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ACQUISITION OF FUNCTIONAL MORPHOLOGY IN L2 RUSSIAN BY ADULT L1 TURKISH LEARNERS: EVIDENCE FROM SPLIT D-LINKED WH-QUESTIONS

DOCTORATE THESIS

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Thesis Advisor: Asst. Prof. Dr. Filiz ÇELE

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THESIS EXAM REPORT

DECLARATION

I hereby declare with respect that the study “Acquisition Of Functional Morphology In L2 Russian By Adult L1 Turkish Learners: Evidence From Split D-Linked Wh-Questions”, which I submitted as a PhD thesis, is written without any assistance in violation of scientific ethics and traditions in all the processes from the Project phase to the conclusion of the thesis and that the works I have benefitted from are those shown in the References. (01/03/2023)

Dzmitry KULSHA

FOREWORD

Writing this dissertation has been one of the most challenging things I have pursued so far in my life, and it has only been possible thanks to a special support, love, guidance, and encouragement from many people, and I would love to express my gratitude towards them.

My dear beautiful wife Anastasiya, who has always been the driving and loving force, and whose support has always been limitless. It is not enough to thank you for tenderly pushing me and helping me get back on the track once and again. You know me and what it has been for me better than anyone.

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And thanks to my mom and my dad, without whom I would not just be possible. Sometimes they would doubt if I needed it, and this has definitely been motivating me to finish it.

My gratitude also extends to my wonderful dissertation committee, and I am truly honored to have received their invaluable help and guidance. Asst. Prof. Dr. Pavel Logačev has contributed to keeping the dissertation highly effective and as minimal as needed to make it to the point and working. His advice regarding the design of the tasks and the statistical analyses has been extremely important to elicit the data to be analyzed. I appreciate your time that you kindly spent on me during a very special time of your life. I am sorry that towards the final stage Dr. Logačev had to leave due to certain circumstances. Dear Asst. Prof. Dr. Ayşe Betül Topçu has always been encouraging and supporting, wishing luck and modestly sharing her own precious experiences for me to keep the correct focus. Asst. Prof. Dr. Serkan has recently joined

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Due to the time and space constraints I cannot mention all the people who have contributed to my writing the dissertation. However, I would like to thank all my friends and colleagues, whose help has been crucial in terms of inspiration, recruiting participants, to all the participants in the pilot studies and the main experiment. Thank you all who have made this dissertation possible.

To my sons, Miron and Andrey Kulsha

April, 2023 Dzmitry KULSHA

ACQUISITION OF FUNCTIONAL MORPHOLOGY IN L2 RUSSIAN BY ADULT L1 TURKISH LEARNERS: EVIDENCE FROM SPLIT D-LINKED WH-QUESTIONS

ABSTRACT

This study explores the acquisition of functional morphology and adjective agreement in L2 Russian by adult L1 Turkish learners in the generative perspective. Our research focuses on the acquisition of adjective agreement in split discourse-linked *wh*-questions. The question posed is to what extent L2 Russian learners make correct decisions in connecting the *wh*-word, specified for phi-features, with its headword through employing implicit knowledge of the uninterpretable features realized as an inflection. The above domains, along with NP splitting, are absent from the participants' L1. The enquiry specifically examines L2 acquisition of short- and long-distance NP splits. This domain of L2 Russian is predicted to be unacquirable by the Interpretability Hypothesis (IH, Tsimpli & Mastropavlou, 2007) and the Shallow Structure Hypothesis (SSH, Clahsen & Felser, 2006), whereas the Bottleneck Hypothesis (BH, Slabakova, 2008) and the Full Transfer/Full Access Hypothesis (FTFAH, Schwartz & Sprouse, 1996) regard it to be acquirable.

The data come from the results of a Semantic Entailments task administered via *Google Forms,* where 64 adult L1 Turkish/L2 Russian learners of A2 through C2 proficiency levels selected a response to split discourse-linked *wh*-questions supplied with a preceding context. 56 L1 Russian speakers constitute the control group. Six conditions are utilized through manipulating noun genders and the inflection on the wh-word.

Our findings demonstrate a decreased accuracy in the L2 Russian group: 84% for short-distance splits and 62% for long-distance splits; the L1 group performs over the top and displays no variability regarding split types. Throughout proficiency levels, we observe a stark difference in L2 Russian learners' treatment of short-distance and long-distance conditions: accuracy is relatively high for short-distance splits (72% in

A2 and 94% - in B2/C2). Conversely, accuracy for long-distance splits is 38% in A2 learners but gradually rises to about 84% in B2/C2 levels. This outcome raises issues as to why L2 learners' accuracy is decreased with accusative case morphology, which is acquired prior to dative case morphology. We suspect the reason to be thr additional processing load associated with long-distance splits. Hence, this domain of L2 Russian, though challenging at lower levels of proficiency, may be successfully acquired at higher levels, which overall supports the FTFAH and the BH, and casts doubt on the IH and the SSH.

The results of the study can be applied in L2 syllabus preparation: special attention should be paid to designing activities aimed at developing processability skills in L2.

Keywords: Holism, Holistic Approach, Leadership, Higher Education, Transdisciplinary Approach

D1 TÜRKÇE / D2 RUSÇA OLAN YETİŞKİNLERİN RUSÇADA SIFATLARA EKLENEN VE BÖLÜNMÜŞ AD ÖBEKLERİNDE SIFAT UYUŞMASINI SAĞLAYAN BİÇİMBİLGİSEL EKLERİN EDİNİMİ

ÖZET

Bu çalışma, yetişkin D1 Türkçe öğrenenlerin D2 Rusçada işlevsel biçimbilim ve sıfat uyumu edinimlerini üretimsel perspektifte incelemektedir. Araştırmamız, bölünmüş söylem bağlantılı ne-sorularındaki sıfat uyumu edinimine odaklanmaktadır. Sorulan soru, D2 Rusça öğrenenlerin bir çekim olarak gerçekleşen yorumlanamaz özelliklerin örtük bilgisini kullanarak, phi-özellikleri için belirtilen ne-sözcüğünü ana sözcük ile bağlarken ne ölçüde doğru kararlar verdiğidir. Yukarıdaki alanlar, NP bölme ile birlikte, katılımcıların D1'inde bulunmamaktadır. Bu araştırma özellikle kısa ve uzun mesafeli NP bölünmelerinin D2 edinimini incelemektedir. D2 Rusçanın bu alanının Interpretability Hipotezi (IH, Tsimpli & Mastropavlou, 2007) ve Yüzey Yapı Hipotezi (YYH, Clahsen & Felser, 2006) tarafından edinilemez olduğu öngörülürken, Bottleneck Hipotezi (BH, Slabakova, 2008) ve Tam Transfer/Tam Erişim Hipotezi (TTTEH, Schwartz & Sprouse, 1996) edinilebilir olduğunu düşünmektedir.

Veriler, A2 ile C2 yeterlik seviyeleri arasında 64 yetişkin D1 Türkçe/D2 Rusça öğrenicisinin, bir önceki bağlamla birlikte verilen söylem bağlantılı ne-sorularına bir yanıt seçtiği, Google Forms aracılığıyla uygulanan bir Anlamsal Yüklemler görevinin sonuçlarından elde edilmiştir. Kontrol grubu, D1 Rusça konuşan kişiden oluşmaktadır. İsim cinsiyetleri ve ne-kelimesi üzerindeki çekim manipüle edilerek altı koşul kullanılmıştır.

Bulgularımız, D2 Rusça grubunda doğruluğun azaldığını göstermektedir: Kısa mesafeli bölmeler için %84 ve uzun mesafeli bölmeler için %62; D1 grubu en üst düzeyde performans göstermekte ve bölme türleri açısından herhangi bir değişkenlik göstermemektedir. Yeterlilik seviyeleri boyunca, D2 Rusça öğrenenlerin kısa mesafe ve uzun mesafe koşullarını ele alışlarında belirgin bir fark gözlemliyoruz: doğruluk kısa mesafe bölmeler için nispeten yüksektir (A2'de %72 ve B2/C2'de %94). Tersine,

uzun mesafeli bölmeler için doğruluk A2 öğrencilerinde %38 iken B2/C2 seviyelerinde kademeli olarak yaklaşık %84'e yükselmektedir. Bu sonuç, D2 öğrenicilerinin doğruluğunun, datif durum morfolojisinden önce edinilen akuzatif durum morfolojisi ile neden azaldığı sorusunu gündeme getirmektedir. Bunun nedeninin uzun mesafeli bölünmelerle ilişkili ek işlem yükü olduğundan şüpheleniyoruz. Dolayısıyla, D2 Rusçanın bu alanı, düşük yeterlilik seviyelerinde zorlayıcı olsa da, daha yüksek seviyelerde başarılı bir şekilde edinilebilir, bu da genel olarak TTTEH ve BH'yi destekler ve IH ve YYH'ye şüphe düşürür.

Çalışmanın sonuçları D2 müfredatının hazırlanmasında uygulanabilir: D2'de işlenebilirlik becerilerini geliştirmeyi amaçlayan etkinliklerin tasarlanmasına özel dikkat gösterilmelidir.

Anahtar Kelimeler: D2 Rusça, D1 Türkçe, bölünmüş söylem-bağlantılı ne-soruları, biçimbilgisel ekler, sıfat ekleri

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LIST OF ABBREVIATIONS

[Q] : Interpretable feature [Question]

[*u*] : Uninterpretable feature

[*u*N] : Uninterpretable feature [Noun]

1SG : 1st person singular

2PL : 2nd person plural

ABL : Ablative

ACC : Accusative case

ADJ : Adjective

AdvP : Adverbial phrase

AgrIOP : Indirect object agree

AgrOP ; Object agreement phrase

ANIM : Animate

AP : Adjective phrase

AspP : Aspectual phrase

BH : Bottleneck Hypothesis

C : Complementizer

CEFR : Common European Framework of Reference for Languages

COP : Copula

CP : Complementizer phrase

CSR : Contemporary Standard Russian

DAT : Dative case

D-linked : Discourse-linked

DP : Determiner phrase

ECM : Exceptional case marking

EPP : Extended Projection Principle

F : Feminine

GEN : Genitive case

IFH : Interface Hypothesis

IH : Interpretability Hypothesis

INANIM : Inanimate

L1 : Language 1, native language

L2 : Language 2, foreign language

LAD : Language acquisition device

LBC : Left Branch Condition

LBE : Left-Branch Extraction

LF : Logical Form

LOC : Locative

M : Masculine

MSIH : Missing Surface Inflection Hypothesis

N : Neutral gender

NEG : Negation

N-ellipsis : Noun-ellipsis

NOM : Nominative case

NP : Noun phrase

NP/DP : Noun phrase / Determiner phrase

O : Object

Ø : Zero-ending

PF : Phonetic Form

PL : plural number

PoS : Poverty of the Stimulus

POSS : Possessive

PP : Prepositional phrase

Pron : Pronoun, pronominal

PRS : Present

PST : Past

RDH : Representational Deficit Hypothesis

RM : Remnant Movement

RQ : Research question

S : Subject

SG : Singular number

SLA : Second language acquisition

SLI : Specific language impairments

SOV : Subject-Object-Verb

Spec : Specifier

SVO : Subject-Verb-Object

T : Tense

T′ : T-bar

TP : Functional Tense projection

UG : Universal grammar

V : Verb

v : Verb-shell

V′ : V-bar

vP : Little verb phrase

VP : Verb phrase

vs. : Versus

Wh-question : Constituent question

wh-word : restrictor ‘which’ (English), ‘Kakoj’ (Russian), ‘Hangi’ (Turkish)

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TRANSLITERATION AND GLOSSING

The transliterated Russian words, phrases, and sentences in the text of the current thesis follow the Scientific Transliteration system for Cyrillic, which is widely accepted and used in texts on Slavic linguistics. Each letter of the Russian alphabet is manifested by an original letter (some of them with diacritics) or a combination of letters. An entire description of the Scientific Transliteration system for Cyrillic is available at https://en.wikipedia.org/wiki/Scientific_transliteration_of_Cyrillic.

Glossing abbreviations follow the conventions of the Leipzig Glossing Rules: http://www.eva.mpg.de/lingua/resources/glossing-rules.php. It should be noted that the glosses in the current study focus on the analyses rather than the data. Due to this some grammatical information or categories may be omitted from the glosses in the text below.

I. INTRODUCTION

A. Background

Acquisition of functional morphology is regarded by many as one of the most challenging domains in second language acquisition. Specifically, adult L2 learners tend to experience issues in attaining native-like accuracy and acquiring phenomena absent from their L1 grammars. This widely reported observation (Bailey et al, 1974; Lardiere, 1998; Prévost & White, 2000; White, 2003) led to emergence of different schools interpreting reasons for variability in L2 grammars, which is understood as omitting or/and substituting functional morphology in obligatory contexts (Haznedar & Schwartz, 1997; White, 2003). Since the variability problem may not disappear even as L2 learners approximate end-state L2 grammars, there have been attempts to interpret the reasons behind such an inconsistancy. Whereas some investigators assert that the problem lies in the corrupt or deficient representation of a L2 grammar (Jiang, 2004; Hawkins & Chan, 1997; Hawkins & Hattori, 2006; Hawkins & Liszka, 2003; Hawkins, 2003; Tsimpli & Dimitrakopoulou, 2007; Tsimpli & Mastropavlou, 2007, among others), others argue that it does not pertain to a representational deficit and may account for other factors, both language-internal or language-external (Haznedar & Schwartz, 1997; Lardiere; 1998, 2008, 2009; Prévost & White, 2000; Slabakova, 2008, 2016, 2019; Sorace & Filiaci, 2006; White, 2003, among others).

Hypotheses based on a representational deficit as the reason for L2 grammar variability link it to age-related constraints disallowing full access to the language acquisition device (LAD), which is allegedly responsible for language acquisition and is fully accessible only during the Critical age for L1 acquisition. Hence, following the Critical age, some features are deemed unavailable, which results in a deficient L2 representation (Hawkins & Chan, 1997; Hawkins & Hattori, 2006; Hawkins, 2003; Tsimpli & Dimitrakopoulou, 2007; Tsimpli & Mastropavlou, 2007). Specifically, the Interpretability Hypothesis (Tsimpli & Dimitrakopoulou, 2007; Tsimpli & Mastropavlou, 2007) argues that uninterpretable features are Critical-age constrained and should they not be contained in the L1 grammar are inevitably underrepresented

in a L2 grammar whereas the L2 learner resorts to the aiding effect of interpretable features. Similarly, the Shallow Structure Hypothesis (Clahsen & Felser, 2006) delves into the difference between the L2 and the L1 processing patterns, and argues that L2 processing is guided by semantic and pragmatic cues rather than by syntactic information, which is why L2 processing is always "shallower" compared to L1 processing. On the contrary, the Full Access / Full Transfer Hypothesis (Schwartz & Sprouse, 1996) regards the LAD as a constantly available system: L2 learners utilize L1 patterns during initial L2 exposure, and when facing issues parsing the input, the interlanguage system is restructured through full access to Universal Grammar (UG). The Bottleneck Hypothesis (Slabakova, 2008, 2016, 2019) explains L2 grammar variability as the need to lexically learn the externalized functional morphology (the "bottleneck"), whereas the semantic and the syntactic properties of grammar phenomena are argued to come for free through direct access to the LAD.

B. The Current Study

Against this background, our study aims to contribute to the current discussion by providing data from adult L1 Turkish / L2 Russian speakers compared to L1 Russian controls based on an interpretation task. The domain under investigation is functional adjective morphology in split nominal constructions, which adult L1 Turkish do not possess in their mother tongue; hence, it has no possibility to be transferred during second language acquisition. Both functional adjective morphology and the operation of splitting constitute the externalization of uninterpretable features resulting in an adjectival infection, and copying and distributed deletion of copies, respectively. The splitting of nominal phrases is regarded as the syntactic reflex whereas the adjectival inflection is the morphological reflex (Slabakova, 2008, 2016). The BH argues that acquiring the syntactic operation of such a subtle notion as splitting in colloquial L2 Russian is expected to cause considerably less variation and difficulty compared to acquiring the rich functional/inflectional morphology on both elements of the phrase, which is likely to pose an issue for L1 Turkish learners of L2 Russian. Meanwhile, the Interpretability Hypothesis predicts that acquiring the uninterpretable phi-features absent from the learners' L1 grammar inventory, namely, the case, number and gender bundle, is impossible due to Critical-age constraints. However,

acquiring interpretable features (grammatical categories of the noun, manifested as gender assignment in our study) is predicted as possible by the IH.

Of the three reflexes related to the phenomenon of NP-splitting only two reflexes are at issue and will undergo testing: the acquisition of copy movement and partial interpretation of copies at Phonetic Form (PF) (Fanselow & Ćavar, 2002; Nunes, 1999; Pereltsvaig, 2008b) as the syntactic reflex, and the acquisition of adjectival morphology (an uninterpretable morphophonological feature) as the morphological reflex. The semantic reflex in split d-linked wh-questions is opaque and transparent (compared to other types of splitting (Pereltsvaig, 2008b)), and will not be tested as the splitting of d-linked wh-questions comes as a syntactic option (Pereltsvaig, p.c.; Sekerina, p.c.; Vysotskaya, p.c.).

C. Overview of the Dissertation

The remainder of this dissertation is organized as follows. Chapter 2 will introduce the linguistic background required to grasp the Generative perspective of the linguistic phenomena in Russian and Turkish pertaining to the current research. Chapter 3 will discuss the theoretical background of second language acquisition with the focus on the adult acquisition of functional morphology, and outline our working hypotheses with their principal claims. It will also provide a review of recent literature on the acquisition of functional morphology. Following this, Chapter 4 will present the methodology used in the study along with the discussion of research questions, predictions, and the description of the tasks and items employed. Chapter 5 will elucidate the obtained results and discuss the outcomes. The interpretation of the results in reference to the previous research will be discussed in Chapter 6. The implications of the findings and suggestions for further research, as well as the limitations of the current study will be included in Chapter 7.

The tasks and the raw data regarding the conducted statistical analyses will be included in the Appendix.

D. Definition of Key Terms

Second Language Acquisition: the theory of acquiring a language when a first language grammar has already been established.

Semantic Entailments Task: a research tool where participants are expected to produce a felicitous continuation for a stimulus (sentence, discourse situation).

Split Nominal Phrase: a nominal phrase, whose heads appear in different positions of a clause but not side by side. E.g. **Who** would you like to take **a picture of**?

D-linked Wh-question: a constituent question (wh-question), usually introduced by the wh-word "Which", where the set of possible discourse referents is restricted by the noun. E.g. Which boy speaks English here? (Tom, John, Andrey, or Miron).

Wh-word: any of a class of words that introduces a constituent question. E.g. what, how, which, when, etc.

Generative linguistics: a linguistic theory that views linguistics as the study of a hypothesized innate grammatical structure.

Functional (or Inflectional) Morphology: inflections (e.g. prefixes, suffixes, endings, etc.) to indicate grammatical aspects of a word (e.g. plurality, tense, person, noun case, etc.), as opposed to Derivational Morphology, which is utilized to produce new words, or lexical items.

II. LINGUISTIC BACKGROUND

A. Language Pair Chosen for the Current Thesis: Russian and Turkish

The enquiry of the current thesis pertains to the acquisition of the functional morphology on the adjective and the adjective-noun agreement in the Minimalist Programme perspective (Chomsky, 1995). In line with the Minimalist assumptions any grammatical category is regarded as comprising a bunch of morphosyntactic features[1] (or just features, for short). These features comprise the following types: semantic features (involving lexical meaning computation), syntactic features (responsible for sentence derivation), and the morphophonological features (the externalized form of the inflection). However, the number and type of features involved and, eventually, the externalization as a morphological marker, may vary depending on the language.

A language pair, which displays sharp differences with respect to which features are involved and how they are bundled and ultimately externalized in adjectival agreement, is duly exemplified by Russian and Turkish. The examples below demonstrate the externalization of different features in Russian and Turkish adjective-noun strings, respectively:

Table 1 Feature externalization in Russian and Turkish adjective-noun strings

	Adjective	**Noun**
Russian	*dorog-**aja***	*knig-**a***
	expensive-F.NOM.SG	book-F.NOM.SG
	‘expensive’	‘book’
	*dorog-**uju***	*knig-**u***
	expensive-F.ACC.SG	book-F.ACC.SG
	‘expensive’	‘book’ (object)
	*dorog-**ie***	*knig-**i***
	expensive-NOM.PL	book-NOM.PL
	‘expensive’	‘books’

[1] We will use the term “morphosyntactic feature” as “a property of words that the syntax is sensitive to and which may determine the particular shape that a word has” (Adger, 2003: 19).

Table 2 Feature externalization in Russian and Turkish adjective-noun strings. Continue

	*dorog-**ix***	*knig-**Ø***
	expensive-GEN.PL	book-GEN.PL
	‘expensive’	‘of books’
Turkish	*pahalı*	*kitap-**Ø-Ø***
	‘expensive’	book-SG-NOM
		‘book’
	pahalı	*kitab-**Ø-ı***
	‘expensive’	book-SG-ACC
		‘book’ (object)
	pahalı	*kitap-**lar-Ø***
	‘expensive’	book-PL-NOM
		‘books’
	pahalı	*kitap-**lar-ın***
	‘expensive’	book-PL-GEN
		‘of books’

Note. The externalized features are marked in bold.

As can be seen above, Russian and Turkish differ from each other with respect to which features are relevant for syntactic derivation (Antonova-Ünlü & Wei, 2016: 4; Pelekani, 2014: 292-293), which features are superficially marked, and whether each bound morpheme stands for a single feature or a bunch of features. In Russian, which is a highly inflecting language (Bailyn, 2012: ix), an array of features is embedded into a single bound morpheme, whereas in Turkish, which is an agglutinating language (Göksel & Kerslake, 2004: xiv), bound morphemes are generally prescribed a specific grammatical meaning each. Turkish does not operate such a feature as grammatical gender, which, in contrast, is well developed in Russian, whose nominals are specified for masculine, feminine, and neutral grammatical genders juxtaposed on the basis of functional morphology, namely, differentiated inflections (referred to as endings in Slavic tradition).

Turkish derives an adjective-noun string without explicitly employing the corresponding features (gender, number, case): the adjective is not specified for the respective uninterpretable phi-features that must be checked by the noun and expressed overtly. In contrast, Russian demands agreement between the adjective and the corresponding noun: the adjective is specified for the uninterpretable phi-features (namely, gender, number, and case), which must be checked and deleted in the process of derivation at Logical Form to satisfy the grammaticality condition (Adger, 2003: 66). We assume Logical Form (LF) to constitute a language-internal system, “a

syntactic structure that is interpreted by the semantic component" (Fox, 2003: 83).The consequence of the syntactic derivation is surfaced at Phonetic Form (PH), which is a language-external representation, which is uttered, heard, or written down as functional morphology.

The rest of the chapter will provide the necessary information on the linguistic phenomena in Russian and Turkish related to our study. First, the typology of the language will be briefly discussed, followed by general linguistic data regarding the derivation of wh-questions, discourse-linked (d-linked) wh-questions, scrambling operations, and prerequisites of (non)existence of split constructions and their derivation. A comprehensive account of the nominal paradigm will be discussed, including gender and case features, and adjective-noun agreement (attributive use)[2]. Finally, we will tackle the syntax and morphology of the items to be used as the instrument in our research.

1. Turkish Versus Russian: Preliminary Note

The facts with respect to elucidating the domains of both languages relevant for our study will be first discussed regarding Russian, and later Turkish. Subsequently, we will compare the presented data and designate the similarities and differences between Russian and Turkish, which are important in the process of L1 Turkish / L2 Russian acquisition of adjective agreement in split d-linked wh-questions externalized as functional morphology on the wh-word.

B. Syntactic Assumptions: Russian

The Russian language is an East Slavic language spoken in the Russian Federation, in the post-Soviet countries, and many other countries, which house large Russian-speaking communities, like Israel, the USA, France, Germany, Turkey, etc. Russian is the most widely spoken Slavic language, and one of the most widely spoken languages in the world (after Chinese Mandarin, Spanish, English, and Hindi/Urdu). It is spoken by approximately 258 million people around the world, including non-native speakers. The number is attested by Arefyev (2012), and the information is

[2] It must be noted that only Russian has PF-marked adjective-noun agreement (but not Turkish), which is morphologically shared with determiners, including the wh-word in d-linked questions.

provided by the *Ethnologue* online source (https://www.ethnologue.com/language/rus Retrieved on 09.02.2020).

Russian is a configurational Subject-Verb-Object (SVO) language. Nevertheless, it boasts a fascinating freedom of word order with regard to constituents, both within and among them (Zemskaya, 1987). A wide range of meanings is encoded into a comparatively limited number of case categories, which morphologically affects nouns, adjectives, some types of numerals and pronouns, to name a few. Noun-related categories, such as grammatical/lexical gender and number (along with case), are encoded into adjectival morphology, bringing about a nominal paradigm of highly inflected forms. Information structure, namely, the opposition of old versus new information, considerably influences the [freedom of] word order, which finds its consequences in the linear order of the sentence.

Regarding the variation of Russian among its speakers, it is a comparatively homogenous language, which is strictly standardized in education, and spoken in nearly the same form throughout its wide geography (excluding Heritage Russian variants). As far as the register is concerned, two distinct varieties are distinguished: standard literary Russian (also referred to as Contemporary Standard Russian [CSR]), and Colloquial Russian (Bailyn, 2012: x; Pereltsvaig, 2008b). The major difference in Colloquial Russian compared to its standard literary norm is manifested in various syntactic properties, primarily in the looser word order (Bailyn, 2012: xi).

In Russian two types of gender feature are recognized: a syntactic (grammatical) feature and a semantic (lexical) feature. All nouns are specified for the grammatical feature [gender], and can be masculine, feminine, or neutral, which finds consequence in the noun morphology, namely, the suffix (traditionally often referred to as the ending, when the nominal domain is involved). Nouns denoting people, their relations, occupations, etc. and some higher animals possess the semantic feature [gender], which is based on the biological gender. To recap, all nouns (including the ones specified for semantic gender) are specified for grammatical, or syntactic, gender. The syntactic feature [gender] is crucial for adjective agreement, as well as for subject-verb agreement (both in matrix and embedded clauses) when the predicate is expressed by past verbal forms, participles, among others.

1. Core Syntax in Russian

In line with traditional approaches regarding where the structural centre of the sentence is contained we assume that the empowering force of the sentence is the verb, and that the distribution of nominal arguments is determined by the verbal predicate. Russian verbs have a range of zero-place to four-place predicates, which entails the number of arguments in the sentence depending on the semantic meaning of the verbal predicate (Bailyn, 2012: 3). Conforming to the generative assumptions, we assume that lexical items consist of bundles of features, which are grouped into the following types: morphophonological (the acoustic or written realization), semantic (the meaning of the lexical item), and syntactic features (whose consequences bring about certain derivational patterns). The main focus in the following subsections will be on the syntactic features of the verb. Occupying the major role in a sentence, verbs comprise the feature that designates their categorial status, the interpretable feature [V]; and uninterpretable feature(s) [*u*N].

a. Interpretable and uninterpretable features

Interpretable features constitute elements of lexical items in terms of semantic content. Interpretable features possess a lexical meaning and participate in meaning calculation, whereas the function of uninterpretable features is limited to driving the process of derivation (Chomsky, 1995). Interpretable features survive derivation, and uninterpretable features are checked and deleted when derivation is realized.

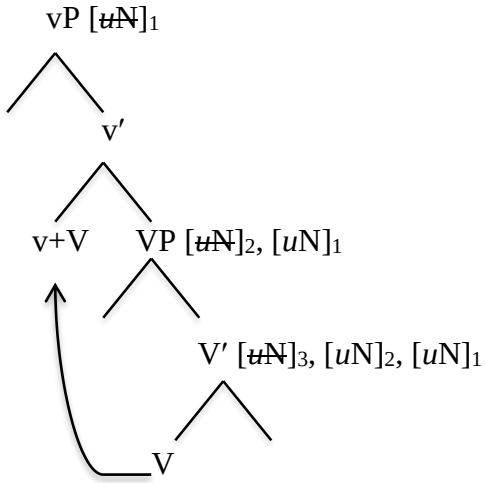
Based on the above, it is uninterpretable features, which are directly involved in derivation. In the course of derivation uninterpretable features must be checked within the syntactic tree and either eliminated (as in VP or DP derivation, discussed below) or valued (for example, in case assignment) while being combined with certain elements to create a phrase. Should all the uninterpretable features of the lexical item in a sentence fail to be checked, or any of them remains unvalued, the derivation of the sentence crashes and results in an ungrammatical sentence (Adger, 2003: 73). This basic operation of combining two elements through checking and eliminating an uninterpretable feature is referred to in the Minimalist Program as Merge, whereas valuing a feature yields the basic operation Agree (Adger, 2003: 71, 172).

b. Verb phrases (VPs/vPs) in Russian

The uninterpretable feature(s) [*u*N] on the verb are eliminated as the verb is merged with noun phrases (NPs), giving rise to the verb phrase (VP). In our approach we assume the v-shell structure (vP) incorporating VP (for details regarding this approach see Adger (2003: 104). It is the higher projection vP, where the structural subject is placed in the sentence, whereas structural objects occupy positions below VP. The VP, being composed of the verb and its dependencies, is a constituent.

Hence, based on the above, Russian, being a head-initial language, has the following vP/VP structure:

Figure 1 VP structure of a Russian three-place predicate



c. Noun/Determiner Phrases (NP/DPs)

In this subsection, we will briefly discuss the basic structure of the Russian noun/determiner phrase (NP/DP), and review case assignment in structures with three-place predicates.

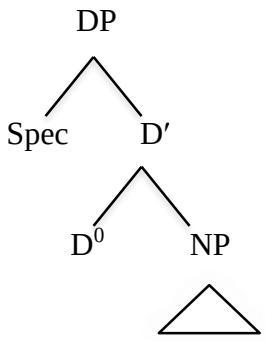
Some researchers contend that due to the absence of an explicitly realized article (like in Bulgarian) Russian has no DPs, but only NPs (Bošković, 2004, 2005). However, in line with the reasoning by Longobardi (1994) in that the NP is responsible for the predicativity whereas the DP maintains the referentiality, since the NP is placed in the argument position, we regard the NP, which has obtained the status of the argument, as the DP. Besides, due to a strong argumentation against the NP view in Rappaport (2001, 2002, 2004, the “result nominal” claim), we assume the universal

character of the determiner phrase according to the DP Hypothesis (Abney, 1987), which has also been suggested in recent works on the syntax and semantics of the Slavic nominal (Bailyn, 2012: 44; Linde-Usiekniewicz & Rutkowski; 2006; Pereltsvaig, 2007, among others). Demonstrative and possessive pronouns, quantifiers, and numerals are claimed to occupy the NP-external projection (Bailyn, 2012: 44), hence DP.[3]

We assume the DP shell to be present around all Russian argument[4] NPs (Bailyn, 2012: 49). Due to a long-lasting tradition in Slavic linguistics, we will only refer to Russian DPs as NP/DPs .

Below is the structure of nominals as assumed in our study:

Figure 2 Structure of a nominal phrase in Russian[5]



d. Case assignment in Russian

Case is a syntactic feature pertaining to arguments, which are constituted by NP/DPs and possess certain thematic roles. As we have mentioned above, every feature in the process of derivation must be checked. When case assignment is involved, the checked NP/DPs receive value. The syntactic operation of combining two elements, where the uninterpretable feature on one element is checked and valued, constitutes the basic operation Agree (Adger, 2003: 172). Because value is assigned

[3] However, Pereltsvaig (2018) proposes an argument against both NP and DP views based on the behavior of Eventive Nominalizations in Russian. At the moment new evidence from empirical domains is required.

[4] The argument is understood as a constituent in a sentence assigned a theta role by a predicate (Adger, 2003: 64).

[5] The reader is required to note that the presented syntactic trees do not reflect the fine-grained structure containing all the functional projections. Instead, we have tried to minimize the structure to retain only the projections necessary to the scope of phenomena relevant for the present study. A detailed theoretical account can be found in Adger (2003), Cinque (2005), to mention a few; and Rizzi & Cinque (2016) for the latest state of the cartographic research; an extended theoretical account related to Russian syntax is exquisitely presented in Bailyn (2012).

locally, NP/DPs may be required to move up the tree, which finds its consequence in the word order. Structural case is assumed to be an uninterpretable feature, which takes no part in meaning calculation (Adger, 2003: 36). The uninterpretable character of the feature [case] in the Russian language can be vividly demonstrated by the examples below.

Affirmative nominal constructions have a structural subject manifested as a noun in the nominative case, whereas the subject in negative nominal constructions is specified for the genitive case:

(1) *U menja est' knig-a*
by me there's book-NOM.
'I have a book [on me].' (nominative subject, affirmative construction)

versus

(2) *U menja net knig-i*
by me there's no book-GEN
'I don't have a book [on me].' (genitive subject, negative construction)

The function of the structural case is crucial for syntactic derivation, and the respective feature is checked by the interpretable feature [case] on the predicate. When the case features have been checked and valued on all the NP/DPs, the required case-marking morphology is supplied in the phonological form (PF) of the sentence after the point of Spellout, which is the threshold between the Logical form and the Phonological form, after which articulation takes place (Adger, 2003: 116).

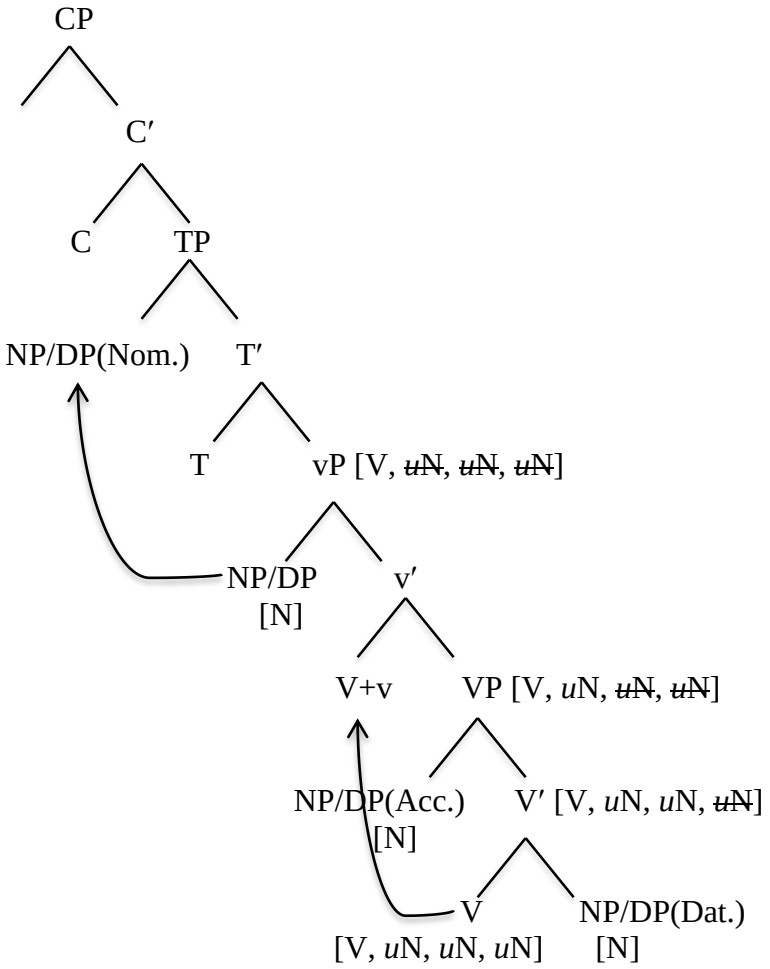
The subject of the sentence is assumed to be generated as the specifier of vP, where it receives an agent theta role. Structural nominal case assignment takes place upon the movement of this NP/DP higher up the tree to the Spec-TP (the functional Tense projection).

In line with Montrul (2004), we assume the view of the syntactic theory incorporating the functional categories AgrOP (object agreement phrase) and AgrIOP (indirect object agreement phrase). As Bailyn (2012: 9) claims, the NP/DP with the meaning of Theme is generated as the specifier of a VP, where it receives the corresponding theta role, and moves up to occupy the specifier position to AgrOP, therein receiving accusative case. The indirect object NP/DP is generated as the complement to a transitive verb as a goal/beneficiary, and is later moved up to the specifier position of the AgrIOP, where it is assigned dative case. With the aim to

maximally simplify the composition of the syntactic tree while preserving clarity and consistency, the direct and the indirect objects will be retained where they are generated (the AgrOP and AgrIOP projections are omitted).

The structure of a sentence with a three-place predicate supplied with the derivation relevant for our study is exemplified below:

Figure 3 Derivation tree of a Russian three-place predicate construction



(the functional heads that are not fundamental for our study are omitted)

2. Wh-questions in Russian: Derivation

The current subsection is devoted to elucidating the derivation of wh-questions in Russian. The derivation of discourse-linked wh-questions, which are the actual focus in the present study, is given special attention.

The research instrument in our study is represented by different variations of the wh-question, and in this respect, the theoretical account on wh-structures in Russian and their derivation will be discussed below.

The two major wh-structures in the Russian language are wh-questions and wh-relatives. Wh-relatives constitute structurally and semantically dependent constructions whereas wh-questions form syntactically and semantically independent units:

(3) a. ***Počemu*** *ty včera ne priexal?*
why you yesterday NEG came
'Why didn't you come yesterday?' (a wh-question)
b. *Rasskaži mne,* ***počemu*** *ty včera ne priexal.*
tell me why you yesterday NEG came
'Tell me why you didn't come yesterday.' (an embedded wh-question with a wh-relative)

The wh-element, which serves as an integral part of wh-questions, is assumed to carry an interpretable [+WH] feature. A system of wh-elements used in the formation of Russian wh-questions is exemplified below.

Table 3 Wh-elements introducing wh-questions

Default form	**Meaning**	**Category**	**Basic information**
kto	'who'	NP/DP	Argument wh-phrase. Used for animate objects including animals. The default form is specified for case [nominative], number [singular], and gender [masculine]. The wh-element agrees with the predicate on the basis of case, number, and also gender (in sentences with predicates denoting past actions).
čto	'what'	NP/DP	Argument wh-phrase. Used for inanimate objects. The default form is specified for case [nominative], number [singular], and gender [masculine] (in sentences with predicates denoting past actions). The wh-element agrees with the predicate on the basis of case, number, and also gender (in sentences with predicates denoting past actions).

Table 4 Wh-elements introducing wh-questions. Continue

kakoj	'what', 'which'	I. AP or II. NP/DP	D-linked wh-phrase. Used for animate and inanimate objects. The default form is nominative singular masculine; hence, it is specified for case, gender, and number. The wh-element agrees with the head noun represented by an argument, or within a PP. Regarding form, it is an AP, however, the wh-phrase can replace and refer to: I. APs II. NP/DPs (d-linked contexts)
gde	'where'	PP, AdvP, CP	Adjunct wh-phrase. Locative.
kogda	'when'	PP, AdvP, CP	Adjunct wh-phrase. Temporal.
počemu	'why'	PP, AdvP, CP	Adjunct wh-phrase. Adverbial of reason.
kak	'how'	PP, AdvP, CP	Adjunct wh-phrase. Adverbial of manner.
skol'ko	'how much', 'how many'	PP, NP/DP	Adjunct wh-phrase. Quantity.

Note. The table does not demonstrate all the wh-elements operable in the Russian language. There exists a considerable number of grammatical forms brought about through inflecting.

Normally, the wh-element occupies the left-peripheral position in a sentence or in an embedded clause. The examples below are: (a-c) wh-questions with wh-words, and (d-f) embedded wh-questions with wh-relatives:

(4)
a. ***Kto*** *k nam zavtra priedet?*
who to us tomorrow will.come
'Who will come to [visit] us tomorrow?'
b. ***Kakoj*** *podarok ty xočeš na Novyj god?*
which gift you want on New Year
'What kind of New Year gift do you want?'
c. ***Skol'ko*** *čelovek vyšli na demonstraciju?*
how many people came.out on demonstration
'How many people have joined the demonstration?'
d. *Skaji,* ***kto*** *k nam zavtra priedet.*
Tell who to us tomorrow will.come
'Tell me who will come to us/visit us tomorrow'
e. *Daj mne ideju,* ***kakoj*** *podarok ty xočeš na Novyj god.*
give me idea which gift you want on New Year
'Give me an idea of what kind of New Year gift you want'
f. *Ty ne znaeš,* ***skol'ko*** *čelovek vyšli na demonstraciju?*
you NEG know how many people came.out on demonstration
'Do you know how many people have joined the demonstration?'

a. Russian wh-movement: overt English type or in-situ?

Some scholars claim that Russian has no overt English-type wh-movement per se, instead asserting it is Focus movement (Bošković, 1988; Stepanov, 1998). Hence, via implementing the Wh-in-situ Hypothesis they consider Russian on par with languages such as Chinese and Turkish. However, there is ample evidence that the above claim cannot be true. First, the wh-element invariably moves up in subordinated constructions, and no other option is attested to be grammatical:

(5) a. **Nikto ne znaet, ty rabotaeš **gde**.*
nobody NEG knows you work where
'Nobody knows where you work.' (the wh-element in-situ)
b. *?Nikto ne znaet, ty **gde** rabotaeš.*
nobody NEG knows you where work
'Nobody knows where you work.' (the wh-element follows the subject)
c. *Nikto ne znaet, **gde** ty rabotaeš.*
nobody NEG knows where you work
'Nobody knows where you work.' (the wh-element is fronted in the embedded clause)

[Bailyn, 2012: 94]

Second, even though it is claimed that the wh-element can follow the subject pronoun (hence, allegedly, no obligatory wh-movement exists in Russian), which is indeed grammatical, the subject in such constructions raises due to Topicalization (Bailyn, 2012: 94), and being a proclitic does not carry any stress whatsoever:

(6) a. *Ty **gde** rabotaeš?*
you where work
'Where do you work?' (a wh-question with a topicalized subject)
b. *Ty **počemu** včera ne priexal?*
you why yesterday NEG came
'Why didn't you come yesterday?' (a wh-question with a topicalized subject)

On the contrary, when a pronoun in the left-peripheral position is stressed, it receives a Focal interpretation, which is marked:

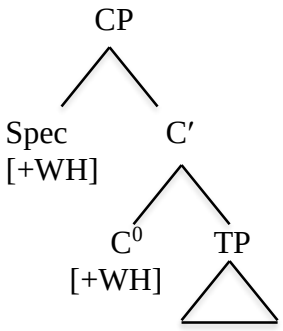
(7) *TY **gde** rabotaeš?* (*ty* is stressed)
you where work
'And what about you: where do you work?' (a wh-question with a focalized subject)

Consequently, the above claim does not hold, and we assume the presence of overt English-type wh-movement required for the formation of wh-questions and wh-relative constructions. A detailed account of the arguments against the Wh-in-situ view

in relation to Russian and the argumentation in favour of the English-type wh-movement are presented in Bailyn (2012).

In line with Adger (2003: 294), we regard the uninterpretable [WH] feature on Complementizer (C) as strong. Thus, the syntactic movement is induced to move the wh-element up the tree from its derived position. A syntactic tree illustrating the final stage of the derivation of a wh-question is given below:

Figure 4 Structure of a wh-question



The next subsection will discuss discourse-linked wh-questions and the latest views on how they are derived in Russian.

b. Derivation of discourse-linked (d-linked) wh-questions in Russian

Discourse-linked (d-linked) wh-questions, according to Pesetsky (1987), are related to limiting the number of possible referents to the noun, which refers to the response to a question, illustrated in 8 below:

(8) D-linked question and possible responses:

- Which boy did you buy the toy for?
- For Misha/Andrey/Vladimir/Sergey, etc.

In semantic terms the d-linked question above can be paraphrased as such: "For which x is it the case, x is a boy, that you bought a specific toy for?". Hence, x is expressed by a limited number of referents (boys) stipulated by a situation.

Russian d-linked wh-questions are formed through utilizing the necessary form of the wh-word *Kakoj*[6] "which", which is specified for adjectival morphology (see Table 2) and is co-referenced with the head noun (or restrictor), hence agrees with it in case, (grammatical or lexical) gender, and number. Besides, in some contexts

[6] The default form *Kakoj* "which" (masculine singular nominative) changes in accordance with its headword: it agrees with its case, gender, and number features. The changes are manifested on the suffix of the wh-word.

(specifically, in the masculine accusative singular form) it may be specified for animacy/inanimacy. The above-mentioned features are externalized through a single inflection, namely, the suffix that incorporates a bundle of features (the inflection in the examples below is marked in bold):

(9) a. *Kak-**oj*** *malčik podaril tebe knigu? – Andrej.*
which-M.NOM.SG$_i$ boy$_i$ gave to.you book – Andrey.
'Which boy gave you a/the book as a present?' – 'Andrey.'
b. *Kak-**omu*** *malčiku ty podaril knigu? – Andreju.*
which-M.DAT.SG$_i$ boy$_i$ you gave book – to.Andrey
'Which boy did you give a/the book as a present?' – 'To Andrey.'
c. *Kak-**oj*** *podarok ty podaril malčiku? – Knigu o*

which-M.ACC.SG$_i$ gift$_i$ you gave to.boy – book about *priključenijax.*
adventures
'Which gift did you give to the boy?' – 'An adventure book.'
d. *Kak-**aja*** *devočka podarila tebe knigu? – Ol'ga.*
Which-F.NOM.SG$_i$ girl$_i$ gave to.you book – Olga
'Which girl gave you a/the book as a present?' – 'Olga.'
e. *Kak-**oj*** *devočke ty podaril knigu? – Olge.*
Which-F.DAT.SG$_i$ girl$_i$ you gave book – to.Olga
'Which girl did you give a/the book as a present?' – 'To Olga.'
f. *Kak-**uju*** *knigu ty podaril devočke? – Učebnik*
which-F.ACC.SG$_i$ book$_i$ you gave to.girl – textbook *anglijskogo jazyka.*
English language
'Which book did you give to the girl as a present?' – 'An English textbook.'

Because the wh-word *Kakoj* "which" is in complementary relations with other determiners (demonstratives *etot* 'this', *tot* 'that', quantifiers *každyj* 'every', *ves'* 'the whole', etc.), we regard it as a determiner with adjectival characteristics, thus, an AP in form. However, the wh-phrase refers to and replaces an NP/DP (see the examples above). As with all wh-constructions, d-linked wh-questions are also derived via overt English-type wh-movement (Bailyn, 2012).

3. Scrambling[7] Operations in Russian

Generally regarded as an SVO language, Russian is famous for its relatively free word order (Bailyn, 2003; Dyakonova, 2009; Kallestinova, 2007), which is licit

[7] Herein we assume scrambling not to constitute a stylistically driven operation, which derives alternative word orders (Saito, 1992) but a process closely related to the distribution of Theme and

due to a rich functional morphology both in the verbal and in the nominal domains. The conjugation of Russian finite verbs includes the categories of tense, aspect, person, number, and gender, whereas the declension of nominal parts of speech involves the categories of case, gender (grammatical and lexical), number, and, in some cases, animacy. Since Russian is a highly fusional language, oftentimes the bundles of categorial features are externalized via a single inflection, particularly on nominals:

(10) a. *Vid-**iš’*** *čern-**ogo*** *konj-**a**?*
see-PRS.2SG black-M.ACC.SG.ANIM horse-M.ACC.SG.ANIM
‘Can you see the black horse?’
– *Teper’ uvid**el-a**.*
now saw-PST-F.SG
‘I saw it just now.’
b. *Naš-**a*** *kompanij-**a*** *vydel-**il-a*** *lušč-**emu***
our-F.NOM.SG firm-F.NOM.SG granted-PST-F.SG best.M.DAT.SG
*rabotnik-**u*** *turističesk-**uju*** *putevk-**u.***
worker.M.DAT.SG touristic.F.ACC.SG tour.F.ACC.SG
‘Our company granted its best worker a package tour.’

As Bailyn claims (2012: 295), scrambling always constitutes an optional syntactic operation. Yet, with a typical two-argument transitive verb in a sentence all the six possible word orders are grammatical (the examples are adopted from Bailyn (2012: 237)):

(11) a. *Mal’čik-i čitajut knig-i.* SVO (Canonical word order)
boys-NOM read books-ACC
b. *Mal’čik-i knig-i čitajut.* SOV
boys-NOM books-ACC read
c. *Knig-i mal’čik-i čitajut.* OSV
books-ACC boys-NOM read
d. *Knig-I čitajut mal’čik-i.* OVS
books-ACC read boys-NOM
e. *Čitajut mal’čik-i knig-i.* VSO
read boys-NOM books-ACC
f. *Čitajut knig-i mal’čik-i.* VOS
read books-ACC boys-NOM
‘Boys read books.’

[Bailyn (2012, p. 237)]

Rheme (The Prague School of Linguistics), and the discourse requirements. For the detailed information on scrambling in Russian the reader is referred to Bailyn (2003).

The distinctive feature that differs and distinguishes each of the linearizations above is the discourse effect, or the Topic/Focus designation (Bailyn, 2003: 1; Bailyn, 2012: 238).

Herein we have resorted to demonstrating the freedom of word order in Russian and will not delve into the theoretical issues regarding syntactic motivation of scrambling. For a detailed discussion regarding Russian scrambled constructions the interested reader is referred to theoretical accounts in Bailyn (2003), Dyakonova (2009), Kallestinova (2007), to mention a few. The next subsection deals with 3-argument constructions employed for our instrument. The focus is on a specific linearization, which is widely observed in both standard Russian and in its colloquial register.

a. A' movement/ object shift in 3-argument constructions: goal over theme

The experimental items utilized as the instrument for the current study are formed on the basis of three-argument constructions, which consist of an Agent expressed by a pronominal subject, a Theme and a Goal realized as an inanimate and an animate noun, respectively. We have employed a slightly "marked" linearization with the following structure: **Agent$_{PRON}$ Goal$_{N}$ V Theme$_{N}$**.

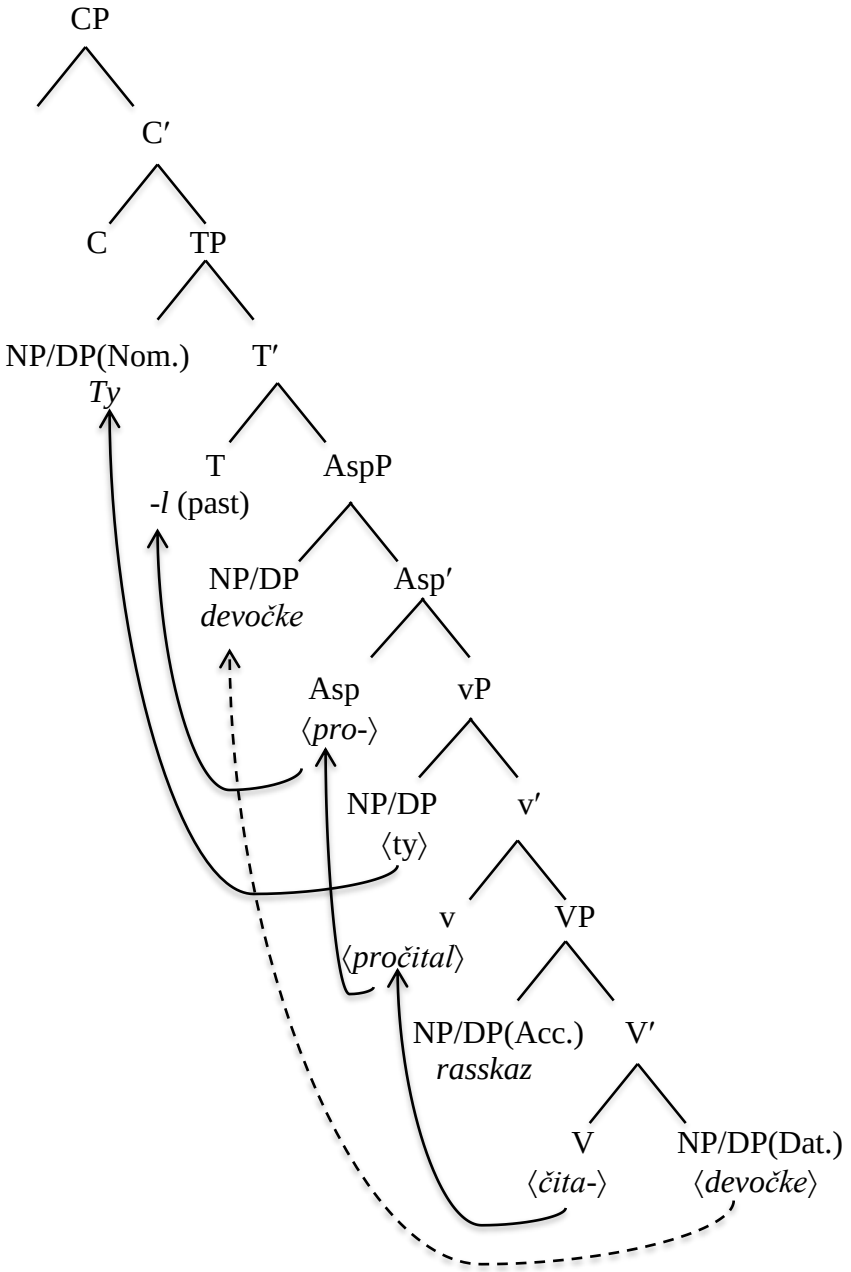
The original derivation path is as follows: the Goal is derived via Merge as the complement to the V head and is assigned structural Dative case, whereas the Theme is derived as the Spec to VP (to change for V′) higher in the tree and is assigned structural Accusative case. The linearization of the construction to be employed in our test is formed via local A-movement, or Object Shift: the Goal NP/DP moves over the Theme to form the Spec projection of the aspectual phrase (AspP) (Bailyn, 1995; Bailyn, p.c.; Harizanov & Gribanova, 2017). Detailed information regarding A-movement and Object Shift in Russian is elucidated in Bailyn (1995), Harizanov & Gribanova (2017).

Below is a syntactic tree with the mechanism of derivation, whose result is the linearization we will be employing for our study. The syntactic tree is exemplified with an affirmative sentence.

(12) Derivation of the construction '*Ty devočke pročital rasskaz.*'(**Agent$_{PRON}$ Goal$_{N}$ V Theme$_{N}$** linearization) via local A-movement/Object Shift[8]:

Ty devočke pročita-l rasskaz.
you to.girl read-PST story
'You read a story to the girl.'

Figure 5 Derivation of the linearization Agent$_{PRON}$ Goal$_{N}$ V Theme$_{N}$ via local A-movement/Object Shift



[8] The notation ⟨ ⟩ stands for the moved element. The continuous lines show stages of derivation prior to local A-movement/Object Shift. The intermittent line indicates the local A-movement /Object Shift of the Goal over the Theme.

The next subsection presents information regarding the operation of splitting. Specific conditions will be discussed that serve as prerequisites for allowing splits. These conditions are discussed in relation to the Russian language, due to which splits are a common phenomenon to encounter.

4. Split Constructions in Russian

For a language to allow splitting the following three distinct conditions must be operative: scrambling, noun-ellipsis (N-ellipsis), and overt morphology on both elements of the noun phrase – these comprise the adjective or the determiner (wh-word) and the noun (Pereltsvaig, 2008b)[9]. All these conditions are evident in several Slavic languages, including Russian (Bailyn, 2012). The examples below demonstrate the above-mentioned constructions with the respective phenomena underlined; the unmarked word order is exemplified in (13a):

(13) a. Unmarked (canonical) word order:
– Budeš pit' gorjačij čaj? – Seyčas ne xoču gorjačego čaja.
you.will drink hot tea now NEG I.want hot tea
'– Will you drink hot tea? – Now I don't want to have hot tea.'

b. Scrambling:
– <u>Gorjačij čaj</u> pit' budeš? – <u>Gorjačego čaja</u> ne xoču seyčas.
<u>hot tea</u> drink you.will <u>hot tea</u> NEG I.want now
'– Will you drink hot tea? – Hot tea, I don't want to have it now.' (the Theme is fronted)

c. N-ellipsis:
– Gorjačij čaj pit' budeš? – <u>Gorjačego</u> [~~čaja~~] ne xoču seyčas.
hot tea drink you.will <u>hot</u> [~~tea~~] NEG I.want now
'– Will you drink hot tea? – *****Now I don't want to have hot [tea].' (the previously mentioned noun is elided)

d. Overt morphology on both elements of the noun phrase:
– Gorjač-<u>ij</u> čaj-<u>Ø</u> pit' budeš?
hot-M.ACC.SG tea-M.ACC.SG drink you.will?
'– Will you drink hot tea?'
– Gorjač-<u>ego</u> čaj-<u>a</u> ne xoču seyčas.
hot-M.GEN.SG tea-M.GEN.SG NEG I.want now
'– Now I don't want to have hot tea.' (both parts of the noun phrase are specified for gender, case, and number, which is manifested in respective suffixes)

[9] As we indicated above, in Russian the adjective (or the determiner – wh-word) is specified for number, (grammatical or semantic) gender, and case features checked by the noun (Bailyn, 2012). To reiterate, the gender of the noun is a lexical characteristic and is assumed to pose no grammatical difficulty in second language acquisition.

According to Pereltsvaig (2008b), the existence of this bundle of features serves as a prerequisite for constructions with split nominal phrases, which is exemplified below:

(14) a. Split nominal phrases:
– *Gorjačij budeš čaj?* – *Gorjačego seyčas ne xoču čaja.*
hot you.will tea hot now NEG I.want tea
'– Will you drink hot tea? – As for hot tea, I don't want to have it now.' (the underlined nominal phrase is split)

It must be noted that splitting is generally avoided in textbook Russian as it is considered to be against the prescriptive rule (Sekerina, 1997), hence almost non-existent in explicit and instructed L2 teaching and learning environments [10]. Notwithstanding, split contructions are an integral part of colloquial register and fiction abundant in characters' verbal interaction, amounting for up to 10% of live colloquial speech when contrasted with the number of adjacent constructions (Pereltsvaig, 2007, 2008b). Besides, the split pattern is ubiquitous and abundant in poetry, which is beyond the scope of our research.

Generally, sentences with split nominal phrases incorporate a subject pronoun, where it is the object NP/DP that is split due to syntactic reasons: it would be odd to split a nominal phrase, which is already in the left periphery. On the contrary, when an object is split, the first part is likely (though does not have) to occupy the left

[10] However, on a closer look into L2 Russian textbooks, split phrases are widely represented in nominal constructions without a lexical verb from early on, namely, when adjectives and determiners are introduced at level A1; e.g. in a popular L2 Russian course 'Doroga v Rossiju 1' (Antonova et al, 2003. *Doroga v Rossiyu*, Part 1. *The Way to Russia*. Elementary Level):
Examples: *Kakoj eto prospekt?* (p. 99)
$which_i$ it $avenue_i$
'Which avenue is it?'
Kakoj eto fil'm? (p. 118)
$which_i$ it $film_i$
'Which film is it?'
Other conversational formulas that contain splits in conversational phrases are as follows:
Kakoj segodnja den'?
$which_i$ today day_i
'What day is it today?'
Kakaja segodnja pogoda?
$which_i$ today $weather_i$
'What is the weather like today?'
The use of the above split constructions is the grammatical norm for standard Russian. Hence, L2 Russian learners are exposed to nominal splits from initial stages of acquisition, albeit without direct instruction or awareness of this phenomenon.

periphery, and the second part may occupy the place where it was derived, or elsewhere in the sentence.

Below we review current approaches to the mechanism of splitting regarding Russian.

a. Derivation of split constructions in Russian

There are several views on the character of splitting in Russian: Left-Branch Extraction (LBE) worked out by Bošković (2005), Remnant Movement Analysis (RM) argued by Bašić (2004, 2008), and splitting through movement and partial interpretation of the copies (the copy-theory of movement + Distributed Deletion) contended by Pereltsvaig (2008b). The theoretical grounds are extensively discussed in Franks (2007) and in Pereltsvaig (2008b). We will assume the approach to splitting argued by Pereltsvaig (2008b) and briefly expand on her line of reasoning below.

Pereltsvaig argues against LBE (the view argued for by Bošković) based on the fact that the operation of splitting "can be applied to non-constituents and can cross islands which typically prevent (non-argument) extraction out of them (2008b: 11). The RM analysis (Bašić, 2004, 2008) is rejected on the grounds that the second split element may be expressed by a non-constituent, and that the unmarked pattern of placement of the elements is not corroborated by the RM claim (Pereltsvaig, 2008b: 15).

Pereltsvaig (2008b, p. 17) proposes an analysis, where the whole phrase to be split moves (the Copy theory of movement by Corver & Nunes (2007) with several stipulations), and the moved copies undergo distributed deletion of the copies at PF (Fanselow & Ćavar, 2002; Nunes, 1999: 226-232). Additional evidence comes from a recent study by Bondarenko & Davis (2018) in that Russian parasitic gaps in fact block Left Branch Condition (LBC), which serves as a telling counterargument against LBE, and in favour of concealed NP pied-piping, hence distributed deletion of copies.

Based on the above, the process of derivation of splits can be illustrated in two steps (the phrase to be split is marked in bold):

(15) a. Merger positions:
možno kupit' ***klubničnogo varen'ja***
possible to.buy strawberry(ADJ) jam

b. Step one (feature-driven movement, scrambling in this case):
klubničnogo ***varen'ja*** *možno kupit'* ***klubničnogo*** ***varen'ja***
strawberry(ADJ) jam possible to.buy strawberry(ADJ) jam
c. Step two (distributed deletion of the copies at PF):
klubničnogo ~~***varen'ja***~~ *možno kupit'* ~~***klubničnogo***~~ ***varen'ja***
strawberry(ADJ) ~~jam~~ possible to.buy ~~strawberry(ADJ)~~ jam
'It is possible to buy strawberry jam.'
[the examples are from Pereltsvaig (2008b: 18)]

The above assertion in favour of the movement and partial interpretation of the copies is corroborated by the fact that Russian splits can appear both as simple splits, where the relative word order is preserved, and inverted splits, where the order of the parts of the split phrase is inverted relative to the default word order (Pereltsvaig, 2008b: 7). The types of splits are exemplified in 16a – a simple split, and 16b – an inverted split; the parts of the split phrase are boldfaced:

(16) a. Simple split:
– ***Vologodskogo*** *net* ***masla****, devuška?*
Vologda(ADJ) not.there.is butter girl
'Do you have Vologda[place name] butter, Miss?'
b. Inverted split:
– ***Brillianty*** *u tebja* ***xorošie****, neskol'ko karat.*
diamonds to you good several carats
'You have good diamonds, several carats'
[the examples are from Pereltsvaig (2008b: 7)]

The movement of the derived copy is driven by a certain syntactic feature. According to Pereltsvaig (2008b: 18), three types of feature-driven movement are observed in Russian: wh-movement, *li*-questions (a kind of yes-no questions), and scrambling. As our study tackles split d-linked wh-questions, which are formed via wh-movement, the remainder of this paper will focus on constructions derived in this way. Below are split constructions, where the movement is driven by the wh-feature; the parts of the split phrase are boldfaced:

(17) a. ***Kakoe*** *tebe do nego* ***delo****?*
which to.you to him business
'What do you care about him?' (parts of the split phrase occupy the periphery positions)
b. ***Kakuju*** *ty emu* ***knigu*** *podariš?*
which you to.him book will.give
'Which book will you give him as a gift?' (one part of the split phrase is not at the periphery).

We have briefly reviewed the theory of splits in the Russian language. By far, this discussion has not been comprehensive and encompassing, and the interested reader is referred to sources focusing on this issue, like Bondarenko & Davis (2018), Bošković (2005), Franks (2007), Pereltsvaig (2008b), Sekerina (1997), among others.

The next subsection provides fundamental facts on adjectives in Russian: first, the place of adjectives in Russian grammar is discussed with the focus on their morphological characteristics; to follow, the morphology of the wh-word *Kakoj* 'which' is examined, and a similarity is drawn between the wh-word and adjectives, especially regarding the externalization of features via an inflection.

5. Adjectives in Russian: Morphology

Adjectives in Russian are often regarded as the most complex part of speech in terms of functional morphology since a number of adjectives are represented by a paradigm of over forty different forms each. This complexity can be accounted for the fact that the adjective is specified for the phi-features checked by the head noun, namely, gender, number, and case (and also animacy under certain conditions)[11]. Furthermore, specific classes of adjectives may possess two functional forms – the short one (predicative use; attributive use in certain contexts, usually stylistically marked) and the full one (attributive and predicative use).

As a rule, adjectives used predicatively follow the head noun, whereas attributively used adjectives generally precede it (however, in split constructions the attribute can follow the head noun. See examples in subsection II.B.4.a.). Below the predicative (18a-c) and attributive (19a-b) uses of the adjective are demonstrated. The adjectives are underlined:

(18) Predicatively used adjectives:
a. *Gorod okazalsja <u>krasivym</u> i <u>dorogim</u>.*
town turned out beautiful and expensive
'The town turned out to be beautiful and expensive.' (full adjectives, inanimate head noun)
b. *V to vremja Andrej byl <u>molod</u> i <u>zdorov</u>.*
in that time Andrey was young and healthy
'At that time Andrey was young and healthy.' (short adjectives, animate head noun)

[11] The feature [animacy] is checked when the adjective is related to a masculine singular or plural head noun in the accusative case.

c. *V to vremja Andrej byl <u>molodym</u> i <u>zdorovym</u>.*
in that time Andrey was young and healthy
'At that time Andrey was young and healthy.' (full adjectives, animate head noun)

(19) Attributively used adjectives:
a. *Ja dovolen <u>svoim</u> <u>krasivym</u> i <u>dorogim</u> kostyumom.*
I glad self.ADJ beautiful and expensive suit
'I am happy about my beautiful and expensive suit.' (full adjectives, inanimate head noun)
b. *Rabota byla vypolnena <u>molodym</u> i <u>zdorovym</u> parnem.*
work was completed young and healthy fellow
'The work was completed by a young and healthy fellow.' (full adjectives, animate head noun)

Being a highly fusional language, Russian tends to utilize a single inflectional morpheme to denote a bunch of grammatical meanings (features), in contrast to agglutinative languages (e.g. Turkish, Japanese). As has been mentioned, nearly all the categories (except for the category of comparison), which the adjective is specified for, are incorporated into a single suffix (usually referred to as an ending in the Slavic tradition). The adjectives are underlined and their suffixes are boldfaced:

(20) a. *Ja$_i$ <u>dovol-**en**$_i$</u> <u>svo-**im**</u>*
I glad-M.NOM.SG(SHORT) self-ADJ.MASC.INS.SG
*<u>krasiv-**ym**</u> i <u>dorog-**im**</u> kostyumom.*
beautiful-M.INS.SG and expensive-M.INS.SG suit
'I am happy about my beautiful and expensive suit.'
b. *Rabota byla vypolnena <u>molod-**oj**</u> i <u>zdorov-**oj**</u>*
work was completed young-F.INS.SG and healthy-F.INS.SG
devušk-oj.
girl-F.INS.SG
'The work was completed by a young and healthy girl'.

a. Adjective declension in Russian

There are several classes of adjective declension in Russian that are subject to the final sound/letter of the stem as well as the stressed syllable. Thus, the default adjective inflection (masculine nominative singular) can be externalized as *–ij*, *–yj*, or *–oj*: *mjagk**ij*** 'soft', *tverd**yj*** 'hard', *bolš**oj*** 'big'. As mentioned earlier, each inflection constitutes a feature bundle specified for gender, case, and number. As our study will only utilize the declension class of adjectives with the stressed suffix (*–oj*), the examples thereafter will pertain to this specific class. An entire declension system of the adjective *suxoj* (dry) is presented in Table 3 below.

Table 5 The declension paradigm of adjectives with the stressed suffix –oj, explicated by the adjective *suxoj* ‘dry’

Case	Masculine singular	Feminine singular	Neutral singular	Plural
Nominative	*sux-**oj** les* ‘a dry forest’(M)	*sux-**aja** trava* ‘a dry grass’ (F)	*sux-**oe** leto* ‘a dry summer’ (N)	*sux-**ie** lesa/travy* ‘dry forests/grasses’
Genitive	*sux-**ogo** lesa* ‘of a dry forest’	*sux-**oj** travy* ‘of a dry grass’	*sux-**ogo** leta* ‘of a dry summer’	*sux-**ix** lesov/trav* ‘of dry forests/grasses’
Dative	*sux-**omu** lesu* ‘to a dry forest’	*sux-**oj** trave* ‘to a dry grass’	*sux-**omu** letu* ‘to a dry summer’	*sux-**im** lesam/travam* ‘to dry forests/grasses’
Accusative	*sux-**oj** les* ‘a dry forest’ (object)	*sux-**uju** travu* ‘a dry grass’ (object)	*sux-**oe** leto* ‘a dry summer’ (object)	*sux-**ie** lesa/travy* ‘dry forests/grasses’ (object)
Instrumental	*sux-**im** lesom* ‘by a dry forest’	*sux-**oj** travoj* ‘by a dry grass’	*sux-**im** letom* ‘by a dry summer’	*sux-**imi** lesami/travami* ‘by dry forests/grasses’
Prepositional	*(o) sux-**om** lese* ‘(about) a dry forest’	*(o) sux-**oj** trave* ‘(about) a dry grass’	*(o) sux-**om** lete* ‘(about) a dry summer’	*(o) sux-**ix** lesax/travax* ‘(about) dry forests/grasses’

Note 1. The adjective is supplied with head nouns of a respective gender/number. The adjective inflection is boldfaced. Only the declension of the full form is provided, not the short form as it is not relevant for our study.

Note 2. The presented account is far from being comprehensive. Russian contains an intricate and complex system of adjective declension depending on the features of the head noun, its position regarding the head noun, style, attributive or predicative use, etc.

b. Adjective morphology on the wh-word *Kakoj* ‘Which’

Our study focuses on the adjective morphology on the wh-word *kakoj* ‘which’ that is used to introduce d-linked wh-questions, and stands for a NP/DP in the consecutive response to that question. The declension of the wh-word *kakoj* ‘which’ is identical to that of adjectives with the stressed suffix (the suffix *–oj* in *kakoj* is stressed). Hence, it is specified for the same grammar categories (features) as all adjectives, namely, gender, case, and number, which are manifested by a single

inflection. A comprehensive declension paradigm of the wh-word *kakoj* 'which' is exhibited in the table below.

Table 6 Declension paradigm of the wh-word *kakoj* 'which'

Case	Gender			
	Masculine singular	**Feminine singular**	**Neutral singular**	**Plural**
Nominative	*kak-**oj** les* 'which forest' (M)	*kak-**aja** trava* 'which grass' (F)	*kak-**oe** leto* 'which summer'(N)	*kak-**ie** lesa/travy* 'which forests/grasses'
Genitive	*kak-**ogo** lesa* 'of which forest'	*kak-**oj** travy* 'of which grass'	*kak-**ogo** leta* 'of which summer'	*kak-**ix** lesov/trav* 'of which forests/summers'
Dative	*kak-**omu** lesu* 'to which forest'	*kak-**oj** trave* 'to which grass'	*kak-**omu** letu* 'to which summer'	*kak-**im** lesam/travam* 'to which forests/grasses'
Accusative	*kak-**oj** les* 'which forest' (object)	*kak-**uju** travu* 'which grass' (object)	*kak-**oe** leto* 'which summer' (object)	*kak-**ie** lesa/travy* 'which forests/summers' (object)
Instrumental	*kak-**im** lesom* 'by which forest'	*kak-**oj** travoj* 'by which grass'	*kak-**im** letom* 'by which summer'	*kak-**imi** lesami/travami* 'by which forests/summers'
Prepositional	*(o)kak-**om** lese* '(about) which forest'	*(o)kak-**oj** trave* '(about) which grass'	*(o) kak-**om** lete* '(about) which summer'	*(o) kak-**ix** lesax/travax* '(about) which forests/summers'

Note. The wh-forms are supplied with the head noun, and the adjective inflection is boldfaced.

Compare the declension paradigms of adjectives with the stressed ending (Table 3) and Table 4. Based on the above, the wh-word *kakoj* 'which' can be considered a typical adjective with a view to its grammatical form and declension type.

c. Morphological forms of the wh-word *Kakoj* 'Which' to be used in the instrument

In our research instrument the following morphological forms of the wh-word *Kakoj* 'which' will be utilized:

Table 7 Morphological forms of the wh-word *Kakoj* 'which' utilized in the current study

Wh-word	**Morphological information**
*Kak-**omu** (studentu)*	which-M.DAT.SG (student)
*Kak-**oj** (stol)*	which-M.ACC.SG (table)
*Kak-**oj** (studentke)*	which-F.DAT.SG (female student)
*Kak-**uju** (knigu)*	which-F.ACC.SG (female student)

Hence, the adjective morphology relevant for our study is presented below:

Table 8 Adjectival morphology on the wh-word *Kakoj* 'which' utilized in the current study

Inflection	**Morphological characteristics**
-omu	M.DAT.SG
-oj	M.ACC.SG
-oj	F.DAT.SG
-uju	F.ACC.SG

The current subsection has expanded on the properties of the adjective and the wh-word *kakoj* "which". The next subsection will briefly discuss properties of the noun, namely, its categories and declension characteristics depending on the grammatical or lexical (natural) gender and classes that the noun pertains to.

6. Noun Declension System in Russian

Russian lexicon possesses multiple declension classes of nouns associated with their origin, gender, animacy, stem characteristics, the number of syllables, and the position of the stressed syllable. Gender, either natural or grammatical, is the invariable category of the noun and is manifested together with variable categories – case and number – by a single inflectional morpheme, which constitutes a bunch of features incorporated into a single form. The inflection is marked in bold. E.g.:

(21) a. *stol-**Ø*** table-M.NOM.SG 'table'
b. *ruk-**a*** arm/hand-F.NOM.SG 'arm/ hand'
c. *mor-**e*** sea-N.NOM.SG 'sea'

To decrease the mental workload for the L2 Russian participants in the experiment, and to make their predictions regarding gender assignment effortless, the lexical items selected for the experimental part pertain to the most ubiquitous declensional classes and possess phonologically transparent suffixes (or endings in the Slavic tradition).

In this respect, we have selected nouns of feminine gender ending in *–a/ja*, which represent the majority of feminine nouns in Russian. The nouns of masculine gender to be employed in the experiment end in a non-palatalized consonant and *-Ø* (a zero-ending, which is covertly expressed): they represent the main masculine declensional class.

Hence, the noun morphology on the experimental items is rendered maximally transparent; transparency is assumed as the extent of regularity in an inflection (Dressler, 2007).

The wh-word *kakoj* 'which' in our instrument refers to objects with certain Theta-roles (Goal in Dative or Theme in Accusative) expressed by nouns of masculine or feminine gender. Below are tables presenting the noun declension paradigm in Russian, separately for the masculine gender represented by the following nouns: *čelovek-**Ø*** 'a person, a human being', *direktor-**Ø*** 'a director', *podarok-**Ø*** 'a gift', *stol-**Ø*** 'a table'; and for feminine nouns represented by *podrug-**a*** 'a girlfriend', *konfet-**a*** 'a candy', *pesnj-**a*** 'a song':

Table 9 Declension of Russian nouns

7a. Masculine nouns ending in -Ø

	Masculine nouns ending in -*Ø*			
Case	**Animate**		**Inanimate**	
Nominative	*čelovek-**Ø*** 'a person'	*direktor-**Ø*** 'a director'	*podarok-**Ø*** 'a gift'	*stol-**Ø*** 'a table'
Genitive	*čelovek-**a*** 'of a person'	*director-**a*** 'of a director'	*podark-**a*** 'of a gift'	*stol-**a*** 'of a table'
Dative	*čelovek-**u*** 'to a person'	*director-**u*** 'to a director'	*podark-**u*** 'to a gift'	*stol-**u*** 'to a table'
Accusative	*čelovek-**a*** 'a person' (object)	*director-**a*** 'a director' (object)	*podarok-**Ø*** 'a gift' (object)	*stol-**Ø*** 'a table' (object)
Instrumental	*čelovek-**om*** 'by a person'	*director-**om*** 'by a director'	*podark-**om*** 'by a gift'	*stol-**om*** 'by a table'
Prepositional	*(o) čelovek-**e*** '(about) a person'	*(o) director-**e*** '(about) a director'	*(o) podark-**e*** '(about) a gift'	*(o) stol-**e*** '(about) a table'

Table 10 Declension of Russian nouns. Continue

7b. Feminine nouns ending in –a/ja

Case	**Feminine nouns ending in –*a/ja*[a]**		
Nominative	*podrug-**a***	*konfet-**a***	*pesnj-**a***
	‘a girlfriend’	‘a candy’	‘a song’
Genitive	*podrug-**i***	*konfet-**y***	*pesn-**i***
	‘of a girlfriend’	‘of a candy’	‘of a song’
Dative	*podrug-**e***	*konfet-**e***	*pesn-**e***
	‘to a girlfriend’	‘to a candy’	‘to a song’
Accusative	*podrug-**u***	*konfet-**u***	*pesnj-**u***
	‘a girlfriend’ (object)	‘a candy’ (object)	‘a song’ (object)
Instrumental	*podrug-**oj***	*konfet-**oj***	*pesn-**ej***
	‘by a girlfriend’	‘ by a candy’	‘by a song’
Prepositional	*(o) podrug-**e***	*(o) konfet-**e***	*(o) pesn-**e***
	‘(about) a girlfriend’	‘(about) a candy’	‘(about) a song’

Note. The morphological markers are boldfaced. The presented paradigm only covers the declension classes of nouns that will be utilized in our study and does not represent the entire system of Russian noun declension.

[a]The category of animacy does not yield any changes in feminine nouns in terms of morphophonology. Hence, demonstrating it in this table is not relevant.

For our research instrument the following forms of nouns have been selected based on their theta-roles in a structure with a 3-argument verb:

Table 11 Noun forms utilized in the instrument

Noun Characteristics	**Example**
Masculine Dative	*čelovek-**u**/director-**u**/podark-**u**/stol-**u***
Masculine Accusative Inanimate	*podarok-**Ø**/stol-**Ø***
Feminine Dative	*podrug-**e**/konfet-**e**/pesn-**e***
Feminine Accusative	*podrug-**u**/konfet-**u**/pesnj-**u***

Note. The morphological markers are boldfaced

Hence, the noun morphology to be employed in our experiments is restricted to the following inflections:

Table 12 Inflections to be employed in the experiments.

Inflection	**Noun Characteristics**
-u	Masculine Dative
-Ø	Masculine Accusative Inanimate
-e	Feminine Dative
-u	Feminine Accusative

We assume that L2 Russian participants are unlikely to experience issues regarding the case and theta-role assignment to the nouns in the experimental

conditions. The reason for this assertion is that the (in)animacy of the noun and the lexical meaning of the verb will invariably lead the participant to the correct decision regarding the theta-role of the argument: the animate argument immediately preceding the verb is assigned the Goal theta-role whereas the inanimate argument following the verb is assigned the Theme theta-role:

(22) *Kakoj ty devočke podaril knigu?*
which$_i$ you girl$_i$(ANIM.GOAL) gave book(INANIM.THEME)
'Which girl did you give a/the book as a gift?'

The current section has provided a brief account of Russian typology, syntax, and morphology relevant to the scope of our enquiry. The next section will discuss the respective issues regarding the Turkish linguistic system.

C. Syntactic Assumptions: Turkish

The Turkish language is the most widely spoken language of the Altaic family with the number of native speakers exceeding 80 million people (in 2006), mostly in Turkey, as well as in other countries with comparatively large Turkish-speaking communities, namely, the Turkish Republic of Northern Cyprus, Bulgaria, Greece, Macedonia, Romania, Germany, etc. (Göksel & Kerslake, 2004). The information regarding the number of speakers is obtained from the Ethnologue online source (https://www.ethnologue.com/language/tur. Retrieved on 09.02.2020).

Being a head-final, predominantly left-branching language, Turkish is regarded as a configurational[12] language with the Subject-Object-Verb (SOV) unmarked word order (Kornfilt, 1997; Özsoy, 2019: 12). It is a highly agglutinating language, which means that certain categories of suffixes are attached to a stem in a particular order, each suffix tending to express a single grammatical meaning (Durrant, 2013; Göksel & Kerslake, 2004: xiv). Turkish has a comparatively free word order, which is closely related to the information structure of the sentence (Balkız Öztürk, p.p.).

The variation of the Turkish language across its geography is not significant to regard its varieties as sharply distinct from each other. Rather it is a continuum, which slightly changes in terms of phonetic rules and some grammatical characteristics.

[12] However, there are accounts claiming Turkish to be a non-configurational language (Öztürk, 2005: 162, 225).

However, regional varieties are comparatively close to standard Turkish, which is used ubiquitously in education and the media.

It is evident from the facts presented in previous subsections (II.B.5., II.B.6.) that numerous grammatical features in Russian are redundant. On the contrary, Turkish possesses a grammatical system, which is aimed at limiting pleonastic phenomena, instead preserving brevity. Hence, each feature tends to be externalized once. The non-redundant properties of the Turkish language can be vividly seen in the expression of plurality:

(23) *Bir bardak – iki bardak*
one glass two glass
'One glass – two glasses' (plurality is not expressed overtly on nouns once it is expressed by an interpretable feature)

(24) *O geliyor. – Onlar geliyor.*
he is.coming they is.coming
'He is coming. – They are coming.' (plurality is not expressed overtly on verbal predicates once it is expressed by an interpretable feature)

An insight into a similar phenomenon of suspended affixation (or affix sharing) is discussed in Kharytonava (2011) and in Kabak (2007): a single conjunct possesses a suffix/suffixes that have scope over all the preceding conjuncts in a case of coordinated constructions. This tendency may also account for the comparative scantiness of externalized functional features.

Gender in Turkish, contrary to Russian, is only a semantic (lexical) feature, which is not marked morphologically. Thus, gender is naturally limited to the lexical domain. In the examples below, the nouns specified for biological gender, hence, possessing the interpretable feature [biological gender] are boldfaced:

(25) a. ***Kadın*** *bir kitap okuyor*.
woman a book reading
'The woman is reading a book.'
b. ***Erkek*** *bir kitap okuyor.*
man a book reading
'The man is reading a book.'
c. ***Kız*** *çocuk uyudu.*
girl child slept
'The girl slept.'
d. ***Erkek*** *çocuk uyudu.*
boy child slept
'The boy slept.'

In each of the examples above it is the animate noun that is designated a

biological gender. As can be seen, biological gender does not impact the feature composition of the sentence either: no respective inflections have been externalized.

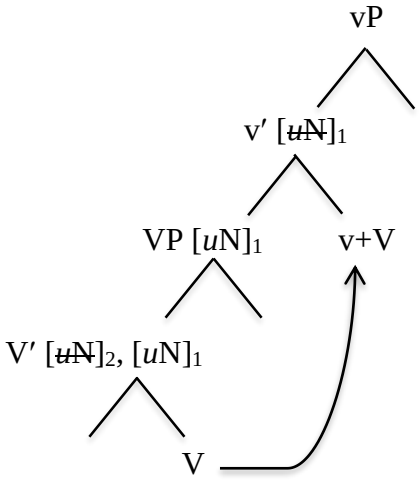
The next subsection will discuss the characteristics of core syntax in Turkish with the focus on the phenomena relevant to the scope of our study, namely, VP and NP expression, wh-movement issues, scrambling, and the possibility of splitting in relation to the nominal phrases.

1. Core Syntax in Turkish. Verb Phrases (VPs/vPs)

In line with the approach employed in the section pertaining to the syntax of Russian (II.B.1), we assume that structurally and semantically the central part of a Turkish sentence is also attributed to the verb phrase. The minimal valency for a Turkish verb is 1 (one), hence, we assume to encounter one-place through four-place predicates. Just as our assumptions regarding Russian lexical items are directed by the generative theory, we assume that Turkish lexical items constitute three types of features as well: morphophonological, semantic, and syntactic features. Focus being on syntactic features of the verb, we recognize the interpretable feature [V] reflecting the categorial meaning of the verb; and uninterpretable feature(s) [*u*N], which do not survive derivation and are duly checked and deleted. Just as we did for the Russian VPs, we assume the existence of the higher v-shell structure (vP) incorporating VP (Adger, 2003: 104).

Turkish, being a left-branching, head-final language, in the scope of the Minimalist program (see Aydın & Şeker, 2013, for reference) is assumed to have the following VP/vP structure:

Figure 6 VP structure of a Turkish three-place predicate



Nevertheless, there are contrastive views on the possibility of the vP in Turkish. Öztürk (2005: 13) argues for the bare TP without any syntactic motivation for a vP shell due to the fact that case and reference assignment are realized in situ rather than being attracted by a higher functional projection.

This subsection has explored the Verb Phrase superficially and only in the scope required by the current research. The next subsection briefly introduces the composition of the Noun/Determiner Phrase in Turkish.

2. Noun/Determiner Phrases (NP/DPs)

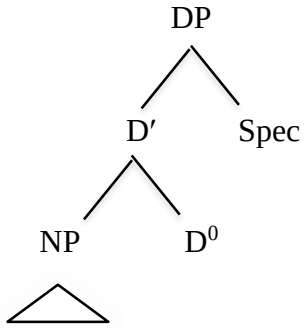
Turkish noun phrases being void of overtly expressed referentiality face a considerable debate over whether there is an operative DP projection, therein the case is similar to Russian noun phrases. Hence, the line of argumentation regarding the NP/DP dispute develops based on the same rationale, which is the absence of the overt morphological determiners.

The reasoning behind the existence of the DP is that the NP has a predicative nature and is introduced into its argument position by means of a functional projection, namely, DP. The head of the DP in this case is responsible for maintaining referentiality (Longobardi, 1994). Thus, the NP obtains the status of an argument via the DP projection. A contrasting point of view is asserted in Chierchia (1988); he claims that the denotational power of NPs in different languages varies and not all NPs are necessarily of predicative nature, hence, the universality of the DP projection is rejected.

Öztürk (2005) argues that Turkish NPs lack a DP projection altogether whereas Kechriotis (2009) puts forward the claim that the DP projection does indeed exist based on case and referentiality assignment. The argument focuses on the non-case-marked nominal, which behaves referentially, and the issue "why [bir NP] nominals occur in ECM (Exceptional case marking) but bare nominals cannot" (Kechriotis, 2009: 8). Herein we concede that Turkish possesses the DP projection due to the claims above and also assume the DP hypothesis (Abney, 1987). Hence, the approach regarding the composition of the NP/DP phrase in Turkish and Russian is similar.

As Turkish is a left-brancing language, the structure of the NP/DP phrase assumed in our study is as follows:

Figure 7 Structure of the Turkish NP/DP phrase



Now that we have assumed the structure of the Turkish NP/DP for our enquiry, in the next subsection we will briefly discuss the views on case assignment in Turkish.

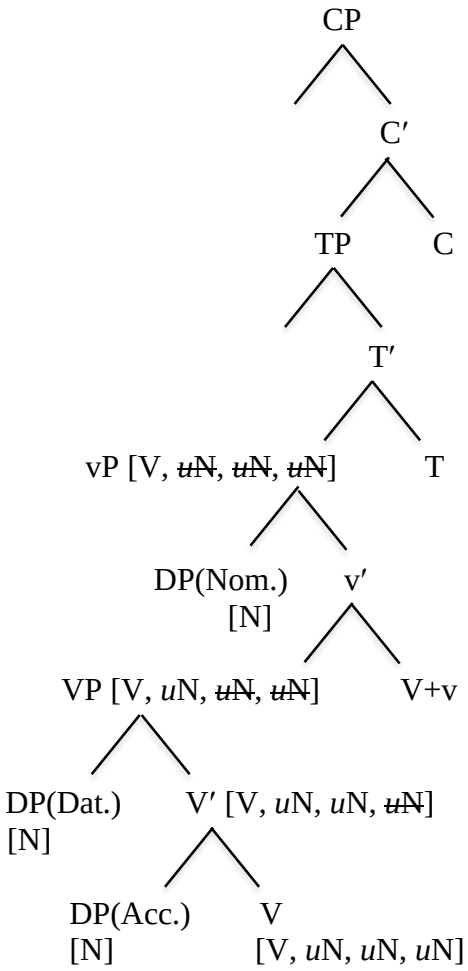
3. Case Assignment in Turkish

As mentioned previously, case assignment constitutes a syntactic operation involving case checking of NP/DPs, thereby the ensued arguments attain certain thematic roles in the course of derivation. A structural case being assigned, the checked NP/DP receives a value via the basic operation Agree (Adger, 2003: 172). Following this, the necessary case-marking morphology is provided for the phonological form (PF) of the sentence after the point of Spellout (Adger, 2003: 116).

According to Öztürk (2005, p.13), case assignment in languages like Turkish and Hungarian "takes places within the domain of a single projection" in virtue of the absence of Agree relationship with higher functional projections. Based on this, case assignment is realized in situ and there is no syntactic motivation for the NP to leave the base position. Noun cases are assumed to be specifiers of respective heads. For the scope of our enquiry we assume this point of view; hence, Turkish is an example of an in-situ language.

Below is a structure of a sentence with a three-place predicate supplied with the derivation relevant for the scope of the current enquiry:

Figure 8 Sentence tree of a Turkish three-place predicate construction



Note: the functional heads that are not fundamental for our study are omitted.

There are other accounts regarding case assignment in Turkish, and the interested reader is referred to Akan (2009), Aydın & Şeker (2013), Keskin (2009), among others, for detailed analyses. The next section will briefly discuss the derivation of wh-questions in Turkish.

4. Derivation of Wh-Questions in Turkish

To start, it is worth reminding that Turkish is a classical SOV language. However, this basic word order is subject to change when other factors are at work, particularly, information structure, topicalization and focalization processes, etc. According to Kornfilt, "the most unmarked position for a wh-element is to the immediate left of the verb, irrespective of its grammatical relation" (1997: 9). The second-best option is to retain the wh-element in its derived position (Kornfilt, 1997: 10). How are the above-mentioned linearizations attained?

The major issue to be tackled in this subsection is whether Turkish possesses wh-movement. Should it be the case, what is its nature? Turkish is viewed by many as a classical wh-in-situ language, which follows that its wh-elements are expected to be found in the merge position of an R-expression (for this position see Akar, 1990; Erguvanlı, 1984; Kornfilt, 1997; Özsoy, 1996, to mention a few). However, based on Watanabe (1992), İşsever (2009: 107) claims that Turkish wh-in-situ displays movement effects in overt syntax and suggests a syntactic operator-movement analysis. The proposal is that Turkish wh-structures are characterized by a focus-driven movement, "whereby its wh-operator is attracted to Spec,CP to satisfy the u[wh] feature of C_0" (İşsever, 2009: 110). Arguing for a kind of pied-piping, through which the [+wh] feature percolates to the maximal projection and dominates it, Özsoy (1996) regards Turkish wh-constructions as derived by means of LF movement. A similar view that Turkish displays LF movement is also shared by Akar (1990) as based on Huang (1982).

Normally in the unmarked context the wh-element occupies the base-derived position in a matrix clause or in an embedded clause. The examples below are root wh-questions (26a-c) with wh-words, and embedded wh-questions with wh-relatives (26d-f). The wh-words are boldfaced:

(26) a. *Yarın bize* ***kim*** *gelecek?*
tomorrow to.us who will.come
'Who will come to/visit us tomorrow?'

b. *Doğum günün için* ***hangi*** *hediye istiyorsun?*
birth day.your for which gift want.you
'What kind of gift do you want on your birthday?'

c. *Gösteri için* ***kaç*** *kişi çıktı?*
demonstration for how many people came.out
'How many people have joined the demonstration?'

d. *Yarın bize* ***kim-in*** *geleceğin-i söyle.*
tomorrow to.us who-GEN will.come-ACC tell
'Tell [me] who will come to us/visit us tomorrow'

e. *Doğum günün için* ***hangi*** *hediye istiyorsun diye bana fikir ver.*
birth day.your for which gift want.you saying(COMP) to.me idea give
'Give me an idea what kind of gift you want on your birthday'

f. *Gösteri için* ***kaç*** *kişinin çıktığını biliyor musun?*
demonstration for how many people came.out know you.Q
'Do you know how many people have joined the demonstration?'

Based on the theoretical accounts and the illustrated examples above, we

assume that Turkish can be viewed as a wh-in-situ language with certain possible reservations pertaining to the covert movement at LF. In this respect, Turkish is assumed not to possess an overt wh-movement, which is, in contrast, operable in Russian.

Below, a brief table of wh-elements in Turkish is illustrated, which presents only a partial view of the wh-elements that can potentially be contained in root or embedded wh-structures.

Table 13 Wh-elements introducing wh-questions in Turkish

Default form	**Meaning**	**Category**	**Basic information**
kim	'who'	NP/DP	Argument wh-phrase. Used for human beings. The default form agrees with the predicate and is specified for case.
ne	'what'	NP/DP	Argument wh-phrase. Used for inanimate objects including animals. The default form agrees with the predicate and is specified for case.
hangi	'what', 'which'	NP/DP	D-linked wh-phrase. Used for human beings, animals, and inanimate objects. The default form immediately precedes the head noun and is not specified for any category explicitly. Regarding its form, it is an AP; however, the wh-phrase replaces and refers to NP/DPs (d-linked contexts)
nerede	'where'	PP	Adjunct wh-phrase. Locative
ne zaman	'when'	PP	Adjunct wh-phrase. Temporal meaning
niçin	'why'	PP	Adjunct wh-phrase. Reason
nasıl	I. 'how' II. 'what kind of'	I. PP II. AP	Adjunct wh-phrase. Attributive meaning when related to the noun phrase, or adverbial meanings when related to verb phrases
kaç	'how much', 'how many'	PP	Adjunct wh-phrase. Quantity in relation to the noun phrase

Note. Not all the wh-elements are presented.

This subsection has briefly explored the issue of wh-question derivation in Turkish. The next subsection will look into the the path of deriving discourse-linked wh-questions, comparing it with the same phenomenon in the Russian language.

5. Derivation of Discourse-linked (D-linked) Wh-Questions in Turkish

In line with Pesetsky (1987), discourse-linked questions display certain differences when compared to constituent (Wh-) questions in that the number of the possible referents is limited by the noun, which refers to the response to the actual

question. This specificity is assumed universally, hence, it pertains both to Russian and to Turkish.

Assumed as a wh-in-situ language, Turkish derives d-linked questions in situ through utilizing the interrogative wh-word *Hangi* 'Which'. It must be noted that the wh-word *Hangi* is not specified for any externalized morphology. The d-linked wh-object is preserved in its base position, or the wh-word and the head-word may immediately precede the verb (Kornfilt, 1997). Below we demonstrate d-linked questions referring to various constituents:

(27) a. *Hangi çocuk sana kitabı hediye etti? – Ali.*
which child to.you book gift made – Ali.
'Which child gave you the book as a gift?' – 'Ali.' (Unmarked word order, wh-subject is in its base position)

b. *Sana kitabı hangi çocuk hediye etti? – Ali.*
to.you book which child gift made – Ali.
'Which child gave you the book as a gift?' – 'Ali.' (Marked word order, wh-subject precedes the verb)

c. *Sen hangi çocuğa kitabı hediye ettin? – Ali'ye.*
you which child book gift made – to.Ali
'Which child did you give the book as a present?' – 'To Ali.' (Unmarked word order, indirect wh-object is in its base position)

d. *Sen kitabı hangi çocuğa hediye ettin? – Ali'ye.*
you book which child gift made – to.Ali
'Which child did you give the book as a present?' – 'To Ali.' (Marked word order, indirect wh-object precedes the verb)

e. *Sen çocuğa hangi kitabı hediye ettin? – Macera hakkında bir kitap.*
you to.child which book gift made – adventures about a book
'Which book did you give to the child?' – 'A book about adventures.' (Unmarked word order, indirect wh-object is in its base position)

As we have already mentioned, biological gender in Turkish is not marked morphologically, be it on nouns, verbs, or adjectives. For this reason the feature [biological gender] is not manipulated when demonstrating the formation of d-linked wh-questions, unlike we did in the Russian respective subsection (II.B.2.b.). Likewise, noun cases do not yield any expression on the wh-word. Ultimately, as can be seen in the examples above, the wh-word *Hangi* 'Which' on par with the adjectives is not specified for any morphologically expressed category.

The next subsection presents some basic information regarding the movitation for scrambling in Turkish.

6. Scrambling Operations in Turkish

Just as we did with scrambling operations in Russian, herein we deviate from the approach to scrambling presented in Saito (1992), where it is regarded as a stylistic operation to derive alternative word orders, but we rather assume the line of the Prague School of Linguistics, according to which scrambling is related to the distribution of the Theme and the Rheme, hence, induced by the discourse requirements.

A careful insight into the issue of scrambling in Turkish is presented in İşsever (2008). His claim suggests that it may not be EPP[13]-driven, which is assumed by Miyagawa (2003), and neither is it optional. Instead, there is a telling claim that it "is driven by the information structural features topic and focus" (İşsever, 2008:14). It has been demonstrated that A'-scrambling but not A-scrambling is operative in Turkish as the object in the OSV linearization reconstructs to its base position. Besides, no obligatory interaction has been observed regarding case-marking and scrambling.

Another argument in favour of the discourse requirement driving the scrambling operation comes from the fact that the fronted topicalized object that is derived in the pre-verbal position receives a diminished stress when pronounced whereas the subject receives major stress in the clause (Öztürk, p.c.):

(28) a. *Kitab-ı* ***Ali*** *gördü.*
Book-ACC Ali-NOM saw
'It is Ali who saw the book.' (Ali, the structural subject, is stressed)

A similar claim is put forward by Akan (2009) in that in the Turkish language scrambling is predominantly an A-bar movement driven by the information structure. However, some reservations are pointed out that scrambling may also be regarded as the last resort operation when different types of foci are analized.

However, Kural (1992) in his article on scrambling argues that this phenomenon exibits A-movement in Turkish, rather than A-bar movement conceding that scrambling is bound with the focus domain of the sentence. We will leave this issue for further research and assume a similar mechanism of scrambling for Turkish presented in connection with Russian in II.B.3, namely, scrambling on account of the discourse conditions.

[13] Extended Projection Principle (EPP) is the claim that the subject position in a clause must be occupied by a noun phrase (NP) or a determiner phrase (DP) (For comprehensive details the reader is referred to Landau, 2005; Svenonius, 2002)

The next subsection will briefly introduce the properties of the Turkish noun and the declension paradigm, drawing on the similarities and differences with Russian.

7. Noun Declension Classes: Declension System in Turkish

Once we deviate from the syntactic motivation for noun declension and the paradigm of noun cases in Turkish and specifically focus on the morphophonological forms of expresson and the associated classes therein, it is easy to discern that Turkish morphology is strictly bound to the vowel harmony and consonant assimilation (Göksel & Kerslake, 2004). The preceding vowel and the consonant determine the affix supplied for the noun (as well as other parts of speech), which gives rise to alterable sound patterns in affixes.

Hence, the rationale for the morphophonological externalization of the affix is rooted in the rules of vowel harmony. Two distinct types of vowel harmony are recognized, fronting harmony and rounding harmony (Göksel & Kerslake, 2004: 21)

I. Fronting harmony. When the preceding or the stem vowel is accounted for, the resulting affix vowel may have variants *E* or *A*, resulting from the row of the preceding vowel, namely, fronted or non-fronted:

Table 14 Fronting harmony in Turkish

Row	Vowel Characteristics
Fronted	Preceding vowels: **e, i, ö, ü –** Affix: **e** *okul – okul**a*** ‘school – to school’, *masa – masay**a*** ‘a table – to/on a table’, *kapı – kapıy**a*** ‘a door – to a door’, *kol – kol**a*** ‘a handle – to a handle’
Mid/Back	Preceding vowels: **a, ı, o, u –** Affix: **a** *göl – göl**e*** ‘a lake – to a lake’, *gül – gül**e*** ‘a rose – to a rose’, *deniz – deniz**e*** ‘a sea – to a/the sea’, *el – el**e*** ‘a hand – to a hand’

Note. The alterable affix is boldfaced

II. Rounding harmony. Another group of vowel affixes depend on the two variables regarding the preceding vowel, namely, the row and the roundedness:

Table 15 Rounding harmony in Turkish

	Roundedness	
Row	**Rounded**	**Non-rounded**
Fronted	Preceding vowels: **ö, ü** – Affix: **ü** *göl – göl**ü*** ‘a lake – a lake-ACC’ *gül – gül**ü*** ‘a rose – a rose-ACC’	Preceding vowels: **e, i –** Affix: **i** *deniz – deniz**i*** ‘a sea – a sea-ACC’ *el – el**i*** ‘a hand – a hand-ACC’
Mid/Back	Preceding vowels: **o, u –** Affix: **u** *okul – okul**u*** ‘a school – a school-ACC’ *kol – kol**u*** ‘a handle – a handle-ACC’	Preceding vowels: **a, ı –** Affix: **ı** *masa – masay**ı*** ‘a table – a table-ACC’, *kapı – kapıy**ı*** ‘a door – a door-ACC’

Note. The alterable affix is boldfaced

Similar phenomena are operable regarding consonant assimilation: the noun affixes are alternated based on the characteristics of the preceding consonant in virtue of its being voiced/voiceless:

E.g. *ses – ses**te*** ‘sound – in a sound’, *deniz – deniz**de*** ‘sea – in a sea’. (the alternable affix is boldfaced). The interested reader is referred to Göksel & Kerslake (2004: 43-44) for a comprehensive account of phonological conditions associated with noun morphology, and the ensued consequences.

Based on the above, it is irrelevant to delineate declension classes of nouns in Turkish due to solely phonetic reasons attributing for the ensuing functional morphology (and also derivational morphology, as the same phonetic assimilation rules work elsewhere within Turkish grammar when it comes to affixation). Hence, we assume that noun functional morphology is homogenous in terms of its form of expression and it cannot be compared to the rationale we used to classify nouns in Russian.

This subsection has briefly discussed the phenomena responsible for inflecting nouns. The next subsection will elucidate some details regarding adjectives in Turkish, namely, the features that compose the adjective, and the morphological form of their expression.

8. Adjectives in Turkish

Adjectives in Turkish are used either attributively (preceding the noun) or predicatively (following the noun). Nevertheless, in both cases adjectival categories possess a relatively timid morphological expression, and are characterized by the externalization of such categories as the degree of comparison, possession and case (in constructions with the elided noun) (Göksel & Kerslake, 2004). Below in 29a-c certain adjectival forms are presented with a view to demonstrate morphological markers. The adjectives with the related externalized categories are marked in bold:

(29) a. ***Yeni*** *okul-um* ***eski-sin-den*** *daha* ***güzel-dir***.
new school-1sPOSS old-3rPOSS-ABL more nice-COP
'My new school is nicer than the old one.' (the ablative case functions as part of a comparative construction)
b. *Ancak yine* ***daha güzel-in-i*** *isti-yor-um*.
but anyway more nice-3rPOSS-ACC want-PRS-1 (the noun is elided in a comparative construction)
'However, still I want a nicer one'.
c. ***Eski-sin-e*** *gitmek asla iste-m-iyor-um*.
old-3rPOSS-DAT go ever want-NEG-PRS-1
'I never want to go to the old one.' (noun-ellipsis)

In the scope of the Minimalist approach, being a head-final language, Turkish, contrary to languages like English and Russian, behaves differently regarding how syntactic categories are projected. A Turkish syntactic structure with an adjective preceding a noun is assumed to comprise an NP rather than an AP (Aydın & Şeker, 2013: 236). This condition is due to the head-last characteristic of the Turkish language. A typical NP structure with an adjective is demonstrated below:

Figure 9 NP structure with an adjective in Turkish

eski *kitaplar* [the example is from Aydın & Şeker, 2013: 236]
old books

Due to the fact that following the point of Spellout, the Turkish adjective in PF has no explicitly marked categories, we assume that in LF all the features on the adjective have been checked, and as a result, no additional categories need checking after the Spellout. Hence, an externally realized structure, which is surfaced in PF, is

void of any inflectional morphology. The examples below vividly exhibit the behaviour of the adjective in an NP (the adjectives are marked in bold):

(30) a. ***Eski*** *kitap-lar bizim servetimiz-dir.*
old book-PL our wealth-COP
'Old books are our wealth.'
b. ***Eski*** *kitap-lar-dan çok şey öğrenebil-ir-iz.*
old book-PL-ABL many thing learn.can-PRS-2PL
'We can learn a lot of things from old books.'
c. ***Eski*** *kitap-lar-ın-dan çok şey öğren-di-m.*
old book-PL-3rPOSS-ABL many thing learn-PST-1SG
'I learned a lot of things from his/her/their old books.'
d. ***Eski*** *kitap-lar-ı çok sevi-yor-um.*
old book-PL-ACC very love-PRS-1SG
'I love old books very much.'
e. ***Bu eski*** *kitab-ı çok sevi-yor-um.*
this old book-ACC very love-PRS-1SG
'I love old books very much.'
f. ***Eski*** *kitap-lar-a daha çok güveni-yor-um.*
old book-PL-DAT more very trust-PRS-1SG
'I trust old books a lot more.'

As can be seen from the sentences above, regarding the expression of adjectival morphology Turkish demonstrates a comparatively impoverished paradigm of the adjective.

The next subsection will probe whether splitting is plausible and operable in Turkish on the basis of certain theoretical viewpoints and evidence from contemporary Turkish speech as judged by Turkish speakers.

a. Views on the possibility of splitting in Turkish: contrasting views

When it comes to observing the phenomenon of splitting in Turkish, several accounts have been presented in research under different denominations, namely, "dislocated adjectival phrases" in Göksel & Kerslake (2004: 349), "subscrambling" in Kornfilt (2003: 130), and Left Branch Extraction (LBE) in Bošković & Şener (2014). A sample of a sentence with an allegedly split nominal phrase is provided below, the phrase with the split constituent is in bold:

(31) *Dün sokak-ta* ***[e$_i$ bir adam]*** *gör- dü-m* ***çok yaşlı$_i$.***
yesterday street-LOC a man see-PST-1SG very old
'Yesterday I saw a very old man in the street'.
[The sample is from Kornfilt (2003: 131)].

The split phrase in the Turkish sentence above is inverted with the attribute following its headword if we use the terminology proposed by Pereltsvaig (2008b), which is plausible on account of the typology of Turkish being a predominantly head-final language. As Kornfilt (2003) points out, the splitting of the NP/DP with the pattern where the extracted AP precedes the co-referenced constituent, is illicit as "the scrambled subconstituent needs to be antecedent-governed, and this would be impossible in such a derivation" (p.131). Bošković & Şener (2014) also raise the issue of left branch extraction in Turkish and claim that only topicalized non-contrastive elements can be dislocated but not contrasted or focalized ones, which have to remain in-situ, hence, inside the NP/DP. Due to the discourse requirements on the dislocation of the attribute it is concluded in Bošković & Şener (2014) that the phenomenon in Turkish must be approached akin LBE in Slavic languages. Ultimately, Göksel & Kerslake (2004) concede that the dislocated adjectival phrases placed after the predicate are perceived as "an afterthought" (p.349), which suggests that the relation between the modifying phrase and the NP is loosened. Consequently, such a phenomenon can be regarded not as a Complement to the NP but rather as an Adjunct: the Complement is normally adjacent to the headword and precedes it in a Turkish NP/DP, whereas placing it in the postposition relative to the headword and the predicate yields another status of the DN/NP. The idea is corroborated by native speakers' judgments: they tend to perceive the dislocated part as an afterthought and have a strong desire either to shape it as a separate sentence, or at least to detach it with a comma from the preceding part.

Ultimately, Pereltsvaig (2008b) designates the three conditions that are allegedly mandatory for the realization of the splitting potential in a language, namely, the possibility of scrambling, N-ellipsis (elided noun in an NP), and overt markers on both elements of a phrase to be split. Albeit Turkish displays a comparatively free word order of arguments subject to the discourse requirements and includes N-ellipsis, it nevertheless fails to exibit inflections on both elements of a NP. Hence, the implausibility of Slavic/Russian-type splitting is predicted owing to the improbability of non-inverted split construction as evident from the research mentioned above, which is consecutively confirmed by L1 Turkish speakers' judgements regarding the following samples:

(32) a.**Sıcak ben çay istiyorum.*
hot I tea want
b.**Ben sıcak istiyorum çay.*
I hot want tea
c. **Ben çay istiyorum, sıcak.*
I tea want hot
'I want some hot tea.'

Educated and literate native speakers of Turkish judge the sentences in (32a-c) as ungrammatical and unacceptable for Turkish. In fact, they propose to repair the (32c) example as in (33):

(33) *Ben çay istiyorum, sıcak olsun.*
I tea want hot let.it.be
'I want some tea, let it be hot.'

The repair constitutes an operation of turning the dislocated element into a separate proposition.

Hence, we assume that the phenomenon of splitting in the sense it functions in Russian is void in Turkish, and this presents a stark difference between Russian and Turkish.

Herein we have explored the phenomena of the Turkish language that are within the scope of the current enquiry. The next section will summarize the similarities and differences between Russian and Turkish grammatical systems.

D. Grammatical Systems of Russian and Turkish Compared

As the evidence presented above suggests, Russian and Turkish differ considerably with respect to their typology, morphology-syntax mapping, direction of projection derivation, and, ultimately, the externalization of certain features. Therein we will summarize the major similarities and differences between the two language systems.

The crucial difference regarding the relevance for our enquiry is that Russian is a highly inflecting language with several features embedded into a single bound morpheme, whereas Turkish is a classical agglutinating language, where each bound morpheme is generally prescribed a specific grammatical meaning. Russian being a configurational SVO language with overt wh-movement is contrasted to Turkish, a typical SOV in-situ language, where overt wh-movement is not observed. When it

comes to case assignment, we assume the movement of the NP/DP in Russian where the constituent receives the status of an argument whereas in Turkish case assignment is assumed to take place locally.

Both Turkish and Russian constitute a comparatively rich system of noun cases in relation to their morphological expression. However, Russian has multiple declension classes based on certain categories, like grammatical and lexical gender, etymology, phonological characteristics, etc. In contrast, Turkish declension system is morphologically invariant and is externalized based entirely on the root phonology.

The Turkish adjective is not specified for any categories co-referencing it with the headword (phi-features) and consequently is void of any functional morphology, instead it immediately precedes the headword. On the contrary, Russian adjectives demonstrate an intricate paradigm, where each adjective is specified for at least three categories (grammatical gender, case, and number) bundled up as a single morpheme, which makes it a prominent difference between the two languages.

Both Turkish and Russian allow N-ellipsis and scrambling. Albeit it is not typical for verb-final languages to have contituents following the verb (Kornfilt, 2003: 130), Turkish is described as a rather word-order free language, and easily allows constituents postposing the verb. The movement of constituents is motivated by the discourse requirement in both languages.

Regarding redundancy Russian is packed with numerous features, which are usually externalized as a single morpheme on virtually every notional word, making Russian not only an extremely complicated flective language but also taxing it with additional redundant meanings. The latter permits a highly flexible word order, between constituents as well as within them. Turkish is characterized by considerable brevity that is accounted for a feature to be externalized once only: the agglutinaling type contributes to this in the possibility of suspended affixation. This constitutes a remarkable difference, which is likely to bear consequences in acquisition.

We assume similar core syntax systems in Russian and Turkish as suggested by the Minimalist program, namely, the DP structure of the nominal phrases, and the vP shell incorporating the VP.

1. D-linking and Splitting in Russian and Turkish

D-linking is available both in Russian and Turkish wh-phrases. According to Pesetsky (1987), *which*-phrases are linked to discourse in that the co-referenced noun limits the number of possible discourse referents, which is how the term d-linking is defined pertaining to our text. Hence, d-linking is assumed to constitute a universal domain, which is unlikely to pose difficulty in SLA.

However, Russian and Turkish languages differ with respect to the structure of d-linked wh-questions: Turkish allows only adjacent constructions whereas Russian possesses both adjacent and split d-linked wh-questions due to its grammatical characteristics, which are elucidated below.

Turkish is contrasted to Russian in a prominent aspect: albeit a configurational language with the SOV word order, and displaying scrambling and N-ellipsis, Turkish falls short of overt adjectival morphology (Göksel & Kerslake, 2004; Yavuz et al, 2011).

The above conditions are exemplified in (34a-c), the phenomena in question are underlined. Canonical word order is demonstrated in (34a):

(34) a: Canonical word order**:**
– Sıcak çay içecek misin? – Ben şimdi sıcak çay istemiyorum.
hot tea drink will.you I now hot tea want.not.I
'– Will you drink hot tea? – Now I don't want to have hot tea.'

b: Scrambling:
– İçecek misin <u>*sıcak çay*</u>*? –* <u>*Sıcak çayı*</u> *ben şimdi istemiyorum.*
drink will.you <u>hot tea</u> <u>hot tea</u> I now want.not.I
'– Will you drink hot tea? – Now I don't want to have hot tea.'

c: N-ellipsis:
– İçecek misin sıcak çay? – Sıcak <u>*[çayı]*</u> *şimdi istemiyorum.*
drink will.you hot tea hot <u>[tea]</u> now want.not.I
'– Will you drink hot tea? – Now I don't want to have hot tea.'

Turkish adjectives and wh-words are unspecified for number, gender, and case features, due to which overt adjectival morphology in Turkish is missing (Göksel & Kerslake, 2004). Hence, no splitting is either expected or licit in the sense of Pereltsvaig (2008b), which is attested by native Turkish speakers (Balkız Öztürk, p.c., Filiz Çele, p.c.). The non-targetlike (ungrammatical) split construction is presented below (the split elements are underlined):

(35) – *Sıcak içecek misin çay? – *Sıcak şimdi istemiyorum çayı.
hot drink will.you tea hot now want.not.I tea
'– Will you drink hot tea? – Now I don't want to have hot tea.'

Likewise, the dislocated AP in the postposition to the predicate is also attested as ungrammatical by L1 Turkish speakers, albeit it is marginally accepted in Kornfilt (2003), Göksel & Kerslake (2004), and Bošković & Şener (2014):

(36) – */? Çay içecek misin sıcak? – *Çay şimdi istemiyorum sıcak.
tea drink will.you hot tea now want.not.I hot
'– Will you drink hot tea? – Now I don't want to have hot tea.'

Furthermore, an attempt to create a split d-linked wh-question through the extraction of the wh-word and postposing it relative to the predicate (the operation claimed to be conditionally licit in Turkish) will yield an ungrammatical construction:

(37) – *Çay içeceksin hangi? – Ben şimdi çay istemiyorum.
tea drink.will.you which I now tea want.not.I
'– Will you drink hot tea? – Now I don't want to have tea.'

It is evident that in the construction above, the wh-word '*hangi'* fails to be antecedent-governed, hence, such a derivation is ruled out. Consequently, we can assert the impossibility of Slavic-type splitting for Turkish, which constitutes a strong claim to conduct an inquiry on the basis of this salient difference between the two languages.

As the operation of splitting (in the sense of Pereltsvaig (2008b)) is inoperative in Turkish (hence the absence of transfer from the L1) and due to its being avoided in the L2 Russian classroom environment as an anti-prescriptive pattern, which is never taught explicitly, we can argue that acquiring L2 Russian splits by adult L1 Turkish learners is an ideal candidate for the Poverty of the Stimulus (PoS) learning situation and a telling phenomenon to utilize in our study.

2. Split D-linked Wh-Questions in Russian and Turkish

Among the numerous options of NP splits present in Russian[14], it was decided to limit the current study to split d-linked wh-questions, which are common in colloquial speech and indicative of overt morphology on both elements of the noun phrase, as exemplified below (the elements of the split phrase are marked in bold, the morphological markers are underlined):

[14] For a detailed account see Pereltsvaig (2008b).

(38) a. ***Kak-<u>oj</u>***[15] *segodnja* ***den'-<u>Ø</u>****?*
Which-M.NOM.SG today day-M.NOM.SG
'Which day is it today?' (split d-linked wh-question)
b. ***Kak-<u>uju</u>*** *ty kupil* ***mašyn-<u>u</u>****?*
Which-F.ACC.SG you bought car-F.ACC.SG
'Which car did you buy?' (split d-linked wh-question)

In line with Pereltsvaig (2008b), it is assumed that Russian split d-linked wh-questions are derived via Copy movement and partial interpretation of copies at Phonetic Form (PF), the ideas developed by Corver & Nunes (2007) and Fanselow & Ćavar (2002).

Taking into account the functional lexicon of the Turkish language and due to the absence of overt inflectional morphology on the elements of the phrase to be split, this syntactic operation is non-existent in Turkish. Hence, as claimed in the previous subsection, split d-linked wh-questions are not observed. The Russian-type non-targetlike (ungrammatical) split constructions are exemplified below:

(39) a.*<u>*Hangi*</u> *sen* <u>*arabayı*</u> *aldın?*
which you car bought
'Which car did you buy?' (split d-linked wh-question)
b.**Sen* <u>*hangi*</u> *aldın* <u>*arabayı*</u>*?*
you which bought car
'Which car did you buy?' (split d-linked wh-question)
(the split elements are underlined)

Besides, extracting the wh-word '*hangi'* out of the NP/DP and placing it post-verbally, which might be licit according to Kornfilt (2003), Göksel & Kerslake (2004), and Bošković & Şener (2014), does not yield a grammatical construction either, as can be seen in example (40) below (also see example (37)):

(40) a.**Sen* <u>*arabayı*</u> *aldın* <u>*hangi*</u>*?*
you car bought which
'Which car did you buy?' (split d-linked wh-question)
(the split elements are underlined)

Only adjacent constructions are licit in Turkish, as exemplified in (41), the respective NP/DPs are underlined:

(41) a. *Sen* <u>*hangi arabayı*</u> *aldın?*
you which car bought
'Which car did you buy?' (SOV, canonical word order)

[15] Russian uses the same wh-word in d-linked and non-d-linked wh-interrogatives (*kakoj*), whereas Turkish uses a distinct wh-word as the wh-specifier (*hangi*). Along with *kakoj*, the wh-word *kotoryj* is also used albeit considerably less frequently.

b. *<u>Hangi arabayı</u> aldın sen?*
which car bought you
'Which car did you buy?' (OVS, focalized object)

The motivation for narrowing this study to the acquisition of adjective morphology in split d-linked wh-questions has been the minimal number of variables to be tested: in line with Corver & Nunes (2007) and Fanselow & Ćavar (2002) we assume the Copy theory of movement and the universal character of wh-movement across natural languages at Logical Form (in this view Turkish is assumed to possess covert movement). Likewise, we assume that d-linking constitutes a universal domain contained in the discourse and reflected universally through semantic reflexes (Pesetsky, 1987). Hence, the linguistic phenomena associated with the above-mentioned domains are unlikely to constitute a source of difficulty in SLA because they are universal and come for free as part of our LAD.

The next chapter will elucidate and discuss current approaches to L2 acquisition of functional morphology, related hypotheses with the experimental studies, and the potential suggestions for our study.

III. SECOND LANGUAGE ACQUISITION: THEORETICAL BACKGROUND

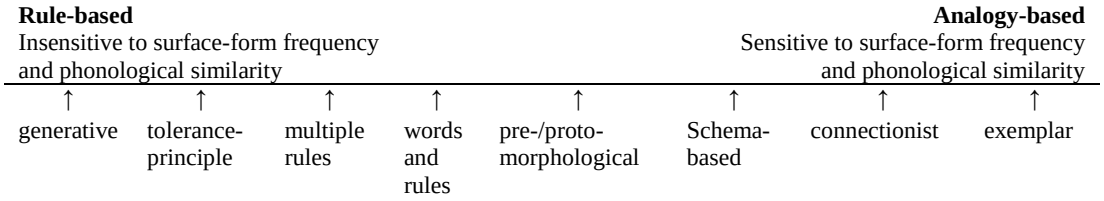
A. L1 acquisition versus L2 acquisition

This study is being conducted with the assumption of an inherited mechanism responsible for acquiring language, the language acquisition device (LAD) (Chomsky, 1995). The main line of arguments in favour of the inherited mechanism is posed by the Poverty of the Stimulus (PoS) claim, or the Logical Problem, in that the received input underrepresents the resulting output, and the other way round: the output can hardly boil down to the amount of input received, as we can see across native languages worldwide relatively easily acquired by children. Unless the child has psychological, physical or mental conditions or impairments, the mental representation of any acquired language invariably converges among its speakers regarding what is grammatical and what is ungrammatical. The ability to judge ungrammaticality induces another line of arguments in relation with the inherited status of the LAD: no child receives (consistent) ungrammatical input, but all native speakers have a gut feeling for what is (un)grammatical.

However, such a convergence cannot be observed in individuals who start acquiring or learning another language after approximately the age of seven; this is when the terms 'second language acquisition' (SLA) and 'L2 learners' emerge to refer to such individuals (Meisel, 2011; Schwartz, 2004; Slabakova, 2016: 142). Virtually all L2 learners demonstrate variability with respect to their L2 grammars, which gave way to the term "interlanguage" characterizing the state of a L2 grammar before it converges with that of a native speaker (Selinker, 1972: 214). Yet, a successful attainment of all domains of a L2 grammar has hardly been attested in research literature. What can be observed in L2 learners is morphological variability regarding different domains of their L2s. Morphological variability is surfaced in comprehension, production, and grammaticality judgements of functional, mainly inflectional, morphology, which arguably constitutes "the main locus of linguistic variation among languages of the world" (Slabakova, 2018: 3).

Regarding the acquisition of morphology, nowadays the scientific community deals with an encompassing array of approaches, having the rule-based and the similarity-based accounts on either edge of the continuum. Figure 10 below summarazes the current trends in tackling the issue of morphology acquisition.

Figure 10 Approaches to second-language acquisition



Adopted from Granlund et al (2019)

The rule-based accounts are derived from generative linguistics, which views the inflection to be a process of checking certain features according to some formal rules. On the contrary, the similarity-based ones claim that dicreet items are stored in our memory and are represented by exemplar approaches (Granlund et al, 2019).

The present study is conducted in the framework of the Minimalist Programme (generative linguistics) as defined and discussed in Chomsky (1995) and Adger (2003).

This subsection has delineated the divide between L1 and L2 acquisition with the consequenses resulting in the different status of either in our mind. The next subsection will introduce the concept of the [morphosyntactic] feature in the Minimalist perspective and how features are externalized via functional morphology.

1. Features in the Minimalist Programme

According to the Minimalist Programme, the core syntactic operations (Merge, Adjoin, Agree, etc.) are universal throughout all natural languages (Adger, 2003; Chomsky, 1995). Naturally, the underlying syntactic structure should find its correlation with the semantic structure and, ultimately, the output should be manifested in sounds or in written form. All of the above is necessary for the successful realization of the meaning-to-form mapping. Accordingly, we assume that core syntactic operations are invariant across languages, and languages are distinguished on the basis of functional morphology and its interface with meaning and the form of expression (Slabakova, 2018: 3).

As has been mentioned before, our assumption is that each form of expression, being externalized through functional morphology, is associated with a bunch of morphosyntactic features. Hence, it is this bundle of features that the L2 learner has to acquire; and how these features (or bundles of features) are represented in L2 may be potentially different from the way in which they are manifested in the L2 learners' mother tongue.

We will now see that acquiring a language constitutes acquiring certain features, which are duly expressed through functional morphology.

2. Language Acquisition is the Acquisition of Features

Based on the above, the process of language acquisition constitutes acquiring information on features, on how they are used in syntactic derivation; feature strength, responsible for constituent movement in a sentence; and on how the features are externalized at Phonetic Form (PF).

Subsection II.B.1.a. above briefly introduced the phenomenon of feature (un)interpretability. Te recap, interpretable features possess semantic content and are not deleted in the course of sentence derivation. Thus, interpretable features are responsible for meaning calculation whereas the function of uninterpretable features is limited to driving the process of derivation (Chomsky, 1995). Interpretable features survive derivation, and uninterpretable features are checked (or valued) and deleted when derivation is attained. Should any of the uninterpretable features survive in the process of derivation, the result is crashed derivation and an ungrammatical sentence.

The array of features and their engagement in the syntactic derivation are assumed to be the characteristic of our language acquisition device (LAD) and are inherited (Chomsky, 1995); hence, the source of interlanguage variation is supposed to be rooted in the inflectional morphology.

Our study focuses on the functional category of L2 Russian adjective agreement in split d-linked wh-questions, where LF uninterpretable features are involved, surfacing at PF as an adjective inflection. Hence, L2 learners are expected to internalize the knowledge of features associated with this category, and the way they are expressed through functional morphology.

To sum up, L2 learners have to acquire certain types of knowledge to attain command of a specific functional category, which will be discussed in the next subsection.

3. Reflexes in SLA Acquisition

As Slabakova (2008, 2016, 2018) argues, when facing the task of acquiring a functional category, the L2 learner has to develop knowledge of at least three types. This knowledge, or usage of this knowledge, is referred to as a reflex, which is target-like behavior in relation to a specific functional category. The first type is the *semantic* reflex, which constitutes the knowledge of specific meanings computed when a functional category is involved. The *syntactic* reflex comprises knowledge of features, their strength and status at LF (whether interpretable or uninterpretable, for detailed explanation read the text below). Acquiring the syntactic reflex finds consequence in syntactic movement, case assignment, agreement, etc. Ultimately, the *morphological* reflex stands for the knowledge of how to encode the meaning and the feature strength in Phonetic Form (PF), namely, the presence or absence of certain inflectional morphology. Our study assumes the above understanding of what L2 acquisition of a functional category includes.

We have defined the key concepts associated with L2 acquisition and now assume that it consists of the acquisition of features, which are manifested as reflexes of certain types. The internalization of the features related to a functional category, which is demonstrable through the correct reflexes (hence, target-like behavior) constitutes the attainment of the category in question. The next section will review the current hypotheses of SLA, which are related to our study, and provide the line of argumentation to conduct our enquiry.

B. Recent Approaches to SLA and Current Hypotheses

A brief overview of the current hypotheses of SLA, whose focus is on the acquisition of functional (inflectional) morphology, is presented below, and includes their major claims, predictions, and the relevance for the current study. We have only included the hypotheses whose claims pertain to our study.

1. The Full Transfer/Full Access Hypothesis (FTFAH)

The Full Transfer/Full Access Hypothesis (FTFAH) (Schwartz & Sprouse, 1996) claims that at the initial stages of L2 acquisition the learner utilizes the L1 system to resolve arising issues. However, encountering patterns which cannot be parsed using the L1 system, the interlanguage system is restructured through full access to UG. Hence, L2 acquisition is assumed to be UG-constrained. The definition of UG has been informed by extensive research over the years, and herein we refer to it in the sense of White (2018). Besides, the FTFAH informs the concept of Interlanguage development.

The FTFAH predicts that the functional morphology and the adjectival agreement can be acquired following the Critical Period, as evidenced in Özçelik (2009), Schwartz & Sprouse (1996). As the Zero Hypothesis of the current study is based on the FTFAH, we will utilize the provisions of the latter to form our research questions.

2. Hypotheses Based On Representational Deficit. The Interpretability Hypothesis (IH)

There are several hypotheses interpreting the status of L2 grammars relative to L1 grammars, that can be grouped under the same position, namely, based on representational deficit. Hypotheses such as the Representational Deficit Hypothesis (RDH), the Morphological Congruence Hypothesis (MCH), and the Interpretability Hypothesis (IH) predict the end state of certain L2 domains to be dissimilar in terms of representation from those in L1. Since our enquiry focuses on the acquisition of L2 uninterpretable features, we direct our attention to the Interpretability Hypothesis (IH).

The Interpretability Hypothesis (IH) proposed by Tsimpli & Dimitrakopoulou (2007) and Tsimpli & Mastropavlou (2007) claims that uninterpretable features, which only serve a grammatical function, constitute "the cornerstone of L2 acquisition" (Tsimpli & Dimitrakopoulou (2007: 224). The IH maintains that it is uninterpretable features that are subject to the critical period effects, and as a result, they will be inaccessible in L2 acquisition (Tsimpli & Dimitrakopoulou, 2007: 224). On the other hand, LF-interpretable features are available to the L2 learner and can be added to the L2 feature inventory should they possess a semantic content, as they are represented both in the linguistic and in the conceptual domains, hence, their dual status in the

mental lexicon. The IH predicts that L2 learners will continue to use the strategy employed in their L1 when dealing with L2 uninterpretable features (p.225).

The results of the Tsimpli & Dimitrakopoulou (2007) study suggest strong L1 effects (animacy effects and d-linking effects, in the aforementioned study) even in the advanced L2 learners, which is in line with the claims of the IH (p.236). Similar evidence is also presented in Tsimpli (2003), Tsimpli & Mastropavlou (2007), to mention a few.

Based on the above and in relation to the language pair we have selected, the IH predicts that ultimate attainment of L2 Russian adjectival morphology and agreement is implausible due to their uninterpretability status. Hence, according to the IH, adult L1 Turkish / L2 Russian learners are unlikely to acquire the inflectional morphology that is associated with adjective agreement, which is realized by uninterpretable features, due to their not being present in the learners' L1. The IH predicts that to resolve the above issues, L2 learners are expected to resort to L1 strategies. Contrary to the claims of the Full Transfer / Full Access Hypothesis (Schwartz & Sprouse, 1996), no restructuring of the L2 system is expected.

Besides, according to the claims of the IH, adult L1 Turkish / L2 Russian learners are unlikely to acquire the process of splitting, which is an uninterpretable feature in action, as it is deficient in their mother tongue.

3. The Shallow Structure Hypothesis (SSH)

The Shallow Structure Hypothesis (SSH) (Clahsen & Felser, 2006) addresses the difference in processing patterns between native and second languages. Specifically, it proposes that L2 processing is primarily based on semantic rather than syntactic information. Hence, second language processing is suggested to be less sensitive to syntactic constraints compared to L1 processing. Ultimately, the SSH predicts that a L2 learner will process the same structure in her L1 and L2 in a diverse fashion: L2 processing will always be less sensitive to structural constraints, and will be directed by semantic and pragmatic cues.

With regard to our study, the SSH predicts that long distance syntactic dependencies, examplified by split nominal phrases, will be processed erroneously due to a shallower representation resulting from "good enough" parsing strategy and certain working memory constraints. Instead, L1 Turkish / L2 Russian learners are

expected to use semantic information and process split phrases as adjacent ones, which will ensue infelicitous interpretations and incorrect assignment of the wh-word to its restrictor. Hence, the SSH assumes split nominal phrases and adjectival morphology to be unacquirable as these domains constitute syntactic information requiring "deep" representation.

4. The Bottleneck Hypothesis (BH)

The Bottleneck Hypothesis (Slabakova, 2008, 2016, 2019) regards the process of L2 acquisition as the internalization of at least 3 types of knowledge, referred to as reflexes, namely, semantic, syntactic, and morphological ones. The most challenging reflex to acquire is claimed to be the morphological one due to being the distinguishable feature between languages, whereas syntax and semantics are rendered to be universal computations that are internalized immediately upon the acquisition of inflectional morphology. Along with the Missing Surface Inflection Hypothesis (Prévost & White, 2000), this approach assumes the syntax-before-morphology view (Lardiere, 1998; White, 2003).

The Bottleneck Hypothesis advocates for the possibility to acquire reflexes independently, or the possibility of eventually failing to acquire one or some of them, which is exemplified in certain works (Lardiere, 1998, 2006). L2 learners may attest a fully operational representation and yet demonstrate a restricted use of functional morphology in production. The above evidence suggests a dissociation of syntactic knowledge from morphological knowledge. In our research we adopt the syntax-before-morphology view and the fact that morphology production may lag behind a successful comprehension of syntax, semantics, and morphology.

However, regarding a probable accurate production of functional morphology, Hawkins (2001: 46) proposed an intriguing point to consider: the accurate use of functional morphology may fail to attest that the L2 learner attributes the same interpretation on par with L1 speakers. In line with the above, "it is of utmost importance to investigate interpretive knowledge of semantic reflexes in order to evaluate complete knowledge of certain functional morphology" (Slabakova, 2018: 7).

Ultimately, the BH assumes the possibility of a full representation of grammar in highest levels of L2 acquisition, whereas the acquisition of inflectional morphology

constitutes the threshold that triggers a full acquisition of a category. Following this threshold, the category is supposed to be fully internalized.

A certain leap to modify the BH is the Bottleneck Hypothesis Updated (Slabakova, 2019), which provides additional details regarding what is less and more challenging in second language acquisition. The main claim that functional morphology is the bottleneck in the process of L2 acquisition being intact, the four classes of parameters related to the degree of challenge are articulated: macroparameters, mesoparameters, microparameters, and nanoparameters (p.5). Slabakova reviews the findings of several studies to report un/successful acquisition of the above parameters. Adjectival morphology and the NP splitting operation constitute a microparameter, namely, "a small, lexically definable subclass of functional heads" (p.5). Slabakova's pyramid of difficulty in SLA suggests that adjectival morphology in L2 Russian is explicated as "a microparameter with complicated L1-L2 mapping" (p.16). Hence, it is expected to present the highest difficulty for L1 Turkish learners, whose mother tongue lacks the respective functional morphology induced by the uninterpretable features. Nevertheless, the NP splitting in L2 Russian, not realized morphologically, is predicted to be successfully acquired, even though it constitutes a Poverty-of-the-Stimulus situation.

In our research we adopt the Bottleneck Hypothesis as the Zero Hypothesis to test. In line with the claims of the BH, we assume that L1 Turkish / L2 Russian learners are likely to internalize the syntactic reflex prior to acquiring the morphological reflex, hence, the syntax-before-morphology view. The syntactic reflex, being a universal operation, is unlikely to constitute a locus of difficulty for a L2 learner. Thus, L1 Turkish / L2 Russian learners are supposed to internalize the operation of splitting early on and are unlikely to demonstrate variability in syntax-related errors, e.g. in short- and long-distance splits. However, the challenge is expected to be formed by the process of lexical learning of the adjectival morphology. Ultimate attainment is possible according to the BH, albeit not across the board. Hence, we may expect to observe multiple errors related to functional morphology, as well as indeterminacy in judgment, which is likely to improve as the proficiency level of the L2 learners increases.

In the next subsection we will summarize the claims of the Zero Hypothesis regarding our study in order to delineate certain predictions related to the acquisition

of the functional category to be investigated (i.e. adjective agreement and adjectival morphology in split d-linked wh-questions in L2 Russian), and identify the constrasting claims, which will be assumed as the ground for refutation.

a. The Bottleneck Hypothesis and contrasting views

As mentioned above, we have designed our enquiry to test the claims of the Bottleneck Hypothesis (BH) and we adopt it as the Zero Hypothesis.

To reiterate, the BH maintains that the acquisition of a functional category constitutes the internalization of knowledge of at least three types, namely, the semantic reflex, the syntactic reflex, and the morphological reflex. The semantic and the syntactic reflexes are supposed to come for free as they constitute part of our LAD, hence, they are not challenging for a L2 learner regardless of her L1. Since the BH is based on the principles of the FTFAH, we assume they constitute a similar camp of approaches.

Based on the above separation of types of knowledge involved in language acquisition, the BH approaches the acquisition of these types of knowledge with the syntax-before-morphology view. The BH, along with the FTFAH, predicts that ultimate attainment is possible, though not across the board. Hence, the performance of L2 learners is expected to be inconsistent in low proficiency levels and is likely to incrementally improve as their proficiency level goes up.

What is argued as the ultimate challenge is the externalization of the features surfaced as functional morphology. In our case it is the adjectival inflection on the wh-word in split d-linked wh-questions, which comprises the major difficulty in the acquisition of the category. Adjective agreement per se and the splitting operation in particular are predicted to be acquired without any effort. Thus, we expect to observe no significant variability in relation to syntactic reflexes. However, manipulating the distance in a split construction may cause processability effects (Pienemann, 1998).

The Interpretability Hypothesis (IH) presenting a contrastive view in virtue of the BH argues for the idea of a representational deficit regarding the status of L2. The IH predicts that adult L1 Turkish / L2 Russian learners may not acquire the process of splitting, which is an uninterpretable feature in action, as it does not exist in their mother tongue. As adjectival morphology constitutes another domain, which is not

operative in the L2 learners' mother tongue, its representation is also expected to be corrupted.

According to the IH, L2 learners are unable to internalize L2 uninterpretable features and will either omit them or substitute them with the default form. Since it is impossible to omit the inflection on adjectives in Russian, L2 learners are predicted to utilize the default form, and to possess the internal representation as the default form. Hence, they are likely to commit multiple errors involving incorrect usage or they may tend to misinterpret adjectival morphology, since the category in question is not operational in their L1 Turkish. Additionally, the representation of the syntactic knowedge related to maintaining the splitting operation is predicted to be deficient.

A similar position is held by the Shallow Structure Hypothesis (Clahsen & Felser, 2006). To reiterate, it suggests that L2 learners may only construct shallow syntactic trees being directed by semantic and pragmatic information. Hence, according to the SSH, adult L1 Turkish / L2 Russian speakers will not be able to correctly process long-distance syntactic dependencies, realized as split constructions in our study, and instead are predicted to resort to a shallower syntactic representation, which ensues from semantic cues. Similarly, adjectival morphology is expected not to be processed effectively. Consequently, the experimental milieu will comprehend split NPs only as adjacent ones, which may be demonstrable through low accuracy rates thereof.

In the next section we will focus on studies whose enquiry has been the acquisition of L2 Russian functional morphology. Due to the insufficient amount of research on L2 Russian, several studies on heritage Russian and on the acquisition of the nominal domain in other languages will also be included.

C. Previous Research on L2 Acquisition of Functional Morphology

1. Acquisition of L2 Russian Functional Morphology: Previous Studies

Regarding the acquisition of the Russian nominal domain, particularly inflectional morphology, a comparatively limited number of studies have been carried out. The majority of research tackles the Russian aspectual system, which supposedly constitutes a particular challenge not only for L2 learners, but also for heritage and even L1 Russian speakers (Pereltsvaig, 2008a: 39). In virtue of the current topic being

related to the variability of L2 Russian grammar, we have decided to review the literature dedicated not only to the acquisition of L2 Russian nominal domain but also of the verbal domain, as well as the nominal domain in other languages.

With regard to the acquisition of L2 Russian functional morphology in the verbal domain some research claims that is may be fully acquirable. In her seminal study on the acquisition of L2 Russian telicity marking, Slabakova (2003) suggests that the functional category of telicity is successfully accomplished by the great majority of the L2 Russian learners. She assumed initial L1 English transfer (along with the FTFAH), the stage when L2 Russian learners are expected not to pay attention to the morphology of the verb, but rather take into account the form of the object. As L2 learners progress, their behaviour is likely to gradually become native-like. The high intermediate and advanced learners were on par with the controls: they paid attention to the prefixes rather than the object, the latter being the strategy of assigning telicity in English. Correct semantic interpretation and semantics-morphology mappings are the prerequisites of the successful acquisition of a functional category; notwithstanding, each of these aspects can develop independently of the other, or even together instantaneously (Slabakova, 2003: 295). The difficulty regarding the acquisition of Russian aspect has been attested to lie not in the grammatical mechanism, but in "learning the lexical items signalling telicity" (Slabakova, 2003: 294). Another study with a similar focus by Nossalik (2008) investigated L2 acquisition of Russian outer aspect (boundedness) in fourteen L1 English / L2 Russian speakers, undergraduate students at McGill University. The results suggest that L2 learners may successfully acquire Russian outer aspect, which is sometimes claimed to pose extreme difficulty for L2 Russian learners (Laleko, 2010; Mikhaylova, 2018). Nossalik reports that advanced learners display native-like performance while lower proficiency groups employ L1 transfer strategies (2008: 179), as predicted by the Full Transfer / Full Access Hypothesis (Schwartz & Sprouse, 1996). Hence, it is implied that L2 learners at lower levels resort to their L1 resources to resolve the challenges in acquisition. However, as they progress, they start to employ native-like strategies, which serves as a counter-example for claims in some L2 Russian pedagogical literature that Russian outer aspect is unacquirable for L2 learners.

Another piece of similar evidence comes from Nossalik's later study (2009), where she tested the Interface Hypothesis (Sorace, 2005; Sorace & Filiaci, 2006) on

forty L1 English / L2 Russian learners at different proficiency levels. The results corroborate the previous data suggesting that the advanced, the near-native participants, and the control group behave indistinguishably, which implies that morphophonological and syntactic properties of Russian aspect can be acquired successfully. Isurin & Ivanova-Sullivan (2008) came to an analoguous conclusion investigating advanced heritage speakers and advanced L2 Russian learners with a view to elicit speech excerpts to be analysed for specific syntactic and morphological features. The L2 Russian group's performance was within the boundaries suggesting a complete acquisition of the respective domains: a 6% error rate for case morphology, and 12.7% for aspectual morphology. The data implies the acquirable nature of both aspectual and case morphology.

Nevertheless, some studies report significant challenges associated with L2 acquisition of functional morphology. Mikhaylova (2011) comes to such a conclusion testing the Interface Hypothesis and the Bottleneck Hypothesis and exploring the acquisition of Russian aspectual morphology in L2 Russian. The self-paced online Stop-Making-Sense Task, which tested participants' sensitivity to morphologically expressed telicity and boundedness contrasts in Russian statements, demonstrated a telling difficulty related to Russian aspectual morphology not only for the test population (L2 learners' accuracy constitutes 70.8%), but also for native speakers with 91% of correct choices. The author proposes that "the structural and morphological differences between types of predicates may affect their ability to process functional morphology correctly on such a demanding online task" (Mikhaylova, 2011: 75). Overall, Mikhaylova suggests that functional morphology might constitute the bottleneck of acquisition for L2 learners (Slabakova, 2008). Such an outcome implies that L2 learners experience more difficulty with the morphological markers rather than the syntactic operations. Specifically, it is plausible that some domains may be challenging not only for the L2 population but also for native speakers, especially if increased processing load is involved in the task.

As can be seen, there is no uniformity in approaching L2 acquisition regarding the (non-)convergence with the L1 state, for which reason we have undertaken this enquiry.

2. Literature Review of the Acquisition of the Russian Nominal Domain

Below we review several recent studies on the acquisition of the Russian nominal domain, which also inform and direct our enquiry. To date, there has not been sufficient research aimed at investigating the acquisition of the nominal domain in L2 Russian, the reason might be the challenges regarding the design of the instrument due to multiple grammatical categories, declension classes, and substantial variability in terms of affix transparency, which considerably complicates the potential implementation of the research instrument.

Taraban & Kempe (1999) in their study suggest a stark difference in the L1 and L2 Russian grammars through investigating processing of transparent and opaque noun endings. The L2 Russian speakers demonstrated considerable difficulty while processing sentences with opaque noun endings, the adjective marker being the cue for determining the noun gender. The L2 Russian group displayed a significantly higher error rate with nouns ending in ambiguous markers rather than in transparent ones. However, no such accounts were attested in L1 Russian speakers. The results suggest that the transparency of endings constitutes a predictive cue while acquiring a L2. However, Taraban & Kempe report that both populations utilize a similar learning mechanism with regard to noun ending processing. Hence, it is claimed that L2 Russian speakers may have a limited grammar, which is qualitatively different from the grammar of a L1 speaker.

Contrary to the previously mentioned study, which demonstated a deficient interlanguage in L2 Russian speakers, some research documents a relatively different picture, suggesting a provisionally successful acquisition of the nominal domain. Isurin & Ivanova-Sullivan's (2008) study attests a successful acquisition of case morphology by the L2 population. The error rate in the L2 group is reported to constitute 6% in a production task. Partially related to our study, Laleko's (2018) research focusing on the acceptability of gender-matched and gender-mismatched adjective-noun strings by heritage Russian speakers suggests that they converge with L1 Russian speakers in congruous and incongruous agreement patterns involving nouns of fixed gender specification. Common gender nouns, which are maximally underspecified forms compatible with both gender interpretations, are observed to constitute the most challenging part in heritage Russian gender assignment (p.261). Hence, the major challenge is constituted by the lexical rather than grammatical

characteristics. In her later study Laleko (2019) further explored gender agreement indeterminacy resolution, this time adding a L2 Russian group. The study focused on non-transparent (opaque) semi-ambiguous contexts, where the noun's functional morphology does not determine the agreement marking on the related words. The result of the experiment demonstrated target-like ratings with formally transparent nouns in all milieus. However, L2 speakers' accuracy with non-transparent (opaque) nouns was diminished, which was not attested in monolinguals. The L2 Russian population "consistently demonstrate a more categorical dependence on a noun's morphophonological form [compared to the L1 milieu]" (p.172). Laleko (2019) points out that it may be related to the frequency and linguistic input conditions. Hence, morphophonological factors (i.e. the morphophonological reflex, in Slabakova's terms) are of considerable importance in bilingual gender processing. This outcome can be interpreted as the confirmation of the provisions of the Bottleneck Hypothesis in that the morphophonological reflex may constitute the major challenge, whereas the syntactic and the semantic reflexes pose no difficulty for the L2 learner.

Another notable study, which claims that the Russian nominal domain can be acquired successfully, was carried out by Artoni & Magnani (2015) on the acquisition of case marking in L2 Russian. The enquiry is conducted in the Processability Theory framework, but the findings may prove interesting and valuable for our study as well. Artoni & Magnani adopt King's (1995) approach to Russian case system, conducted in the Lexical Functional Grammar framework. Five tasks were used to elicit varied pragmatic usage of Russian case: introduction, story-telling, spotting differences, making up a story, and an adopted elicitation task from Di Biase & Kawaguchi (2002) was also employed. The findings of the study suggest that the trajectory of the acquisition of Russian case system starts with L2 learners distinguishing between Nominative and non-Nominative, and utilizing only the canonical word order. In the intermediate stages it is not clear whether L2 learners are able to topicalize Adj and produce V-Obj unification in morphology. Lastly, only following the activation of the functional (i.e. inflectional) morphology can L2 learners "free up the rigidity of the canonical word order constraints, and assign case to grammatical functions irrespectively of their position" (Artoni & Magnani, 2015: 191). Hence, the authors assert that ultimate attainment of L2 Russian case is possible, and here again the inflectional morphology constitutes the bottleneck.

Conflicting results are also attested in some studies. For instance, Cherepovskaia & Slioussar (2018) analysed production errors in the Russian nominal paradigm based on a pool of written texts elicited from bilingual Spanish-Catalan adult learners of L2 Russian. In contrast to the influential previous study by Rubinstein (1995), which focused on errors in L2 Russian case acquisition, and encompassed the entire case paradigm, the study by Cherepovskaia and Slioussar compares the rates of errors against the correct forms, which is a considerable improvement in terms of instrument design. The results of their study suggest that the numbers of errors decrease both quantitatively and qualitatively as the learners' levels progress: L2 learners employ the default form and misuse the necessary case less frequently. The most challenging case for acquisition has proved to be Dative; even advanced learners use it incorrectly in 23% of contexts, and it is followed by Instrumental and Accusative with 17% and 10% for C1 level respectively. This evidence corroborates the common belief that the Russian case system poses a serious issue for L2 learners. Nevertheless, the question stands why L2 Russian learners commit errors: does the reason lie in the Dative case itself, due to which the participants wrongly assign the case to the noun, or is it primarily related to the morphology of the nouns specified for the Dative case?

3. Literature Review of L2 Acquisition of the Nominal Paradigm and Adjectival Morphology

Due to the scarcity of research directly involving L2 Russian adjectival morphology or adjective-noun agreement we are reviewing some recent studies that focus on L2 acquisition of adjectival morphology by learners, whose L1 lacks this feature.

Some studies focus on L2 uninterpretable features absent from the learners' L1 and the results suggest that such features are Critical-age-constrained and may not be fully acquired. For example, Tsimpli & Dimitrakopoulou (2007) set off to explore L1 Greek/ L2 English intermediate and advanced learners' resumptive strategies regarding wh-subject and object extraction. The work mainly tackles variability in L2 learners' judgement as opposed to a steady invariable performance by native speakers. Assuming that the functional lexicon is inaccessible once first language acquisition is completed, variability is referred to as the (in)consistent behaviour of L2 learners in the target language (Tsimpli & Dimitrakopoulou, 2007: 216). Interpretable features (animacy and d-linking) are predicted to aid the L2 learners as their levels progress.

Tsimpli & Dimitrakopoulou (2007) adhere to the Minimalist Approach and emphasize the role of the distinction between LF-interpretable features, and LF-uninterpretable features; the former being semantically realized at LF, whereas the latter are only required for syntactic derivation and lack semantically computed meanings (also Tsimpli, 2003; Tsimpli & Mastropavlou, 2007). Meanwhile, both LF-interpretable and LF-uninterpretable features are either realized or unrealized at PF. The obtained results suggest strong L1 effects in (subject) interrogatives even in the advanced L2 learners, which is in line with the claims of the Interpretability Hypothesis. Animacy effects and d-linking effects on the acceptability of resumptive pronouns were observed both in the intermediate and in the advanced groups, which also casts doubt on the Missing Surface Inflection Hypothesis (Haznedar & Schwartz, 1997; Prévost & White, 2000) in that non-target abstract representation has been observed along with systematic non-target responses due to processing difficulties of the morphological component.

Another study with similar predictions was carried out by Tsimpli & Mastropavlou (2007): they also tackled the learnability of formal features based on their interpretability status. Performance data were collected from L1 learners, child and adult L2 Greek learners, as well as a population with specific language impairments (SLI). The study was based on the acquisition of pronominal clitics and determiners (definite and indefinite articles) in Greek by different populations. Along with Tsimpli & Dimitrakopoulou (2007), Tsimpli & Mastropavlou hypothesize that unintepretable features are developmentally constrained and fail to be realized in adult L2 grammars. L2 learners are expected to implement a compensatory strategy through employing interpretable features in misanalysed input. The obtained results suggest a crucial difference in the acquisition of adult L2 Greek pronominal clitics and definite and indefinite articles when compared to L1 and child L2 learners. The adult L2 group demonstrated persistent problems regarding the use of both pronominal clitics and determiners, resorting either to omission or to improper use. The studies above attest a "representational deficit" with regard to the L2 grammar, which may also pertain to the status of the features under investigation within the scope of our enquiry: the L2 Russian uninterpretable features [case, number, gender] fail to be realized in Turkish.

However, another line of research tends to reject the L2 representational deficit. Schwartz & Sprouse (1994) conducted a longitudinal case study of an adult L1 Turkish L2 German subject called Cevdet. The enquiry was based on the production data over

a period of 26 months. Specifically, the researchers were interested in the position of the verbal domain as well as pronominal and non-pronominal subjects relative to the predicate. The obtained results suggest that the L2 learner passes through several stages, the initial being the L1 grammar; during the second stage the L2 learner starts the reconstruction of the current grammatical system and marginal patterns may arise; the 3rd stage may demonstrate reanalysis of the L2 input and certain fossilized patterns may emerge. Ultimately, the course of Interlanguage development may be dependent on several factors: initial state, input, UG apparatus, and learnability factors (p.41). Due to these factors the learner may reach an end state, characterized by certain fossilized patterns. It is overall suggested by Schwartz & Sprouse (1994) that via protracted access to UG the accuracy incrementally increases as the L2 learner advances; in some cases the L2 learner may attest ultimate attainment of L2 categories. The attested data can be regarded to confirm the premises of the Full Transfer / Full Access Hypothesis.

Yet, some studies come up with strong claims in favour of a possible convergence of specific L2 and L1 domains, and refute the positions asserted by Tsimpli & Dimitrakopoulou (2007) and Tsimpli & Mastropavlou (2007). For instance, Leal Méndez & Slabakova (2014) partially replicated the experimental study conducted by Tsimpli & Dimitrakopoulou (2007) in an attempt to test the claims of the Interpretability Hypothesis proposed in the latter work. Leal Méndez & Slabakova (2014) emphasized that the crucial detail to have been overlooked in the previous study is the optional character of the resumptive pronouns in the Greek Language and the lack of dividing the experimental population into the groups that either accept or reject resumptives in their L1. For the purpose of closing this gap they divided speakers of L1 Spanish, which, as Greek, optionally allows resumptives, into two groups: the ones who accept resumptive pronouns, and those who reject them. The study also examined the effects of d-linking, animacy, and the complementizer *that* in order to test whether the L2 learners will resort to interpretable features to aid the process of eliminating the resumpting strategy. Specifically, the participants were tested on (non)acceptance of the resumptive strategy in their L1. To test the Spanish speakers' acceptance of resumptives in their L1, an untimed resumptive grammaticality task was used, which consisted of ten items and four fillers. Questions with resumptives were preceded with a context story, and a 4-point Likert-scale was used to judge the grammaticality of the

question. Next, the materials employed in Tsimpli & Dimitrakopoulou (2007) were administered. Additionally, the test items (interrogatives with resumptives) were supplied with the preceding context to facilitate comprehension and parsing, which the original study lacks. Just as in the original study, the materials were delivered bi-modally (in aural and written forms). A 4-point Likert scale was used with the "I don't know" option. In contrast to the previous study by Tsimpli & Dimitrakopoulou (2007), the results demonstrate advanced L2 learners' convergence in terms of performance with the control group. Leal Méndez & Slabakova (2014) noticed the presence of individual preferences regarding resumptive use across the board: the experimental participants tolerating resumptives in their L1 were 10% more willing to accept resumptives in L2 English. However, both groups "had established a syntactic, grammatical contrast in their grammar between the ungrammatical sentences with resumptives and grammatical sentences with gaps" (Leal Méndez & Slabakova, 2014: 14). Additionally, no statistically significant effects have been found regarding L2 learners' utilization of interpretable features (animacy, d-linking, etc.) to aid their strategies in resumption resolution. Overall, taking into account the enhanced design of the experiment (dividing L1 speakers according to their resumptive strategies in L1, contextualizing the test items), the main result of the study is that the advanced L2 group demonstrated native-like competence, which casts doubt on the predictions of the Interpretability Hypothesis in that the uninterpretable features absent from the learner's L1 cannot be acquired in a L2.

Another study on the status of uninterpretable features in SLA is by Leal et al (2016), whose focus was testing the Interpretability Hypothesis on the basis of acquiring interrogatives in L2 English by L1 Kuwaiti Arabic speakers. The novelty of the study is the specific choice of the paired languages: the previous research contained languages with optionality with respect to resumptives, whereas Arabic resumptive pronouns are mandatory. The Interpretability Hypothesis predicts that in order to perform in the target-like fashion in their L2 English, L1 Arabic speakers have to "unlearn" the resumptives, which is problematic in virtue of the uninterpretable status of the feature in question. As the study is a partial replication of Leal Méndez & Slabakova (2014) and Tsimpli & Dimitrakopoulou (2007), the research questions and the method were the same. In line with Leal Méndez & Slabakova (2014), the experimental group showed a successful differentiation of ungrammatical questions

with resumptive pronouns and grammatical questions without them. The findings suggest no advantage associated with the interpretable features (animacy, d-linking) aiding L2 English learners: the participants failed to display better performance under the influence of the interpretable features. Hence, the arguments of the Interpretability Hypothesis seem not to hold.

Some other studies specifically approached the acquisition of adjective agreement by learners, whose L1 is void of adjective morphology, and concluded that the L2 participants' performance can be on par with the L1 controls'. For example, an enquiry by Lichtman (2009) explored acquisition of adjective agreement in a language with rich morphology (Spanish) by learners whose L1 language lacks this feature (English) on the premise that even advanced L2 learners have issues with this domain (Franceschina, 2003, 2005). Namely, they omit obligatory morphology, overgeneralize the default gender, and are insensitive to gender discord. The research is conducted in the generative perspective and is based on testing the claims of the the Representational Deficit Hypothesis (RDH) (originally the Failed Functional Features Hypothesis (FFFH), Hawkins & Chan, 1997), according to which, if a feature is not instantiated in a L1, it has no potential of arising in a L2 and the learners are subject to a deficient representation of the feature in question. Hence, the line of argument is similar to that in Tsimpli & Dimitrakopoulou (2007) and Tsimpli & Mastropavlou (2007); and the Missing Surface Inflection Hypothesis (MSIH, Prévost & White, 2000), which claims that L2 learners may acquire native-like competence even for purely grammatical features, hence, may develop a fully operational target-like representation of a feature, but are limited by the processing load and, as a result, resort to the default form in production. However, a gap in the MSIH is vivid with respect to which form is expected to be produced by L2 learners by default (Slabakova, 2018: 9). The test items manipulated the attributively and predicatively used adjectives, as well as the distance between the noun and the adjective (with predicatively used adjectives). Besides, the adjective morphology was manipulated in order to also yield ungrammatical inflections on the adjectives (feminine to a masculine noun). The results showed that as L2 learners advance, they process agreement more accurately.The distance effect has been observed in the non-native group only: as the distance between the adjective and the noun increases, the performance significantly declines in beginners, and only slightly in intermediate subjects. These results support

the MSIH and are against the RDH in that the features not instantiated in learners' L1 cannot be acquired in a L2; the representation has proved to be in place, however, processing issues may contribute to the deficient application of this knowledge.

A more recent remarkable study by de Garavito & Otalora (2016) dealt with the L1 English / L2 Spanish learners' acquisition of gender and number agreement under nominal ellipsis. The elided noun and its antecedent in Spanish may differ in number but are consistent with respect to gender. The results of a grammaticality judgement test and a production task indicate that "L2 Spanish learners are able to access features such as number and gender, and that they are able to then compare the relevant features to antecedents" (de Garavito & Otalora, 2016: 36). Hence, no representational deficit has been found, which casts doubt on the Failed Functional Features Hypothesis (FFFH, Hawkins & Chan, 1997), which claims that features not instantiated in the learner's L1 are not acquirable. The same claim is operational for the Interpretability Hypothesis (Tsimpli & Dimitrakopoulou, 2007; Tsimpli & Mastropavlou, 2007). Most importantly, L2 learners proved to display sensitivity regarding the prohibition of gender mismatch, on par with the native controls. The findings corroborate the propositions of the MSIH and the Interface Hypothesis in that some difficulties can be explained by the mapping between the abstract category and the particular form, as well as the resulting interface.

Another school of thought is presented by Clahsen & Felser's (2006) remarkable study, whose result is the Shallow Structure Hypothesis (SSH). Through a detailed review of online and offline tasks they analized sentence processing patterns of monolingual children and L2 learners, comparing the two groups' performance with adult monolinguals' performance. Clahsen & Felser claim that L2 processing is qualitatively different from L1 processing, proposing the SSH to account for this phenomenon. L2 learners' syntactic representations are asserted to be shallower and less detailed compared to L1 processing, and also involving more direct form-function mappings, which are guided by "lexical, semantic, and pragmatic information" (p.31). The SSH also suggests "confounding factors", namely, working memory limitations, differences in processing speed, effects of transfer, and "incomplete" acquisition, which may restrict the capacity of constructing "deeper representations". However, there has been some research refuting the above idea that L1 and L2 processing are qualitatively different. For instance, Tucciarone (2022) tested the SSH using an offline

Acceptability Judgment Test and an online Self-paced Reading Task in order to investigate L2 English learners' sensitivity to the Strong Crossover constraints and Binding Principle C. Her findings indicate that the L2 parsing is similar to native incremental parsing. Smith (2016) conducted a study to test the SSH using a Self-paced Reading Task. She investigated whether L2 Japanese learners rely on case particles to project structure in relative clauses as well as wh-dependencies and ambiguity resolution preferences. The obtained results suggest that L2 Japanese learners are largely convergent on reliance on case particles, ambiguity resolution, and on sensitivity to wh-dependencies in canonical clauses. However, the experimental group was not sensitive to wh-dependencies in scrambled constructions. Overall, the findings are incompatible with the predictions of the SSH.

As can be seen, there is no uniform opinion as to whether some specific domains in L2 can be fully acquired, and our enquiry will try to cover this gap testing the Interpretability Hypothesis, the Full Transfer/Full Access Hypothesis, the Shallow Structure Hypothesis, and the Bottleneck Hypothesis.

D. Literature Review: Summary

This chapter has reviewed recent research on the acquisition of functional morphology both in L2 Russian and in other languages from different perspectives, reflecting a range of hypotheses. The previous studies provide a convincing body of evidence that adjective agreement may pose considerable issues for L2 Russian learners; thus, they are not expected to be convergent with L1 Russian speakers until the native-like level is attained. Additionally, the obtained results from the previous research – the evidence, still uninvestigated gaps, and possible limitations (all of which are equally important) – suggest certain directions for our study to follow.

Table 13 below briefly summarizes the principal claims of the second language acquisition hypotheses regarding the (im)possibility of nativelike representation and ultimate attainment of features, which will be tested in the current study. Major studies are also mentioned in relation with the hypotheses.

Table 16 A brief account of the L2 hypotheses to be tested in the current study

Hypothesis	Representation/ Acquisition of Features (yes/no)	Meaning-form mapping issues	Acquisition of Morphology	Principal claim	Notable studies
Full Transfer/Full Access Hypothesis (FTFAH)	+	yes	yes	Initial stages of L2 acquisition comprise utilization of the L1 grammar. The failure to map the existing L1 system onto the L2 input impels the learner to access UG, which is argued to have a possibility to become fully operational, depending on certain factors.	Schwartz & Sprouse (1996)
Bottleneck Hypothesis (BH)	+	yes	may be	The most challenging reflex to acquire is the morphological one due to being the distinguishable feature between languages, whereas syntax and semantics are rendered to be universal computations that are internalized prior to the acquisition of inflectional morphology. We have assumed the BH as the Zero Hypothesis in our study.	Slabakova (2008, 2016, 2018)
Interpretability Hypothesis (IH)	-	yes	no	The uninterpretable features absent from the learner's L1 cannot be acquired in a L2 following the Critical age for language acquisition.	Tsimpli & Dimitrakopoulou (2007)
Shallow Structure Hypothesis (SSH)	-	yes	-	L2 processing is suggested to be less sensitive to syntactic constraints compared to L1 processing as it is based on semantic rather than syntactic information. For this reason a shallower representation resulting from "good enough" parsing strategy and certain working memory constraints is predicted.	Clahsen & Felser (2006)

As of now, to our knowledge, there has been no research conducted on the acquisition of split constructions, either on L2 Russian or any other languages. Hence, it is believed that this study may provide some interesting outcomes and pave a new direction for future research.

E. Motivation for the Present Study Based on the Literature Review

As stated from the onset, our study follows assumptions developed in the scope of Generative Linguistics, in its Minimalist programme framework (Chomsky, 1995). The core syntax theory and notations are adopted from the seminal work by Adger (2003). Functional morphology is understood as elucidated in Slabakova (2018: 4-8); its acquisition is assumed to constitute the internalization of at least three reflexes: semantic, syntactic, and morphological. The reflexes are manifested as the knowledge of certain features related to the functional category in question. In our case it is the functional category of adjective agreement, where LF uninterpretable features are

surfaced at PF as an adjective inflection. According to Slabakova (2018: 4-8) and as evidenced from previous research, features are separated in acquisition and can be acquired one by one. Following Lardiere (1998), we dissociate syntactic knowledge from morphological knowledge, and assume that morphology production lags behind successful comprehension of both syntax and morphology. Thus, in our study we assume the syntax-before-morphology view, which has also been corroborated by our preliminary pilot study (the details will be elucidated further on), in which L1 Turkish /L2 Russian participants demonstrated nativelike knowledge of a subtle syntactic phenomenon, namely, splitting of nominal phrases.

Split NPs are never explicitly demonstrated or taught in the classroom and are generally restricted to the colloquial register (Pereltsvaig, 2008b). Nevertheless, when it comes to d-linked wh-questions with the copula (without a notional verb), as mentioned in the text above, the convention is to split the nominal phrase: the wh-word tends to move to the left periphery, and the headword stays in situ. An example of a typical sentence with a split nominal phrase is illustrated below:

(42) *Kakaja segodnja pogoda?*
which$_i$ today weather$_i$
'What is the weather like today?'

Based on the premises above, we assume that L2 learners generally take the comparatively free word order in Russian for granted, and start to develop it during initial exposure to the Russian language due to the presence of such forms in course textbooks from early on (e.g. Antonova et al, 2003).

To our knowledge and based on the reviewed literature, L2 Russian acquisition of adjectival morphology and adjective-noun agreement has not attracted sufficient attention up till now. The scarcity of research on these domains (Cherepovskaia & Slioussar, 2018) renders our study significant in contributing to the current pool of enquiry on the acquisition of the uninterpretable features on the wh-word with a new pairs of languages involved.

The potential outcomes regarding the acquisition of L2 Russian functional morphology, namely, the adjectival inflection externalized as a bundle of uninterpretable features, are discussed below from the perspective of current hypotheses. In line with the results of our pilot studies and according to the claims of the Bottleneck Hypothesis (Slabakova, 2003, 2006, 2018), L2 Russian learners are

predicted to have no issues associated with the syntactic and semantic reflexes, but may have underdeveloped semantics-morpho(phono)logy mappings in the proficiency levels prior to the advanced, when convergence with native speakers may be attained in this respect. Additionally, L2 learners are expected to exhibit a dissociation between LF-uninterpretable and PF-interpretable features in L2 Russian (i.e. grammatical gender, case, and number inflection on the adjective), which may urge them to employ a limited paradigm. Put differently, it may be challenging for L2 learners to reassemble the LF-uninterpretable features in one form. Hence, our enquiry is likely to support the claims of the BH and the Feature Reassembling Hypothesis (FRH)[16] in that L2 learners may develop a full mental representation of the features, but the externalized form may pose an immense challenge, which limits the L2 learners' ability to co-reference the wh-word with the required argument, the same operation being absolutely smooth for native speakers. Another issue can be posed by the large processing load required to reassemble the uninterpretable features into the adjectival inflection, on this ground it could also be fruitful to conduct a study within the frame of the Processability Theory (Pienemann, 1998), which is not in line with the Generative Program, but alternatively approaches second language acquisition as a hierarchy of processing procedures.

Contrarywise, native-like performance by any milieu of the experimental group can suggest a full mental representation of the LF-uninterpretable features and the L2 learners' capacity to employ them to correctly assign the wh-word to the restrictor (argument), which can cast doubt on the IH and further support the BH.

As we mentioned in the previous chapter, the Interpretability Hypothesis (IH) predicts that adult L1 Turkish / L2 Russian learners will fail to acquire the uninterpretable features related to the adjective declension in L2 Russian as such features are not operable in their L1. Hence, adjectival morphology will not be internalized. Additionally, the IH suggests that the operation of splitting, which is an uninterpretable feature in action, will not be acquired either since their mother tongue lacks it.

The similar predictions are put forward by the Morphological Congruency Hypothesis (Jiang, 2004) as the respective features are not externalized in our experimental population's mother tongue. To iterate, as we have noted in the previous

[16] Due to the complexity of the design of the instrument required to test the FRH it is not involved into the scope of our enquiry.

chapters, Turkish displays no explicit adjective morphology. Thus, impaired competence regarding the inflection on the wh-word is expected in L1 Turkish / L2 Russian learners, and they may demonstrate indeterminate performance in the comprehension task.

Likewise, the claims of the Interpretability Hypothesis (IH) regarding ultimate attainment of L2 Russian adjective morphology and agreement by L1 Turkish speakers hold it implausible due to the uninterpretable status of these categories. According to the IH, adult L1 Turkish / L2 Russian learners are unlikely to acquire the inflectional morphology that is associated with adjective agreement, which is realized by uninterpretable features, due to their not being present in the learners' L1, aka the RDH. The IH also suggests that to resolve the above issues, L2 learners have to resort to L1 strategies. However, there are no other clues apart from the adjectival inflection in order for the participant to co-reference the wh-word with the restrictor. Thus, this domain of L2 Russian is supposed to be unacquirable in accordance with the IH.

Albeit the behaviour of the participants is motivated solely by the grammatical clue on the wh-word, other probable effects will be investigated, e.g. L2 learner's superficial strategies in making decisions regarding co-reference of the wh-word (e.i. utilizing the final vowels of the inflections for co-referencing the wh-word with the restrictor, etc.). As suggested by Leal et al (2016), no advantage has been observed in connection with the animacy or d-linking, which could aide L2 English learners in their study: the participants fail to display better performance under the influence of the interpretable features. The limitation of our instrument is that it has not been designed to manipulate the effects of d-linking: all the experimental items include d-linked contexts. However, following Tsimpli & Dimitrakopoulou (2007) and Leal Méndez & Slabakova (2014), we will attempt to investigate animacy effects in the strategies employed by L2 Russian learners in co-referencing the wh-word with either the animate or the inanimate argument. The question posed is whether the interpretable feature [animacy] can improve performance in L2 Russian.

According to the Processability Theory (Pienemann, 1998) and as suggested by Lichtman (2009), distance effects are also expected to be observed in split constructions. Thus, L1 Turkish / L2 Russian participants are likely to perform more accurately on comprehension and subsequent responding when the distance between the wh-word and the headword is shorter (in short-distance splits), compared to when

a longer distance dependency (in long-distance splits) is required, as the latter proves more taxing. Hence, even if L2 Russian learners happen to perceive the context as ambiguous, they are expected to employ the strategy of Minimal attachment (Frazier, 1979) via the preference of short-distance splits.

Regarding the acquisition of gender assignment, which is not a direct focus of our study but can also be relevant in directing our research, Hopp & Lemmerth (2018) suggest that there exists a developmental trajectory from a lexically based gender assignment to the syntactic processing, which is native-like. Besides, based on Laleko (2018), the forms of nouns underspecified for gender caused considerable issues in the heritage population. To mitigate the possible effects associated with the difficulty of assigning gender to the nouns used in the instrument, only nouns with the highest levels of transparency[17] have been selected. Additionally, maximally transparent groups of nouns (in terms of inflections) to decrease the processing load for the L2 learners during the task of case assignment will be employed.

However scarce it may be, previous research (Schwartz et al., 2015) on adjective-noun agreement suggests that Russian gender agreement is a challenging domain not only for L2 or heritage learners, but even for L1 acquirers due to the low transparency of the gender inflections. Just as we have noted before, Schwartz et al. (2015) claims that transparency of inflectional morphology plays a crucial role for the acquisition of gender agreement both in the L1, and in the heritage Russian population. Additionally, there is evidence that the presence of grammatical gender in the L2 learner's mother tongue may have an aiding effect when acquiring a language with a rich grammatical gender system, like Russian. The results of Schwartz et al.'s study (2015) imply that we implement a design, which would only include nouns of the most common declensional classes for both genders we are intending to utilize: to recap, this will yield the inflections maximally transparent in order to facilitate the process of L2 Russian learners' assigning noun gender. As a result, their processing load will be considerably decreased. Specifically, only feminine nouns ending in *-a/-ja*, and only masculine nouns ending in a non-palatalized consonant (morphologically null

[17] Transparency of inflections is assumed as worked out by Dressler (2007). More on inflection transparency regarding our instrument design is elucidated in the linguistic background and in the methodology chapters.

affix -*Ø*) will be utilized in the instrument. No masculine nouns with the palatalized final consonant, and no feminine nouns ending in a consonant will be included.

To further advance the instrument design, in line with Lichtman (2009), we have taken into consideration the fact that the noun forms should be co-referenced with both marked[18] (Dative Masculine) and unmarked forms of the wh-word (Accusative Masculine). According to the claims of the Representational Deficit Hypothesis (RDH), which is in line with the IH, L2 learners tend to utilize the default forms when the respective feature is not realized in the L2 grammar. Thus, as the acquisition of the Accusative case inflection on the Masculine noun and on the Masculine adjective timewise precedes the acquisition of the Dative case morphology, L2 learners' preference for long-distance splits, where the default forms are contained, may be predicted according to the RDH. Such an outcome may also support the claims of the Interpretability Hypothesis.

Furthermore, the unmarked form of the wh-word (*Kakoj*) is the one co-referenced with a Masculine Accusative singular noun. However, this form is also homonymous with the one specified for the Feminine Dative singular adjectival inflection. L2 Russian learners may experience issues incorrectly co-referencing this form of the wh-word with a Masculine Dative noun, which could also corroborate the claims of the IH that we have mentioned above. This potential issue will be investigated using the current instrument design.

Besides, the L2 Russian learners' misinterpretation of the wh-word with the Masculine Accusative singular inflection *–oj* and using it to co-reference with Masculine nouns in indirect cases can yield another direction for enquiry: whether the features involved in adjective agreement can be acquired one by one. The relevant evidence could be obtained once the following performance is observed: the wh-word *Kakoj* is used not only to be co-referenced with the Masculine.Accusative noun (the long-distance split), but also to refer to masculine nouns in other cases, namely, Dative in our instrument (the short-distance split). Should we come across multiple cases like

[18] Traditionally the unmarked form of the noun in Russian is supposed to be the Nominative singular form, which is presented in a dictionary. The unmarked forms of the Masculine noun are the Nominative singular form and the morphologically synonymous Accusative singular form, which are specified for the null affix *–Ø* (relevant for inanimate nouns only, animate nouns are inflected in a different way). The unmarked form of the Feminine noun is the Nominative singular form with the affix *–a*. However, the unmarked form of the Feminine noun is not relevant for our study. The same is releveant regarding the adjectival inflections.

this, it may suggest that L2 learners have acquired the feature [*u*gender] on the wh-word, but still struggle with the feature [*u*case] resorting to the default Nominative/Accusative form to connect it with the closest Masculine noun. Besides, L2 learners' selecting both options may suggest that the syntactic reflex is not yet in place.

Encountering cases where L2 learners co-reference the Masculine.Dative form of the wh-word (*Kak-**omu*** 'which-M.DAT.SG') and the Feminine.Accusative form of the Theme (e.g. *knig-**u*** (book-F.ACC.SG) may provide evidence that L2 learners go by superficial analogy co-referencing two words ending in *–u*. It may suggest that neither [*u*case] nor [*u*gender] features have been acquired, and the learner is trying to resolve assignment of arguments employing the phonetic resemblance of the surface forms.

In Leal Méndez & Slabakova (2014), whose goal was to replicate Tsimpli & Dimitrakopoulou's (2007) study, the test items (interrogatives with resumptives), in contrast with the latter, were supplied with the preceding context to facilitate the participants' comprehension and parsing. As a result, the advanced L2 group demonstrated native-like competence, contrary to Tsimpli & Dimitrakopoulou's (2007) data, hence casting doubt on the predictions of the Interpretability Hypothesis in that the uninterpretable features absent from the learner's L1 cannot be acquired in a L2 following the Critical age. Following Leal Méndez & Slabakova (2014), in our study we will provide a preceding context for the d-linked wh-questions in virtue of facilitating comprehension. Albeit the supplied context turns into a longer text to be processed by the participants, it familiarizes them with the situations of discourse.

In retrospect, an issue with Tsimpli & Dimitrakopoulou (2007) instrument design might have been the lack of context, which is a mandatory factor in tasks including d-linked questions (Frazier & Clifton, 2002; Leal et al., 2016; Pesetsky, 1987, among others). The reason is that isolated d-linked questions may immensely increase the processing load, especially in Grammaticality Judgment Tests (GJTs), which was duly repaired in Leal Méndez & Slabakova's (2014) design. According to Pesetsky (1987), *which*-phrases are d-linked in that the set of possible discourse referents is restricted by the noun. A d-linked question uttered in an out-of-the blue context is likely to yield an infelicitous result (Leal et al., 2016: 105).

Furthermore, providing context will aid both comprehension and parsing, and the presentation of the experimental stimuli will be more natural (Leal et al., 2016: 105). In support for the claim above, our previous pilot study, where respondents were required to react to d-linked questions without a supplied context, has demonstrated that operations with d-linked questions display increased variability both in native speakers and in L2 learners when the situation or context are missing. This is another telling reason to include a mini-situation for the participants not to face stranded d-linked questions. Through the employment of the context the participant's attention is also likely to be diverted to the meaning rather than form, which is an important factor to consider while designing an instrument.

While reviewing some previous studies it became evident that in certain cases effectively demonstrable numbers of participants were not recruited, both for the experimental and for the control groups. Hence, the results and the claims of the studies may not be completely valid and clear-cut. For our study we will attempt to provide a sufficient number of participants representing different proficiency levels, as well as the control group. The reason is to obtain ample data to analize and secure tangible results.

Regarding the experimental population to be recruited for our experiment, we have followed the implications suggested by the data provided in Lichtman (2009): the presence of a context, distance manipulation, and fillers used in testing the acquisition of adjective agreement considerably increase the processing load and make the task more implicit. This causes additional challenge for lower-lever learners. Owing to this evidence, we have decided to employ L2 Russian learners with higher levels of attainment only. Along with the outcomes suggested by Artoni & Magnani's (2015) study, only pre-intermediate, intermediate, high-intermediate, and advanced L2 Russian learners may be expected to demonstrate successful acquisition of the entire case paradigm, along with mastering the functional morphology on the wh-word supplied with a bundle of uninterpretable features. Hence, L2 Russian learners with the proficiency levels specified above are able to effectively perform in the test, whereas learners with levels prior to stable pre-intermediate (A2) are unlikely to provide data that is relevant for our study.

When the participants react to a wh-question selecting the compatible entailment for the situation of discourse in accordance with the infection on the wh-

word, they have two options to choose from. The situation is felicitous when one option only is selected. However, based on Mikhaylova's (2018) study, it was decided to utilize the option "both possible" (attained via separately checking both options) for the participants to be able to demonstrate indeterminacy, if such is present. To recapitulate, this instrument design feature is likely to provide evidence regarding the judgment of L2 Russian learners and any indeterminacy related to the acquisition of the syntax and the adjective morphology.

In our case in order to internalize adjective agreement, L2 learners have to acquire the uninterpretable feature bundle (case, gender, number) and the way it is externalized as inflectional morphology. Acquiring the feature bundle in the sense above will constitute complete acquisition. As per Slabakova (2018: 7), evaluating complete knowledge of certain functional morphology is only fruitful through investigating the interpretive knowledge of semantic reflexes, which will be reflected in the testing instrument. We will accept the acquisition of a functional category if "its semantic interpretation is 80% accurate" (Slabakova, 2003: 285). The research instrument will include distinct morphological and semantic varieties of a split discourse-linked wh-question with a ditransitive verb. Our experimental conditions are based on a construction with an animate Goal expressed by a Dative noun, and an inanimate Theme expressed by an Accusative noun. The lexical/grammatical gender of the Goal and the grammatical gender of the Theme are manipulated: Masculine.Dative vs. Feminine.Dative vs. Masculine.Accusative vs. Feminine.Accusative. Additionally, the adjectival inflection on the wh-word will be manipulated to be co-referenced either with the animate Goal (Dative noun), which results in a short-distance split, or with the inanimate Theme (Accusative noun), which yields a long-distance split. Hence, three factors are involved in the design of the instrument.

This chapter has explored the current SLA hypotheses and the recent studies on the acquisition of functional morphology in L2 Russian. Owing to the scarcity of research on the acquisition of adjectival morphology and noun-adjective agreement in L2 Russian, studies on heritage Russian, other languages, and domains outside the scope of the nominal phrase of L2 Russian were also included. Sadly, to date there have been no studies dedicated to the acquisition of split d-linked wh-questions, and the current research is likely to designate a new direction for SLA enquiry. The next

chapter will present information on the research questions and methodology utilized in our study. Such issues as the predictions for the research questions, the instrument, the participants, as well as miscellaneous technical information regarding the experiments will be discussed.

IV. RESEARCH QUESTIONS AND METHODOLOGY

A. Brief Remarks on Feature Acquisition

As our enquiry focuses on the acquisition of L2 Russian, henceforth the linguistic data will pertain to Russian; phenomena related to the Turkish language will be explicitly pointed out. As mentioned earlier, in our current study we assume that the adjectival agreement inflection on the wh-word is the spell-out of the uninterpretable features [*u*case], [*u*number], and [*u*gender]. Hence, the interpretation of the inflection is derived through checking uninterpretable features with the coindexed headword (restrictor), as based on the externalized PF-features required to satisfy the noun's morphological well-formedness condition. We can also approach it as an assembly of a bunch of features into a single inflection, which is typical for a highly inflecting language like Russian.

Adopting the system of the interplay of interpretable and uninterpretable features at LF/PF (Tsimpli & Dimitrakopoulou, 2007: 223), we can illustrate the distribution of features potentially plausible in the course of derivation:

1. LF-interpretable/PF-uninterpretable features (the feature [animacy] is not externalized either on Turkish or Russian wh-word– *Hangi* vs. *Kakoj* [19] respectively);
2. LF-interpretable/PF-interpretable (the feature [animacy] on the Masculine.Accusative noun inflection in Russian, where this feature is marked explicitly);
3. LF-uninterpretable/PF-interpretable (the features [*u*case], [*u*number], and [*u*grammatical gender] on the Russian wh-word);
4. LF-uninterpretable/PF-uninterpretable (the feature [*u*case] on the Turkish wh-word).

[19] Only the Masculine.Accusative inflections on the noun and the adjective are specified for animacy, in which case the feature is marked explicitly. However, these forms are not relevant for our instrument.

1. Acquisition of Features Relevant for the Current Study

Taking into account the system of features involved in derivation at LF and PF (Tsimpli & Dimitrakopoulou, 2007: 223), which is exemplified above, and adopting it for the current study, our inquiry is limited to exploring LF-uninterpretable/PF-interpretable features on the wh-word in L2 Russian. It must be noted that the above derivation is to be acquired by native speakers of a language, where the respective features constitute an LF-uninterpretable/PF-uninterpretable pair.[20]

The next section will present data on the previous pilot studies conducted with the aim to narrow down the scope of and direct the enquiry, while leaving out the aspects, which are likely to significantly complicate the data.

B. Previous Pilot Studies

The current section will elucidate the details of the preliminary pilot studies, which were aimed at probing a design of a research instrument to be implemented in our enquiry.

1. Pilot Study 1

While paving the road to reach the current state of enquiry, several attempts in choosing the correct direction were made, for which several pilot studies were conducted. The first pilot study focused on L2 Russian acquisition of split d-linked wh-questions by L1 Turkish adults.

Two populations were recruited to participate in the pilot study: the experimental group (n=12, mean age=36,16), and the control group (n=14, mean age=40,78). The experimental group included L1 Turkish speakers who had learned L2 Russian in an academic environment, either in a Russian-speaking country, or in Turkey. All the participants had to complete a background questionnaire prior to proceding to the tests, where questions were asked regarding their native and L2 languages. They also had to give concent that the data obtained as the result of the tests could be used in the scope of the enquiry. Following the background questionnaire, the L2 Russian proficiency level was measured prior to administering the experiments

[20] We are not intending to investigate the acquisition of the LF-interpretable feature [animacy] in the scope of the current study, but it may designate a perspective path for further research.

with the Cloze test employed by Slabakova (2005), who had kindly shared it to be used for the current study.

The Cloze test consisted of a fairy tale about seasons where participants were required to select the best word (three options were provided) to fill in 31 gaps targeting different aspects of L2 Russian grammar knowledge. The level of participants is attested according to the values in the original paper. Namely, the performance of the high intermediate through advanced group (B2-C1) ranges between 27 and 31 points; the intermediate group (B1) ranges from 21 to 26 points; and the low intermediate group (A2) performs within the range of 11 through 20 points. The same Cloze test is employed in the next Pilot studies and in the actual study.

The accuracy of the L2 group proficiency turned out to be on a scale from 23/31 to 30/31, hence, it was within the range sufficient to conduct the experiment. The control group included native speakers of Russian and was exempt from the proficiency test. All the recruited participants underwent an interview following the experiment with the aim to elicit information on whether they had guessed the investigated phenomena, and some questions were asked related to the amount of time spent, as well as the procedure of the experiment.

The participants were administered two tasks, which were compiled using Google forms and were completed online. A Semantic Entailments (comprehension) task tested the participants' interpretation of and sensitivity to split d-linked wh-questions in Russian; it consisted of 42 experimental items (distributed among three conditions, 14 items per condition), and 66 distractors. A Filling-in (production) task tested the participants' ability and willingness to form and use split d-linked wh-questions. The production task consisted of 42 experimental items (distributed among three conditions, 14 items per condition), and 66 distractors. There was an option in both tasks for the participant to correct the proposed wh-questions if they had the feeling it sounded odd or artificial. The items used in the tasks included split d-linked wh-questions of two types: with pronominal subjects, and with subjects expressed by the noun. Part A of the split preceded the subject, and part B was left behind in-situ. Items with adjoining d-linked wh-questions were also utilized for control purposes.

The constructions used in the instrument constituted d-linked wh-questions with a 3-place predicate, whose principal structure is demonstrated below:

Wh-word Subject$_{Agent}$ Verb-PST Object$_{Theme}$?

Based on the structure above, the sets of items were devised with a view to manipulate the following factors:

1. Subject: Animate Masculine Noun (Agent) versus Animate Feminine Noun (Agent) versus Pronoun[21] (Masculine);
2. Direct object: Inanimate Masculine Noun (Theme) versus Inanimate Feminine Noun (Theme);
3. Co-referencing of the wh-word (in constructions with a subject expressed by a noun): Subject concord (non-split type) versus Object concord (split type).

The truncated system of manipulations was utilized, and the following conditions were devised:

1. In the non-split NP condition we used an animate feminine noun as a subject (Agent, Nominative case), and an inanimate masculine noun as a direct object (Theme, Accusative case). The wh-word is co-referenced with the subject. Hence, the adjoining construction is used, not a split one: the inflection *-aja* provides the only licit co-reference of the wh-word with the feminine subject:

   *Kak-**aja**$_i$ ženščin-**a**$_i$ pročita-l-a žurnal-**Ø**?*
   Which-F woman-F.NOM.SG read-PST-F.SG journal-M.ACC.SG?
   'Which woman read a/the journal?' (The functional morphology on the nouns and the wh-word is boldfaced)

2. In the split NP condition condition we also used an animate feminine noun as a subject (Agent, Nominative case), and an inanimate masculine noun as a direct object (Theme, Accusative case). The wh-word is co-referenced with the direct object (Theme). The inflection *–oj* on the wh-word *Kakoj* 'which' coindexes it with the inanimate masculine object:

   *Kak-**oj**$_j$ ženščin-**a** pročita-l-a žurnal-**Ø**$_j$?*
   Which-M.ACC.SG woman-F.NOM.SG read-PST-F.SG journal-M.ACC.SG?
   'Which journal did the woman read?' (The functional morphology on the nouns and the wh-word is boldfaced)

[21] All sentences with a pronomical subject had a split phrase.

3. The split NP+Pronoun condition is designed with the subject of the sentence expressed by the personal pronoun *on* ‘he’ in the nominative case. The co-indexation of the wh-word with the pronoun is ruled out, and the only licit option is to co-reference it with the masculine object:

   *Kak-**oj**$_j$ on pročita-l žurnal-**Ø**$_j$?*
   Which-M.ACC.SG he-NOM read-PST.M.SG journal-M.ACC.SG?
   Which journal did he read? (The functional morphology on the noun and the wh-word is boldfaced)

In the Semantic Entailments (comprehension) task the participants were asked to react to the d-linked question selecting one of two entailments provided. Only one option was congruous. In the Filling-in (production) task the entailment to a d-linked wh-question was supplied, and the participants were required to provide the felicitous inflection for the wh-word and to put the words in the appropriate order. In all the conditions the wh-word was placed in the initial position.

Following the Pilot study, certain critical areas were discerned, which required modifying the research instrument. However, some interesting outcomes have also been obtained. Below some specific data are presented, related to each condition separately.

Semantic Entailments (comprehension) task data

Condition 1 (non-split NP): In the condition with the adjoining construction both populations performed in approximately the same way except for a couple of native respondents who chose another wh-construction instead of “which” (namely, *Kotoraja iz…* ‘Which of the…’ or *Kto…* ‘Who…’). The L2 group’s performance can be regarded as maximally approaching the L1 accuracy.

Condition 2 (split NP): In the construction where the wh-word and the referent noun are split, approximately half of both polulations demonstrate a preference for adjoining constructions. Hence, they try to repair the constructions presented. However, the way how the populations repair the structure is different: the experimental L2 group predominantly comprehends the noun in the nominative case (Agent) as the one related to the wh-word, and changes the wh-word for the feminine gender without noticing the probable split realization. Meanwhile, the control group registers the split and repairs the construction via moving the peripherally placed constituent: they place the noun in the accusative case immediately after the wh-word.

Nevertheless, a cosiderable part of the participants process the nominal split and accept it as grammatical.

Condition 3 (split NP+Pronoun): When compared, both groups performed in a similar manner: the acceptance rate of a nominal split construction with a pronominal subject is fairly equal – contrary to the 2nd condition (with the split construction, where the subject is expressed by a noun), which was rejected in almost half of the cases. This fact is in line with the claims of the Bottleneck Hypothesis in that the syntactic features do not pose considerable difficulty in L2 language acquisition even in the PoS situation.

Filling-in (production) task data

Condition 1 (non-split NP): this condition has posed little challenge for the L2 group, and the performance is fairly homogenous. There have been some errors related to the spelling of the inflection, which may corroborate the tenets of the Bottleneck Hypothesis.

Condition 2 (split NP): both groups showed a strong inclination to utilizing adjoining constructions in noun phrases (rather than splits, which is widely documented in literature (Pereltsvaig, 2008b; Sekerina, 1997)). There was a small fraction of native controls, who demonstrated an insignificant number of split constructions.

Condition 3 (split NP+Pronoun): the performance of both groups is very much the same regarding the production of split constructions with a pronoun. There are several cases of misusing the morphological markers on the wh-word, which is also in accordance with the claims of the Bottleneck Hypothesis. The issue may be the unacquired uninterpretable features [*u*case, *u*gender, *u*number], which are externalized as an inflection. However, the percentage of erroneous usage of adjectival morphology may be rather low for the time being. A very interesting phenomenon that has come about is the difference in the composition of split phrases with pronouns by native speakers and L2 learners. L1 population predominantly places the pronoun in the left peripheral position, whereas the experimental group preferred to place the verb in the final position. Since placing the verb in the final position is the canonical word order for the respondents' L1, we can deduce that they may be lead by their native syntax, which could present an additional enquiry further research.

Results

The obtained evidence suggests that from early on L1 Turkish / L2 Russian learners can correctly comprehend and produce split d-linked wh-questions with pronominal subjects on par with the L1 Russian controls. However, both populations demonstrated certain variability regarding comprehending and producing split interrogative constructions with subjects expressed by nouns (but not by pronouns). Due to the fact that nominal splits mainly pertain to the colloquial register of Russian, both the L2 Russian and the L1 Russain participants were reluctant to utilize them in the production task via typing, especially in interrogatives with a subject manifested by a noun. Conversely, wh-questions with pronominal subjects demonstrated far more uniformity. Due to the high complexity of the tasks, long periods of time and considerable efforts that the experiments require, along with increased variability attested in native speakers, it was decided to abandon the design utilized in our first pilot study, and to reformulate the approach and the research questions. The details of the pilot study are available to the interested reader on request.

However, based on the attested results, which are in line with the claims of the Bottleneck Hypothesis, inter alia, we assume the "syntax-before-morphology view" in that L2 Russian learners are likely to have acquired the syntactic reflexes, namely, the operation of splitting, whose theoretical grounds are extensively examined in Pereltsvaig (2008b). As discussed above, the syntactic reflex regarding splitting is comprised of the wh-movement of the whole phrase (according to the copy-movement approach), and the subsequent distributed deletion of the copies at PF.

The next subsection will elucidate the details of the subsequent pilot study conducted through utilizing the same construction (**Wh-word Subject$_{\textbf{Agent}}$ Verb.PST Object$_{\textbf{Theme}}$?**), where certain factors were manipulated.

2. Pilot Study 2

Stimuli / Tested Conditions

In order to test the research questions of the pilot study (research questions 1, 2 in the current study), several experimental conditions were designed, which probed different aspects of the acquisition of L2 Russian adjectival morphology and adjective-noun agreement. We manipulated the following grammatical features:

I. The uninterpretable feature [*u*gender] on the wh-word externalized as adjectival morphology:

Ia: The uninterpretable feature [*u*gender: Masculine]
Kak-oj
Which-M.NOM.SG/M.ACC.SG

The wh-word inflected as in Ia possesses the uninterpretable feature [*u*gender: Masculine] along with the uninterpretable features [*u*case] and [*u*number]. The context yields a globally ambiguous reading due to the uninterpretable feature [*u*case]; hence, the wh-word can relate to a masculine subject or a masculine inanimate[22] object, which is exemplified in (43):

(43) *Kak-**oj**$_{i/j}$ malčik-**Ø**$_i$ čitaet žurnal-**Ø**$_j$?*
which-M.NOM.SG boy-M.NOM reads journal-M.ACC
'Which journal does the boy read?/Which boy reads the journal?'
(The manipulated feature is underlined. The functional morphology on the nouns and the wh-word is boldfaced).

Ib: The uninterpretable feature [*u*gender: Feminine]
Kak-aja
which-F.NOM.SG

The wh-word inflected as in Ib has the uninterpretable feature [*u*gender: Feminine] and relates to a feminine subject externalized as a noun as exemplified in (44).

(44): *Kak-**aja**$_i$ devočk-**a**$_i$ čitaet žurnal-**Ø**?*
which-F.SG.NOM girl-F.NOM reads journal-M.ACC
'Which girl reads the journal?'
(The manipulated feature is underlined. The functional morphology on the nouns and the wh-word is boldfaced).

II. The interpretable feature [gender][23] of the animate subject, which is realized through:

IIa. An animate common noun with the interpretable gender feature [masculine]
e.g. *malčik-Ø*
boy-M.NOM

An animate masculine common noun will contribute to creating an ambiguous construction: it may either be co-referenced with the wh-word, hence, interpreted as

[22] A masculine animate object requires another marker on the wh-word.
[23] It is important to note that assigning gender to the noun (gender assignment) is a lexical operation. Herein we are not focusing on the inflectional morphology of the noun and its acquisition: it is beyond our study.

an adjacent d-linked wh-question illustrated in (45a), or, if not connected to the wh-word, will entail a split construction as illustrated in (45b):

(45): a. *Kak-**oj**$_i$ malčik-**Ø**$_i$ čitaet žurnal-**Ø**?*
which-M.NOM.SG boy-M.NOM.SG reads journal-M.ACC.SG
'Which boy reads the journal?'
b. *Kak-**oj**$_i$ malčik-**Ø** čitaet žurnal-**Ø**$_j$?*
which-M.NOM.SG boy-M.NOM.SG reads journal-M.ACC.SG
'Which journal does the boy read?'
(The manipulated feature is underlined. The functional morphology on the nouns and the wh-word is boldfaced).

IIb. An animate common noun with the interpretable gender feature [feminine]
e.g. *devočk-a*
girl-F.NOM

An animate feminine common noun will be co-referenced with the wh-word on condition the latter is inflected with the uninterpretable gender feature [*u*feminine], hence resulting in an adjacent d-linked wh-question as exemplified in (46a). Should the wh-word be specified for the uninterpretable gender feature [*u*masculine], the interpretation will be a split d-linked wh-question, where the wh-word will be coindexed with the object exemplified in (46b):

(46): a. *Kak-**aja**$_i$ devočk-**a**$_i$ čitaet žurnal-**Ø**?*
which-F.NOM.SG girl-F.NOM.SG reads journal-M.ACC.SG
'Which girl reads the journal?'
b. *Kak-**oj**$_j$ devočk-**a** čitaet žurnal-**Ø**$_j$?*
which-M.ACC.SG girl-F.NOM.SG reads journal-M.ACC.SG
'Which journal does the girl read?'
(The manipulated feature is underlined. The functional morphology on the nouns and the wh-word is boldfaced).

IIc. A personal pronoun with the interpretable feature gender [masculine]
on-Ø
he-M.NOM

Due to the inability for a pronoun to serve as an antecedent for the wh-word, constructions with a subject specified for the interpretable gender feature [+masculine], which is externalized through the personal pronoun *on* 'he', will result in split d-linked wh-questions as exemplified in (47):

(47) *Kak-**oj**$_j$ on-**Ø** čitaet žurnal-**Ø**$_j$?*
Which-M.NOM.SG he reads journal-M.ACC.SG
'Which journal does he read?'
(The manipulated feature is underlined. The functional morphology on the nouns and the wh-word is boldfaced).

IId. A personal pronoun with the interpretable feature gender [+feminine]

on-a

she-F.NOM

Because it is unfeasible for a pronoun to link with the wh-word, constructions with a subject specified for the interpretable gender feature [+feminine], which is externalized via the personal pronoun *ona* 'she', will result in split d-linked wh-questions as exemplified in (48):

(48): *Kak-**oj**$_j$* *<u>on-**a**</u>* *čitaet žurnal-**Ø**$_j$?*

which-M.NOM.SG <u>she</u>-F.NOM reads journal-M.ACC.SG

'Which journal does she read?'

(The manipulated feature is underlined. The functional morphology on the nouns and the wh-word is boldfaced).

The manipulations of the uninterpretable and interpretable features elucidated above entail the following probable testing conditions:

1. A semantically ambiguous construction:

1. Masculine Subject Ambiguous:

Kak-oj$_{i/j}$ *malčik-Ø$_i$* *čitaet žurnal-Ø$_j$?*

Which-M.NOM.SG boy-M.NOM reads journal-M.ACC

'Which journal does the boy read?/Which boy reads the journal?'

2. Split constructions exemplified in (46b, 47, 48, respectively):

2. Feminine Subject Split:

Kak-oj$_j$ *devočk-a* *čitaet žurnal-Ø$_j$?*

Which-M.NOM.SG girl-F.NOM reads journal-M.ACC

'Which journal does the girl read?'

3. Masculine Pronominal Subject Split:

Kak-oj$_j$ *on čitaet žurnal-Ø$_j$?*

Which-M.NOM.SG he reads journal-M.ACC

'Which journal does he read?'

4. Feminine Pronominal Subject Split:

Kak-oj$_j$ *ona čitaet žurnal-Ø$_j$?*

Which-M.NOM.SG she reads journal-M.ACC

'Which journal does she read?'

3. Adjacent constructions as exemplified in (45a, 46a):

5. Masculine Subject Adjacent:

Kak-oj$_i$ *malčik-Ø$_i$* *čitaet žurnal-Ø$_j$?*

which-M.NOM.SG boy-M.NOM reads journal-M.ACC

'Which boy reads the journal?'

6. Feminine Subject Adjacent:

Kak-aja$_i$ *devočk-a$_i$* *čitaet žurnal-Ø?*

which-F.NOM.SG girl-F.NOM reads journal-M.ACC

'Which girl reads the journal?'

4. Besides, non-targetlike constructions have also been designed as a result of the manipulations of the features above:

7. Masculine Pronominal Subject Non-felicitous:

**Kak-aja$_j$ on čitaet žurnal-Ø$_j$?*
which-F.NOM.SG he reads journal-M.ACC
*'Which journal does he read?'

8. Feminine Pronominal Subject Non-felicitous:

*****Kak-aja$_j$ ona čitaet žurnal-Ø$_j$?*
which-F.NOM.SG she reads journal-M.ACC
*'Which journal does she read?'

The constructions illustrated above and obtained through the manipulation of the uninterpretable feature [*u*gender] (externalized via the adjectival inflection on the wh-word) and the interpretable feature [gender] on the subject (externalized through employing common animate nouns and pronouns) were used as conditions in the tasks that were designed to test the preliminary research questions of the second pilot study.

Tasks

The tasks were designed assuming that a functional category to be acquired comprises 3 distinct reflexes (semantic, syntactic, and morphological), and the acquisition of the three results in a full acquisition of the respective functional category (Slabakova, 2008, 2016, 2018). It is assumed that the acquisition of these reflexes can occur independently from each other and not isochronously (Slabakova, 2006). As distinctive semantic reflexes of split d-linked wh-questions in Russian are not different from those of the adjoining construction (Irina Vysotskaja, p.c.; Pereltsvaig, p.c.), only the syntactic and the morphological reflexes are probed in our study. The syntactic reflexes are tested via the correct comprehension and production of splits. The morphological reflexes are tested via the correct comprehension and production of adjectival morphology.

The L2 Russian learners and the control group underwent the Semantic Entailments Task and the Sentence Completion Task/Situation-Constrained Fill-in-the-Blank Task, which are widely used quantitative methods of data collection in SLA. The results of the tasks were expected to provide us with descriptive and causal patterns in the L2 learners' interlanguage. The L2 learners' performance is compared to that of the controls'.

All the instructions for the tasks were presented in Russian. Prior to proceeding to the actual test, the participants were given a short practice session in order to be familiarized with the design. Both tasks were pen-and-paper based, and took place in

an environment comfortable for the participant. The tasks were completed individually.

All the vocabulary items employed in the instrument constitute the vocabulary of high frequency (top 5000 lemmas of the Russian Corpus, which cover about 82% of word forms in texts, www.bokrcorpora.narod.ru).

Semantic Entailments Task (design partially adopted from Mikhaylova, 2018)

A Semantic Entailments task was designed to test the comprehension of L2 Russian split d-linked wh-questions in L1 Turkish L2 Russian learners. Its purpose is to measure L2 learners' ability to interpret split d-linked wh-questions through employing the knowledge of adjectival morphology (the uninterpretable feature [*u*gender]) and the knowledge of a syntactic operation, namely, the copy movement and partial interpretation of copies at PF. The test contained 25 target items (five conditions, five items per condition) and 25 distractors and fillers. The task was distributed and administered on paper in one attempt. The participants were asked not to backtrack.

The stimuli were presented in the following way: on the test paper a d-linked wh-question was given, and two options are proposed as entailments to choose from: A. Subject-concord (entailment 1); B. Object-concord (entailment 2). Besides, another 2 options are provided: C. Both entailments are correct; D. The question has an error. Write the correct form of the question in the box below and choose the correct entailment encircling either or both continuations (letters next to the box).

When option D is chosen and the participant changes a split d-linked wh-question for the adjoining construction, the elicited outcome is regarded as yielding both comprehension and production data. The production data are suggestive of the participants' preferences whether to use a split or an adjoining kind of d-linked wh-questions (it is added to the information elicited in the Sentence Production task).

With no other contextual clues to rely on, the adjectival morphology (the PF externalization of the uninterpretable feature [*u*gender]) is the only cue available for arriving at correct interpretations, according to which participants were required to choose the most logical answer. If the question makes little or no sense to produce the answer, the participant chose option D, and provided the correct form of the wh-question indicating the entailment that is the answer to the wh-question. Hence, the participants' ability to interpret functional morphology in the interrogative sentence determines their choice in the task. To this end, five testing conditions were employed.

Each condition is elucidated below. The detailed explanation and interpretation of potential answers that the participants may/may not choose ara available on request.

Condition 1: Masculine Subject Ambiguous

Condition 1 is an ambiguous construction that undergoes split and adjacent interpretation illustrated below as (49):

(49) *Kak-oj$_{i/j}$ malčik-Ø$_i$ čitaet žurnal-Ø$_j$?*
Which-M.NOM.SG boy-M.NOM reads journal-M.ACC
'Which journal does the boy read?/Which boy reads the journal?'

The ambiguity is realized through the adjectival morphology on the wh-word: the uninterpretable feature gender [*u*masculine]. Specifically, it refers either to the Subject (Agent) or to the Object (Theme): both arguments are specified for the interpretable gender feature [masculine]. Condition 1 tests whether the masculine singular nominal inflection on the wh-word is extrapolated both on the subject and the object. Obtaining these results suggests that splitting and adjectival morphology are fully acquired. However, indeterminacy and optionality are plausible in respect to spotting ambiguity due to working memory constraints.

A stimulus item including Condition 1 is exemplified in (50):

(50) Anya is asking:
Kakoj malčik čitaet žurnal?
which boy reads journal
'Which journal does the boy read?/Which boy reads the journal?'
Andrey replies:
a. *Po-moemu, eto Vova.*
To-me it Vova
'I think it is Vova.' (Subject-concord)

b. *Dumayu, on čitaet NatGeo.*
I.think he read NatGeo
'I think he is reading a NatGeo.' (Object-concord)

c. Both are correct ← **The correct choice**

d. The question has an error. Write the correct form of the question in the box below and choose the correct entailment encircling the letter(s) that stand for answers next to the box.

a b

Condition 2: Feminine Subject Split

Condition 2 is our main experimental condition, which is a split non-ambiguous construction illustrated below as (51):

(51) *Kak-oj$_j$ devočk-a čitaet žurnal-Ø$_j$?*
Which-M.NOM.SG girl-F.NOM reads journal-M.ACC
'Which journal does the girl read?'

Splitting is realized morphologically via the uninterpretable gender feature [*u*masculine] on the fronted wh-word checked by the interpretable gender feature [masculine] of the object noun. The subject noun possessing the interpretable gender feature [feminine] cannot result in checking the uninterpretable feature [*u*gender] of the wh-word, as this produces a gender mismatch. Condition 2 tests whether the adjectival morphology on the wh-word is co-referenced with the object only, hence, splitting and adjectival morphology are fully acquired.

A stimulus item including Condition 2 is exemplified in (51a):

(51) a. Anya is asking:
Kakoj devočka čitajet žurnal?
which girl read journal
'Which journal is the girl reading?'

Andrey replies:
a. *Po-moemu, eto Vera.*
To-me it Vera
'I think it is Vera.' (Subject-concord)

b. *Dumayu, ona čitaet NatGeo* ← **The correct choice**
I.think she read NatGeo
'I think she is reading a NatGeo.' (Object-concord)

c. Both are correct

d. The question has an error. Write the correct form of the question in the box below and choose the correct entailment encircling the letter(s) that stand for answers next to the box.

a b

Condition 3: Feminine Subject Adjacent

Condition 3 constitutes an adjacent non-ambiguous construction, where the wh-word refers to the animate feminine subject but not to the masculine object. It is exemplified below as (52):

(52) *Kak-aja$_i$ devočk-a$_i$ čitaet žurnal-Ø?*
which-F.NOM.SG girl-F.NOM reads journal-M.ACC
'Which girl reads the journal?'

This condition tests whether the uninterpretable gender feature [*u*feminine] on the wh-word is coindexed with the subject only; hence, adjacent structures, transferrable from a L1, and adjectival morphology are fully acquired.

A stimulus item including Condition 3 is exemplified in (52a):

(52) a. Anya is asking:
Kakaja devočka čitaet žurnal?
which girl reads journal
'Which girl reads the journal?'

Andrey replies:
a. *Po-moemu, eto Vera.*
To-me it Vera
'I think it is Vera.' (Subject-concord)

b. *Dumayu, ona čitaet NatGeo* ← **The correct choice**
I.think she read NatGeo
'I think she is reading a NatGeo.' (Object-concord)

c. Both are correct

d. The question has an error. Write the correct form of the question in the box below and choose the correct entailment encircling the letter(s) that stand for answers next to the box.

a b

Condition 4: Masculine Pronominal Subject Split

Condition 4 constitutes a split non-ambiguous construction, where the wh-word refers to the inanimate masculine object noun, but not to a masculine pronominal subject and is illustrated below as (53):

(53) *Kak-oj$_j$ on-Ø čitaet žurnal-Ø$_j$?*
which-M.NOM.SG he reads journal-M.ACC
'Which journal does he read?'

Condition 4 tests whether the uninterpretable gender feature [*u*masculine] on the wh-word is checked by the interpretable gender feature [masculine] on the common noun, which is an object (reference to the pronoun is universally disallowed); hence, splitting and adjectival morphology are fully acquired.

A stimulus item including Condition 5 is exemplified in (53a):

(53) a. Anya is asking:
Kakoj on čitaet žurnal?
which he reads journal
'Which journal does he read?'

Andrey replies:
a. *Po-moemu, eto Vanja.*
To-me it Vanja
'I think it is Vanja.' (Subject-concord)

b. *Dumayu, on čitaet NatGeo* ← **The correct choice**
I.think he read NatGeo
'I think he is reading a NatGeo.' (Object-concord)

c. Both are correct

d. The question has an error. Write the correct form of the question in the box below and choose the correct entailment encircling the letter(s) that stand for answers next to the box.

a b

Condition 5: Masculine Pronominal Subject Non-felicitous

Condition 5 constitutes an infelicitous construction with the wh-word specified for the feminine gender inflexion, a masculine pronominal subject and a masculine object noun, and is demonstrated below as (54):

(54) ***Kak-aja**$_j$ on-Ø čitaet žurnal-Ø$_j$?*
which-F.NOM.SG he reads journal-M.ACC
*'Which journal does he read?'

There exists a gender violation due to the uninterpretable gender feature [*u*feminine] on the wh-word: it cannot be checked by the interpretable gender feature [masculine] on the animate object noun, and the reference to the pronoun is universally disallowed. The wh-word thus cannot refer to a masculine object, hence the sentence is ungrammatical: a gender feature clash error is created. Rejection is expected and constitutes the operativeness of adjectival morphology in the L2 interlanguage. Condition 5 tests L2 Russian learners' sensitivity to a gender mismatch and will demonstrate whether they have acquired the functional adjectival morphology sufficient to comprehend gender violation.

A stimulus item including Condition 5 is exemplified in (54a):

(54) a. Anya is asking:
Kakaja on čitaet žurnal?
which he reads journal
*'Which journal does he read?'

Andrey replies:
a. *Po-moemu, eto Vanja.*

To-me it Vanja
'I think it is Vanja.' (Subject-concord)

b. *Dumayu, on čitaet NatGeo*
I.think he read NatGeo
'I think he is reading a NatGeo.' (Object-concord)

c. Both are correct

d. The question has an error. Write the correct form of the question in the box below and choose the correct entailment encircling the letter(s) that stand for answers next to the box. ← **The correct choice**

Kakoj on čitaet žurnal? which he reads journal 'Which journal does he read?'

The above conditions were our instruments in comparing the control and the experimental groups, and elucidating the mental representation of the reflexes related to the functional category split d-linked wh-questions in both populations. The data were analized to obtain information indicative of (non)divergence of the experimental L2 group from the control L1 group. These data were used to answer Preliminary Research Questions 1 and 3.

The table below summarizes the test conditions employed for Pilot study 2 (Task 1: Sentence Comprehension).

Table 17 Test conditions employed for the sentence comprehension task of pilot study 2

	Task 1: Sentence Comprehension	
Gender of the Arguments	**Wh-word Masculine**	**Wh-word Feminine**
Masc.S (Noun)/ Masc.O (Noun)	Condition 1: Ambiguous – split or adjacent interpretation	____
Fem.S (Noun)/ Masc.O (Noun)	Condition 2: Non-ambiguous – split interpretation	Condition 3: Non-ambiguous – adjacent interpretation
Masc.S (Pron.)/ Masc.O (Noun)	Condition 4: Non-ambiguous – split interpretation	Condition 5: Non-targetlike construction
Fem.S (Pron.)/ Masc.O (Noun)	____	____

Sentence Completion task (Situation-Constrained Fill-in-the-Blank Task) (design partially adopted from Denhovska & Serratrice (2017) and Dintrans (2011))

A Sentence Completion task was designed to test the production of L2 Russian split d-linked wh-questions in L1 Turkish L2 Russian learners. It is a production test whose purpose is twofold. On the one hand, it is aimed at measuring L2 learners' ability to correctly supply the adjectival morphology required to externalize the uninterpretable feature [*u*gender] on the wh-word, hence, the morphological reflex is probed. On the other hand, it will test L2 learner's ability to produce split d-linked wh-questions based on their decisions regarding the wh-word subject or object concord, hence, the syntactic reflex is probed. In this respect, we are going to employ constructions where adjoining and split options are equally licit (Type 1, with a subject (Agent) expressed by a noun); and constructions necessitating the use of the split variation (Type 2, with a pronominal subject (Agent)). Along with the participants' ability to produce split d-linked wh-questions, Type 1 constructions may also demonstrate their preference for adjoining and split varieties. Type 2 constructions will be indicative of the participants' ability to produce split d-linked wh-questions in a mandatory environment.

We implemented 21 target items (three conditions, seven items per condition) and 30 distractors and fillers. The test was distributed and administered on paper in one attempt and the participants were asked not to backtrack.

On the test paper the participant faces a d-linked wh-question, where only the uninflected wh-word (and the pronominal subject in Type 2 constructions, see below for details) is visible, the remaining words are to be placed in the correct order. The words to be supplied are presented below. The necessary inflectional morphology are elicited on all the words except the verb. The entailment that follows is the clue to the required adjectival morphology (the morphological reflex) and the word order (the syntactic reflex). With no other cues to rely on, the entailment to the question (context) is the only cue available for arriving at correct interpretations, based on which the participants are required to complete the test stimuli. Thus, the participants' ability to produce correct adjectival morphology and split NPs will determine their performance in the task.

The participants were asked to write the correct inflection on the wh-word and to put the provided words into the gaps in the correct order with the necessary inflections if needed. There is also an option to check if the participant wishes to order the supplied words in a better way with the box to write it in.

To summarize, in this task we intended to separately test the production of the morphological or syntactic reflexes related to the acquisition of split d-linked wh-questions. To this end, three testing conditions will be employed.

Each condition is elucidated below. Detailed explanation and interpretation of potential answers that the participants may provide is available on request.

In order to probe the syntactic reflexes, Type 1 constructions constitute conditions 1 and 2, whereas Type 2 constructions constitute condition 3.

Type 1 constructions

Each test stimulus (a d-linked wh-question) is presented as the wh-word with a gap to elicit the necessary adjectival morphology, which will be followed by three gaps standing for the 3 words to be supplied in the correct order. The words to fill in the gaps are provided below in a column. Horizontal representation of the words is disregarded as it may influence/prime the participants' behaviour. A stimulus item is illustrated in (55):

(55) *Kak*____ _____ _____ _____?
which…
čitajet (reads)
devočka (girl-NOM)
žurnal (journal-NOM)

Type 2 constructions

Each test stimulus (a d-linked wh-question) is presented as the wh-word with a gap to elicit the necessary adjectival morphology, which is followed by a pronominal subject (3rd person singular, masculine or feminine), and two gaps standing for the remaining words to be supplied in the correct order. The words to fill in the gaps will be provided below in a column. Horizontal representation of the words is avoided as it may influence/prime the participants' behaviour. A stimulus item is illustrated in (56):

(56) *Kak*____ *on* _____ _____?
which… he
žurnal (journal.NOM)
čitajet (reads)

Test Conditions

The stimulus materials for the Sentence Completion Task/Situation-Constrained Filling-In Task comprise 3 conditions:

Condition 1: Feminine Subject Split

This condition is employed on the basis of the object-concord entailment as a reaction to the d-linked wh-question. The entailment provided is the only cue available for the participant to arrive at the necessary decisions regarding the realization of the uninterpretable feature [*u*gender] on the wh-word (the morphological reflex) and the required word order (the syntactic reflex). Condition 1, intended for elicitation, is a non-ambiguous split d-linked wh-question, where the wh-word has the uninterpretable feature gender [*u*masculine] and relates to an inanimate masculine object (Theme) expressed by a common noun. It constitutes our major experimental condition and is exemplified below as (57):

(57) *Kak-oj$_j$ devočk-a čitaet žurnal-Ø$_j$?*
which-M.NOM.SG girl.F.NOM reads journal-M.ACC
'Which journal does the girl read?'

A test stimulus including condition 1 is exemplified in (57a):

(57) a. Anya is asking:
– Kak____ _____ _____
_____?
which…
čitajet (reads)
devočka (girl)
žurnal (journal)

Andrey replies:
– *Dumaju, ona čitajet žurnal NatGeo.*
I.think, she read journal NatGeo
'I think she is reading a NatGeo journal'.

☐ Check if you think that the question is incorrect and suggest a better form of the sentence(s). Please, write in the box below.

Condition 2: Feminine Subject Adjacent

This condition is employed on the basis of the subject-concord entailment as a reaction to the d-linked wh-question. The provided entailment is the only cue available for the participant to arrive at the necessary decisions regarding the realization of the uninterpretable feature [*u*gender] on the wh-word (the morphological reflex) and the required word order (the syntactic reflex. Condition 2, intended for elicitation, is a non-ambiguous adjacent d-linked wh-question, where the wh-word is specified for the

uninterpretable feature gender [*u*feminine] and relates to a feminine subject expressed by an animate common noun (Agent). It is exemplified below as (58):

(58) *Kak-aja$_i$ devočk-a$_i$ čitaet žurnal-Ø?*
which-F.NOM.SG girl-F.NOM reads journal-M.ACC
'Which girl reads the journal?'

A stimulus item including condition 2 is exemplified in (58a):

(58) a. Anya is asking:
– Kak____ _____ _____ _____?
which…
čitajet (reads)
devočka (girl-F.NOM)
žurnal (journal-M.NOM)

Andrey replies:
– *Po-moemu, eto Maša.*
to-me it Masha
'I think it is Masha'.

☐ Check if you think that the question is incorrect and suggest a better form of the sentence(s). Please, write in the box below.

Condition 3: Feminine Pronominal Subject Split

This condition is employed on the basis of the object-concord entailment as a reaction to the d-linked wh-question. The provided entailment is the only cue available for the participant to arrive at the necessary decisions regarding the realization of the uninterpretable feature [*u*gender] on the wh-word (the morphophonemic reflex) and the required word order (the syntactic reflex). Condition 3, intended for elicitation, is a non-ambiguous split d-linked wh-question, where the wh-word has the uninterpretable feature gender [*u*masculine] and relates to a masculine object (Theme) expressed by an inanimate noun. It cannot relate to the feminine pronominal subject, as linking of the wh-word to the pronoun is universally disallowed. It is an important tool to demonstrate the participants' ability to produce split constructions. Condition 3 is exemplified below as (59):

(59) *Kak-oj$_j$ ona čitaet žurnal-Ø$_j$?*
which-M.NOM.SG she reads journal-M.ACC
'Which journal does she read?'

A stimulus item demonstrating Condition 2 (Type 2 construction, the pronominal subject is explicitly shown) is exemplified in (59a):

(59) a. Anya is asking:
– Kak____ ona _____ _____?
which… she
čitajet (reads)
žurnal (journal)
'Which journal is she reading?' (intended production)

Andrey replies:
– *Po-moemu, eto NatGeo.*
to-me it NatGeo
'I think it is a NatGeo'.

☐ Check if you think that the question is incorrect and suggest a better form of the sentence(s). Please, write in the box below.

The table below summarizes the test conditions employed for Pilot study 2 (Task 2: Sentence Completion).

Table 18 Test conditions employed for the Pilot study

Task 2: Sentence Completion		
Gender of the Arguments	Wh-word Masculine	Wh-word Feminine
Masc.S (Noun)/ Masc.O (Noun)	____	____
Fem.S (Noun)/ Masc.O (Noun)	Condition 1: Non-ambiguous – split interpretation	Condition 2: Non-ambiguous – adjacent interpretation
Masc.S (Pron.)/ Masc.O (Noun)	____	____
Fem.S (Pron.)/ Masc.O (Noun)	Condition 3: Non-ambiguous – split interpretation	____

All the words utilized in the research instrument constitute the vocabulary of high frequency (top 5000 lemmas of the Russian Corpus, which cover about 82% of word forms in texts, www.bokrcorpora.narod.ru).

Results

There have been issues regarding the statistical analysis of the data – not enough skills to process the data effectively. Besides, the participants were not happy with the design: the majority pointed out it was too complex and intricate; on average it took about an hour to complete the tests, which is extremely long and may cause deviations in the performance. Ultimately, I also realized that the conditions and the tests were not designed properly enough to provide qualitatively and quantitatively

accurate data. Due to these reasons it was decided to completely re-tailor the whole approach to the instrument, hence, to the study.

The major positive outcome of pilot study 2 has been additional evidence that L2 Russian learners and L1 Russian speakers react to split nominal constructions in a similar fashion. Specifically, encountering a subject expressed by a noun does not seem completely "natural" whereas using a pronominal subject does not "annoy" either population. This result is favourable for the current enquiry: we can regard the syntactic reflex of splitting as acquired. Conducting another encompassing study on split constructions would be a significant contribution for the SLA theory.

Following the second pilot study, the design of the research and the research questions underwent considerable changes, which resulted in other Pilot studies and the subsequent reconsideration of the focus and the tested hypotheses. Thus, initially the focus was on the splitting operation proper. However, the following Pilot studies and exploring additional literature helped to find tangible areas for investigation. Ultimately, we have arrived at the current state, when the enquiry centers around the acquisition of adjective-noun agreement and the acquisition of the adjectival infection in split d-linked wh-questions. Hence, the acquisition of splitting constitutes an indirect focus of our study, viewed as the syntactic reflex to be acquired, along with the morphological and the semantic reflexes, which altogether pertain to a full acquisition of adjective-noun agreement.

The details of the iterim pilot studies are omitted. Only the latest pilot study is discussed in the next subsection in order to shed light on the way that led to the current state of the research design.

3. Pilot Study 3

Naturally, the latest pilot study involved the instrument design utilized for the current research (the information is contained in the respective section below). Ultimately, following the previous pilot studies, the 2-predicate-verb structure was dropped, and a novel design with a 3-predicate verb was developed. All the stimuli of the research instrument included a structure with a 3-predicate verb. Specifically, the manipulations were implemented using split d-linked wh-questions, where the primary thematic structure was realized in the following linearization: **Agent$_{PRON}$ Goal$_{N}$ V Theme$_{N}$**. Russian demonstrating overt wh-movement, the d-linked wh-questions require the wh-word to move to the left periphery of the clause. In split contexts the

restrictor may stay in situ, or move higher via local A-movement (pertaining to the Goal NP/DP only). Based on the above, the structure of the resulting split d-linked wh-question has the following shape: **Which Agent$_{PRON}$ Goal$_{N}$ V Theme$_{N}$**.

With a view to create the instrument to answer the research questions of the present study, the following manipulations were implemented:

1. Coindexation of the wh-word *Kakoj* 'Which': either with the **Goal$_{N}$** (a short-distance split) or with the **Theme$_{N}$** (a long-distance split): **Which$_{(i/j)}$ Agent$_{PRON}$ Goal$_{N(i)}$ V Theme$_{N(j)}$**. This manipulation finds morphological consequence as the inflection on the wh-word.
2. Manipulating the grammatical/lexical gender of the **Goal$_{N}$**, which results in a specific inflection on the noun itself and ensues certain inflections on the wh-word, when coindexed with it. Hence, the thematic role **Goal$_{N}$** is expressed by an animate Masculine or by an animate Feminine noun.
3. Manipulating the grammatical gender of the **Theme$_{N}$**, which results in a specific inflection on the noun itself and ensues certain inflections on the wh-word, when coindexed with it. To elcit the data, the thematic role **Theme$_{N}$** is expressed by an inanimate Masculine or by an inanimate Feminine noun.

As the result of the interplay of the factors above we have obtained the following testing conditions:

1. **Which$_{(i)}$ Agent$_{PRON}$ Goal$_{Masc(i)}$ V Theme$_{Fem}$**
2. **Which$_{(i)}$ Agent$_{PRON}$ Goal$_{Fem(i)}$ V Theme$_{Fem}$**
3. **Which$_{(i)}$ Agent$_{PRON}$ Goal$_{Masc(i)}$ V Theme$_{Masc}$**
4. **Which$_{(j)}$ Agent$_{PRON}$ Goal$_{Masc}$ V Theme$_{Fem(j)}$**
5. **Which$_{(j)}$ Agent$_{PRON}$ Goal$_{Masc}$ V Theme$_{Masc(j)}$**
6. **Which$_{(j)}$ Agent$_{PRON}$ Goal$_{Fem}$ V Theme$_{Fem(j)}$**
7. **Which$_{(j)}$ Agent$_{PRON}$ Goal$_{Fem}$ V Theme$_{Masc(j)}$**
8. **Which$_{(i)}$ Agent$_{PRON}$ Goal$_{Fem(i)}$ V Theme$_{Masc}$**

The intricate details regarding the externalization of each and every inflection are elucidated in subsection V.F.1-6. Conditions 7 and 8 as exemplified in the list above turned out to be ambiguous. It was decided to include them into the Pilot study with a view to elicit information on how sensitive the control and the experimental groups are to the ambiguous contexts. It was expected that L1 Russian speakers are likely to perceive both parses, and will indicate both congruous continuations to the

stimulus. The L2 Russian learners's performance was expected to be considerably different compared to the native speakers': a single parse was anticipated, specifically the co-reference to the Goal, which constitutes a short-distance split, in line with the Minimal Attachment claim. Hence, the study was likely to be partially diverted to the Processability Framework.

Nevertheless, the pilot study and the subsequent interviews demonstrated that the ambiguous contexts significantly confused the L1 participants and made the process of completing the test immensely taxing and time-consuming. The obtained data suggested that only a small fraction of the L1 group could discern the ambiguity; hence, heterogenous and vague data were obtained, which is challenging for subsequent processing and discussion. The experimental group, as expected, failed to demonstrate sensitivity regarding the ambiguous conditions. Due to the reasons above, it was decided to exclude the contexts with ambiguities from our instrument as they constitute a substantial processing load even for the L1 population, which may affect their performance on the other conditions (Sekerina, 1997). However, conducting research that focuses specifically on ambiguous split d-linked wh-questions in the Processability framework could yield interesting results.

To sum up, our previous pilot studies have demonstrated that even regardless of any explicit instruction in class, L2 Russian learners tend to acquire splitting (the Copy Movement and Distributed Deletion syntactic operation). This outcome will serve as our assumption that L2 learners internalize syntactic reflexes prior to acquiring the morphological reflexes, hence, the BH holds.

C. Zero Hypothesis and Predictions

Adopting the propositions of the BH as the Zero hypothesis for our study (as discussed in III.B.9.a.), we dare predict certain patterns that can arise in the L2 population as the outcome of our experiment. As L2 Russian learners progress in their proficiency level, their performance regarding the acquisition of the split d-linked wh-questions is expected to gradually enhance; the ultimate attainment is suggested as plausible but challenging (Slabakova, 2003, 2006, 2019). Advanced L2 learners are expected to correctly co-reference the wh-word with the necessary restrictor judging by the inflection on the wh-word (hence, utilizing the morphological reflex); notwithstanding, due to the complexity of the adjectival morphology in the Russian

language there can be variability associated with acquiring the morphological reflex at lower proficiency levels. Short-distance splits may be preferred compaired to long-distance splits, however, this difference is expected to be gone as the L2 milieu approaches the native-like level. The above-mentioned effect may be accounted for processability constraints (on assumption that the syntactic reflex is internalized).

The erroneous assignment of the restrictor to the wh-word may imply the dissociation between the semantics of the adjectival morphology and the required noun morphology. Specifically, in this respect we can expect L2 learners to misuse *–oj* as the co-referent for the masculine dative noun (instead of the masculine accusative noun), which may suggest the inability of L2 learners to acquire adjective morphology and resorting to the default form (*kakoj*) in order to repair the mental misrepresentation of the adjectival inflection (as claimed by the IH).

Our research instrument is designed for the functional morphology on the wh-word to comprise the only cue available for participants to arrive at correct interpretations, based on which the participants are required to complete the test stimuli. Hence, within our study (in)animacy effects cannot be explored regarding L2 learners' preference in co-referencing the wh-word with either the animate dative noun, or the inanimate accusative noun. Besides, as the wh-word in Russian does not carry the feature [animacy] in the employed contexts, it may not have the aiding effect for L2 learners regarding their strategy in assigning the argument.

As splitting of the NP/DP is predominant in spoken registers of the Russian language (Pereltsvaig, 2008b), L2 Russian learners lacking adequate conversational input may fail to have fully acquired this phenomenon associated with the Copy Movement and Distributed Deletion syntactic operation. Hence, they may erroneously attempt to assign the wh-word to the closest argument, namely, the Goal, expressed by a dative noun regardless of the wh-word inflectional morphology, which may be demonstrable through increased preference for the Goal role.

Following Slabakova (2003), we assume that L2 learners' interpreting 80% o f the items correctly suggests a successful acquisition of the functional category.

Herein we have tried to delineate the assumptions, constraints, and directions for our enquiry based on the previous studies in the field of L2 acquisition of functional morphology. The next section will present research questions that direct the current

enquiry. Predictions of the working hypotheses and potential outcomes will also be discussed.

D. Research Questions

As a result of reviewing current SLA literature in chapter 3, we have selected the Bottleneck Hypothesis (BH) and the Full Transfer / Full Access Hypothesis (FTFAH) as the Zero hypotheses. The competing hypotheses that may hold, should the obtained results fail to corroborate the BH and the FTFAH, are the Interpretability Hypothesis (IH) and the Shallow Structure Hypothesis (SSH). The FTFAH assumes the utilization of the L1 language system as the initial attempt to construct the L2 system, and when issues are encountered, full access to UG, which ultimately results in corrupted interpretation at lower levels of proficiency and native-like results as L2 learners reach higher levels. The BH predicts that the acquisition of adjective-noun agreement and the adjectival morphology is challenging yet possible as L2 learners approach native-like levels of proficiency. In contrast, the IH suggests that these categories are unacquirable by the L1 Turkish / L2 Russian speakers since the unintepretable features absent from the learners' L1 cannot be internalized following the critical age. The SSH predicts that long distance syntactic dependencies, instantiated by split nominal phrases, will be comprehended erroneously due to a shallower representation. As a result, L1 Turkish / L2 Russian learners are predicted to utilize semantic information and process split phrases as adjacent constructions. Herein we assume that successful acquisition is demonstrated on condition that the participants' accuracy is above 80% (Slabakova, 2003). In order to test the above hypotheses, the following research questions have been posed:

> Research Question 1: Are L2 Russian speakers at higher levels of proficiency as successful as L1 Russian speakers in comprehending split d-linked wh-questions in Russian, which is demonstrable through the correct comprehension of adjectival morphology (specified for gender, number, and case) on the wh-word and the correct agreement with the respective split NP (object concord with the noun)?

In our instrument, the participants have to employ the adjectival morphology on the wh-word being the only grammatical cue for the participants to arrive at the correct interpretation of the split d-linked wh-question in order to co-reference the wh-word with the Goal (short-distance split) or the Theme (long-distance split).

The Bottleneck Hypothesis predicts that L1 Turkish / L2 Russian learners may successfully acquire uninterpretable features and comprehend L2 Russian split d-linked wh-questions, based on similar evidence and as attained in Slabakova (2008) and Mikhaylova (2011). As has been shown in our previous pilot studies, L2 Russian learners may converge with L1 Russian speakers in syntactic reflexes, as also claimed in Nossalik (2009) and Dintrans (2011). According to Dintrans (2011), it is predicted that as L2 learners reach higher proficiency levels, their performance on adjectival morphology (the morphological reflex) is likely to converge with that of L1 controls'. However, some difficulty is expected regarding assigning the wh-word to the correct argument, as evidenced in Artoni & Magnani (2015), de Garavito & Otalora (2016). According to the latest state of the BH, the investigated category constitutes "a microparameter with complicated L1-L2 mapping" (Slabakova, 2019: 16), and poses the utmost challenge for the L2 population due to the uninterpretable features externalized as functional morphology, which is challenging to learn. To recapitulate, based on the BH, the L2 participants are expected to acquire the morphological reflex at higher levels of L2 proficiency, hence, this category is regarded as successfully acquirable.

The Full Transfer / Full Access Hypothesis (FTFAH) in turn predicts that L2 Russian learners may fully acquire inflectional morphology and the operation of splitting associated with split d-linked wh-questions through full access to UG following the stage of full transfer from L1 (Schwartz & Sprouse, 1996).

Should the obtained results demonstrate that the performance of the L2 learners at higher levels of proficiency is considerably lower compared to the L1 controls', doubt may be cast on the tenets of the BH and the FTFAH in that this category of L2 Russian is acquirable. Conversely, it may support the claims of the Interpretability Hypothesis (IH) and the Shallow Structure Hypothesis (SSH). The IH predicts that features absent from the learners' L1 cannot be internalized following the Critical Age. The evidence to the claims of the above mentioned approach is presented in Tsimpli & Dimitrakopoulou (2007), Tsimpli & Mastropavlou (2007), to mention a few. The SSH predicts that L2 Russian learners will process sentences with split nominal phrases through utilizing semantic and pragmatic cues but not syntactic information, which will result in comprehending the split NPs as adjacent NPs. The claims of the hypothesis are elucidated in Clahsen & Felser (2006).

Regarding ultimate attainment, as argued by the Bottleneck Hypothesis, it is problematic yet possible (Slabakova, 2003, 2018). We provisionally employ Hopp's (2010) position suggesting that native and non-native grammars are fundamentally identical, whereas L2 systems may be less efficient in terms of processing due to L1 interference.

> Research Question 2: Does L2 Russian learners' proficiency level positively affect the performance in comprehending split d-linked wh-questions in Russian, which is demonstrable through the accuracy thereof?

The Bottleneck Hypothesis along with the FTFAH predict an incremental improvement in accuracy as the L2 participants' proficiency level increases (Laleko, 2019; Schwartz & Sprouse, 1996; Slabakova, 2003). The BH claims that L2 learners have a full access to syntactic and semantic knowledge at initial stages of exposure whereas the FTFAH predicts a full transfer from the learner's L1 at the initial stage, which is followed by a full access to UG henceforth. Both hypotheses claim that ultimate acquisition is possible as the learner reaches higher proficiency levels. Specifically, we expect to observe higher optionality and residual indeterminacy in the lower-intermediate level, and towards the advanced level the participants are anticipated to be on par with the control group in terms of performance; the variability in answers may be gone albeit not across the board, as asserted in Leal Méndez & Slabakova (2014), Leal et al (2016).

Recall that no other cues are available for the participant to arrive at the correct interpretation of the context except for the adjectival morphology, constituting the manifestation of the bunch of uninterpreatable features on the wh-word. If the obtained results demonstrate an unchanged accuracy rate regardless the level of the L2 population, or no approximation to the ultimate attainment threshold of 80% (Slabakova, 2003: 285), the obtained data may suggest that the adjectival morphology and L2 Russian adjective-noun agreement may constitute an unacquirable domain providing support for the IH, which is evidenced in Tsimpli & Dimitrakopoulou (2007), Tsimpli & Mastropavlou (2007). To reiterate, the corresponding uninterpretable features [*u*gender], [*u*case] are absent from the L2 Russian learners' native tongue (Turkish) and are in no way externalized as an overt morpheme. According to the IH, the features in question are predicted to be unacquirable. Instead, L2 learners are expected to employ interpretable features in order to aid them in

computing the meaning (Tsimpli, 2003; Tsimpli & Mastropavlou, 2007). Similarly, the SSH (Clahsen & Felser, 2006) suggests that the L2 group may not process syntactic information on par with the L1 population, the former constructing only "shallow representations", hence, this domain in L2 Russian is expected to be unacquirable and low accuracy is predicted. To recapitulate, we have designed the research instrument in order for discourse-related cues to be of no avail, and only the inflection on the wh-word will determine the felicitous response to the d-linked wh-question.

> Research Question 3: Do L2 Russian learners attest variable accuracy with respect to the distance of the split, and does the ratio of short-split versus long-split accuracy change as the learners' proficiency level increases, which is demonstrable through the accuracy thereof?

This research question is based on the premises of the BH in that the syntactic reflex (the splitting operation via the Copy Movement and Distributed deletion of the copies) is internalized prior to the acquisition of the functional morphology (Slabakova, 2003). Obtaining a relatively invariable accuracy regarding the distance of the split may serve as strong evidence for the claim that the syntactic reflex is completely internalized prior to the morphological reflex, as claimed by the BH (Slabakova, 2003, 2006, 2018).

Notwithstanding, observing variability in accuracy related to the distance of the split may pose new questions: may L2 Russian learners experience disjoint issues when assigning the wh-word to the respective argument in the sentence? Specifically, contrary to the claims of the BH (Slabakova, 2003), it may account for the incomplete acquisition of the syntactic reflex, which was observed in Hawkins & Liszka (2003), Tsimpli & Dimitrakopoulou (2007). Alternatively, such a result may be caused by the increased processing load and differentiated parsing strategies (Lichtman, 2009; Sekerina, 1997; Sorace & Filiaci, 2006), as well as specific issues related to the order of acquisition of different noun cases as suggested in Cherepovskaia & Slioussar (2018). Since the design of the current study is not aligned to test the Processability Theory (Pienemann, 1998), further enquiry in the relevant framework to test processability issues in relation to split constructions in L2 might yield valuable results. To recap, observing a gradually decreasing disparity in the accuracy of short-distance versus long-distance conditions as L2 proficiency level increases may suggest that the syntactic reflex is not completely acquired in lower proficiency levels and may undergo restructuring and developing (Artoni & Magnani, 2015; Lichtman, 2009;

Mikhaylova, 2011). This result may cast doubt on the claim of the BH in that the syntactic reflex is in place long before the other two are acquired. Should we come up with such outcomes, new directions to investigate the phenomenon may also be required.

Additionally, the variability in accuracy related to the distance of the split may support the claims of the BH in the following: 1. The dissociation of reflexes into at least three types: the syntactic, the morphological, and the semantic (the ability of the L2 learner to connect the wh-word with its restrictor according to the theta-role of the argument); 2. The plausibility of the syntax-before-morphology view (Lardier, 1998; White, 2003), which claims that syntactic reflexes are internalized before the meaning and the form of the functional morphology are acquired; 3. The possibility of ultimate attainment of L2 adjective agreement by learners, whose L1 does not have the corresponding syntactic features.

The IH predicts that, on the one hand, L2 participants may opt for the default form of the uninterpretable features to be assigned on the adjectival morphology, which means that the preference should be for the accusative noun assignment correlated with long-distance conditions. On the other hand, the IH predicts employment of L1 strategy, namely, assigning the wh-word to the closest argument, hence, the preference should be for short-distance conditions. We expect that this paradox may result in increased residual indeterminacy and optionality, specifically, checking both entailments. Since according to the tenets of the IH the L2 uninterpretable features are unacquirable, residual indeterminacy is expected to persist into higher levels of L2 proficiency.

In this respect, the participant's selecting both entailments may suggest residual indeterminacy and optionality regarding the assignment of the wh-word to its referent, which constitutes a syntactic reflex. This outcome may contradict the predictions of the BH in that the syntactic reflex is internalized prior to the acquisition of the morphological reflex, in this way negatively answering RQ3. However, it may provide positive evidence for the IH in that L2 uninterpretable features absent from the learner's L1 cannot be acquired.

We have presented the research questions that direct our study and the grounding to explain the probable outcomes. The next section will focus on the method to be employed for eliciting data to answer the research questions.

E. Method

1. Subject Population

In order to test the Working Hypotheses with a view to answering the research questions the experimental endeavour had two groups: the native Russian control group and the L2 Russian experimental group.

The participants were searched for and recruited using social media platforms, predominantly Instagram, as well as the resources of the portal uniting the Russian speaking community of Turkey, www.ZdesVse.com, and also the author's personal friends and contacts. Additionally, Russian language programmes at Universities and language courses in Turkey were contacted with a call to supply L2 Russian volunteers to participate in the current study. The native Russian subjects volunteered to engage in research out of their free will. The L2 Russian participants were offered an extensive analysis of the results in the proficiency test with the directions to enhance their language performance, of which they were informed prior to being shared the Internet link for the experiment. No details were disclosed regarding the enquiry of the study until the collection of data was finalized. Due to the challenges with the search for the subjects, the gender distribution was not prioritized, and the participants were recruited regardless.

a. Control group (L1 Russian participants)

The control group consisted of 56 native speakers of Russian (ages 19-52). The entire L1 Russian milieu had been exposed to Russian since childhood and had acquired it in a naturalistic setting. Since the instrument contains no ambiguous, ungrammatical, or marginal forms and requires the knowledge of standard Russian only, Russian speakers with the knowledge of other languages were also recruited for the study.

b. Experimental group (L1 Turkish/L2 Russian participants)

The experimental group was composed of 64 subjects (ages 20-61), whose L1 is Turkish, and who had learned/acquired the Russian language in an academic environment, either in Turkey or in a country where Russian is spoken as a major community language (the Former Soviet Union countries). With a view to eliminate the age of first exposure as a probable effect, only participants who started learning L2

Russian following the Critical age for L1 acquisition were recruited. Since most studies define the cutoff age regarding age-related effects to be between 12 and 15, our cutoff of 17 seems a safe haven to be employed for the study.

The control group is represented by seven males and 49 femailes, whereas the experimental group contains 37 males and 27 females.

With the above criteria the following populations were formed:

Group 1: Speakers of L1 Russian (Control): n = 56, ages 19-52, mean age = 31,52

Group 2: Speakers of L1 Turkish / L2 Russian (Experimental): n = 64, ages 20-61, mean age = 30,82

2. Research Instrument: Tasks

The following tasks were used in our enquiry as the research instrument:

1. A language background questionnaire to obtain data about the participants' linguistic and cultural profile;
2. A cloze test to obtain a separate measure of proficiency in Russian (only for the L2 Russian speakers);
3. A Semantic Entailments task designed to obtain experimental data to answer the research questions.

The instructions for all the tasks were presented in Russian. The respondents were explicitly instructed to complete the tasks individually and without anyone's assistance, hence, this factor is a matter of their prudence. The participants were informed that they could discontinue the participation at any time.

3. Language Background Questionnaire

The language background questionnaires for both populations are based on Marian, Blumenfeld, & Kaushanskaya (2007). The prototypes were abridged and altered to conform to the settings required for our study.

The subjects were required to confirm they agreed to participate in the study and informed that the obtained results would be used solely for the purpose of the study, and no personal information will emerge or be shared with any third party. Some of the participants failed to tick the option stating their agreement to participate in the

enquiry; consequently, the results of their performance were not visible to the author. Hence, they were not included into the study. The author's email and the telephone number were provided, should any particiant wish to clarify the details regarding the study.

The questions for both populations elicited information regarding the gender, age, education level, native language, spoken languages and the order of their acquisition, and whether the subjects had any impairments (eyesight, hearing, speech related issues, learnability issues). Specifically, L1 Russian subjects were asked on their preference regarding the use of Russian in aspects of daily speech and their stance regarding which culture and linguistic background they attribute themselves with. The L2 participants were asked questions concerning the age of first exposure to L2 Russian, the duration of learning the language, the duration of time spent in Russian-speaking environments, the ages when whey could use different aspects of daily Russian speech, the frequency of using different aspects of Russian speech, the reasons that motivated them to learn the Russian language. Additionally, all the subjects were offered an option to provide their contact information (telephone number) in case some clarification of the details is required.

The language background questionnaire was designed using Google Forms and administered online prior to directing the subjects to the actual experiment. In order to access the questionnaire the participants used an Internet link, shared by the author personally or on social media platforms.

The goal of the language background questionnaire was to obtain data on the profile of the subjects and sort out the ones who do not meet the requirements of the currect study regarding the language background characteristics. As stated above, 56 L1 Russian speakers and 64 L1 Turkish / L2 Russian speakers joined the experiment. Since the questionnaires for the L1 Russian and L2 Russian populations were designed in a distinct manner, the outcomes will be discussed separately.

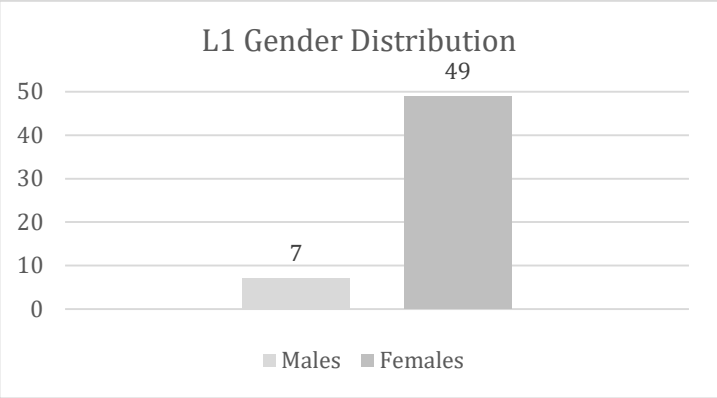
a. L1 Russian controls

To recap, the L1 Russian subjects were recruited through several social media platforms, primarily Instagram and WhatsApp, as well as among the authors' personal friends and acquaintances, and the portal uniting the Russian speaking community of Turkey, www.ZdesVse.com. At the time of the experiment the subjects were residing

in the Russian Federation, Republic of Belarus or in Turkey. The participants residing in Turkey represented a milieu of varied backgrounds; notwithstanding, originally they had all come from the Post-Soviet countries. All the participants had been exposed to the Russian language since childhood and acquired it in a naturalistic setting.

The control group overall consisted of seven males and 49 females, aged between 19 and 52, mean age 31,52, which is illustrated in Figure 11 below.

Figure 11 Gender Distribution for L1 Russian Group



The first part of the questionnaire tackled the participants' knowledge of languages. Primarily, the answers were elicited regarding the participants' knowledge of languages starting with the dominant one. Out of the 56 subjects, 52 indicated Russian as the dominant one, whereas only four indicated languages outside Russian as the dominant ones, namely, three participants specified Kazakh and 1 participant reported Kyrgyz as the dominant languages. When asked the order of acquisition of the languages starting with the first to be acquired, only seven subjects indicated a language other than Russian: Romanian (1), Azerbaijani (1), Abaza (1), Kyrgyz (1), Kazakh (3). Yet, due to high measures in the Experimental task that these subjects attained (ranges between 33 and 36 out of 36), it was decided not to exclude them from the study. Overall, all the participants tend to associate themselves in a considerable degree with Russian culture and language.

Figures 12 and 13 below present the composition of the L1 Russian group on the basis of the time periods spent in formal education, and the highest level of formal education attained prior to the experiment, respectively. Regarding the time spent in formal education, only one participant has been receiving education for less than five years (1,78%); another five subjects have spent 5-7 years in education (8,92%); four subjects have been in education for 7-10 years (7,14%); 26 subjects have opted for 11-

15 years (46,42%); and the remaining 20 have been in education for more than 16 years (35,71%). Only mandatory secondary school level has been finished by two respondents (3,57%); three respondents have received mandatory school education supplied by a professional training (5,35%); 16 are still undergraduate university/college students (28,57%); 15 are University graduates (26,78%); five are doing their MA (8,92%); 13 have received the MA degree (23,21%); and finally, two participants have received a PhD degree (3,57%).

Figure 12 L1 Russian (Control) Group by Time Spent in Education

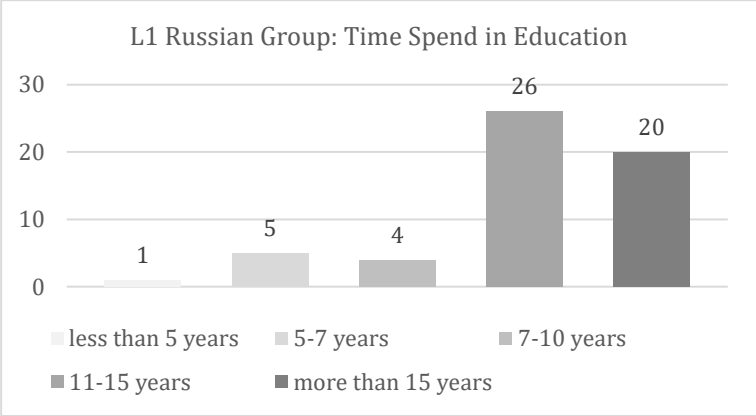
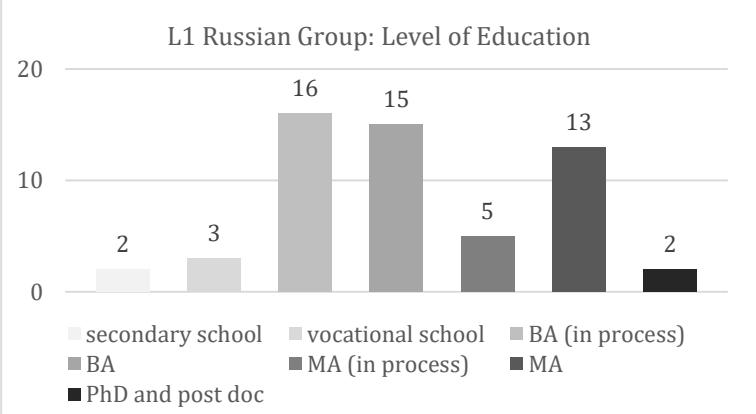


Figure 13 L1 Russian Group by Level of Education



A considerable number of the L1 Russian controls reported eye-related issues (41,07%). Three subjects have speech related issues (5,35%), and one subject reported education-related impairment (1,78%). Notwithstanding, as there was no time constraint and due to the high scores these participants demonstrated, the above have not been attested as an effect while performing the experimental task. Hence, the results of the subjects were included into the pool of data.

Due to the challenges with the search for the subjects, the gender distribution was not prioritized, and the participants were recruited regardless. A group of 56

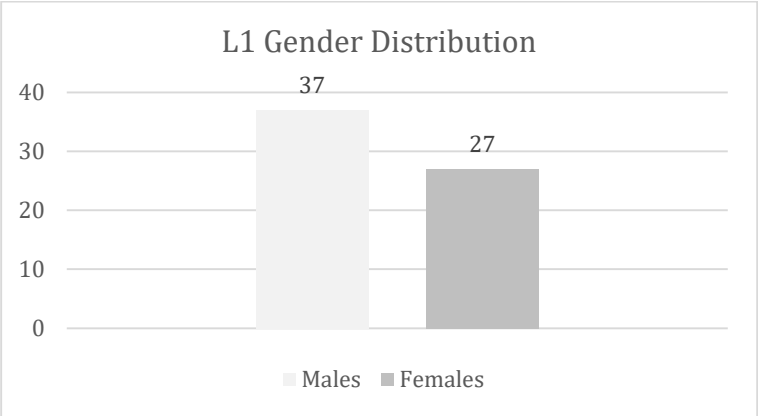
participants was recruited after opting out the subjects who did not comply with the criteria required for the present study.

b. L1 Turkish / L2 Russian group

The experimental group consisting of L1 Turkish / L2 Russian subjects was recruited among the authors' personal friends and acquaintances, as well as through several social media platforms, primarily Instagram and WhatsApp. Besides, language schools and University programmes were contacted with a request to provide L2 Russian learners, who might volunteer to participate in the current study. The portal for the Russian speaking community of Turkey, www.ZdesVse.com, was sent a similar request. As a result, 64 participants were recruited following preliminary sorting out in line with our criteria for participation in the study. All of the participants had acquired Russian as a second language, namely, following the cut-off age of approximately 16 years of age, when no native language effects are operational, according to the present-day science. A requirement has been set by the author that L2 Russian should be acquired in an academic environment, and only such subjects were recruited for the study. The L2 language phenomena tested herein, namely, the adjective-noun agreement in different noun cases manifested in the related functional morphology, are expected to be fully acquired as L2 Russian learners attain CEFR level A2 (Adrjushina et al, 2009; Nahabina et al, 2001). With this in mind, a minimal CEFR level of A2 is the threshold for the L2 subjects' inclusion in the study, which is defined based on the results of a proficiency test, previously employed in Slabakova (2005).

The experimental group consisted of 37 males and 27 females, which is shown in Figure 14. They are aged between 20 and 61, mean age 30,82.

Figure 14 Gender Distribution for L2 (Experimental) Russian Group



Primarily the participants were asked about their knowledge of languages. First, the answers were elicited in view of the participants' knowledge of languages starting with the dominant one. Out of the 64 subjects, 51 indicated Turkish as the dominant one, whereas 13 participants erroneously listed the languages they knew excluding their mother tongue, which is evident from the next question regarding the order of acquisition. The latter 13 subjects indicated Russian to be the first language in the list, hence, the one following Turkish in terms of dominance. One subject indicated the Zaza language to be her dominant one. Nevertheless, when contacted following the completion of the test, she stated that Turkish was her dominant language. Due to the challenges associated with searching for participants it was decided to include subjects who supplied an answer other than Turkish in question 2 (languages in the order of acquisition) on condition that Turkish is their dominant language. The languages reported to be acquired prior to Turkish were the following: Azerbayjani (3) being a language of the same family as Turkish, Kurdish (1), Zaza (1), Armenian (1). Besides, subjects with other L2s were also recruited for the study.

When asked about the period of time spent while receiving formal education, nine participants reported they had been receiving education for less than five years (14,06%). When contacted later, they added they had meant the education following high school. Another nine subjects have spent 5-7 years in education (14,06%); one subject has been in education for 7-10 years (1,56%); ten subjects have opted for 11-15 years (15,63%); and the remaining 35 have been in education for more than 15 years (54,69%). Five respondents have finished mandatory high school level (7,81%), however, they had acquired L2 Russian in an academic environment – in language courses. Two respondents have received mandatory school education supplied by a

professional training (3,13%); ten are still undergraduate university/college students (15,63%); 28 are University graduates (43,75%); three are doing their MA (4,69%); 12 have received an MA degree (18,75%); and finally, four participants have a PhD degree (6,25%). Information related to the overall time spent in formal education and the highest level of formal education attained by the time of participating in the experiment, is presented in Figures 15 and 16 below, respectively.

Figure 15 L2 Russian (Experimental) Group by Time Spent in Education

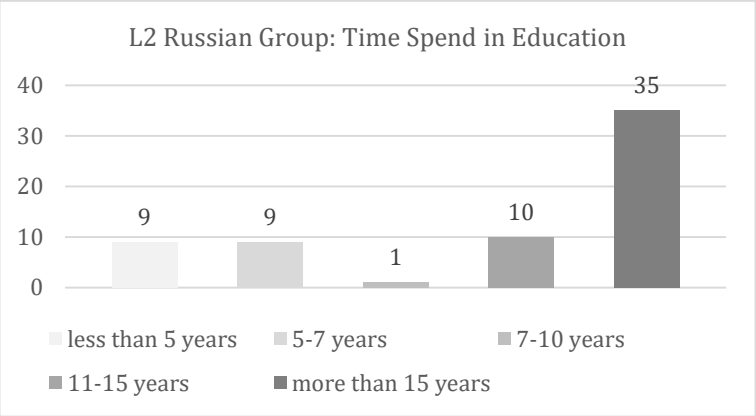
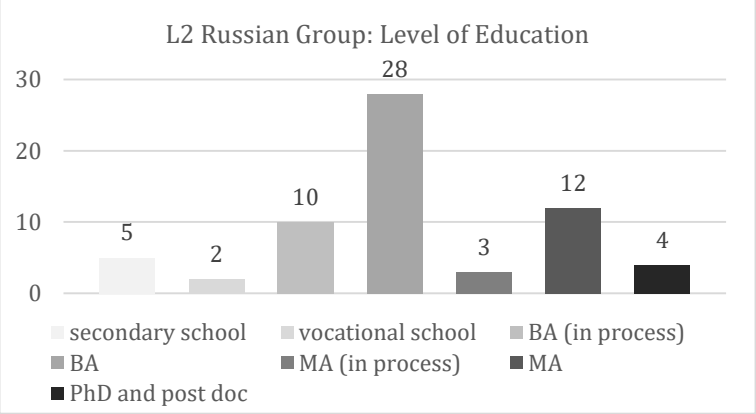


Figure 16 L2 Russian (Experimental) Group by Level of Education



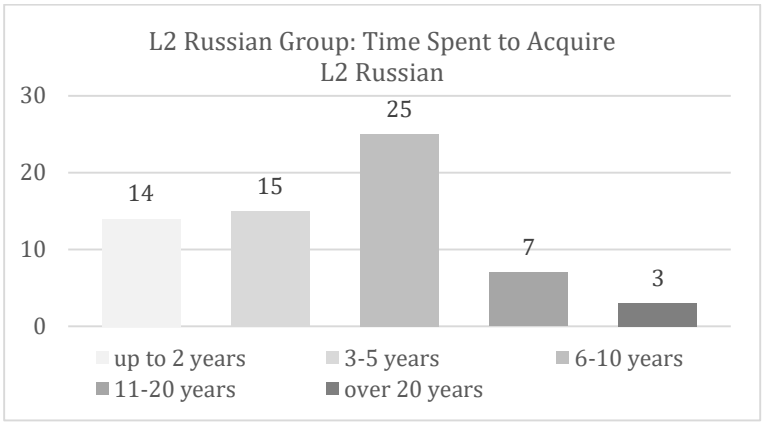
In the L2 Russian experimental group 12 subjects reported eye-related issues (18,75%). Five subjects experience speech related issues (7,81%), and seven subjects reported education-related impairment (10,94%). Notwithstanding, the above have not been attested as an effect while performing the experimental task as the task was not time-constraint. Hence, the results of the above subjects were included into our data pool.

For nearly half of the participants (31) Russian is a second language regarding the order of acquisition, 24 subjects reported Russian to be their third language, and for seven it is their fourth language. We adopt the view that any language acquired

following the cut-off age of 16 years of age, when the effects of the native tongue are not operative, is a second language (L2). Hence, irrespective of the order of acquisition by the Experimental population, we approach their L2 Russian uniformly.

When we delve into how long the Experimental group have been engaged in learning the Russian language, the results are as follows: 14 subjects reported to have been learning L2 Russian for up to two years; 15 have been learning it for 3-5 years; another 25 have spent 6-10 years on L2 Russian; seven subjects have been acquiring it for 11-20 years; and three participants have spent over 20 years on acquiring the Russian language. The above information is graphically illustrated in Figure 17.

Figure 17 L2 Russian (Experimental) Group by Time Spent to Acquire L2 Russian



With the criteria required to successfully conduct the current study and after opting out the subjects who did not conform to the criteria we recruited 64 participants, who are L1 Turkish / L2 Russian speakers.

4. L2 Russian Language Proficiency Test

The L2 population's Russian proficiency level was measured using a Cloze test employed by Slabakova (2005), who has kindly shared it for the current study. The L1 Russian subjects were exempt from the proficiency test due to the overall complexity of the instrument, which in itself is quite time-consuming. To verify the plausibility of the results provided by the L1 group, fillers were designed for the Semantic Entailments task to elicit answers that could signify the participants' attention to and focus on the experiment.

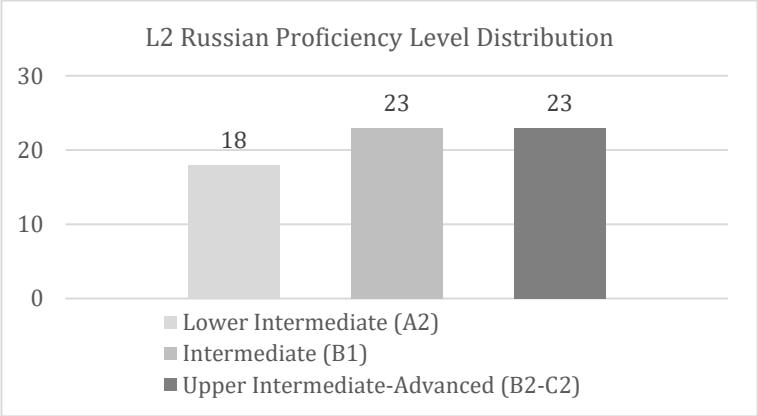
The Cloze test is a short fairy tale about seasons of the year where participants are required to select the best word (out of three options) in order to fill in 31 gaps involving different aspects of L2 Russian grammar knowledge. The goal was to obtain

a measure of the participants' CEFR-based level of L2 Russian acquisition. Parallel with the original study, the results ranging from 11 to 20 account for A2 level (lower intermediate); results 21 through 26 suggest level B1 (intermediate); and the results of 27 points and over qualify for level B2 and higher (upper intermediate and advanced).

The proficiency test was designed using Google Forms and administered online as a separate session after the participants had completed the language background questionnaire with the experimental part to follow. Each L2 Russian subject was shared the Internet link personally via email or WhatsApp. Several L2 subjects did not complete the proficiency test, for which reason they were excluded from the data pool.

Figure 18 below illustrates the results of the proficiency test: 18 participants performed with the measure of level A2 (ranges 11-20, mean=15.88); 23 subjects qualified as B1 performers (ranges 21-26, mean=23.65); and another 23 performed at level B2 and over (ranges 27-31, mean=28.30). Hence, a relatively representative L2 Russian population has been recruited to successfully conduct the present study.

Figure 18 Results of the L2 Russian Proficiency Test (Experimental Group)



The next subsection elucidates details regarding the design of the experimental task and the conditions employed for our study.

5. Experimental Task: Semantic Entailments Task

The semantic entailments task used as the research instrument in our study is a partial reconstruction of the semantic entailments task employed in Mikhaylova's (2018) study. It is a comprehension task designed specifically to address the issue whether the L2 Russian population correctly comprehend the stimulus (a split d-linked wh-question) and correctly select the felicitous entailment. The d-linked wh-questions are supplied with a preceding context (a short discourse situation) to facilitate the

participants' comprehension and parsing, as suggested in Leal Méndez & Slabakova (2014), which was also corroborated by the results of a previous pilot study, where the participants struggled with constructing a discourse situation. For each item subjects could choose one of two probable entailments, or both. However, only one entailment was felicitous. The possibility to select both options was activated for a twofold reason: on the one hand, both options were plausible for some of the filler items; on the other hand, we were curious regarding optionality and indeterminacy in L2 responses, which could be another effect to tackle.

Utmost effort has been made to design an instrument that would maximally eliminate all collateral effects, such as discourse, d-linking, animacy, noun-gender assignment issues, etc. We have tried to prepare the items in such a way that the inflection on the wh-word is the only cue for the participants to arrive at the correct interpretation of the d-linked wh-question in order to select the felicitous continuation, namely, the response to the question.

The comprehension task is aimed at testing the interpretation of and sensitivity to split d-linked wh-questions in Russian. It consists of 57 items in total: 36 experimental items distributed among six conditions, six items per condition; and 22 distractors of two types: 10 type I fillers with both options suitable and 11 type II fillers where only one option is grammatically appropriate. The type II fillers serve to measure whether the subjects complete the task rationally and with due attention. The order of the experimental items and the distractors is organized with the intent to maximally eliminate the chances for the participants to deduce the actual area of the enquiry. Additionally, the correct answers within each condition are sequenced throughout the test in the following manner: A – B – A – B – A – B. This design is attained with a view to measure the possible effects of the participants' bias in favour of A or B options. Besides, the type I fillers were specifically provided for the participants to be comfortable with selecting both options if need be.

The semantic entailments task was designed using Google Forms and administered online immediately following the participants' completion of the language background questionnaire, as part of the same session. Hence, the Internet link for the experimental task is the link for the language background questionnaire. Prior to starting the task the subjects were provided with an instruction on how to

complete the task and a sample item was given to show how they should mark the selected option. The task is identical for the control and experimental populations.

a. Lexical items used in the comprehension task

All the vocabulary items selected for the research instrument constitute the vocabulary of high frequency (top 5000 lemmas of the Russian Corpus, which cover about 82% of word forms in texts, www.bokrcorpora.narod.ru). Additionally, we have also utilized lexemes that are either representative of Russian culture and are acquired at lower levels (e.g. names of food, common articles of clothing) or words that are identical in the participants' native language or are part of the contemporary reality (e.g. blog, blogger, broccoli, theorem, agency, brochure). Hence, the subjects are not expected to experience challenges regarding the interpretation of the items.

Furthermore, all the lexical items used in the experimental section belong to the most common declensional classes and have phonologically transparent endings, which makes predictions regarding gender assignment effortless. The distribution of the Russian nominal lexicon regarding gender is as follows: about 46% are masculine nouns, 41% are feminine nouns, and 13% of nouns are neutral (Polinsky, 2008: 4). In addition, animate nouns (predominantly denoting humans and higher animals) are assigned gender based on the natural gender and are usually supplied with the respective inflection; the remaining nouns are assigned gender based on morphophonological properties (with the exception of nouns of foreign origin). A detailed account can be seen in Ceytlin (2005). Specifically, we have opted for nouns of feminine gender ending in *–a/ja*, which constitute the majority of feminine nouns in Russian. Similarly, all the selected nouns of masculine gender end in a non-palatalized consonant with the zero suffix *-Ø* (zero-ending, covertly expressed): these nouns constitute the major and most ubiquitous masculine declensional class. In fact, a comparatively large number of feminine nouns end in a palatalized final consonant with a zero-ending; to be safe, only commonly used masculine nouns with a non-palatalized final consonant and a zero ending were selected with a view to eliminate the probable parsing difficulties by L2 learners (Laleko, 2019; Taraban & Kempe, 1999). Nouns of neutral gender, being non-transparent and often causing confusion among L2 Russian learners (Polinsky, 2008; Schwartz et al., 2015; Taraban & Kempe, 1999) were excluded from our design.

To recap, the noun morphology on the experimental items is maximally transparent; transparency herein is understood as the extent of regularity in an inflection (Dressler, 2007). Regarding salience of the adjectival inflection on the wh-word *kakoj* 'which' and its derivatives, it is always salient due to bearing the word stress.

b. Language phenomena used in the instrument: acquisition of reflexes

Herein we recall some of the theoretical grounds regarding the acquisition of the adjective-noun agreement and adjectival morphology in the scope of our study, and tackle the language phenomena utilized in our research instrument. As mentioned above, in our study we adopt the system of functional category acquisition proposed by Slabakova (2003), in that the acquisition of a functional category consists of at least three reflexes to be acquired independently of each other:

1. morphological reflexes: knowledge of the inflectional morphology associated with the category;
2. syntactic reflexes: knowledge of LF- and PF- movements induced by the feature strength;
3. semantic reflexes: knowledge of the meanings computed when certain categories are checked.

In relation to our study that focuses on the acquisition of adjective morphology on the wh-word in split d-linked wh-questions in L2 Russian, we assume that the **morphological reflex** is externalized through the inflectional morphology (a suffix, or ending in Slavic lingustics) on the wh-word.

The **syntactic reflex** is externalized by the overt wh-movement of the wh-word to the left periphery of the interrogative sentence. Russian, being a language with extremely rich morphology where segmental stress determines the distribution of topicalized and focalized arguments, allows multiple word orders. In the research instrument, we utilize the linearization where the wh-word *kakoj* 'which' is in its Canonical position (the left periphery) and the restrictor remains in its LF-derived position, hence, the so-called split construction, which is a common phenomenon in colloquial Russian (Pereltsvaig, 2007, 2008b; Podobryaev et al, 2009; Sekerina, 1997). We also presume based on the Bottleneck Hypothesis that core syntactic operations are universally available and are acquired automatically (Slabakova, 2003, 2016, 2018,

among others). The syntactic operations employed in the derivation of splits in Russian are the Copy Movement and the Distributed Deletion of the copies (Corver & Nunes, 2007; Fanselow & Ćavar, 2002; Nunes, 1999; Pereltsvaig, 2008b), according to which the moved constituent is copied and subsequently the portions of the copies are distributively deleted. This type of derivation is a frequent phenomenon across languages of the world (Butler & Mathieu, 2004; Franks, 2007); hence, it is regarded as a core syntactic operation, which is likely to pose no challenge in acquisition. A similar outcome has been suggested by a previous pilot studies: L2 Russian learners performed on par with the native controls when the focus was on the operation of splitting (the details of the pilot studies are presented in subsections IV.B.1-3).

The **semantic reflex** of the adjective morphology is associated with the meaning carried by the externalized inflection, which in turn activates co-referencing of the wh-word with the distinct argument. For instance, in a d-linked interrogative the inflection *–omu* on the wh-word refers it to goal expressed by a masculine dative noun, whereas the inflection *–uju* binds it with a theme expressed by a feminine accusative noun, etc.

We assume that the restrictor in a d-linked interrogative is specified for the LF-uninterpretable feature [*u*case], which is projected by the argument thematic role: in our study it is either a goal (animate dative noun) or a theme (inanimate accusative noun). These features are PF-interpretable since they are externalized via inflectional morphology on the noun. The feature [gender], with respect to its status, can be uninterpretable (grammatical gender) required only for syntactic derivation, as can be seen in inanimate nouns: e.g. *stol-Ø* – table-M, *knig-a* – book-F, *okn-o* – window-N. In nouns denoting human beings (names of professions, relations within a family, etc.) and names of some higher animals specified for [animacy], the feature [gender] serves as an interpretable feature and conveys the natural (lexical) gender of the noun, hence, participates in meaning calculation at LF: e.g. *pevec-Ø* – male singer-M, *pevic-a* – female singer-F. It is essential to point out that both types of nouns, namely, the ones assigned grammatical gender, and the ones assigned natural (lexical) gender are inflected in the same way. Compare: *knig-a* – book-F.NOM, *pevic-a* – female singer-F.NOM, *knig-u* – book-F.ACC, *pevic-u* – female singer-F.ACC.

The only theta role where the feature [animacy] is surfaced as an overt marker is the Theme instantiated by a masculine accusative noun. Compare: *stol-Ø* – table-

M.NOM/ACC, *pevec-Ø* – male singer-M.NOM/~~ACC~~, *pevc-a* – male singer-M.ACC/~~NOM~~. However, the feature [animacy] of the noun is not included into the scope of this study but can suggest an interesting ground for further research.

The Russian wh-word *kakoj* (the default form) is assumed to comprise the LF- and PF-interpretable feature [Q] participating in the derivation of interrogatives, and the LF-uninterpretable features [*u*case], [*u*gender], and [*u*number], or *phi*-features, which are checked and deleted in the process of co-referencing with the respective noun, and subsequently spelled out at PF as an inflection.

As we focus on split d-linked wh-questions, the successful acquisition of the inflectional morphology on the wh-word, according to the Bottleneck Hypothesis, presupposes the acquisition of all the three reflexes associated with the related functional category. To recap, L2 learners have to acquire the following:

1. Morphophonological reflexes, in our study it is the bunch of uninterpretable features [*u*case], [*u*gender], and [*u*number] externalized as *-omu, -oj, -uju* inflections on the wh-word;
2. Syntactic reflexes, which are assumed to be available universally and not to pose difficulty in second language acquisition. The successful acquisition of wh-movement along with the operations of the Copy Movement and Distributed Deletion by L1 Turkish / L2 Russian learners has been corroborated by the preliminary pilot study (IV.B.1-3), in which the comprehension and production of split d-linked wh-questions with the wh-word in the left periphery was on par with that of the control L1 Russian group. Hence, our assumption is that L2 learners of higher levels have fully internalized the syntactic operations of the Russian language;
3. The semantic reflex, namely, the co-reference of the externalized inflection on the wh-word with a specific argument denoting a theta role.

c. Sentence design

All the experimental items in our research instrument have an identical surface structure: it constitutes a split d-linked wh-question with a 3-predicate verb, such as ‘send, give, show, pass’, and the like. The initial left-peripheral position is occupied by the wh-word that undergoes overt wh-movement. The agent follows the wh-word and is instantiated by the pronoun *ty* ‘you-NOM.SG’; the two remaining arguments

are linearized in the following order: Goal, expressed by an animate dative noun (gender is manipulated); Theme, expressed by an inanimate accusative noun (gender is manipulated). The verb follows the Goal and precedes the Theme. Finally, the right-peripheral position is occupied by the Theme as can be seen in examples 60 and 61 below.

Example (60)
Lately I have had a lot of work to do, and I had to give part of it to one of our co-workers. Now he is dealing with it [the work].

- *Kak-omu ty sotrudnik-u peredal rabot-u?*
  which-M.DAT$_i$ you co-worker-M.DAT$_i$ pass work-F.ACC
  'Which co-worker did you pass the work?'
- A. The co-worker who is in the office across. (CORRECT)
- B. The work related with the latest project.

Example (61)
We are making some changes in our company and yesterday I offered one of [our] managers a nice idea.

- *Kak-uju ty menedžer-u predložil ideju?*
  Which-F.ACC$_j$ you manager-M.DAT offer idea-F.ACC$_j$
  'Which idea did you suggest to the manager?'
- A. The manager who is in charge of sales.
- B. An/The idea of how to increase sales. (CORRECT)

The interested reader is referred to a detailed discussion of derivation of the linearization above in subsection II.B.3.a.

d. Manipulated factors to form test conditions

Based on the information above, we have decided to manipulate the following factors in order to obtain the necessary test conditions:

1. **The gender of the Goal expressed by a Dative noun**: masculine vs. feminine. In all experimental items the Dative noun is specified for [+animacy] and is manifested by a noun denoting a human being with the thematic role of a Goal, hence, the gender of the noun is lexical rather than grammatical. It should be noted that the form of the wh-word is invariable regarding (in)animacy: inherently it is underspecified for the feature [animacy].
2. **The gender of the Theme expressed by an Accusative noun**: masculine vs. feminine. In all experimental items the Accusative nouns are specified for [*u*animacy] and denote inanimate objects, hence, possess grammatical gender, an uninterpretable feature participating only in syntactic derivation.

3. **The Dative object concord vs. Accusative object concord as externalized by the overt inflection on the wh-word**: *-omu* for masculine dative concord and *–oj* for feminine dative concord; *–oj* for masculine accusative concord and *–uju* for feminine accusative concord, respectively. Thus, the adjective-noun agreement is attained via the co-reference of the inflection on the wh-word and the respective restrictor. It must be mentioned that the concord and the distance of the split are always correlated: the Dative concord is represented by the short-distance split whereas the long-distance split accounts for the Accusative concord.

The manipulation of the inflection on the wh-word is aimed at testing the morphological reflex in the L2 population: the accurate comprehension of the inflection will suggest that the adjectival morphology is acquirable; subsequently, the correct argument will be selected to co-reference the wh-word with. The following inflections on the wh-word are used in our instrument:

Inflection **–omu**: the wh-word is specified for Masculine gender – Dative case – Singular number (Object-concord with the Masculine Goal);
Inflection **–oj**: the wh-word is specified for Masculine gender – Accusative case – Singular number (Object-concord with the Masculine Theme);
Inflection **–oj**: the wh-word is specified for Feminine gender – Dative case – Singular number (Object-concord with the Feminine Goal);
Inflection **–uju**: the wh-word is specified for Feminine gender – Accusative case – Singular number (Object-concord with the Feminine Theme).

The syntactic reflex is tested through the manipulation of the gender of objects and the subsequent type of object concord as determined by the suffix on the wh-word. The gender factor is manifested by Masculine **(M)** and Feminine **(F)** nouns, both for the Goal and for the Theme. The initial argument in the surface structure to manipulate is the Goal, and the Theme is the final one, hence, to reiterate, the co-reference of the wh-word with the Goal will result in a short-distance split, whereas co-referencing with the Theme entails a long-distance split.

Due to the correlation of three factors, namely, case, distance, and animacy, we have the following combinations of factors to form test conditions: distance/case/animacy versus the gender of the Goal and the gender of the Theme, the resulting combinations being mapped on the wh-word as the inflection.

F. Test Conditions

The manipulation of the factors listed above yields the following system of experimental conditions (the inflections relevant to our study are boldfaced, the felicitous and infelicitous entailments are supplied):

Masculine-Feminine Short (Condition 1): a short-distance split d-linked wh-question with the wh-word co-referenced with the animate masculine goal expressed by a dative noun; the theme is manifested by an inanimate accusative feminine noun:
*Kak-**omu**$_i$ ty drug-**u**$_i$ dal knig-**u**?* (Masculine-Feminine Short)
which-M.DAT you friend-M.DAT gave book-F.ACC
'Which friend did you give the book?'
a. I gave it to Andrey. (felicitous)
b. It is a book about adventures. (incorrect)
Masculine-Feminine Long (Condition 2): a long-distance split d-linked wh-question with the wh-word co-referenced with the inanimate feminine theme expressed by an accusative noun; the goal is manifested by an animate dative masculine noun:
*Kak-**uju**$_j$ ty drug-**u** dal knig-**u**$_j$?* (Masculine-Feminine Long)
which-F.ACC you friend-M.DAT gave book-F.ACC
'Which book did you give to the friend?'
a. I gave it to Andrey. (incorrect)
b. It is a book about adventures. (felicitous)
Masculine Short (Condition 3): a short-distance split d-linked wh-question with the wh-word co-referenced with the animate masculine goal expressed by a dative noun; the theme is manifested by an inanimate accusative masculine noun:
*Kak-**omu**$_i$ ty drug-**u**$_i$ dal podarok-**Ø**?* (Masculine Short)
which-M.DAT you friend-M.DAT gave gift-M.ACC
'Which friend did you give the gift?'
a. I gave it to Andrey. (felicitous)
b. It is a book about adventures. (incorrect)
Masculine Long (Condition 4): a long-distance split d-linked wh-question with the wh-word co-referenced with the inanimate masculine theme expressed by an accusative noun; the goal is manifested by an animate dative masculine noun:
*Kak-**oj**$_j$ ty drug-**u** dal podarok-**Ø**$_j$?* (Masculine Long)
Which-M.ACC you friend-M.DAT gave gift-M.ACC
'Which gift did you give to the friend?'
a. I gave it to Andrey. (incorrect)
b. It is a book about adventures. (felicitous)
Feminine Short (Condition 5): a short-distance split d-linked wh-question with the wh-word co-referenced with the animate feminine goal expressed by a dative noun; the theme is manifested by an inanimate accusative feminine noun:
*Kak-**oj**$_i$ ty podrug-**e**$_i$ dal knig-**u**?* (Feminine Short)
Which-F.DAT you (girl)friend-F.DAT gave book-F.ACC
'Which (girl)friend did you give the book?'
a. I gave it to Anna. (felicitous)
b. It is a book about adventures. (incorrect)

Feminine Long (Condition 6): a long-distance split d-linked wh-question with the wh-word co-referenced with the inanimate feminine theme expressed by an accusative noun; the goal is manifested by an animate dative feminine noun:
*Kak-**uju**$_j$ ty podrug-**e** dal knig-**u**$_j$?* (Feminine Long)
which-F.ACC you (girl)friend-F.DAT gave book-F.ACC
'Which book did you give to the (girl)friend?'
a. I gave it to Anna. (incorrect)
b. It is a book about adventures. (felicitous)
Feminine-Masculine Short (Condition 7): a short-distance split d-linked wh-question with the wh-word co-referenced with the animate feminine goal expressed by a dative noun; the theme is manifested by an inanimate accusative masculine noun:
*Kak-**oj**$_i$ ty podrug-**e**$_i$ dal podarok-**Ø**?* (Feminine-Masculine Short)
which-F.DAT you (girl)friend-F.DAT gave gift-M.ACC
'Which (girl)friend did you give the gift?'
a. I gave it to Anna. (incorrect)
b. It is a book about adventures. (felicitous)
Feminine-Masculine Long (Condition 8): a long-distance split d-linked wh-question with the wh-word co-referenced with the inanimate masculine theme expressed by an accusative noun; the goal is manifested by an animate dative feminine noun:
*Kak-**oj**$_j$ ty podrug-**e** dal podarok-**Ø**$_j$?* (Feminine-Masculine Long)
which-M.ACC you (girl)friend-F.DAT gave gift-M.ACC
'Which gift did you give to the (girl)friend?'
a. I gave it to Anna. (incorrect)
b. It is a book about adventures. (felicitous)

It must be noted that Feminine-Masculine Short (Condition 7) and Feminine-Masculine Long (Condition 8) are globally ambiguous: the inflection *–oj* on the wh-word yields a globally ambiguous interpretation in contexts with feminine dative and masculine accusative nouns. The closing version of the pilot study included globally ambiguous interrogative sentences in virtue of primarily testing the behaviour of the control group. The obtained results suggested that globally ambiguous contexts substantially increase processing load and are difficult for comprehension, which results in a considerable indeterminacy and variability even among L1 Russian speakers. Considering this evidence, we have decided to exclude such contexts from our study. However, future research on ambiguous interrogative sentences with split NPs, especially in the Processability framework, could produce interesting results. Sekerina (1997) tackled a similar issue, namely, processing of adjoint and split scrambled phrases in her PhD Dissertation, and further enquiry, particularly in the SLA perspective, could yield novel results. Since the globally ambiguous pair of conditions with the gender mismatch is excluded, Masculine-Feminine Short (Condition 1) and Masculine-Feminine Long (Condition 2), which also constitute a

gender mismatched Masculine-Feminine pair, will be referred to henceforth as Gender Mismatch Conditions, short and long, respectively.

We should also point out the locally ambiguous meaning of the inflection *–oj* on the wh-word in Masculine Long (Condition 4) and Feminine Short (Condition 5). This fact may result in increased processing load as the participants are likely to utilize the Garden Path strategy (Clahsen & Felser, 2006), particularly in the Feminine Short condition. As the inflection *–oj* primarily stands for the default and unmarked grammatical form of the masculine nominative or inanimate accusative wh-word, the participants are expected to experience a certain challenge while encountering a highly marked feminine dative noun, which can also be co-referenced with this inflection. This may impel the participant to reassess the sentence again, through another parsing, a failure in which may result in an increased overall error rate. Should this be the case, this issue should be approached from the Garden Path perspective to account for the results.

To recap, the experimental items employed in our research instrument are manifested by the 6 conditions and are as follows: Gender Mismatch (short and long), Masculine (short and long), and Feminine (short and long). Each condition is instantiated by 6 items, which in sum constitute 36 experimental items. Examples 62 and 63 below illustrate the way Experimental Items as presented to the participants.

(62) **Gender Mismatch Short (Condition 1)**

Lately I have had a lot of work to do, and I had to give part of it to one of our co-workers. Now he is dealing with it [the work].

- *Kak-omu ty sotrudnik-u peredal rabot-u?*
  which-M.DAT$_i$ you co-worker-M.DAT$_i$ passed work-F.ACC
  'Which co-worker did you pass the work?'
- A. The co-worker who is in the office across. (CORRECT)
- B. The work related with the latest project.

(63) **Gender Mismatch Long (Condition 2)**

We are making some changes in our company and yesterday I suggested one of [our] managers a nice idea.

- *Kak-uju ty menedžer-u predložil idej-u?*
  which-F.ACC$_j$ you manager-M.DAT suggested idea-F.ACC$_j$
  'Which idea did you suggest to the manager?'
- A. The manager who is in charge of sales.
- B. An/The idea of how to increase sales. (CORRECT)

Below we will discuss each condition separately and the plausible outcome in relation to the Research Questions (subsection IV.D.).

1. Gender Mismatch Short (Condition 1)[24]

The Gender Mismatch Short (Condition 1) constitutes a short-distance d-linked wh-question with the wh-word co-referenced with the animate masculine goal expressed by a dative noun; the theme manifested by an inanimate accusative feminine noun:

*Kak-**omu**$_i$ ty drug-**u**$_i$ dal knig-**u**?* (Masculine-Feminine Short)
which-M.DAT you friend-M.DAT gave book-F.ACC
'Which friend did you give the book?'
a. I gave it to Andrey. (felicitous)
b. It is a book about adventures. (incorrect)

The participant's choice of the felicitous entailment suggests that the adjectival morphology on the wh-word specified for the uninterpretable features [*u*masculine], [*u*dative], [*u*singular] has been acquired. This result affirmatively answers RQ1 and provides support for the BH and FTFAH, which claim that both the syntactic and the morphological reflexes can ultimately be acquired. If the participant chooses the infelicitous entailment for the wh-question, the outcome answers RQ1 negatively and contradicts the predictions of the BH whereas supporting the IH in that the L2 uninterpretable features absent from the learner's L1 has not been acquired. It may also support the SSH in that the L2 learners may not successfully construct deep syntactic structures.

In relation to RQ2, the infelicitous entailment may support the predictions of the BH in that functional morphology constitutes an extreme challenge for L2 learners provided the response is produced by a participant at lower proficiency levels. It may as well provide support for the SSH in that L2 Russian learners fail to construct a deep representation of a long distance dependency. Should a lower proficiency level participant supply the felicitous entailment, doubt is cast on the predictions of the BH and IH in that the acquisition of uninterpretable features poses an extreme difficulty for a L2 learner.

The participant's selecting both entailments may suggest indeterminacy regarding the assignment of the wh-word to its referent, which is a syntactic reflex.

[24] It is important to note that the word "mismatch" here does not mean an ungrammatical construction but refers to the difference between the gender characteristics of the dative and the accusative nouns. The dative noun is specified for masculine gender, and the accusative noun is specified for feminine gender. Hence, the nouns demonstrate a gender mismatch.

Hence, it may cast doubt on the predictions of the BH and FTFAH in that the syntactic reflex is internalized prior to the acquisition of the morphological reflex, in this way negatively answering RQ1. This result will provide positive evidence for the IH in that L2 uninterpretable features absent from the learner's L1 cannot be acquired.

2. Gender Mismatch Long (Condition 2)

The Gender Mismatch Long (Condition 2) constitutes a long-distance d-linked wh-question with the wh-word co-referenced with the inanimate feminine theme expressed by an accusative noun; the goal is manifested by an animate masculine dative noun:

*Kak-**uju**$_j$ ty drug-**u** dal knig-**u**$_j$?* (Gender Mismatch Long)
which-F.ACC you friend-M.DAT gave book-F.ACC
'Which book did you give to the friend?'
a. I gave it to Andrey. (incorrect)
b. It is a book about adventures. (felicitous)

What makes it different from the previous condition (gender mismatch short) is that the adjectival morphology on the wh-word should cause the participant to co-reference it with the accusative noun, but not the dative noun. The syntactic operation constitutes a long-distance split. We provisionally regard long-distance splits to be more demanding in terms of processability, hence, more challenging, as attested in Lichtman (2009) and Sekerina (1997).

The participant's choice of the felicitous entailment in the Gender Mismatch Long condition will suggest that the adjectival morphology on the wh-word specified for the uninterpretable features [*u*feminine], [*u*accusative], [*u*singular] has been acquired. This result answers RQ1 affirmatively and supports the BH and FTFAH, which claims that both the syntactic and the morphological reflexes can be acquired successfully. Should the participant select the infelicitous entailment for the wh-question, the outcome answers RQ1 negatively and casts doubt on the predictions of the BH and FTFAH whereas supporting the IH in that the L2 uninterpretable features absent from the learner's L1 has not been acquired. It will also support the SSH in that the L2 learners may not successfully construct deep structures for long syntactic dependencies.

Nevertheless, in relation to RQ2 the incorrect entailment for the wh-question may support the predictions of the BH in that functional morphology constitutes an

exceptional challenge for L2 learners provided the response is produced by a participant at lower proficiency levels. Additionally, erroneous entailment may provide support for the SSH in that L2 Russian learners only construct a shallow representation of a syntactic structure. On the contrary, if a lower proficiency level participant supplies the felicitous entailment, the predictions of the BH and IH may be contradicted in that the acquisition of uninterpretable features poses an extreme difficulty for a L2 learner.

Just as we did in the previous condition, we view the participant's choice of both entailments as indeterminacy in relation to the assignment of the wh-word to its referent, which is a syntactic reflex. This outcome may contradict the predictions of the BH in that the syntactic reflex is internalized prior to the acquisition of the morphological reflex, which negatively answers RQ1. However, it provides positive evidence for the IH in that L2 uninterpretable features absent from the learner's L1 cannot be acquired.

Assuming the short-distance split conditions to be less challenging compared to long-distance conditions overall, as in Lichtman (2009), the failure to correctly assign the wh-word to its referent in this condition may provide evidence for RQ3 when the ratio of accuracy between short splits and long splits is compared. This outcome will support the FTFAH in that in initial stages of exposure L2 learners utilize the L1 representation but as their proficiency level advances, correct L2 representation can be formed through full access to the required UG parameters.

3. Masculine Short (Condition 3)

The Masculine Short (Condition 3) constitutes a short-distance d-linked wh-question with the wh-word co-referenced with the animate masculine goal expressed by a dative noun; the theme manifested by an inanimate masculine accusative noun:

*Kak-**omu**$_i$ ty drug-**u**$_i$ dal podarok-**Ø**?* (Masculine Short)
which-M.DAT you friend-M.DAT gave gift-M.ACC
'Which friend did you give the gift?'
a.I gave it to Andrey. (felicitous)
b. It is a book about adventures. (incorrect)

Similarly with the Gender Mismach Short (Condition 1), the functional morphology on the wh-word pertaining to this condition is the *–omu* inflection, which impels the participant to co-reference it with the masculine dative noun. The

participant's correct choice of the entailment suggests that the adjectival morphology on the wh-word specified for the uninterpretable features [*u*masculine], [*u*dative], [*u*singular] has been acquired. This result affirmatively answers RQ1 and provides support for the BH, which claims that both the syntactic and the morphological reflexes can ultimately be acquired. Should the participant select the infelicitous entailment for the wh-question, RQ1 is answered negatively, which contradicts the predictions of the BH whereas supporting the IH in that the L2 uninterpretable features absent from the learner's L1 are unattainable. This outcome will also support the SSH in that the L2 learners do not successfully construct deep syntactic structures.

Regarding RQ2, the infelicitous entailment may support the predictions of the BH in that functional morphology is challenging for L2 learners provided the response is produced by a participant at lower proficiency levels. It will also provide support for the SSH in that L2 Russian learners fail to construct a deep representation of a long distance dependency. Should the felicitous entailment be provided by a lower proficiency level participant, the predictions of the BH and IH may be contradicted in that the acquisition of uninterpretable features constitutes extreme difficulty for a L2 learner.

If both entailments are selected, indeterminacy is observed in relation to the assignment of the wh-word to its referent. This outcome may provide negative evidence for the predictions of the BH in that the syntactic reflex is internalized prior to the acquisition of the morphological reflex, in this way negatively answering RQ1 and supporting the IH in that L2 uninterpretable features absent from the learner's L1 are unacquirable.

4. Masculine Long (Condition 4)

The Masculine Long (Condition 4) constitutes a long-distance d-linked wh-question with the wh-word co-referenced with the inanimate masculine theme expressed by an accusative noun; the goal is manifested by an animate masculine dative noun:

*Kak-**oj**$_j$ ty drug-**u** dal podarok-**Ø**$_j$?* (Masculine Long)
which-M.ACC you friend-M.DAT gave gift-M.ACC
'Which gift did you give to the friend?'
a.I gave it to Andrey. (incorrect)
b. It is a book about adventures. (felicitous)

The functional morphology on the wh-word is the only cue for the participant to form the correct decision in co-referencing it to the masculine accusative noun rather than to the masculine goal in dative. We regard this condition more challenging compared to the masculine short (Condition 3) due to the increased processing load, just like in the gender mismatch long (Condition 2).

The participant's choice of the felicitous entailment in the Masculine Long condition will suggest that the adjectival morphology on the wh-word specified for the uninterpretable features [*u*masculine], [*u*accusative], [*u*singular] has been acquired. This result affirmatively answers RQ1 and provides support for the BH, which claims that both the syntactic and the morphological reflexes can be acquired successfully. If the participant selects the infelicitous entailment for the wh-question, RQ1 is answered negatively, which casts doubt on the predictions of the BH whereas supporting the IH in that the L2 uninterpretable features absent from the learner's L1 are unacquirable. This result will also support the SSH in that the L2 learners do not successfully construct deep structures for long syntactic dependencies.

In relation to RQ2 the incorrect entailment for the wh-question may support the predictions of the BH in that functional morphology constitutes an exceptional challenge for L2 learners on condition that the response is produced by a lower proficiency level participant. Infelicitous entailments also support the provisions of the SSH in that L2 Russian learners fail to construct a deep representation of a long distance dependency. On the contrary, if a lower proficiency level participant supplies the felicitous entailment, the predictions of the BH and IH may be refuted in that the acquisition of uninterpretable features poses an extreme difficulty for a L2 learner.

The participant's choice of both entailments is interpreted as indeterminacy in relation to the assignment of the wh-word to its referent, hence, a syntactic reflex. This outcome may cast doubt on the predictions of the BH in that the syntactic reflex is internalized prior to the acquisition of the morphological reflex, which answers RQ1 negatively. Nonetheless, it adds to the positive evidence for the IH in that L2 uninterpretable features absent from the learner's L1 cannot be acquired.

As stated in the Gender Mismatch Long (Condition 2), the failure to correctly co-reference the wh-word with its referent in this condition may provide evidence for RQ3 following the comparison of the ratio of accuracy between short splits and long

splits. This outcome will support the FTFAH in that in initial stages of exposure L2 learners resort to the L1 representation but as their proficiency level advances, correct L2 representation can be attained through full access to the required UG parameters.

5. Feminine Short (Condition 5)

The Feminine Short (Condition 5) constitutes a short-distance split d-linked wh-question with the wh-word co-referenced with the animate feminine goal expressed by a dative noun; the theme is manifested by an inanimate feminine accusative noun:

*Kak-**oj**$_i$ ty podrug-**e**$_i$ dal knig-**u**?* (Feminine Short)
which-F.DAT you (girl)friend-F.DAT gave book-F.ACC
'Which (girl)friend did you give the book?'
a.I gave it to Anna. (felicitous)
b. It is a book about adventures. (incorrect)

The Feminine Short (Condition 5) displays a local ambiguity of the inflection *–oj* on the wh-word, which is disambiguated on the feminine dative noun. Recall that this inflection on the wh-word is "marked". On the other hand, *–oj,* being the default adjectival inflection, is normally co-referenced with masculine nouns in Nominative or Inanimate Accusative. This fact may result in increased processing load as the participants disambiguate the Garden-path sentence (Clahsen & Felser, 2006), which may cause participants to reassess the sentence again, through another parsing, a failure in which may result in an increased overall error rate. Should this be the case, this issue should be approached from the Garden Path perspective to account for the results.

The participant's choice of the felicitous entailment in the Feminine Short condition will suggest that the adjectival morphology on the wh-word specified for the uninterpretable features [*u*feminine], [*u*dative], [*u*singular] has been internalized. This result affirmatively answers RQ1 and provides support for the BH, according to which both the syntactic and the morphological reflexes can ultimately be acquired. If the participant chooses the infelicitous entailment for the wh-question, the outcome answers RQ1 negatively and casts doubt on the predictions of the BH whereas supporting the IH in that the L2 uninterpretable features absent from the learner's L1 cannot be acquired. It will also support the SSH in that the L2 learners may only construct shallow syntactic structures. In addition, as mentioned above, increased

processing load due to resolving a garden-path context may also be evaluated, especially in relation to the L2 milieu.

Regarding RQ2, the incorrect entailment may support the predictions of the BH in that functional morphology poses an extreme challenge for L2 learners provided the response is produced by a participant at lower proficiency levels. Should a lower proficiency level participant provide the correct entailment, the predictions of the BH and IH may be contradicted in that the acquisition of uninterpretable features is extremely challenging for a L2 learner. Erroneous co-reference of the wh-word and the restrictor may also provide support for the SSH in that L2 Russian learners fail to construct a deep representation of a long distance dependency.

The participant's selection of both entailments may suggest an indeterminacy regarding the assignment of the wh-word to its referent, which is a syntactic reflex. As a result, it may cast doubt on the predictions of the BH in that the syntactic reflex is internalized prior to the acquisition of the morphological reflex, in this way negatively answering RQ1. This result may also suggest positive evidence for the IH in that L2 uninterpretable features absent from the learner's L1 cannot be acquired.

6. Feminine Long (Condition 6)

The Feminine Long (Condition 6) constitutes a long-distance split d-linked wh-question with the wh-word co-referenced with the inanimate feminine theme expressed by an accusative noun; the goal is manifested by an animate feminine dative noun:

*Kak-**uju**$_j$ ty podrug-**e** dal knig-**u**$_j$?* (Feminine Long)
which-F.ACC you (girl)friend-F.DAT gave book-F.ACC
'Which book did you give to the (girl)friend?'
a.I gave it to Anna. (incorrect)
b. It is a book about adventures. (felicitous)

Just as we have discussed the preceeding long-distance split conditions, provisionally we assume it to pose higher challenge compared to the Feminine Short condition due to additional processing load (as in Lichtman, 2009). However, the feminine accusative inflection on the wh-word is supposed to be internalized at proficiency level A2.

The participant's selecting the felicitous entailment in the Feminine Long condition will suggest that the adjectival morphology on the wh-word specified for the

uninterpretable features [*u*feminine], [*u*accusative], [*u*singular] has been acquired. This result provides an affirmative answer to RQ1 and supports the BH, according to which both the syntactic and the morphological reflexes can be acquired successfully. If the participant chooses the infelicitous entailment for the wh-question, the outcome answers RQ1 negatively, the result contradicting the predictions of the BH whereas supporting the premises of the IH in that the L2 uninterpretable features absent from the learner's L1 are unacquirable. This outcome may also support the SSH in that the L2 learners do not successfully construct deep structures for long syntactic dependencies.

Nonetheless, the infelicitous entailment for the wh-question in relation to RQ2 may support the predictions of the BH in that functional morphology constitutes an ultimate challenge for L2 learners provided the response is produced by a participant at lower proficiency levels. Deminished accuracy across proficiency levels will also provide support for the SSH in that L2 Russian learners tend to construct only shallow representations of L2 syntactic structures. However, should a lower proficiency level participant provide the felicitous entailment, the predictions of the BH and IH may be casts doubt on in that the acquisition of uninterpretable features constitutes an extreme challenge for a L2 learner.

Similarly to the previous conditions, we regard the participant's choice of both entailments as indeterminacy in relation to the assignment of the wh-word to its referent, which constitutes a syntactic reflex. This result may cast doubt on the predictions of the BH in that the syntactic reflex is internalized prior to the acquisition of the morphological reflex, which negatively answers RQ1. On the other hand, it may supply positive evidence for the IH in that L2 uninterpretable features absent from the learner's L1 cannot be acquired.

In relation to RQ3, the failure to correctly assign the wh-word to its referent in the Feminine Long condition may provide data after comparing the ratio of the participants' accuracy on short splits and long splits. Decreased accuracy on long splits and higher accuracy on short splits in initial proficiency levels, and a gradual change for improved accuracy on long splits in higher proficiency levels will support the FTFAH in that in initial stages of exposure L2 learners utilize the L1 representation but as their proficiency level advances, correct L2 representation can be formed through full access to the required UG parameters.

G. Distractors

There are 21 distractors in the instrument. All the distractors have a similar syntactic structure with the experimental items. They are in fact d-linked wh-questions: the left periphery is the wh-word with inflections utilized for the current study. However, none of the distractors are split.

The distractors are represented as two distinct types. Type I fillers (n = 10) are designed to yield both options correct for the purpose of creating an artificial challenge, where subjects are likely to ponder whether to select both entailments (equally felicitous) or just one. Example 64 below presents an idea of Distractor Type I:

Example (64)
When I was making plans for the holiday, I went to an agency and luckily bought a tour to the mountains.

- *Kak-uju poezdk-u ty kupil v agentstv-e?*
  which-F.ACC tour-F.ACC you bought in agency-N.LOC
  'Which tour did you buy at [in] the agency?'
- А. At/[in] the agency I bought a tour to/[on] the Alps. (CORRECT)
- Б. At/[in] the agency I bought a tour to/[into] the Alps. (CORRECT)

Type II fillers (n = 11) contain elementary structures, which pose little challenge for both populations. They entail only one felicitous option and are utilized not only to divert the participants' attention from the actual enquiry but also to ascertain that the subjects complete the task rationally and with due attention. Example 65 below represents Distractor Type II:

Example (65)
We moved into another building and now we have a new office. I put a new PC there.

- *Kak-oj komp'yuter-Ø ty postavil v ofis?*
  which-M.ACC PC-M.ACC you put into office-M.ACC
  'Which PC did you put into the office?'
- А. I put a Samsung PC into the office. (CORRECT)
- Б. *I put a Samsung PC on the office.

Table 16 graphically illustrates the items that the research instrument contains. Specifically, there are filler items designed to divert the participants' attention from the actual focus of the study and check that participants pay due attention to the task (n = 21). Both entailments are appropriate for Type I filler items; this is designed to show the participants that both options can also be selected. There are six experimental

conditions to address the RQs of the study; each experimental condition is represented by six tokens. The total number of tokens is 57.

Table 19 Items of the research instrument by condition and type

		Research Instrument Items						**Number of tokens**
Fillers	**Type I**	both entailments correct						10
	Type II	elementary structures with a single correct entailment						11
Experi-mental Items	**Condition**	**Wh-word inflection**	**Wh-word inflection specified for:**	**Type of Split**	**Co-reference with:**	**Gender of Goal**	**Gender of Theme**	
	Gender Mismatch Short (Condition 1)	*-omu*	M.DAT	short-distance	Goal	M	F	6
	Gender Mismatch Long (Condition 2)	*-uju*	F.ACC	long-distance	Theme	M	F	6
	Masculine Short (Condition 3)	*-omu*	M.DAT	short-distance	Goal	M	M	6
	Masculine Long (Condition 4)	*-oj*	M.ACC	long-distance	Theme	M	M	6
	Feminine Short (Condition 5)	*-oj*	F.DAT	short-distance	Goal	F	F	6
	Feminine Long (Condition 6)	*-uju*	F.ACC	long-distance	Theme	F	F	6
						Total number of tokens		57

Procedure

As elucidated above, the instrument was administered to the L2 Russian subjects online in two separate sessions; the L1 Russian speakers had only one session. The sessions were not time-constraint. The participants accessed the sessions using an Internet link, which was present on several social media platforms, or shared by the author individually. The first session included the consent form, the background questionnaire, and the Semantic Entailments task.

The second session comprised a L2 Proficiency test. As mentioned above, it was performed only by the L2 Russian population using a separate link. The L2 subjects were individually sent the Internet link on completing the first session. All the parts of the research instrument were designed using Google Forms. The collection of data was conducted between 12.2019 and 05.2021.

1. Task Scoring System

Following the collection of data, Excel spreadsheets were extracted from the Google Forms database. The background questionnaire and the semantic entailments task were merged: two separate files were obtained for the L2 and the L1 Russian

populations. The proficiency test spreadsheet was generated only for the L2 group as the L1 Russian milieu were exempt from it. The grading of the L2 proficiency test was attained automatically by the Google Forms software. The performance of the participants on the Semantic Entailments task was also graded by the Google Forms software. However, it did not take into consideration the details regarding the research questions relevant for our study, and the obtained spreadsheet was processed using a frequentist approach to statistical analysis. Namely, R software (version 4.1.0, R Core Team, 2021) was utilized to run the necessary tests. The particulars of the attested outcome will be presented in the results chapter.

This chapter has discussed the methodology behind our study, specifically focusing on the participants, the tasks that constitute the research instrument, and the items included into the experimental part of the instrument. Detailed information has been provided regarding the manipulated factors and the attained conditions, as well as distractors. The items utilized in the Semantic Entailments task have been instantiated. The next chapter introduces the results obtained during the data collection period.

V. RESULTS

In this chapter we will discuss the results of the main research instrument, namely, the Semantic Entailments task. Specifically, the data will be presented with a view to address the Research Questions (subsection 4.D.). Group analyses and item (condition) analyses will be reported in this regard.

A. Semantic Entailments Task (Comprehension Test)

The Semantic Entailments task, being the major source of experimental data, provided us with materials to perform statistical analyses. Following the exclusion of the participants who failed to meet the requirement criteria for the study, we obtained a pool of 4,320 tokens of the critical stimuli (120 speakers × 36 experimental items). The tokens were distributed in the following way: 2,016 were elicited from the L1 Russian milieu, and 2,304 came from the L2 Russian group.

To recap, the conditions utilized in the study were formed on the basis of the following factors:

a. Distance of the split (short vs. long, distance is always correlated with the concord and animacy: short distance/goal/animate vs. long distance/theme/inanimate);
b. Gender of the Goal (masculine vs. feminine),
c. Gender of the Theme (masculine vs. feminine).

The underlying semantic representation surfaces as an inflection on the wh-word. As a result of the above manipulations, we have obtained the following experimental conditions (repeated for the reader's convenience as in IV.F.):

1. Gender Mismatch Short (Condition 1)

*Kak-**omu**$_i$ ty drug-**u**$_i$ dal knig-**u**?* (Masculine-Feminine Short)
which-M.DAT you friend-M.DAT gave book-F.ACC
'Which friend did you give the book?'
a. I gave it to Andrey. (felicitous)
b. It is a book about adventures. (incorrect)

2. Gender Mismatch Long (Condition 2)

*Kak-**uju**$_j$ ty drug-**u** dal knig-**u**$_j$?* (Gender Mismatch Long)
which-F.ACC you friend-M.DAT gave book-F.ACC
'Which book did you give to the friend?'
a. I gave it to Andrey. (incorrect)
b. It is a book about adventures. (felicitous)

3. Masculine Short (Condition 3)

*Kak-**omu**$_i$ ty drug-**u**$_i$ dal podarok-**Ø**?* (Masculine Short)
which-M.DAT you friend-M.DAT gave gift-M.ACC
'Which friend did you give the gift?'
a.I gave it to Andrey. (felicitous)
b. It is a book about adventures. (incorrect)

4. Masculine Long (Condition 4)

*Kak-**oj**$_j$ ty drug-**u** dal podarok-**Ø**$_j$?* (Masculine Long)
which-M.ACC you friend-M.DAT gave gift-M.ACC
'Which gift did you give to the friend?'
a.I gave it to Andrey. (incorrect)
b. It is a book about adventures. (felicitous)

5. Feminine Short (Condition 5)

*Kak-**oj**$_i$ ty podrug-**e**$_i$ dal knig-**u**?* (Feminine Short)
which-F.DAT you (girl)friend-F.DAT gave book-F.ACC
'Which (girl)friend did you give the book?'
a.I gave it to Anna. (felicitous)
b. It is a book about adventures. (incorrect)

6. Feminine Long (Condition 6)

*Kak-**uju**$_j$ ty podrug-**e** dal knig-**u**$_j$?* (Feminine Long)
which-F.ACC you (girl)friend-F.DAT gave book-F.ACC
'Which book did you give to the (girl)friend?'
a.I gave it to Anna. (incorrect)
b. It is a book about adventures. (felicitous)

Extensive discussion on each condition was presented in subsections IV.F.1-6.

While performing the analyses and the calculations, the sum was coded as 1 (felicitous entailment) and 0 (infelicitous entailment). Indeterminant responses, when the respondent selected both options, were analysed as a separate body of data but were extracted from the other analyses. Accuracy across the particiant groups and the experimental conditions was calculated using R software (version: 4.1.0., R Core Team, 2021), plots and tables were generated accordingly. Due to the limited number of participants in each proficiency level ($n < 30$), non-parametric tests were preferred. In order to interpret the results in terms of significance, the Kruskal-Wallis Test was utilized for three and more group comparisons; the T-test was used for normally

distributed pairs; for non-normally distributed pairs the Mann-Whitney U Test was used. The Shapiro-Wilk test was employed prior to performing the comparison in order to check for normality of distribution. If Kruskal-Wallis test result proved significant ($p < 0.05$), post hoc analyses were implemented: a pairwise analysis was conducted using a Dunn's test. Since all the results regarding the groups were significant, a Dunn's test was utilized for all the results following the Kruskal-Wallis Test; the Bonferroni method was performed for p-value adjustment.

The tables below demonstrate the estimated proportions of correct entailments regarding diverse factors including the standard error, which is a standard deviation of the sampling distribution.

Only essential information regarding statistical analyses has been provided in the text. The raw test data associated with the analyses and the related plots are presented for the interested reader in the Appendix.

B. Group Analyses

1. Accuracy Results of L1 Russian Group vs. L2 Russian Group

Fugures 19.1-6 below illustrate accuracy in experimental conditions across the control group and the L2 Russian experimental group on the six conditions: the means are demonstrated as bars and the numerical values are provided inside the respective bar; the standard error is shown as a vertical line through the respective graph. The *y*-axis demonstrates mean accuracy, 100 amounting for 100%; the *x*-axis shows the conditions.

Figures 19.1-6 Accuracy in experimental conditions by group (L1 Russian group vs. L2 Russian group)

Figure 19.1 Gender Mismatch Short

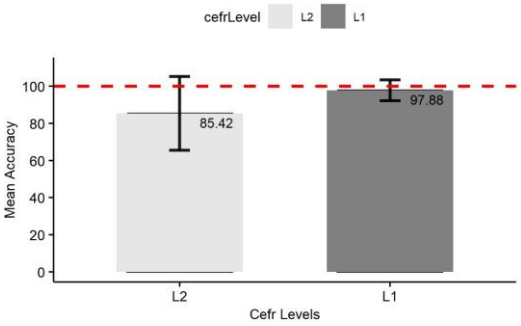


Figure 19.2 Gender Mismatch Long

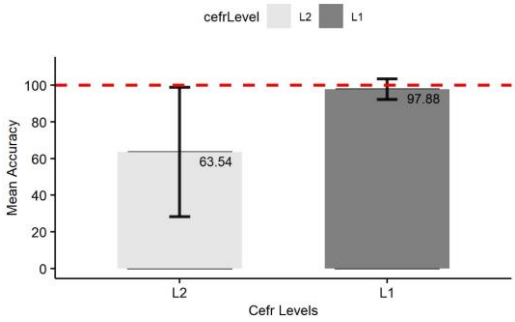


Figure 19.3 Masculine Short

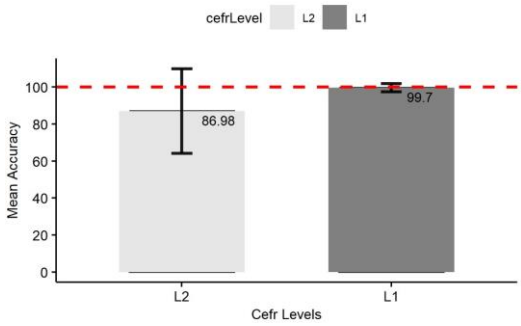


Figure 19.4 Masculine Long

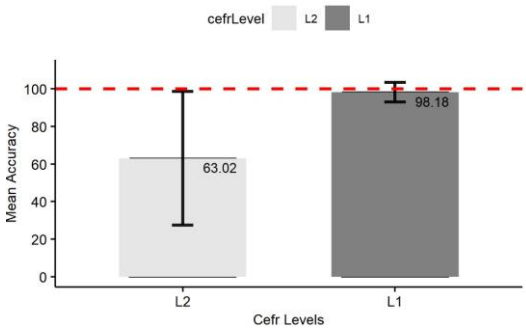


Figure 19.5 Feminine Short

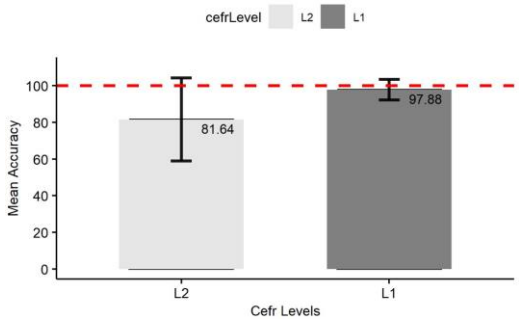
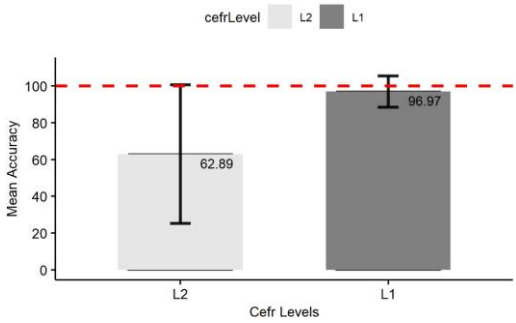


Figure 19.6 Feminine Long



As can be seen, the performance of the L1 group is over the top on all conditions, ranging from 97% to 99.7%. Conversely, the L2 group attained lower accuracy overall, ranging from 62.9% to 87%. Specifically, a stark difference in accuracy can be observed between short-distance and long-distance conditions. Long-distance splits display considerably lower accuracy (62.9%-63.5%) compared to short-distance splits (81.7%-87%).

Table 17 below demonstrates the statistical significance of the difference between the two participant groups (L1 Control and L2 Experimental) on all the conditions globally and on separate conditions. The significance is defined on the basis of the p-value: $p < 0.05$ renders the comparison significant. The lower and upper confidence intervals

Table 20 Results of a Mann-Whitney U test comparing L1 and L2 populations' performance globally and on separate conditions

Comparison	**Conf.low**	**Conf.upp**	**Statistc (U value)**	**p.value**
L1 vs L2	3.5	13.5	2957.5	**<0.01***
Gender mismatch short: L1 vs L2	0	1	2393	**<0.01***
Gender mismatch long: L1 vs L2	1	2.5	2878.5	**<0.01***
Masculine short: L1 vs L2	0	0	2340	**<0.01***
Masculine long: L1 vs L2	0.5	3	2788.5	**<0.01***
Feminine short: L1 vs L2	0	1	2534	**<0.01***
Feminine long: L1 vs L2	0	2.5	2687	**<0.01***

Figures 19.1-6 and Table 17 above suggest a steady advantage of the L1 Russian group compared to the Experimental milieu: the L1 Russian speakers have performed homogenously over the top in all conditions regardless the gender of the arguments or the distance of the split.

Compared to the homogenous over-the-top performance by the control group, the L2 Russian group's accuracy displays a stark disparity between short-distance and long-distance splits in all conditions. L2 accuracy in short-distance conditions is considerably higher (Figures 19.1, 3, 5), and this domain can be regarded as completely acquired by the L2 Russian learners based on the view attested in Slabakova (2003) – the rates range between 81.7% and 87% with the threshold being 80%, which suggests a successful acquisition of a phenomenon. Conversely, long-distance conditions have proved to be substantially more challenging with accuracy rates between 62.9% and 63.5%. Though slight, there is a variance regarding the Feminine conditions: they attest somewhat lower accuracy in the experimental group compared to the Gender Mismatch and Masculine conditions. The statistical significance of the obtained results come from the comparison of the L1 snd L2 groups via utilizing a Mann-Whitney U test: the p-value is < 0.01, hence, the difference is significant, as presented in Table 17.

Below we will tackle the accuracy in the L1 and L2 populations regarding separate conditions.

a. Gender mismatch short (condition 1): L1 Russian group vs. L2 Russian group

The obtained results on this condition suggest a statistically comparable outcome for the L1 and the L2 Russian milieus. The control group performed with an accuracy of 97.9%, which is over the top. The experimental group's accuracy of 85.4% may serve as evidence that the uninterpretable features [*u*case: Dative], [*u*gender: Masculine], and [*u*number: Singular] assembled as an inflection on the wh-word can be acquirable. Specifically, the relatively correct assignment of the inflection on the wh-word with its Masculine Dative Singular referent, which is split from the antecedent, implies that functional morphology can be successfully acquired by L2 learners. This outcome provides positive evidence regarding L2 Russian acquisition of the Dative case and the related functional morphology, which is sometimes attested as substantially challenging.

However, as the results of the Mann-Whitney U test (p-value < 0.01) suggest the difference between the populations is statistically significant (Table 17). This indicates that the groups are likely to approach the Gender Mismatch Short condition in a different manner.

b. Gender mismatch long (condition 2): L1 Russian group vs. L2 Russian group

The accuracy of 97.9% on the Gender Mismatch Long in the control group, which is the same as on the corresponding short condition, indicates that L1 Russian speakers do not treat short and long splits differently. A significant divergence in how the L2 Russian group approaches the Gender Mismatch Long condition in contrast with the short one is evident with an accuracy of 63.5%. It implies that the uninterpretable features [*u*case: Accusative], [*u*gender: Feminine], and [*u*number: Singular] assembled as an inflection on the wh-word constitute an immence challenge for L2 Russian learners. The inflection *–uju* on the wh-word is supposed not to pose extreme difficulty per se and is to be acquired at level A2, however, other factors such as the distance of the split resulting in an increased processing load may play a certain role as also attested in Lichtman (2009). Hence, this condition not reaching the 80%

threshold may be regarded as incompletely acquired by the experimental group overall.

The results of the Mann-Whitney U test (p-value < 0.01) indicate that the difference between the populations is regarded as statistically significant (Table 17). This suggests that the groups may approach the Gender Mismatch Long condition differently.

c. Masculine short (condition 3): L1 Russian group vs. L2 Russian group

The Masculine Short condition (Condition 3) displays the highest rates of accuracy for both groups: 99.7% for the control group and 86.9% for the experimental group. The uninterpretable features [*u*case: Dative], [*u*gender: Masculine], and [*u*number: Singular] assembled as an inflection on the wh-word are attested to be successfully acquirable. Likewise, the Masculine Dative Singular inflection *–omu* on the wh-word is evidenced to have been acquired completely. This result provides positive evidence that adjectival morphology in L2 Russian may not be regarded as completely unacquirable.

As can be suggested by the results of the Mann-Whitney U test (p-value < 0.01, the difference between the populations is statistically significant (Table 17). This implies that the groups are likely to interpret the Masculine Short condition in a different manner.

d. Masculine long (condition 4): L1 Russian group vs. L2 Russian group

Contrary to the previous condition, the Masculine Long Condition (Condition 4) has posed a considerable challenge for the L2 Russian population, whose accuracy is 63% versus the over-the-top performance by the L1 group (98.2%). Hence, it is supposed not to be successfully acquired by the L2 Russian group overall. The uninterpretable features [*u*case: Accusative], [*u*gender: Masculine], and [*u*number: Singular] assembled as an inflection on the wh-word constitute a serious challenge for L2 Russian learners. Nevertheless, as can be seen in V.B.2.b., there is no significant difference in the L2 Russian accuracy between the Gender Mismatch long and the Masculine long-distance split conditions, which implies that L2 Russian learners treat the wh-word specified for the gender features [Feminine] and [Masculine] uniformly. This outcome indicates that either the uninterpretable features externalized as an

inflection are processed in a similar fashion, or that the long distance creates a specific challenge for L2 learners.

The results of the Mann-Whitney U test (p-value < 0.01) suggest that the difference between the L1 and the L2 groups is statistically significant (Table 17). This indicates that the groups are likely to resolve the Masculine Long condition differently.

e. Feminine short (condition 5): L1 Russian group vs. L2 Russian group

It must be noted that the Feminine Short condition (with the locally ambiguous wh-word inflection) has not demonstrated a considerably lower accuracy in the Control group compared with the other conditions. In subsection IV.F.5. a contrary outcome was hypothesized even for the L1 Russian group due to a local ambiguity, which is resolved through the Garden Path strategy (Clahsen & Felser, 2006).

Contrary to the L1 Russian group's accuracy, we can observe a certain drop in the accuracy of the experimental group in this condition compared to the other short-distance conditions. This may suggest that L2 Russian learners may experience additional challenges during the parse. Nevertheless, more precise data could only be obtained, should the participants undergo a time constrained task. Overall, the evidenced outcome can be accounted either for the Garden Path-related processing workload, or other underlying reasons, which will be discussed in the next chapter.

The attested accuracy rate of 81.6% suggests that the Feminine Short Condition is successfully acquired by the L2 Russian learners as the accuracy exceeds the 80% threshold. Normally, the adjectival inflection *–oj* is strongly associated with the masculine gender, whose default form it represents; this inflection is operational in nominative and accusative (inanimate) cases. In spite of the above, we may observe that in general the marked adjectival inflection *–oj* on the wh-word specified for the uninterpretable features [*u*case: Dative], [*u*gender: Feminine], and [*u*number: Singular] has been internalized by the L2 Russian learners.

As can be seen in Table 17, the results of the Mann-Whitney U test (p-value < 0.01) suggest that the difference between the populations is statistically significant. This implies that the groups may approach the Feminine Short condition differently.

f. Feminine long (condition 6): L1 Russian group vs. L2 Russian group

The accuracy of the control group on the Feminine Long Condition (Condition 6) is slightly lower than in the other conditions, namely, 97%, which is nevertheless over the top. The performance of the experimental group is slightly lower regarding the other conditions with long-distance splits accounting for 62.9%. Nevertheless, this outcome does not produce a completely novel picture in relation to the acquisition of long-distance splits. By and large the uninterpretable features [*u*case: Accusative], [*u*gender: Feminine], and [*u*number: Singular] assembled as an inflection on the wh-word are attested to constitute a considerable challenge for L2 Russian learners. Even though the resulting inflection *–uju* on the wh-word is to be acquired at level A2, similarly with the Gender Mismatch Long, the distance of the split may play a certain role in aggravated accuracy. The L2 group's accuracy in this condition not reaching the 80% threshold may suggest an incomplete acquisition of the L2 Russian adjective agreement.

The results of the Mann-Whitney U test (p-value < 0.01) suggest that the difference between the L1 and the L2 groups is statistically significant (Table 17). This demonstrates that the groups are likely to resolve the Feminine Long condition in a different manner.

The next subsection will explore accuracy across the L2 proficiency levels.

2. Accuracy by L2 Proficiency Level in L2 Russian Group

Figures 20.1-6 below present accuracy in each of the six conditions in relation to each of the proficiency levels (L2 group - A2, B1, B2-C2) and the L1 Russian controls: the means are demonstrated as bars and the numerical values are provided inside the respective bar; the standard error is shown as a vertical line through the respective graph. The *y*-axis demonstrates mean accuracy, 100 amounting for 100%; the *x*-axis shows the conditions.

Figure 20 Accuracy on experimental conditions by L2 Russian proficiency level compared to the L1 Russian group

Figure 20.1 Gender Mismatch Short

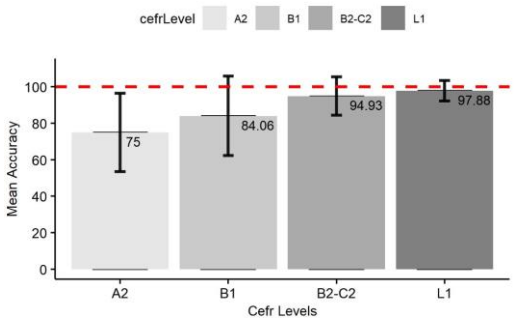


Figure 20.2 Gender Mismatch Long

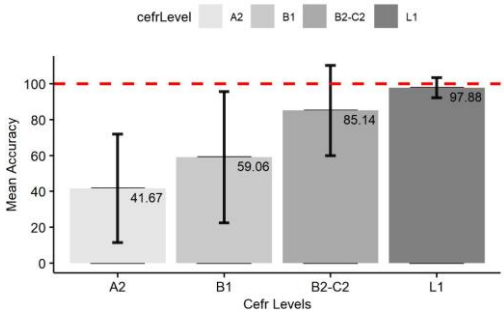


Figure 20.3 Masculine Short

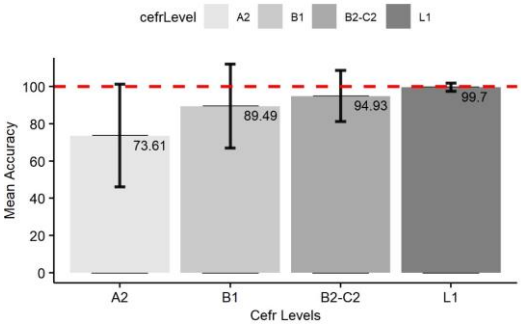


Figure 20.4 Masculine Long

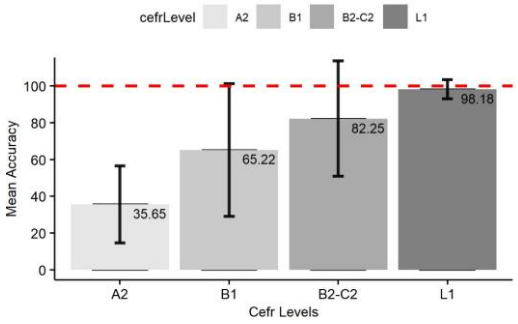


Figure 20.5 Feminine Short

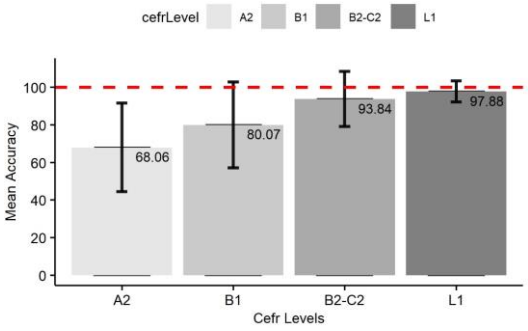
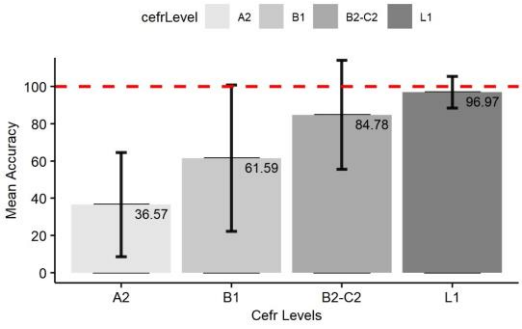


Figure 20.6 Feminine Long



As can be seen, the performance of the A2 group is relatively acceptable on all short-distance splits (68.1%-75%) but falls considerably short on long-distance splits (36.6%-41.7%). B1 group displays better results compared to the A2 group with accuracy rates for short-distance splits ranging from 80.1% to 89.5%, and 59.1% to 65.2% for long-distance splits. Hence, inflectional morphology on short splits is successfully acquired at level B1 but not long splits. The B2-C2 group's accuracy is comparable to L1 Russian controls': morphology on short splits is correct from 93.9% to 94.9% whereas accuracy on long splits ranges from 82.2% to 85.1%, which suggests

that this domain of L2 Russian albeit challenging can be successfully acquired. Accuracy on the Feminine Short condition is slightly lower across all proficiency levels, supposedly due to the local ambiguity on the wh-word.

As can be observed in Figures 20.1-6 above, the consistent trend is a gradual improvement of accuracy from the low intermediate through advanced levels. Aside from the Feminine Short Condition (Condition 5), the other short-distance conditions exhibit a comparatively successful acquisition of adjectival morphology and adjective-noun agreement in split contexts even in the Low Intermediate level participants, which is nevertheless below the 80% threshold . The accuracy in the Feminine Short condition (Condition 5) is manifested by a considerably lower rate (66.1%), which may provisionally be related to the local ambiguity. The possible causes will be discussed in the Discussion chapter.

All the long-distance conditions display an average accuracy below 40% for the Low Intermediate level, which suggests it to be a challenging domain in L2 Russian. The reasons for such low performance may lie in a considerably higher processability load compared with the short-distance splits. Specifically, it should be noted that the L2 Russian participants have extremely low rates of indeterminacy (they had an option to check both variants): there have been 42 incidents of checking both options, which constitutes 1.82% of the 2304 tokens. This fact may imply that the syntactic operation of splitting is internalized, and other mechanisms are at play while making the decision of which argument to co-reference with the wh-word – the wrong strategy resulting in selecting incongruous continuations. The possible reasoning will be evaluated in the Discussion chapter. Another explanation for a a declined performance on long-distance splits may be accounted for the type of argument rather than the distance, which will also be discussed in the next chapter.

It is apparent that High Intermediate and Advanced L2 Russian speakers' accuracy regarding short-distance splits can be regarded as native-like, whereas the performance on long-distance splits is lower but comparable to that of the L1 Russian controls. This result may be explicable by the reduced processing load in the Control milieu. Hence, the predictions of the BH hold and are fully corroborated by the obtained results. Meanwhile, it can be claimed that this domain of the L2 Russian can be successfully acquired by L2 Russian learners, whose mother tongue lacks respective morphology externalized by certain inflection markers.

Table 18 below presents results of a Kruskal-Wallis test designed to measure the significance between different proficiency levels across the experimental conditions. Related to the Kruskal-Wallis test, the following values are presented: H value, degrees of freedom (group number minus one), and p-value. Post-hoc tests were run on condition that Kruskal-Wallis test results are significant. Due to the significance of all the Kruskal-Wallis test results, a post-hoc Dunn's test was utilized for all group combinations. Related to the Dunn's test, the following is presented: Z value, p-value (adjusted as follows the implementation of the Bonferroni method for p-value adjustment due to multiple analyses). The significance of the difference among group combinations is attained based on the adjusted p-value ($p < 0.05$). The interested reader can access the raw data regarding the tests in the Appendix.

Table 18 Results of Kruskal-Wallis chi-square test and post-hoc tests on experimental conditions: comparison across L2 Russian proficiency levels and the L1 Russian group

Condition tested	**Test name**	**H value (K-W Test)**	**Z value (D Test)**	**Group comparison**	**Degrees of freedom**	**p-value (K-W test)**	**p.adj (D Test)**
All conditions	Kruskal-Wallis Test	63.7			3	**<0.01***	
	Dunn's Test		-7.10	A2 vs L1			**<0.01***
	Dunn's Test		-5.35	B1 vs L1			**<0.01***
	Dunn's Test		-2.04	B2-C2 vs L1			0.25
Gender Mismatch Short	Kruskal-Wallis Test	30.74			3	**<0.01***	
(Condition 1)	Dunn's Test		-4.95	A2 vs L1			**<0.01***
	Dunn's Test		-3.5	B1 vs L1			**<0.01***
	Dunn's Test		-0.84	B2-C2 vs L1			1
Gender Mismatch Long	Kruskal-Wallis Test	63,06			3	**<0.01***	
(Condition 2)	Dunn's Test		-6.83	A2 vs L1			**<0.01***
	Dunn's Test		-5.68	B1 vs L1			**<0.01***
	Dunn's Test		-2.06	B2-C2 vs L1			0.24
Masculine Short	Kruskal-Wallis Test	38.99			3	**<0.01***	
(Condition 3)	Dunn's Test		-6.07	A2 vs L1			**<0.01***
	Dunn's Test		-2.83	B1 vs L1			**0.03***
	Dunn's Test		-1.22	B2-C2 vs L1			1
Masculine Long	Kruskal-Wallis Test	58.54			3	**<0.01***	
(Condition 4)	Dunn's Test		-7.25	A2 vs L1			**<0.01***
	Dunn's Test		-4.31	B1 vs L1			**<0.01***
	Dunn's Test		-2.31	B2-C2 vs L1			0.13

Table 18 Results of Kruskal-Wallis chi-square test and post-hoc tests on experimental conditions: comparison across L2 Russian proficiency levels and the L1 Russian group. Continue

Feminine Short	Kruskal-Wallis Test	42.65			3	**<0.01***	
(Condition 5)	Dunn's Test		-5.92	A2 vs L1			**<0.01***
	Dunn's Test		-3.98	B1 vs L1			**<0.01***
	Dunn's Test		-1.02	B2-C2 vs L1			1
Feminine Long	Kruskal-Wallis Test	53.93			3	**<0.01***	
(Condition 6)	Dunn's Test		-6.8	A2 vs L1			**<0.01***
	Dunn's Test		-4.33	B1 vs L1			**<0.01***
	Dunn's Test		-1.54	B2-C2 vs L1			0.75

Below we will tackle the accuracy in the L2 proficiency levels regarding aggregate conditions and separate conditions.

a. Aggregate conditions by L2 proficiency level

As Table 18 above suggests, the Kruskal-Wallis chi-square test demonstrated a statistically significant difference in the performance regarding all the proficiency levels: $H(3) = 63.7$, $p < .01$*. Thus, post hoc Dunn's tests were performed, and Bonferroni method was used for p-value adjustment. Specifically, no significant difference has been attained between proficiency level B2-C2 and the L1 controls ($p = .25$). The obtained results suggest a successful acquisition of adjectival inflections and split d-linked wh-questions in higher proficiency levels.

b. Gender mismatch short (condition 1) by L2 proficiency level

As can be seen in Figure 20.1, the obtained results on this condition suggest a gradual and steady increase in accuracy as the participants' level goes up. The A2 proficiency group's accuracy is 75%, which cannot yet be regarded as complete acquisition of the domain. B1 participants have demonstrated an accuracy of 84.1%. The highest proficiency group's accuracy is 94.9%, which falls just a little short of the control group's accuracy of 97.9%. Hence, the obtained results may serve as evidence that the uninterpretable features [*u*case: Dative], [*u*gender: Masculine], and [*u*number: Singular] assembled as an inflection on the wh-word can be acquired. Specifically, the correct assignment of the inflection on the wh-word to its masculine dative singular referent, which is split from the antecedent, implies that functional morphology can be successfully acquired by L2 learners, the process of acquisition being a steady upward trajectory. This provides positive evidence regarding the L2 Russian acquisition of the

dative case and the related functional morphology, which is sometimes attested as substantially challenging.

As demonstrated in Table 18, the Kruskal-Wallis chi-square test showed a statistically significant difference in the performance between the groups: $H(3) = 30.74$, $p < .01$*. To this end, post hoc Dunn's tests were run and Bonferroni method was used for p-value adjustment. A pairwise post-hoc Dunn's test indicated no significant difference between proficiency level B2-C2 and the L1 controls ($p = 1$). The obtained results imply a nativelike acquisition of the gender mismatch short condition in higher proficiency levels.

c. Gender mismatch long (condition 2) by L2 proficiency level

Figure 20.2 suggests a gradual increase in accuracy as the participants' level goes up. The A2 proficiency group's accuracy is 41.7% and the accuracy of the B1 proficiency group is 59.1%, which is considerably below the 80% threshold standing for the complete acquisition of the domain. However, the B2-C2 proficiency group's accuracy is 85.1%, which suggests that the uninterpretable features [*u*case: Accusative], [*u*gender: Feminine], and [*u*number: Singular] assembled as an inflection on the wh-word can be acquired by L2 Russian learners at higher levels of proficiency. Meanwhile, the accuracy of the control group constitutes 97.9%. The inflection *–uju* on the wh-word is not likely to pose extreme difficulty and is normally to be acquired at level A2, however, other factors such as the distance of the split resulting in an increased processing load may produce a certain detrimental effect on accuracy.

As Table 18 shows, the Kruskal-Wallis chi-square test demonstrated a statistically significant difference in the performance between the groups: $H(3) = 63.06$, $p < .01$*. Due to this result, post hoc Dunn's tests were run and Bonferroni method was utilized for p-value adjustment. A pairwise post-hoc Dunn's test indicated the absence of statistically significant difference between proficiency level B2-C2 and the L1 controls ($p = .24$). This outcome suggests that the gender mismatch long condition has a tendency to be acquired as L2 Russian learners approximate L1 speakers whereas the acquisition of this condition by A2 and B1 learners is problematic.

d. Masculine short (condition 3) by L2 proficiency level

Figure 20.3 suggests a gradual increase in accuracy on the masculine short condition as the participants' level goes up. The A2 proficiency group's accuracy is 73.6%, which cannot be regarded as successful acquisition of the domain. The B1 group has attained an accuracy of 89.5%, and the B2-C2 proficiency group's accuracy is 94.9%, which is rather close to the control group's accuracy of 99.7%. This data implies that the uninterpretable features [*u*case: Dative], [*u*gender: Masculine], and [*u*number: Singular] assembled as an inflection on the wh-word can be fully acquired. The correct reference of the inflection on the wh-word with its masculine dative singular referent, which is split from the antecedent, implies that adjectival morphology and adjective agreement can be successfully acquired by L2 learners, the process of acquisition being a steady upward trajectory. Just like with the Gender Mismatch Short condition, this result provides positive evidence regarding the L2 Russian acquisition of the dative case and the related functional morphology.

As demonstrated in Table 18, the Kruskal-Wallis chi-square test showed a statistically significant difference in the performance between the groups: $H(3) = 38.99$, $p < .01$*. As a result, post-hoc Dunn's tests were run and Bonferroni method was used for p-value adjustment. A pairwise post-hoc Dunn's test demonstrated that L2 proficiency level B2-C2 and the L1 controls are not significantly different ($p = 1$). The obtained results suggest a nativelike acquisition of the masculine short condition in higher proficiency levels.

e. Masculine long (condition 4) by L2 proficiency level

As can be seen in Table 18 and Figure 20.4, there is a gradual increase in accuracy as the participants' level goes up. The A2 proficiency group's accuracy is 36.7%, the accuracy of the B1 proficiency group is 65.2%, and the B2-C2 proficiency group's accuracy is 82.3%. The obtained results suggest that the uninterpretable features [*u*case: Accusative], [*u*gender: Masculine], and [*u*number: Singular] assembled as an inflection on the wh-word can be successfully acquired by L2 Russian learners only at highest levels of proficiency. The accuracy of the control group constitutes 98.2%. The inflection *–oj* on the wh-word is not likely to constitute extreme difficulty and is expected to be acquired at level A2. However, other factors such as the distance of the split, which results in an increased processing load, may negatively affect accuracy.

As Table 18 shows, the Kruskal-Wallis chi-square test demonstrated a statistically significant difference in the performance between the groups: $H(3) = 58.54$, $p < .01$*. For this reason post-hoc Dunn's tests were run and Bonferroni method was utilized for p-value adjustment. No statistically significant difference was observed between proficiency level B2-C2 and the L1 controls ($p = .13$). This outcome suggests that the masculine long condition is likely to be acquired as L2 Russian learners attain higher levels whereas the acquisition of this condition by A2 and B1 learners is problematic.

f. Feminine short (condition 5) by L2 proficiency level

In line with the previously discussed short-distance-split conditions, Figure 20.5 suggests a gradual increase in accuracy on the feminine short condition as the participants' level goes up. Nevertheless, the accuracy of the A2 proficiency group is considerably lower than on the other short-distance splits, namely, 68.1%, which is below the successful acquisition threshold. The B1 group has attained an accuracy of 80.1%, which is slightly above the threshold. This outcome may account for a local ambiguity on the wh-word. However, the accuracy of the B2-C2 proficiency group (93.8%) is similar to the other short-distance conditions: 94.9% for the gender mismatch short and 94.9% for the masculine short conditions. The accuracy of the control group constitutes 97.9%. This data implies that the uninterpretable features [*u*case: Dative], [*u*gender: Feminine], and [*u*number: Singular] assembled as an inflection on the wh-word can be fully acquired only at the highest levels of L2 proficiency. The correct co-reference of the inflection on the wh-word with its feminine dative singular referent implies that adjectival morphology and adjective agreement can be acquired by L2 learners, the process of acquisition being an upward trajectory, where B2 learners are likely to make a substantial leap. This result provides positive evidence regarding the L2 Russian acquisition of the highly marked feminine dative singular inflection and the related agreement.

As demonstrated in Table 18, the Kruskal-Wallis chi-square test showed a statistically significant difference in the performance between the groups: $H(3) = 42.65$, $p < .01$*. Subsequently, post-hoc Dunn's tests were run and Bonferroni method was used for p-value adjustment. No significant difference has been observed between proficiency level B2-C2 and the L1 controls ($p = 1$). The obtained results suggest a

nativelike acquisition of the feminine short condition but only in higher proficiency levels.

g. Feminine long (condition 6) by L2 proficiency level

As can be observed in Figure 20.6, there is a gradual increase in accuracy as the participants' level goes up, which is similar with all the other conditions. The A2 proficiency group's accuracy is 36.6%, which is slightly higher than in the other long-distance conditions. The accuracy of the B1 proficiency group is 61.6%, and the B2-C2 proficiency group's accuracy is 84.8%. The obtained results suggest that the uninterpretable features [*u*case: Accusative], [*u*gender: Feminine], and [*u*number: Singular] assembled as an inflection on the wh-word may be successfully acquired only by L2 Russian learners at highest levels of proficiency. The accuracy of the control group constitutes 97%. Similarly with the gender mismatch long condition, the inflection *–uju* on the wh-word is not supposed to constitute extreme difficulty and is expected to be acquired at level A2. However, the distance of the split and the ensuing increased processing load may have a negative effect on the L2 accuracy.

As Table 18 shows, the Kruskal-Wallis chi-square test demonstrated a statistically significant difference in the performance between the groups: $H(3) = 53.93$, $p < .01$*. Consequently, post-hoc Dunn's tests were performed and Bonferroni method was utilized for p-value adjustment. Ultimately, no significant difference was observed between proficiency level B2-C2 and the L1 controls ($p = .75$). This outcome suggests that the feminine long condition is likely to be acquired by L2 Russian learners at highest proficiency levels whereas the acquisition of this condition by A2 and B1 learners is restricted.

h. Acquisition of split d-linked wh-questions across L2 proficiency levels: summary

As can be deduced from the accuracy rates on the experimental conditions above, the acquisition of the short-distant splits and the related functional morphology is not successful at lower proficiency levels, namely, A2. Specifically, the accuracy on the Feminine Short condition in A2 level subjects is slightly lower, which may be related to the highly marked character of the *–oj* inflection employed: being a default singular masculine nominative or accusative (inanimate) adjective marker, in this condition it is utilized as the singular feminine dative marker. This local ambiguity

may confuse the participant and cause her either to employ the garden-path strategy, or yield a disruption in parsing. Regarding the short-split condition, B2-C2 learners are expected to maximally approximate L1 speakers, which is suggested by the statistical significance tests.

The acquisition of the three long-distance conditions is represented by a trajectory of a similar configuration. However, the accuracy at A2 proficiency level constitutes on average 38%, the B1 level participants' accuracy is approximately 62%. It is only at higher levels (B2-C2) that we can observe a successful acquisition of long-distance splits (average accuracy – 84%). The result implies that uninterpretable features associated with long-distance splits are not internalized prior to B2 proficiency level.

Overall, the conducted analyses demonstrate that this domain of L2 Russian is acquirable by speakers of a language where the respective uninterpretable features and the associated functional morphology are not realized.

The next subsection will provide item (condition) analyses discussing the accuracy across conditions in relation to the L1 and L2 populations including proficiency levels.

C. Item (Condition) Analyses

In this subsection we will compare the results of the Semantic Entailments Task across conditions with participant groups constituting the invariable. This is done in order to explore a potential difference between the conditions utilized in the research instrument. We will first discuss a pairwise comparison of short-distance split aggregates and long-distance split aggregates for each population in order to determine whether there is a statistically significant difference between them. Based on the outcome, we will discuss the significance of the differences between short-distance conditions and long-distance conditions for each milieu. In order to define the significance between the three short-distance versus the three long-distance conditions, a Kruskal-Wallis Test was utilized for each population and proficiency level. A two-sample independent T-test was conducted to compare normally distributed datasets. The difference is attested to be significant when the p-value < 0.05.

Figure 21 visually presents the average number of items answered correctly by each group (L1, L2, A2, B1, and B2-C2). The barcharts present the total number of items in the short-distance conditions (n=18) and those in the long-distance conditions (n=18). As can be observed, the control group performed over the top, the result of the aggregate L2 group demonstrates a considerably lower accuracy on long-distance splits. Regarding the proficiency levels, short-distance splits may be acquired at level B1; nonetheless, the accuracy of the B2-C2 level participants on both types of splits approximates that of the L1 group.

Table 19 demonstrates the statistical significance of the difference between the short-distance and long-distance conditions regarding each participant group being the result of a Mann-Whitney U test. The significance is defined on the basis of the p-value: $p < 0.05$ renders the comparison significant. The lower and upper confidence intervals are also indicated.

Figure 21 Average number of items (n=18) answered correctly by each group: comparison of short-distance splits versus long-distance splits

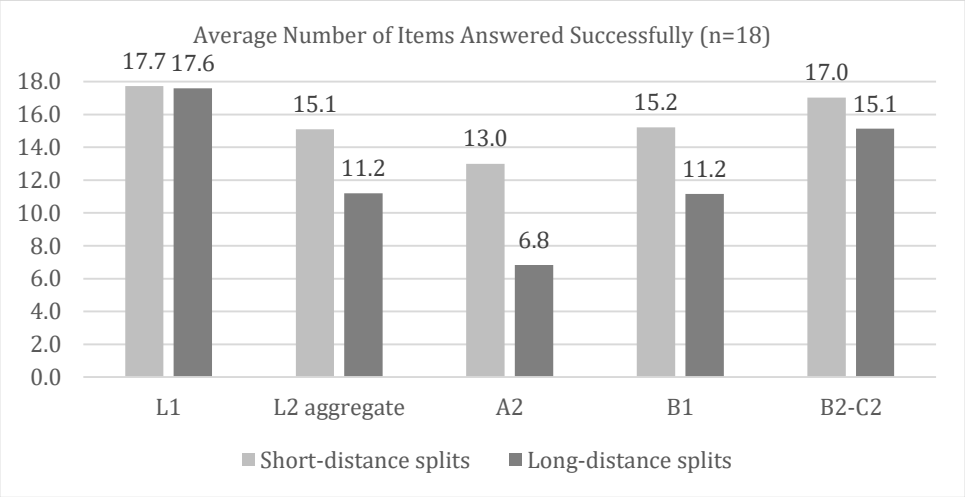


Table 19 Results of a Mann-Whitney U test comparing performance on short-distance vs. long-distance conditions by participant group

Comparison	Group tested	Conf.low	Conf.upp	Statistc (U value)	p-value
Short-distance vs. Long-distance	L1	0.00	0.00	1599	0.50
	L2	0.50	6.00	2733	**<0.01***
	A2	3.50	9.00	271.5	**<0.01***
	B1	0.00	7.00	370.5	**0.02***
	B2-C2	0.00	1.00	321	0.18

1. Short-Distance Splits versus Long-Distance Splits

As Figure 21 suggests, compared to the performance on long-distance conditions, performance on short-distance splits is markedly higher for each proficiency group, in contrast to the L1 population, where we observe no difference in accuracy between short and long-distance conditions. According to the result of a Mann-Whitney U test (Table 19), the distribution between the short-distance and long-distance splits differs significantly as shown by the performance of 64 L1 Turkish L2 Russian participants, Mann-Whitney U = 2733, $n_1 = n_2 = 18$, $p < .01$. On the contrary, no significant difference is attested between short and long-distance conditions in the 56 L1 Russian subjects, Mann-Whitney U = 1599, $n_1 = n_2 = 18$, $p = .5$.

a. Short-distance splits versus long-distance splits: L1 russian group

As Figure 21 suggests, the L1 Russian group performed in nearly the same manner on the long-distance conditions as it did on the short-distance conditions. The results of a Mann-Whitney U test in Table 19 demonstrate that the distribution between the short-distance and long-distance splits across the control population has no significant difference as shown by the performance of 56 L1 Russian subjects, Mann-Whitney U = 1599, $n_1 = n_2 = 18$, $p = .5$.

b. Short-distance splits versus long-distance splits: L2 russian group

As Figure 21 suggests, the L2 Russian group performed considerably lower on the long-distance conditions than on the short-distance conditions. The results of a Mann-Whitney U test in Table 19 suggest that the distribution between the short-distance and long-distance splits across the L2 population has a significant difference as shown by the performance of 64 L2 Russian participants, Mann-Whitney U = 2733, $n_1 = n_2 = 18$, $p < .01$.

c. Short-distance splits versus long-distance splits: A2 proficiency level

The bar charts of Figure 21 imply that the A2 proficiency level participants within the L2 Russian group performed considerably lower on the long-distance conditions compared to the short-distance conditions. This outcome suggests that long splits and the associated functional morphology are considerably more challenging and are not acquired at level A2. The results of a Mann-Whitney U test (Table 19) corroborate the above outcome that the distribution between the short-distance and

long-distance splits across the A2 mllieu is significantly different as shown by the performance of 18 subjects, Mann-Whitney U = 271.5, $n_1 = n_2 = 18$, $p < .01$.

d. Short-distance splits versus long-distance splits: B1 proficiency level

Figure 21 demonstrates that overall the B1 proficiency level participants performed somewhat lower on the long-distance conditions compared to the short-distance conditions; nonetheless, the difference is not as stark as for level A2. The results of a Mann-Whitney U test in Table 19 suggest that the distribution between the short-distance and long-distance splits across the B1 population is significantly different as shown by the performance of 23 subjects, Mann-Whitney U = 370.5, $n_1 = n_2 = 18$, $p = .02$.

e. Short-distance splits versus long-distance splits: B2-C2 proficiency levels

Contrary to proficiency levels A2 and B1, the performance of the B2-C2 participants on the long-distance conditions compared to the short-distance conditions is almost equal, as implied by Figure 21. As can be seen in Table 19, the results of a Mann-Whitney U test demonstrate that the distribution between the short-distance and long-distance splits across the B2-C2 mileu is not significantly different as shown by the performance of 23 subjects, Mann-Whitney U = 321, $n_1 = n_2 = 18$, $p = .18$.

f. Acquisition of short-distance splits versus long-distance splits: summary

The results of the Mann-Whitney U test in Table 19 as applied to all the proficiency levels suggest that L2 Russian learners fail to internalize long-distance splits until they reach higher levels of attainment, namely, at least B2. The evidence is the p-value of 0.18, which yields no statistical difference between short-distance and long-distance splits in the B2-C2 milieu. In this respect we can see that this domain of L2 Russian grammar can be acquired by speakers of a language that has no respective uninterpretable features externalized as functional morphology.

2. Separate Short-Distance Conditions Across All Groups

Figure 22 below visually presents the average number of correctly answered items (n=6) by each group (L1, L2, A2, B1, and B2-C2) across the short-distance conditions: Gender Mismatch, Masculine, and Feminine. The L1 group performed over the top, the aggregate result of the L2 group demonstrates a moderately lower accuracy on all the conditions. Regarding the proficiency levels, accuracy on the

feminine short condition is somewhat lower compared to the other two conditions in levels A2 and B1. Nonetheless, the accuracy of the B2-C2 level participants approximates that of the L1 group across all the short-distance conditions. When all the short-distance conditions are compared, no striking difference is attested.

Figure 22 Average number of items (n=6) answered correctly by each group across short-distance conditions

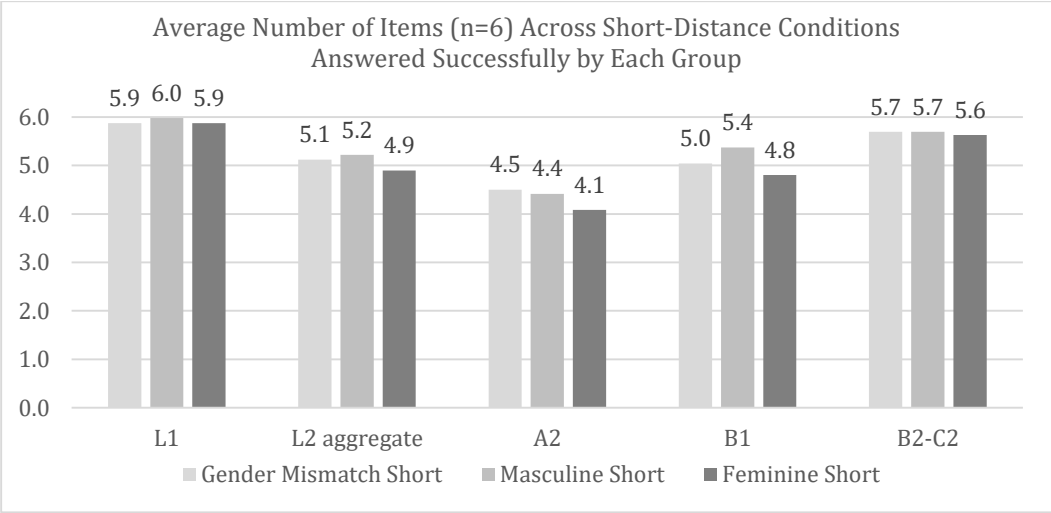


Table 20 below demonstrates results of a Kruskal-Wallis chi-square test, which is a test for 3 conditions compared. The test was run on short-distance conditions. Related to the Kruskal-Wallis test, the following values are presented: H value, degrees of freedom (condition number minus one), and p-value. The results suggest that the difference between the conditions involved is not significant. The significance is based on the p-value ($p < 0.05$). The interested reader can access the raw data regarding the tests and the related box plots in the Appendix.

Table 21 Results of a Kruskal-Wallis chi-square test: comparison across short-distance conditions by participant group

Conditions compared	H value	Group tested	Degrees of freedom	p-value
Short-distance	5.25	L1	2	0.07
	3.63	L2	2	0.16
	0.93	A2	2	0.63
	3.56	B1	2	0.17
	0.77	B2-C2	2	0.68

As can be observed in Table 20 and Figure 22 above, no significant difference has been attested in relation to separate short-distance conditions when any of the populations are involved, which is suggested by the Kruskal-Wallis chi-square test

result. Specifically, there is no significant difference condition-wise for the L1 milieu: $H(2) = 5.25$, $p = .07$, and the L2 population either: $H(2) = 3.63$, $p = .16$. Similarly, the same is reported regarding the short-distance conditions in any of the proficiency levels within the L2 group:

A2 population: $H(2) = 0.93$, $p = .63$;

B1 population: $H(2) = 3.56$, $p = .17$.

B2-C2 population: $H(2) = 0.77$, $p = .68$.

Hence, the results suggest that there is no statistically significant difference between any of the short-distance conditions, and they can be treated equally.

In spite of the local ambiguity on the wh-word in the Feminine Short condition and somewhat reduced accuracy in proficiency levels A2 and B1, the performance at proficiency level B2-C2 converges on all the three conditions.

3. Separate Long-Distance Conditions Across All Groups

Figure 23 below demonstrates the average number of correctly answered items (n=6) by each group (L1, L2, A2, B1, and B2-C2) across the long-distance conditions: Gender Mismatch, Masculine, and Feminine. The L1 group performed over the top, whereas the aggregate result of the L2 group demonstrates a considerably lower accuracy on all the long conditions. The A2 group shows quite low accuracy on all the conditions. The accuracy gradually improves in the B1 participants, and approximates the L1 level in the B2-C2 participants. No salient difference is observed between the conditions in any of the populations.

Figure 23 Average number of items (n=6) answered correctly by each group across long-distance conditions

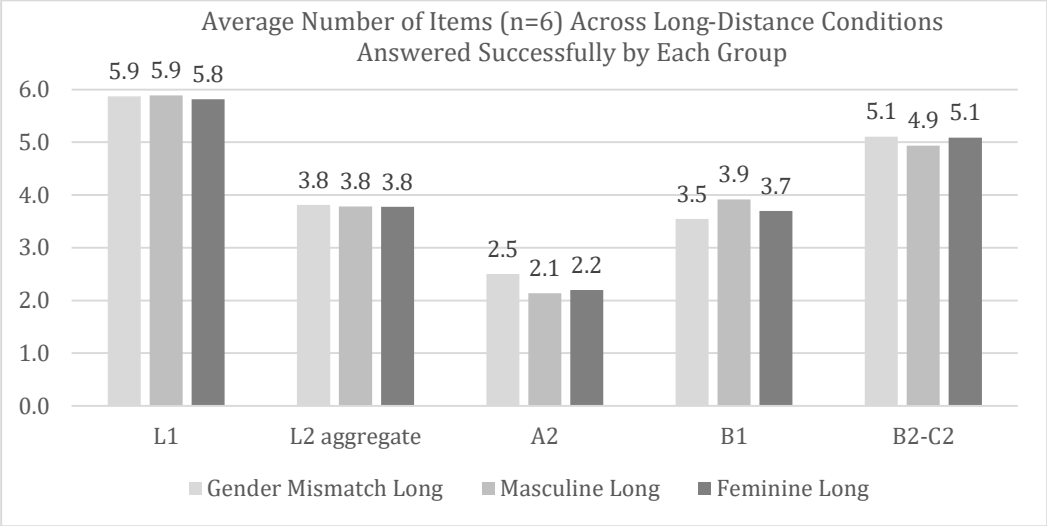


Table 21 below demonstrates results of a Kruskal-Wallis chi-square test, which is a test for 3 conditions compared. The test was run on long-distance conditions only. Related to the Kruskal-Wallis test, the following values are presented: H value, degrees of freedom (condition number minus one), p-value, and statistical significance. The results suggest that the difference between the conditions involved is not significant. The significance is based on the p-value ($p < 0.05$). The interested reader can access the raw data regarding the tests and the related box plots in the Appendix.

Table 221 Results of a Kruskal-Wallis chi-square test: comparison across long-distance conditions by participant group

Conditions compared	H value	Group tested	Degrees of freedom	p-value
Long-distance	0.16	L1	2	0.92
	0.06	L2	2	0.97
	0.62	A2	2	0.73
	0.71	B1	2	0.70
	0.24	B2-C2	2	0.89

As can be observed in Table 21 and Figure 23, no significant difference has been found between separate long-distance conditions when any of the experimental populations is involved, which is suggested by the Kruskal-Wallis chi-square test result. Specifically, no significant difference condition-wise has been attested for the L1 milieu ($H(2) = 0.16$, $p = .92$), and for the L2 aggregate: $H(2) = 0.06$, $p = .97$.

Similarly, the same is reported regarding the conditions in any of the proficiency levels within the L2 group:

A2 population: $H(2) = 0.62$, $p = .73$;

B1 population: $H(2) = 0.71$, $p = .70$.

B2-C2 population: $H(2) = 0.24$, $p = .89$.

To recapitate, no statistically significant difference has been attested between any of the long-distance conditions, and they can be treated uniformly.

4. Feminine Short versus Feminine Long: the Case of Local Ambiguity

The wh-word in the Feminine Short condition is inflected with the suffix *–oj*, which is the externalization of the uninterpretable features: [*u*case: Dative], [*u*gender: Feminine], and [*u*number: Singular]. Generally it is assumed to constitute the default inflection for the nominative and inanimate masculine accusative forms of the adjective. Nevertheless, in this condition it is highly marked – by default it may not be associated with a dative feminine meaning. As mentioned above in subsection IV.F.5., this creates an effect of a local ambiguity, which is resolved as the participant reaches the feminine accusative noun (the Theme), and the Garden Path strategy is activated.

Figure 24 visually presents the average number of correctly answered items (n=6) in the feminine short versus feminine long conditions by each group (L1, L2, A2, B1, and B2-C2). The L1 group performed over the top in both conditions, whereas the aggregate result of the L2 group demonstrates a considerable difference between the feminine short and feminine long conditions. The A2 group shows the most substantial difference between the conditions, in level B1 the accuracy is overall higher, and the difference is less massive. The accuracy in the B2-C2 group approximates the L1 level, and the difference between the feminine short and long conditions is not significant.

Figure 24 Average number of items (n=6) answered correctly by each group in feminine short versus feminine long conditions

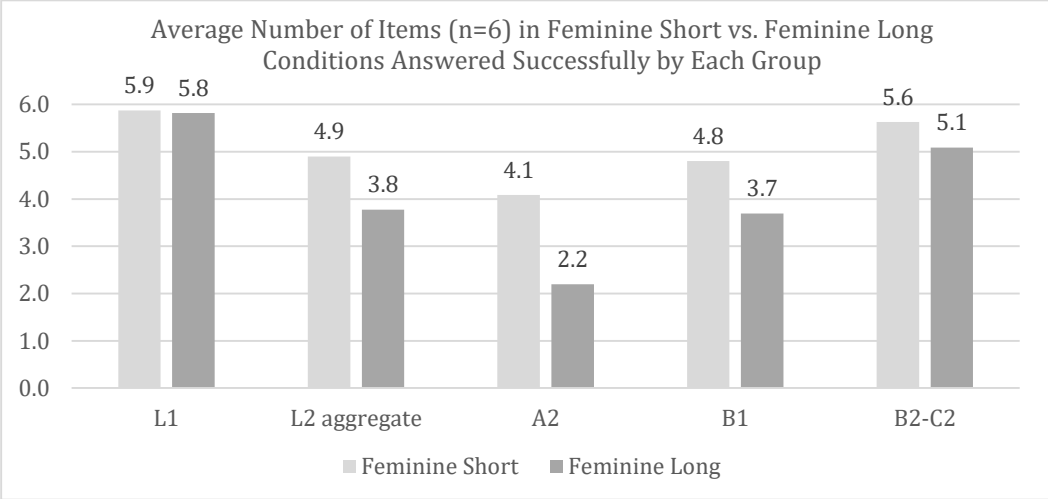


Table 22 below demonstrates the statistical significance of the difference between the Feminine Short versus Feminine Long conditions regarding each participant group. The significance is defined on the basis of the p-value: $p < 0.05$ renders the comparison significant. The lower and upper confidence intervals are also indicated.

Table 23 Results of a Mann-Whitney U test (T-test for the A2 group) comparing performance on Feminine Short vs. Feminine Long conditions by participant group

Comparison	**Group tested**	**Conf.low**	**Conf.upp**	**Statistc (U value)**	**p-value**
Feminine Short vs. Feminine Long	L1	0.00	0.00	1523	0.92
	L2	0.00	2.00	2536	**0.01***
	A2	0.83	2.94	3.65 (T value)	**<0.01***
	B1	0.00	2.00	324.5	0.17
	B2-C2	0.00	0.00	288.5	0.52

As can be observed in Figure 24, the difference of the accuracy on the Feminine Long condition across the L2 populations is diminished relatively to the Feminine Short condition, which is not attested when compared to the L1 Russian performance. The results of a Mann-Whitney U test and the T-test (Table 22) will be discussed below.

a. Feminine short versus feminine long: L1 russian group

As Figure 24 suggests, the L1 Russian group performed equally well on Feminine Short and Feminine Long conditions. The results of a Mann-Whitney U test imply that the distribution between Feminine Short and Feminine Long conditions

across the control population does not differ significantly as shown by the performance of 56 L1 Russian subjects, Mann-Whitney U = 1523, $n_1 = n_2 = 6$, $p = .92$. Likewise, the accuracy on the L1 group is over the top.

b. Feminine short versus feminine long: A2 proficiency level

As can be observed in Figure 24, the accuracy of the A2 proficiency group on the Feminine Short condition is considerably higher than on the Feminine Long condition. According to the result of a T-test in Table 22 above, the difference between Feminine Short and Long conditions is significant as shown by the performance of the 18 A2 level participants, $t(10) = 3.64$, $p < .01$.

c. Feminine short versus feminine long: B1 proficiency level

Figure 24 demonstrates that the B1 proficiency level participants performed somewhat lower on the Feminine Long condition compared to the Feminine Short condition. The results of a Mann-Whitney U test in Table 22 suggest that the distribution between the Feminine Long and Feminine Short conditions across the B1 population is not significantly different as shown by the performance of 23 subjects, Mann-Whitney U = 324.5, $n_1 = n_2 = 6$, $p = .17$.

d. Feminine short versus feminine long: B2-C2 proficiency levels

Regarding the performance of the B2-C2 proficiency level participants on the Feminine Long and Feminine Short conditions, Figure 24 implies that there is a slight difference. The results of a Mann-Whitney U test in Table 22 demonstrate that the distribution between the Feminine Long and Feminine Short conditions across the B2-C2 population is not significantly different as shown by the performance of 23 subjects, Mann-Whitney U = 288.5, $n_1 = n_2 = 6$, $p = .52$.

e. Feminine short versus feminine long: summary

The analysis of the Feminine Short and Feminine Long conditions across different populations has demonstrated that L2 Russian learners are likely to experience equal challenges with the short and long types of the Feminine condition at lower proficiency levels. The challenge may lie in the highly marked character of the inflection on the wh-word. However, as L2 learners advance, ultimate attainment is expected as they reach proficiency levels B2 and higher.

D. Indeterminacy in Responses

We assumed in IV.D. that inability to select a single felicitous entailment may constitute an issue pertaining to internalizing the syntactic reflex as part of the acquisition process. To this end, while performing the semantic entailments task, participants had an option of picking both entailments, which would serve as evidence that the syntactic reflex is not yet in place. To encourage the L2 population to opt for both variants, type 1 fillers were designed for both entailments to be felicitous. Nonetheless, the L2 Russian participants attested 42 incidents of checking both options, which accounts for 1.82% of all the tokens in the L2 Russian group (total number of tokens = 2304). This result fails to provide significant statistical data. Hence, this outcome may imply that L2 learners may not experience difficulties regarding the syntactic operation per se.

E. Results. Summary

This chapter has presented the results obtained in the course of data collection based on the Semantic Entailments task, which is the major source of experimental data. Certain patterns have been attested related to the inflections on the wh-word, argument characteristics, and the distance of the split (the combinations of the three are utilized as conditions). Accuracy rates have been explored regarding various factors and significance levels have been attained.

The L1 group has been attested to perform uniformly over the top on all conditions. The L2 group in general performs considerably lower compared to the controls. Nevertheless, as separate L2 proficiency levels are observed, we can see that mean accuracy on short-distance conditions is below 80% in level A2 but continues to go up in higher levels. However, accuracy on long-distance splits is about 40% in level A2. The accuracy both on short- and long-distance conditions gradually increases as L2 learners advance, and approximates the L1 controls' accuracy at levels B2 and higher. Specifically, no statistical difference is attested between the L1 and B2-C2 populations.

It must be noted that by far have we presented the data associated with the statistical analyses. As previously mentioned, the interested reader can access the raw test data and the concurrent plots and tables in the Appendix. The next chapter will

examine the obtained results in the view of the current state of SLA enquiry; implications and suggestions in relation to further research will be discussed.

VI. DISCUSSION

This study examined whether L2 Russian learners can successfully acquire uninterpretable features associated with adjectival morphology and adjective agreement in split d-linked wh-questions, as well as the effect of proficiency on the acquisition of these L2 features. The results of the Semantic Entailments task suggest that the L2 population follows a course of a trajectory reaching levels statistically indistinct from those of the L1 population.

Slabakova (2003, 2005, 2016) proposes that the acquisition of a L2 and specifically the acquisition of L2 categories constitutes the acquisition of features, which are manifested as reflexes, namely, syntactic, morphological, and semantic reflexes. In the Bottleneck Hypothesis she argues that syntactic and semantic reflexes are internalized effortlessly due to their universal status, whereas the morphological reflex is the locus of interlanguage difference and for this reason it poses a major challenge. In other words, it is the functional morphology that has to be learnt lexically. The Bottleneck Hypothesis asserts that following the acquisition of the morphological reflex, the category in question is fully internalized automatically. As the morphological reflex is expressed via functional morphology, it is the latter that constitutes the central part of L2 acquisition, hence, it poses the utmost challenge for the learner, being the "bottleneck" that suppresses L2 acquisition. In line with the updated version of the Bottleneck Hypothesis (Slabakova, 2019), the locus of our enquiry constitutes "a microparameter with complicated L1-L2 mapping" (p.16), which is regarded as the most challenging type of domain to acquire. The prediction is that the syntactic and the semantic reflexes will pose no issues in L2 acquisition whereas the morphological reflex is likely to compose a serious issue into higher proficiency levels and has to be lexically learnt. Specifically, L2 learners at lower levels of proficiency may erroneously assign the wh-word (specified for uninterpretable case, gender, and number features externalized as an inflection, i.e. functional morphology) to the argument. As their level advances, the L2 group is predicted to gradually approximate the L1 population. Ultimate attainment is possible though not across the board.

The Full Transfer Full Access Hypothesis (Schwarz & Sprouse, 1996) suggests that at the initial stages of L2 acquisition the learner resorts to her L1 grammar system to process the L2 input, and when incompatibility of the grammar systems is encountered, full access to UG is available. The building and reconstruction of the L2 grammar system is related to several factors, such as the initial state, input, UG apparatus, and learnability factors (Schwarz & Sprouse, 1994: 41). The prediction is that on the onset the approach to the L2 domain will be based on the L1 system, later the L2 structure gradually emerges through full access to UG, hence, accuracy incrementally enhances. The final stage of the Interlanguage is not corrupt in terms of representation whereas the production can reach either a fossilized state or be realized with precision: ultimate attainment is not disregarded.

On the contrary, the Interpretability Hypothesis (Tsimpli & Dimitrakopoulou, 2007; Tsimpli & Mastropavlou, 2007) claims that L2 learners are unable to internalize L2 uninterpretable features absent from their ambient language, whereas interpretable features being realized in the logical domain, are acquired relatively easily. In this respect L2 learners are expected to utilize interpretable features to aid them in calculating the meaning. Hence, the predictions of the IH regarding our study are as follows: uninterpretable features realized as adjectival morphology (the inflection on the wh-word specified for gender, case, and number) as well as the splitting operation may not be acquired in a L2 since the respective features are not realized in the learner's L1 at LF and PF. Specifically, the accuracy in comprehending the inflection on the wh-word will be significantly different from that of the L1 group. Besides, since the splitting operation may not be acquired, increased residual indeterminacy is expected to be exhibited in the L2 learners selecting both entailments as the response to experimental stimuli.

Similarly, the Shallow Structure Hypothesis (SSH) (Clahsen & Felser, 2006) proposes that L2 processing is primarily based on semantic rather than syntactic information, and predicts that L2 learners are less sensitive to structural constraints, and will be directed by semantic and pragmatic cues. Consequently, the L2 representation will be shallower compared to that in L1 speakers. Regarding our study, the SSH predicts that long distance syntactic dependencies, examplified by split nominal phrases, will be processed erroneously due to a shallow representation.

Instead, the experimental group is expected to process split phrases as adjacent ones, which will result in decreased accuracy.

Recall that the current research tackles the following issues: 1. Potential L1-L2 differences (at highest proficiency levels) with respect to Russian adjective morphology and NP splits; 2. The role of L2 proficiency with respect to Russian adjective morphology and NP splits across L2 levels; 3. Potential short-distance and long-distance differences with respect to NP splits across participation groups. Additionally, in the course of investigation our current enquiry also focused on potential L1-L2 differences in resolving a local ambiguity via the Garden-path strategy and L2 preference of default interpretation of morphemes in contexts with a marked inflection.

A. L1-L2 Accuracy on Russian adjective morphology and Split NPs

The first research question addressed potential differences in the comprehension of split d-linked wh-questions by L1 and high intermediate and advanced L2 populations, which is demonstrable through the correct comprehension of adjectival morphology (specified for case, gender, and number) on the wh-word and the correct assignment of the wh-word to the appropriate object (Dative or Accusative), which is split from its headword. It is attained via the correct comprehension of uninterpretable features externalized as an inflection on the wh-word, and felicitous agreement.

L1 Russian speaker data revealed a homogenous over-the-top accuracy on all experimental conditions regardless the distance type of the NP split or the inflection on the wh-word (over 97%). In contrast, the aggregate L2 Russian group reported noticeably lower accuracy rates (68% through 91%), similar results reported in Mikhaylova (2011, 2018) on telicity markers. This outcome supports the predictions of the updated version of the Bottleneck Hypothesis (Slabakova, 2019) in that morphological reflexes associated with externalization of uninterpretable features comprise a microparameter and may indeed pose serious difficulties for the L2 learner. The same predictions have been put forward by the IH (Tsimpli & Dimitrakopoulou, 2007; Tsimpli & Mastropavlou, 2007) and by the SSH (Clahsen & Felser, 2006), hence, these predictions are supported.

However, another perspective emerges as we compare the highest proficiency L2 milieu and the L1 controls. The results clearly suggest that uninterpretable features externalized as an inflection on the wh-word and adjective agreement are acquired successfully (82,3-94,9% accuracy), and the accuracy thereof is statistically indistinguishable from the L1 group (p=.25 for all conditions, B2-C2 and L1 compared), which is in line with the results in Slabakova (2003) and Nossalik (2008, 2009) with regard to the acquisition of L2 Russian telicity and the outer aspect, respectively. Our finding clearly shows that L2 uninterpretable features realized as functional morphology and absent from the learners' L1 can be successfully acquired at higher levels of proficiency, which refutes the provisions of the IH and the SSH and supports the BH and the FTFAH. Hence, we can argue that split d-linked wh-questions are fully acquirable in L2 Russian. Recall that the inflection on the wh-word is the only cue to arrive at the correct interpretation of the wh-question; no interpretable feature can aid the participant in selecting the felicitous entailment.

Attesting the 80% threshold as the measure for a successfully attained grammatical category, we can observe that L2 participants at higher levels of attainment converge with the L1 group regarding accuracy on short-distance splits (accuracy on separate conditions ranges from 93,8 to 94,9%). This clearly indicates that the uninterpretable feature [*u*case: Dative] reassembled with [*u*gender: Masculine or Feminine], and [*u*number: Singular] does not pose an insurmountable challenge for L2 learners, also reported in Artoni & Magnani (2015). Similar results were obtained in Isurin & Ivanova-Sullivan, 2008; Nossalik, 2008, 2009; Slabakova, 2003. Leal et al (2016) and Leal Méndez & Slabakova (2014) also reported successful acquisition of uninterpretable features absent from the L2 learners' L1, which evidently confirms the predictions of the BH and the FTFAH in that features absent from the learner's L1 can be accessed and acquired. This refutes the claims of the IH in that uninterpretable features are Critical age-constrained, results reported in Tsimpli & Dimitrakopoulou (2007), Tsimpli & Mastropavlou (2007), Cherepovskaia & Slioussar (2018), to name a few. Specifically, our finding may cast doubt on the claim in Cherepovskaia & Slioussar (2018) that the Russian case system poses a serious challenge to the L2 population, where Dative was reported to be incorrectly used in 23% of contexts by advanced L2 Russian learners (a production task). Our results confirm the predictions of the BH in that the challenge is primarily contained in the morphological reflex, i.e.

the inflection itself, rather than the syntactic or semantic reflexes, which may be fully internalized. Similar outcomes are presented in de Garavito & Otalora (2016) in relation to the acquisition of gender and number agreement under nominal ellipsis in L2 Spanish as well as in Isurin & Ivanova-Sullivan (2008) regarding both aspectual and case morphology in L2 Russian. Besides, our findings cast doubt on the claims of the SSH in that L2 learners fail to construct deep structure representations and long distance dependencies, and instead are only directed by semantic and pragmatic cues, as asserted in Clahsen & Felser (2006). Similar accounts against these provisions of the SSH are reported in Smith (2016) and Tucciarone (2022).

Together with that, it is worth reporting that the conditions where L2 subjects were tested on assigning the wh-word on the Accusative noun demonstrated considerably lower accuracy compared to assigning the wh-word on the Dative noun. The Accusative inflection on the adjective is supposed to be internalized prior to the Dative one (Andrjushina et al, 2009; Nahabina et al, 2001). This fact also finds evidence in the previous research on the acquisition of L2 Russian cases, for instance, Artoni & Magnani (2015), Cherepovskaia & Slioussar (2018). Recall that the co-reference of the wh-word with the Accusative object is correlated with long-distance splits. It seems that primarily the challenge is comprised not by the uninterpretable feature [*u*case: Accusative] or the associated morphology per se, as much as by the distance between the antecedent (the wh-word) and the referent, which was reported in the previous research. For instance, Lichtman (2009) claims that longer distance effect increases processability costs (Pienemann, 1998) as observed with regard to agreement in beginners and intermediate subjects. Since no high intermediate or advanced group was recruited in Lichtman's enquiry, our study effectively closes that gap. Our finding evidently suggests that the L1 group and the L2 milieu at higher proficiency levels are statistically indistinguishable in terms of comprehending uninterpretable features on the wh-word, which is in line with Lichtman's (2009) outcome. These results are against the predictions of the IH in that L2 learners may be significantly different from the L1 population regarding agreement, and conversely, the BH predictions are confirmed. Processing of long-distance splits is incrementally more effective as L2 learners advance, and tackling the issue in the processability framework may yield interesting results.

B. Accuracy on Russian adjective morphology and Split NPs across L2 levels

Employing three populations of gradually advancing L2 Russian learners (low intermediate (A2) through high intermediate/advanced (B2-C2) levels), we can clearly observe that the utilized conditions demonstrate a steady increase in accuracy. The increasing trajectory pertains to the morphological characteristics of the inflection on the wh-word, which will be addressed later. In line with the predicitons of the BH, it can be argued that uninterpretable features that are absent from the L2 learners' native tongue and constituting "a microparameter with complicated L1-L2 mapping" (Slabakova, 2019:16), indeed pose a serious challenge at lower levels of attainment but can be successfully acquired as L2 learners advance. For example, similar results are reported in Leal et al (2016) and Leal Méndez & Slabakova (2014) with regard to accepting/rejecting resumptive pronouns by L2 English / L1 Spanish learners. It is important to note that our result partly supports the propositions of the IH in regard to lower proficiency levels but evidently contradicts the predictions regarding higher levels, as attested in Tsimpli & Dimitrakopoulou (2007), Tsimpli & Mastropavlou (2007), Cherepovskaia & Slioussar (2018), to name a few.

The predictions of the FTFAH are confirmed in that the L2 population at lower levels of proficiency may display considerably lower accuracy than the L1 group, which is accounted for the L1-transfer approach at initial stages of L2 acquisition, as reported in Schwartz & Sprouse (1996), Schwartz et al. (2015), and Nossalik (2008). This is evident regarding the reassemblance of the uninterpretable features [*u*case], [*u*gender], and [*u*number] on the wh-word externalized as an inflection. However, no such effect was observed regarding the splitting operation: very little residual indeterminacy was reported as demonstrated by the participants selecting both entailments (1,82% of all experimental tokens elicited). The FTFAH is confirmed in that high intermediate through advanced L2 participants demonstrate native-like performance regarding the correct assignment of the wh-word to the respective object. Similar results were reported in Nossalik (2008, 2009) in relation to Russian outer aspect, which is sometimes claimed unattainable (Laleko, 2010; Mikhaylova, 2018).

When separate proficiency levels are considered, the obtained result clearly suggests that the operation of splitting and the uninterpretable features externalized as an adjectival inflection on the wh-word, which are absent from the L2 learners' L1 (Turkish), can be fully internalized. The experimental group did not successfully

perform on short-distance splits at level A2 (mean accuracy=72%), but was successful at level B1 (mean accuracy=84%), whereas the accuracy on nominal split constructions in the B2-C2 group constitutes over 84% across all conditions. This result is statistically indistinguishable from the L1 group (*Z* value = -2.04, *p*=.25).

The feminine short condition comprising a local ambiguity on the wh-word revealed lower L2 accuracy with respect to the other short-distance conditions, a similar outcome reported in Lichtman (2009), the study pertaining to the distance between the noun and the adjective (with predicatively used adjectives). Specifically, the accuracy of the A2 group is 68,1% and the accuracy of the B1 group is 80.1%, which can be accounted for a failure to effectively reassess the sentence as a Garden-path context. This outcome may be regarded as the prediction of the BH in that this domain constitutes a microparameter in the scope of functional morphology and poses extreme difficulty for L2 Russian learners: the inflection *–oj* on the wh-word is the default form specified for [*u*case: Accusative], [*u*gender: Masculine], and [*u*number: Singular]. Its interpretation as [*u*case: Dative], [*u*gender: Feminine], [*u*number: Singular] is "marked". Hence, it is the functional morphology that constitutes difficulty. As L2 learners advance, their performance gradually converges with that of the control group: the accuracy of the B2-C2 proficiency group is 94.2%, which is indistinguishable for other short-distance splits. No statistical difference is attested between proficiency level B2-C2 and the L1 controls ($p = 1$). Hence, at higher levels L2 learners can use garden-path strategies at native-like level, which confirms the predictions of the BH and FTFAH in that this domain is acquirable and rejects the IH in that L2 cannot acquire it. In addition, the provisions of the SSH in that L2 learners permanently process syntactic information in a "shallower" fashion compared to the L1 group, do not hold either. Contrary to the above hypotheses arguing for the representational deficit, positive evidence in favour of the BH and FTFAH is reported in Slabakova (2003) and Nossalik (2008, 2009) with regard to the acquisition of L2 Russian verbal domain.

Regarding the Masculine long condition, the IH predicted that L2 learners might erroneously co-reference the *–oj* inflection on the wh-word, specified for [*u*case: Accusative], [*u*gender: Masculine], and [*u*number: Singular] with a dative animate masculine noun in constructions of the following kind: *Kakoj ty drugu podaril podarok?* 'Which gift did you give to your friend?'. It is important to note that the

same form (*Kakoj*) is the default form for the wh-word. This prediction arises from the premise of the IH suggesting that adult L2 speakers are not likely to acquire uninterpretable formal features not realized in the L1 grammar (Franceschina, 2001, 2003, 2005; Tsimpli & Mastropavlou, 2007). Should this claim be operational, L2 Russian learners would have erroneously assign the default masculine form of the wh-word to the closest masculine noun regardless of the case it is specified for. A similar result was observed in Cherepovskaia & Slioussar (2018), where low-level L2 Russian learners tended to utilize default morphology when utilizing nouns and adjectives to compose texts, nevertheless, no higher proficiency group was employed. Albeit L2 participants at lower levels of proficiency display decreased accuracy (35,6% for A2, 65.2% for the B1 group) – which is in line with the BH and the FTFAH – no such outcome has been observed in the higher proficiency group: the B2-C2 proficiency group's accuracy is 82.2%. This result is over the threshold accounting for a successful acquisition of a functional category according to Slabakova (2003: 285). Besides, it is very similar with the accuracy regarding other long-distance conditions (Gender Mismatch Long - 85.1% and Feminine Long 84.8%, no statistically significant difference is found between the conditions: *H* value = 0.24, *p*=.89). This outcome clearly indicates that the predictions of the IH do not hold.

C. L1-L2 Accuracy on Short vs. Long Russian Split NPs

As the L1 group is considered, no statistical difference has been attested with regard to the distance of the split in d-linked wh-questions (*U* value = 1599, *p*=.5). The L1 population's performance on short- versus long-distance splits is virtually indistinguishable (above 97% on average), which suggests they approach these contexts uniformly.

In contrast to the over-the-top performance by the L1 milieu, the L2 population demonstrated a stark difference with a view to the distance of the split: the accuracy on short-distance conditions (except for the Feminine Short due to a local ambiguity case requiring the Garden-path strategy) is quite satisfactory even at level A2. Conversely, long-distance splits have proved extremely challenging for the L2 population: it is only at higher levels that they can be regarded as fully acquired.

Taking into account the fact that the difference between the short-distance and the long-distance conditions is statistically insignificant (see Tables 20 and 21 above),

is it possible to compare the short-distance and the long-distance conditions as aggregates. Specifically, at level A2 the average accuracy on short splits constitutes 77.2% versus 37.9% on long splits. Hence, short splits are challenging but can provisionally be regarded as acquired, whereas long splits are still insurmountably hard. Intermediate L2 learners demonstrated the average accuracy of 85,2% on short splits versus 67.8% on long splits. This result implies that short-distance splits and the associated functional morphology are successfully acquired whereas long-distance splits still lag behind. At levels B2-C2 the average accuracy for short splits is 94.7% and 84.2% for long splits, which is close to the accuracy of the L1 population. Ultimately, no statistical difference is attested within the B2-C2 group with regard to short- and long-distance conditions: *U* value = 321, *p*=.18. Again it is clear evidence that at higher levels of attainment L2 Russian leaners can converge with the L1 group, and the interpretation of long-distance splits is on par with the interpretation of short-distance splits. Hence, the BH and the FTFAH are strongly confirmed whereas the predictions of the IH are cast doubt on.

Primarily we attested this outcome to the probable reassemblance of uninterpretable features (the morphological reflex) and issues assigning the externalized inflection on the wh-word with the necessary argument (the syntactic reflex). However, it seems to be attributed to the processing load rather than language-internal causes (Pienemann, 1998). The research by Lichtman (2009) presents similar data in relation to the agreement of attributively and predicatively used adjectives with nouns.

Recall our assumption that the L2 learners' tendency to select both entailments would suggest that the syntactic reflex is not yet in place, thus casting doubt on the prediction of the BH in that the syntactic reflex is internalized prior to the morphological one. In contrast to this provisional conjecture, we have obtained only 42 incidents of L2 Russian learners selecting both options, which accounts for 1.82% of all the tokens pertaining to the L2 Russian group (total number of tokens = 2304). This result clearly indicates that L2 learners have successfully internalized the syntactic reflex and are not likely to experience challenges regarding the syntactic operation per se. Hence, no residual indeterminacy and optionality in regard to selecting both entailments. This outcome corroborates the tenets of the BH in that the syntactic reflex is acquired early on. In contrast, the predictions of the IH do not hold

in that the uninterpretable features not instantiated in the L2 learners' L1 are unacquirable.

The most important point here is that L2 learners have demonstrated considerably higher accuracy on short-distance split type correlated with assigning the wh-word inflection on Dative nouns, which are "marked". On the other hand, assigning the wh-word inflection on Accusative nouns, which are acquired first (Andrjushina et al, 2009; Nahabina et al, 2001), has turned out noticeably more challenging due to the distance effect, which is also reported in Lichtman (2009). This fact can clearly be accounted for increased processing cost associated with parsing split NPs rather than issues related to the acquisition of functional morphology or adjective agreement. This radical finding may direct SLA theorists to develop strategies in order to enhance L2 learners' processability abilities instead of focusing on language-internal structures: the language system has a high potential to be fully acquired regardless of overt instruction, which is evident with split constructions in L2 Russian. To reiterate, split constructions are never ever taught in any L2 Russian class, hence a PoS situation.

VII. CONCLUSION AND PROPOSALS

A. Conclusion

The results of the analysis, both across the groups and the experimental conditions, suggest that split d-linked wh-questions may pose a serious challenge for L2 Russian learners. Short-distance splits are expected to be unrepresented at level A1 and start to emerge at proficiency levels A2 through B1. They tend to be acquired at level B1 whereas long-distance splits fail to be completely internalized until L2 learners reach higher levels of proficiency (B2 and up), which confirms the predictions of the BH and the FAFTH and casts doubt on the IH and the SSH. The important finding has been that uninterpretable features realized as functional morphology on the wh-word and adjective agreement can be acquired successfully despite being absent from the learners' L1, which refutes the tenets put forward by the IH. Specifically, our evidence suggests that uninterpretable features are not developmentally constrained and can be acquired following the Critical Age. The syntactic operation of splitting per se is not likely to pose extreme challenge, which supports the BH and refutes the SSH in that L2 learners cannot process long-distance dependencies. Additional factors such as a local ambiguity, which may activate a Garden path strategy (Clahsen & Felser, 2006), and the distance of the split are likely to have a detrimental effect on the L2 learner's performance.

B. Implications and Suggestions for Future Research

Instead of testing the (non)grammaticality judgment in an explicit way, and for the purpose of testing the underlying representation implicitly, we have decided to employ responses to a d-linked interrogative, which would elicit two different behaviours from the learners: either to co-reference the wh-word with the animate Goal expressed by a Dative noun, or with the inanimate Theme expressed by an Accusative noun. This design provided us with the insight into the strategies employed by L2 learners, and allowed us to further analyse L2 competence regarding the

acquisition of the uninterpretable features, which are required in calculating adjective agreement.

Since the research instrument in the current enquiry was not time-constrained, no comprehensive data have been obtained regarding the processability load experienced by the participants. Approaching the acquisition of adjective morphology on the wh-word in split contexts from the processability framework could yield interesting results. Additionally, the processability issues of globally ambiguous conditions, which were disregarded from the current study, can also be tackled in further research. Our enquiry employed only transparent inflections that are discerned fairly easily, for this reason a replication of the current enquiry with opaque morphology may provide additional evidence.

Our study focused on the interpretation but not the production of split d-linked wh-questions by L2 Russian learners. In this respect, it might be useful to conduct further research on split nominal phrases, which would also include production or grammaticality judgment tasks. A grammaticality judgment task would be an effective tool in order to measure L2 learners' sensitivity to grammatical and ungrammatical wh-word reference in the scope of split d-linked questions. There can be a separate split d-linked question or a discourse situation containing a split d-linked question utilized as a test item.

C. Limitations of the Current Study

In section III.E. we stated that comprehension constitutes the main locus of our study to test the BH. Owing to the complexity of the instrument design required to test production, it was decided not to include a production task into the instrument. Besides, in line with the evidence presented in Kempe & MacWhinney (1998) and Mikhaylova (2011), considerable variability and residual indeterminacy in globally ambiguous contexts may be expected even in higher proficiency levels, which can considerably encumber our enquiry. Due to these reasons and the inferences suggested by the Pilot studies, globally ambiguous contexts are not in the scope of our research.

Due to the complexity of the research instrument manifested in multiple testing stimuli, we also had to limit the range of noun classes to be used. Specifically, we have decided not to utilize nouns of the neutral gender, which only account for about 13%

of the Russian lexicon (Polinsky, 2008: 4); and nouns with non-transparent endings, which cause most issues for L2 Russian learners in terms of gender assignment (Laleko, 2019). It is plausible that the results might have been different, should the aforementioned categories of nouns have been included in the instrument design. It is safe to claim, though, that the performance of the L2 population would decline significantly since nouns of neutral gender and nouns with non-transparent endings are somewhat marginal and constitute challenging domains in L2 Russian acquisition (Schwartz et al., 2015; Taraban & Kempe, 1999). Nevertheless, acquisition of marginal domains of L2 Russian could become a perspective field for future research.

Apart from the above, since our enquiry was designed in the Generative syntax framework, we did not delve into issues related to processability. Needless to say, had we approached split d-linked wh-questions in L2 Russian from the Processability Theory position (Pienemann, 1998), the research instrument and the interpretation of the obtained results would have been completely different.

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APPENDICES

Language Background Questionnaire (L1 Russian group)

Уважаемые друзья,

Благодарю Вас за согласие принять участие в научном исследовании, которое впоследствии поможет студентам-иностранцам в овладении русской грамматикой.

Прошу обратить внимание, что цель - не протестировать Ваши знания, а улучшить методологию преподавания русского языка как иностранного. Полученные данные будут обработаны в рамках докторской диссертации по общей теме «Овладение русским языком как иностранным».

Любые вопросы по содержанию анкеты и тестов Вы можете получить по телефону/Whatsapp:
(+90) 534 744 8636 или по электронной почте: dimakulsha@yahoo.com.
Дмитрий Кульша.

Пожалуйста, укажите действительный адрес электронной почты: Email

Я согласен/согласна принять участие в научном исследовании Да / Нет

Дата заполнения:

Анкета опыта и знания языков
Имя
Возраст: лет
Пол: М /Ж

(1) Пожалуйста, перечислите все языки, которые вы знаете, по уровню владения в порядке убывания:

(2) Пожалуйста, перечислите все языки, которые вы знаете, в порядке их изучения, начиная с родного:

(3) Пожалуйста, перечислите, сколько времени в процентном соотношении вы в среднем пользуетесь каждым языком в настоящее время. (Проценты должны в сумме давать 100%). Пример: русс.-70% англ.-30%

(4) При чтении текста, доступного на всех языках, которыми вы владеете, в каком процентном отношении вы бы предпочли читать на каждом языке?

Представьте, что оригинал был написан на неизвестном вам языке. (Проценты должны в сумме давать 100%). Пример: русс.-70% англ.-30%

(5) При выборе языка для беседы с человеком, который одинаково хорошо говорит на всех языках, которыми вы владеете, в каком процентном соотношении вы бы предпочли разговаривать на каждом из языков? Пожалуйста, укажите процент времени в совокупности. (Проценты должны в сумме давать 100%). Пример: русс.-70% англ.-30%

(6) На шкале от нуля до пяти, пожалуйста, оцените, в какой мере вы себя относите к каждому языку и культуре (порядок, как в вопросе 5). 0 - Нет принадлежности, 5 - абсолютная принадлежность

Первый язык и культура	0 – 1 – 2 – 3 – 4 – 5
Второй язык и культура	0 – 1 – 2 – 3 – 4 – 5
Третий язык и культура	0 – 1 – 2 – 3 – 4 – 5
Четвертый язык и культура	0 – 1 – 2 – 3 – 4 – 5
Пятый язык и культура	0 – 1 – 2 – 3 – 4 – 5

(7) Сколько всего лет вы обучались в образовательном учреждении?
Менее 5 лет / 5-7 лет / 7-10 лет / 11-15 лет / 16 лет и больше

Отметьте, пожалуйста, какой самый высший уровень образования вы имеете: менее, чем среднее общее / среднее общее / среднее специальное/техническое / неоконченный бакалавриат / высшее/бакалавриат / неоконченная магистратура / магистратура / кандидат наук/доктор наук

(8) У вас когда-либо были проблемы со слухом__, зрением__, нарушения речи__, или недостаточная специфическая обучаемость__? (выберите все, что подходит).

Если да, пожалуйста, объясните (включая средства, которые вы используете для коррекции, например, очки, слуховой аппарат и т.п.)

Спасибо за ответы. Теперь приступайте к тесту.

Language Background Questionnaire (L2 Russian group)

Уважаемые друзья,
Это исследование проводится в рамках докторской диссертации по общей теме «Овладение русским языком как иностранным». Прошу обратить внимание, что цель - не протестировать Ваши знания, а улучшить методологию преподавания русского языка как иностранного. Полученные в результате данные помогут студентам, которые с трудом осваивают русскую грамматику.
Выражаю Вам признательность за согласие помочь.
Любые вопросы по содержанию анкеты и тестов Вы можете получить по телефону:
(+90) 534 744 8636 или по электронной почте: dimakulsha@yahoo.com.
Дмитрий Кульша.

Пожалуйста, укажите действительный адрес электронной почты:
Email

Оставьте, пожалуйста, свой контактный номер телефона или другой мессенджер для возможных уточнений (необязательно)

Я согласен/согласна принять участие в научном исследовании Да / Нет
Дата заполнения:

Анкета опыта и знания языков (можете использовать латиницу)
Имя
Возраст: лет
Пол: М /Ж

(1) Пожалуйста, перечислите все языки, которые вы знаете, по уровню владения в порядке убывания:

(2) Пожалуйста, перечислите все языки, которые вы знаете, в порядке их изучения, начиная с родного:

(3) Сколько всего лет вы обучались в образовательном учреждении?
Менее 5 лет / 5-7 лет / 7-10 лет / 11-15 лет / 16 лет и больше

(4) Отметьте, пожалуйста, какой самый высший уровень образования вы имеете:
менее, чем среднее общее / среднее общее / среднее специальное/техническое / неоконченный бакалавриат / высшее/бакалавриат / неоконченная магистратура / магистратура / кандидат наук/доктор наук

(5) У вас когда-либо были проблемы со слухом__, зрением__, нарушения речи__, или недостаточная специфическая обучаемость__? (выберите все, что подходит).

Если да, пожалуйста, объясните (включая средства, которые вы используете для коррекции, например, очки, слуховой аппарат и т.п.)

Все вопросы ниже относятся к знанию РУССКОГО ЯЗЫКА КАК ИНОСТРАННОГО (РКИ).
Русский язык - это мой _____ язык
первый
второй
третий
четвертый

(1а) Возраст (лет), когда вы начали изучать русский язык
(1б) Возраст (лет), когда вы смогли бегло говорить по-русски
(1в) Возраст (лет), когда вы начали читать по-русски
(1г) Возраст (лет), когда вы смогли бегло читать по-русски
(2) Пожалуйста, отметьте количество лет, которые вы провели в каждой языковой среде.
Rows: меньше года / 1-2 года / 3-4 года / 5-6 лет / 7-8 лет / 9-10 лет / больше 10 лет
Collumns:

Страна, где говорят по-русски	
Семья, в которой разговаривают по-русски	
Место учебы и/или место работы, где разговаривают по-русски	
Страна, где говорят по-русски	
Семья, в которой разговаривают по-русски	
Место учебы и/или место работы, где разговаривают по-русски	

(3) На шкале от нуля до пяти, пожалуйста, определите ваш уровень понимания, говорения и чтения на русском языке. 0 - нулевой, 5 – совершенный

Понимание	0 – 1 – 2 – 3 – 4 – 5
Говорение	0 – 1 – 2 – 3 – 4 – 5
Чтение	0 – 1 – 2 – 3 – 4 – 5

(4) На шкале от нуля до пяти, пожалуйста, отметьте, в какой степени нижеприведенные факторы повлияли на изучение русского языка. 0 - не повлияло, 5 - сильное влияние

Общение с друзьями	0 – 1 – 2 – 3 – 4 – 5
Общение с семьей	0 – 1 – 2 – 3 – 4 – 5
Чтение	0 – 1 – 2 – 3 – 4 – 5
Интернет/самообучение	0 – 1 – 2 – 3 – 4 – 5
Просмотр телевизора	0 – 1 – 2 – 3 – 4 – 5
Прослушивание музыки	0 – 1 – 2 – 3 – 4 – 5

(5) Пожалуйста, отметьте, в какой степени в настоящее время вы используете русский язык в следующих ситуациях. 0 - не использую, 5 - постоянно использую

Общение с друзьями	0 – 1 – 2 – 3 – 4 – 5
Общение с семьей	0 – 1 – 2 – 3 – 4 – 5
Чтение	0 – 1 – 2 – 3 – 4 – 5
Интернет/самообучение	0 – 1 – 2 – 3 – 4 – 5
Просмотр телевизора	0 – 1 – 2 – 3 – 4 – 5
Прослушивание музыки	0 – 1 – 2 – 3 – 4 – 5

Спасибо за ответы. Теперь приступайте к тесту.

L2 Russian Language Proficiency Task

The following test, kindly shared with me by Rumyana Slabakova, was utilized in order to assess the L2 Russian proficiency level of the L1 Turkish participants. The test was administered using the online platform, Google Docs.

Поры года

Когда пришло Лето, Весна ещё не (1 А.пришла Б.ушла В.уходила). Лето принесло ей большой букет тюльпанов и (2 А.роз Б.розы В.роза) и сказало: “Я люблю тебя, милая Весна, поверь (3 А.мне Б.меня В.мной), не уходи, оставайся со мной!” Но Весна ушла. (4 А.Оно Б.Она В.Он) не любила Лето.

Лето так расстроилось, что (5.А.при Б.у В.для) него поднялась температура. (6 А.Им Б.Его В.Ему) стало очень жарко. Через некоторое время пришла Осень, которая любила Лето. “Не уходи, (7 А.приходи Б.останься В.возвращайся) со мной, я люблю тебя, милое Лето”, – сказала Осень и осыпала (8 А.его Б.ему В.им) с ног до головы (9 А.фруктам Б.фруктами В.фруктов). Но ведь Лето любило (10 А.Весной Б.Весна В.Весну) и поэтому оно ушло. Осень заплакала и так долго и часто (11 А.заплакала Б.поплакала В.плакала), что промокли леса и поля, улицы и площади, дома и дороги. Она грустила с утра (12 А.от Б.до В.у) вечера. Но Лето так и не вернулось.

Скоро пришла седая Зима со своим сыном (13 А.Мороза Б.Морозом В.Мороз), который любил и очень хотел видеть Осень. Он сказал: “Не плачь, золотая Осень! Я (14 А.ненавижу Б.люблю В.боюсь) тебя, я не могу жить без (15 А.тебя Б.тобой В.тебе), будь со мной! Я построю тебе ледяной дворец, сделаю (16 А.просеки Б.дороги В.мосты) через могучие реки, буду петь тебе красивые (17 А.сказки Б.танцы В.песни).” Но Золотая Осень любила Лето и не осталась с Морозом. После (18 А.этим Б.этого В.этот) Мороз рассердился: пошёл снег, за одну ночь всё вокруг стало (19 А.белым Б.белое В.белая), поднялся ветер, началась вьюга.

“Не расстраивайся, сынок”,– (20 А.сказала Б.отвечала В.приглашала) ему мать, –“постарайся (21 А.застать Б.запомнить В.забыть) Осень. Ведь тебя любит красавица Весна”. “Я боюсь (22 А.ей Б.её В.она”,– сказал Мороз. Но вот в один прекрасный день (23 А.улетела Б.прилетела В.вылетела) Весна. Она принесла (24 А.Зимой Б.Зиме В.Зиму) голубые подснежники. “Скажи, бабушка Зима, где твой сын Мороз?” – (25 А.улыбнувшись Б.улыбаясь В.улыбнуться) спросила она. “Мой сын боится тебя, не (26 А.говори Б.ищи В.оставь) его”, – сказала Зима и, взяв сына, ушла от (27 А.Весна Б.Весны В.Весной).

С этого дня (28 А.погрустила Б.грустила В.загрустила) Весна. Она стала плакать. Она плакала день, два, а потом (29 А.смотрела Б.посмотрела В.рассмотрела) вокруг, улыбнулась и подумала: “Что я плачу? Ведь я молодая, красивая, и у меня много (30 А.дела Б.дел В.делов). И всё надо успеть сделать, (31 А.поэтому Б.чтобы В.что) хорошо встретить Лето”. Сказала это, перестала плакать и с этой минуты взялась за дело: сразу растаял снег, побежали ручьи, зазеленела трава, зацвели деревья, прилетели и начали петь птицы.

Entailments Task Items

Пример:
У наших детей в саду был урок рисования. Один из мальчиков попросил меня помочь ему дорисовать картину.
- Какой мальчик попросил тебя дорисовать картину?
Вы бы ответили:
А.- Он попросил меня.
Б.- Мальчик Саша.

Правильный ответ Б.

1. Мой старый рабочий портфель порвался, я пришлось сшить новый. Он обошелся мне достаточно дорого.

- **Какой портфель ты сшил для работы?**
- А. Я на работу сшил портфель из кожи. (correct)
- Б. Я для работы сшил портфель из кожи. (correct)

2. В последнее время у меня скопилось много работы, и часть мне пришлось передать одному из наших сотрудников. Теперь он этим занимается.

- **Какому ты сотруднику передал работу?**
- А. Сотруднику, который в офисе напротив. (correct)
- Б. Работу, связанную с последним проектом.

3. Недавно у нас был экзамен по истории, и для подготовки к нему я использовал всего один учебник, и прекрасно сдал экзамен.

- **Какой учебник ты использовал для экзамена?**
- А. Для экзамена я использовал учебник Иванова. (correct)
- Б. На экзамен я использовал учебник Иванова. (correct)

4. В конце каждого урока я студентам задаю задачу-вопрос. Правда, далеко не все могут ответить правильно. Сегодня задал вопрос, на который ответил только один студент.

- **Какой ты студенту задал вопрос?**
- А. Вопрос по истории Средних веков. (correct)
- Б. Студенту, который постоянно уроки пропускает.

5. Вчера сразу у двух моих подруг был день рождения. С одной из них получилось увидеться, и я подарил ей книгу.

- Какой ты подруге подарил книгу?
- А. Моей подруге Тане. (correct)
- Б. Интересную книгу про путешествия.

6. Мы переехали в другое здание, и теперь у нас новый офис. Я туда поставил новый компьютер.

- **Какой компьютер ты поставил в офис?**
- А. Я поставил в офис компьютер Самсунг. (correct)
- Б. Я поставил на офис компьютер Самсунг.

7. Во время последнего награждения мне повезло: я сам вышел на сцену и вручил статуэтку любимому актеру.

- **Какую ты актеру вручил статуэтку?**
- А. Статуэтку, которая выглядит, как «Оскар». (correct)
- Б. Актеру, который снимался в фильме «Лето».

8. Так как я потерял ключ от одного из наших офисов, мне пришлось заказывать себе новый.

- **Какой ключ ты заказал для офиса?**
- А. Я от офиса заказал секретный ключ. (correct)
- Б. Я для офиса заказал секретный ключ. (correct)

9. Наконец закончились экзамены и студенты могут отдохнуть. Вчера я проэкзаменовал трёх студентов и двух студенток. Одна студентка получила очень низкую оценку.

- **Какую ты студентке поставил оценку?**
- А. Я ей поставил пять баллов из двадцати. (correct)
- Б. Студентке, которая пропустила почти все занятия.

10. Мы всегда стремимся все заказы выполнять в срок. Вчера одному из заказчиков мы отправили пакет в полночь.

- **Какому ты заказчику отправил пакет?**
- А. Заказчику из Минска. (correct)
- Б. Пакет с новыми образцами тканей.

11. Я решил купить что-нибудь новое для музыки и поехал в магазин техники. Там выбрал пару вещей.

- **Какую технику ты выбрал в магазине?**
- А. Я выбрал на магазине колонки и усилитель.
- Б. Я выбрал в магазине колонки и усилитель. (correct)

12. Наш отель недалеко от центра, и туристы часто оставляют у нас багаж на хранение. Вчера один турист хотел оставить подозрительную сумку, но я ее не принял, отдал обратно.

- **Какому ты туристу отдал сумку?**
- А. Сумку, которая была покрыта маслом.
- Б. Туристу, который грубо себя вел. (correct)

13. Для того чтобы работать с большим количеством данных, я купил специальную

программу. Сам ее установил, все на компьютере работает.

- **Какую программу ты установил на компьютер?**
- А. Я установил на компьютере программу-ускоритель.
- Б. Я установил на компьютер программу-ускоритель. (correct)

14. Так как мне срочно понадобились деньги, я решил продать один из своих домов. Так получилось, что его купил сосед.

- **Какой ты соседу продал дом?**
- А. Соседу, который вообще собирался машину покупать.
- Б. Дом, который около речки. (correct)

15 Мы переехали в новую квартиру, и я купил немного новой мебели. Сегодня принес диван в спальню.

- **Какой диван ты принес для спальни?**
- А. Я принес красный диван в спальни. (correct)
- Б. Я принес красный диван для спальни. (correct)

16. В саду остались две девочки, из которых одна была голодной, и я ей пожарила котлету.

- **Какой ты девочке пожарила котлету?**
- А. Котлету, которую я нашла в холодильнике.
- Б. Девочке, мама которой работает в школе. (correct)

17. Мы в компании проводим ряд изменений, и вчера я одному из менеджеров предложил хорошую идею.

- **Какую ты менеджеру предложил идею?**
- А. Менеджеру, который занимается продажами.
- Б. Идею, как можно увеличить продажи. (correct)

18. Только вчера понял, что у нас совершенно пустой балкон, и решил купить цветок. Для этого сходил в хозяйственный магазин.

- **Какой цветок ты купил для балкона?**
- А. Я для балкона купил цветок в горшке. (correct)
- Б. Я на балкон купил цветок в горшке. (correct)

19. Когда я ждал своей очереди, чтобы зайти к доктору, в коридоре играла девочка. Я решил дать ей конфету, но ее мама рассердилась на меня.

- **Какую ты девочке дал конфету?**
- А. Той девочке в красном платье.
- Б. Шоколадную конфету, очень вкусную. (correct)

20. Во время долгой поездки в такси водитель мне рассказал несколько историй из своей жизни. Я тоже ему рассказал один случай.

- **Какой ты таксисту рассказал случай?**
- А. Случай, когда я не успел на рейс. (correct)
- Б. Таксисту, который меня отвозил в аэропорт.

21. При въезде в Россию я заполнил въездные документы, там была только одна форма.

- **Какую форму ты заполнил на границе?**
- А. Я заполнил на границе страховку. (correct)
- Б. Я заполнил в границе страховку.

22. В офисе было очень жарко, и во время интервью один из кандидатов попросил меня налить воду.

- **Какому ты кандидату налил воду?**
- А. Кандидату, который приехал из другого города. (correct)
- Б. Воду из-под крана, потому не было воды в бутылках.

23. На уроке я объяснил ученикам новую тему, но одна ученица попросила повторить прошлую тему, и я это сделал на перемене.

- **Какой ты ученице повторил тему?**
- А. Ученице, которая всегда опаздывает. (correct)
- Б. Падеж существительных.

24. Во время прошлой выставки я выбрал только одну картину, которую хотел бы приобрести.

- **Какую картину ты выбрал на выставке?**
- А. Из выставки я выбрал картину с морским видом.
- Б. На выставке я выбрал картину с морским видом. (correct)

25. Около меня остановилось такси, и таксист попросил показать ему дорогу.

- **Какую ты таксисту показал дорогу?**
- А. Дорогу в аэропорт. (correct)
- Б. Таксисту «Убера».

26. Мы в семье иногда читаем друг другу истории или рассказы. Вчера я решил прочитать рассказ одному из братьев.
- **Какому ты брату прочитал рассказ?**
- А. Рассказ про двух друзей из Индии.
- Б. Самому младшему брату, как обычно. (correct)

27. В этой комнате у нас обычно очень жарко, и вчера я наконец поставил туда вентилятор.
- **Какой вентилятор ты поставил для охлаждения?**
- А. Я на охлаждение поставил мощный вентилятор. (correct)
- Б. Я для охлаждения поставил мощный вентилятор. (correct)

28. Я преподаватель вуза. Во время лекции я доказал одной из студенток очень сложную теорему.
- **Какую ты студентке доказал теорему?**
- А. Теорему про углы треугольника. (correct)
- Б. Студентке, которая всегда участвует в дискуссиях.

29. На уроке мы рассмотрели несколько примеров и ответов к ним. Один ученик не понял тему, и я ему объяснил все на перемене. Я снова разъяснил ответ.
- **Какой ты ученику разъяснил ответ?**
- А. Ученику, который постоянно что-то не понимает.
- Б. Ответ на пример про изменение давления. (correct)

30. Когда делал планы на отпуск, то поехал в агентство и удачно купил поездку в горы.
- **Какую ты поездку купил в агентстве?**
- А. Я в агентстве купил поездку на Альпы.
- Б. Я в агентстве купил поездку в Альпы. (correct)

31. Очень часто бабушки вяжут одежду для своих детей и внуков. Вот и я связала кофту для одного из своих внуков.
- **Какому ты внуку связала кофту?**
- А. Теплую кофту из чистой шерсти.
- Б. Внуку, который живет в Москве. (correct)

32. У одной из моих дочерей день рождения, и я вчера час потратил, чтобы выбрать ей в подарок игрушку.
- **Какой ты дочке выбрал игрушку?**
- А. Игрушку – большого плюшевого медведя.
- Б. Дочке, которой исполнилось пять лет. (correct)

33. Мы любим пить чай с конфетами или с шоколадом. На этот раз я прислал шоколад, а не конфеты.
- **Какой шоколад ты прислал для чая?**

- А. Для чая я прислал черный шоколад. (correct)
- Б. На чай я прислал черный шоколад. (correct)

34. Вчера на собрании мы отбирали брошюры для печати. Я предложил директору одну из новых брошюр.
- **Какую ты директору предложил брошюру?**
- А. Директору по персоналу.
- Б. Брошюру, которую подготовил Вадим. (correct)

35. Вчера во время игры я удачно дал пас игроку, который забил гол.
- **Какому ты игроку дал пас?**
- А. Игроку, который пришел к нам на прошлой неделе. (correct)
- Б. Это был длинный пас.

36. Вчера вечером я возвращался уставший с работы домой на автобусе и оставил там сумку.
- **Какую сумку ты оставил в автобусе?**
- А. Я оставил на автобусе красную сумку.
- Б. Я оставил в автобусе красную сумку. (correct)

37. На конференции много кто обращался по поводу работы – у нас есть одна вакансия. Я пообещал работу одной талантливой девушке.
- **Какую ты девушке пообещал работу?**
- А. Девушке, которая уже присылала резюме.
- Б. Работу, связанную с иностранными клиентами. (correct)

38. Во время последнего обсуждения будущих планов компании я представил начальнику интересный проект.
- **Какой ты начальнику представил проект?**
- А. Проект постройки нового корпуса. (correct)
- Б. Начальнику нашего отдела.

39. Во время поездки по Индии я фотографировал на камеру, а потом испортилась батарея, и пришлось использовать телефон для большой реки.
- **Какую реку ты фотографировал на телефон?**
- Я в телефон фотографировал реку Ганг.
- Я на телефон фотографировал реку Ганг. (correct)

40. После прекрасно проведенной операции я подарил доктору особенную картину.
- **Какую ты доктору подарил картину?**
- А. Картину, написанную талантливым русским художником. (correct)
- Б. Доктору, который делал операцию на плече.

41. Один из наших пациентов на диете, и я сварила для него особенную кашу.
- **Какому ты пациенту сварила кашу?**
- А. Пациенту из второй палаты. (correct)
- Б. Кукурузную кашу, первый раз такую ел.

42. Когда мы семьей ездили за покупками, на стоянку рядом с торговым центром припарковали очень красивую машину.

- **Какую машину ты видел на стоянке?**
- А. Я в стоянке видел «Волгу» пятидесятых годов.
- Б. Я на стоянке видел «Волгу» пятидесятых годов. (correct)

43. Во время прогулки я увидел собаку и бросил ей кусок колбасы, который случайно оказался у меня в руке. А она меня чуть не укусила.

- **Какую ты собаке бросил колбасу?**
- А. Колбасу, которую купил на ужин. (correct)
- Б. Рыжей собаке, которая обычно около нашего подъезда.

44. Я коллекционирую монеты, и на прошлой неделе был монетный аукцион. Я там выиграл очень редкую монету.

- **Какую монету ты выиграл на аукционе?**
- А. Я на аукционе выиграл монету Крита. (correct)
- Б. Я в аукционе выиграл монету Крита.

45. Один из редакторов нашего журнала давно просил меня написать что-нибудь для издания. Наконец удалось написать небольшой рассказ.

- **Какому ты редактору написал рассказ?**
- А. Рассказ про полет к Солнцу.
- Б. Редактору отдела «Публицистика». (correct)

46. Я работаю в бухгалтерии, и мы выдаем зарплату в конце месяца. Но одной работнице выплату очень задержали, и я ей выдал зарплату только вчера.

- **Какой ты работнице выдал зарплату?**
- А. Работнице из машинного отделения. (correct)
- Б. Зарплату за последние два месяца.

47. Нашему ребенку мы всегда на обед готовим суп. Вчера я решил приготовить очень необычный суп.

- **Какой суп ты приготовил для ребенка?**
- А. Я приготовил ребенку суп из яйца. (correct)
- Б. Я приготовил для ребенка суп из яйца. (correct)

48. Во время семинара один из студентов не понимал, как решить задачу, и мне пришлось два часа потратить, чтобы он ее наконец понял.

- **Какому ты студенту объяснил задачу?**
- А. Задачу по механике.
- Б. Студенту второго курса. (correct)

48. Когда я получал зарплату, один из кассиров выдал мне сумму больше, чем нужно. Наконец, я смог возвратить разницу.

- **Какую ты кассиру возвратил разницу?**
- А. Разницу в 400 рублей. (correct)
- Б. Кассиру, который работает утром.

50. Сегодня будет собрание комиссии, чтобы выслушать наши ответы касательно новой программы.

- **Какой ответ ты подготовил для комиссии?**
- А. Я для комиссии подготовил расширенный ответ. (correct)
- Б. Я комиссии подготовил расширенный ответ.

51. Вчера у одного из моих друзей был юбилей, и я ему сделал небольшой сюрприз.
- **Какой ты другу сделал сюрприз?**
- А. Другу, который меня принял на работу.
- Б. Сюрприз – билет на горнолыжный курорт. (correct)

52. Когда мне не хватало на покупку телевизора в прошлом году, один из друзей меня выручил и дал взаймы. Наконец, я смог вернуть долг.
- **Какому ты другу вернул долг?**
- А. Другу, с которым тебя знакомил весной. (correct)
- Б. Долг был примерно 5000 рублей.

53. Когда работа уже была сделана, я просто встал из-за стола и пошел домой. Только потом вспомнил, что оставил там свою любимую ручку.
- **Какую ручку ты оставил на столе?**
- А. Я на столе оставил черную ручку. (correct)
- Б. Я в столе оставил черную ручку.

54. В школе я часто показываю детям разные игры. Вчера одной ученице показала хорошую игру.
- **Какую ты ученице показала игру?**
- А. Ученице, которая неделю назад пришла.
- Б. Игру, которой ты меня научил. (correct)

55. Мы решили сделать в коридоре ремонт и поменять все шкафы. Теперь там будет один шкаф. Я сам его собрал.
- **Какой шкаф ты собрал для коридора?**
- А. Шкаф для коридора из Икеи. (correct)
- Б. Шкаф коридору из Икеи. (correct)

56. На работе мне всегда помогает одна сотрудница. Я решил её отблагодарить и купил ей хорошую книгу.
- **Какой ты сотруднице купил книгу?**
- А. Сотруднице, которая меня иногда заменяет по выходным. (correct)
- Б. Новую книгу её любимой писательницы.

57. У нас в автопарке всегда возвращают вещи, которые пассажиры забывают в автобусе. На днях, например, один пассажир забыл кошелек. Вчера он пришел к нам и я вернул ему кошелек.
- **Какому ты пассажиру вернул кошелек?**
- А. Кожаный кошелек с массой кредиток.
- Б. Пассажиру, который сообщил о пропаже вчера утром. (correct)

Information pertaining to the statistical analyses performed: Tables, Plots, Figures

24 P-value for comparisons across conditions and groups

Comparison	p-value	Significance
L1_vs_L2	6,49E-11	1
Kruskal-Wallis Test (All Questions)	9,50E-14	1
A2_vs_B1	3,45E-01	0
A2_vs_B2-C2	3,75E-05	1
B1_vs_B2-C2	3,12E-02	1
A2_vs_L1	7,61E-12	1
B1_vs_L1	5,16E-07	1
B2-C2_vs_L1	2,51E-01	0
L1_mis_short_vs_L2_mis_short	3,20E-05	1
Kruskal-Wallis Test (Mismatch-Short)	9,64E-07	1
mis_short_A2_vs_B1	7,96E-01	0
mis_short_A2_vs_B2-C2	1,85E-03	1
mis_short_B1_vs_B2-C2	1,48E-01	0
mis_short_A2_vs_L1	4,51E-06	1
mis_short_B1_vs_L1	2,74E-03	1
mis_short_B2-C2_vs_L1	1,00E+00	0
L1_mis_long_vs_L2_mis_long	4,47E-11	1
Kruskal-Wallis Test (Mismatch-Long)	1,30E-13	1
mis_long_A2_vs_B1	9,46E-01	0
mis_long_A2_vs_B2-C2	1,18E-04	1
mis_long_B1_vs_B2-C2	1,38E-02	1
mis_long_A2_vs_L1	5,14E-11	1
mis_long_B1_vs_L1	8,23E-08	1
mis_long_B2-C2_vs_L1	2,38E-01	0
L1_masculine_short_vs_L2_masculine_short	7,33E-06	1
Kruskal-Wallis Test (Masculine-Short)	1,74E-08	1
masculine_short_A2_vs_B1	1,60E-02	1
masculine_short_A2_vs_B2-C2	1,12E-04	1
masculine_short_B1_vs_B2-C2	1,00E+00	0
masculine_short_A2_vs_L1	7,55E-09	1
masculine_short_B1_vs_L1	2,76E-02	1
masculine_short_B2-C2_vs_L1	1,00E+00	0
L1_masculine_long_vs_L2_masculine_long	5,02E-10	1
Kruskal-Wallis Test (Masculine-Long)	1,20E-12	1
masculine_long_A2_vs_B1	2,60E-02	1
masculine_long_A2_vs_B2-C2	5,60E-05	1
masculine_long_B1_vs_B2-C2	5,51E-01	0
masculine_long_A2_vs_L1	2,57E-12	1

masculine_long_B1_vs_L1	9,83E-05	1
masculine_long_B2-C2_vs_L1	1,26E-01	0
L1_f_short_vs_L2_f_short	1,04E-06	1
Kruskal-Wallis Test (Feminine-Short)	2,91E-09	1
feminine_short_A2_vs_B1	2,97E-01	0
feminine_short_A2_vs_B2-C2	1,03E-04	1
feminine_short_B1_vs_B2-C2	7,64E-02	0
feminine_short_A2_vs_L1	1,96E-08	1
feminine_short_B1_vs_L1	4,11E-04	1
feminine_short_B2-C2_vs_L1	1,00E+00	0
L1_f_long_vs_L2_f_long	1,42E-08	1
Kruskal-Wallis Test (Feminine-Long)	1,16E-11	1
feminine_long_A2_vs_B1	8,51E-02	0
feminine_long_A2_vs_B2-C2	1,92E-05	1
feminine_long_B1_vs_B2-C2	1,12E-01	0
feminine_long_A2_vs_L1	6,13E-11	1
feminine_long_B1_vs_L1	8,87E-05	1
feminine_long_B2-C2_vs_L1	7,46E-01	0
short_vs_long_L2	9,51E-04	1
l1_short_vs_l1_long	5,00E-01	0
A2_short_vs_A2_long	5,38E-04	1
B1_short_vs_B1_long	1,92E-02	1
B2_C2_short_vs_B2_C2_long	1,83E-01	0
fem_short_vs_fem_long_L2	1,49E-02	1
l1_fem_short_vs_l1_fem_long	9,18E-01	0
A2_fem_short_vs_A2_fem_long	9,10E-04	1
B1_fem_short_vs_B1_fem_long	1,74E-01	0
B2_C2_fem_short_vs_B2_C2_fem_long	5,15E-01	0
Kruskal-Wallis Test (Short Questions for L1)	7,25E-02	0
Kruskal-Wallis Test (Short Questions for L2)	1,63E-01	0
Kruskal-Wallis Test (Short Questions for A2)	6,27E-01	0
Kruskal-Wallis Test (Short Questions for B1)	1,69E-01	0
Kruskal-Wallis Test (Short Questions for B2-C2)	6,80E-01	0
Kruskal-Wallis Test (Long Questions for L1)	9,21E-01	0
Kruskal-Wallis Test (Long Questions for L2)	9,73E-01	0
Kruskal-Wallis Test (Long Questions for A2)	7,32E-01	0
Kruskal-Wallis Test (Long Questions for B1)	7,00E-01	0
Kruskal-Wallis Test (Long Questions for B2-C2)	8,87E-01	0

25 Quantiles: Raw Data

Data	Minimum	1st Quantile	Median	Mean	3rd Quantile	Maximum
l1_scores	32	35	36	35,31	36	36
l2_scores	15	19	26	26,61	35	36
A2_scores	16	17,25	19	19,83	20,75	33
B1_scores	17	19,75	26	26,37	34	36
B2_C2_scores	15	32	35	32,15	36	36
L1_mis_short_scores	5	6	6	5,87	6	6
L2_mis_short_scores	1	4	6	5,13	6	6
A2_mis_short_scores	2	3,625	4	4,50	6	6
B1_mis_short_scores	1	4,5	5,5	5,04	6	6
B2_C2_mis_short_scores	4	6	6	5,70	6	6
L1_mis_long_scores	5	6	6	5,87	6	6
L2_mis_long_scores	0	2	4	3,81	6	6
A2_mis_long_scores	0	1,25	2,5	2,50	3,875	6
B1_mis_long_scores	0	2,5	4	3,54	5,25	6
B2_C2_mis_long_scores	1	5	6	5,11	6	6
L1_masculine_short_scores	5	6	6	5,98	6	6
L2_masculine_short_scores	0	5	6	5,22	6	6
A2_masculine_short_scores	1	3,5	5	4,42	6	6
B1_masculine_short_scores	0	5	6	5,37	6	6
B2_C2_masculine_short_scores	3	6	6	5,70	6	6
L1_masculine_long_scores	5	6	6	5,89	6	6
L2_masculine_long_scores	0	2	4	3,78	6	6
A2_masculine_long_scores	0	1,25	2	2,14	3	5
B1_masculine_long_scores	0	2	4	3,91	6	6
B2_C2_masculine_long_scores	1	5	6	4,93	6	6
L1_f_short_scores	5	6	6	5,87	6	6
L2_f_short_scores	1,5	4	5	4,90	6	6
A2_f_short_scores	1,5	3	4	4,08	5	6
B1_f_short_scores	2	4	5	4,80	6	6
B2_C2_f_short_scores	2	5,75	6	5,63	6	6
L1_f_long_scores	4	6	6	5,82	6	6
L2_f_long_scores	0	2	4	3,77	6	6
A2_f_long_scores	0	1	2	2,19	3,375	6
B1_f_long_scores	0	2	4	3,70	6	6
B2_C2_f_long_scores	0	5	6	5,09	6	6
short_scores_L2	5,5	13,375	17	15,24	18	18
long_scores_L2	0	6	12	11,37	17,5	18
l1_short_scores	16	18	18	17,73	18	18
l1_long_scores	15	17	18	17,58	18	18
A2_short_scores	6,5	10,25	14,25	13,00	16	17
A2_long_scores	0	2,5	7,5	6,83	9,75	17
B1_short_scores	5,5	13,5	16,5	15,22	18	18

B1_long_scores	0	5	12	11,15	17	18
B2_C2_short_scores	10	17	18	17,02	18	18
B2_C2_long_scores	3	15,5	17,5	15,13	18	18
fem_short_scores_L2	1,5	4	5	4,90	6	6
fem_long_scores_L2	0	2	4	3,77	6	6
l1_fem_short_scores	5	6	6	5,87	6	6
l1_fem_long_scores	4	6	6	5,82	6	6
A2_fem_short_scores	1,5	3	4	4,08	5	6
A2_fem_long_scores	0	1	2	2,19	3,375	6
B1_fem_short_scores	2	4	5	4,80	6	6
B1_fem_long_scores	0	2	4	3,70	6	6
B2_C2_fem_short_scores	2	5,75	6	5,63	6	6
B2_C2_fem_long_scores	0	5	6	5,09	6	6

26 All statistical analyses: Raw data

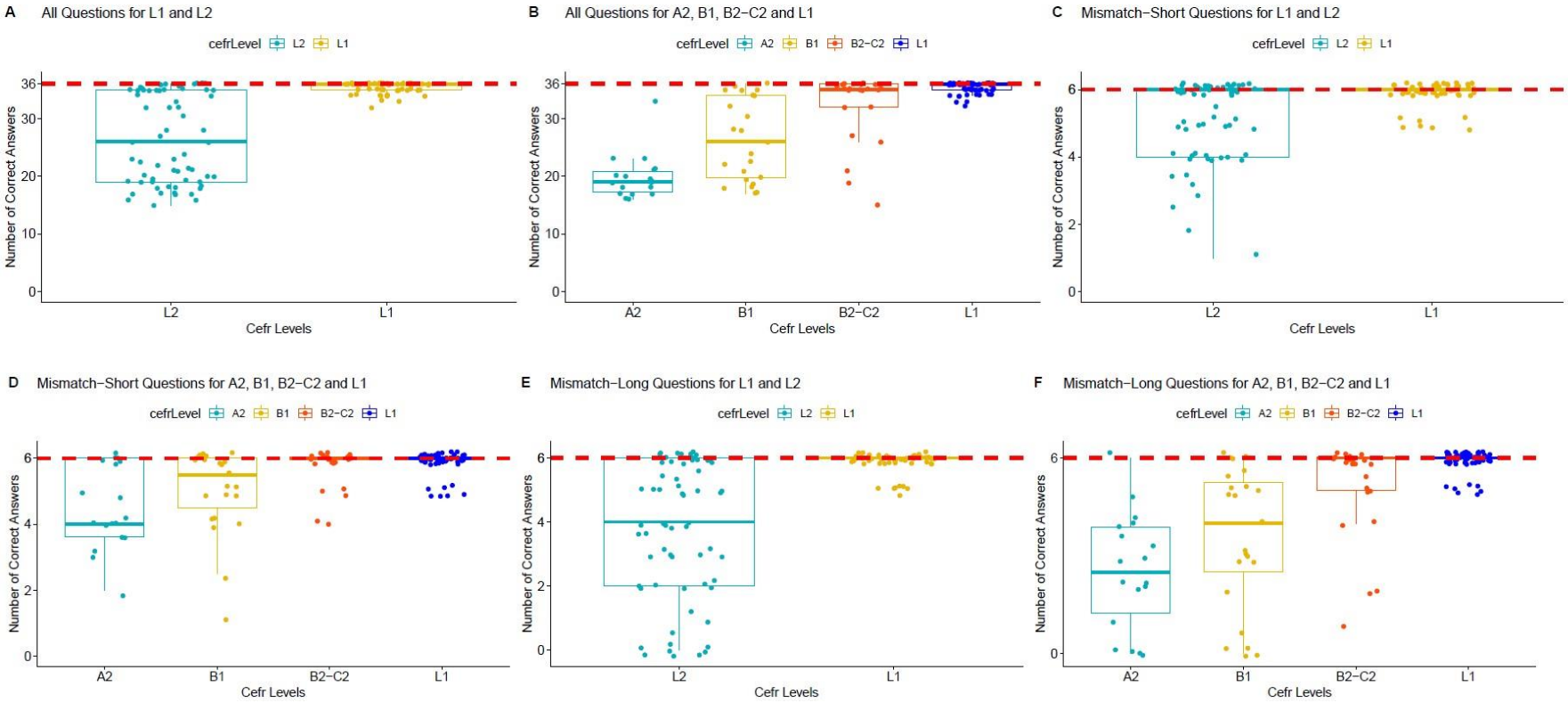
	Comparison	test_name	method	statistic	conf. low	conf. high	alternative	parameter	Z	p.value	P.unadj	P.adj	Estimate	Estimate 1	Estimate 2
1	NA	L1_vs_L2	Wilcoxon rank sum test with continuity correction	2957,50	3,50	13,50	two.sided	NA	NA	6E-11	NA	NA	10,00	NA	NA
2	NA	Kruskal-Wallis Test (All Questions)	Kruskal-Wallis rank sum test	63,70	NA	NA	NA	3	NA	1E-13	NA	NA	NA	NA	NA
3	A2 - B1	Dunn Test (All Questions)	NA	NA	NA	NA	NA	NA	-1,90	NA	0,06	0,34	NA	NA	NA
4	A2 - B2-C2	Dunn Test (All Questions)	NA	NA	NA	NA	NA	NA	-4,52	NA	0,00	0,00	NA	NA	NA
5	B1 - B2-C2	Dunn Test (All Questions)	NA	NA	NA	NA	NA	NA	-2,79	NA	0,01	0,03	NA	NA	NA
6	A2 - L1	Dunn Test (All Questions)	NA	NA	NA	NA	NA	NA	-7,10	NA	0,00	0,00	NA	NA	NA
7	B1 - L1	Dunn Test (All Questions)	NA	NA	NA	NA	NA	NA	-5,35	NA	0,00	0,00	NA	NA	NA
8	B2-C2 - L1	Dunn Test (All Questions)	NA	NA	NA	NA	NA	NA	-2,04	NA	0,04	0,25	NA	NA	NA
9	NA	L1_mis_short_vs_L2_mis_short	Wilcoxon rank sum test with continuity correction	2393,00	0,00	1,00	two.sided	NA	NA	3E-05	NA	NA	0,00	NA	NA
10	NA	Kruskal-Wallis Test (Mismatch-Short)	Kruskal-Wallis rank sum test	30,74	NA	NA	NA	3	NA	1E-06	NA	NA	NA	NA	NA
11	A2 - B1	Dunn Test (Mismatch-Short)	NA	NA	NA	NA	NA	NA	-1,50	NA	0,13	0,80	NA	NA	NA
12	A2 - B2-C2	Dunn Test (Mismatch-Short)	NA	NA	NA	NA	NA	NA	-3,61	NA	0,00	0,00	NA	NA	NA
13	B1 - B2-C2	Dunn Test (Mismatch-Short)	NA	NA	NA	NA	NA	NA	-2,25	NA	0,02	0,15	NA	NA	NA
14	A2 - L1	Dunn Test (Mismatch-Short)	NA	NA	NA	NA	NA	NA	-4,95	NA	0,00	0,00	NA	NA	NA
15	B1 - L1	Dunn Test (Mismatch-Short)	NA	NA	NA	NA	NA	NA	-3,50	NA	0,00	0,00	NA	NA	NA
16	B2-C2 - L1	Dunn Test (Mismatch-Short)	NA	NA	NA	NA	NA	NA	-0,84	NA	0,40	1,00	NA	NA	NA
17	NA	L1_mis_long_vs_L2_mis_long	Wilcoxon rank sum test with continuity correction	2878,50	1,00	2,50	two.sided	NA	NA	4E-11	NA	NA	1,50	NA	NA
18	NA	Kruskal-Wallis Test (Mismatch-Long)	Kruskal-Wallis rank sum test	63,06	NA	NA	NA	3	NA	1E-13	NA	NA	NA	NA	NA
19	A2 - B1	Dunn Test (Mismatch-Long)	NA	NA	NA	NA	NA	NA	-1,41	NA	0,16	0,95	NA	NA	NA
20	A2 - B2-C2	Dunn Test (Mismatch-Long)	NA	NA	NA	NA	NA	NA	-4,27	NA	0,00	0,00	NA	NA	NA
21	B1 - B2-C2	Dunn Test (Mismatch-Long)	NA	NA	NA	NA	NA	NA	-3,05	NA	0,00	0,01	NA	NA	NA
22	A2 - L1	Dunn Test (Mismatch-Long)	NA	NA	NA	NA	NA	NA	-6,83	NA	0,00	0,00	NA	NA	NA

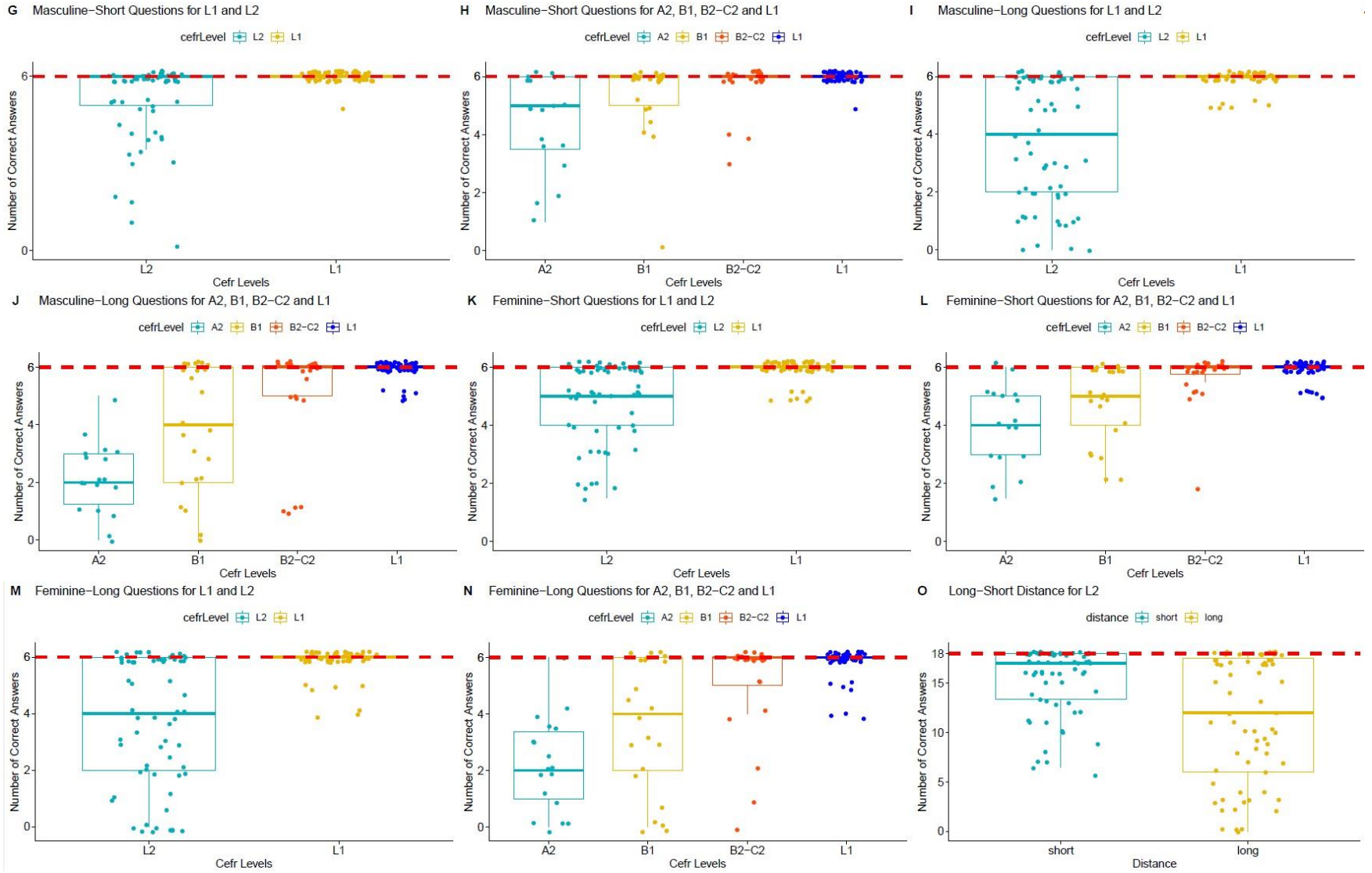
23	B1 - L1	Dunn Test (Mismatch-Long)	NA	NA	NA	NA	NA	NA	-5,68	NA	0,00	0,00	NA	NA	NA
24	B2-C2 - L1	Dunn Test (Mismatch-Long)	NA	NA	NA	NA	NA	NA	-2,06	NA	0,04	0,24	NA	NA	NA
25	NA	L1_masculine_short_vs_L2_masculine_short	Wilcoxon rank sum test with continuity correction	2340,00	0,00	0,00	two.sided	NA	NA	7E-06	NA	NA	0,00	NA	NA
26	NA	Kruskal-Wallis Test (Masculine-Short)	Kruskal-Wallis rank sum test	38,99	NA	NA	NA	3	NA	2E-08	NA	NA	NA	NA	NA
27	A2 - B1	Dunn Test (Masculine-Short)	NA	NA	NA	NA	NA	NA	-3,00	NA	0,00	0,02	NA	NA	NA
28	A2 - B2-C2	Dunn Test (Masculine-Short)	NA	NA	NA	NA	NA	NA	-4,28	NA	0,00	0,00	NA	NA	NA
29	B1 - B2-C2	Dunn Test (Masculine-Short)	NA	NA	NA	NA	NA	NA	-1,36	NA	0,17	1,00	NA	NA	NA
30	A2 - L1	Dunn Test (Masculine-Short)	NA	NA	NA	NA	NA	NA	-6,07	NA	0,00	0,00	NA	NA	NA
31	B1 - L1	Dunn Test (Masculine-Short)	NA	NA	NA	NA	NA	NA	-2,83	NA	0,00	0,03	NA	NA	NA
32	B2-C2 - L1	Dunn Test (Masculine-Short)	NA	NA	NA	NA	NA	NA	-1,22	NA	0,22	1,00	NA	NA	NA
33	NA	L1_masculine_long_vs_L2_masculine_long	Wilcoxon rank sum test with continuity correction	2788,50	0,50	3,00	two.sided	NA	NA	5E-10	NA	NA	2,00	NA	NA
34	NA	Kruskal-Wallis Test (Masculine-Long)	Kruskal-Wallis rank sum test	58,54	NA	NA	NA	3	NA	1E-12	NA	NA	NA	NA	NA
35	A2 - B1	Dunn Test (Masculine-Long)	NA	NA	NA	NA	NA	NA	-2,85	NA	0,00	0,03	NA	NA	NA
36	A2 - B2-C2	Dunn Test (Masculine-Long)	NA	NA	NA	NA	NA	NA	-4,43	NA	0,00	0,00	NA	NA	NA
37	B1 - B2-C2	Dunn Test (Masculine-Long)	NA	NA	NA	NA	NA	NA	-1,69	NA	0,09	0,55	NA	NA	NA
38	A2 - L1	Dunn Test (Masculine-Long)	NA	NA	NA	NA	NA	NA	-7,25	NA	0,00	0,00	NA	NA	NA
39	B1 - L1	Dunn Test (Masculine-Long)	NA	NA	NA	NA	NA	NA	-4,31	NA	0,00	0,00	NA	NA	NA
40	B2-C2 - L1	Dunn Test (Masculine-Long)	NA	NA	NA	NA	NA	NA	-2,31	NA	0,02	0,13	NA	NA	NA
41	NA	L1_f_short_vs_L2_f_short	Wilcoxon rank sum test with continuity correction	2534,00	0,00	1,00	two.sided	NA	NA	1E-06	NA	NA	0,50	NA	NA
42	NA	Kruskal-Wallis Test (Feminine-Short)	Kruskal-Wallis rank sum test	42,65	NA	NA	NA	3	NA	3E-09	NA	NA	NA	NA	NA
43	A2 - B1	Dunn Test (Feminine-Short)	NA	NA	NA	NA	NA	NA	-1,96	NA	0,05	0,30	NA	NA	NA
44	A2 - B2-C2	Dunn Test (Feminine-Short)	NA	NA	NA	NA	NA	NA	-4,30	NA	0,00	0,00	NA	NA	NA
45	B1 - B2-C2	Dunn Test (Feminine-Short)	NA	NA	NA	NA	NA	NA	-2,49	NA	0,01	0,08	NA	NA	NA
46	A2 - L1	Dunn Test (Feminine-Short)	NA	NA	NA	NA	NA	NA	-5,92	NA	0,00	0,00	NA	NA	NA
47	B1 - L1	Dunn Test (Feminine-Short)	NA	NA	NA	NA	NA	NA	-3,98	NA	0,00	0,00	NA	NA	NA

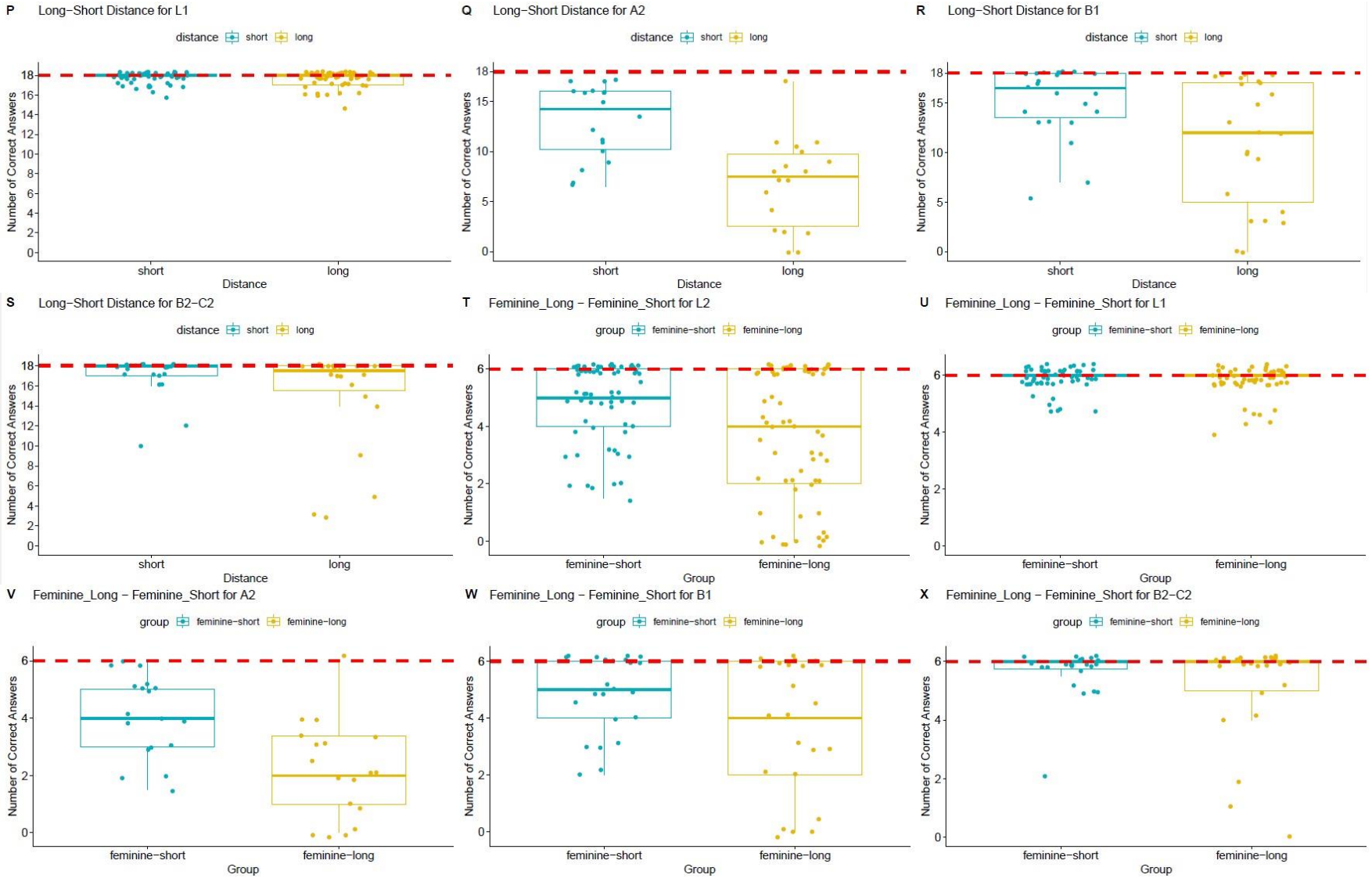
48	B2-C2 - L1	Dunn Test (Feminine-Short)	NA	NA	NA	NA	NA	NA	-1,02	NA	0,31	1,00	NA	NA	NA
49	NA	L1_f_long_vs_L2_f_long	Wilcoxon rank sum test with continuity correction	2687,00	0,00	2,50	two.sided	NA	NA	1E-08	NA	NA	2,00	NA	NA
50	NA	Kruskal-Wallis Test (Feminine-Long)	Kruskal-Wallis rank sum test	53,93	NA	NA	NA	3	NA	1E-11	NA	NA	NA	NA	NA
51	A2 - B1	Dunn Test (Feminine-Long)	NA	NA	NA	NA	NA	NA	-2,45	NA	0,01	0,09	NA	NA	NA
52	A2 - B2-C2	Dunn Test (Feminine-Long)	NA	NA	NA	NA	NA	NA	-4,66	NA	0,00	0,00	NA	NA	NA
53	B1 - B2-C2	Dunn Test (Feminine-Long)	NA	NA	NA	NA	NA	NA	-2,35	NA	0,02	0,11	NA	NA	NA
54	A2 - L1	Dunn Test (Feminine-Long)	NA	NA	NA	NA	NA	NA	-6,80	NA	0,00	0,00	NA	NA	NA
55	B1 - L1	Dunn Test (Feminine-Long)	NA	NA	NA	NA	NA	NA	-4,33	NA	0,00	0,00	NA	NA	NA
56	B2-C2 - L1	Dunn Test (Feminine-Long)	NA	NA	NA	NA	NA	NA	-1,54	NA	0,12	0,75	NA	NA	NA
57	NA	short_vs_long_L2	Wilcoxon rank sum test with continuity correction	2733,00	0,50	6,00	two.sided	NA	NA	1E-03	NA	NA	2,00	NA	NA
58	NA	l1_short_vs_l1_long	Wilcoxon rank sum test with continuity correction	1599,00	0,00	0,00	two.sided	NA	NA	5E-01	NA	NA	0,00	NA	NA
59	NA	A2_short_vs_A2_long	Wilcoxon rank sum test with continuity correction	271,50	3,50	9,00	two.sided	NA	NA	5E-04	NA	NA	6,50	NA	NA
60	NA	B1_short_vs_B1_long	Wilcoxon rank sum test with continuity correction	370,50	0,00	7,00	two.sided	NA	NA	2E-02	NA	NA	3,00	NA	NA
61	NA	B2_C2_short_vs_B2_C2_long	Wilcoxon rank sum test with continuity correction	321,00	0,00	1,00	two.sided	NA	NA	2E-01	NA	NA	0,00	NA	NA
62	NA	fem_short_vs_fem_long_L2	Wilcoxon rank sum test with continuity correction	2536,00	0,00	2,00	two.sided	NA	NA	1E-02	NA	NA	0,50	NA	NA
63	NA	l1_fem_short_vs_l1_fem_long	Wilcoxon rank sum test with continuity correction	1523,00	0,00	0,00	two.sided	NA	NA	9E-01	NA	NA	0,00	NA	NA
64	NA	A2_fem_short_vs_A2_fem_long	Welch Two Sample t-test	3,64	0,83	2,94	two.sided	33	NA	9E-04	NA	NA	1,89	4,08	2,19
65	NA	B1_fem_short_vs_B1_fem_long	Wilcoxon rank sum test with continuity correction	324,50	0,00	2,00	two.sided	NA	NA	2E-01	NA	NA	0,50	NA	NA
66	NA	B2_C2_fem_short_vs_B2_C2_fem_long	Wilcoxon rank sum test with continuity correction	288,50	0,00	0,00	two.sided	NA	NA	5E-01	NA	NA	0,00	NA	NA
67	NA	Kruskal-Wallis Test (Short Questions for L1)	Kruskal-Wallis rank sum test	5,25	NA	NA	NA	2	NA	7E-02	NA	NA	NA	NA	NA
68	NA	Kruskal-Wallis Test (Short Questions for L2)	Kruskal-Wallis rank sum test	3,63	NA	NA	NA	2	NA	2E-01	NA	NA	NA	NA	NA

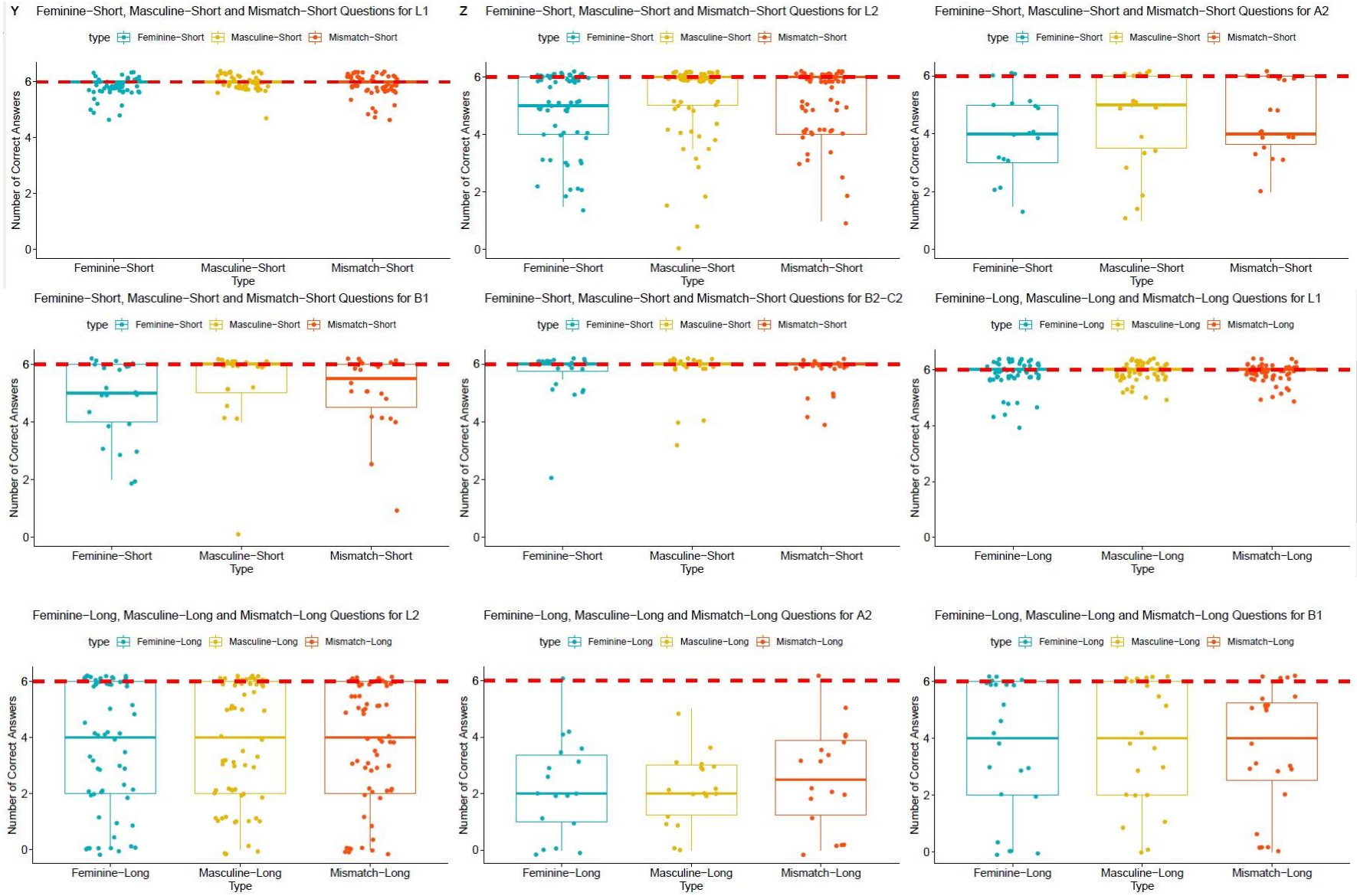
69	NA	Kruskal-Wallis Test (Short Questions for A2)	Kruskal-Wallis rank sum test	0,93	NA	NA	NA	2	NA	6E-01	NA	NA	NA	NA	NA
70	NA	Kruskal-Wallis Test (Short Questions for B1)	Kruskal-Wallis rank sum test	3,56	NA	NA	NA	2	NA	2E-01	NA	NA	NA	NA	NA
71	NA	Kruskal-Wallis Test (Short Questions for B2-C2)	Kruskal-Wallis rank sum test	0,77	NA	NA	NA	2	NA	7E-01	NA	NA	NA	NA	NA
72	NA	Kruskal-Wallis Test (Long Questions for L1)	Kruskal-Wallis rank sum test	0,16	NA	NA	NA	2	NA	9E-01	NA	NA	NA	NA	NA
73	NA	Kruskal-Wallis Test (Long Questions for L2)	Kruskal-Wallis rank sum test	0,06	NA	NA	NA	2	NA	1E+00	NA	NA	NA	NA	NA
74	NA	Kruskal-Wallis Test (Long Questions for A2)	Kruskal-Wallis rank sum test	0,62	NA	NA	NA	2	NA	7E-01	NA	NA	NA	NA	NA
75	NA	Kruskal-Wallis Test (Long Questions for B1)	Kruskal-Wallis rank sum test	0,71	NA	NA	NA	2	NA	7E-01	NA	NA	NA	NA	NA
76	NA	Kruskal-Wallis Test (Long Questions for B2-C2)	Kruskal-Wallis rank sum test	0,24	NA	NA	NA	2	NA	9E-01	NA	NA	NA	NA	NA

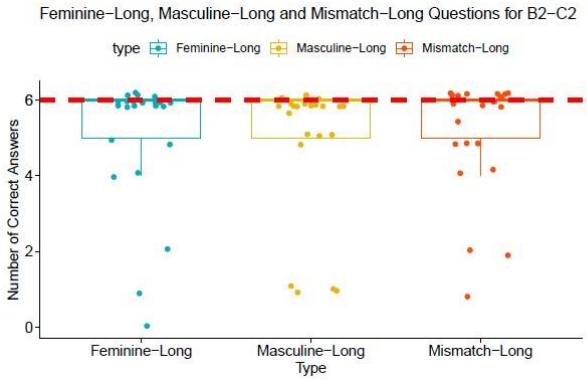
Figure 25 All statistical analyses: Box Plots




G Masculine−Short Questions for L1 and L2
cefrLevel L2 L1
Number of Correct Answers
Cefr Levels
L2
L1
H Masculine−Short Questions for A2, B1, B2−C2 and L1
cefrLevel A2 B1 B2−C2 L1
A2
B1
B2−C2
I Masculine−Long Questions for L1 and L2
J Masculine−Long Questions for A2, B1, B2−C2 and L1
K Feminine−Short Questions for L1 and L2
L Feminine−Short Questions for A2, B1, B2−C2 and L1
M Feminine−Long Questions for L1 and L2
N Feminine−Long Questions for A2, B1, B2−C2 and L1
O Long−Short Distance for L2
distance short long
Distance
short
long


P
Long−Short Distance for L1
distance short long
Number of Correct Answers
Distance
short
long
Q
Long−Short Distance for A2
R
Long−Short Distance for B1
S
Long−Short Distance for B2−C2
T
Feminine_Long − Feminine_Short for L2
group feminine−short feminine−long
Group
feminine−short
feminine−long
U
Feminine_Long − Feminine_Short for L1
V
Feminine_Long − Feminine_Short for A2
W
Feminine_Long − Feminine_Short for B1
X
Feminine_Long − Feminine_Short for B2−C2


Y
Feminine−Short, Masculine−Short and Mismatch−Short Questions for L1
Z
Feminine−Short, Masculine−Short and Mismatch−Short Questions for L2
Feminine−Short, Masculine−Short and Mismatch−Short Questions for A2
Feminine−Short, Masculine−Short and Mismatch−Short Questions for B1
Feminine−Short, Masculine−Short and Mismatch−Short Questions for B2−C2
Feminine−Long, Masculine−Long and Mismatch−Long Questions for L1
Feminine−Long, Masculine−Long and Mismatch−Long Questions for L2
Feminine−Long, Masculine−Long and Mismatch−Long Questions for A2
Feminine−Long, Masculine−Long and Mismatch−Long Questions for B1
type
Feminine−Short
Masculine−Short
Mismatch−Short
Feminine−Long
Masculine−Long
Mismatch−Long
Number of Correct Answers
Type


Feminine−Long, Masculine−Long and Mismatch−Long Questions for B2−C2
type
Feminine−Long
Masculine−Long
Mismatch−Long
Number of Correct Answers
0
2
4
6
Feminine−Long
Masculine−Long
Mismatch−Long
Type

RESUME

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