	1	0	1	0	1	1	0	1	0	1	0	2	2	0	2	2	0	2	0	2
1700759105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1700759104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1700759102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1700759101	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2300289105	0	0	0	0	0	0	0	0	0	2	2	0	2	0	2	0	0	0	0	0	0	0	0	0	0	
2300289104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2300289103	0	0	1	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	
2300289102	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2300289101	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	1	1	0	1	1	0	1	0	1	
2300579101	0	0	0	0	0	0	0	0	0	2	2	0	2	0	2	0	0	0	0	0	0	0	0	0	0	
2400999109	0	0	3	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	
2400999108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2400999105	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2400999104	0	0	0	0	0	0	0	0	0	2	2	0	2	0	2	0	1	1	0	1	1	0	1	0	1	
2400999103	0	0	0	0	0	0	0	0	0	2	2	0	2	0	2	0	0	0	0	0	0	0	0	0	0	
231	0	0	2	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	
251	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	2	2	0	2	0	2	
295	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
366	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	1	0	1	
558	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	
589	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

## Appendix

616	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	1	1	0	1	0	1
626	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	1	0	1
671	1	0	7	0	0	0	0	0	0	0	1	1	0	1	0	1	1	0	1	1	0	1	0	1	
702	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
704	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
708	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	1	0	1
712	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
901	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
902	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
927	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
928	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	1	0	1
929	0	0	4	0	0	0	0	0	0	0	1	1	0	1	0	1	1	0	0	0	0	0	0	0	0

**Table 129: Labels for Table 128**

<b>BA</b>	That determinative target like	<b>BJ</b>	That identifying predicative not-target like	<b>BS</b>	These target like
<b>BB</b>	That determinative not-target like	<b>BK</b>	That identifying anaphorical	<b>BT</b>	These not-target like
<b>BC</b>	That subordinative	<b>BL</b>	That identifying anaphorical agreement	<b>BU</b>	These determinative
<b>BD</b>	That identifying predicative	<b>BM</b>	That identifying anaphorical no agreement	<b>BV</b>	These determinative agreement
<b>BE</b>	That identifying predicative agreement	<b>BN</b>	That identifying anaphorical context agreement	<b>BW</b>	These determinative no agreement
<b>BF</b>	That identifying predicative no agreement	<b>BO</b>	That identifying anaphorical no context agreement	<b>BX</b>	These determinative context agreement
<b>BG</b>	That identifying predicative context agreement	<b>BP</b>	That identifying anaphorical target like	<b>BY</b>	These determinative no context agreement
<b>BH</b>	That identifying predicative no context agreement	<b>BQ</b>	That identifying anaphorical not-target like	<b>BZ</b>	These determinative target like
<b>BI</b>	That identifying predicative target like	<b>BR</b>	These		

**Table 130: Analysis of written texts - absolute frequencies 4**

ID	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ	CK	CL	CM	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX	CY	CZ
1302547113	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547114	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547118	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547119	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547122	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



















## Appendix

712	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
901	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
902	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
927	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
928	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
929	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0

**Table 131: Labels for Table 130**

<b>CA</b>	These determinative not-target like	<b>CJ</b>	These identifying anaphorical agreement	<b>CS</b>	Those determinative
<b>CB</b>	These identifying predicative	<b>CK</b>	These identifying anaphorical no agreement	<b>CT</b>	Those determinative agreement
<b>CC</b>	These identifying predicative agreement	<b>CL</b>	These identifying anaphorical context agreement	<b>CU</b>	Those determinative no agreement
<b>CD</b>	These identifying predicative no agreement	<b>CM</b>	These identifying anaphorical no context agreement	<b>CV</b>	Those determinative context agreement
<b>CE</b>	These identifying predicative context agreement	<b>CN</b>	These identifying anaphorical target like	<b>CW</b>	Those determinative no context agreement
<b>CF</b>	These identifying predicative no context agreement	<b>CO</b>	These identifying anaphorical not-target like	<b>CX</b>	Those determinative target like
<b>CG</b>	These identifying predicative target like	<b>CP</b>	Those	<b>CY</b>	Those determinative not-target like
<b>CH</b>	These identifying predicative not-target like	<b>CQ</b>	Those target like	<b>CZ</b>	Those identifying predicative
<b>CI</b>	These identifying anaphorical	<b>CR</b>	Those not-target like		

**Table 132: Analysis of written texts - absolute frequencies 5**

ID	DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ	DK	DL	DM
1302547113	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547114	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547115	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547116	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547118	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547119	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547121	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547122	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547117	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547123	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547124	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547125	0	0	0	0	0	0	0	0	0	0	0	0	0
1304937107	0	0	0	0	0	0	0	0	0	0	0	0	0
1305747113	0	0	0	0	0	0	0	0	0	0	0	0	0



## Appendix

---

1306047115	0	0	0	0	0	0	0	0	0	0	0	0	0
1306047116	0	0	0	0	0	0	0	0	0	0	0	0	0
1700757111	0	0	0	0	0	0	0	0	0	0	0	0	0
1700757113	0	0	0	0	0	0	0	0	0	0	0	0	0
1301907125	0	0	0	0	0	0	0	0	0	0	0	0	0
1401877116	0	0	0	0	0	0	0	0	0	0	0	0	0
1401877117	0	0	0	0	0	0	0	0	0	0	0	0	0
1401877118	0	0	0	0	0	0	0	0	0	0	0	0	0
1304167116	0	0	0	0	0	0	0	0	0	0	0	0	0
1304167117	0	0	0	0	0	0	0	0	0	0	0	0	0
1304167118	0	0	0	0	0	0	0	0	0	0	0	0	0
1304417111	0	0	0	0	0	0	0	0	0	0	0	0	0
1304417113	0	0	0	0	0	0	0	0	0	0	0	0	0
1304167119	0	0	0	0	0	0	0	0	0	0	0	0	0
1304417112	0	0	0	0	0	0	0	0	0	0	0	0	0
1304967110	0	0	0	0	0	0	0	0	0	0	0	0	0
2400997116	0	0	0	0	0	0	0	0	0	0	0	0	0
2400997117	0	0	0	0	0	0	0	0	0	0	0	0	0
2300577123	0	0	0	0	0	0	0	0	0	0	0	0	0
2300577124	0	0	0	0	0	0	0	0	0	0	0	0	0
2300577129	0	0	0	0	0	0	0	0	0	0	0	0	0
2300577133	0	0	0	0	0	0	0	0	0	0	0	0	0
1700757112	0	0	0	0	0	0	0	0	0	0	0	0	0
1700747109	0	0	0	0	0	0	0	0	0	0	0	0	0
1700637114	0	0	0	0	0	0	0	0	0	0	0	0	0
1700467120	0	0	0	0	0	0	0	0	0	0	0	0	0
1700467123	0	0	0	0	0	0	0	0	0	0	0	0	0
1700467124	0	0	0	0	0	0	0	0	0	0	0	0	0
1601167118	0	0	0	0	0	0	0	0	0	0	0	0	0
1601167119	0	0	0	0	0	0	0	0	0	0	0	0	0
1601167120	0	0	0	0	0	0	0	0	0	0	0	0	0
1601167121	0	0	0	0	0	0	0	0	0	0	0	0	0
1600027114	0	0	0	0	0	0	0	0	0	0	0	0	0
1200067127	0	0	0	0	0	0	0	0	0	0	0	0	0
1200067128	0	0	0	0	0	0	0	0	0	0	0	0	0
1200067133	0	0	0	0	0	0	0	0	0	0	0	0	0
1300729110	0	0	0	0	0	0	0	0	0	0	0	0	0
1305729117	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix

1305729118	0	0	0	0	0	0	0	0	0	0	0	0	0
1305729119	0	0	0	0	0	0	0	0	0	0	0	0	0
1305729120	0	0	0	0	0	0	0	0	0	0	0	0	0
1600029115	0	0	0	0	0	0	0	0	0	0	0	0	0
1600029114	0	0	0	0	0	0	0	0	0	0	0	0	0
1500389126	0	0	0	0	0	0	0	0	0	0	0	0	0
1500389125	0	0	0	0	0	0	0	0	0	0	0	0	0
1500389124	0	0	0	0	0	0	0	0	0	0	0	0	0
1401509113	0	0	0	0	0	0	0	0	0	0	0	0	0
1401509112	0	0	0	0	0	0	0	0	0	0	0	0	0
1401379113	0	0	0	0	0	0	0	0	0	0	0	0	0
1400389116	0	0	0	0	0	0	0	0	0	0	0	0	0
1304169125	0	0	0	0	0	0	0	0	0	0	0	0	0
1700749115	0	0	0	0	0	0	0	0	0	0	0	0	0
1304169124	0	0	0	0	0	0	0	0	0	0	0	0	0
1304129127	0	0	0	0	0	0	0	0	0	0	0	0	0
1303409116	0	0	0	0	0	0	0	0	0	0	0	0	0
1303409115	0	0	0	0	0	0	0	0	0	0	0	0	0
1303409114	0	0	0	0	0	0	0	0	0	0	0	0	0
1303409113	0	0	0	0	0	0	0	0	0	0	0	0	0
1304169123	0	0	0	0	0	0	0	0	0	0	0	0	0
1700639120	0	0	0	0	0	0	0	0	0	0	0	0	0
1700759114	0	0	0	0	0	0	0	0	0	0	0	0	0
1700639119	0	0	0	0	0	0	0	0	0	0	0	0	0
1700639118	0	0	0	0	0	0	0	0	0	0	0	0	0
1700639116	0	0	0	0	0	0	0	0	0	0	0	0	0
1306049114	0	0	0	0	0	0	0	0	0	0	0	0	0
2300579111	0	0	0	0	0	0	0	0	0	0	0	0	0
1601169130	0	0	0	0	0	0	0	0	0	0	0	0	0
1601169120	0	0	0	0	0	0	0	0	0	0	0	0	0
1601169116	0	0	0	0	0	0	0	0	0	0	0	0	0
1200379111	0	0	0	0	0	0	0	0	0	0	0	0	0
1200379110	0	0	0	0	0	0	0	0	0	0	0	0	0
1700469122	0	0	0	0	0	0	0	0	0	0	0	0	0
1700469120	0	0	0	0	0	0	0	0	0	0	0	0	0
1700469117	0	0	0	0	0	0	1	1	0	1	0	0	1
1700639124	0	0	0	0	0	0	0	0	0	0	0	0	0
1700639122	0	0	0	0	0	0	0	0	0	0	0	0	0

## Appendix

---

1700639117	0	0	0	0	0	0	0	0	0	0	0	0	0
1700759112	0	0	0	0	0	0	0	0	0	0	0	0	0
1700759111	0	0	0	0	0	0	0	0	0	0	0	0	0
2300289116	0	0	0	0	0	0	0	0	0	0	0	0	0
2300289115	0	0	0	0	0	0	0	0	0	0	0	0	0
2300579113	0	0	0	0	0	0	0	0	0	0	0	0	0
2400999115	0	0	0	0	0	0	0	0	0	0	0	0	0
1305749116	0	0	0	0	0	0	0	0	0	0	0	0	0
1300169121	0	0	0	0	0	0	0	0	0	0	0	0	0
1300169125	0	0	0	0	0	0	0	0	0	0	0	0	0
1300387143	0	0	0	0	0	0	0	0	0	0	0	0	0
1300387144	0	0	0	0	0	0	0	0	0	0	0	0	0
1300727127	0	0	0	0	0	0	0	0	0	0	0	0	0
1302667124	0	0	0	0	0	0	0	0	0	0	0	0	0
1302937131	0	0	0	0	0	0	0	0	0	0	0	0	0
1304127157	0	0	0	0	0	0	0	0	0	0	0	0	0
1304127156	0	0	0	0	0	0	0	0	0	0	0	0	0
1304127154	0	0	0	0	0	0	0	0	0	0	0	0	0
1304127153	0	0	0	0	0	0	0	0	0	0	0	0	0
1303147121	0	0	0	0	0	0	0	0	0	0	0	0	0
1303107174	0	0	0	0	0	0	0	0	0	0	0	0	0
1303107173	0	0	0	0	0	0	0	0	0	0	0	0	0
1301377168	0	0	0	0	0	0	0	0	0	0	0	0	0
1200377118	0	0	0	0	0	0	0	0	0	0	0	0	0
1200337122	0	0	0	0	0	0	0	0	0	0	0	0	0
1200067174	0	0	0	0	0	0	0	0	0	0	0	0	0
1700037123	0	0	0	0	0	0	0	0	0	0	0	0	0
1700037122	0	0	0	0	0	0	0	0	0	0	0	0	0
1700037120	0	0	0	0	0	0	0	0	0	0	0	0	0
1601207115	0	0	0	0	0	0	0	0	0	0	0	0	0
1601207114	0	0	0	0	0	0	0	0	0	0	0	0	0
1601167146	0	0	0	0	0	0	0	0	0	0	0	0	0
1600027126	0	0	0	0	0	0	0	0	0	0	0	0	0
1600027125	0	0	0	0	0	0	0	0	0	0	0	0	0
1600027124	0	0	0	0	0	0	0	0	0	0	0	0	0
1600027123	0	0	0	0	0	0	0	0	0	0	0	0	0
1600027122	0	0	0	0	0	0	0	0	0	0	0	0	0
1500387135	0	0	0	0	0	0	0	0	0	0	0	0	0

## Appendix

---

1302937134	0	0	0	0	0	0	0	0	0	0	0	0	0
1302937133	0	0	0	0	0	0	0	0	0	0	0	0	0
1700177146	0	0	0	0	0	0	0	0	0	0	0	0	0
1700177144	0	0	0	0	0	0	0	0	0	0	0	0	0
1700177139	0	0	0	0	0	0	0	0	0	0	0	0	0
1700177138	0	0	0	0	0	0	0	0	0	0	0	0	0
1700417113	0	0	0	0	0	0	0	0	0	0	0	0	0
1700417112	0	0	0	0	0	0	0	0	0	0	0	0	0
1700637119	0	0	0	0	0	0	0	0	0	0	0	0	0
1700747113	0	0	0	0	0	0	0	0	0	0	0	0	0
1700757118	0	0	0	0	0	0	0	0	0	0	0	0	0
1700757117	0	0	0	0	0	0	0	0	0	0	0	0	0
1700757116	0	0	0	0	0	0	0	0	0	0	0	0	0
1700757115	0	0	0	0	0	0	0	0	0	0	0	0	0
2300287133	0	0	0	0	0	0	0	0	0	0	0	0	0
2300577150	0	0	0	0	0	0	0	0	0	0	0	0	0
2300577149	0	0	0	0	0	0	0	0	0	0	0	0	0
2300577148	0	0	0	0	0	0	0	0	0	0	0	0	0
2300577147	0	0	0	0	0	0	0	0	0	0	0	0	0
2300577146	0	0	0	0	0	0	0	0	0	0	0	0	0
2400997127	0	0	0	0	0	0	0	0	0	0	0	0	0
1302937132	0	0	0	0	0	0	0	0	0	0	0	0	0
1300389146	0	0	0	0	0	0	0	0	0	0	0	0	0
1300729122	0	0	0	0	0	0	0	0	0	0	0	0	0
1300389147	0	0	0	0	0	0	0	0	0	0	0	0	0
1300389148	0	0	0	0	0	0	0	0	0	0	0	0	0
1300389149	0	0	0	0	0	0	0	0	0	0	0	0	0
1300729120	0	0	0	0	0	0	0	0	0	0	0	0	0
1303409130	0	0	0	0	0	0	0	0	0	0	0	0	0
1303409129	0	0	0	0	0	0	0	0	0	0	0	0	0
1303409128	0	0	0	0	0	0	0	0	0	0	0	0	0
1303409127	0	0	0	0	0	0	0	0	0	0	0	0	0
1303409126	0	0	0	0	0	0	0	0	0	0	0	0	0
1303409125	0	0	0	0	0	0	0	0	0	0	0	0	0
1303109153	0	0	0	0	0	0	0	0	0	0	0	0	0
1301389123	0	0	0	0	0	0	0	0	0	0	0	0	0
1301389106	0	0	0	0	0	0	0	0	0	0	0	0	0
1301379161	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix

---

1700179128	0	0	0	0	0	0	0	0	0	0	0	0	0
1700179127	0	0	0	0	0	0	0	0	0	0	0	0	0
1601209119	0	0	0	0	0	0	0	0	0	0	0	0	0
1601169155	0	0	0	0	0	0	0	0	0	0	0	0	0
1500389159	0	0	0	0	0	0	0	0	0	0	0	0	0
1500389158	0	0	0	0	0	0	0	0	0	0	0	0	0
1302939125	0	0	0	0	0	0	0	0	0	0	0	0	0
1302939124	0	0	0	0	0	0	0	0	0	0	0	0	0
1302939123	0	0	0	0	0	0	0	0	0	0	0	0	0
1302669123	0	0	0	0	0	0	0	0	0	0	0	0	0
1300909155	0	0	0	0	0	0	0	0	0	0	0	0	0
1300909154	0	0	0	0	0	0	0	0	0	0	0	0	0
1300909153	0	0	0	0	0	0	0	0	0	0	0	0	0
1300729121	0	0	0	0	0	0	0	0	0	0	0	0	0
1401599126	0	0	0	0	0	0	0	0	0	0	0	0	0
1401809127	0	0	0	0	0	0	0	0	0	0	0	0	0
1401809126	0	0	0	0	0	0	0	0	0	0	0	0	0
1700179131	0	0	0	0	0	0	0	0	0	0	0	0	0
1700179130	0	0	0	0	0	0	0	0	0	0	0	0	0
1700179129	0	0	0	0	0	0	0	0	0	0	0	0	0
1700419121	0	0	0	0	0	0	0	0	0	0	0	0	0
1700419120	0	0	0	0	0	0	0	0	0	0	0	0	0
1700419119	0	0	0	0	0	0	0	0	0	0	0	0	0
1700419118	0	0	0	0	0	0	0	0	0	0	0	0	0
1700469141	0	0	0	0	0	0	1	1	0	1	0	1	0
1700749124	0	0	0	0	0	0	0	0	0	0	0	0	0
1700749123	0	0	0	0	0	0	0	0	0	0	0	0	0
1700749122	0	0	0	0	0	0	0	0	0	0	0	0	0
1700749121	0	0	0	0	0	0	0	0	0	0	0	0	0
1700759117	0	0	0	0	0	0	0	0	0	0	0	0	0
1700759116	0	0	0	0	0	0	0	0	0	0	0	0	0
2300289123	0	0	0	0	0	0	0	0	0	0	0	0	0
2300289122	0	0	0	0	0	0	0	0	0	0	0	0	0
2300579123	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547102	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547103	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547105	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547106	0	0	0	0	0	0	0	0	0	0	0	0	0

## Appendix

---

1302547107	0	0	0	0	0	0	0	0	0	0	0	0	0
1200067103	0	0	0	0	0	0	0	0	0	0	0	0	0
1600027104	0	0	0	0	0	0	0	0	0	0	0	0	0
1200067104	0	0	0	0	0	0	0	0	0	0	0	0	0
1200337101	0	0	0	0	0	0	0	0	0	0	0	0	0
1200337102	0	0	0	0	0	0	0	0	0	0	0	0	0
1401877105	0	0	0	0	0	0	0	0	0	0	0	0	0
1401877104	0	0	0	0	0	0	0	0	0	0	0	0	0
1200337103	0	0	0	0	0	0	0	0	0	0	0	0	0
1401877102	0	0	0	0	0	0	0	0	0	0	0	0	0
1401877101	0	0	0	0	0	0	0	0	0	0	0	0	0
1306047105	0	0	0	0	0	0	0	0	0	0	0	0	0
1306047102	0	0	0	0	0	0	0	0	0	0	0	0	0
1306047101	0	0	0	0	0	0	0	0	0	0	0	0	0
1700757110	0	0	0	0	0	0	0	0	0	0	0	0	0
1700757106	0	0	0	0	0	0	0	0	0	0	0	0	0
1700757104	0	0	0	0	0	0	0	0	0	0	0	0	0
1700757103	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547112	0	0	0	0	0	0	0	0	0	0	0	0	0
1200337104	0	0	0	0	0	0	0	0	0	0	0	0	0
1700757101	0	0	0	0	0	0	0	0	0	0	0	0	0
1306047106	0	0	0	0	0	0	0	0	0	0	0	0	0
1306047103	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547110	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547109	0	0	0	0	0	0	0	0	0	0	0	0	0
1302547108	0	0	0	0	0	0	0	0	0	0	0	0	0
2300577112	0	0	0	0	0	0	0	0	0	0	0	0	0
2300577110	0	0	0	0	0	0	0	0	0	0	0	0	0
2300577109	0	0	0	0	0	0	0	0	0	0	0	0	0
2300577108	0	0	0	0	0	0	0	0	0	0	0	0	0
2300287105	0	0	0	0	0	0	0	0	0	0	0	0	0
2300287103	0	0	0	0	0	0	0	0	0	0	0	0	0
2300287102	0	0	0	0	0	0	0	0	0	0	0	0	0
2300287101	0	0	0	0	0	0	0	0	0	0	0	0	0
2300577107	0	0	0	0	0	0	0	0	0	0	0	0	0
2300577106	0	0	0	0	0	0	0	0	0	0	0	0	0
2300577105	0	0	0	0	0	0	0	0	0	0	0	0	0
2300577104	0	0	0	0	0	0	0	0	0	0	0	0	0

## Appendix

---

2300577103	0	0	0	0	0	0	0	0	0	0	0	0	0
2300577102	0	0	0	0	0	0	0	0	0	0	0	0	0
2400997107	0	0	0	0	0	0	0	0	0	0	0	0	0
2400997106	0	0	0	0	0	0	0	0	0	0	0	0	0
2400997104	0	0	0	0	0	0	0	0	0	0	0	0	0
2400997103	0	0	0	0	0	0	0	0	0	0	0	0	0
2400997102	0	0	0	0	0	0	0	0	0	0	0	0	0
2400997101	0	0	0	0	0	0	0	0	0	0	0	0	0
1400459101	0	0	0	0	0	0	0	0	0	0	0	0	0
1400459102	0	0	0	0	0	0	0	0	0	0	0	0	0
1400459103	0	0	0	0	0	0	0	0	0	0	0	0	0
1402099101	0	0	0	0	0	0	0	0	0	0	0	0	0
1200339101	0	0	0	0	0	0	0	0	0	0	0	0	0
1500469105	0	0	0	0	0	0	0	0	0	0	0	0	0
1500469104	0	0	0	0	0	0	0	0	0	0	0	0	0
1500469103	0	0	0	0	0	0	0	0	0	0	0	0	0
1200339102	0	0	0	0	0	0	0	0	0	0	0	0	0
1500329107	0	0	0	0	0	0	0	0	0	0	0	0	0
1500329106	0	0	0	0	0	0	0	0	0	0	0	0	0
1500329104	0	0	0	0	0	0	0	0	0	0	0	0	0
1500329103	0	0	0	0	0	0	0	0	0	0	0	0	0
1500329102	0	0	0	0	0	0	0	0	0	0	0	0	0
1500329101	0	0	0	0	0	0	0	0	0	0	0	0	0
1200339103	0	0	0	0	0	0	0	0	0	0	0	0	0
1306049101	0	0	0	0	0	0	0	0	0	0	0	0	0
1200339106	0	0	0	0	0	0	0	0	0	0	0	0	0
1200339109	0	0	0	0	0	0	0	0	0	0	0	0	0
1300729108	0	0	0	0	0	0	0	0	0	0	0	0	0
1300729104	0	0	0	0	0	0	0	0	0	0	0	0	0
1300729103	0	0	0	0	0	0	0	0	0	0	0	0	0
1402099108	0	0	0	0	0	0	0	0	0	0	0	0	0
1402099105	0	0	0	0	0	0	0	0	0	0	0	0	0
1300169101	0	0	0	0	0	0	0	0	0	0	0	0	0
1306049103	0	0	0	0	0	0	0	0	0	0	0	0	0
1304169107	0	0	0	0	0	0	0	0	0	0	0	0	0
1304169105	0	0	0	0	0	0	0	0	0	0	0	0	0
1304169103	0	0	0	0	0	0	0	0	0	0	0	0	0
1300729107	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix

---

1700639104	0	0	0	0	0	0	0	0	0	0	0	0	0
1700639102	0	0	0	0	0	0	0	0	0	0	0	0	0
1700639101	0	0	0	0	0	0	0	0	0	0	0	0	0
1700759109	0	0	0	0	0	0	0	0	0	0	0	0	0
1700759106	0	0	0	0	0	0	0	0	0	0	0	0	0
1700759105	0	0	0	0	0	0	0	0	0	0	0	0	0
1700759104	0	0	0	0	0	0	0	0	0	0	0	0	0
1700759102	0	0	0	0	0	0	0	0	0	0	0	0	0
1700759101	0	0	0	0	0	0	0	0	0	0	0	0	0
2300289105	0	0	0	0	0	0	0	0	0	0	0	0	0
2300289104	0	0	0	0	0	0	0	0	0	0	0	0	0
2300289103	0	0	0	0	0	0	0	0	0	0	0	0	0
2300289102	0	0	0	0	0	0	0	0	0	0	0	0	0
2300289101	0	0	0	0	0	0	0	0	0	0	0	0	0
2300579101	0	0	0	0	0	0	0	0	0	0	0	0	0
2400999109	0	0	0	0	0	0	0	0	0	0	0	0	0
2400999108	0	0	0	0	0	0	0	0	0	0	0	0	0
2400999105	0	0	0	0	0	0	0	0	0	0	0	0	0
2400999104	0	0	0	0	0	0	0	0	0	0	0	0	0
2400999103	0	0	0	0	0	0	0	0	0	0	0	0	0
231	0	0	0	0	0	0	0	0	0	0	0	0	0
251	0	0	0	0	0	0	0	0	0	0	0	0	0
295	0	0	0	0	0	0	0	0	0	0	0	0	0
366	0	0	0	0	0	0	0	0	0	0	0	0	0
558	0	0	0	0	0	0	0	0	0	0	0	0	0
589	0	0	0	0	0	0	0	0	0	0	0	0	0
616	0	0	0	0	0	0	0	0	0	0	0	0	0
626	0	0	0	0	0	0	0	0	0	0	0	0	0
671	0	0	0	0	0	0	0	0	0	0	0	0	0
702	0	0	0	0	0	0	0	0	0	0	0	0	0
704	0	0	0	0	0	0	1	1	0	1	0	1	0
708	0	0	0	0	0	0	0	0	0	0	0	0	0
712	0	0	0	0	0	0	0	0	0	0	0	0	0
901	0	0	0	0	0	0	0	0	0	0	0	0	0
902	0	0	0	0	0	0	0	0	0	0	0	0	0
927	0	0	0	0	0	0	0	0	0	0	0	0	0
928	0	0	0	0	0	0	0	0	0	0	0	0	0
929	0	0	0	0	0	0	0	0	0	0	0	0	0



**Table 133: Labels for Table 132**

<b>DA</b>	Those identifying predicative agreement	<b>DH</b>	Those identifying anaphorical agreement
<b>DB</b>	Those identifying predicative no agreement	<b>DI</b>	Those identifying anaphorical no agreement
<b>DC</b>	Those identifying predicative context agreement	<b>DJ</b>	Those identifying anaphorical context agreement
<b>DD</b>	Those identifying predicative no context agreement	<b>DK</b>	Those identifying anaphorical no context agreement
<b>DE</b>	Those identifying predicative target like	<b>DL</b>	Those identifying anaphorical target like
<b>DF</b>	Those identifying predicative not-target like	<b>DM</b>	Those identifying anaphorical not-target like
<b>DG</b>	Those identifying anaphorical		

**Table 134 Country of birth of the bilingual participants**

Language group	Country of birth					
	Germany	Russia	Kazakhstan	Turkey	Ukraine	N.A.
Russian-German	45	8	4		2	41
Turkish-German	61	0	0	2	0	37

## Appendix

**Table 135: Overview of determinative *subclauses*, the mean values, standard deviation in parentheses, t-tests and Cohen's d**

		Grade 7	Grade 9	t-test	dCohen
Subclauses	GER	1.66(1.45)	2.13(1.42)	t(526.44)= -0.2479, p= .5979	0.02
	RUS-GER	2.06(1.86)	2.54(1.58)	t(322.25)= -1.032, p= .849	0.11
	TUR-GER	1.3(1.3)	2.1(1.63)	t(112.25)= -1.61, p= .945	0.27
	ENG	0.82(0.26)	1.46(1.16)	t(7.689)= -1.53, p=.92	0.77
when	GER	0.52(0.65)	0.56(0.64)	t(523.8)= 0.1741, p= .4309	0.01
	RUS-GER	0.7(1.02)	0.64(0.61)	t(307.38)= 0.0534, p= .479	5.84E-03
	TUR-GER	0.63(0.88)	0.66(0.85)	t(95.949)= -0.077, p= .53	0.01
	ENG	0.13(0.28)	0.71(0.3)	t(13.92)=-.955, p=.822	0.48
what	GER	0.22(0.48)	0.21(0.36)	t(516.79)= 0.4814, p= .3152	0.04
	RUS-GER	0.41(0.73)	0.65(0.94)	t(336.38)= -0.9719, p= .834	0.1
	TUR-GER	0.18(0.37)	0.44(0.88)	t(147.04)= -1.526, p= .936	0.22
	ENG	0.03(0.09)	0.34(0.48)	t(7.465)=-1.76, p=.941	0.88
if	GER	0.27(0.55)	0.48(0.73)	t(535.89)= -0.5321, p= .7026	0.05
	RUS-GER	0.36(0.78)	0.42(0.63)	t(319.94)= -0.5247, p= .699	0.06
	TUR-GER	0.1(0.43)	0.36(0.67)	t(126.02)= -1.581, p= .942	0.25
	ENG	0.09(0.14)	0.41(0.64)	t(7.65)=-1.389, p=.898	0.69
but	GER	0.17(0.39)	0.15(0.31)	t(522.86)= 0.03039, p= .4879	2.61E-03
	RUS-GER	0.1(0.34)	0.29(0.56)	t(345.67)= -1.193, p= .883	0.13
	TUR-GER	0.1(0.26)	0.11(0.39)	t(119.12)= -0.09, p= .536	0.01
	ENG	0.05(0.14)	0(0)	t(7)=1, p=.175	0.5
how	GER	0.1(0.27)	0.15(0.33)	t(533.74)= -0.3447, p= 0.6348	0.03
	RUS-GER	0.13(0.46)	0.08(0.24)	t(310.79)= 0.157, p= .438	0.02
	TUR-GER	0.48(0.17)	0.13(0.25)	t(121.94)= -1.33, p= .908	0.21
	ENG	0.08(0.15)	0.02(0.06)	t(9.282)=1.007, p=.169	0.5
which	GER	0.11(0.27)	0.14(0.42)	t(543.58)= -0.3283, p= .6286	0.03
	RUS-GER	0.1(0.33)	0.12(0.30)	t(323.26)= -0.383, p= .649	0.04
	TUR-GER	0.02(0.09)	0.11(0.36)	t(135.08)= -1.617, p= .946	0.21
	ENG	0.03(0.08)	0.07(0.19)	t(9.487)=-0.525, p=.694	0.26
where	GER	0.07(0.21)	0.15(0.3)	t(540.5)=-0.7013, p= .7583	0.06
	RUS-GER	0.1(0.31)	0.06(0.23)	t(320.59)=0.0087, p= .497	9.40E-04
	TUR-GER	0.03(0.16)	0.07(0.21)	t(111.77)= -0.717, p= .762	0.12
	ENG	0.4(0.11)	0.1(0.21)	t(10.627)=-0.673, p=.742	0.34
before	GER	0.06(0.19)	0.014(0.28)	t(536.61)= -0.6227, p= .7331	0.05
	RUS-GER	0.04(0.19)	0.06(0.21)	t(313.22)= 0.0278, p= .489	3.02E-03

	TUR-GER	0.03(0.11)	0.11(0.39)	t(140.89)= -1.327, p= .907	0.18
	ENG	0.05(0.13)	0.07(0.2)	t(12.156)=-0.281, p=.608	0.14
because	GER	0.04(0.15)	0.12(0.26)	t(537.24)= -0.539, p= .705	0.05
	RUS-GER	0.08(0.26)	0.08(0.22)	t(319.21)= -0.152, p= .561	0.02
	TUR-GER	0.08(0.28)	0.03(0.13)	t(79.96)= 0.59, p= .278	0.11
	ENG	0(0)	0.02(0.06)	t(7)=-1, p=.825	0.5
who	GER	0.08(0.24)	0.02(0.09)	t(513.97)= 0.4156, p= .3389	0.04
	RUS-GER	0.06(0.26)	0.11(0.3)	t(338.05)= -0.649, p= .741	0.07
	TUR-GER	0.07(0.24)	0.01(0.08)	t(77.643)= 0.72, p=.237	0.14
	ENG	0(0)	0(0)	0(0)	0(0)
while	GER	0.01	0.02	t(532.65)= -0.1499, p= .5595	0.01
	RUS-GER	0(0)	0.02	t(336.35)= -0.35, p= 0.637	0.04
	TUR-GER	0(0)	0.03	t(99)= -1.417, p= .92	0.17
	ENG	0.28(0.32)	0.23(0.46)	t(12.51)=0.234, p=.409	0.12
why	GER	0(0)	0(0)	t(510.07)= 0.128, p= .449	0.01
	RUS-GER	0(0)	0(0)	t(294.1)= 0.2, p= .421	0.02
	TUR-GER	0.02	0(0)	t(74.265)= 0.447, p= .328	0.09
	ENG	0(0)	0(0)	0(0)	0(0)

### 8.3 Abstract (English)

This dissertation focused on crosslinguistic influence (CLI) in the research field of second and third language acquisition, bilingualism, heritage speakers and multilingualism. The role of the background languages as influencing factors was examined in second and third language learners of English. The participants were monolingual Germans, unbalanced heritage speakers of Russian-German and Turkish-German and native speakers of English. The bilinguals grow up in Germany and learn English as the third language in school. The use of demonstratives by these bilinguals were compared to the performance of German monolinguals who learn English as the second language in school. As a control, the performance of English (adult) native speakers was compared to the other language groups. Unfortunately, we only collected data of English native speakers who are adults, due to the Corona pandemic.

The focus was to find evidence for differences between monolinguals and bilinguals who learn English as the additional second or third language.

The research question was whether one of the background languages serves as a source of CLI, namely whether German as the dominant language or the heritage languages Russian and Turkish influenced the use of demonstratives in written English or both background languages. Hence, we presented and discussed different theories and models of third language acquisition, such as the *absolute L1 transfer* (Herms 2014), the *L2 Status Factor Model* (Bardel & Falk 2007), the *Cumulative Enhancement Model* (Flynn et al. 2004), the *Typological Primacy Model* (Rothman 2011), the *Linguistic Proximity Model* (Westergaard et al. 2017) and the *Scalpel Model* (Slabakova 2017). Furthermore, we discussed whether the unbalanced bilingual heritage speakers have an advantage over monolinguals or whether the monolinguals outperformed the bilinguals. Therefore, additional social background variables were examined, too, i.e., the socio-economic status, age, gender, the type of school, school grades, the language use of bilinguals and the attitudes towards English.

Since this study investigated young, unbalanced heritage speakers who learn English as the third language in school, we significantly add to third language acquisition, because other study mostly focused on balanced bilinguals. In addition, our data sample contains a large number of participants (n=318), and the use of demonstratives is rarely examined in other studies in third language acquisition.

As a basis for this dissertation, the data of the project *Mehrsprachigkeitsentwicklung im Zeitverlauf (MEZ)* was used. This study was carried out by the University of Hamburg between 2015 and 2018 and collected data at four different time periods. Two age cohorts, namely 12- and 16-year-old students, with the background languages Russian and Turkish were examined. In this study, we used data from wave 1a. The written task was to write about a typical German breakfast. In addition, the participants had a picture story that included nine pictures. For the English natives, we adapted this story and used new pictures that we provided via SoSciSurvey. Within 30 minutes, the participants had to write about the German or English breakfast like a journalist. In addition, they had to fill in two background questionnaires. One included questions about personal information, i.e., age, gender, foreign languages, friends, motivation to learn English. The other concerned social networks, linguistic skills, and attitudes towards school and additional languages. Within the online survey for the English natives, additional questions regarding their age, gender and languages were addressed, too. Since the English natives are adults, we divided them into 20- and 40-year-old participants. Then, we coded the data manually and analyzed the formal correctness of demonstratives. The central part of this dissertation were four case studies. First, the overall use of demonstrative and its three categories was

analyzed. Second, the use of articles, namely definite, indefinite and zero articles were examined. The third case study focused on subclauses as a counterpart to the use of demonstratives and finally, the last case study investigated lexical transfer.

In sum, we identified differences between the language groups of second and third language learners of English which mostly fade with increasing age. Due to the dominant status, we argue that German is the main source for cli-effects, visible in lexical transfer. Furthermore, the proficiency in the heritage language is probably lower. Another variable that explains the results is the typological similarity between German and English. We found a monolingual advantage in the use of formal correctness of demonstratives which occurred in the older cohort and a bilingual advantage in the occurrence of lexical transfer. In the Russian group, an advantage as well as a disadvantage were found, too. In general, the acquisition of a third language is not automatically facilitative when someone is an unbalanced heritage speaker.

#### **8.4 Abstract (German)**

Im Rahmen der Forschungsgebiete des Zweit- und Drittspracherwerbs, Bilingualismus, der Herkunftssprachen und des Multilingualismus untersucht diese Studie, ob und inwiefern Unterschiede zwischen monolingualen Deutschen und HerkunftssprecherInnen des Russischen und des Türkischen bestehen. Im Fokus dabei stehen die Einflüsse der Hintergrundsprachen. Die bilingualen Teilnehmer sind in Deutschland aufgewachsen und lernen Englisch als Drittsprache in der Schule, wohingegen Englisch für die monolingualen Deutschen die Zweitsprache ist. Als weitere Kontrollgruppe dienen englische Muttersprachler, die im englischsprachigen Ausland leben. Auf Grund von Corona war es nicht möglich, Daten einer jüngeren Kontrollgruppe zu erheben. Deshalb sind die englischen Muttersprachler in dieser Studie junge und ältere Erwachsene.

Der Schwerpunkt dieser Studie war es, Unterschiede zwischen monolingualen und bilingualen Sprechern in der schriftlichen Leistung des Englischen zu analysieren. Dabei stand im Vordergrund, ob die Hintergrundsprachen einen Einfluss auf das Englische ausüben oder ob das Deutsche als Umgebungssprache dominanter ist. Als erstes wurden dafür aktuelle Theorien und Modelle aus dem Drittspracherwerb vorgestellt. Dazu gehören unter anderem *the absolute L1 transfer* (Herms 2014), *the L2 Status Factor Model* (Bardel & Falk 2007), *the Cumulative Enhancement Model* (Flynn et al. 2004), *the Typological Primacy Model* (Rothman 2011), *the Linguistic Proximity Model* (Westergaard et al. 2017) und *the Scalpel Model* (Slabakova 2017). Diese haben gegensätzliche Auffassungen und

Ergebnisse, die innerhalb dieser Studie diskutiert werden. Innerhalb des Drittspracherwerbs gibt es immer wieder Studien, die analysieren, ob Mehrsprachigkeit ein Vorteil ist. Auch darauf wird innerhalb der Fallstudien eingegangen. Zusätzlich wurden weitere soziale Variablen in die statistischen Analysen miteinbezogen. Dazu gehören beispielsweise der sozioökonomische Status, der Schultyp, das Geschlecht, das Alter und die Lernmotivation.

Durch diese Studie wird ein wichtiger Beitrag zum Drittspracherwerb geleistet, da speziell auf jüngere bilinguale HerkunftssprecherInnen eingegangen wird. Des Weiteren ist die Stichprobe mit 318 Teilnehmern verhältnismäßig groß. Zusätzlich ist die Erforschung von Demonstrativpronomen im Drittspracherwerb selten und eher im Erst- und Zweitspracherwerb zu finden. Anhand englischer Muttersprachler (Kontrollgruppe) wird die schriftliche Leistung im Englischen von monolingualen Deutschsprechern mit denen von Deutsch-Russischen und Deutsch-Türkischen Bilingualen verglichen. Außerdem werden diese in zwei Altersgruppen eingeteilt: 12- und 16-Jährige. Da die englischen Muttersprachler erwachsen sind, werden diese in die Gruppen 20- und 40-Jährige geteilt.

Grundlage dieser Studie ist das Projekt „Mehrsprachigkeitsentwicklung im Zeitverlauf“ (MEZ), das die Universität Hamburg zwischen 2015 und 2018 durchgeführt hat. Es gab vier Erhebungszeiträume. Für diese Studie werden die Daten aus der Welle 1a verwendet. Die Teilnehmer sind 12- und 16-jährige Schüler mit den Herkunftssprachen Russisch und Türkisch. Eine der Schreibaufgaben war es, anhand einer Bildersequenz ein typisches deutsches Frühstück zu beschreiben. Die Teilnehmer hatten 30 Minuten Zeit für diese Aufgabe. Für die englischen Muttersprachler wurde diese Bildersequenz angepasst und online via SoScisurvey bereitgestellt. Auch sie sollten innerhalb 30 Minuten ein typisches englisches (amerikanisches) Frühstück beschreiben. Zusätzlich gab es bei MEZ zwei Fragebögen. Der erste beinhaltete Fragen zu persönlichen Informationen wie Alter, Geschlecht und Fremdsprachen. Im zweiten ging es um soziale Netzwerke, Motivation in der Schule und generell dem Fremdsprachenlernen gegenüber. Auch die englischen Muttersprachler hatten einen kurzen Fragebogen, der persönliche Informationen wie Alter, Geschlecht und Sprachen beinhaltete. Die Daten wurden manuell codiert und analysiert.

Diese Studie besteht aus vier Fallstudien. Erstens wurde die Verwendung von Demonstrativpronomen und deren verschiedene Kategorien untersucht. In der zweiten Fallstudie stand die Nutzung von definiten, indefiniten und Nullartikeln im Vordergrund. Danach wurde untersucht, ob die Teilnehmer anstatt des Nebensatzes „dass“ weitere komplexe Nebensatzstrukturen verwenden. Als letztes wurde lexikalischer Transfer untersucht.

Zusammenfassend konnten Unterschiede zwischen den Sprachgruppen identifiziert werden, die weitestgehend mit steigendem Alter verschwanden. Auf Grund des dominanten Status argumentieren wir für Deutsch als hauptsächlichen Einflussfaktor für cli-Effekte, erkennbar in lexikalischem Transfer. Außerdem war die Fertigkeit in den Herkunftssprachen wahrscheinlich geringer. Eine weitere Variable, die die Ergebnisse unterstützt, ist die typologische Ähnlichkeit zwischen Deutsch und Englisch. Wir fanden einen monolingualen Vorteil bei der Verwendung von formal korrekten Demonstrativa, die in der älteren Kohorte sichtbar waren und einen bilingualen Vorteil hinsichtlich des lexikalischen Transfers. In der russischen Sprachgruppe gab es einen Vor- und Nachteil. Allgemein lässt sich sagen, dass unausgeglichene bilinguale Herkunftssprecher eine dritte Sprache nicht automatisch erleichternd erwerben.

## 8.1 Declaration on oath

Name: Barkallah    Vorname: Stefanie    geb. am: 27.09.1988

Matrikel-Nr.: 6696221

Ich versichere an Eides Statt durch meine eigene Unterschrift, dass ich die vorliegende Arbeit selbstständig und ohne fremde Hilfe angefertigt und alle Text-Stellen, die wörtlich oder annähernd wörtlich aus Veröffentlichungen entnommen sind, als solche kenntlich gemacht und mich auch keiner anderen als der angegebenen Literatur, insbesondere keiner im Quellenverzeichnis nicht benannten Internet-Quellen, bedient habe. Diese Versicherung bezieht sich auch auf die in der Arbeit gelieferten Zeichnungen, Skizzen, bildlichen Darstellungen und dergleichen.

Ich versichere, diese Arbeit nicht bereits in einem anderen Prüfungsverfahren eingereicht zu haben und bestätige, dass die eingereichte schriftliche Fassung derjenigen auf dem Speichermedium entspricht.

Hamburg, den \_\_\_\_\_