

Heritage Languages and Variation

edited by
Natalia Pavlou, Constantina Fotiou,
Kleanthes K. Grohmann

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Heritage Languages and Variation

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edited by | a cura di Natalia Pavlou, Constantina Fotiou, Kleanthes K. Grohmann

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Abstract

This volume is based on the conference *Heritage Languages and Variation* (HELV), which was held in Limassol, Cyprus in September 2022. It brings together interdisciplinary research from the fields of heritage language study and language variation with a critical eye towards examining issues of bi- and multilingualism, heritage language acquisition, home language development, language teaching methodology and language variation. The essays include a wide range of issues, including the study of different language patterns, the understanding of the grammar of heritage languages, the exposure and input of a particular population by a dominant language, the age of exposure to this input from the dominant language, the grammar properties affected by it, and the overall competence of the heritage speaker and the variation in grammar.

Keywords Heritage language acquisition. Bilingualism. Multilingualism. Language teaching. Language variation. Language exposure.

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Introducing Heritage Languages and Variation

Natalia Pavlou, Constantina Fotiou, Kleanthes K. Grohmann

University of Cyprus, Cyprus

The grammar of heritage language speakers has attracted extended scholarly interest in the last few decades. While many different cultural and grammatical aspects have been discussed to explain the deviant language trajectory of heritage speakers, the variation found with respect to the different facilitative factors and criteria as well as linguistic phenomena is still investigated. With the current volume, we present studies from diverse and cross-linguistic research, following the *International Conference on Heritage Languages and Variation (HELV)*, which was held in Limassol, Cyprus in September 2022. The volume comprises seven chapters, with each one focusing on a different linguistic phenomenon or population, involving the interaction between a heritage language and a dominant language, followed by comparison with monolingual speakers. This collection of different interrelated studies enables the discussion of the most common factors explaining the effects observed and the comparison of methodologies and findings across different languages and contexts.

For years now, research on heritage language speakers focused on the profile of the population (Benmamoun, Montrul, Polinsky 2013; Polinsky 2018; Rothman 2009), the question of incomplete acquisition as an explanation to the deviant grammar observed (Montrul 2016), and the effects of language contact between dominant and heritage languages (Andriani et al. 2022). Most studies have one common factor: the study of heritage languages to study the mechanisms of language development and change in different groups following language contact in heritage contexts. In some contexts, the different forms can vary from the grammar acquired in the early stages

of life, that is, the speaker's first language (L1), and other grammars developed in speakers of later generations whose dominant language for various reasons is different from their home-spoken language L1. The study of this population then must involve a comparison with a respective 'full' language, also known as the "baseline or homeland variety" (Polinsky 2018). The comparison between a heritage and a homeland/baseline speaker aims to inform our understanding of linguistic structures, as well as identify any innovations and emerging phenomena in the heritage grammar. The input received by younger generations can be grammatically divergent from the input received in earlier generations and could also be characterized by disruption in the acquisition process (e.g., Benmamoun, Montrul, Polinsky 2013). Different linguistic abilities may be observable in different scales of multilingualism across different populations, thereby contributing to the "comparative linguality" (Grohmann 2014) of monolingual, bi(dia)lectal, and bi-/multilingual speakers within a gradient spectrum of multilingualism. With specific reference to a deviant grammar of heritage speakers of Russian, Serbian, English as well as the grammar of Greek and Turkish Cypriot monolingual speakers, the following chapters bring together experimental, theoretical and sociolinguistic research.

Chapter 1 investigates morphosyntactic development in HL-Russian populations compared to monolingual Russian children and adults, by examining the variables of monolingual-like language acquisition, divergent attainment, attrition, and the consequences of language contact. Previous research showed gender restructuring in adult HL-Russian speakers in the United States (Polinsky 2008) that differed from HL-Russian children. With a focus on child HL-Russian speakers of different linguistic backgrounds, Meir mentions the factors of transparency, frequency, and regularity (e.g., Rodina, Westergaard 2012; 2017; Mitrofanova et al. 2018), masculine gender as the default on the basis of its frequency and morphological unmarkedness, gender restructuring, and facilitative cross-linguistic influences (Rodina et al. 2020). By focusing on an adjective-noun elicitation task, the author examines gender assignment/agreement in real words in Russian. In the study, 99 participants were recruited, with the monolingual adult and child group from the Russian Federation, Belarus, and Kazakhstan, while the HL group of adults and children were recruited in Israel. A picture-based adjective-noun agreement task was administered, including nouns in feminine, masculine and neuter gender. The results showed that the HL-child group has a lower accuracy on transparent feminine, opaque masculine, and opaque feminine conditions. The author discusses the relevance of gender agreement similarity in Russian and Hebrew as a possible explanation for the developmental trajectory observed, as well as exposure variables such as accuracy, proficiency, and the type of input to the

children. The results for HL-Russian child speakers are consistent with monolingual Russian-speaking children language development, indicating that neuter nouns and opaque feminine nouns pose greater challenges and that some HL-Russian speakers restructure gender, either demonstrating a two-way gender system or a system with no grammatical gender, defaulting to masculine.

In Chapter 2, gender is investigated in 9 child heritage speakers of Serbian, with German being the dominant language. Based on previous research (Montrul 2008; Polinsky 2008), heritage gender agreement in Slavic HL show that masculine gender is the default gender and fewer errors are observed in agreeing masculine nouns and that heritage Russian speakers develop two distinct gender systems: a three-gendered system in high proficiency speakers different from the monolingual three-gendered system and a two-gendered system in low proficiency speakers, in which all the neuter nouns are categorized as feminine. Krstic and Stankovic discuss lexical learning and cue-based gender assignment in bilinguals, transparency, amount of exposure in the home and morphophonological characteristics of words as possible facilitative factors in the acquisition of gender based on previous work. With an elicited production task where participants were shown pictures of pairs of objects, animals or people and were asked to complete sentences, the authors tested 6 groups of nouns (three genders, with canonical and non-canonical endings) chosen based on overall highest frequency. The results confirm that speakers rely on morphophonological cues to determine noun gender, and a correlation between proficiency level and error production, while the advanced speakers show agreement patterns similar to the monolingual control group. The overall age was found to have a positive effect with older child bilinguals and monolinguals (7-10) showing a more target-like gender agreement system. Advanced participants developed a three-gender system, while the lowest-ranked subjects exposed a two-gender system (masculine vs. feminine).

Cerqueglini in Chapter 3 explores definiteness as on crosslinguistic semantic variable and more specifically the count/mass distinction with a study testing grammar of definiteness, cognitive individuation, and attention to shape vs. substance in Levantine Arabic heritage speakers of English. The relations between countability through definiteness and conceptual properties such as the individuation of discrete bounded entities is discussed in the chapter as a crosslinguistic observation with the count/mass distinction associated with shape rather than subsense of entities. Speakers then classify entities based on their shapes (see Du Bois 1980; Gundel, Hedberg, Zacharski 1993; Koga 1992). The methodology of the study involved linguistic and cognitive tests for participants born and raised in England, monolingual native Levantine Arabic speakers and heritage Arabic speakers of English. Grammar tests involved a fill-in-the-blank

task, an error correction task, countability judgments of nouns in isolation, and countability judgments of nouns in context. A semantic similarity test was administered to test whether the count/mass distinction affected the semantic representation of words. Then a Spot-the-Odd-One-Out task asked speakers to make semantic judgments by spotting the odd one out in terms of meaning to check if the count/mass status affects English speakers' semantic representations. The replication of the Match-by-Similarity task (Lucy, Gaskins 2001) had the participants observe an original objects and choose a similar one from two alternative objects based on the shape or the material composition to test if these factors define the linguistic properties of countability. The results of the experiments showed a marked closeness between the Levantine Arabic heritage speakers of English and the Levantine Arabic speakers. The author discusses the domain (dependent on sensory experience) and the language in question and its transmission as possible factors for the speakers. Levantine Arabic heritage speakers of English in an English linguistic environment base their daily routine to Levantine Arabic culture and this influences mass concepts, quantifiers and classifiers. The conclusion for this chapter highlights that the heritage speaker group tested shows that attitudes and judgments are also transmitted on the basis of cultural practices.

In chapter 4, Papastefanou investigates bilingual children's performance in language and word-level reading (i.e., decoding) by drawing comparisons between the heritage and majority languages (Greek-English) and between two age groups in the first four years of primary school. The author also investigates contextual factors (i.e., quality and quantity of language exposure and input) as predictors of language and reading development. The study involved forty children attending Years 1 and 3 of primary school who were then reassessed one year later in Years 2 and 4 in schools in the UK. With a battery of standardized and non-standardized assessments, the children's non-verbal abilities, vocabulary, phonological awareness, and decoding skills in Greek and English were tested accompanied by a parental questionnaire measuring the children's language history. The author tested English phonological awareness by using the blending and elision tasks from the Comprehensive Test of Phonological Processing-Second Edition (Wagner et al. 2013), as well as adaptations of relevant tools. English Decoding was assessed using The Test of Word Reading Efficiency (Wagner et al. 2013) and Greek Decoding was assessed using the Greek adaption of the TOWRE-2 (Georgiou et al. 2012). The results showed that overall scores were higher in the majority than in the heritage language, showing a relation between contextual factors and the scores in the heritage language. Findings also show a relationship between phonological awareness and decoding skills, supporting the orthographic transparency hypothesis.

On the basis of a theoretical analysis on evaluative morphology, chapter 5, proposes different aspects of evaluative morphology in Modern Greek by focusing on intensification, deintensification, augmentation, and diminution. Giannoula in this chapter argues that adverbial preverbs in Modern Greek have a degree function and are used as evaluative morphemes when categorized into the evaluative classes of boosters, maximizers, diminishers, and maximizing minimizers. Focusing on intensification and deintensification, evaluative affixes in Modern Greek are presented as belonging in two main categories, namely *intensifying preverbs* (*para-* ‘over’, *kalo-* ‘well’, *yper-* ‘over-’, *kata-* ‘completely’, *kara-* ‘extremely’, *skilo-* ‘to death’, *xilio-* ‘deeply’, and *mirjo-* ‘deeply’) and *deintensifying preverbs* (*poly-* ‘much’, *psilo-* ‘a bit’, *miso-* ‘half-’, *koutso-* ‘poorly’, *psefto-* ‘poorly’, *xazo-* ‘half-heartedly’). Two other dimensions of evaluation, i.e., *augmentation* and *diminution*, are also discussed with respect to Modern Greek evaluative morphemes, like the diminutive *-aki*, that may have either a descriptive, quantitative property, when referring to size, or a qualitative property when referring to speaker’s feelings towards a referent. This study contributes with capturing the variation in the evaluative morphology of Modern Greek through a detailed descriptive and theoretical discussion.

In the same realm, chapter 6 discusses the variation in Cypriot Turkish grammar by focusing on young adult Turkish Cypriots. Variation is discussed by Walter as related to the main urban centers of the area and is associated with differing positions along the continuum between Cypriot and Standard Turkish. The methodology applied involved fifteen Turkish Cypriot university students who were shown print-out maps of northern Cyprus and were asked to draw lines on the map showing where Cypriot Turkish would be spoken in a different way. Participants consistently showed that variation exists between each of the main urban areas in northern Cyprus. The author discusses the proximity of Cypriot Turkish to Standard Turkish and the language contact with Greek vocabulary as determining factors for the variation observed. On a sociolinguistic note, variation is also captured along a basilectal-acrolectal continuum between the varieties in contact and the spoken variety. This chapter provides an interesting description of the variation in the Cypriot Turkish grammar and possible sociolinguistic explanations that can explain the variation observed.

Last, in chapter 7 by Rowe, Cypriot Greek is discussed in the context of diglossia, attenuated toward diaglossia characterized by dialect moribundity and further complicated by socio-politically ideological factors, with Standard Greek as the high variety indexing Cypriot Hellenism (vs. Cypriotism, ‘true’ local Cypriot nationalism) and challenging dialect revitalization and diglossic maintenance. The author discusses the way the Cyprus populations is characterized by

proponents of Cypriotism who usually view Cyprus as a community where being Cypriot infers a cross-border pan-Cyprian unification. Those of Greek-Cypriot nationalism/Cypriot Hellenism maintain an ideological union with Greece and show nostalgia on the basis of a close ethnic connection with it. The author proposed that this “diglossic nostalgia”, with the High variety representing the “Greekness” of (Orthodox) Cypriots and that conservative institutions embrace this “diglossic nostalgia” by dividing the High and Low varieties. This chapter, in this sense, offers a different explanation as to the observed sociolinguistic variation between the standard and non-standard varieties used on the island of Cyprus.

In summary, the chapters in this volume provide the reader with a variety of methodological tools in experimental contexts involving heritage and monolingual speakers, detailed description of language variation and theoretical analysis to explain it, as well as sociolinguistic variables and ideas that show the complexity of the various aspects of heritage language development and language variation.

Before delving into the contributions to the present volume, we would like to express our gratitude to the funding sources that made our research and outreach activities possible over the past few years. In conjunction, the following three competitively funded research projects allowed us to hold the HELV conference and finance the publication of this collection.

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Heritage Languages and Variation

Grammatical Gender in Child and Adult Heritage Russian in Contact with Hebrew

What Do We Learn About the Trajectories of Heritage Language Development?

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Abstract The current study investigated trajectories of HL-Russian grammatical development in the domain of morpho-syntax by considering (a) monolingual-like development, (b) divergent attainment (previously referred to as incomplete acquisition), (c) attrition, and (d) a birth of a new language variety in a contact situation. Adult and child HL-Russian speakers were compared to monolingual child and adult Russian-speaking baseline controls. The adjective-noun elicitation task, which taps gender assignment/agreement in real words in Russian, was used. The results of the current study bring evidence for a monolingual-like trajectory in HL-Russian speakers, albeit protracted, in the acquisition of grammatical gender.

Keywords Grammatical gender. Heritage Language. Russian. Divergent attainment. Attrition.

Summary 1 Introduction. – 1.1 HL Speakers and their Grammars. – 1.2 HL Grammar Development Trajectories. – 1.3 Gender Systems of Russian and Hebrew. – 1.4 Gender Acquisition in Russian in Monolingual and Bilingual Speakers. – 1.5 The Present Study: Research Questions and Hypotheses. – 2 Methodology. – 2.1 Participants and Procedure. – 2.2 Materials. – 2.3 Statistical Analysis. – 3 Results. – 4 Discussion.

1 Introduction

1.1 HL Speakers and their Grammars

The term ‘Heritage Language’ (hereafter HL) denotes a minority language spoken at home that is not the Societal Language (hereafter SL) of the society.¹ HL speakers are bilinguals who are often (though not always) weaker in their HL and dominant in the SL. They are typically second- or third-generation immigrants who acquire their HL from birth until the onset of schooling, usually at age 4-5, through naturalistic exposure to native input.

Although HL speakers acquire HL as their native language during childhood, their linguistic performance exhibits significant deviation compared to the baseline (the language as spoken in the country of origin or the language spoken by first-generation immigrants who are dominant in that language). Divergences and innovations observed in HL grammars are believed to be systematic (e.g., Hopp, Putnam 2015; Montrul 2008; Rothman 2009), but the precise mechanisms of HL acquisition and the trajectory of HL development are subjects of ongoing intense debate in formal theoretical linguistics, psycholinguistics, and neurolinguistics (refer to the recent keynote papers by Polinsky, Scontras 2019; 2020, and the commentaries at the *International Journal of Bilingualism*). The current study aims to address the question of developmental trajectories in HL grammars by investigating the grammatical gender system in HL speakers of Russian in contact with SL-Hebrew.

1.2 HL Grammar Development Trajectories

Previous studies have shown an intricate interplay between the age of onset of bilingualism (hereafter AoB), also known as the length of uninterrupted acquisition, and the timing of acquisition of specific linguistic phenomena (Tsimpli 2014). Linguistic phenomena vary in terms of their timing of acquisition in both monolingual and bilingual children: some are acquired early, while others emerge later. Therefore, when discussing the trajectory of HL development and the effect of AoB, it is important to consider the monolingual trajectory of acquisition and differentiate between early-acquired and late-acquired phenomena. Based on AoB and the timing of acquisition of specific linguistic phenomena, the literature suggests the following trajectories in HL development:

¹ Benmamoun, Montrul, Polinsky 2013; Montrul 2016; Polinsky 2018; Rothman 2009.

T1: Monolingual-like development (albeit delayed), where bilingual children exhibit a linguistic phenomenon on par with monolinguals or with a slight delay. Previous studies indeed show that HL child and adult speakers might perform similarly to their monolingual peers, or their development may be delayed, with HL children performing lower than monolingual peers but HL adult speakers not exhibiting a gap compared to monolingual adult baseline speakers. For example, Martínez-Nieto and Restrepo (2023) compared four- and eight-year-old HL-Spanish speakers to age-matched Spanish-speaking monolingual controls. Older HL speakers were more accurate than younger HL speakers, leading the authors to conclude that while HL speakers may differ from monolinguals, their grammatical development is similar, yet protracted.

T2: Intake failure (previously referred to as incomplete acquisition) is a scenario under which a linguistic phenomenon is simply not acquired due to interruptions in HL acquisition.² This scenario emphasizes the role of AoB and predicts that early-acquired phenomena remain intact, while late-acquired phenomena are absent in both child and adult HL grammars. For example, Montrul (2018) examined differential object marking in four groups of participants and found significant differences between monolingual child Spanish-speaking controls and both child and adult HL-Spanish speakers in the US, indicating intake failure.

T3: Attrition is a scenario, wherein a linguistic phenomenon is acquired in childhood but gradually lost over time due to diminished input.³ Under this scenario, child HL speakers are expected to demonstrate intact acquisition of early-acquired phenomena and be indistinguishable from monolingual child controls, while adult HL speakers are predicted to deviate from the baseline due to the loss of this structure. A study by Cuza et al. (2013) provided evidence for this developmental trajectory by examining Spanish tense and aspect marking in child and adult HL speakers. Younger children and adults exhibited similar tendencies, while older children showed differences. Similarly, a study by Polinsky (2011) investigating relative clauses in HL-Russian in contact with English found that child HL speakers were indistinguishable from monolingual child peers, whereas adult HL speakers performed significantly lower than both monolingual adults and child HL speakers. Polinsky (2011) concludes that divergent performance in HL adult speakers is a result of attrition.

² Montrul 2008; Putnam, Sánchez 2013; Polinsky 2006; 2008.

³ Polinsky 2011; Karayayla, Schmid 2019; Hicks, Dominguez 2020; Schmid, Köpke 2017.

T4: The emergence of a new linguistic variety in a contact situation, such as a new dialect (Kupisch, Rothman 2018). This perspective posits that HL grammar should not be seen as ‘broken’ or ‘incomplete’ but rather as a new variety that emerges in a contact situation. It suggests that HL speakers should be considered native speakers of their HL variety. Under this scenario, trajectories of HL speakers are not specifically linked to AoB, as divergences in HL grammars are already observable at the onset of HL development, including early-acquired phenomena in HL child grammars, which persist into adulthood, giving rise to a new contact variety. For example, Meir, Avramenko, and Verhovceva (2021) found that both child and adult HL-Russian speakers differed from child and adult monolinguals in their production of the accusative case, indicating divergence from childhood that continues into adulthood, thus suggesting the emergence of a new language variety (i.e., Israeli Russian).

To hypothesize about the trajectories of HL development (T1-T4), studies directly comparing child and adult HL speakers are necessary. While such studies exist, they are limited.⁴ In the domain of lexicon, a study by Fridman and Meir (2023) demonstrated that elements of all trajectories can be observed for noun and verb production in HL-Russian speakers in the USA and Israel. The present study aims to address the question of developmental trajectory in HL speakers by examining grammatical gender agreement.

1.3 Gender Systems of Russian and Hebrew

Russian is a language with a three-way gender system, distinguishing between masculine, feminine, and neuter genders. Gender is marked through dedicated inflections on adjectives, participles, numerals, determiners, quantifiers, certain cardinal numbers, and verbs, using noun-controlled concord or agreement in the singular form. However, gender distinctions disappear in plural forms (Corbett 1983). Please refer to Table 1 for further details.

Table 1 Adjectival inflections in singular and plural form in Russian

Gender	Singular	Plural
Masculine	<i>golub-ozont</i> ‘blue.M umbrella.M’	<i>golub-yie zont-y</i> ‘blue.PL umbrella.M.PL’
Feminine	<i>golub-aja sumk-a</i> ‘blue.F bag.F’	<i>golub-yie sumk-i</i> ‘blue.PL bag.F.PL’
Neuter	<i>golub-oje kryl-o</i> ‘blue.N wing.N’	<i>golub- yje kryl-ja</i> ‘blue.PL wing.N.PL’

⁴ See Cuza, Pérez-Leroux, Sánchez 2013; Fridman, Meir 2023; Meir, Avramenko, Verhovceva 2021; Montrul 2018; Montrul, Sánchez-Walker 2013; Polinsky 2011; Rothman, Treffers-Daller 2014.

Nouns are unequally distributed across the three gender values in Russian: masculine 46%, feminine 41%, and neuter 13% (Corbett 1991). Gender assignment is generally transparent in Russian: nouns ending in non-palatalized consonants (-C) are usually masculine, nouns ending in *-a* or *-ja* are typically feminine, and nouns ending in *-o* or *-e* are likely to be assigned the neuter gender. However, some nouns are considered opaque in terms of gender assignment. For example, nouns ending in a palatalized consonant (-C') and nouns ending in unstressed *-a* and *-o* do not reliably indicate gender based on morpho-phonological cues.

Furthermore, Russian features nouns ending in *-a/-ja* (e.g., *papa* 'father', *dedushka* 'grandfather') that denote human males and require agreement in the masculine gender. There are also nouns, particularly those denoting professions and occupations (e.g., *vrac* 'doctor'), which can exhibit semantic agreement, either feminine or masculine. Finally, hybrid nouns (e.g., *sirota* 'orphan', *plaksa* 'crybaby', *molodec* 'good boy/girl') can also show semantic agreement. However, these nouns are not the focus of the present study.

Hebrew is a two-way gender language, which differentiates between feminine and masculine. Similarly to Russian, in Hebrew most masculine nouns end in a consonant (*shulxan* 'table.M'), while most feminine nouns end in *-a* (*siml-a* 'dress.F') (Schwarzwald 1982; Ravid, Schiff 2015). Some feminines in Hebrew also end in *-et/at/it* (*rakevet* 'train'). Opaque classes are present in Hebrew, e.g., feminine nouns ending in a constant (*regel* 'leg'). Gender agreement in Hebrew is realized with dedicated inflections on verbs, pronouns, and adjectives, (e.g., *sefer gadol* 'book.M.S. big.M.S' vs. *siml-a gdol-a* 'dress.F.S big.F.S'). Unlike in Russian, plural forms in Hebrew are gender marked, *sfar-im gdol-im* 'book.M.PL. big.M.PL' vs. *smal-ot gdol-ot* 'dress.F.PL big.F.PL'.

Thus, the two languages, Russian and Hebrew have very similar morpho-phonological cues which participate in grammatical gender classification and in gender agreement.

1.4 Gender Acquisition in Russian in Monolingual and Bilingual Speakers

A chapter by Ivanova-Sullivan et al. (forthcoming) on Slavic gender acquisition provides the most comprehensive overview of monolingual and multilingual child and adult gender acquisition in Slavic languages, with a particular emphasis on Russian, which has been extensively investigated compared to other Slavic languages.

In Russian-speaking monolingual children, gender agreement begins to emerge around the age of two (e.g., Gvozdev 1961), while the acquisition of certain less frequent and opaque nouns continues

into the school years (Cejtlin 2000; 2009). The acquisition of neuter gender is delayed in monolinguals compared to masculine and feminine genders. Between the ages of 3;0 and 4;0, transparent neuter forms are produced without errors, while opaque neuter forms are acquired at around the age of six. Derived diminutive forms disambiguate the gender of the nouns and facilitate gender acquisition of opaque nouns (compare *kost* 'bone.F' vs. *kostochk-a* 'bone.DIM.F'): Russian-speaking monolinguals are more accurate on derived non-ambiguous forms compared to simplex opaque nouns (see Kempe et al. 2007). Interestingly, Russian-speaking children aged 2-3 disregard semantic gender and rely on morpho-phonological cues even with female names with *-ok/ -ik* suffixes (e.g., *Svetik* **prosnulsja* 'Svetik.F.S woke-up.M.S'), showing sensitivity to morphonological cues early on and rely on these cues in the choice of agreement (see Rodina 2014).

Mitrofanova et al. (2018) conducted a study on gender agreement in 107 monolingual Russian-speaking children aged 3-7, using real and novel word tasks. In the real word experiment, monolingual children exhibited lower accuracy on neuter nouns (both transparent and opaque), as well as on opaque feminine nouns (e.g., *kost* 'bone.F'). In the novel word experiment, monolingual children showed considerable success in assigning gender based on morpho-phonological cues. However, it should be noted that although monolingual children were able to assign gender to novel words using gender cues, their performance was more accurate for real words compared to novel words.

Under HL acquisition, a seminal study by Polinsky (2008) provided evidence of restructured gender representations in adult HL-Russian speakers in the United States, resulting in a two-gender grammatical system instead of the traditional three-gender system. However, this divergence was not consistently observed in child HL-Russian speakers. For example, Antonova Ünlü and Wei (2018) reported that gender agreement in a bilingual Russian-Turkish child, dominant in Turkish, was monolingual-like: the child demonstrated mastery of gender agreement at the age of 3. Studies on the production and comprehension of child HL-Russian speakers revealed the facilitative role of transparency, frequency, and regularity,⁵ which aligns with findings in monolingual children influenced by the same factors. Neuter nouns (both transparent and opaque) and opaque feminine nouns were found to be challenging for HL-Russian speakers with SL-Norwegian (see Mitrofanova et al., 2018). The authors reported that bilingual children tended to default to the masculine form in non-masculine conditions, and this preference was associated with exposure to Russian. The preference for the masculine gender is not surprising,

⁵ E.g., Janssen 2016; Rodina, Westergaard 2012; 2017; Rodina et al. 2020; Mitrofanova et al. 2018.

as the masculine value is the most frequent gender, it is morphologically unmarked, it attracts most borrowings and is associated with the default declension class in languages with a case system (Corbett 2007), and therefore the masculine is considered to be the linguistic default. Linguistic defaults play a significant role in language acquisition as they demand less cognitive effort during processing and are generally acquired more swiftly compared to other linguistic forms (Tsimpli, Hulk 2013).

Subsequent studies on gender acquisition in child HL-speakers, aiming to evaluate the impact of SL properties on HL gender maintenance in Russian, have yielded conflicting evidence. Schwartz et al. (2015) compared groups of bilingual HL-Russian child speakers with different SLs (English, German, Hebrew, and Finnish) and found that participants whose SLs had grammatical gender performed better on adjective-noun agreement tasks in their HL (specifically speakers of SL-Hebrew and SL-German) than those whose SLs did not (SL-English and SL-Finnish). In contrast, Rodina et al. (2020) tested production accuracy on the adjective-noun agreement task among HL-Russian speakers with different SLs (English, German, Hebrew, Norwegian, Latvian) and did not find evidence of a facilitative cross-linguistic influence effect. Instead, the study pointed to exposure factors influencing gender agreement.

Similarly to Polinsky (2008), Rodina et al. (2020) also provided evidence for restructured gender systems in some but not all child HL-speakers. In the majority of child HL speakers, the three-way masculine-feminine-neuter distinction is maintained. Only a few children encountered challenges in acquiring neuter or grammatical gender altogether. Reduced two-way gender systems, differentiating masculine and feminine (and other variants of the two-way gender values), or no-gender systems, displaying only the use of masculine forms, were associated with exposure variables such as family type, age at kindergarten enrollment, and current exposure to HL-Russian instruction.

Regarding adult HL-Russian acquisition, HL-Russian speakers were found to exhibit non-divergent performance in gender agreement situations where morpho-phonological and lexical cues align, suggesting that the mechanism of gender agreement remains intact in adult HL grammars (see Laleko 2018; 2019). Furthermore, in the line of research exploring the potential influence of SL properties on gender acquisition and maintenance in HL, Fridman, Polinsky and Meir (2023) demonstrated an advantage for Hebrew-dominant bilinguals over English-dominant ones in gender agreement in HL-Russian. This was attributed to the influence of SL-Hebrew, which employs a two-way gender system, unlike English, which has no grammatical gender. The results, when comparing two varieties of HL-Russian, corroborated previous findings in children, highlighting

advantages for masculine and feminine over neuter, as well as better performance on transparent nouns compared to opaque ones.

1.5 The Present Study: Research Questions and Hypotheses

The present study has four objectives. First, it is devised to shed light on the trajectory of gender acquisition in HL-Russian by “connecting the dots” (as stated by Montrul 2018) between child and adult HL speakers and child and adult monolingual controls. As outlined in 1.1, four hypotheses were tested by formulating specific predictions, see Table 2.

Table 2 HL developmental trajectories and specific prediction for the four groups

Trajectory	Prediction
T1: Monolingual-like trajectory	(Mono-ADULT = HL-ADULT = HL-CHILD = HL-CHILD) or (Mono-ADULT = HL-ADULT) > (HL-CHILD = HL-CHILD)
T2: Divergent attainment / intake failure (previously referred to as incomplete acquisition)	Mono-ADULT > (Mono-CHILD = HL-ADULT = HL-CHILD)
T3: Attrition	(Mono-ADULT = Mono-CHILD = HL-CHILD) > HL-ADULT
T4: New Language Variety in a Contact Situation	Mono-CHILD > (HL-ADULT = HL-CHILD)

Second, in addition to examining quantitative differences or similarities in performance among child and adult HL speakers and monolingual controls, the study aims to investigate non-target responses to observe any qualitative differences, if present. Non-target responses are expected to provide further insights into the nature of divergence, if any, in HL speakers.

Third, the study aims to explore how the gender system is restructured in HL speakers, if divergence occurs. Based on previous findings, divergent 2-way gender systems following Polinsky (2008) are expected to be observed in HL speakers, i.e., restructured gender systems that differentiate between masculine and feminine forms (FEM-MASC, no NEUT). Furthermore, additional system configurations, although less frequent, as reported by Rodina et al. (2020), are anticipated, such as a gender system that does not mark grammatical gender, using only masculine forms (only MASC).

Finally, the study aims to evaluate the link between gender accuracy production and age, age of onset of bilingualism, and proficiency.

2 Methodology

2.1 Participants and Procedure

A total of 100 participants were recruited for the study, including two adult groups and two child groups (see Table 3). The current study is part of a larger ongoing project aimed at investigating the characteristics of HL-Russian among adult and child speakers in Israel and the USA.

The monolingual adult group (hereafter referred to as Mono-Adult) and the monolingual child group (hereafter referred to as Mono-Child) of Russian speakers were recruited in the Russian Federation, Belarus, and Kazakhstan. All the monolingual Russian-speaking controls reported Russian as their mother tongue and the language of their daily communication.

The HL group of adults (hereafter referred to as HL-Adult) and children (hereafter referred to as HL-Child) were recruited in Israel. They were all raised in Russian-speaking families in Israel, but the age of onset of bilingualism (AoB) to SL-Hebrew varied.

There was no significant difference in sex distribution across the groups ($X^2=7.055$, $p=0.70$). As intended, there were group differences in age ($F(3.96)=134.73$, $p<.001$). Post hoc pairwise comparisons indicated that the child groups did not differ in age ($p=1.00$). Furthermore, the results indicated that the HL groups, both child and adult, did not differ in AoB ($F(1.57)=1.078$, $p=.304$).

Table 3 Background information on participants

	Monolingual		HL-Speakers	
	Mono-Adult N=21	Mono-Child N=20	HL-Adult N=30	HL-Child N=29
Sex	18f/3m	10f/10m	17f/13m	20f/9m
Age	40(14)	6(1)	26(4)	6(2)
AoB	n/a	n/a	1.3(1.6)	1.8(1.9)

Prior to participating in the study, adult participants signed a consent form available in both Russian and Hebrew. They also filled out a background questionnaire. For children, parents signed parental consent forms, and oral assent was obtained from each child before each task. The sessions were audio-recorded for later transcription and coding. This study received approval from the Institutional Review Board of Bar Ilan University, Israel.

2.2 Materials

2.2.1 Proficiency

To assess lexical proficiency, an expressive noun-production subtask from Fridman and Meir (2023) was administered to all participants. The subtask included a total of 51 nouns of varying frequency and varying age of acquisition. The stimuli for the task were taken from the “Noun and Object: Stimuli Database” (Akinina et al. 2015). Figure 1 presents the performance of the four groups. The results indicated a significant effect of Group ($F(3.96)=42.375, p<.001$). Post hoc pairwise comparisons revealed the following significant group differences: MONO-ADULT > MONO-CHILD > HL-ADULT > HL-CHILD. Thus, the four groups differed with respect to their proficiency as measured by lexical abilities.

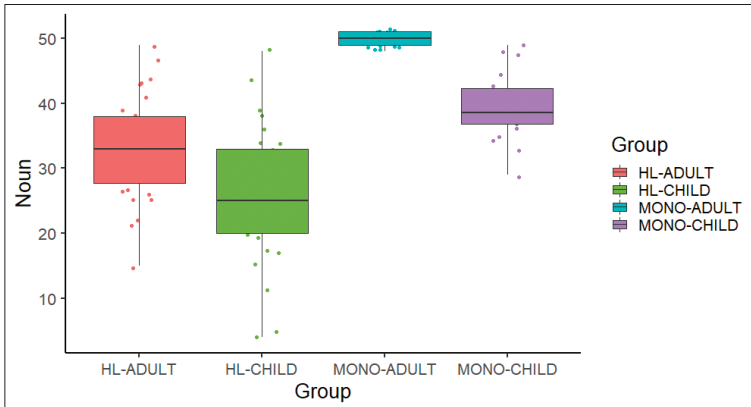


Figure 1 Performance across the groups on noun production

2.2.2 Experimental Adjective-Noun Agreement Task

The adjective-noun agreement task (Rodina et al. 2020; Mitrofanova et al. 2018) was administered to all participants. The task includes 30 nouns divided equally across six conditions: feminine, masculine, and neuter nouns with transparent and opaque gender cues (see Table 4 below). In order to avoid a gender match across the languages, we chose only nouns whose translation equivalents in SL-Hebrew had a different (non-congruent) gender (e.g., Russian: *sumka*(F) vs. Hebrew: *tik*(M) ‘bag’).

Table 4 Experimental stimuli

Transparent			Opaque		
Masculine	Feminine	Neuter	Masculine	Feminine	Neuter
<i>zont</i> ‘umbrella’	<i>sumka</i> ‘bag’	<i>krylo</i> ‘wing’	<i>remen</i> ‘belt’	<i>kost</i> ‘bone’	<i>jabloko</i> ‘apple’

Pictures of the target nouns were presented as PowerPoint slides on a laptop screen. Then, one of the members of the pair disappeared, and the participants had to name the disappearing object. Since it differed from the remaining one in color, they had to use the relevant color term. To denote the colors of the missing objects, we consistently used end-stressed adjectives (*zolotOJ* ‘gold’ or *golubOJ* ‘light blue’), which made gender marking unambiguous. The accuracy measure was coded as 1 for target production (e.g., *golubaja sumka* ‘blue.F bag.F’) and 0 for non-target production (e.g., *goluboj sumka* ‘blue.M bag(M)’ / *goluboje sumka* ‘blue.N bag(F)’). Next, a detailed analysis of non-target responses was carried out, noting the non-target use of masculine, feminine, and neuter.

2.3 Statistical Analysis

The analysis was conducted using RStudio (R Core Team 2020). A binomial mixed-effects logistic regression model was fitted, given the binary nature of the task (1 = Target, 0 = Non-Target). The model was built by adding random and fixed variables in a step-by-step procedure, starting with an intercept-only model as a baseline. The null models included both by-subject random intercepts and by-stimulus random intercepts.

First, the language-internal factors were added Gender (3 levels: MASC, FEM, NEUT) and Transparency (2 levels: Transparent, Opaque). Then, Group (4 levels: MONO-ADULT, MONO-CHILD, HL-ADULT, HL-CHILD) was included. Interactions between the language-internal factors (Gender and Transparency) and Group were also added. The variables and interactions were kept in the model only if they significantly improved the fit and resulted in a reduced AIC-value. Results from the highest-level model that converged are reported (Barr et al. 2013). We also present results from pairwise post-hoc comparisons with Tukey-adjusted significance levels.

3 Results

Figure 2 presents the target performance across the four groups by grammatical gender and noun transparency.

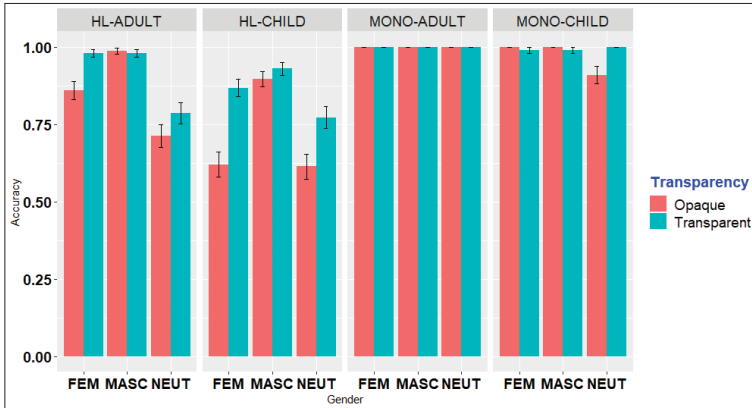


Figure 2 Performance on noun-adjective phrases per Group, Transparency and Gender

The final analysis for production accuracy is presented in Table 5. The model indicated that the inclusion of the three-way interaction Gender*Transparency*Group improved the fit of the models, suggesting that groups performed differently across different conditions [tab. 5].

First, the main effects are discussed (e.g., Group, Gender, and Transparency) which are visualized in Figure 3 in panels A-C. Starting with the group effect, the *emmeans* function indicated that only the HL-CHILD Group stood out, while all the other groups performed similarly overall: MONO-ADULT=MONO-CHILD>HL-ADULT>HL-CHILD. There were also differences in accuracy among the three genders: MASC > FEM > NEUT. Additionally, gender agreement on adjectives for transparent nouns was more likely to be accurate compared to opaque nouns.

Table 5 Predictors of performance on the adjective-noun agreement task

Formula: Accuracy ~ (1 | Code) + Gender + Transparency + Group + Gender:Transparency + Gender:Group + Transparency:Group + Gender:Transparency:Group, Data: ADJ, Control: glmerControl(optimizer = "bobyqa")

Predictors	Odds Ratios	CI	p
(Intercept)	12.35	5.79 – 26.32	<0.001
Gender [MASC]	17.69	3.63 – 86.14	<0.001
Gender [NEUT]	0.29	0.14 – 0.57	<0.001
Transparency [Transparent]	11.45	3.00 – 43.72	<0.001
Group [HL-CHILD]	0.16	0.06 – 0.44	<0.001
Gender [MASC] * Transparency [Transparent]	0.06	0.01 – 0.59	0.016
Gender [NEUT] * Transparency [Transparent]	0.15	0.04 – 0.67	0.012
Gender [NEUT] * Group [HL-CHILD]	3.37	1.41 – 8.09	0.006
Random Effects			
σ^2		3.29	
Observations		2998	
Marginal R ² / Conditional R ²		0.930 / 0.956	

Note: Only significant effects and interactions are presented in this table.

The three-way interaction indicated that there were group differences across different conditions (see Figure 3). These differences were further explored using the *emmean* R functions to identify the source of the interaction. The analysis showed that the HL-CHILD group was significantly lower in accuracy compared to the other groups. Specifically, the HL-CHILD group had significantly lower accuracy on transparent feminine, opaque masculine, and opaque feminine conditions. Differences in other conditions did not reach significance. It is important to note that while the accuracy rate on transparent masculine and feminine nouns conditions reached the ceiling in the MO-NO-CHILD group, there was some variation in the transparent and opaque neuter conditions.

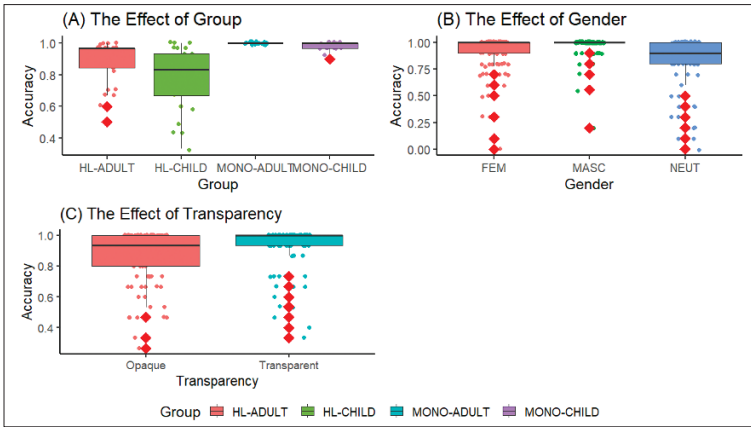


Figure 3 Visualization of the fixed effects

The distribution of non-target responses is presented in Figure 4. Looking more closely at non-target responses on transparent neuter nouns, both HL groups resorted to the masculine form (e.g., **golubOJ oknO* 'blue.M window.N') and some to the feminine form (e.g., **golubAJA oknO* 'blue.F window.N'). Some child and adult HL speakers used the masculine form with transparent feminine nouns (e.g., **zolotOJ klubnIka* 'gold.M strawberry.F'). Transparent masculine forms were also found with feminine forms (e.g., **zolotAJA zont* 'gold.F umbrella.M'). It should be mentioned that all transparent nouns in our study had a different gender in the HL speakers' second language (SL). For example, in Hebrew *mitriya* 'umbrella' is feminine, these non-target responses in HL-Russian with transparent gender cues might be attributed to cross-linguistic influence from Hebrew.

Turning to non-target responses on opaque feminine nouns, both HL groups (HL-ADULT, HL-CHILD) defaulted to the masculine form (e.g., **golubOJE ten'* 'blue.M shadow.F') and occasionally to the neuter form (e.g., **golubOJ ten'* 'blue.N shadow.F') for feminine nouns. No non-target responses were detected for opaque masculine and feminine nouns in the MONO-CHILD group. On opaque neuter nouns, the HL groups as well as the MONO-CHILD group, predominantly used the feminine form (e.g., **zolotAJA slitə* 'gold.F sieve.N') and to a lesser degree the masculine form in the HL groups. Interestingly, feminine forms (**golubAJA fonar'* 'blue.F flashlight.M') and neuter were erroneously used with opaque masculine nouns in child speakers only (*golubOJE fonar'* 'blue.N flashlight.M') in both child and adult HL speakers. Whereas the use of feminine with opaque masculine forms is expected, as these forms are ambiguous between masculine and feminine, the choice of neuter can be attributed to the syntactic default in Russian. Neuter is considered to be the syntactic default.

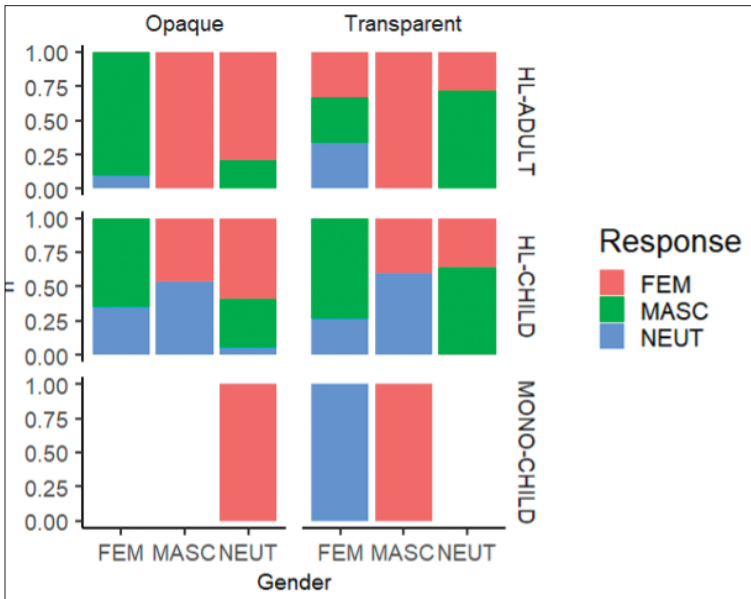


Figure 4 Non-target responses (Note: non-target responses were not observed in the MONO-ADULT group)

Furthermore, when examining gender accuracy across the groups, individual patterns were observed in the HL-CHILD and HL-ADULT groups. A cut-off of 0.33 was determined as the chance-level performance on gender accuracy. In the HL-ADULT group, three participants (3/30, i.e., 10%) exhibited performance at or below chance level on neuter nouns, indicating that the gender systems of these three participants were reduced to two-way gender systems, differentiating only between masculine and feminine. In the HL-CHILD group, one participant (1/29, i.e., 3%) displayed a reduction in both feminine and neuter genders, suggesting a restructured system that does not differentiate grammatical gender, and the only form that is used across all conditions is masculine. In Russian, similarly to many other languages, e.g., Hebrew, masculine is unmarked and is the default, i.e., the first to be acquired and the one assigned to borrowings and loanwords.

Finally, Pearson correlational analyses were conducted to examine the relationships between gender accuracy production, age, AoB, and proficiency (as indexed by noun accuracy production) in the HL child and adult groups. The results revealed weak correlations between age and gender accuracy ($r = .281$, $p = .031$), indicating that older individuals tended to exhibit higher gender accuracy. However, no significant correlations were found between gender accuracy and age of onset of bilingualism ($r = .153$, $p = .248$). Strong correlations were observed between gender accuracy and proficiency ($r = .773$, $p < .001$).

Figure 5 illustrates that gender agreement accuracy increases with proficiency, as indexed by vocabulary size: both children and adult HL speakers who produce more target nouns demonstrate higher accuracy in gender agreement.

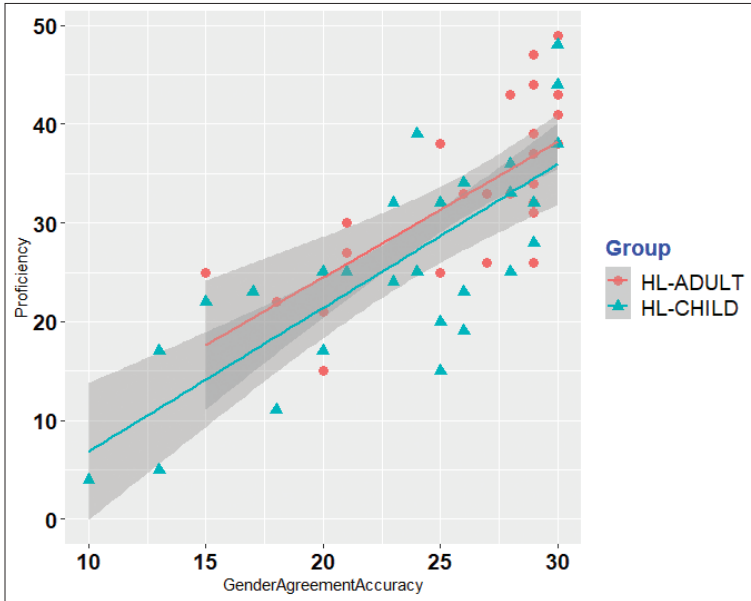


Figure 5 Scatterplot for gender agreement accuracy and proficiency as a function of Group (HL-CHILD vs. HL-ADULT)

4 Discussion

The presented study investigated the developmental trajectories of gender agreement in HL-Russian in contact with SL-Hebrew. The first research question examined the trajectory of gender acquisition in HL speakers by comparing child and adult HL speakers to monolingual controls. Based on the literature, four trajectories were considered: monolingual-like development (T1), intake failure (T2), attrition (T3), and the emergence of a new linguistic variety in a contact situation (T4). The results of the current study pointed at a monolingual-like trajectory (T1), albeit protracted, for gender agreement acquisition in HL-Russian in contact with Hebrew. No evidence for divergent attainment or intake failure (T2), attrition trajectory (T3), or the emergence of a new linguistic variety in a contact situation (T4) was detected.

The monolingual-like trajectory (T1) was evidenced in the lower performance of the child HL speakers compared to the rest of the groups (i.e., MONO-ADULT=MONO-CHILD=HL-ADULT>HL-CHILD). Adult HL speakers in this study were on par with monolingual adult controls, reiterating the findings by Laleko (2018, 2019) for HL-Russian speakers dominant in SL-English. This is important, since the proficiency test, as indexed by lexical abilities, showed that HL adult speakers were lower than monolingual Russian-speaking children. The results point to different developmental trajectories for morpho-syntax and lexical abilities in HL. Adult child HL speakers might achieve target-like grammatical representations as their monolingual adult peers. In contrast, child HL speakers showed the lowest proficiency in the lexical proficiency, and they also were lower in grammatical gender-accuracy production. To be more specific, the performance of the HL-CHILD group was significantly lower on opaque masculine and opaque feminine forms, which is in line with previous monolingual acquisition data for Russian (Cejtlin 2005; Gvozdev 1961; Mitrofanova et al. 2018). The HL child speakers were also lower on transparent feminine nouns.

Furthermore, the analysis of non-target responses also indicated that HL child and adult speakers relied on the same types of cues as monolingual peers. For example, both HL child and adult speakers used non-target feminine forms with neuter nouns. Additionally, opaque feminine nouns with palatalized consonants were often paired with masculine forms of adjectives, which aligns with findings from the Russian-monolingual acquisition literature. However, there were instances where HL speakers defaulted to masculine forms, especially in neuter cases, which is less frequent among monolingual speakers. The strategy of defaulting to masculine has been observed in Russian-Norwegian bilinguals (see Mitrofanova et al. 2018), which points to a profound gender-system restructuring in some HL speakers, as discussed below.

Interestingly, in a study investigating accusative case acquisition using a somewhat similar design, Meir, Avramenko, and Verhovceva (2021) reported that case morphology in HL-Russian in contact with Hebrew shows divergence in both child and adult HL speakers. The authors suggested that the divergence starts early in life and is maintained into adulthood, thus suggesting the emergence of a new language variety (Israeli Russian).

So, why would some phenomena show one trajectory and others a different one? Both accusative case morphology and gender agreement are early acquired phenomena. One plausible explanation is the effect of the properties of the SL. When it comes to gender agreement, Russian and Hebrew rely on very similar cues (-a marking feminine: Russian -*sumka*-a 'bag.F'; Hebrew, *siml-a* 'dress.F'; consonants marking masculine: Russian - *stol* 'table.M'; Hebrew: *tik* 'bag.M'). Although accusative case is marked in both languages, different lexical

realizations of the accusative case are used (inflections in Russian; particle *et* in Hebrew). Furthermore, in the two languages, the accusative case is bundled with different features. In Russian, it is bundled with gender and animacy, whereas in Hebrew, it is bundled with definiteness. The properties of the SL seem to explain the discrepancy in the developmental trajectory for the accusative case (Meir, Avramenko, Verhovceva 2021) and gender agreement (the current study) in HL-Russian in contact with Hebrew.

However, if we consider other language combinations, this explanation will not hold. The monolingual-like developmental trajectory was noted for HL-Russian in contact with Turkish (Antonova Ünlü, Wei 2018). However, unlike Hebrew, which, as explained above, has similar gender cues to Russian, Turkish does not mark grammatical gender. So, the findings by Antonova Ünlü and Wei (2018) cannot be solely attributed to a facilitative effect of the SL. Similarly, Martínez-Nieto and Restrepo (2023) provided evidence for a monolingual-like protracted trajectory for gender agreement in HL-Spanish in contact with English, which also does not mark grammatical gender.

The discrepancy between the results and their interpretation might be related to exposure variables which, in combination with the effect of SL properties, shape the trajectory of HL acquisition. For example, Mitrofanova et al. (2018) showed that individual differences in HL exposure predict the HL gender system for Norwegian-Russian bilinguals. Similarly, Rodina et al. (2020) demonstrated that exposure variables predicted the HL gender system configurations for bilingual HL-Russian-speaking children with different SLs (English, German, Hebrew, Norwegian, Latvian). In the current study, no significant correlations were detected between Age of Bilingualism (AoB), which determines the age of uninterrupted HL acquisition, and gender agreement accuracy. However, strong correlations were found between gender agreement accuracy and proficiency (as indexed by noun naming). Thus, sufficient HL exposure results in larger vocabularies and more target-like grammatical systems. Another possible explanation is the type of input that children are exposed to. Does the linguistic phenomenon under investigation show divergence in the input providers? This question is left for future studies.

In the current study, the majority of HL child and adult speakers developed three-way gender systems in their HL-Russian. Only a small number of participants showed a restructuring of the gender system. Three participants in the HL-ADULT group (10% of the subject pool) had a restructured two-way gender system with only feminine and masculine values. These results confirm previous findings by Polinsky (2008) for American Russian, which demonstrated a restructured (shrunk) grammatical gender system, where the differentiation between masculine and feminine is determined by a binary system of morpho-phonological cues (consonants vs. vowels).

Furthermore, in the HL-CHILD group, one participant (3% of the subject sample) exhibited a restructured system that does not differentiate grammatical genders, with only the masculine form used across all conditions. The defaulting to masculine has been previously reported for some Russian-Norwegian bilingual children (Mitrofanova et al. 2018). Preference for the masculine can be attributed to the fact that the masculine is unmarked, it is the most frequent, and therefore it is considered to be a default form in Russian, as well as in many other languages (Corbett 2007). Additionally, evidence for the absence of grammatical gender marking in HL-Russian has been noted in a small number of children who speak different second languages (i.e., English, German, Hebrew, Norwegian, Latvian). Thus, a restructured gender system in HL-Russian occurs in only very few children and adults. The vast majority of HL-Russian speakers develop target gender configurations, at least for nouns with transparent cues.

In conclusion, the results of the current study provide evidence for a monolingual-like trajectory, albeit protracted, in the acquisition of grammatical gender. Both child and adult HL-Russian speakers develop the target three-way gender system in their HL-Russian for nouns with transparent cues. The gender assignment of opaque cues might be divergent as it requires more exposure and memorization of gender values for specific lexical items.

The results for HL-Russian child speakers are consistent with previous findings in monolingual Russian-speaking children, which indicate that neuter (transparent and opaque) nouns and opaque feminine nouns pose greater challenges. A small number of HL-Russian speakers exhibit restructured systems, either demonstrating a two-way gender system or a system with no grammatical gender, defaulting to masculine. The masculine forms in Russian and in Hebrew (the dominant language of HL speakers in the current study) are unmarked forms and are considered as defaults. Future studies should expand research on defaults across different populations and different languages (for more information on defaults in language acquisition see Tsimpli, Hulk 2013).

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Gender Agreement in Heritage Serbian: A First Study

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Abstract This study investigates nine child heritage speakers' gender agreement in Serbian, with German being the dominant language. We hypothesized that our participants will display different stages of the gender system development found with (Slavic) monolinguals and bilinguals, in which low-frequent non-canonical grammatical suffixes get to be interpreted as regular, canonical endings, resulting in attributive agreement errors among speakers. The results from an elicited production task confirm that speakers rely on morphophonological cues to determine noun gender, the lower their proficiency is. On the other hand, the advanced speakers exposed agreement patterns similar to our monolingual control group. Expectedly, the overall age was found to have a positive effect (when the proficiency is not disparate), as both older child bilinguals and monolinguals (7-10) demonstrated a more target-like gender agreement system. Finally, our findings show that the advanced participants utilized a three-gender system, slightly simplified than the elaborate one found with monolinguals, while the lowest-ranked subjects exposed a two-gender system (masculine vs. feminine).

Keywords Heritage language. Serbian. German. Gender agreement. Language acquisition. Canonicity.

Summary 1 Introduction. – 2 Previous Research on Gender Agreement in Heritage Speakers, Monolinguals and Bilinguals. – 3 Gender System and Agreement in Serbian. Differences from German. – 4 Research Questions and Hypothesis. – 5 Methodology. – 5.1 Task Design. – 5.2 Participants. – 6 Preliminary Results. – 6.1 Percentage of Errors. – 7 Discussion. – 8 Conclusion.



1 Introduction

This paper represents our first study of noun-adjective agreement in Serbian heritage speakers aged 7 to 10, whose dominant language is German. In this study, we refer to heritage speakers as those who were exposed from an early age, even infancy, to a certain ‘home language’, which is different from the official and majority language of their environment (Valdés 2000).

Gender agreement in heritage languages has been the subject of research concerning both non-Slavic¹ and Slavic heritage speakers (Mitrofanova et al. 2018; Polinsky 2008; Schwartz et al. 2014). However, there is less research on heritage Serbian (e.g. Vuletić Đurić 2015), and almost no research on gender agreement in heritage Serbian with German being the dominant language. In literature, gender agreement in monolinguals and bilinguals has been shown to be one of the grammatical properties acquired very early on. However, some studies mention that there can be facilitating factors to acquiring the agreement faster in some languages than others. In the study of Kupisch, Müller, Cantone (2002) (extracted by Schwartz et al. 2014), it was observed that the bilingual children made more errors in determiner-noun agreement in French than in Italian. This was explained by the fact that Italian nouns are classified by gender according to very transparent endings, which is not the case in French.

Since the majority of Serbian nouns can be classified by their endings (e.g. masculine nouns end in a consonant: *čovek* ‘man’), similarly to the situation in Italian, we expect their agreement to be acquired quite early in both monolinguals and bilinguals. However, we do expect certain delay of agreement acquisition in nouns that have non-transparent endings (for instance, feminine nouns with the null ending, which is a suffix typical for masculine nouns: *krv* ‘blood’), especially among bilinguals. Nevertheless, given the fact that the dominant language of the heritage speakers in our study is German – which has a three gendered system and is inflectional enough to have different endings for each gender in determiner/adjective-noun agreement – we expect that it could facilitate gender acquisition in heritage Serbian.

The study is organized in the following manner: we first give a short overview of relevant research on gender agreement in heritage speakers, monolinguals and bilinguals (section 2); followed by a description of the gender system and gender agreement in Serbian (section 3); we present the research questions (section 4) and methodology (section 5), analysis of the results (section 6), discussion (section 7) and we finish with the conclusion (section 8).

¹ Alexiadou et al. 2020; Boers et al. 2020; Johannessen, Larsson 2015; Montrul, Foote, Perpiñan 2008; Montrul, Potowski 2007.

2 Previous Research on Gender Agreement in Heritage Speakers, Monolinguals and Bilinguals

A lot of research on gender agreement has been done with heritage speakers in the USA, where English is the dominant language. Montrul (2008) showed that adult HL (heritage language) speakers and L2 (second language) speakers of Spanish made more errors than monolinguals in the domain of syntactic agreement. On the other hand, Alarcón (2011) came to the conclusion that the Spanish heritage speakers were closer to monolinguals than to L2 speakers in their gender agreement performance, based on a picture describing task.

Some studies (Montrul, Potowski 2007; Cuza, Pérez-Tattam 2016) point out that the difference between monolinguals and HL speakers is still significant in terms of gender agreement, which is attributed to language attrition (mostly in adults), or incomplete acquisition (children), because of a restricted HL input, and a growing exposure to the dominant language (Goebel-Mahrl, Shin 2020). Since English is a language that lacks the category of grammatical gender in the nominal domain, there is a reasonable assumption on its potential negative transfer into the HL. However, some researchers (Irizarri van Suchtelen 2016) compared the situations with different dominant languages and showed that when the dominant language has a more developed gender agreement (such as German or Dutch), the HL speakers were closer to monolinguals, than when the dominant language was English, which can be an indicator of a positive transfer of the dominant language.

When it comes to research on error analysis in (non-Slavic) gender agreement, studies such as Montrul and Potowski (2007) show that monolinguals aged 3-4 years perform at ceiling, unlike the bilinguals. As a matter of fact, it has been determined that it is the bilinguals that produce the most errors when agreeing nouns with non-canonical endings.

As for the error analysis in heritage gender agreement in Slavic studies on HL, results showed that masculine gender appeared as the dominant gender, almost as the default gender, so naturally, HL speakers made the least errors in agreeing masculine nouns (Montrul et al. 2008, on heritage Russian and Polish). In the same study, it was found that there are more errors in nouns with non-canonical ending than in those with canonical endings. Polinsky (2008) made a summed conclusion that among American speakers of heritage Russian, there are two distinct gender systems: 1) a three-gendered system in high proficiency speakers, which is different from monolingual three-gendered system, since neuter nouns ending in the unstressed vowel -o are categorized as feminine nouns (a prominent property present in Russian, but not in Serbian language); 2) two-gendered system in low proficiency speakers, in which all the

neuter nouns are categorized as feminine. The author explains that the latter group of speakers didn't acquire the declension system, and therefore, they rely on the phonological properties of the noun, that is, whether it ends in a vowel or consonant.

Similarly, Schwartz et al. (2014) describe that

it is important to note also that gender assignment of end-unstressed neuter nouns and feminine nouns ending in a palatalized consonant was challenging even for the older monolingual children in this study. (2)

The authors point out that at the age of 5, they were still mastering the gender of these nouns. These findings support Slobin's (1985) hypothesis on the critical role of salience and transparency in the child's perception of final morphemes of words: "Overall, children have difficulty with grammatical morphemes that are less readily identifiable as distinct acoustic entities" (1164).

In their study Mitrofanova, Rodina, Urek and Westergaard (2018, 17) state that

the results show that purely cue-based gender assignment is more challenging for the bilinguals, while the differences between the bilingual groups indicate that the amount of exposure plays a role. At the same time, it needs to be stressed that all groups of participants showed sensitivity to phonological gender cues - albeit to different degrees. This might be taken as evidence that lexical learning of the gender category of familiar nouns in addition to cue-based assignment is an important strategy in grammatical gender acquisition for both bilinguals and monolinguals.

Rodina and Westergaard (2017, 211) state that "the children's knowledge of grammatical gender was found to be dependent on the transparency of the gender system in the target language and the amount of exposure in the home". This means that transparency is important in Russian and that opaque noun classes are more problematic both for monolinguals and bilinguals, than transparent noun classes. The authors also noted the importance of the role of parental input: children with two Russian-speaking parents were outperforming those with one Russian-speaking parent. Qualitative difference of input was also found. Children with lower input have not mastered the declension system of Russian, and are insensitive to gender cues. The result is therefore, reduction in the gender system, confirming previous findings from Russian heritage speakers (Polinsky 2008).

Dieser (2009, 276) found that both monolinguals and bilinguals rely on morphophonological characteristic of words and not on semantic gender up to age 3 or 4. He concludes that their intermediate

system is two-gendered (with feminine and masculine). Similarly, Velnić (2020, 11) conducted research on Croatian and Italian monolinguals, and found that Croatian monolinguals also have two stages in the gender system development, with the first stage resembling the intermediate Russian gender system. At that stage, the monolinguals (aged 2;10) produce most errors in neuter nouns, with a rather stable feminine vs. masculine distinction, whereas at the second stage, monolinguals (aged 4;2) perform better with neuters. However, at that point feminine gender agreement is at ceiling, but that is not the case with masculine, due to the “similarity of masculine and neuter gender systems”. The author concludes that in Croatian, the transparency of the gender system facilitates the acquisition, but case syncretism and low frequency (neuter nouns) hinder it.²

Ševa et al. (2007) conducted research on diminutive advantage in gender agreement of Russian and Serbian children, and found that in both groups of speakers (mean age 3;9 years) the magnitude of diminutive advantage suggests that the frequency of a particular form plays a smaller facilitating role than the morphophonological properties of the diminutives.

Kovačević, Palmović and Hržica (2009) found that the distribution of all three genders in the Serbian children corpus reflects the distribution in the language. The authors found that children are using all the seven cases (with different frequency) by the age of 1;10. Velnić (2020, 6) points out that since Kovačević, Palmović and Hržica’s corpus contains data only until 2;8, there is no evidence of a more distributed case paradigm, or of any significant frequency rise among neuter nouns. The author assumes that only with increased exposure to the full case paradigm can we see how it reflects on the acquisition of gender, especially masculine and neuter, as it could take children longer to realize these are two different genders. She then hypothesizes that if the case system does affect acquisition of gender, then the rich case system might hinder it, but if the role of nominative is big in gender acquisition, its timing might be affected by the transparency of this case. The author states that the transparency plays a great role in gender agreement acquisition in Croatian and Italian, but the transparency should be perceived as a continuum rather than a binary feature between transparent and opaque (Velnić 2020, 12).

Pophristic and Schuler (2021, 904) found that a child can assume a noun’s gender based solely off of its nominative form, but also based off of a non-nominative case declension for 2 of 3 noun classes. A

2 In Serbian, neuter form can be marked only in nominative, accusative and vocative case (in both Sg and Pl), while in all other cases it takes the syncretic, i.e., default, masculine suffixes. Nevertheless, neuter nouns are present in the everyday language surrounding the children from day one.

child can also assume a noun's declension pattern and (with the exception of the neuter gender), it can assume the noun's nominative singular ending based off of the noun's gender. The authors predict that a child could

take a novel noun which was heard in only one specific syntactic context and use it in novel syntactic contexts which may require overt gender marking or different case declensions. (Pophristic, Schuler 2021, 903)

Despite the presented facts concerning other Slavic HLs, there is less research on heritage Serbian (e.g. Vuletić Đurić 2015), and almost no research on gender agreement in heritage Serbian, with German being the dominant language. Needless to say that all the aforementioned studies are important for our current research, as we heavily rely on the similarities of Russian Serbian and Croatian in terms of gender assignment and gender agreement (but without the problematic Russian end-unstressed neuter nouns), and we expect similar outcomes in Serbian heritage speakers.

3 Gender System and Agreement in Serbian. Differences from German

Corbett (2001) explains that

the defining characteristic of gender is agreement; a language has a gender system only if noun phrases headed by nouns of different types control different agreements. The evidence that nouns have gender in a given language thus lies outside the nouns themselves. (6335)

The author also emphasizes the difference between gender assignment and gender agreement, the first being the inherent feature of the noun, while the other is basically congruency with other words, which is dependent on the noun's gender (Corbett 1991).

Serbian is a language with three grammatical gender classes: masculine, feminine, and neuter gender. For animate nouns denoting humans, biological sex determines the grammatical gender class (Arsenijević, Borik 2020, 9) (*čovjek* 'man'; *žena* 'woman'). Animate nouns denoting animals are assigned the gender on the count of what is culturally representative sex of the animal, or simply unspecified (*mačka* 'cat' [fem. gender]; *zec* 'rabbit' [masc. gender]).

Inanimate nouns in Serbian get their grammatical gender in an arbitrary way, and these are classified by the morphological properties of the noun (like the type of declension) and depending on the

agreement with an agreeing constituent (Arsenijević, Borik 2020, 10). In animate nouns, typically, the semantic and grammatical gender match, but there can be a more complex agreement in nouns whose semantic and grammatical gender do not match (so-called hybrid nouns, like *pijanica* ‘drunkard’). In this study, we avoided such hybrid nouns, and the only mismatching type of animate nouns we looked at were the ones which belong to the morphological class of feminine gender, but are semantically masculine (*tata* ‘Dad’, *papa* ‘pope’...), and have straightforwardly semantic agreement. We present the two ways in which grammatical gender classes are determined in Serbian as follows [tab. 1].

Table 1 Declension classes in Serbian language

	First declension class		Second declension class	Third declension class		Fourth declension class
	Masculine	Neuter	Neuter	Masculine	Feminine	Feminine
	cons.Nom. Sg.	o/e Nom.Sg.	o/e Nom.Sg.	a Nom.Sg.	a Nom.Sg.	cons. Nom. Sg.
Animate	<i>čovjek</i> ‘man’	<i>Slavko</i> , <i>Milivoje</i>	<i>pile</i> (Gen. Sg. <i>pileta</i>) ‘chicken’	<i>tata</i> ‘Dad’	<i>žena</i> ‘woman’	
Inanimate	<i>telefon</i> ‘phone’	<i>sto</i> ‘table’, <i>radio</i> ‘radio’, <i>kupe</i> ‘compartment’, <i>tupe</i> ‘taupe’	<i>selo</i> ‘village’, <i>polje</i> ‘field’	<i>bure</i> (Gen. Sg. <i>bureta</i>) ‘barrel’	<i>olovka</i> ‘pencil’	<i>peč</i> ‘furnace’, <i>krv</i> ‘blood’

Agreement patterns:

Masculine: *lep/lepi čovek* (beautiful man); *lep/lepi telefon* (beautiful phone); *lep/lepi Slavko* (beautiful Slavko); *lep/lepi kupe* (beautiful compartment); *lep/lepi tata* (beautiful Dad)

Feminine in a consonant: *lepa peč* (beautiful furnace)

Neuter: *lepo selo* (beautiful village); *lepo dete* (beautiful child)

Feminine in -a: *lepa žena* (beautiful woman)

Items that agree with nouns, like the mentioned adjectives above, come in three-agreement classes, which is one class fewer than nouns (Arsenijević, Borik 2020, 10). Like the case is with Serbian, German exposes a three grammatical gender system, with masculine, feminine and neuter. While biological sex can play a role in the grammatical gender of the noun, especially for nouns denoting a representative of one of the sexes (*der Mann* ‘man’ [masculine]; *die Frau* ‘woman’ [feminine]), there can also be some mismatches in the grammatical and semantic gender of the noun (*das Mädchen* ‘girl’ [neuter]), with appropriate syntactic agreement. Also, unlike Serbian, in

which nouns are classified by their declension classes (and therefore, by the typical endings the in nominative singular form), in German there are quite rarely some morphophonological cues to what the gender of the noun is. So, we can expect that being a three-gendered language, German as the dominant language can have a facilitating effect on Serbian heritage, but at the same time, the lack of declension on the nouns in German might create a challenge for those speakers who have not mastered the declension system in Serbian, and therefore might rely on a simplified classification of the nouns based entirely on their endings.

4 Research Questions and Hypothesis

Our research questions are:

1. What are the overall similarities/differences between heritage speakers and their monolingual peers in patterns of noun-adjective agreement?
2. How are the error patterns explained in terms of gender, animacy and noun ending (canonical vs. non-canonical)?
3. How are factors such as language proficiency and age affect correlated to gender agreement in heritage speakers?

We hypothesized that monolinguals would perform at ceiling, while heritage speakers would show results of incomplete acquisition (Polinsky 2008) in agreement of nouns with non-canonical endings.

5 Methodology

5.1 Task Design

The participants performed a production task. They were shown pictures of pairs of objects, animals or people contrasting in some distinct feature and were asked to either finish the sentence e.g.: On the table there is a... 'blue egg'; or give complete answers: What's under the table? A 'yellow egg' (*Na stolu je... 'plavo jaje'. A ispod stola? 'Zeleno jaje'*). The initial existential sentence enforced nominative case in the subject's answer. Stimuli consisted of 6 groups of nouns (three genders, with canonical and non-canonical endings), with at least 6 examples in each group. In Serbian, the *-a* ending is the canonical ending for feminine (in)animate nouns, and noncanonical for masculine animate nouns, the *-o* and *-e* endings are canonical for (in)animate neuter, and noncanonical for inanimate masculine, while nouns ending in consonant are canonically (in)animate masculine, noncanonically feminine inanimate. The choice of lexicon items was

established on the overall highest frequency among the nouns with the canonical null and non-canonical -a ending, and it included typical representatives of nouns with non-canonical endings, including animacy as criterium in masculine nouns ending in -o/-e (according to CHILDES database for Serbo-Croatian). Given the fact that the latter group is significantly infrequent and underrepresented in the everyday language, we expected that these items are not part of the active nor passive lexicon of all participants, and especially heritage speakers. This ‘gap’ was solved by introducing the novel noun items explicitly, while the speakers were supposed to describe them by its size, color etc. (*Ovo je tupe. Tupe je.../This is a taupe. The taupe is...*). Those contexts gave us valuable insight into the acquiring mechanism in which grammatical suffixes pose as the only gender cues, and the learners are manipulating novel noun stems. We give the full list of the used lexicon items below. Their order of appearance was randomized in the actual task [tab. 2].

5.2 Participants

In total, nine heritage speakers of Serbian from German-speaking areas participated in our study. The term *Serbian heritage speaker* covers children who have been exposed to Serbian since their birth in their home, but whose dominant language is different from this ‘home language’. All the participants could technically be considered bilinguals, since all of them, to some degree, speak and understand their heritage language, in addition to speaking the dominant language of their society (Montrul 2004, 125; Valdes 2000, 1). In our case, these speakers represent second generation immigrants in dominantly German-speaking environments. We chose this particular case of HS because of the last decade’s increase in immigration from the Balkans, especially to most sought and favorable European countries, among which are Germany, Switzerland and Austria. In addition to that, there are a lot of Serbian communities in metropolises, and the children often attend Serbian Saturday schools, usually organized by local churches.

Preceding the task, participants’ parents were given a questionnaire concerning their children’s linguistic background, which included a consent form. Heritage speakers were given a standard proficiency level test for Serbian language, according to the CEFR (Common European Framework of Reference for Languages) (2020), which consists of 6 levels, A1-C2. The oldest participant was 15 and the youngest 4 years old (mean age of participants is 8;7), with a high school student and a preschooler on both ends of our age scale. Therefore, their results could be taken into consideration for either confirming the hypothesis that older bilinguals perform better, or,

Table 2 Lexical items used in the study

canonical ending	masculine gender			feminine gender		neuter gender	
	consonant	non-canonical ending		canonical ending	non-canonical ending	canonical ending	
	O	e	a	A	consonant	O	e
<i>žuti/crveni telefon</i> 'yellow/red phone'	<i>zeleni/beli auto</i> ¹ 'green/white car'	<i>crni/plavi tupe</i> 'black/blond taupe'	<i>mladi/stari sudija</i> 'young/old judge'	<i>mršava/debela devojka</i> 'thin/fat girl'	<i>plava/žuta noć</i> 'blue/yellow night'	<i>veliko/malo ogledalo</i> 'big/small mirror'	<i>plavo/žuto jaje</i> 'blue/yellow egg'
<i>crni/žuti ključ</i> 'black/yellow key'	<i>veliki/mali pikado</i> 'big/small dart-board'	<i>plavi/crveni kupe</i> 'blue/red compartment'	<i>mladi/stari papa</i> 'young/old pope'	<i>velika/mala devojčica</i> 'big/small girl'	<i>crvena/crna peć</i> 'red/black stove'	<i>veliko/malo drvo</i> 'big/small tree'	<i>žuto/zeleno polje</i> 'yellow/green field'
<i>beli/crni sat</i> 'white/black clock'	<i>plavi/sivi tornado</i> 'blue/gray tornado'	<i>zeleni/crveni kanabe</i> 'green/red sofa'	<i>mršavi/debeli deda</i> 'skinny/fat grandpa'	<i>crna/siva mačka</i> 'black/gray cat'	<i>velika/mala kost</i> 'big/small bone'	<i>zeleno/žuto selo</i> 'green/yellow village'	<i>zeleno/crveno dugme</i> 'green/red button'
<i>veliki/mali nož</i> 'big/small knife'	<i>odrasli/dečji džudo</i> 'adults'judo/kids' judo'	<i>beli/crni tabure</i> 'white/black tabouret'	<i>mladi/stari vladika</i> 'young/old high priest'	<i>bela/crna ovca</i> 'white/black sheep'	<i>crvena/zelena mast</i> 'red/yellow ointment'	<i>plavo/narandžasto nebo</i> 'blue/orange sky'	<i>veliko/malo bure</i> 'big/small barrel'
<i>beli/plavi jastuk</i> 'white/blue pillow'	<i>odrasli/dečji tekvondo</i> 'adults' taekwondo/kids' taekwondo'	<i>veliki/mali pire</i> 'big/small puree'	<i>mladi/stari ujka</i> 'young/old uncle'	<i>žuta/zelena žaba</i> 'yellow/green frog'	<i>crvena/bela reč</i> 'red/white word'	<i>žuto/crveno slovo</i> 'yellow/red letter'	<i>plavo/sivo more</i> 'blue/gray sky'
<i>sivi/beli oblak</i> 'gray/white pillow'	<i>plavi/crveni biro</i> 'blue/red office'	<i>veliki/mali bife</i> 'big/small buffet'		<i>visoka mama/niska mama</i> 'tall mother/short mother'	<i>velika/mala kokoš</i> 'big/small hen'	<i>crno/belo vino</i> 'red/white wine'	<i>moje/tvoje ime</i> 'my/your name'
						<i>svetlo/tamno pivo</i> 'light/dark beer'	

1 Interestingly, the noun *auto* showed stable target-like results in almost all heritage speakers, which can be attributed to the high frequency of the word. However, it must be noted that in some varieties of Serbian language, this noun is in neuter gender, so its agreement can be explained as a result of the direct input.

on the contrary, that the process attrition increases with age progression. The control group were monolinguals from age 4 to age 10, that were hypothesized to have acquired gender agreement almost completely at a very early age. By monolinguals we refer to children who were born and still live in Serbia, whose dominant language both at home and in the social surrounding is Serbian. Taking into account the relatively small number of participants (<10), we cannot draw relevant statistical inferences about the correlation between factors such as proficiency or age, but we can at least point out the general tendencies.

Five heritage speakers were from Germany, two from Switzerland and two from Austria. All the participants are simultaneous bilinguals, since they were born in these countries and were exposed to both Serbian and German from an early age. It is important to point out that out of five participants from Germany, three were siblings, and the two HS from Switzerland are brothers, as well. Seven participants come from monolingual families, meaning that both of the parents are Serbian, and two participants' mothers were even born in the diaspora. Other two participants are actually two of the three brothers from Germany, whose mother is German, but their father remarried to a Serbian woman (mother of their half-brother).

Six heritage speakers were placed on lower proficiency levels (A1 and A2), and three participants were ranked as with higher proficiency levels (B1 and B2), which matches with the evaluation grades estimated by their parents. Expectedly, the proficiency level can be correlated with the level of everyday input and use of Serbian language, since lower-ranked HSs use more German than Serbian in their home environment, as opposed to higher proficiency HS. Two of the three brothers from Germany, who have a German mother, previously spoke only German at home with their parents, and since their parents' divorce, and their father's marriage to a Serbian woman, they started speaking Serbian on weekends, during their regular visits of their father and step-mother. It is important to note that the use of Serbian is mainly restricted to home environment, for both parties - both lower and higher proficiency speakers. In addition, these speakers have never gained any formal education on Serbian language.³

3 The parents also noticed that the frequency of visiting Serbia was somewhat reduced due to the COVID 19 pandemic restrictions in the years 2020-23.

6 Preliminary Results

We present here results of our first study, which, if we take into account the relatively small sample of participants, are considered as a possible tendency in error patterns among Serbian monolingual and heritage children.

6.1 Percentage of Errors

In Table 3 we show the percentage of errors among heritage speakers for each gender of the nouns, dividing the three categories into the ones with canonical and non-canonical endings. The most errors occur with feminine gender of non-canonical ending.

Table 3 Heritage speakers

masculine gender				feminine gender		neuter gender	
canonical ending	non-canonical ending			canonical ending	non-canonical ending	canonical ending	
consonant	O	e	a	a	consonant	o	e
10%	50%	40%	0%	10%	90%	20%	20%

In Table 4 we show the percentage of errors among monolingual speakers for each gender of the nouns, dividing the three categories into the ones with canonical and non-canonical endings. Likewise, the most errors occur with feminine gender of non-canonical ending.

Table 4 Monolinguals

masculine gender				feminine gender		neuter gender	
canonical ending	non-canonical ending			canonical ending	non-canonical ending	canonical ending	
consonant	o	e	a	a	Consonant	o	e
	10%	10%	0%	0%	90%	0%	0%

Em. (9) had the most deviant gender agreement from the target language, as the sole agreeing pattern he demonstrated for attributive adjectives was masculine, which is the non-marked, default form. This implies that he exposed correct agreement on all masculine nouns (with canonical and non-canonical endings) by chance, without any indication of genuine gender distinction.

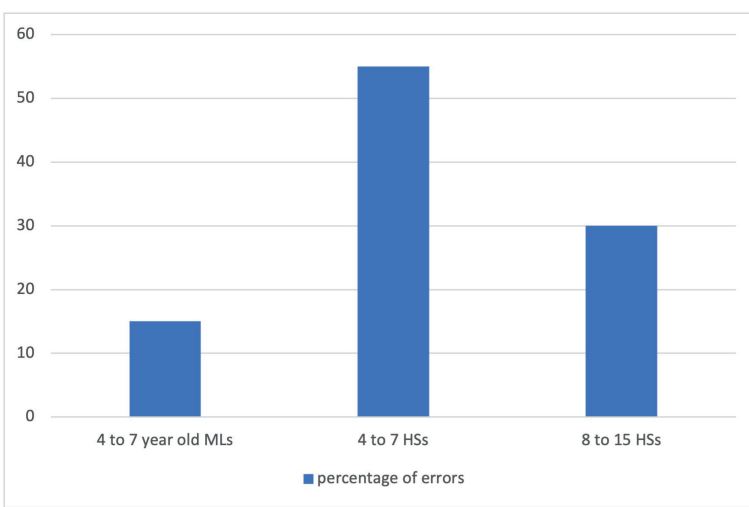


Chart 1 Percentage of errors among MLs and HSs, presented by age

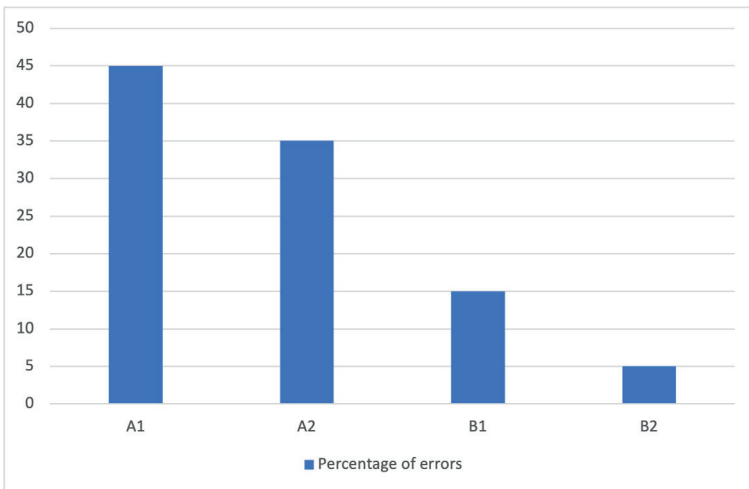


Chart 2 Percentage of errors among HSs categorized by proficiency level

One step further in gender agreement acquisition went Em.'s (9) older brother K. (15), who utilized a two-gender system, with all nouns (including neuters) except the ones with the *-a* ending interpreted as masculine, and all *-a* nouns referring to human females identified as feminine. Ev.'s (9) results conveniently illustrate the following learning phase, a three-gender system based predominantly on semantic

gender, with a clear distinction between masculine (canonical null suffix and non-canonical ending with *-a*) and feminine nouns (canonical ending with *-a*), while the non-canonical masculine nouns are (morphophonologically) analysed as neuter.⁴

E. (7) and M. (4) surprisingly had very similar results to V. (7), even though the first two demonstrated lower language proficiency levels, while V. was ranked higher. All three of them produced no errors when manipulating nouns with canonical endings. The same has been confirmed when dealing with masculine nouns ending with *-a*. Nevertheless, masculine nouns ending in *-o* or *-e* were mostly analyzed as neuter (80%) and feminine nouns ending with a consonant were interpreted as masculine (90%).

Quite unexpectedly, S. (8) and B. (10) also showed similar results, even though their proficiency level difference is considerable. In their case, most of the agreement was target-like, even in masculine nouns ending with *-o* or *-e* (around 70%). Even so, deviant gender agreement in these speakers was identified with feminine nouns ending in a consonant, which were regularly interpreted as masculine. Finally, L. (10), who demonstrated the highest proficiency level at our initial testing, accordingly exposed a completely target-like agreement behaviour.

Out of the six monolinguals aged 7, only one participant had completely target-like agreement, and the rest performed almost at ceiling, with feminine nouns ending in a consonant being agreed as masculine. The one monolingual aged 4 was almost the same as them, except she treated all the nouns ending in *-e* and *-o* as neuter.

7 Discussion

The results display the expected correlation between proficiency level (which is congruent with the percentage of input and use of Serbian, according to the parents' questionnaire answers) and the number of produced errors. This means that higher proficiency level HSs demonstrated a more target-like agreement, and utilized a three-gendered system, while the lowest proficiency speakers used rather deviant agreement patterns with a simplified gender system, with default neuter, or default masculine. However, there were two cases when lower proficiency participants showed similar results to a higher proficiency participant - in one case the agreement was more target-like, while in the other, this stage was still not reached. Looking

⁴ It's important to note that the speakers on lower proficiency levels often mispronounce or did not pronounce the target words in the task, irrespective of their overall frequency and transparency.

at the participants' age, this (confounding) variable was expectedly in correlation with the number and types of errors - less target-like agreement was confirmed with subjects aged around 7, while more target-like agreement was found with 8 to 10-year-olds. The confounding effect of age is most distinctly seen in L., who is 10 and at the same time of the highest proficiency. He outperforms even the monolinguals, who, even though are of the same proficiency by default, still haven't acquired agreement in what seems to be the most difficult category - feminine nouns ending in a consonant. This notion matches Schwartz's (2014) observation that feminine nouns ending in a consonant are acquired last in monolingual acquisition, and is in line with Slobin's (1985) hypothesis that children will have more difficulties with less identifiable morphemes. Nevertheless, age cannot be the deciding factor in performing in a target-like manner, if the level of proficiency is very low, as we have witnessed with K.'s (15) performance. Otherwise, if certain minimum input has been provided to the HS, it follows a progression path similar to the one attested with monolinguals and bilinguals.

As for the types of errors, we can conclude that masculine nouns ending with *-a* had target-like agreement among all participants, mainly because they are animate (and could possibly be primed by the stimulus pictures): *papa* 'pope', *sudija* 'judge', *vladika* 'high priest', *tata* 'Dad'. In K.'s (15) and Em.'s (9) case, this could also be a consequence of the default masculine agreement pattern shown with almost all nouns. The overall results similarities shared by HSs and MLs are in line with Laleko's (2019) study on Russian HS, emphasizing that HS performed better than SLA students in noun-adjective agreement of masculine nouns ending with *-a*.

It must be noticed that most of the masculine nouns ending in *-e* or *-o* chosen for this study are, in fact, loan words, fairly unknown to the majority, if not to all of our participants, due to the fact that genuine Slavic common nouns never take the *-e* or *-o* ending in Serbian: *kupe* (compartment), *tupe* (taupe), *kanabe* (sofa), *bife* (buffe), *tornado* (tornado), *pikado* (dart board). In order to maintain the same referent type, we chose this solution over utilizing proper names, making it inevitably an experiment design step that could affect our results to certain degree. As one could assume, all the masculine nouns ending in *-e* or *-o* were mostly interpreted as neuter, as these endings in a three-gender system are typical neuter cues. When it comes to participants whose gender system is simplified and is default neuter or masculine, we cannot testify its separate existence. Our subjects' performance is more in line with the attainment of the monolingual participant aged 4, but rather disparate from the older monolingual participants, as monolinguals acquire masculine nouns ending in *-o/-e* agreement only after the agreement patterns of nouns with canonical endings have been entirely accomplished.

A thorough research should be conducted on the agreement pattern progression among Serbian monolinguals. Our participants seem to display different stages of this supposed path. Em. (9) stuck to the non-marked, default, masculine form, being almost insensitive to any gender cues. K. (15) used a two-gender system, in which only -a nouns referring to human females were analyzed as feminine, while the rest of the stimuli were interpreted as masculine. Ev. (9), Em. (7), M. (4) and V. (7) utilized a more advanced three-gender system, in which non-canonical masculine nouns were misinterpreted as neuter and non-canonical feminine items as masculine. S. (8) and B. (10) exposed a non-target agreement pattern only when dealing with null ending feminine nouns. Lastly, L. exposed a completely target-like agreement behavior.

8 Conclusion

The goals of this study were to determine what are the similarities and differences between heritage speakers and their monolingual peers in noun-adjective agreement; what are the error patterns and how the canonicity of the endings influences those patterns; how is proficiency and age related to the results of HL speakers. Based on a rather smaller sample of participants, we could not draw statistically relevant conclusions, but we can at least define the regularities in heritage gender agreement. The main observation is that monolinguals and advanced heritage speakers go through similar progression phases if exposed to a certain minimal input. For both groups, the biggest obstacle were feminine nouns ending in a consonant, which they analyse as masculine, with different success in acquiring other non-canonical agreement patterns. As one could expect, the null ending feminine nouns are with the lowest frequency and are acquired the latest in both types of speakers. Nevertheless, we identified different agreement strategies among the participants, ranging from a simple, masculine-gender-for-everything approach or a basic binomial two-gender system, to quite elaborate target-like agreement patterns.

Future investigation could tackle the comparison between Serbian HSs whose dominant language is German and English-dominant HSs, in order to determine whether German has any positive effect on differentiating grammatical genders in Serbian, as opposed to English, which could be hypothesized to delay gender agreement progress. As a reminder, the German gender system is not as transparent as the Italian and Serbian one. Therefore, its role in acquiring a more predictable system based on transparent gender cues seems still not definite.

Appendix

Table 5 Participants' information

Name	Age	Country	Proficiency level	Percentage of use of Serbian at home	Frequency of stay in Serbia	Duration of stay in Serbia
S.	8	Austria	A2	50%	once or twice a year	three weeks
E.	7	Austria	A1	70%	twice a year	a week
B.	10	Switzerland	B2	95%	once or twice a year	a week or two
V.	7	Switzerland	B1	95%	once or twice a year	a week or two
K.	15	Germany	A2	50%	once or twice a year	a week
M.	4	Germany	A2	70%	every two months	two weeks
Em.	9	Germany	A1	50%	once or twice a year	a week
Ev.	9	Germany	A1	15%	been in Serbia four times	three to five days
L.	10	Germany	B2	100%	twice a year	three weeks

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Definiteness in Levantine Arabic Heritage Speakers of English

How Heritage Language Affects Cognition

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Abstract Definiteness depends on crosslinguistic semantic variables, including count/mass distinction, which correlates with cognitive individuation of discrete entities and attention to shape rather than substance. Count/mass distinction is represented by definiteness markers in English but not in Levantine Arabic (LA). Replicating experiments by Liu and Gleason, Middleton, and Lucy and Gaskins, this study tested grammar of definiteness, cognitive individuation, and attention to shape vs. substance in LA heritage speakers of English (LAHSEs, aged 18-25). The results show that LA definiteness parameters affect LAHSEs' cognition but not their grammar of definiteness.

Keywords Definiteness. Count/mass nouns. Heritage language. Language-to-cognition correlation. English. Levantine Arabic.

Summary 1 Background. – 1.1 Definiteness. – 1.2 The Definite Article. – 1.3 English Definiteness and the Definite Article. – 1.4 Arabic Definiteness and the Definite Article. – 1.5 Definiteness of Entities Varies across Languages. – 1.6 System Interference. – 1.7 Cognitive Correlates of Definiteness in English and Levantine Arabic. – 2 Aim of the Study and Research Question. – 3 Preliminary Hypothesis. – 4 Heritage Speakers. – 5 Methodology. – 5.1 Preliminary Grammar Tests. – 5.2 Semantic Similarity Test. – 5.3 Spot-the-Odd-One-Out. – 5.4 Match-by-Similarity. – 6 Results. – 6.1 Preliminary Grammar Test. – 6.2 Semantic Similarity Test. – 6.3 Spot-the-Odd-One-Out. – 6.4 Match-by-Similarity. – 7 Discussion. – 8 Conclusions.

1 Background

1.1 Definiteness

Definiteness, found universally, varies greatly across languages in terms of its semantic foundations and manifestations (Lyons 1999). It has been explored in connection to specificity (von Heusinger 2002), salience (von Heusinger 1997a), uniqueness and inclusiveness (Heim 2011; von Heusinger 1997b; Roberts 2003), familiarity and identifiability (Chen 2004; Heim 1983), ellipsis/reference tracking (Nariyama 2003), and anaphoricity/information triggering (Reinhart 1983). Indeed, definiteness consists of a complex interplay of several strictly correlated semantic and pragmatic features (Zucchi 1995) that operate in different languages to varying degrees (Cho, Slabakova 2014). Among these features is countability, i.e., the distinction between mass and count nouns. Chesterman (2005) theorized definiteness/indefiniteness as linguistically “encoded” and psycholinguistically “decoded” based on a cluster of physical properties such as quantity/inclusiveness, genericity/extensivity, and countability/concreteness, all scalar properties that may vary crosslinguistically. Interestingly, quantity, generality, and concreteness can all be considered semantically proximal within the cognitive bedrock of countability (Strik Liever, Bolognesi, Winter 2021).

1.2 The Definite Article

Languages with articles vary widely in their usage (Hawkins 1978). Some uses of articles have been explored for deixis (Himmelmann 1997), anaphora (Bosch 1983), and uniqueness (Hawkins 1978), among other closely interconnected parameters and functions. Among many crosslinguistically detected strategies (Czardybon 2017), the presence or absence of the definite article - in the languages that use it - is a marker associated with the semantic-pragmatic parameter of definiteness (Krámský 1972; von Heusinger 1997b). A striking example of crosslinguistic variation in the use of the definite article is revealed by comparing Arabic (in its numerous varieties) and English, as several studies have demonstrated (Harb 2014; Husni, Newman 2015).

1.3 English Definiteness and the Definite Article

The English article system includes the indefinite article *a(n)*, the definite article *the*, and the zero (null) article. Many have attempted to identify explanations for definite/indefinite noun phrases and the semantic features beyond this distinction (Haspelmath 1999). Abbott (2004) discusses the following semantic properties as related to

English definiteness: uniqueness (Russell 1905), inclusiveness (Hawkins 1978), familiarity (Bolinger 1977), strength (Milsark 1977), and specificity (Haspelmath 1997; Partee 1972). Some of these properties correlate with countability.

Languages either allow or require nouns to appear with an overt indefinite or definite article or allow bare nouns to appear without an article. Danon (2001) observes that the use of the definite article with generics varies crosslinguistically in a way that has no possible effect on interpretation. English allows singular proper nouns and abstract, plural, and mass nouns in argument position with no determiner. In English, singular common, concrete, countable nouns require a determiner (definite article, classifier, number, measure). Mass nouns require the use of measure phrases that contain a classifier to be countable, while count nouns do not (Chierchia 1998). English definite and indefinite singular count nouns, bare plural count nouns, and bare mass nouns can convey genericity, while definite plurals are not allowed to express generic meaning except for names of nationalities. Thus, the semantic-pragmatic feature of entities' countability and its grammatical manifestation in the use of the definite article is active in English. In English, linguistic countability is marked by differential use of definite, indefinite, and no-article options, e.g., 'food is necessary', 'dogs bark', but 'the house is furnished', 'the/a dog barks', to put it simply. English mass nouns in generic sentences do not take the definite article, e.g., 'water is healthy'.

1.4 Arabic Definiteness and the Definite Article

Studies on Arabic definiteness have mainly focused on Classical and Standard varieties, with a few exceptions concerning dialectal data (Dickins 2013; Testen 1998), especially on the grammar of nuna-tion (*tanwīn*) and the definite article *'al-* (and its variants, e.g., *il-* in some dialects), considering them definiteness/indefiniteness markers (Holes 1995; Badawi, Carter, Gully 2004), state markers (Lyons 1999; Retsö 2010), or information triggers (Jarrah 2016).

According to the Arab grammatical tradition (Sakaedani 2019; Sartori 2019) and modern scholars (Al-Rawi 2005; Hawas 1986; Jaber 2014), definiteness is not expressed only by *'al 'at-ta'rīf*, nor does *'al* express only definiteness, e.g., *'ams 'yesterday/'al-'ams* 'a day in the past' (Kashgari 2015). Definiteness is also acquired through annexation in constructing state nominals (Shlonsky 2004). *'Al-* can be: 1. nominal (*'ism mawsūl*); 2. definite (*'al-'al-ta'rīf*, including *'al 'al-dihniyya* for familiarity, *'al 'al-huduriyya* for contextuality, *'al 'al-dikriyya* for anaphoricity, and *'al 'al-jinsiyya* for 'non-referential' definiteness) (Abu-Melhim 2013); or 3. augmented *'al-zāyda*, attached to demonstrative nouns, time adverbials such as 'now', days of the week,

and singular proper names, which are otherwise generally nunated. The situation is different among dialects in the classic language, as nunation is absent or residual, local strategies other than 'al-/ il- can be prefixed to nouns (e.g., *hal-*; Jarrah 2016), and the obligatory definiteness agreement (Danon 2008) is often violated (as in the *yom ha-šišiy* syndrome; Borg 2000; Pat-El 2009). However, the article system does not correlate with considerations of count/mass oppositions.

Indeed, from a typological point of view, Arabic is a determiner language, i.e., it requires noun phrases in argument position to be preceded by a determiner. In classical, standard forms and most dialects, Arabic only allows definite (singular, plural, and mass) noun phrases to express generic meaning without any difference between well-established and less well-established types and noun-level and sentence-level genericity (Krifka et al. 1995). In Levantine Arabic (LA), the sentence

1. il-ḥalīb jayyid *l-ak*
 DEF-milk good PREP-you
 lit. 'The milk is good for you.'

has a generic meaning. Indeed, Arabic varieties use definite articles with non-count generics, unlike English. Furthermore, across Arabic varieties, the default form of many basic nouns is a grammatically singular mass noun, from which countable forms are obtained through a change in the ending or stem (Bettega, D'Anna 2023). This series of LA examples shows different forms for the concept *bēḏ* 'egg-ness':

2. `addēš əl-bēḏ?
 how much DET-egg(ness)?
 'How much do eggs cost?'

Bēḏ is a singular grammatically masculine mass noun.

3. kəmm bēḏa?
 how much egg?
 'How many eggs?'

Bēḏa is the countable singulative form, obligatory after the adverbial quantifier *kəmm* and obtained by adding to the basic form *bēḏ* the feminine singular ending *-a*.

4. xams bēḏāt
 five eggs
 'Five eggs.'

Bēḏāt is the countable plural form obtained by adding the feminine plural ending *-āt* to the basic form *bēḏ*.

1.5 Definiteness of Entities Varies across Languages

According to Chesterman (2005), English countability correlates with contiguous properties such as extensiveness, inclusivity, and genericity, all of which surface in grammatical and syntactic definiteness, so that words like ‘lightning’, ‘mankind’, ‘evidence’, and ‘furniture’ are also grammatically processed as mass nouns (Iwasaki, Vinson, Vigliocco 2010). In all languages, some nouns can be counted by numbers, while others need classifiers. Count nouns are perceived as possessing properties that allow them to be counted. Referents of mass nouns are considered not easily countable. Importantly, count/mass properties may vary crosslinguistically in reference to the same entity. In English, apples, biscuits, and sandwiches are usually considered countable, but wine, soup, water, pasta, and corn are not (they need a classifier to be counted, e.g., ‘three bottles of wine’). In LA, most edible entities and foods are mass nouns and require classifiers (*ḥabbeh* for many fruits and grains, *kurrah* for ball-shaped food units such as meatballs, *qit* for candies, *mlaffeh* or *‘ilbeh* for most traditional pastries). English and LA definiteness systems diverge according to different countability parameters that determine different usages of the definite article. The following examples show that the same words (fire, water, bread, dogs, uranium, apples) have different definiteness statuses in English and LA but the same degree of genericity, i.e., they are indefinite in English but definite in LA (Fassi Fehri, Vinet 2008):

- 5a. When fire starts to burn, it spreads
- 5b. lam btabda n-nār tift’il,
 conj start.PRES.III.F.S. DEF-fire burn.SUB.III.F.S.
 inna-ha btunfur
 CONJ-SUFF.III.F.S. spread.PRES.III.F.S.
- 6a. Water is good for health
- 6b. il-mā mufid la-ṣ-ṣiḥḥa
 DET-water good PREP-DET-health
- 7a. Bread sells well every day
- 7b. il-xubz byitbī kaṭīr kull yōm
 DET-bread sell.PRES.III.M.S. well every day
- 8a. Dogs bark
- 8b. il-klāb byinbaḥu
 DET-dog.PL bark.PRES.III.PL

- 9a. Uranium is a heavy element
9b. il-yurānyum ʿunṣur tqīl
 DET.uranium element heavy
- 10a. Apples are too expensive
10b. it-tiffāḥ ktīr ḡāliy
 DET-apple much expensive

1.6 System Interference

English and LA definiteness systems interfere with Arabic native speakers' acquisition of English as a second language (Harb 2014; Husni, Newman 2015). There is evidence of the effects of Arabic countability properties in their errors in the target language.¹ Arabic learners of English overuse the definite article in idioms, with abstract and uncountable nouns, and in generic plural noun phrases, e.g., *The value of the time; *He sells the apples at the crossroad; *The milk is nutritious to the body; *I went to the bed; *You cook the rice; *The horses are useful animals. The fact that Arabic-speaking English learners find it difficult to decide whether referents are countable (Butler 2002; Master 1987) supports the hypothesis that the count/mass opposition is language-specific and non-conceptual, i.e., to some extent, arbitrary. Therefore, it is worth observing if and how the cognitive structures involved co-vary crosslinguistically with the linguistic structures. In addition to crosslinguistic comparisons, relevant case studies are those in which different linguistic systems coexist in the same subjects, such as multilingualism, heritage languages, linguistic impairments, and language acquisition.

1.7 Cognitive Correlates of Definiteness in English and Levantine Arabic

The correspondence between the grammatical expression of countability through definiteness and conceptual properties, for example, the individuation of discrete bounded entities vs. non-individuation, has been proposed by Du Bois (1980), Gundel, Hedberg and Zacharski (1993); Koga (1992), Wierzbicka (1988), and Wisniewski, Lamb and Middleton (2003). Furthermore, cognitive tests conducted on native speakers of English have proved the relationship between linguistic countability and the cognitive individuation of discrete bounded entities (Middleton et al. 2004). Lucy and Gaskins (2001) have

¹ Aboras 2020; Alenizi 2013; 2017; Al-Malki, Norazmani, Noor 2014; Naim-Bader 1988.

demonstrated that the presence of count/mass distinction correlates crosslinguistically with attention to the shape rather than the substance of entities. Indeed, they found that English speakers associate the unit of individuation with count nouns and, as a result, classify entities based on their shapes, which are the best indicators of individuated entities. In contrast, speakers of Yucatec Maya (an indigenous language spoken in southeastern Mexico) usually pay attention to the material composition of entities rather than their shapes. Thus, while native speakers of English categorize objects by shape rather than material, native speakers of Mayan languages – where the count/mass distinction is not embedded in grammar but realized through classifiers – tested positive for the opposite cognitive tendency.

English spoken by native speakers thus displays a strong correlation between the semantic-pragmatic property of countability and its grammatical manifestation through definiteness and the tendency toward individuation of discrete bounded entities and attention to shape rather than substance in cognition. Assuming a correlation between language and cognition exists, based on the linguistic data presented so far, one could hypothesize that LA will cognitively behave similarly to Yucatec Maya in the experiment of Lucy and Gaskins (2001) and produce results opposite to those produced by English in the experiment designed by Middleton et al. (2004).

Indeed, the two experiments had not previously been conducted on LA. Fifteen LA native monolingual adult speakers were tested in both experiments to provide the necessary background information for the present research. The hypothesis articulated above was confirmed. LA speakers do not manifest any particular cognitive bias toward the individuation of discrete bounded entities, and they show clear attention to substance rather than shape, consistently with LA's lack of correlation between countability, definiteness, and the use of the definite article at the linguistic level.

A more detailed exposition of the LA data is unnecessary here, as it is not the subject of the present research and will be treated separately in a future study. For the present study, the results provided by the replications of the studies of Lucy and Gaskins (2001) and Middleton et al. (2004) for English and LA speakers represent control data.

2 Aim of the Study and Research Question

Due to the extreme differences between English and LA linguistic and cognitive data mentioned above, linguistic and cognitive responses of LA heritage speakers of English (LAHSEs) are particularly interesting here. Linguistically, LAHSEs' definiteness system and use of the definite article should reflect complete mastery of the English rules of mass/count distinction without influences from LA, which the LAHSE

informants selected for this study ceased to acquire at an early age (three to four) so that their experience with the language remained limited to partial comprehension and the use of some brief/routine speech productions (greetings, thanking formulas, expressions of affection or disappointment, some nouns). Assuming there is a strong correlation between linguistic definiteness and countability, on the one hand, and cognitive bias toward the individuation of discrete entities and preference for the shape over the substance of objects on the other, LAHSEs' cognitive responses should reflect the data elicited from English speakers.

If cognition does not necessarily reflect only the constraints of the dominant language at a certain moment in one's lifetime and can store different kinds of information, experiences, and endowments, some cognitive similarities may exist between LA speakers and LAHSEs.

To test the presence of cognitive similarities between LA and LAHSEs, 15 adult LAHSEs aged 18 to 25 were tested in the experiments designed by Lucy and Gaskins (2001) and Middleton et al. (2004). The identification of cognitive similarities between LA and LAHSEs would demonstrate that despite the late development of definiteness in children (Liu, Gleason 2002), cognitive features that correlate with it are established by age three or four, the age at which LA heritage language acquisition ceased among the informants of this study.

3 Preliminary Hypothesis

I expected LAHSEs to display complete mastery of the English definiteness markers in tasks that entailed different countability values in the linguistic experiments and produce the same results as the English (EN) native speakers' control group. On the other hand, I hypothesized that LAHSEs' cognitive responses would be similar to those of the EN control group, yet I could not exclude the possibility of some similarities with the LA control group. In particular, following preliminary spontaneous observations, I expected LAHSEs to classify known and novel objects by material, not shape. I anticipated that heritage languages would leave traces in the cognition of heritage speakers, as was observed for semantic structures by Polinsky (2011) and Scontras et al. (2017). It seems, therefore, unnecessary to actively speak a language for it to influence one's cognitive structures. This idea is in line with the notion of complex cognition, in which different structures not necessarily related to communicative tasks and proficiency can coexist (Slobin 2014).

4 Heritage Speakers

The term ‘heritage speakers’ refers to descendants of immigrants who inhabit a bilingual environment from an early age. Their dominant language is the host country’s language, but some aspects of the family language (the heritage language) may still affect their linguistic abilities from the periphery of their linguistic consciousnesses. Heritage languages are often accompanied by stories and individual paths of migration, displacement, and minority communities and often remain marginal in the societies in which heritage speakers live and in their communities and daily lives (Pavlou, Grohmann 2021). Importantly, heritage languages can be acquired at different proficiency levels and for various reasons (Pavlou, Fotiou 2022). Indeed, heritage speakers vary widely in the degree of their receptive and productive command of the heritage language. This study considers a particular type of heritage speakers defined by Polinsky as “over-hearers” (2018). These heritage speakers have limited situational competence in their heritage language that is restricted to a more or less extensive understanding. The LAHSEs selected for this research were born to LA-speaking parents in England. They are all over-hearers whose families deliberately deprived them of exposure to Arabic linguistic stimulus very early due to the urgency of integrating into English-speaking society. LA was heard only at gatherings of family and friends, early on becoming less important than English, which was considered necessary for education and perceived as an instrument of social integration and advancement. None of the LAHSEs tested here were proficient in LA, and all possessed only oral comprehension abilities and basic communicative competence (beginner level). I chose LAHSEs to investigate whether and how passive proficiency in a given language can still affect cognition.

5 Methodology

All groups (LAHSEs, EN speakers, LA speakers) were tested using the linguistic and cognitive tests described here. Fifteen LAHSEs aged 18 to 25, born and raised in England, participated in linguistic and cognitive experiments. Fifteen monolingual native LA speakers and fifteen EN native speakers aged 18 to 25 represented the control groups and participated in the same experiments. As for the linguistic experiment, EN speakers and LAHSEs were requested to reply in English, and monolingual LA speakers in LA.

Due to the effort of recruiting a sufficient number of heritage Arabic speakers of English, especially of the ‘over-hearer’ type, for the experiments described here, I selected the informants who participated in this study, to whom I am deeply indebted, from sedentary urban

Arabic-speaking Palestinian and Syrian communities. Therefore, I use the label Levantine Arabic (ISO 639-3), also used in traditional dialectological classifications to define the languages spoken in the predominantly urban and coastal area that includes Syria, Lebanon, Palestine, and Jordan (Al-Jallad 2012; Al-Masri 2015; McLoughlin 2009).

5.1 Preliminary Grammar Tests

Grammar tests consisted of a fill-in-the-blank task, an error correction task, countability judgments of nouns in isolation, and countability judgments of nouns in context. Each test included 20 entries, all elaborated *ad hoc* based on Liu and Gleason's model (2002). These entailed countability-based oppositions correlated with abstractness, genericity (Behrens 2000; Dahl 1975), extension, and inclusiveness (Carlson 1977; Fiengo 1987) under different conditions of numbers, tenses, and argument structure. Sentences were never longer than one line. The EN control group and LAHSE informants underwent the test in English, while the LA control group underwent the same test in LA. LA informants were tested as a control group to allow me to judge LA influences in LAHSEs' performances. Informants had thirty minutes to complete this task.

5.2 Semantic Similarity Test

A semantic similarity test was employed to determine whether the count/mass distinction had consequences for semantic representation in that words that share count or mass status are more semantically similar than words that do not (Iwasaki, Vinson, Vigliocco 2010). The test was based on the 'error induction design', counting and analyzing the mass/count cross-category 'substitution errors'. Semantically related lexical substitution errors (e.g., 'beer' substituted by 'wine') are quite common due to the co-activation of semantically related lexical candidates during a conceptually driven retrieval process (Garrett 1992; Levelt, Roelofs, Meyer 1999). Grammatical classes also appear to play a role in errors of this type (Fromkin 1973). If English speakers' semantic representations are affected by count/mass distinction, their substitution errors are expected to include more cases in which target and error words share count/mass status than those made by LA speakers. I tested words from the domain of food because this domain offers significant within-category variability regarding the count/mass status of picturable items. In this field, there are both solid and non-solid entities, and within substantial items, there are differing degrees of ease of individuation (e.g., 'apple' may be more easily individuated than 'celery') that can overlap

with count/mass status. Finally, Bloom (1994) found that English-speaking children tend to make errors involving count/mass status in the semantic field of foods ('eating a bacon', 'I drop a celery'), suggesting that in this domain, the link between conceptual and grammatical properties may be more arbitrary than in others. If English count/mass status has come to affect English speakers' semantic knowledge as a consequence of the relationship between conceptual properties (object vs. substance or individual vs. portion) and grammatical properties (count vs. mass), we would be expected to observe language-specific effects on semantic substitution errors such that errors in which names of stimulus and target share the count/mass status would be more common for English speakers than for Arabic speakers, for whom this distinction is not grammatically marked.

Speakers were first asked to name, in their native language, items depicted in 30 high-resolution color pictures shown on a computer screen using either a count phrase (e.g., English 'a __'; LA ' __ *wāḥid/a* 'one') or a mass phrase (e.g., English 'some __'; LA ' __') to check their agreement on the property attributed to each entity. Next, I grouped 21 pictures of the food items on whose mass/count status speakers of both groups agreed the most into blocks of seven pictures. Each picture appeared 14 times during the experiment, which included 42 blocks and lasted 30 to 40 minutes. Speakers were asked to name food pictures aloud in their native languages using single words (or a name such as 'green bean') as they appeared on the computer screen.

The experiment began with a name agreement phase in which participants were asked to name each experimental picture without time pressure. I noted any variation from the intended names and provided prompts if the participants could not produce a label for a particular picture. Next, participants performed a set of 42 practice trials on 42 blocks, each containing seven pictures in a row. Each target picture could appear once in each block and could not appear as the last item of one block and the first item of the next. In the practice trials, the blocks were presented in one of four possible locations on the screen, and the participant was instructed to name each aloud. After each block was presented, I altered the presentation rate to accommodate each speaker's speech rate, adjusting it by 100 milliseconds more or less, if necessary, to make the task challenging yet manageable for each speaker. The presentation rate was speeded up if a participant successfully named all pictures without errors and slowed down if a participant could not keep up with the presentation.

I analyzed the lexical errors (i.e., cases in which the word produced for a target was a different word than the one I expected). EN speakers', LA speakers', and LAHSEs' errors were analyzed according to the proportion of errors that preserved the count/mass status of the target label.

5.3 Spot-the-Odd-One-Out

In this experiment, speakers were asked to make semantic judgments on 12 triads of words (translation equivalent in the two languages). Their task was to spot the odd one out and cross out the word less similar to the other two in terms of meaning (Garrard et al. 2004). I hypothesized that if count/mass status affects English speakers' semantic representations, EN speakers and LAHSEs should show a greater tendency than LA speakers to select words that share count/mass. Twelve words were selected and combined in all possible triadic combinations, and the order of the three words in each triad was randomized. Participants completed the task using paper and pencil. The time assigned to complete the task was 90 seconds.

5.4 Match-by-Similarity

A non-linguistic experiment by Lucy and Gaskins (2001) was replicated. It consisted of asking the informants to observe an original object and decide which of two alternative objects was more similar to it. One had the same shape as the original object, while the other had the same material composition. Each informant underwent six tests, four with known objects and two with novel objects. The time allocated was 18 seconds.

According to the hypothesis that linguistic properties of countability affect cognition, EN speakers were expected to prefer the shape alternative and LA speakers the material alternative. The choices of the LAHSEs were the objects of the experimental question.

6 Results

6.1 Preliminary Grammar Test

The results of the EN speakers' and LAHSEs' grammar tests confirm that count/mass noun judgments strongly correlate with competence in definiteness rules in English. The grammatical tests are not discussed here since the linguistic count/mass nominal parameters of LAHSEs are similar to the average outcomes produced by EN speakers (Liu, Gleason 2002) in all respects. Indeed, LAHSEs demonstrated native competence in English.

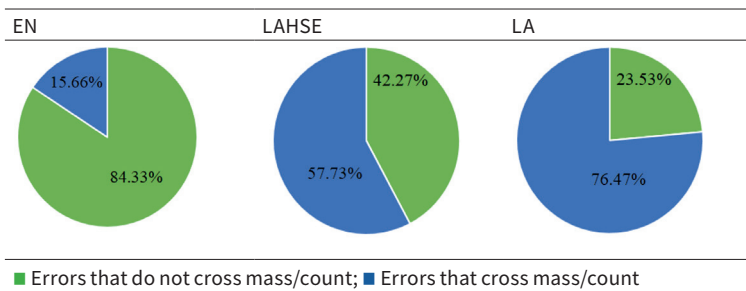
6.2 Semantic Similarity Test

In the semantic similarity test, all groups produced more naming errors under increasing time stress. Each group had an average of 4,400 valid responses. All entities (mainly liquid, edible, processed, or raw) were presented in bowls so that shape would not interfere with categorization. Errors made by the EN control group (83 errors; 1.88%) did not involve the count/mass distinction (70 of 83 errors; 84.33%), so nouns were mistakenly attributed within the same category (mass: ‘water’ for ‘juice’, ‘rice’ for ‘corn’, ‘flour’ for ‘sugar’, ‘oil’ for ‘honey’; count: ‘biscuits’ for ‘candies’, ‘chocolates’ for ‘meatballs’, ‘pastries’ for ‘meat rolls’). Only 13 of 83 errors (15.66%) violated the mass/count boundary in the EN group. Interestingly, a small percentage of errors produced by EN speakers also involved shape-related boundaries (e.g., ‘oranges’ for ‘meatballs’; 5 of 83; 6.02%).

Among the LA speakers, 2.31% of the responses were incorrect. In line with the hypothesis, the errors produced by LA informants often crossed the count/mass distinction (78 of 102 errors; 76.47%). Errors included, for example, ‘rice’ (*ruz*/mass) for ‘sugared almonds’ (*ḥalawiyāt*/count), ‘meat-and-rice balls’ (*kafta*/mass) for ‘biscuits’ (*baskwit*/count), and ‘candies’ (*ḥulwa*/mass) for ‘pastries’ (*mu’janeh*/count).

Among the LAHSEs, 2.2% of the responses were incorrect. Notably, 56 of the 97 errors (57.73%) produced by LAHSE informants, mainly those related to nouns representing processed food types, crossed the count/mass boundary, in line with the LA results. Figure 1 summarizes the results of the semantic similarity test.

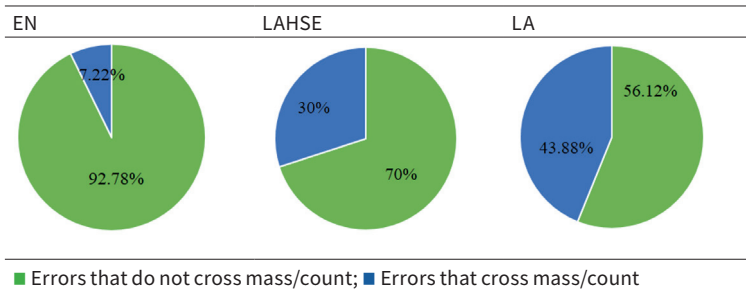
Figure 1 Results of the semantic similarity test



6.3 Spot-the-Odd-One-Out

The test employed 180 triads. Of these, EN speakers violated the count/mass boundary in 13 cases (7.22%), LA speakers in 79 cases (43.88%), and LAHSEs in 54 cases (30%). Figure 2 reports the results of the spot-the-odd-one-out test.

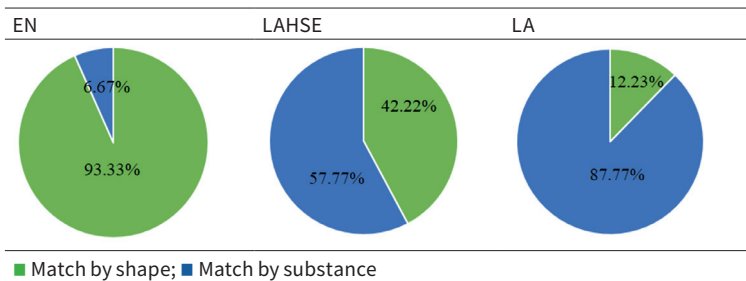
Figure 2 Results of the spot-the-odd-one-out test



6.4 Match-by-Similarity

The cognitive test confirmed the data yielded by previous experiments conducted by Lucy and Gaskins (2001) on EN speakers. Indeed, this group opted mainly for matching objects with the same shape (84 of 90 responses; 93.33%). LA speakers were more oriented toward matching objects of the same substance (79 of 90 responses; 87.77%). LAHSE informants produced an intermediate result: 52 of 90 responses matched objects by material (57.77%) and 38 by shape (42.22%). Figure 3 reports the results of the match-by-similarity test.

Figure 3 Results of the match-by-similarity test



7 Discussion

Except in the case of the preliminary grammatical test, in which the expectations of similarity between the results of the EN and LAHSE speakers were satisfied, the other experiments showed a marked closeness of the LAHSE results with the LA ones. Regarding the match-by-similarity cognitive test, a remarkable discrepancy emerged between linguistic and cognitive representations. This discrepancy could be due to various cultural and environmental factors, yet it is not very surprising in light of the most recent studies on the complexity of the relationships between language and cognition in different domains of experience. The alignment between linguistic and cognitive representations is a recently dispelled myth (Bohnenmeyer et al. 2022). The relation between linguistic and cognitive structures is a complex phenomenon that depends on many factors, such as the domain (more or less dependent on sensory experience) and the language in question and its transmission, which is connected to the conditions of the material and intellectual culture in which speakers are immersed (Cerqueglini 2022).

What is perhaps most striking is the discrepancy between the LAHSE results of the grammatical test, which converge with the EN results, and the LAHSE semantic representations of mass/count, which lie between the EN and LA results, as shown by the semantic similarity test and the spot-the-odd-one-out test. The results of the semantic similarity and spot-the-odd-one-out tests may depend on cultural factors that interfere with linguistic choices in LAHSEs. Indeed, LAHSE informants live in an English linguistic environment, yet food is part of the daily domestic routine and is prepared, measured, served, and discussed according to inherent LA cultural criteria, influenced by mass concepts and related quantifiers and classifiers.

Nonetheless, the failure to notice the count/mass distinction did not occur only in the case of food. In the spot-the-odd-one-out triads, for example, given the trio showing water/rice/biscuits, 12 EN speakers spotted the water (the liquid), while 14 LAHSE informants spotted the biscuits (the only count noun). In the English triplet ‘parquet’ (mass)/‘tile’ (count)/‘brick’ (count), 12 EN speakers pointed to ‘parquet’, the only mass noun, while LAHSEs were much less count/mass-oriented (four pointed to ‘parquet’, six to ‘tile’, and five to ‘brick’). In the corresponding LA triplet *barkē* (mass, ‘parquet’)/*balāṭa* (count, ‘tile’)/*qarmīd* (mass, ‘brick’), LA speakers did not show specific effects of count/mass distinctions. Similar results were obtained for the triplet ‘soap/*ṣabūn*’ (mass)/‘shampoo/*šambū*’ (mass)/‘sponge/*sfinjeh*’ (count). EN speakers generally pointed to ‘sponge’, while LAHSEs and LA speakers made different choices, not oriented by count/mass bias.

8 Conclusions

This article presents a study of the alignment between the grammatical structures of definiteness and semantic and cognitive representations of countability and individuation. Semantic and cognitive similarities between LAHSEs and LA speakers are striking, considering that LAHSEs speak only English fluently, and their competence in LA is only passive and restricted to a scanty vocabulary and set of communicative tasks. LA definiteness grammar, which does not mark count/mass distinctions, does not affect LAHSEs' grammatical proficiency in English definiteness grammar. Probably because the article system is among the most frequently recurring elements in English, its rules are deeply embedded in the grammatical proficiency of its speakers. Being fully competent in English definiteness grammar as native speakers of English, LAHSE informants were expected to have strong biases toward the semantic count/mass opposition and cognitive individuation by shape. Nonetheless, the lability of the semantic count/mass opposition among LAHSEs echoes the LA semantic profile, and LAHSEs' cognitive bias toward matching objects by shape is in line with LA speakers' cognitive decisions.

Regarding the relationship between language and cognition, the case of LAHSE speakers demonstrates that cognition and language are not expressions of the same underlying structures; vast experiential categories are stored in cognition yet are often silent or recessive in language. Thus, a 'thinking for speaking' activity does exist (Slobin 1992) but represents a small part of the whole cognitive potential of an individual. In other words, language is not the only factor that affects cognition. LAHSE informants' experience demonstrates that mental habits and attitudes that lead to specific judgments, evaluations, and decisions are also transmitted via cultural practices. Preparing food in specific quantities, portions, and shapes and serving and consuming it in specific containers and with certain utensils can affect cognition as much as the language in which we think.

Furthermore, in terms of linguistic acquisition studies, this study raises an interesting question. Although definiteness is acquired at a later age than other grammatical competencies, it seems that semantic and cognitive parameters related to it are ready to use at a very early age (three to four), when LAHSEs' acquisition of LA structures begins its decline in favor of English. This suggestive scenario remains open for future studies to explore.

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Learning to Read in the Heritage Language Supports Literacy Skills in the Majority Language

Evidence from Greek-English Speaking Children

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Abstract The first aim of the study was to investigate bilingual children's performance in language and word-level reading (i.e., decoding) at two testing points, drawing comparisons between the heritage and majority languages (Greek-English) and between two age groups in the first four years of primary school. Secondly, we investigated whether contextual factors (i.e., quality and quantity of language exposure and input) can predict language and reading development. Additionally, we addressed whether there is a contribution to the children's language scores in the heritage and majority language from Time 1 on decoding at Time 2 across languages. Forty children attending Years 1 and 3 of primary school were assessed in language and decoding skills and were then reassessed one year later in Years 2 and 4. The results showed that overall scores were higher in the majority than in the heritage language, but there were differences between the tasks in the developmental trajectory of the two languages. The results also showed more associations between contextual factors and the scores in the heritage language compared to the majority language, which suggests that the heritage language benefits from additional exposure and use. Finally, findings showed a concurrent and longitudinal relationship between phonological awareness and decoding skills, both within and between languages, supporting the orthographic transparency hypothesis.

Keywords Heritage language speakers. Phonological awareness. Decoding. Contextual factors. Cross-language transfer.

Summary 1 Introduction. – 2 Methodology. – 3 Results. – 4 Discussion. – 5 Conclusion.



1 Introduction

In England, the School Census (2020) results showed that the proportion of students who do not have English as their first language was 21.3% in primary schools and 17.1% in secondary schools (www.gov.uk). Often these children come from immigrant families, in which one or both parents speak a minority language (author). Therefore, these children learn two languages, the dominant language of the larger society and their family's heritage language. In the present study, we aim to investigate children's language and reading skills grown up as bilinguals in the UK and learn Greek as their heritage language and English as their dominant language. Several previous studies have investigated how children develop their dominant language.¹ In contrast, a smaller number of studies have carried out in depth examinations of how children develop and maintain their heritage language.²

In addition, learning to read is one of the main goals of primary education. Therefore, reading was a specific focus of the current study. The aim of the present study was to carry out a cross-sequential investigation of differences in the development of language and decoding skills between the heritage and the majority language at the beginning of primary school, and to investigate the relationship between contextual/environmental factors and the development of the children's language and reading skills. We were interested in bilingual children's language and decoding across the first four years of primary school in the UK because during these years language dominance usually shifts from the heritage to the majority language (Bylund, Abrahamsson, Hyltenstam 2012; Birdsong 2014). Our study also aimed to provide evidence of how learning to read two languages with different transparency levels may affect children's reading performance.

In what follows, we first introduce the Simple View of Reading (Hoover, Gough 1990) which provides a framework regarding the skills underlying learning to read. Then we review research on cross-language relationships between oral language and decoding skills in primary school bilingual children based on the linguistic interdependence hypothesis formulated by Cummins (1979; 1991); and research on contextual factors that contribute to heritage language and decoding skills. Our study is one of the few studies that examines the language and decoding of bilingual children longitudinally in both languages taking into account the contribution of

1 Gutierrez-Clellen, Simon-Cerejido, Wagner 2008; Chondrogianni, Marinis 2011; Verhoeven, van Leeuwe, Vermeer 2011; Chondrogianni, Marinis 2012; Hoff et al. 2012.

2 Winsler et al. 1999; Cavallaro 2005; Gathercole, Thomas 2009; Hoff 2013; Chondrogianni, Schwartz 2020.

contextual factors (i.e., language input and exposure inside and outside the home, parents' self-rated language proficiency and educational level) in the maintenance of heritage language.

1.1 Reading Development in Bilingual Children

Reading comprehension, according to the Simple View of Reading (e.g., Hoover, Gough 1990), is the product of two dimensions: decoding and linguistic comprehension. Although the Simple View of Reading was established as a framework for reading development in monolingual children, more recently it has also been applied to bilingual children (Bonifacci, Tobia 2017). Bilingual children, according to research (Babayiğit 2014), have relatively good decoding skills but can lag behind monolinguals in linguistic comprehension, which can result in some difficulties in reading comprehension, which has clear implications for progress across the curriculum. In this study, we take the Simple View of Reading as a theoretical framework, focusing on its two main dimensions: decoding and the oral language skills underlying linguistic comprehension.

An additional important factor that should be taken into account when reading development is measured is the level of orthographic transparency in the languages tested. Orthographic transparency refers to the extent to which graphemes consistently map onto one and the same phoneme, and vice versa, in an alphabetic writing system (Ziegler, Goswami 2005). The two languages spoken by bilingual children may differ in orthographic transparency, which may affect the development of the children's decoding skills in the two languages. However, very few studies have investigated how different levels of orthographic transparency along with phonological awareness skills can affect bilingual children's decoding skills (Lafrance, Gottardo 2005; Branum-Martin et al. 2012). In the present study, the heritage language is Greek, which has a transparent orthography (e.g., καλημέρα, *kalimera* 'good morning', πόρτα, *porta* 'door', γάτα, *gata* 'cat') and the majority language is English, which has a highly opaque orthography, as it has many irregular words (e.g., pint, yacht, cough). This has implications for the ease with which children learn how to read and write (Seymour et al. 2003). For example, English-speaking children may require more time to learn the foundations of decoding skills than children learning more consistent orthographies, such as Greek (Seymour et al. 2003; Ziegler, Goswami 2005; Spencer, Slocum 2010). Our study aims to provide evidence of how learning to read two languages with different transparency levels may affect children's reading performance.

1.2 Crosslinguistic Relationships in the Development of Reading and Oral Language Skills

Cummins (1979; 1991) has formulated the linguistic interdependence hypothesis, according to which certain language and literacy skills depend on a central processing system or a common underlying proficiency that is shared across languages. Thus, some literacy skills can be universal and be applied across languages, whereas others are language-specific and cannot be transferred (Durgunoğlu 2002). Cummins's (1979) linguistic interdependence hypothesis is supported by several studies that have demonstrated significant crosslinguistic relationships for literacy-related abilities, such as phonological awareness (e.g., Durgunoğlu, Nagy, Hancin-Bhatt 1993; Wang, Perfetti, Liu 2005). In addition, there is evidence showing that crosslinguistic transfer can happen in either direction (e.g., from the L1 to the L2 and from the L2 to the L1) (Verhoeven 1994; 2007). It is worth noting that crosslinguistic links between language and reading skills in one language and reading performance in the other language are often taken as evidence for positive effects of bilingualism or biliteracy (Comeau et al. 1999; Durgunoğlu, Nagy, Hancin-Bhatt 1993; D'Angiulli, Siegel, Serra 2001).

Given that bilingual children have different levels of language exposure and use in the two languages, it is important to examine the factors contributing to heritage language maintenance and majority language development and determine the relationships between oral language and decoding skills within and across languages, and the extent to which these relationships may change with development. Moreover, further research is needed to verify the evidence showing that heritage language maintenance could enhance reading skills in the majority language.

1.3 Heritage Language Acquisition

Heritage language acquisition is both related to and different from first and second language acquisition (Montrul 2006). Heritage language speakers are exposed to their heritage language from birth, like monolingual speakers, but they are also exposed to another language, which is the majority and dominant language of the region they live in. This may interact with their heritage language and may affect the children's development and maintenance of the heritage language. A significant aspect of heritage language acquisition is the age of onset of exposure to the majority language, the quality and the quantity of input and exposure in both the majority and the heritage language.

Various factors have been argued to contribute to the observed differences between the heritage language speakers, including

crosslinguistic influence from the majority language (Argyri, Sorace 2007), heritage input quantity (e.g., Gathercole, Kennedy, Thomas 2009; Flores et al. 2017; Daskalaki et al. 2019), and heritage input quality (Daskalaki et al. 2020; Paradis 2023). In the present study, input quantity will be taken to refer to the daily amount of heritage language input that children receive at home and outside the home. Input quality, on the other hand, will be taken to refer to the type of activities (e.g., reading books), parents' self-language proficiency and parental educational level.

Language use at home between parents and children is a crucial factor in determining whether the heritage language will be maintained or lost over the generations (Lao 2004). This view is also supported by other researchers demonstrating that parents' positive attitude towards the heritage language at home will affect positively the children's heritage language skills (Park, Sarkar 2007). More recently Sorenson-Duncan and Paradis (2020) demonstrated that bilingual children who received more input in their heritage language from their mothers achieved higher scores in that language. To extend this line of research, the current study examined how contextual factors can longitudinally affect language and word-level reading skills in the heritage language. Specifically, we examined the associations between language exposure and use and language and word-level reading skills with the aim of finding out their impact on language maintenance of the heritage language.

The impact of qualitative components of language exposure is now the focus of a growing amount of research (Blom, Soderstrom 2020). The quality of language exposure has frequently been related to the socioeconomic status (SES) of the family. In the language acquisition literature, SES has been operationalized as parental education (most often maternal education), household affluence (estimated from parental occupation, entitlement to free school meals, or estimated from postcodes), or indices of deprivation. Most studies employ a single measure of SES, although it has been claimed that composite measures are more useful because they capture multiple components of a child's environment (Daniela, Baldacchino, Barbara 2020). SES has been associated to bilingual children's vocabulary size (Gathercole, Kennedy, Thomas 2016; Daniela, Baldacchino, Barbara 2020), morphosyntax (Chiat, Polišenská 2016; Meir, Armon-Lotem 2017), and receptive grammar abilities (Gathercole, Kennedy, Thomas 2016; Daniela, Baldacchino, Barbara 2020). The effects of SES, however, may be varied. For example, Unsworth (2016) found that maternal education predicted receptive vocabulary scores but not morphosyntactic, semantic fluency, or accuracy sentence repetition in preschoolers. To extend this line of research, the current study examined how the contextual factors related to the input quality (i.e., parents' educational level and self-rated language proficiency) can longitudinally

affect language and word-level reading skills in the heritage language (Paradis 2023). Specifically, we examined the associations between parents' educational level and self-rated language proficiency and language and word-level reading skills with the aim to find out their impact on language maintenance of the heritage language.

1.4 Aims of the Study

The participants consisted of children in two age groups, a younger (Year 1) and an older (Year 3) group, who were tested two times in a cross-sequential design. At Time 1, the two groups were in Year 1 and Year 3 and at Time 2, they were in Year 2 and Year 4 of primary school. The focus of the study was to address the extent to which language input and exposure in and outside of the home would contribute to children's performance on measures of vocabulary, phonological awareness, and decoding skills in Greek and English over Time 1 and Time 2.

1. The first aim of the study was to investigate bilingual children's performance in measures of language and decoding skills at two testing points, between the heritage (Greek) and majority language (English) and between the two age groups in the first four years of primary school. The research question was: Did children's performance on measures of language and decoding skills differ on the basis of time (Time 1 vs. 2), language (English vs. Greek), and age (Younger vs. Older children)? The prediction was that as children progressed through school, English would become more dominant than Greek.³
2. The second aim was to investigate whether language use and environmental factors could impact language and reading development. Thus, the research question was: Could language use and environmental factors predict language and decoding skills in each language in Time 1 and Time 2? We hypothesized that the extent to which children would maintain their heritage language would depend on language input in and outside the home (De Houwer 2007; Gathercole, Thomas 2009; Schechter, Bayley 2004).
3. The third aim was to address whether the heritage and majority language scores at the first time point could predict decoding skills at the second time point both within and across languages. The research question was: Could Greek and English language scores at Time 1 predict decoding at Time 2 both across languages? It was hypothesized that language skills,

³ Montrul 2002; 2004; 2005; Polinsky 2007.

and mainly phonological awareness at Time 1 would contribute to reading skills at Time 2, indicating cross-language transfer effects. This is based on studies, such as Durgunoğlu (Durgunoğlu 2002), which demonstrated that phonological awareness is only acquired once in one of the child's languages and is transferred to the second language promoting reading skills.

2 Methodology

2.1 Participants

Forty typically developing Greek-English bilingual children were recruited from primary schools in the London, Reading, and Oxford areas. At Time 1, 20 attended Year 1 (Mean age = 76.6 months, SD = 3.6, 14 boys and 6 girls) and 20 attended Year 3 (Mean age = 100.4 months, SD = 3.4, 9 boys and 11 girls). Children were assessed again one school year later (Time 2), when the younger group was in Year 2 and the older group in Year 4. All children attended English mainstream primary schools and Greek supplementary schools in the UK. Supplementary schools support and maintain the heritage language and culture of immigrant communities in countries such as the UK, the USA, Canada, South Africa, and Australia (Papastergiou, Sanoudaki 2022). These schools take place every Saturday and children are taught to read and write in Greek. Most children were born in the UK, but some were born in Greece and moved to the UK at least 2 years before the commencement of the study. The children came mostly from families of average and above-average socioeconomic status. None of the children had a history of speech and/or language delay or impairment and their parents were not concerned about their language development. All children had attended reception classes in the UK (the first year of formal schooling).

2.2 Materials

Standardized and non-standardized assessments were used to measure the children's non-verbal abilities, vocabulary, phonological awareness, and decoding skills in Greek and English; a parental questionnaire measured the children's language history.

The children's non-verbal abilities were measured using the Raven's Colored Progressive Matrices (Raven, Raven, Court 2004). English vocabulary was measured using the Renfrew Word Finding Vocabulary Scale (Renfrew 1995) and Greek Vocabulary using its Greek adaptation (Vogindroukas, Protopapas, Sideridis 2009).

English phonological awareness was assessed using the blending and elision tasks from the Comprehensive Test of Phonological Processing-Second Edition (Wagner et al. 2013). For elision in Greek we used the adaptation of the elision task from the CTOPP-2 (Georgiou, Parrila, Papadopoulos 2008). There is no Greek adaptation of blending task from the CTOPP-2, therefore, we developed a task similar to the one from the CTOPP-2 using the same testing procedure. Participants listened to the sounds of a word separately and had to put them together to create the word, e.g., *i-p-n-o-s* (ύπνος ‘nap’), *a-r-i-th-m-'o-s* (αριθμός ‘number’). The task included five practice items that asked participants to put together two syllables to make a word. Five of the test items required the participant to put an onset and a rime together to make a word and the remaining twenty-one items required the participant to put individual phonemes together to make a word. A preliminary analysis revealed a correlation between blending and elision in both languages (Time 1: English: $r = .723, p < .01$; Greek: $r = .775, p < .01$; Time 2: English: $r = .560, p < .01$; Greek: $r = .707, p < .01$). To reduce the number of variables, we transformed these variables into composite scores. A composite score for phonological awareness was calculated by converting the raw scores for blending and elision to z scores, and then taking the mean z scores of the two tasks.⁴

English Decoding was assessed using The Test of Word Reading Efficiency (Torgesen et al. 2012) and Greek Decoding was assessed using the Greek adaption of the TOWRE-2 (Georgiou et al. 2012). Based on preliminary strong correlations between the two tasks (word reading and non-word reading subtasks) in each language (Time 1: English: $r = .548, p < .01$; Greek: $r = .712, p < .01$; Time 2: English: $r = .468, p < .01$; Greek: $r = .648, p < .01$), we created composite scores from the two tasks for each language.

The LITMUS-PABIQ questionnaire (Tuller 2015) was used to obtain data on the children’s language history, quantity and quality of input, and use. The questionnaire includes sections on the child’s early language history, current language skills, language used at home, languages spoken outside the home and information about the maternal and paternal education. It also includes sections about how often the child communicates in different languages.

2.3 Procedure

At both Time 1 and Time 2, children were assessed individually in a quiet room in their schools or homes. The assessments in both testing points were divided into two sessions lasting around 45 minutes

⁴ Composite scores were calculated in the same way for all tasks.

each. In Time 1, one session consisted of measuring the children's non-verbal IQ, English expressive vocabulary, phonological awareness, and decoding. In this session the participants' parents completed the LITMUS-PABIQ questionnaire. The other session consisted of the Greek language and literacy tasks. Time 2 assessments followed the same procedure as at Time 1, but children were not tested again on their non-verbal abilities and parents did not have to complete the PABIQ for a second time. The second testing point was one school year after the first one. The order of the sessions as well as the order of the tests within each session were counterbalanced. Parental written consent was obtained prior to onset of the data collection.

3 Results

3.1 Comparison Between the Younger and Older Children's Performance on the Two Languages at the Two Testing Points

The first research question addressed if there is a difference between the children's performance on the measures of language and decoding skills at the two testing points, between the Greek and English tasks and between the two age groups.

Table 1 summarizes younger and older children's performance on expressive vocabulary, phonological awareness, and decoding tasks in the two languages at the two testing points.

Table 1 Descriptive statistics of the children's performance on the Greek and English expressive vocabulary, phonological awareness and decoding tasks (percentage correct) at Time 1 and Time 2

		Greek				English			
		T1: Younger	T1: Older	T2: Younger	T2: Older	T1: Younger	T1: Older	T2: Younger	T2: Older
Expressive vocabulary	Mean	58.1	73.8	65.1	79.7	76.4	87.6	80.2	91.4
	SD	8.55	12.73	8.23	12.59	9.33	9.96	7.5	7.23
	Min-Max	42-70	50-94	50-76	56-98	66-100	70-100	70-94	74-100
Phonological awareness	Mean	59.18	80.94	82.13	95.25	74.88	88.75	82.50	90.75
	SD	16.33	9.86	13.91	8.7	9.82	6.56	5.38	3.81
	Min-Max	33-92	61-100	58-100	85-100	58-95	75-100	73-95	83-98
Decoding	Mean	52.93	77.27	58.79	81.12	67.76	83.68	72.03	86.86
	SD	19.13	14.66	17.73	14.59	12.1	4.74	8.66	4.68
	Min-Max	27-85	34-96	32-89	41-98	41-88	72-90	58-87	74-93

The results were analyzed using the statistical software SPSS (Gray, Kinnear 2012). To examine differences between the Age groups, between Greek and English, and between Time of testing, we entered the results (in percentages correct) into repeated-measures ANOVAs with Age group (younger, older) as the between participants factor, Language (Greek, English) and Time (Time 1, Time 2) as the within participants factors, for each task separately. The analysis on the expressive vocabulary tasks showed a significant main effect of Time ($F(1, 38) = 30.87, p < .001, \eta^2 = .448$), a significant main effect of Language ($F(1, 38) = 85.61, p < .001, \eta^2 = .693$), and significant Language by Age ($F(1, 38) = 10.52, p = .002, \eta^2 = .217$), Time by Language interaction ($F(1, 38) = 257.29, p < .001, \eta^2 = .867$), and Time by Language by Age Interactions ($F(1, 38) = 10.57, p = .002, \eta^2 = .566$). To explore the 3-way interaction, we split the file based on Age (younger vs. older) and we looked at the 2-way interaction between Language and Time. The analysis for the Younger group showed a significant main effect of Time ($F(1, 19) = 48.43, p < .001, \eta^2 = .718$), a significant main effect of Language ($F(1, 19) = 42.63, p < .001, \eta^2 = .692$), and a significant interaction between Language and Time ($F(1, 19) = 4.49, p < .05, \eta_p^2 = .191$). The results of the Older group showed a significant main effect of Time ($F(1, 19) = 8.41, p = .009, \eta^2 = .306$), a significant main effect of Language ($F(1, 19) = 45.31, p < .001, \eta^2 = .704$), but the interaction between Language and Time was not significant ($F(1, 19) = .518, p = ns.$). To explore the significant interaction in the Younger group we run simple effects tests. Both at Time 1 and Time 2, children were better in English than Greek (Time 1: $F(1, 19) = 47.59, p < .001, \eta_p^2 = .715$; Time 2: $F(1, 19) = 31.72, p < .001, \eta_p^2 = .625$). The children's performance was significantly better at Time 2 than at Time 1 in both languages (Greek: $F(1, 19) = 27.87, p < .001, \eta_p^2 = .595$; English: $F(1, 19) = 24.58, p < .001, \eta_p^2 = .564$). The interaction is likely to have resulted from the larger effect size in the difference between English and Greek at Time 1 (.715) compared to Time 2 (.625), suggesting that the difference between Greek and English in Time 1 is smaller than in Time 2.

The analysis on the phonological awareness tasks showed a significant main effect of time ($F(1, 38) = 317.84, p < .001, \eta^2 = .893$), a significant main effect of age ($F(1, 38) = 49.61, p < .001, \eta^2 = .566$), but no significant effect of language ($F(1, 38) = 1.31, p = .260, \eta^2 = .033$). The time by age interaction was not significant ($F(1, 38) = 1.01, p = .321, \eta^2 = .026$), but the language by age, time by language as well as the time by language by age interactions were significant ($F(1, 38) = 10.52, p = .002, \eta^2 = .217, F(1, 38) = 257.29, p < .001, \eta^2 = .867$ and $F(1, 38) = 10.57, p = .002, \eta^2 = .566$, respectively).

To explore the 3-way, time by language by age interaction, we split the file based on Age (younger vs. older) and we looked at the 2-way interaction between Language and Time. The analysis for the

Younger group showed a significant main effect of Time ($F(1, 19) = 147.93, p < .001, \eta^2 = .886$), a significant main effect of Language ($F(1, 19) = 6.47, p < .05, \eta^2 = .254$), and a significant interaction between Language and Time ($F(1, 19) = 86.56, p < .001, \eta^2 = .82$) in PA scores. The results of the Older group also showed a significant main effect of Time ($F(1, 19) = 177.89, p < .001, \eta^2 = .903$), a significant main effect of Language ($F(1, 19) = 4.29, p < .05, \eta^2 = .184$), and a significant interaction between Language and Time ($F(1, 19) = 163.52, p < .001, \eta^2 = .896$). To explore the significant simple interactions between language and time, we run simple effects tests, separately for the younger and older groups. In the younger group, the children's performance was significantly better in Time 2 than in Time 1 in both languages (Greek: $F(1, 19) = 207.22, p < .001, \eta^2 = .916$; English: $F(1, 19) = 29.23, p < .001, \eta^2 = .606$). The clearest source of the interaction was that at Time 1 the children performed better in English than Greek ($F(1, 19) = 20.77, p < .001, \eta^2 = .522$), but at Time 2, this difference disappeared ($F(1, 19) = .015, p = .904, \eta^2 = .001$).

In the older group, the children's performance in Greek PA was significantly better in Time 2 than Time 1 ($F(1, 19) = 264.46, p < .001, \eta^2 = .933$), but this was not the case for English ($F(1, 19) = 2.99, p = .100, \eta^2 = .136$). At Time 1 the children performed better in English than Greek ($F(1, 19) = 12.41, p = .002, \eta^2 = .395$), but this changed at Time 2; the children were significantly better in Greek than English ($F(1, 19) = 66.04, p < .001, \eta^2 = .777$).

The analysis of the decoding tasks showed a significant main effect of Time ($F(1, 38) = 42.01, p < .001, \eta^2 = .526$), a significant main effect of Language ($F(1, 38) = 21.52, p < .001, \eta^2 = .362$), and a significant main effect of Age ($F(1, 38) = 32.25, p < .001, \eta^2 = .459$). The Time by Age, the Language by Age, the Language by Time, and the Time by Language by Age interactions were not significant ($F(1, 38) = 1.37, p = .249, F(1, 38) = 3.38, p = .074, F(1, 38) = .771, p = .385$, and $F(1, 38) = .126, p = .724$ respectively) suggesting that both younger and older children had higher scores in Time 2 than in Time 1 and achieved higher scores in English than Greek.

3.2 Contextual Factors as Predictors of Language and Word Reading Measures in the Heritage Language

The second research question addressed whether there is a relationship between the contextual factors and the development of language and reading measures in the heritage language (i.e., Greek). Specifically, we examined whether the effects of language exposure and input on children's heritage language skills are consistent at the two testing points.

To examine the relationships between parental report measures of children's language exposure and proficiency level, parental level

of education, parental rating of their own language proficiency, and the measures of children's language and decoding skills in Greek at Time 1, Pearson's correlations were conducted, as shown in Table 2. We used the composite scores where we had more than one measure per construct: the parental reports and tasks measuring expressive vocabulary, phonological awareness, and decoding at Time 1. The analysis revealed that overall, children's performance on the majority of the Greek tasks was significantly positively correlated with Greek language use outside the home at Time 1, as shown in Table 2. Expressive vocabulary was significantly positively correlated with language use in the home and outside the home. The score of the decoding task was significantly positively correlated with language use outside the home and parental educational level.

Table 2 Correlation matrix showing correlations between children's performance on objective measures and parent-questionnaire measures of language exposure before 4 years and language use in and outside home, parents' educational level and parents' self-rated language proficiency in Greek, testing point 1

	1.	2.	3.	4.	5.	6.	7.
1. Expressive.Vocabulary.Gr.1							
2. Phonological.Awareness.Gr.1	.42**						
3. Decoding.Gr.1	.47**	.67**					
4. Greek Exposure before 4 years old	.10	.02	.10				
5. Language use in home	.41**	.10	.09	.12			
6. Language use outside home	.54**	.31	.34**	.11	.71**		
7. Parents.Educational.Level	0	.13	.33**	.37*	.13	.23	
8. Parents.Proficiency.Level.Gr	.20	.31	.21	.23	.18	.27	.14

** . Correlation is significant at the 0.01 level (2-tailed).
 * . Correlation is significant at the 0.05 level (2-tailed).
 Gr. = Greek
 Regression analysis: predictors of Greek expressive vocabulary at Time 1

Additionally, the second research question addressed whether parental report measures of language exposure and level could predict the objective measures of the language and decoding skills in Greek. To address this question, we used multiple regressions. In each case, only those variables yielding significant bivariate correlations with the criterion variable were included in the regression. Prior to the analysis, the data was screened to ensure that the assumptions underlying the use of regression analysis were met.

A standard multiple regression was performed on Greek expressive vocabulary as the dependent variable and language use in the home and language use outside the home as the independent variables. Prior to the analysis the data was screened to ensure that the assumptions underlying the use of regression analysis were met. The

results are summarized in Table 3, which shows that the regression model was significant, and that language use outside the home, but not inside the home, accounted for unique variance in Greek expressive vocabulary scores.

Table 3 Summary of multiple regression analyses for variables predicting children's performance on expressive vocabulary in Greek (N = 40)

Variable	Expressive Vocabulary		
	B	SE B	β
Language use in home	.401	1.36	.058
Language use outside the home	2.86	1.12	.499*
$R^2 = .293, F = 7.67^{**}$			

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).
Regression analysis: predictors of Greek decoding at Time 1

A simple linear regression was performed on Greek decoding as the dependent variable and language use outside the home and parents' educational level as the independent variables. The results are summarized in Table 4, which shows that the regression model was significant, and that language use outside the home and parents' educational level accounted for unique variance in Greek decoding scores.

Table 4 Summary of multiple regression analyses for variables predicting children's performance on decoding in Greek (N = 40)

Variable	Decoding	
	B	SE B β
Language use in home		
Language use outside the home	3.71	1.42.363*
Parents' educational level	6.27	3.03.318*
$R^2 = .135, F = 4.53^*$		

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Overall, the regression analyses showed that language used outside the home was a significant unique predictor for almost all the tasks in Greek, as shown in Tables 3 and 4.

To examine whether the effects of the contextual factors, and especially the effects of language exposure and use, change over the time as children progress in school, we run Pearson's correlations including the parents' reports and children's performance on language and word-level reading measures at Time 2 for each language separately. The results showed that the children's performance on

the Greek language tasks was significantly positively correlated with Greek language use outside the home at Time 2. As in Time 1, expressive vocabulary was significantly correlated with language use outside the home and the score of the decoding tasks was significantly correlated with parents' educational level. Expressive vocabulary was also positively correlated with parents' level of proficiency, as shown in Table 5.

Table 5 Correlation matrix showing correlations between children's performance on objective measures and parent-questionnaire measures of language exposure before 4 years and language use in and outside home, parents' educational level and parents' self-rated language proficiency in Greek, testing point 2

	1.	2.	3.	4.	5.	6.	7.
1.Expressive.Vocabulary.Gr.2							
2.Phonological.Awareness.Gr.2	.43**						
3.Decoding.Gr.2	.40**	.68**					
4.Greek Exposure before 4 years old	.02	.05	.04				
5.Language use in home	.27	.20	.03	.12			
6.Language outside home	.50**	.28	.21	.11	.71**		
7.Parents.Educational.Level	.13	.11	.05	.37*	.13	.23	
8.Parents.Proficiency.Level.Gr	.33*	.29	.23	.23	.19	.28	.14

*. Correlation is significant at the 0.05 level (2-tailed).

Additionally, we investigated whether parental report measures of language exposure and level at Time 1 could predict the objective measures of the various language and reading measures in Greek at Time 2. To address this question, we used multiple regressions. In each case, only those variables yielding significant bivariate correlations with the criterion variable were included in the regression. Prior to the analysis the data was screened to ensure that the assumptions underlying the use of regression analysis were met.

Regression Analysis: Contextual Predictors of Greek Expressive Vocabulary at Time 2

A standard multiple regression was performed on Greek expressive vocabulary as the dependent variable and language use outside the home and parents' level of proficiency as the independent variables. The results are summarized in Table 6, which shows that the regression model was significant, and that language use outside the home, but not parents' level of proficiency accounted for unique variance in Greek expressive vocabulary scores.

Regression Analysis: Contextual Predictors of Greek Decoding at Time 2

A simple linear regression was performed on Greek decoding as the dependent variable and parents' educational level as the independent variable. The results are summarized in Table 6, which shows that the regression model was significant, and that parents' educational level accounted for unique variance in Greek decoding scores.

Table 6 Summary of multiple regression analyses for variables predicting children's performance on Greek expressive vocabulary and decoding at Time 2 (N = 40)

Variable	Expressive vocabulary			Decoding		
	B	SE B	β	B	SE B	β
Language use outside the home	2.43	.80	.439**			
Parents' self-rated language proficiency	4.39	3.02	.209			
Parents' educational level				6.43	2.87	.361*
	$R^2 = .249, F = 7.46^{**}$			$R^2 = .130, F = 5.68^*$		

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Overall, the results showed that the effects of Greek language exposure and input on Greek language skills are similar across Time 1 and Time 2 indicating that there is consistency between the two testing points regarding the role of contextual factors for Greek. Additionally, the findings confirmed that heritage language use is important for the heritage language but does not have an impact on the majority language.

3.3 Cross-Language Effects Between Greek and English Language and Reading Skills

The third research question addressed whether language skills at Time1 can predict reading skills at Time 2 both within and across the languages. Prior to the regression analysis, we examined the within- and cross-language correlations between Greek and English expressive vocabulary and phonological awareness at Time 1 and decoding at Time 2, with simple correlations shown above the diagonal in Table 9. The variables were residualized for age (Durand et al. 2005) and correlations between the resulting age-independent variables shown below the diagonal in the Table 7.

In terms of correlations between the oral language skills and decoding, there were significant positive within language associations. Specifically, Greek phonological awareness at Time 1 was significantly associated with Greek decoding at Time 2. English phonological awareness at Time 1 was significantly correlated with English decoding at Time 2.

In terms of correlations between the oral language skills and decoding, there were significant positive cross-language associations. Greek phonological awareness at Time 1 was significantly associated with Greek and English decoding at Time 2. English phonological awareness at Time 1 was significantly correlated with Greek and English decoding at Time 2. Greek inflectional morphology at Time 1 was significantly correlated with English decoding at Time 2.

Overall, the results showed that phonological awareness is significantly associated with decoding both within and across languages.

Table 7 Correlations for children's performance on expressive vocabulary, phonological awareness and decoding in Greek and English at two testing points, with zero-order correlations above the diagonal, and correlations between age-controlled variables below the diagonal

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1.Expressive Vocabulary.Gr.1	-	.60**	.42**	.40**	.46*	.56**	.77**	.60**	.41**	.56**
2.Expressive Vocabulary.Eng1	.43***	-	.37*	.37*	.27	.54**	.46**	.81**	.19	.57**
3.Phonological Awareness.Gr.1	.07	.07	-	.63**	.34*	.33*	.48**	.47**	.64**	.72**
4.Phonological Awareness.Eng.1	.03	.06	.37*	-	.35*	.44**	.36*	.48**	.69**	.70**
5.Expressive Vocabulary.Gr.2	.66**	.24	.18	.02	-	.49**	.38*	.35*	.40**	.50**
6.Expressive Vocabulary.Eng.2	.37*	.73**	.13	.13	.10	-	.44**	.59*	.38*	.59**
7.Phonological Awareness. Gr.2	.06	.07	.85*	.25***	.03	.15	-	.48*	.68**	.68**
8.Phonological Awareness.Eng.2	.05*	.19	.30	.75***	.06	.14	.24	-	.54**	.65**
9.Decoding.Gr.2	.11	.15	.44**	.41*	.11	.04	.46	.26	-	.68**
10.Decoding.Eng.2	.16	.24	.48*	.43**	.14	.27	.34*	.30	.46**	-

***. Correlation is significant at the 0.001 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Additionally, we run multiple regression to investigate the contribution of Greek and English language variables to Greek and English reading skills using the variables residualized for age.

Regression analysis: predictors of Greek decoding

A standard multiple regression was performed on Greek decoding at Time 2 as the dependent variable and Greek and English phonological awareness at Time 1 as the independent variables. Prior to the analysis the data were screened to ensure that the assumptions were met. The results are summarized in Table 8, which shows that the regression model was significant, and that Greek phonological awareness was a significant predictor of Greek decoding scores. Moreover, English phonological awareness accounted for additional unique variance in Greek decoding at Time 2, providing evidence of crosslinguistic transfer.

Table 8 Summary of multiple regression analyses for variables predicting children's performance on Greek decoding at Time 2 (N = 40)

Greek decoding.2			
Variable	B	SE B	β
Phonological Awareness.Gr.1	.467	.171	.412**
Phonological Awareness.Eng.1	.667	.272	.368*
R^2	.24318.26**		
F			

Gr. = Greek, Eng. = English
 **. Correlation is significant at the 0.01 level (2-tailed).
 *. Correlation is significant at the 0.05 level (2-tailed).
 Regression analysis: predictors of English decoding

A standard multiple regression was performed on English decoding at Time 2 as the dependent variable and Greek phonological awareness and English phonological awareness at Time 1 as the independent variable. Prior to the analysis the data were screened to ensure that the assumptions were met. The results are summarized in Table 9, which shows that the regression model was significant, and that English phonological awareness was significant predictor of English decoding scores. Moreover, Greek phonological awareness at Time 1 accounted for additional unique variance in English decoding at Time 2, providing evidence of crosslinguistic transfer.

Table 9 Summary of multiple regression analyses for variables predicting children's performance on English decoding at Time 2 (N = 40)

English decoding.2			
Variables	B	SE B	β
Phonological Awareness.Gr.1	.157	.086	.266*
Phonological Awareness.Eng.1	.274	.124	.368**
R^2	.52424.61**		
F			

Gr. = Greek, Eng. = English
 **. Correlation is significant at the 0.01 level (2-tailed).
 *. Correlation is significant at the 0.05 level (2-tailed).

4 Discussion

The first aim of the study was to investigate bilingual children's performance in objective measures of language and decoding skills at two testing points, between the heritage (Greek) and majority language (English) and between the two age groups in the first four years of primary school. The second aim was to investigate the relationship between language use, environmental factors and language and reading development. The third aim was to address whether there is a relationship between the heritage and majority language at the first time point and decoding skills at the second time point within and across languages. The prediction was that as children progress through school, English would become more dominant than Greek, and that the extent to which they would maintain their heritage language would depend on language input in and outside the home. Additionally, it was hypothesized that language skills at Time 1 would be associated with decoding skills at Time 2, indicating within and cross-language transfer effects. This is based on studies, such as Durgunoğlu (2002), which demonstrated that phonological awareness is only acquired once in one of the child's languages and is then transferred to the second language promoting reading skills in that language (the second language). In the present study, the children grew up in the UK with Greek as a heritage language and English as a majority language and they attended English mainstream schools. As a result, English was expected to be the children's dominant language.

4.1 Comparison of the Children's Performance on Language and Literacy Tasks Based on Time, Language and Age

The first research question of our study was to investigate whether the children's performance on objective measures of language and decoding skills differs on the basis of time (Time 1 vs. 2), language (English vs. Greek), and age (Younger vs. Older children). The results showed overall higher scores in the majority language (English) compared to the heritage language (Greek), but there were differences in terms of the developmental trajectory of the two languages between the tasks. There was a linear development in vocabulary and decoding skills with older children showing higher scores than younger children and higher scores in the second compared to the first testing time. In phonological awareness, the difference between the majority and heritage language closed in the second testing time. This is in line with previous studies demonstrating that bilingual children often have better skills in the majority compared to the heritage language (Montrul 2002, 2004, 2005; Polinsky 2007). Montrul (2004) underscored that heritage speakers exposed to their heritage language are less likely to have severe loss of their heritage language (Spanish). Similarly, our results showed that children continue to develop their heritage language skills across the first years of primary school.

Another important finding is that younger children performed similarly in Greek and English phonological awareness tasks at Time 2, while older children were better in Greek than English phonological awareness tasks at Time 2. This could be explained by the fact that Greek is a more transparent language than English. Lafrance and Gottardo (2005) demonstrated that orthographic depth appears to contribute in terms of factors related to reading, such as phonological awareness.

4.2 Contextual Factors as Predictors of Heritage Language and Decoding Skills

The second aim of our study was to investigate the relationship between the contextual factors and the children's language and decoding skills in the heritage language (Greek) in Time 1 and Time 2. The questionnaire provided evidence about the children's exposure to both Greek and English in the home and outside the home before attending school (before the age of 4 years) and also at the time this study was conducted, as well as information about the parental level of education and language proficiency.

Focusing on Greek as a heritage language, at Time 1 vocabulary and phonological awareness tasks were significantly correlated with language use at home and outside the home. Additionally,

performance on decoding was significantly correlated with Greek language use outside the home and parents' educational level. At Time 2, vocabulary was significantly correlated with Greek outside the home. The scores of vocabulary were significantly associated with the parents' level of Greek proficiency and also, decoding appeared to be significantly correlated with the parents' educational level.

Overall, the results showed that the effects of Greek language exposure and input on Greek language skills are similar across Time 1 and Time 2, indicating that there is consistency in the two testing points regarding the role of exposure to Greek. Additionally, the results confirmed that language use is important for the heritage language but not the majority language. These findings are in line with previous studies underlining the importance of language exposure and use in heritage language development (De Houwer 2007, Gathercole, Thomas 2009; Schecter, Bayley 2004). Specifically, De Houwer (2007) and Gathercole and Thomas (2009) demonstrated that children often develop high competence in their dominant language because they usually receive a sufficient amount of exposure to that language, while the amount of use and exposure is a crucial factor for the heritage language development. Additionally, we found that parents' Greek proficiency was positively associated with the children's performance on the Greek oral tasks at both testing points. Indeed, several studies have shown that parents' increasing use of English (L2) at home had no impact on the children's English development. On the other hand, parents not speaking their heritage language at home seems to negatively affect the children's heritage language skills (Hammer et al. 2009). This is one of the few studies examining longitudinally the effects of language exposure and use on heritage language and bilingual children's development of oral language and decoding skills. Future studies could examine participants with different levels of language proficiency in the heritage language to investigate this point further.

4.3 Cross-Language Transfer between the Greek and English Tasks Based on Time 1 and Time 2

The third aim of our study was to investigate whether language skills at Time 1 could predict decoding skills at Time 2, indicating cross-language transfer effects. The results showed that Greek and English phonological awareness tasks contributed to Greek decoding. Similarly, English and Greek phonological awareness tasks predicted English decoding.

Our findings are in line with the hypothesis that phonological awareness is strongly related to decoding skills in alphabetic orthographies. For example, demonstrated that phonological skills in both

languages are concurrent predictors of decoding in both languages. Given the view that phonological awareness is universal, once acquired, it will affect reading skills cross-linguistically and the transfer should be bidirectional (Durgunoğlu 2002). Durgunoğlu, Nagy and Hancin-Bhatt (1993) found that Spanish phonological awareness could predict English decoding, indicating cross-language transfer. However, Spanish and English oral proficiency did not contribute to reading performance. The authors argued that phonological awareness was a significant predictor of word reading both within and across languages. Moreover, they underlined that oral proficiency should be associated with reading skills, but possibly not with all the aspects of reading skills. Similarly to our study, phonological awareness was a longitudinal predictor of decoding both within and across languages.

5 Conclusion

The first aim of the study was to investigate bilingual children's performance in objective measures of language and decoding skills at two testing points, between the heritage (Greek) and majority language (English) and between the two age groups in the first four years of primary school. The second aim was to investigate whether the contextual factors (i.e., language use and environmental factors) could predict language and reading development. The third aim was to address whether language skills at Time 1 could predict decoding at Time 2 both within and across languages.

This is one of the few studies to examine bilingual children's performance in both of their speaking languages at two testing points. It also provided evidence about the relationship between language exposure and language and reading development in the same population of bilingual children in both heritage and majority language. It examined the cross-language relationships of language and reading skills when the pair of spoken languages differ in terms of their orthographic transparency.

The results showed that overall, scores were higher in the majority language (English) compared to the heritage language (Greek), but there were differences in terms of the developmental trajectory of the two languages between the tasks. There was linear development in vocabulary and decoding with older children showing higher scores than younger children and higher scores in the second compared to the first testing time. In phonological awareness, the difference between the majority and heritage language closed at the second testing time. The results also showed more associations between language exposure, use, and environmental factors and the scores in the heritage language compared to the majority language.

This is likely to reflect that the majority language is so pervasive in the children's lives through schooling and life in the UK that exposure, use, and environmental factors are leveled out (Papastergiou, Sanoudaki 2022). Moreover, the heritage language can benefit from additional exposure, use, and environmental support. Finally, findings showed that phonological awareness was a concurrent and longitudinal predictor of decoding skills both within and across-languages (Durgunoğlu 2002; Lafrance, Gottardo 2005), supporting firstly the view that learning a first language with more transparent orthography could enhance skills in the second language with more opaque orthography and secondly the interdependence hypothesis (Cummins 1979; 1991). In addition, this finding demonstrates that supporting reading skills in the heritage language benefits reading skills in both languages spoken by bilingual children and supports the linguistic interdependence principle (Cummins 1979).

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The Variation of Evaluation

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Abstract The essay discusses the phenomenon of evaluation and different dimensions of evaluative morphology in Modern Greek both from a descriptive and a theoretical perspective, focusing on intensification, deintensification, augmentation, and diminution. It is shown that adverbial preverbs in Modern Greek that have a degree function are used as evaluative morphemes and are categorized into the evaluative classes of boosters, maximizers, diminishers, and maximizing minimizers. The semantic analysis provided captures formally these categories. The study is of importance since it presents the variation of evaluation in Modern Greek.

Keywords Evaluation. Evaluative morphology. Affixes. Adverbial preverbs. Intensification. Deintensification.

Summary 1 Introduction. – 2 Evaluation and Evaluative Morphology. – 3 Intensification and Deintensification. – 3.1 Intensification. – 3.2 Deintensification. – 4 The Semantics of Evaluation. – 5 Augmentation and Diminution. – 6 Conclusion.

1 Introduction

The term ‘evaluation’ is used to express the speaker and writer’s stance for a person, a situation, or another entity, considered to be subjective and placed within a societal value-system (Hunston 1994). In earlier more descriptive literature, evaluation had a restricted use referring to those words and phrases expressing the speaker or writer’s emotions (Carter 1987). Nowadays, evaluation is a vague term used for “the expression of the speaker or writer’s attitude or stance towards, viewpoint on, or feelings about the entities or propositions or desirability or any of a number of other sets of values” (Hunston, Thompson 2000, 5). Investigation into the evaluation has preoccupied

the literature,¹ with intensification and deintensification being the two main dimensions of evaluation.

Intensification is considered as degree modification, a function that exceeds the standard, (i.e., the level used as normal or average thought to be acceptable) and denotes the high degree of a property (Gavriilidou 2013). Bound morphemes in Modern Greek used as degree modifiers are intensifying morphemes that increase the degree of the property which is expressed by the verb base. They are distinguished into two categories: a) boosters (*para-* 'over', *yper-* 'over', and *kalo-* 'well') denoting a high degree on a scale, as in (1), and b) maximizers (*kata-* 'completely-', *skylo-* 'to death', *xilio-* 'thousand-', and *mirio-* 'million-') denoting the upper boundaries on a scale of gradable properties, as in (2).

- (1) Tis Ioannas tis kalo-arese o Aris.
the.GEN Joanne her well-liked.3SG the Ares
'Joanne liked Ares very much.'
- (2) I Ioanna kata-xarike me ta nea tou.
the Joanne over-was.joyed with the news his
'Joanne was overjoyed in his news.'

Deintensification is another facet of evaluation used to denote the meaning of insufficiency, i.e., a property under the threshold expressed by the base (Efthymiou 2017). In this paper, it is shown that the Modern Greek adverbial preverbs *poly-* 'much', *psilo-* 'a bit', *miso-* 'half-', *koutso-* 'poorly', *psefto-* 'fake-', and *xazo-* 'half-heartedly' functioning as gradable modifiers express deintensification and are used as 'diminishers':

- (3) I Ioanna koutso-diavase gia to diagonisma.
the Joanne poorly-studied.3SG for the exam
'Joanne studied poorly for the exam.'

The paper is organized as follows.² Section 2 discusses the phenomenon of evaluation and evaluative morphology in languages. Section 3 examines different components of evaluative morphology, i.e., 'intensification' and 'deintensification', to understand how evaluation is expressed in the system of Modern Greek grammar presenting the

¹ Stump 1993; Dressler, Merlini-Barbaresi 1994; Grandi 2005; 2009; Fradin, Montermini 2009; Stekauer, Valera, Körtvélyessy 2012; Katunar 2013; Amiot, Stosic 2014; Grandi, Körtvélyessy 2015; Weidhass, Schmid 2015, among others.

² The author and native speakers of the languages provided are the source of data; otherwise, it is explicitly stated from the source cited.

different functions that are emerged in Modern Greek degree modifiers used as evaluative morphemes. Section 4 captures the semantics of the evaluative morphemes by assuming a scale of degree for gradable predicates and provides their denotations treating them not as individual elements, but rather as semantic classes, namely boosters, maximizers, and minimizers, presenting a unified analysis. Section 5 discusses the derivational processes of ‘augmentation’ and ‘diminution’ as also parts of the variation of evaluation in the language. Section 6 concludes.

2 Evaluation and Evaluative Morphology

‘Evaluation’ is used to express the speaker and writer’s stance for a person, a situation, or another entity. It is considered not to be objective but rather subjective and is placed within a societal value system (Hunston 1994). In earlier more descriptive literature, evaluation had a restricted use referring to those words and phrases expressing the speaker or writer’s emotions (Carter 1987). However, nowadays, it is a vague term used for “the expression of the speaker or writer’s attitude or stance towards, viewpoint on, or feelings about entities or propositions or desirability or any of a number of other sets of values” (Hunston, Thompson 2000, 5). Merlini Barbarelli (2015) argues that evaluation is a mental operation assessing the value of an object or event, as more or less desirable and important in the interpreter’s view – the speaker expresses a judgment ‘as to value’, not ‘as to fact’, according to his or her intentions, perspectives, and standards of evaluation.

‘Evaluative morphology’ is a subfield of derivational morphology that expresses evaluation. It forms lexemes expressing some deviation from the norm or standard denoted by the base. Evaluative morphology focuses its analysis on the morphological processes which generate evaluative constructions (i.e., morphologically marked lexical units), and on the various semantic aspects they can convey. In selecting one of these constructions over an unmodified root word, and in using a specific form from among the many that one same root word may afford, a message can be enhanced at different levels, notably semantically, stylistically, and pragmatically (Martin Calvo 2019, 4-5).

Evidenced by cross-linguistic research,³ affixation is the most frequent and productive of such procedures, and consequently the term “evaluative morphology” often appears as synonymous of “evaluative affixation” (Grandi 2017). Across languages, evaluative affixes obtain certain properties (see Grandi 2005; 2007; 2017; among others).

3 Jurafsky 1996; Štekauer, Valera, Körtvélyessy 2012; Körtvélyessy 2015a; 2015b.

Amplification of Semantic Features and Pragmatic Functions

Evaluative affixes change the semantics of the base (Scalise 1984; Efthymiou 2019). A given construction may be defined as evaluative if it has the function of assigning a value which is different from that of the standard or default (Grandi, Körtvélyessy 2015). More specifically, an affix with an evaluative role ascribes to the evaluative form a noticeable amount of additional semantic-pragmatic information, not contained in the root word (Martin Calvo 2019).

Morphological Expansion

According to Grandi and Körtvélyessy (2015), an evaluative construction must include at least the explicit expression of the standard value and an evaluative mark, i.e., a linguistic element specifically devoted to express the shift. Morphologically, the formation of an evaluative construction must involve the expansion of a root word, in such a way that the former resembles the latter (Martin Calvo 2019).

- (4) a. dad > daddy (English)
b. bueno 'good' > requetebueno 'very/extremely good' (Spanish)
c. saldš 'sweet' > iesaldens 'sweetish' (Latvian)

Semantic Subordination (Hyponymy)

The meaning of evaluative affixes is usually referential (Grandi 2017). More specifically, an evaluative construction can be described as a type, instance, or sort of its root word. The root word undergoes a process of semantic specialization, the result of which is one or several semantically interrelated lexemes, only differentiated by the semantic nuances and pragmatic functions expressed by their respective affixes (Martin Calvo 2019, 9).

Categorical Neutrality or Invariance

Evaluative affixes do not change the lexical class of the lexemes over which they operate; they generate nouns from nouns, verbs from verbs, and adjectives from adjectives.⁴

⁴ Scalise 1984; Beard 1995; Bauer 1997; Grandi 2005; Martin Calvo 2019.

Optionality

In any given context, the use or non-use of an evaluative form does not affect the factual amount of information conveyed by the message. Expressive derivatives are always optional and subjective. A speaker may refer to a person of normal size with a diminutive in one context and an augmentative in another for emotional effect (Beard 1995, 164). Moreover, no evaluative affix is applied due to syntactic necessity and no syntactic construction can determine the use of an evaluative affix (Grandi 2005, 195-6).

- (5) Mommy is exhausted = Mom is exhausted

Combinatorial Potential and Recursivity of an Affix

As Scalise (1984) notices, more than one affix can concur on a root word, even when sharing the fulfillment of very similar semantic aspects and pragmatic functions.

- (6) fuoco 'fire' > fuoch-erell-o > fuoch-erell-in-o (Italian)

Lexical Class Distribution

Evaluative affixes are not necessarily bound to a specific lexical class, and one same evaluative affix may be found attached to nouns, adjectives, adverbs, verbs, or other lexical classes.

- (7) Greek
a. psilo-kimame 'to sleep a little' (v.)
b. psilo-vroxo 'light rain' (n.)
c. psilo-kammenos 'a little burnt' (part.)

Interchangeability

Various evaluative forms stemming from one root word may also be in a relationship marked by their interchangeability, as the semantic features and pragmatic functions of various evaluative affixes may be rather similar.

- (8) galleta 'cookie' > galletita, galletilla, galletica, galletina (Spanish)

Subcategorization Frames

The case of evaluative forms whose gender marking differs from that of the root word are not uncommon cross-linguistically (Štekauer 2015, 54).

- (9) a. gata_{fem} ‘cat’ > gataki_{neutr} ‘kitten’ (Greek)
b. novela_{fem} ‘novel’ > novelón_{masc} ‘novel’ (Spanish)
c. Baum_{masc} ‘tree’ > Baumchen_{neutr} ‘tree’ (German)

Working on evaluative affixes in Modern Greek, Efthymiou (2019) also notices that, since they can function as free variants, morphemes with the same semantics can be used interchangeably (such as the elements *xazo-* and *koutso-* ‘poorly’). She also argues that it is difficult to describe their exact meaning and distinguish a quantitative from a qualitative aspect of their content. In addition, as Xydopoulos (2009) mentions, speakers also use evaluative affixes not only to evaluate the referent but also to create a distance between themselves and it, as it is the case of *psilo-* ‘a little’.

Intensification, deintensification, augmentation, diminution, and approximative morphology are different aspects of evaluation, or else, constitute the variation of evaluation in languages.⁵ The next sections focus on intensification, deintensification, augmentation, and diminution in Modern Greek.

3 Intensification and Deintensification

3.1 Intensification

In the linguistic research, ‘intensification’ is an evaluative category. Gavriilidou (2013) argues that intensification is mainly considered as degree modification, i.e., as a function that exceeds the standard and denotes the high degree of a property. It is related to gradable predicates, in other words, to predicates that are characterized by scales and allow the expression of the high degree of a property (Gavriilidou 2013, 41).

Intensification is mainly materialized by intensifying prefixes that increase the degree of the properties which are expressed by the

⁵ Scalise 1984; Dressler, Merlini Barbaresi 1994; Jurafsky 1996; Grandi 2002; 2009; 2017; Schneider 2003; Bakema, Geeraerts 2004; Prieto 2005; Fradin, Montermini 2009; Körtvelyessy, Štekauer 2011; Gavriilidou 2013; Efthymiou 2015; Efthymiou, Fragaki, Markos 2015; Rainer 2015; Napoli 2017; Hendriks 2019; Masini, Micheli 2020; Giannoula 2022, among others.

base they are attached to. Greek intensifying prefixes have been long discussed in the literature.⁶

Gavriilidou presents the following main properties of Modern Greek intensifying prefixes (2014, 240):

- a. They apply to scalar predicates, which are scaled upwards from an assumed norm concerning their extent or intensity, although non-gradable predicates also exist.
- b. They change the meaning of the base by ‘boosting’ the property denoted by the base.
- c. They make no change to the syntactic category of the base they are attached to.
- d. They originate from either prepositions and adverbs or nouns.
- e. They may be polysemous having both an intensifying and a non-intensifying meaning (e.g., *theofovoumenos*, lit. god+afraid, ‘afraid to the God’, *theotrellos*, lit. god+crazy, ‘very crazy’).

Gavriilidou points out three intensifying prefixes that are attached to verbal bases, namely *para-* ‘over’, *yper-* ‘over’, *kata-* ‘completely’:

- (10) a. *para-vrazo* ‘over-boil’
b. *yper-analio* ‘over-analyze’
c. *kata-xeirokroto* ‘over-applaud’

Adopting the analysis of scalar predicates of Kennedy and McNally (2005), Gavriilidou argues that *para-* ‘over’ and *yper-* ‘over’ are used with verbs that have totally closed scales and introduce incremental arguments. The morphemes in question “raise the degree of the progress of the event beyond the upper endpoint of the scale used by the verbal predicate” (2014, 249). By contrast, *kata-* ‘over’ is attached to atelic verbs, which map onto lower closed scales that are open on the upper end.

Efthymiou (2019) also discusses the properties of these three intensifying morphemes. She points out that *para-* ‘over’ combines with a variety of verb classes but never combines with [+learned] verbal bases. It is productive in the semantics of excess and many of verbal complexes with *para-* also “express periphrastic reinforcement, upgrading the determinacy of the propositional content of the verb” (2019, 7) (see also Efthymiou, Fragaki, Markos 2015a).

⁶ Symeonidis 1984; Fotiou 1998; Delveroudi, Vassilaki 1999; Efthymiou 2001; 2002; 2019; Giannouloupoulou 2003; Ralli 2003; 2004; Valetopoulos 2004; Anastasiadi-Symeonidi 2008; Savvidou 2012; Gavriilidou 2013; 2014; Gavriilidou, Fliatouras 2019; among others.

- (11) I loanna para-*ipie* sto parti.
the Joanne excessively-drunk.3SG at-the party
'Joanne drank excessively at the party.'

In (11), the prefix *para-* increases the degree of Joanne's drinking. It expresses the excess of the propositional content of the verb *ipie* 'she drank'.

Regarding *yper-* 'over', Efthymiou points out that it occurs on [+learned] or [+/-learned] verbal bases. It is found not only with incremental verbs but also with atelic ones that express situations with no natural endpoint. Moreover, *yper-* expresses "the notion of excess (i.e., 'more than normal or desirable') or the meaning of high degree (i.e., 'very, extremely x'), without any emotional overtones" (Efthymiou 2019, 6; see also Efthymiou 2003; Gavriilidou 2014; Efthymiou, Fragaki, Markos 2015b).

- (12) *Yper-fortosan* to aftokinito gia to taksidi tous.
over-loaded.3PL the car for the trip their
'They overloaded the car for their trip.'

In (12), the prefix *yper-* raises the degree of the propositional content of the verb *fortosan* 'they loaded', expressing excess.

Finally, *kata-* 'over' usually attaches to verbal bases that have negative connotations while the derived words have also negative connotations (Efthymiou 2019) and indicates the semantics of 'absolute completeness'.⁷ However, the following sentence shows that the prefix *kata-* is also attached to verbal bases with positive connotations while the verbal complex has also a positive connotation expressing excess of Joanne's joy:

- (13) I loanna kata-xarike me ta nea tou.
the Joanne over-rejoiced.3SG with the news his
'Joanne rejoiced in his news.'

Other than the morphemes *para-*, *yper-* and *kata-*, the bound elements *skilo-* 'to death', *xilio-* 'deeply', *mirjo-* 'deeply' and *kalo-* 'well' are also intensifying morphemes that are attached to verbs.

According to Efthymiou (2017; 2019), the preverb *skilo-* denotes either a very high degree of intensification, the negative attitude or the emotional involvement of the speaker, or overstatement (see also Fotiou 1998).

⁷ Delveroudi, Vassilaki 1999; Efthymiou 2003; 2017; Gavriilidou 2014; Kallergi 2015.

- (14) Skilo- varethikame sti dialeksi.
dog- were.bored.1PL at-the lecture
We were bored to death at the lecture.

In (14), the prefix *skilo-* is used to express speaker's negative attitude regarding an event they participated in.

On the other hand, *xilio-* and *mirio-* express plurality (i.e., multiple repetition of an action) or overstatement and are not very productive as other intensifying preverbs (Efthimiou 2019, 8).

- (15) Tin xilio- efxaristise gia ti viothia pou tou profere.
her a.thousand-thanked.3SG for the help that him offered.3SG
'He was deeply grateful for the help she offered him.'

- (16) Ton mirio- parakalese na min pei tipota se kanenan.
him ten.thousand-begged.3SG SUBJ not say.3SG anything to anyone
'She begged him many times not to say anything to anyone.'

In (15) and (16), both prefixes *xilio-* and *mirio-* are used to express multiple repetition of the actions of thanking and begging, respectively. While *xilio-* literally means 'a thousand' and *mirio-* 'ten thousand', I argue that both morphemes express the same degree of repetition of the actions.

Finally, *kalo-* is attached to verbal stems denoting a higher intensity of an event.

- (17) Kalo- fagame stoxthesin gevma.
Great-ate at yesterday's meal
'We had a great meal yesterday.'

In (17), the morpheme *kalo-* attached to the verbal stem *faagme* 'we ate' to booster the semantics of the event of eating.⁸

So far, we saw that intensification is a function that increases the degree of a property. Regarding this, the intensifying preverbs *para-* 'over', *kalo-* 'well-', *yper-* 'over-', *kata-* 'completely', *kara-* 'extremely', *skilo-* 'to death', *xilio-* 'deeply', and *mirjo-* 'deeply' are used as degree modifiers. Gavriilidou (2013) argues that degree modifiers can be distinguished into two categories, namely "boosters" and "maximizers". Boosters are used to denote a high degree in a scale, whereas maximizers denote the upper boundaries in a scale of gradable properties

⁸ The verbal complex *kalofagame* 'we ate' has both a degree and a manner interpretation, i.e., 'we ate a lot and well'. However, in cases like *kalopantrevomai* 'I have a good husband/wife', there is only a manner interpretation. This difference can be explained based on the meaning of the base.

(Quirk et al. 1985). Following Gavriilidou, the following classification of the intensifying elements in question is argued:

- a. Boosters: *para-* ‘over’, *yper-* ‘over’, and *kalo-* ‘well-’, and
- b. Maximizers: *kata-* ‘completely’, *skylo-* ‘to death’, *xilio-* ‘deeply’, and *mirjo-* ‘deeply’

Based on this classification, the bound morpheme *yper-* ‘over-’ is a gradable modifier that expresses intensification and functions as a booster:

- (18) I Ioanna yper-analyi ta panta.
 the Joanne over-analyzes the everything
 ‘Joanne overanalyzes everything.’

In (18), the gradable modifier *yper-* ‘well-’ denotes the high degree of Joanne’s analyzing everything. Its presence is used to boost the action of analyzing by increasing the degree and moving it above the contextually dependent threshold, but not close to the maximal values on a degree scale.

By contrast, the bound morpheme *skylo-* ‘to death’ is a gradable modifier expressing intensification and functions as a maximizer:

- (19) I Ioanna skylo-varethike sto parti.
 the Joanne dog-drank.3SG at.the party
 ‘Joanne was bored to death at the party.’

In (19), the gradable modifier *skylo-* ‘to death’ denotes a high degree of Joanne’s boredom. Here, it is not the case that Joanne was bored a lot at the party. In the presence of *skylo-*, the degree of her boredom moves above the contextually dependent threshold, close to the maximal values on a degree scale, unlike the gradable modifier *yper-* ‘over-’.

3.2 Deintensification

‘Deintensification’ (also called ‘attenuation’) is another aspect of evaluation. While intensification is considered as degree modification denoting the high degree, deintensification is used to denote the meaning of insufficiency, i.e., a property under the threshold expressed by the base, according to Efthymiou (2017).

In Modern Greek, the bound morphemes *psilo-* ‘a bit’, *miso-* ‘half-’, *koutso-* ‘poorly’, *psefto-* ‘affectedly’, and *xazo-* ‘poorly’ are deintensifying prefixes that are attached to verbal bases. They are basically used to express speaker’s negative attitude or mitigation.

More specifically, when *psilo-* is attached to verbal bases, it decreases the intensity of an action or approximation.⁹

- (20) I loanna psilo-methise sto parti.
the Joanne a.little-got.drunk.3SG at.the party
'Joanne got a little drunk at the party.'
- (21) Psilo-xathikame se ekeinous tous dromous.
a.little-got.lost.1PL in those the streets
'We lost our way a little in those streets.'

In (20), *psilo-* is used with the verbal stem *methise* 'she drank' to reduce the intensity of Joanne's drinking. In (21), *psilo-* is used to express a kind of approximation regarding the fact of losing speaker's way.

Xydopoulos (2009) points out that the element when attached to verbs also denotes low energy or slow rhythm (such as in the verbal complex *psilovrexi* 'drizzling'), or the action of cutting something into smaller or thinner pieces (such as in the verbal complex *psilokovo* 'to chop').¹⁰ He also argues that *psilo-* is possible to attach to verbs having negative connotation or even an offensive meaning (as with the verbal complexes *psilogamithika* 'I was a bit fucked up' and *psilotsantistika* 'I got a bit pissed off').

The preverb *miso-* is used with verbal bases to reduce the intensity of an event (Efthymiou 2019) or to express incompleteness of an action.

- (22) I loanna miso-epsise to keik.
the Joanne half-baked.3SG the cake
'Joanne half-baked the cake.'

In (22), the morpheme *miso-* attached to the verbal stem *epsise* 'she baked' shows not that Joanne baked only the one half of the cake and not the other, but rather that she didn't complete the process of baking.

The deintensifying preverb *koutso-* is used with verbal stems to denote a lower quality of an action (Efthymiou 2019).

- (23) Ta koutso-katafernei me ta mathimata.
them poorly-achieve.3SG with the courses
'He poorly comes to grips with the courses.'

⁹ See also Giannoulopoulou 2003; Xydopoulos 2009; Savvidou 2012; Efthymiou 2019.

¹⁰ The bound morpheme *psilo-* deriving from the adverb *psila* 'thinly'. While *psilometho* 'to get a little drunk' has a deintensifying interpretation with the use of the adverbial decreasing the intensity of the action of getting drunk, its use in *psilokovo* encodes different semantics literally meaning 'to chop, to cut into thin pieces'; likewise, the verbal complex *psilokoskinizo* 'to sift with a very thin/fine sieve'.

In (23), *koutso-* is attached to the verb *katafernei* ‘s/he achieves’ to express a qualitatively low evaluation regarding someone’s progressing on program of study.

Psefto- ‘affectedly’ denotes speaker’s depreciation or shows that a process is performed with less effort than expected (Efthymiou 2019).

- (24) O Kostas psefto- doulevei stin etaireia tou patera tou.
the Kostas affectedly-works at-the company of father his
‘Kostas pretends to work at his father’s company.’

In (24), *psefto-* is used with the verb *doulevei* ‘s/he works’ to show that Kostas puts less effort working at his father’s company than someone else who truly works, thus he pretends to work.

Finally, like *koutso-*, the preverb *xazo-* ‘poorly’ is attached to verbal stems to express a lower quality of an action (Efthymiou 2019).

- (25) O Petros xazo- diavase gia tin eksetasi
the Peter poorly-studied.3SG for the exam
‘Peter studied poorly for the exam.’

In (25), the preverb *xazo-* attached to the verb *diavase* ‘s/he studied’ denotes a lower quality of Peter’s studying.

Working on the property of deintensification, Paradis (1997) distinguishes two subcategories: “totality modification” and “gradable modification”. According to her model, total modifiers are characterized as ‘approximizers’ (e.g., ‘almost’), whereas gradable modifiers are ‘moderators’ (e.g., ‘quite’, ‘rather’, ‘pretty’) and ‘minimizers’ (e.g., ‘a (little) bit’, ‘slightly’, ‘a little’, ‘somewhat’). The former decrease slightly the degree of the property denoted by the gradable predicate, whereas the latter indicate the lowest boundaries in a scale.

However, I argue that ‘minimizer’ is not an accurate term to describe this function. A minimizer is an expression that denotes a minimal quantity, degree, or extent with negation scoping over it:

- (26) I did not drink (even) a drop.

Minimizers are considered as occupying the lowest end of the scale (Bolinger 1972; Fauconnier 1975a; 1975b), and negation functions as “an emphatic way of expressing zero” (Bolinger 1972, 120). Bolinger (1972) and Horn (2001) make a distinction between minimizers and ‘diminishers’ (e.g., ‘a little’): the former appears in the [negation + minimizer] structure, whereas the latter functions as a litotes for the purpose of evaluation.

Taking the above into consideration, here it is proposed that Modern Greek preverbs *poly-* ‘much’, *psilo-* ‘a bit’, *miso-* ‘half-’, *koutso-* ‘poorly’,

psefto- ‘poorly’ and *xazo-* ‘half-heartedly’ expressing deintensification are gradable modifiers used as ‘diminishers’.

- (27) I loanna koutso-diavase gia to diagonisma.
the Joanne poorly-studied.3SG for the test
‘Joanne studied poorly for the test.’

In (27), the adverbial preverb *koutso-* ‘poorly’ is a gradable modifier expressing deintensification and functions as a diminisher. It denotes a low degree of Joanne’s studying. Here, it is not the case that Joanne studied enough or adequately. In the presence of *koutso-*, the degree of her studying moves below the contextually dependent threshold, close to the lowest values on a degree scale.

4 The Semantics of Evaluation

In the previous sections, we saw two aspects of evaluation in Modern Greek, i.e., intensification and deintensification. Here, the different functions of intensifying preverbs and deintensifying preverbs in Modern Greek will be formally defined. The semantics will be captured not for each distinct element but rather for the main evaluative classes they belong to.

As seen, based on their functions, Modern Greek evaluative preverbs are divided into boosters, maximizers, and diminishers (following Quirk et al. 1985, Gavriilidou 2013). A booster expresses a high degree in a scale, as the bound morpheme *yper-* ‘over’ in (28).

- (28) I loanna yper-analyei ta panta.
the Joanne over-analyzes the everything
‘Joanne overanalyzes everything.’

A maximizer denotes the upper boundaries in a scale of gradable properties, such as the intensifying preverb *skylo-* ‘to death’ in (29).

- (29) I loanna skylo-varethike sto parti.
the Joanne dog-drank.3SG at.the party
‘Joanne was bored to death at the party.’

Finally, a diminisher decreases slightly the degree of the property expressed by the gradable predicate functioning as a litotes for the purpose of evaluation, such as the deintensifying preverb *koutso-* ‘poorly’ in (30).

- (30) I loanna koutso-diavase gia to diagonisma.
the Joanne poorly-studied.3SG for the party
‘Joanne studied poorly for the test.’

To capture the semantics of boosters, maximizers and diminisher, and the differences among them, a scale of degree for gradable predicates is assumed in (31):

- (31) Scale of degree
<extremely, a lot, sufficiently, a little, none>

In the scale in question, the value SUFFICIENTLY is the threshold representing the value close to the norm. The scale of degree itself is sensitive to contextual factors, and the threshold SUFFICIENTLY, like all scalar predicates, does not have a fixed value, rather it is context-sensitive (Kennedy 2007). To capture the difference in the meaning of evaluative morphemes in Modern Greek, I propose a semantic analysis under which there is a different denotation for each class of evaluative morphemes.

Formally, the denotation of boosters, the class of intensifying modifiers that denote high degree in the scale, is given as follows:

- (32) $[\text{BOOSTER}] = \lambda P \lambda x. \exists d [P(x)(d) \wedge (d > \text{SUFFICIENTLY})]$

Based on the denotation in (32), a booster is a relation that takes a scalar predicate P and an individual argument x and returns *True* if and only if there exists a degree d such that $x P$ above the degree SUFFICIENTLY.

The denotation of maximizers, the class of intensifying modifiers that denote the upper boundaries in a scale of gradable properties, is given in (30):

- (33) $[\text{MAXIMIZER}] = \lambda P \lambda x. \exists d [P(x)(d) \wedge (d > \text{A LOT})]$

Based on the denotation in (33), a maximizer is a relation that takes a scalar predicate P and an individual argument x and returns *True* if and only if there exists a degree d such that $x P$ above the degree A LOT.

Regarding diminishers, the class of deintensifying modifiers that indicate the lower boundaries in a scale, their semantics is given as follows:

- (34) $[\text{DIMINISHER}] = \lambda P \lambda x. \exists d [P(x)(d) \wedge (d < \text{SUFFICIENTLY})]$

Based on the denotation in (34), a diminisher is a relation that takes a scalar predicate P and an individual argument x and returns *True* if and only if there exists a degree d such that $x P$ below the degree SUFFICIENTLY.

Interestingly, as Giannoula (2021) argues, under the framework of the “(Non)Veridicality Theory of Polarity” (Giannakidou 1998; 2001), the bound morpheme *poly-* functions as a strong Negative Polarity

Item (NPI) appearing only in antiveridical environments (negation and ‘without-’ clauses):

(35)

- a. I Ioanna dhen poly-kimithike xthes vradi.
the Joanne not much-slept.3SG yesterday night
‘Joanne didn’t sleep much last night.’
- b. #I Ioanna poly-kimithike xthes vradi.
the Joanna much-slept.3SG yesterday night
(lit: ‘Joanna slept much last night.’)

Given that *poly-* is an NPI occurring only with negation, unlike the other degree modifiers, and although it seems to belong to the class of diminishers, it has its own denotation. The semantics of *poly-* and the negative operator are given as follows:

(36) $[[\text{poly-}]] = \lambda P \lambda x. \exists d [P(x)(d) \wedge (d \geq \text{A LITTLE})]$

(37) $[[\text{NEG}]] = \lambda p [\neg p]$

Given the denotation in (36), *poly-* is a function that takes a scalar predicate *P* and an individual argument *x* and returns *True* if and only if there exists a degree *d* such that *x P* above or equally to the degree A LITTLE. Since *poly-*, as an NPI, appears in sentences that combine with the negative operator, the direction of its degree changes and the degree maps not to a value that is equal or greater than the value A LITTLE, but to a value that is equal or less than the value A LITTLE.

In addition, the denotation of *poly-* in (36) indicates that its meaning differs from the meaning of other diminishers in Modern Greek. While the formal semantics of diminishers shows that their degree maps to a value below the threshold SUFFICIENTLY, the denotation of *poly-* shows that its degree maps to a value equal or greater than SUFFICIENTLY and it turns to a value below the threshold only when the negative operator takes scope over it. Thus, it is argued that the bound degree modifier *poly-* is not a diminisher since its value is below SUFFICIENTLY but more than A LITTLE and its function can be described better as maximizing a minimizing value. For that, the term ‘maximizing minimizer’ is proposed for the bound degree modifier *poly-*.

5 Augmentation and Diminution

In the previous sections, two aspects of evaluation in Modern Greek were presented, i.e., intensification and deintensification. The different functions and semantics of intensifying preverbs and deintensifying preverbs in Modern Greek were defined formally showing that they belong to the evaluative classes of boosters, maximizers, and diminishers. In what follows, two other dimensions of evaluation are discussed, namely ‘augmentation’ and ‘diminution’.

‘Augmentation’ and ‘diminution’ are derivational morphological processes in Modern Greek that also constitute part of evaluative morphology.¹¹

Augmentatives are mainly used to refer to derivational suffixes that attribute speaker-attitude features to the base they combine with. They attach to specific grammatical categories, namely nouns, indicating gender, number, and case.

- (38) Augmentative suffixes in Modern Greek
-*aras/-ara* (e.g., *foni* ‘voice’ > *fon-ara* ‘great voice’,
kathigitis ‘professor’ > *kathigitaras* ‘great professor’)
-*arona* (e.g., *spiti* ‘house’ > *spit-arona* ‘impressive house’)
-*aros* (e.g., *pontiki* ‘mouse’ > *pontik-aros* ‘huge mouse’)

Augmentation in Modern Greek has multiple functions. It is used to indicate high degree of a property or a characteristic of the base, to attribute intensiveness to the meaning of the base, to denote large size, high intensity, long duration, long area, etc., of the referent of the base, or to express admiration and appreciation.¹²

- (39) Meanings of augmentatives
Big size (e.g., *spitarona* ‘big/impressive house’)
Flattery (e.g., *fonara* ‘great voice’)
Admiration (e.g., *aftokinitara* ‘impressive car’)
Appreciation (e.g., *kathigitaras* ‘great professor’)

Diminutives, like augmentatives, are referred to the derivational suffixes that attribute speaker-attitude properties to the base they attach to. Likewise, they attach to nouns (e.g., *spiti* ‘house’, *spit-aki* ‘little house’) also indicating gender, number, and case, while the

¹¹ Daltas 1985; Sifianou 1992; Alexopoulos 1994; Melissaropoulou, Ralli 2008; Melissaropoulou 2009; Xydopoulos, Christopoulou 2011; Efthymiou 2015; Christopoulou, Xydopoulos, Tsangalidis 2017.

¹² The lexical choices in (39) are not unique to the categories suggested. For instance, the word *spiti* ‘house’ can be used for the augmentative *spitarona* having either the meaning ‘big house’ or the meaning ‘impressive house’.

grammatical category of adjectives (e.g., *mikros* 'little', *mikr-ulis* 'tiny little') can also be a possible base for diminutives to combine with.

(40) Diminutive suffixes in Modern Greek

-akis/-aki	(e.g., <i>kosm-akis</i> 'rabble', <i>gat-aki</i> 'kitten')
-akos	(e.g., <i>kafed-akos</i> 'java')
-areli	(e.g., <i>paid-areli</i> 'pipsqueak')
-itsa	(e.g., <i>koukl-itsa</i> 'little doll')
-oulis/-oula/-ouli	(e.g., <i>mikr-oulis</i> , <i>mikr-oula</i> , <i>mikr-ouli</i> 'very small')
-outsikos/-i/-o	(e.g., <i>mikr-outsikos</i> , <i>mikr-outsiki</i> , <i>mikr-outsiko</i> 'tiny')
-idrio	(e.g., <i>logidrio</i> 'spiel')

Diminution is used to indicate reduction of the meaning of the base, or to express familiarity, mocker or contempt.

(41) Properties of Modern Greek diminutives

Small size	(e.g., <i>kontoulis</i> 'shortish', <i>gatoula</i> 'small cat', <i>pedaki</i> 'little kid')
Familiarity	(e.g., <i>kafedaki</i> 'coffee', <i>filaraki/filarakos</i> 'chappy')
Mockery	(e.g., <i>eksipnakias</i> 'wiseacre')
Contempt	(e.g., <i>ginekoula</i> 'wuss')

Christopoulou, Xydopoulos, Tsangalidis (2017) show that Modern Greek evaluative morphemes, like the diminutive *-aki*, may have either a descriptive, quantitative property, when referring to size, or a qualitative property when referring to speaker's feelings towards a referent (see also Körtvélyessy 2015a; Grandi, Körtvélyessy 2015), while the boundaries between the two properties are not always appreciable. Further, they show that augmentatives and diminutives denoting quantity and/or quality are the two poles of a continuum that "causes a fluctuation of the intensity in the taboo meaning of the base" (2017, 293). Moreover, since evaluatives are referred to speaker's emotional attitude towards a referent, these morphemes are also used in the slang vocabulary as a common way to rise or reduce the meaning of a word. More specifically, in a slang vocabulary, augmentatives boost the meaning of a word having either a positive or a negative meaning. On the other hand, diminutives in slang vocabulary reduce the negative content of the base and/or build familiarity and friendliness.

Christopoulou, Xydopoulos, Tsangalidis also mention the intensifying character of augmentatives and their function as to signify speaker's respect, tenderness, evaluation, familiarity, irony, belittlement, or disapproval for the referent (see also Sifianou 1992; Efthymiou 2015). An example illustrated the negative connotation of augmentatives would be as follows:

(42) Ise megali psonara!

'You are such a swellhead!'

By contrast, diminutives can also be used to mark politeness and to indicate positive connotation (love, appreciation, and tenderness) or negative one (disapproval and understatement) (e.g., *Ine to filaraki mu!* 'He is my chappie!'), spreading to a scale with affection and disapproval in its ends.

Moreover, they argue that, in slang vocabulary, augmentatives without the correspondence of the natural and grammatical gender of the base are also used as a positive impoliteness strategy, whereas diminutives imply speaker's off-record impoliteness attitude. In both cases, evaluative morphemes, with or without gender alternation, obtain offensiveness (in the sense of how offensive or annoying an interlocutor considers a word) whether in higher or lower degree.

6 Conclusion

This paper presented the phenomenon of evaluation showing different flavors of evaluative morphology in Modern Greek. Focusing on intensification and deintensification, evaluative affixes in Modern Greek are distinguished into two main categories, namely 'intensifying preverbs' (*para-* 'over', *kalo-* 'well-', *yper-* 'over-', *kata-* 'completely', *kara-* 'extremely', *skilo-* 'to death', *xilio-* 'deeply', and *mirjo-* 'deeply') and 'deintensifying preverbs' (*poly-* 'much', *psilo-* 'a bit', *miso-* 'half-', *koutso-* 'poorly', *psefto-* 'poorly', *xazo-* 'half-heartedly'). These morphemes are categorized, based on their functions, into boosters, maximizers, diminishers, and maximizing minimizers, and their semantics captures not each element separately, but rather the main evaluative classes they belong to. Finally, elements in Modern Greek that express the two other dimensions of evaluation, i.e., 'augmentation' and 'diminution', are also discussed.

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Gidecen/Gidecek min/Gidecek misin?

Where Turkish Cypriots Think Dialect Variation Is Going

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Abstract This study is a first look at the public perception of variation in Cypriot Turkish by young adult Turkish Cypriots. Young adult Turkish Cypriots indicated their opinions on a map and in comments. All asserted that regional variation within Cypriot Turkish does exist, despite ongoing dialect levelling. Variation is primarily attributed to each of the main urban centers of the area and is largely associated with differing positions along the continuum between Cypriot and Standard Turkish. The amount of Greek vocabulary is also identified as a source of variation.

Keywords Sociolinguistics. Dialectology. Turkish. Cyprus. Variation.

Summary 1 Introduction. – 2 Setting the Linguistic Scene in Northern Cyprus. – 3 Methods. – 4 Geographical Aspects of Cypriot Turkish Dialect Variation. – 4.1 Nicosia. – 4.2 Kyrenia. – 4.3 Famagusta. – 4.4 Morphou. – 4.5 Karpaz. – 4.6 Lefke. – 5 Thematic Aspects of Cypriot Turkish Dialect Variation. – 5.1 The Standard-Cypriot Continuum. – 5.2 Vocabulary Variation. – 6 Conclusions.

1 Introduction

The title of this chapter includes three different ways of asking the question ‘will you go?’ in Turkish. *Gidecek misin?* is the Standard Turkish acrolectal version, which would be used especially in formal contexts and written texts both in Turkey and in northern Cyprus, where Standard Turkish is the primary language variety of education, broadcasting and writing.

Gidecen? on the other hand, is the hyperlocal, basilectal form of the question which would normally be used by Turkish Cypriots, especially in speech and with other Turkish Cypriots and when asserting Turkish Cypriot identity. Notably, the ‘question marker’ *mi* from Standard Turkish is not present. This question word is not a feature of Cypriot Turkish – one of the major grammatical differences between it and the standard variety.

There is also a mesolectal, intermediate version of this question: *Gidecek min?* This third alternative incorporates the Standard Turkish *mi* question particle, while still remaining grammatically distinct from the fully Standard form of the question, by retaining a different version of the second-person verbal suffix (/n/ rather than /sin/). This use of *mi* combined with a variant of the person suffix is an innovation in Cypriot Turkish grammar, originating from the increased prominence of Standard Turkish in the northern part of the island since the post-conflict *de facto* division of the island in the 1970s.

Thus, a basic question reveals considerable complexity in terms of grammatical variants and the social significance of the choice between them. The answer(s) to this question, in dialectological terms, may be equally complex. In this study, I explore young adult Turkish Cypriots’ views of dialect variation in the past and present, with particular attention to the role of geographical variation within Cyprus. In doing so, I use the theoretical and methodological approach of ‘perceptual dialectology’.

Perceptual dialectology (Preston 1999; Long, Preston 2002) investigates how ‘non’-linguists perceive dialect variation. It addresses questions like: According to the general public, what different dialects of their language exist? Where is each one used? What are they like? How are they different, either from your own speech, or from the ‘standard’ version? Why?

Of course, the views of the general public may differ from those of language professionals. Nevertheless, such language attitudes have important effects on social structures and linguistic behavior, and are worthy of investigation in their own right. In addition, when a linguistic literature is relatively lacking, they provide an important starting point for in-depth investigations of language variation. To my knowledge, this is the first perceptual dialectology study of northern Cyprus.

In the following section, I outline the existing literature on linguistic variation within Turkish in northern Cyprus, as well as the methods used in this study. Section 3 discusses the results of the study with respect to geographical variation, while Section 4 discusses the results thematically. In Section 5 I summarize the conclusions and compare the situation in the Greek-speaking southern region controlled by the Republic of Cyprus.

2 Setting the Linguistic Scene in Northern Cyprus

Northern Cyprus presents a special case to observe the rise of dialect ideologies. Prior to 1974, a newly-independent (from the UK) Cyprus was majority Greek-speaking, with a significant Turkish Cypriot minority, of whom many were bilingual in Cypriot Greek. English was still widely used institutionally, and the role of standard Turkish was relatively small in Turkish Cypriot life, although educational materials in Turkish schools was imported from Turkey.

This situation changed drastically with the large-scale relocations starting in the 1960s and culminating in the *de facto* division of the island in to Greek and Turkish zones in 1974. In the intervening and following periods, there was widespread dialect mixing among speakers of Cypriot Turkish (as for Cypriot Greek), leading to a kind of koineization of the dialect (Petraki 2011; Gülle 2014; Kappler, Tsiplakou 2018).

At the same time, the role of Standard Turkish significantly expanded, both in the schools and in the society in general, particularly after the 1974 division and the large-scale arrival of mainland Turks from the Republic of Turkey. This wave of immigration was numerically significant. Yet it also had a profound impact beyond numbers and demographics, due to the employment of skilled workers from Turkey in leadership positions, and the increased presence of Standard Turkish in these domains (rather than Greek or English, as in the past; Hatay 2005).

As a result of historical processes, therefore, northern Cyprus represents today a bidialectal, diglossic society. Two related varieties of one language are used in different domains, with one of higher status than the other. In this case of diglossia, Standard Turkish is the 'high' variety of education and administration, and is also the native dialect of the many immigrants coming from mainland Turkey. Cypriot Turkish is the 'low' variety spoken inside the Turkish Cypriot community and family life. English is still widely used - in higher education, almost exclusively - as well as in tourism.

Most of the literature on Cypriot Turkish focuses on its unique dialectal features and differences from Standard Turkish (Demir, Johanson 2006). Sociolinguistics-oriented work explores the attitudes toward dialect differences. In a familiar and typical bifurcation, according to Turkish Cypriots, Standard Turkish is relatively educated and well-mannered, while Cypriot Turkish is rough and rustic (Kızılyürek, Gautier-Kızılyürek 2004); similarly, Cypriot Turkish is seen as less educated but more sincere, honest and friendly (Osam 2004).

The extant research posits the existence of a new, shared variety of Cypriot Turkish (Petraki 2011; Gülle 2014) - therefore presupposing the existence of geographical variation. According to Kappler and Tsiplakou (2018), there is "partial convergence to the standard

variety together with loss of local or basilectal features [...] koineization [...] hand-in-hand with the levelling of local features". Kappler and Tsiplakou highlight the maintenance and spread of certain dialectal features as newly regionally unmarked (i.e. no longer geographically localized). They also document the emergence of hybrid, mixed forms drawing on both different previously-existing regional dialects, and mixing with the standard variety.

These sources all acknowledge that variation 'within' Cypriot Turkish does exist, although it is mentioned only briefly and not described in detail. Indeed, the emergence of a new koine presupposes the pre-existence of different dialectal varieties. Petraki states that there are "several CT [Cypriot Turkish] dialects, not just one" (2011). Gülle (2014, 94) states that:

as far as the literature on Cypriot Turkish goes, there is no complete categorization of these sub-varieties. Several such varieties are mentioned here and there, such as the Paphian variety and the variety of Limassol. It is, however, unknown how many of these varieties there were and what the clear differences between them were.

Evrpidou and Çavuşoğlu (2015, 131) also report relevant comments from their Turkish Cypriot participants regarding within-dialect variation, such as the following:

Cypriot Turkish has changed a lot; now people here [Nicosia] speak it differently from people living in village in Karpaz Peninsula [Dipkarpaz/Rizokarpas] for example. It has many forms. The way it's spoken in Nicosia [Nicosia] is closer to Standard Turkish, but still different and it carries more prestige.

As they conclude,

Ones used in cities carry more prestige than the ones used in villages or other parts of the island. The level of respect accorded to city Cypriot Turkish as compared to that of other varieties in the speech community is clearly shown by the quote above. The prestige it may carry (in comparison to the rest of the language varieties) is also associated with the idea that city Cypriot Turkish is believed to be closer to Standard Turkish, but at the same time different from it. (2015, 131)

Clearly, based on these quotations, Cypriot Turkish young adult speakers subscribe to the idea that internal dialect variation exists. Interestingly, these speakers seem to view it through the lens of proximity/distance to or from Standard Turkish.

3 Methods

In this study, the classic perceptual dialectology method of the ‘map task’ is used to investigate young adult Turkish Cypriots’ knowledge of and attitudes toward regional variation in Cypriot Turkish (for an overview of the map task method and its previous use in the sociolinguistic literature, see Cramer 2016). In the map task, a printed map is provided for participants, who are asked to annotate the map according to how [they think] people speak differently in different areas.

Fifteen Turkish Cypriot university students, currently undertaking English-medium undergraduate education in northern Cyprus, were provided with Google Maps print-outs of northern Cyprus. All were born at least twenty years after the *de facto* division of the island. The names of major towns and cities of the area appear on the map in both Latin script (Turkish names) and Greek script (Greek names). The following instructions were given:

Cypriot Turkish is spoken all over this island, but this dialect (or language?) can be different from place to place.

Draw lines on the map showing where people speak Cypriot Turkish differently.

Please add your observations about the speech of the people living in each area.

4 Geographical Aspects of Cypriot Turkish Dialect Variation

Participants unanimously accepted the premise that within-dialect variation exists in Cypriot Turkish. Every participant drew some boundary lines and added some comments about variation to the map.

Participants were consistent in perceiving variation between each of the main urban areas in northern Cyprus. Thus, some frequently-observed patterns regarding variation were implicitly rejected. For example, there was no mention of an urban/rural divide (often seen in the Arab world and elsewhere) or regional divides such as north versus south (standard perceptual divisions in both the US and UK) or coastal/inland.

Therefore, participant comments are collated and discussed on a city-by-city basis in the remainder of this section. These comments are provided exhaustively and *in toto* – readers have access to the full range of responses, which are sorted by topic but not otherwise. They are provided verbatim and are not ‘corrected’ or modified, although translations and annotations are provided when appropriate.

4.1 Nicosia

Nicosia - Turkish Lefkoşa - is the main administrative city of northern Cyprus, located inland and centrally. It is the last and now only 'divided city' in Europe. The 'Green Line', or UN-controlled buffer zone running through it, is monitored by international troops and subject to border controls.

Participants made the following comments about Cypriot Turkish as used in this city:

1. basic Cypriot Turkish
2. more like local Cypriot Turkish
3. more polite talking compared to other regions of northern cyprus; use a dialect much more like Turkish people; use *gidecek min?*, more like *gidecek misin?* in Turkish dialect
4. people are careful a bit as here is a city but again we can see the use of Greek words especially from older people
5. Cypriot Turkish is used most obviously and dialect is faster
6. people speak faster than other places
7. dialect is very slow and words are being swallowed while talking
8. they speak so loud
9. by transitivity,¹ talk differently from in Guzelyurt and Famagusta

Participants variably identify Nicosia Cypriot Turkish as both 'more' local or 'basic' (comments 1, 2 and 5) and 'less' local (comments 3 and 4, where 'careful' means 'more like the standard variety').

Specific examples of variation relate to perceived proximity/distance from Standard Turkish as well as to use of Greek words and rate of speech (e.g. perceived speed of speaking). As with 'standardness', the precise nature of rate of speech variation is evaluated in contradictory ways, as either exceptionally fast or exceptionally slow. Finally, one participant explicitly and accurately identifies the grammatical variation in question formation which constitutes the title of this paper.

In sum, participants identify similar parameters of variation (degree of standardness, rate of speech) although are inconsistent in how they apply in Nicosia.

1 Transitivity because this participant elsewhere identifies the other cities as different - therefore it is entailed that Nicosia speech is also different from them, as they are different from it.

4.2 Kyrenia

Kyrenia - Turkish Girne - is the main tourist city of northern Cyprus, located on the central coast. Participants made the following comments about Cypriot Turkish as used in this city, as compared to other northern Cyprus locations (hence the use of terms like 'more', 'less' and 'most'):

1. compared to other areas, the use of old words is less
2. use typical northern cypriot dialect such as *gadeh*,² *gICCaCCIk*,³ *galem*,⁴ *ilan*,⁵ and so on; rigidly northern Cypriot type
3. in Girne which is my hometown people try to use Turkish correctly but even they try it, they also make words a bit longer as we used to speak Turkish this way
4. calm speaking voice, pronouncing every consonant, vowel, short 'i', 'a'
5. most fluent
6. their dialect are the most clear one
7. they talk slower; more correct Turkish
8. more like Turkey Turks!
9. mostly tourists, Istanbul Turkish is also spoken commonly

Once again, as for Nicosia, several comments refer to the degree of standardness. In this case, all participants agree that Cypriot Turkish in Kyrenia is closer to standard Turkish, with none claiming the opposite, unlike the situation for Nicosia. Predictably, according to diglossic criteria, this variety is also assumed to also be more 'correct', 'fluent', and 'clear', and perhaps 'calm' (comments 1, 3, 4, 5, 6, 7, 8, 9), with only one exception (comment 2). This property is attributed to the presence of tourists and tourism.

Again, lexical variation is specifically mentioned, although here in the opposite direction - according to comment 1, Kyrenia Cypriot Turkish uses fewer 'old words' (probably Greek) rather than more (as is claimed for other locations). Comment 2 accurately identifies use of stop consonant voicing in its example words, which is typical of Cypriot Turkish.

2 Nonstandard pronunciation of Turkish *kadeh* 'drinking glass' with initial stop consonant voicing.

3 Nonstandard word form with obstruent voicing and gemination.

4 Nonstandard pronunciation of Turkish *kalem* 'pen' with initial stop consonant voicing.

5 Nonstandard pronunciation of Turkish *yılan* 'snake' with initial glide deletion and fronting of the high vowel.

Participants also made some comments about outlying areas of the Kyrenia district, in addition to the city proper:

10. mixed Cypriot Turkish
11. a lot of local Cypriot Turkish. They pronounce vowels more long
12. quick tight vowels and consonants, faster spoken than the rest
13. Karşıyaka - most of the people who live there are Turkish people so that we come across with Cypriot Turkish less than other places
14. in Karşıyaka, they emphasize vowels longer
15. Alsancak - they use Turkish similarly as people do in Girne, but as it's a small place people tend to compensatory lengthening⁶ as most of them know each other
16. Esentepe - they are connected with Cypriot culture and they even protect some traditions. They generally do not change Cypriot Turkish, they rather tend to preserve it;
17. Kaplıca - one of the places in which the original Cypriot Turkish is preserved

Comments 13, 14 and 15 refer to villages west of the city center, and the influence of immigrants from mainland Turkey is acknowledged. Comments 16 and 17 refer to villages east of the city center, which is said to retain more local dialect features, which are construed as in need of protection.

4.3 Famagusta

Famagusta - Cypriot Turkish Magosa - is also a coastal city, and hosts the only deepwater harbor in northern Cyprus. It is also the home of the largest public university. Due probably to its location on the east side, relatively far away from the place of research and other cities of northern Cyprus, it received fewer comments from participants.

1. they are loud and un-understandable
2. talk a bit different from the people who live in Nicosia
3. people in this area do not use the whole letters⁷ in a word
4. their dialect are so different as they swallow letters⁸
5. louder speaking voice. Swallow 'r' 'l' consonants

⁶ Due to their curriculum as prospective English language teachers, participants are familiar with linguistics terms such as this one - although in this case, it is not used appropriately.

⁷ I.e. speech sounds / phonemes.

⁸ I.e. speech sounds / phonemes.

6. normal Cypriot Turkish! (do not know a lot of people from here); special words for (only) their region. Ex: *garga suyu*⁹=coke
7. much more non-Cypriot speaking. Closer to Istanbul Turkish

Nevertheless it is identified as a distinct dialect region. Again we see the familiar pattern of contradictory evaluations of 'standardness'. City-specific lexical variation is mentioned, as well as some segmental variation/deletion.

4.4 Morphou

Morphou - still often referred to as such as well as by the Turkish name *Güzelyurt* - is a much smaller city located inland in the western part of the island. It is the location of the university at which this research was conducted. Presumably due to its proximity and the higher levels of interaction with residents in the students' daily lives, it receives a relatively large number of comments.

Morphou also presents a special case as it is numerically and socially dominated by Turkish Cypriot refugees from Paphos, which is now located on the Greek 'other side' of the island, in the area controlled by the Republic of Cyprus in the south. There is a very active social organization in Morphou for this refugee community originating in Paphos, and a recently-erected public memorial monument in Morphou to the Turkish Cypriot victims of intercommunal violence in Paphos.

Therefore, there may be a 'founder effect' in which a relatively small but influential number of people play an outsized role in future developments, in this case the potential development of a distinctive subdialect based on Paphian Cypriot Turkish. In addition, as a smaller city, Morphou may have experienced less dialect mixing compared to the other locations.

Participants made the following comments about Cypriot Turkish as used in this city:

1. old Turkish words are used, such as *gancelli*,¹⁰ *bandofla*,¹¹ stronger Cypriot Turkish is used
2. talk a bit different from the people who live in Nicosia; they use some different words like *olan*¹²

⁹ Standard Turkish 'mouthwash water'.

¹⁰ 'garden gate', from Italian *cancello/cancelli* (plural), 'gate, house front', also with typically Cypriot initial stop consonant voicing.

¹¹ 'slipper', from Italian *pantofola*, also with typically Cypriot initial stop consonant voicing.

¹² *Olan* 'being' i.e. 'the one who'.

3. as this place is small most of the people are affected from each other and generally people use Greekwords...
4. Greek words use commonly
5. they use so many Greek words. (Greek influenced)
6. louder. *Gölge=kölge*.¹³ They use k instead of g sometimes.¹⁴
7. in Guzelyurt, Cypriot people emphasize consonants longer
8. a lot of local Cypriot Turkish. They pronounce vowels more long
9. a very peculiar emphasis system.¹⁵ Long vowels, slow speech overall. Vowels are very pronounced
10. inverted sentences¹⁶ are used while talking
11. people who migrated from Paphos to Guzelyurt, most of them tend to use 'bre' sound (word) in front of their sentences. And as I heard from my grandparents, they said that this sound comes from the Greek dialect (it makes easier for some people to show stress in words). However, we cannot see that 'bre' sound that much in other cities.

Morphou Cypriot Turkish is described as more local (less standard) by multiple participants, and for the first time, no one claims the contrary - probably due to the smaller size and relatively smaller political role of this city.

Lexical variation is emphasized, in particular, the role of Greek-origin vocabulary. Interestingly, comment 1 gives several examples of local dialect words and describes them as 'old Turkish' although they are of non-Turkish origin. However, they are perceived as both local (therefore Turkish) and 'old' in presumed contrast to the more 'modern' standard Turkish.

Comment 6 provides a beautiful example of hypercorrection. Stop consonant voicing is typical of Cypriot Turkish, as noted earlier - a property it shares with Cypriot Greek. In this case, however, the local example word *kölge* 'shade' shows initial /k/ where standard Turkish has /g/.

Comment 10 refers to greater use of 'inverted' sentences, which in this case refers to sentences with SVO word order, rather than the SOV order of standard Turkish. This SVO order is also typical of Cypriot Turkish and usually attributed to influence from Greek.

Finally, the last comment refers to a specific lexical item *bre*, which does indeed stem from Greek as the participant relates. This term ultimately derives from /m(o)re/ 'man!' (fool!), a Greek vocative form which was also used in Ottoman Turkish.

13 Standard Turkish *gölge* 'shade' pronounced with initial consonant voicing.

14 An accurate observation about stop voicing in Cypriot Turkish.

15 Probably referring to differences in phrasal intonation, e.g. in question formation.

16 Refers to the use of SVO word order, rather than primarily SOV as in Standard Turkish.

4.5 Karpaz

The most remote area of northern Cyprus is the Karpaz peninsula extending to the east, in which there are villages but no cities. Participants made the following comments about Cypriot Turkish as used in this region:

1. a small place so that people talk very similar with each other. They use words as it is longer like *napan*¹⁷ but they pronounce it *napaan*. But in most of the other places in Cyprus they pronounce it as it is¹⁸
2. their dialect are the most interesting one, they speak incredibly fast, generally others do not understand their dialect
3. Turkey Turkish is more popular in these regions
4. Turkish spoken like Greek Cypriot. Some Greek words used within Turkish
5. some words are implemented from Cypriot Greeks
6. Greek and Turkish are mixed
7. Mehmetcik – also one of the places where people talk Turkish as the natural way of speaking Cypriot Turkish
8. Bafra – they speak stronger Cypriot Turkish compared to other areas

Again, participants made seemingly contradictory comments about the relative Cypriotness of speech in this region, and also about the role of Greek. In this case, they do so with a firm empirical basis, due to recent settlement patterns. The remoteness and relatively small population of the area meant that new settlements were created there after the *de facto* division of the island in 1974. Some of these settlements consisted primarily of immigrants from mainland Turkey, speaking their non-Cypriot variety of Turkish. However, others consisted of refugees from south Cyprus, a well-established and substantial proportion of whom were Greek-dominant or even monolingual Cypriot Greek speakers.

Participant comments reveal that, fifty years later, young Turkish Cypriots are well aware of these different communities and their complicated social history, as well as its ongoing linguistic consequences.

17 Nonstandard version of *nayıyorsun* ‘what (~how) are you doing’.

18 Meaning, how it is written (i.e. in a more Standard Turkish way).

4.6 Lefke

Lefke is a western coastal city, very close to Morphou. It was less often singled out as a distinctive region. However, participants made the following comments about Cypriot Turkish as used in this city:

1. very old verbs,¹⁹ loud speaking
2. people in this area do not use the whole letters in a word;²⁰ each village has its own dialect
3. they are making the vowels short and more implied (slow talkers)
4. loan words from Greek language. South Cyprus version; a lot of special words for their region
5. Greek words used frequently and talk fast

Again the role of Greek in local vocabulary is highlighted (and again they are referred to as 'old').

5 Thematic Aspects of Cypriot Turkish Dialect Variation

In this section, I collate comments according to the themes observed in participants' comments. As before, the comments on each theme are provided exhaustively and verbatim.

The descriptive terminology that participants use when describing varieties of Turkish fit closely with the expected patterns for a bidialectal, diglossic society. Words used to describe Standard Turkish include the following: polite, clear, careful, correctly, fluent, calm.

It is clear that Standard Turkish is of higher status (polite, correct) and viewed with some emotional distance (calm, careful). The term 'careful' also implies that speaking Standard Turkish is 'effortful' in a way that the native dialect is not.

Words used to describe Cypriot Turkish include the following: natural, protect/protected, old.

The term 'natural' provides the perfect contrast with 'careful' as used for Standard Turkish. Use of Cypriot Turkish is clearly construed as less effortful and more normal. Despite this, however, the term 'protect(ed)' implies that Cypriot Turkish may be under threat from Standard Turkish, and therefore in need of protection. Finally, Cypriot Turkish dialect features are at times described as old. This is certainly true in terms of their widespread presence on the island, which predates the influx of Standard Turkish forms and speakers in recent decades.

¹⁹ Probably meaning vocabulary in general, not specifically verbs.

²⁰ I.e. some phonemes / speech sounds are dropped as compared to standard Turkish / written language.

5.1 The Standard-Cypriot Continuum

A good deal of the commentary on Cypriot Turkish variation focuses on its relative proximity to Standard Turkish. Variation is largely associated with differing positions along the basilectal-acrolectal continuum between Cypriot and Standard Turkish, or differences in the balance between how much Standard or Cypriot Turkish is spoken. Comments on this specific aspect of variation are collated below.

1. Nicosia
 - a. more like local Cypriot Turkish
 - b. more like Turkish people
2. Kyrenia
 - a. a lot of local Cypriot Turkish
 - b. rigidly northern Cypriot type
 - c. original Cypriot Turkish
 - d. mixed Cypriot Turkish
 - e. more like Turkey Turks
 - f. Istanbul Turkish is also spoken commonly
 - g. more correct/clear Turkish
3. Famagusta
 - a. Closer to Istanbul Turkish
4. Morphou
 - a. stronger Cypriot Turkish
 - b. a lot of local Cypriot Turkish
5. Karpaz
 - a. Turkey Turkish is more popular
 - b. stronger Cypriot Turkish is used

Note that there is very little agreement about this variation according to location. Different participants identify different places as being more or less Standard or Cypriot in their speech. For a given location, contradictory statements can be made, as for Nicosia, Kyrenia, and Karpaz. There is therefore no consensus on the precise distribution of this aspect of variation – however, it constitutes a ‘shared parameter’ of variation, which is mentioned again and again by participants.

5.2 Vocabulary Variation

A second perceived parameter of variation is the amount of Greek vocabulary used in different locations within northern Cyprus. Comments on this specific aspect of variation are collated below.

1. General
 - a. we can see some Greek words that affected Turkish dialect
2. Nicosia
 - b. use of Greek words especially from older people

3. Morphou
 - a. people use some of the words from Greek language...
 - b. Greek words use commonly
 - c. they use so many Greek words. (Greek influenced)
4. Karpaz
 - a. some Greek words used within Turkish
 - b. some words are implemented from Cypriot Greeks
 - c. Greek and Turkish are mixed
5. Lefke
 - a. loan words from Greek language. South Cyprus version; a lot of special words for their region
 - b. Greek words used frequently

Once again, there is no consensus on the precise distribution of this aspect of variation. Instead, ‘every single area’ (except Kyrenia) is identified as having more Greek lexical influence, compared to all the others!

Also again, however, Greek lexical influence constitutes a ‘shared parameter’ of variation, which is mentioned again and again by participants.

Notably, Greek is the only language which is singled out in this way. Italian, French, and Arabic, for example, also made significant lexical contributions to Cypriot Turkish. Some of the most enregistered, widely used dialectal words are of Italian origin, such as *gancelli* ‘garden gate’.

More recently, there is of course the influence of English, which is considerable. Russian too is more and more often heard, and seen in public signage, in recent years. Yet none of these languages are mentioned as a source of variation, even when it seems quite plausible (e.g. in Kyrenia given its role in tourism, or Nicosia as the seat of British colonial government).

6 Conclusions

The results of this investigation reveal that young Turkish Cypriots do perceive dialect variation in Cypriot Turkish. They attribute differences to each urban center. Interestingly, this is consistent with what Fotiou and Grohmann (2022) observe in the Greek-speaking southern part of the island, controlled by the Republic of Cyprus. Greek Cypriots also “viewed the different cities and their districts [...] as the different regional dialect areas they perceive to exist in Cyprus” (1), which they interpret as characteristic of koineization and regional dialect leveling.

Although the perceived characteristics of this variation in Cypriot Turkish are inconsistent, and at times contradictory, they tend to

focus on two separate dimensions. First, variation is attributed to the relative ‘standardness’ of the speech of each area – that is, proximity to or distance from Standard Turkish of mainland Turkey. This often occurs in conjunction with mentions of tourists and other visitors. Given the diglossic, bidialectal nature of Turkish Cypriot society, the salience of this aspect of variation is perhaps not surprising.

A second perceived locus of variation is the amount of Greek vocabulary used in different areas, given the proximity of (Cypriot) Greek and awareness of its role before the Turkish presence and widespread bilingualism among older generations of Turkish Cypriots. The influence of other languages which are also widespread locally – particularly English, and also more recently Russian – is not singled out in this way.

Neither of these factors are salient for Greek Cypriots regarding variation in Cypriot Greek, according to Fotiou and Grohmann (2022).

If there is regional variation in Cypriot Turkish in other domains – e.g. phonological or syntactic – then young Turkish Cypriots are not aware of it or able to describe it. Rather, they may make impressionistic observations regarding rate of speech or intonation. This also parallels the perceptions of Greek Cypriots regarding Cypriot Greek, which are largely lacking in linguistic detail (Fotiou, Grohmann 2022). Rather, Greek Cypriots primarily mention intonation and variation in a particular palatal consonant (which does relate indirectly to standardness, however).

In summary, young Turkish Cypriots perceive geographical variation in Cypriot Turkish according to urban centers. In doing so, they parallel the perceptions of Greek Cypriots on the ‘other side’ with respect to Cypriot Greek. The Turkish Cypriots attribute variation primarily to differing degrees of ‘standardness’ and amount of persistent Greek vocabulary (which is quite different from Greek Cypriots). Ongoing research investigates the perceptions of older generations of Turkish Cypriots and of long-term residents originally from mainland Turkey.

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Di(a)glossia and Political Ideology in Grecophone Cyprus Moribundity Resistance, Diglossic Nostalgia, and a Sociolinguistic ‘Buffer Zone’

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Abstract Cyprus holds a storied past of self-determination – a hallmark of endangerment – serving as a backdrop for the trajectory of Cypriot Greek. In Cyprus, waning minority varieties are juxtaposed with Standard Greek, as is the native majority lect, Cypriot Greek. The relationship of Cypriot to Standard is often seen as diglossic; it is attenuated, toward diaglossia, characterized by dialect moribundity; it is further complicated by socio-politically ideological factors, with Standard Greek (H) indexing Cypriot Hellenism (vs. Cypriotism, ‘true’ local Cypriot nationalism), resulting in a tension between dialect revitalization and diglossic maintenance.

Keywords Diaglossia. Diglossic shift. Revitalization. Ideology. Prestige. Moribundity.

Summary 1 Introduction and Background: Cypriot Greek Diglossia. – 2 Excursus on the Pancyriot Koiné. – 2.1 Pancyriot Koiné Features. – 2.2 Hybridities. – 3 Diglossic Prestige. – 4 Ideologies & Diglossic Shift. – 5 Divided Cyprus With Views Divided: A Diglossic Nostalgia. – 6 Forward Movement: Zeitgeist, Ideologies, and Revitalization. – 7 Epilogue: What about Diglossia?

1 Introduction and Background: Cypriot Greek Diglossia

The first [...] and truly natural boundaries of states are...their internal boundaries. Those who speak the same language [:variety] are joined [...] by [...] invisible bonds...they belong together and are [...] an inseparable whole.

(Fichte, *Addresses to the German Nation*, 1806)

The Mediterranean island of Cyprus comprises the Republic of Cyprus (south) and the internationally unrecognized Turkish Republic of Cyprus (north), divided by the UN-patrolled ‘Green Line’/Buffer Zone. The two main populations, grecophone Cypriots (south) and turkophone Cypriots (north), speak Cypriot Greek (L) and Cypriot Turkish (L), respectively; both maintain their respective H varieties, Standard Modern Greek (SMG) and Standard Turkish (ST). This chapter focuses on the (socio)linguistic situation in the Republic of Cyprus, on ‘di(a)glossia’ between Cypriot Greek (CG) and SMG, and on the relevance of political ideology for lectal choice and diglossia maintenance (or breakdown) there.

Research on Cyprus linguistics is highly varied, and the diglossia question has been disputed for some time. Having said this, the scholarship shows significant agreement about the details of the linguistic situation itself (e.g., under what conditions speakers use dialect or Standard), and less consensus about identification (diglossia vs. continuum, and the nature of diglossia itself; see Hudson 2002, 29 for generalizations across diglossia scholarship). While some authors¹ describe Cyprus as diglossic, other research questions this status, based on an ostensible standard-dialect continuum,² as opposed to discrete varieties characteristic of diglossic societies (expounded upon in Karyolemou (2006) and Karyolemou, Pavlou (2001, *inter alia*). Cyprus was further described in Rowe, Grohmann (2013; 2014) as “attenuated diglossia”, “medial diglossia”, and “impending diaglossia”.³ Subsequently, Pappas (2016) reidentified the situation as a (non-diglossic) continuum. Without taking on the classification battle more than necessary, suffice it to say that no scholarship refutes an ongoing shift,⁴ and this shift will be captured here in terms of diglossia resolution.

1 E.g., Voniati, Armotistis, Tafiadis 2023; Arvaniti 2006; 2010; Pappas 2009; Tsiplakou 2003, *inter alia*.

2 However, Schiffmann (1997, 210-11) notes: “though linguistic cultures think of diglossia as either-or, it is often a gradient cline”. See Terkourafi 2007, 89, n. 39. See also Rowe, Grohmann 2013 for review.

3 ‘Dilalia’ is synonymous: “a situation, resembling but not identical to [...] (Fergusonian) diglossia [...] [where] (1) the linguistic distance between dialects [and]...standard is large, [and] (2) both [...] are used in everyday conversation [and] overlap in certain domains, but [with] clear functional differentiation” (Berruto 1989, 7).

4 Pavlou (2004) noted a change already thirty years in the making.

Accordingly, the aim of this chapter is to establish a path for diglossic resolution – toward a “standard-with-dialects/social dialectia” continuum (via diaglossia; Auer 2005; Bellman 1998) – based in part on political ideology. The CG koiné has a role to play in the question: As the intermediate acrolect, it could potentially unseat SMG as H in Cyprus, effecting total diglossic breakdown.

However, the persistence of diglossia is seen in (at least) the following: (a) Koiné innovations⁵ continue, with structural differences between SMG and even the koiné remaining salient (Arvaniti 2006, Tsipplakou et al. 2019); (b) koiné robusticity increases (Tsipplakou, Armostis, Evripidou 2016); (c) like SMG and CG generally, the koiné bears co-overt prestige (Rowe, Grohmann 2013; 2014; cf. Auer 2005, 23); (d) the koiné (like SMG, mesolect, and basilect) essentially occupies its own functional niche, even as domain allocations shift; this is the essence of diglossia (Schiffman 1997, 206; Watts 1999, 91).

Socio-politically ideological factors also indicate a diglossic split: (a) Political ideological lines dividing CG and SMG persist (Ioannidou 2012), with SMG indexing Greek-Cypriot nationalism/Cypriot Hellenism (vs. Cypriotism/‘true’ local Cypriot nationalism) and ethnicity (in the Greek sense of *ethnos*), reflecting a certain Greek ‘ethno-dialectology’; and (b) institutional linguistic traditions are officially retained and promoted (Ioannidou 2012), reflecting ‘diglossic nostalgia’.

The history of the political circumstances is burned into the collective consciousness as part of Cypriot identity as nation and *ethnos* (see Papadakis 1998, 160). Combined with koiné effects and co-overt prestige, politically conservative socio-political factors have the effect – and indeed the tacit goal – of diglossic maintenance. On the other hand, leveling, attenuations, koiné hybridities and innovations, and dialect promotion within progressive socio-political ideologies (e.g., Cypriotism), could represent harbingers of dialect retreat (see Rowe 2009), constituting a counterforce. At present, anyway, diglossic maintenance persists, and sufficient defenses against full di(a)glossic breakdown remain.

2 Excursus on the Pancypriot Koiné

When an irredentism-motivated right-wing Greek nationalist coup staged in newly-independent Cyprus in 1974 overthrew Archbishop Makarios, and Turkey responded by invading, the resultant war culminated in the country’s division, as grecophone Cypriots were driven south by the armies, with turkophone Cypriots forced north. This disrupted social networks and created new ones, intensifying

⁵ Terkourafi 2005; Pappas 2009; 2016; Kappler, Tsipplakou 2018, *inter alia*.

contact among grecophone Cypriots from different areas of the island. The increased contact among speakers of various subdialects necessitated linguistic accommodation and abandonment of local features for mutual intelligibility (Terkourafi 2005; Tsiplakou, Armostis, Evripidou 2016; Pappas 2015). This, along with (pre-invasion) social mobility, urbanization, and literacy spread, drove extensive dialect leveling (homogenization), particularly among those born after 1974 (Karyolemou, Pavlou 2001, 111; Kolitsis 1988). Thus, the Cyprus geopolitical situation hastened a koinéization process already present (Terkourafi 2005),⁶ and the CG koiné has been making strides since (Hadjioannou, Tsiplakou, Kappler 2011; Rowe, Grohmann 2013; Fotiou, Grohmann 2022).

Contact-induced leveling has largely involved ‘selection’ of (geographically unbounded) pancypriot features, leading to moribundity – the loss of many of the most basilectal features (Auer 2005) – and feeding the koiné’s development (Terkourafi 2005; Tsiplakou et al. 2006; 2015).⁷ The koiné – an intermediate, “compromise” variety (Siegel 1985) – is systematically different from SMG (Arvaniti 2006, 14): It has become a recognizable acrolectal variety, bearing almost Standard-like status.⁸ Among locals, it is known as ‘the mixed one’, ‘the mix’, and ‘Cypriot mix’. Thus, time has brought a high degree of metalinguistic awareness about the koiné, with speakers referring to it by name, and knowing when to use it.⁹ This is more so now, as it develops its own innovations, feeding its growing stability,¹⁰ and what appears to be incipient fossilization (or anyway, conventionalization).¹¹ The ultimate effect parallels “glocalization” (Robertson 1994; see Røyneland 2009, 8), whereby the regional supersedes the local, and intermediate forms represent an amalgamation of identities.

6 Newton (1983) identified “town speech” register, which could have been a koiné (cf. Terkourafi 2005). Anyway, diglossia is arguably inherently register-oriented (see Ure 1982, 16) and thus not geographically-aligned (Ferguson 1991, 222, in Hudson 2002, 2), so the description applies regardless of precise diglossic status. At any rate, both geographical and register variation obtain (Terkourafi 2007, 81; Fotiou, Grohmann 2022; see Trudgill 1983, 188), though register variation is more prominent than previously (Kolitsis 1988).

7 “[Cypriot] koineization involves...*partial* convergence to the standard...[and] the maintenance and spread of specific dialect features, depending on whether these are construed as unmarked or ‘pancyriot’” (Kappler, Tsiplakou 2018, 75; see Tuten 2007, 186).

8 Terkourafi 2005; Tsiplakou, Ioannidou 2012, 183; Pappas 2015, 175; cf. Arvaniti 2006.

9 This is an interesting development over the past few years, given Arvaniti’s (2006, 16) observation of the status of the koiné (which she had the prescience to term Cypriot Standard Greek) as it stood in 2006: “[T]he most striking characteristic...[is]...that its users are largely unaware that it exists”.

10 Arvaniti 2006; 2010; Kappler, Tsiplakou 2018; Tsiplakou 2006; 2016, *inter alia*.

11 See Rowe (2009) for the interconnectedness of resilience, salience, fossilization, and revitalization in a British dialect in the face of moribundity.

2.1 Pancyriot Koiné Features

Among koiné features, Tsiplakou and Armostis (2020) discuss socio-stylistic reallocation (CG [j:] vs. SMG [x:], Pappas 2015); focus clefting; and innovative perfect tenses. Tsiplakou et al. (2016) discuss hybridities (Terkourafi 2005) which, as the researchers indicate, do not seem like classic code-mixing (of the type expected in standards-with-dialects; Rowe, Grohmann 2013). I show two of these to elucidate stability in the koiné and implications for diglossic shift.

The innovative CG koiné present perfect (Melissaropoulou et al. 2013) expresses simple past (aorist) semantics (Tsiplakou et al. 2019, 232):

- (1) 'exo afipiretisi ton 'av y usto
 have.1s retire. ppl.perf in August
 'I have retired (:retired) last August.' (Melissaropoulou et al. 2013, 163)

The temporal adverbial renders the construction ungrammatical in SMG, but it is completely grammatical in the koiné. Extremely elucidating is the metalinguistic comment by a participant:

I [...] use the Present Perfect, mainly when talking to Cypriots, because some Cypriot Past Tense forms are too heavy and I don't like to use them, for example, *epiamen* 'we went'. The Modern Greek Past Tense form *piyame* is *kapos* 'pretentious' and I think it sounds too Greek to Cypriot ears. So the Present Perfect is the best compromise [...] for me. (Melissaropoulou et al. 2013, 169-70, n. 8)

This type of interdialectism is typical of koinés (Tuten 2006-07, 187). It is, uncoincidentally, characteristic of diglossias.¹²

2.2 Hybridities

A hybridity feature affecting all grammatical levels is an integral part of the koiné (Terkourafi 2005; Tsiplakou et al. 2016; Grohmann et al. 2020). The following is from Tsiplakou et al. (2016, 11):

¹² Auer (2005, 27-8) writes: "The intermediate forms often...enable[e]...users to act out...an identity which could not be symbolised through... [basilects], which may have rural, backwardish or non-educated connotations) nor through...standard (which may smack of formality and unnaturalness and/or be unable to express regional affiliation)".

(2)	'ksero	to	'tuto'	'ksero	to
	know.1S	it.CL.ACC	this.ACC	know.1S	it.CL.ACC
	to	eʃi	maθi'tis	mu	
	it.CL.ACC	have.PRES.3S	student.NOM.S	my.GEN.S	
	'I know it, this one, I know it! A student of mine has it.'				

The first sentence contains Cypriot clitic-second and CG lexis *tuto* (<*touto*>) 'this'; the second uses SMG clitic-first placement plus CG phonology, seen in the pronunciation *eʃi* 'have'. The authors discuss this as bricolage (Eckert 2008); Grohmann et al. (2020) regard this type as (relatively) free variation. Either way, the koiné abounds in such hybridities. The question is whether this is a pattern that is becoming fixed in the koiné (which is, after all, termed 'Cypriot mix' by speakers) – that is, whether it represents the paradox of stable entropy, vs. dynamic entropy, "chaos", and erosion in the system (cf. Rowe, Grohmann 2013), toward diglossic breakdown (suggested generally by Pappas 2015; similarly, Auer 2005, 22-3). At any rate, given the non-negotiability of the hybridity (Grohmann et al. 2020; Terkourafi 2005, 329-30), the strong association of certain features with the koiné, and the coherence found there (see Tsiplakou, Armostis, Evripidou 2016), the koiné grammar does on its face appear to be crystalizing, which should afford it additional resilience. Either this development can be regarded as a stabilizing force, or else as a harbinger of full-scale (basi- and mesolectal) retreat. Further, if the koiné emerged from a political situation (Terkourafi 2005), its persistence and growth, too, depend on political context. It is a valid question since, as Terkourafi (2005, 335) noted, "[this] wealth of new productive mechanisms and novel constructions is not what one expects of a retreating variety".¹³ Political ideology (including, in the case of Cyprus, ideology of dialect) may be the final arbiter, as will be discussed.

13 See discussion in Pappas (2009; 2015); see Kappler, Tsiplakou 2018 on TC koiné productivity.

3 Diglossic Prestige

Linguistic prestige – an important part of the classification question in the Cyprus situation, and in diglossia generally – is in need of scrutiny.¹⁴ It is a sticky wicket that Rowe and Grohmann (2013; 2014) attempted to address with its relevance to diglossic shift in Cyprus, because the (1959) Fergusonian ‘prestige’ setting apart the H[igh] from the L[ow] variety was not designed to address the affective social value the dialect in diglossia has with respect to Standard. However, probably due to the canonical terminology, most research referring to prestige in diglossia focuses more on the way people comment on L, and less on how it functions in society. Either way, the prestigious/non-prestigious monikers themselves are less problematic than resultant claims that Cypriot is generally stigmatized.¹⁵ Prestige, as discussed in Auer (2005) and argued by Rowe and Grohmann (2013, 126-7), is a relative notion:

In attenuated forms of diglossia, both varieties...are structurally and attitudinally (ethno-dialectologically) kept apart, and can usually be identified by speakers and linguists; *they have their own prestige, one attached to formal, official language [...] the other to regional identity.* (Auer 2005, 23; emphasis added)

Studler (2017, 51 ff.) likewise distinguishes between the “cold prestige” of H (Standard German) in Switzerland versus the (presumably ‘warm’) prestige automatically assigned to the Swiss German dialect as reflective of regional identity and of the (putative) diglossia there. Importantly, one of her informants points out, as do scholars of Swiss diglossia (see Hudson 2002, 3), that the dialect crosses class lines: “Dialekt ist Alltags- und Umgangssprache aller Schichten” (Dialect is the everyday and colloquial language for all social classes) (Studler 2017, 53).

Due to the terminological lacuna, Rowe and Grohmann (2013; see also 2014) introduced the term “co-overt prestige” (‘equally overt prestige’) to apply to both H and L. This unifying notion captures the equal prestige status that Auer (2005) references, particularly as applied to the prestige relations of dialect and Standard in (putatively)

¹⁴ See Kyriakou 2016. Among other hypotheses, she suggests that “rural” connotations of /f/ and /dʒ/ occur because these sounds are absent in SMG. Far from begging the question, she implies an important distinction: Greece is considered more metropolitan (Athens, population 3.1 million) than Cyprus (Nicosia, 200,000; World Population Review <https://worldpopulationreview.com/>). Moreover, by population, Greece is 20% rural vs. Cyprus, 33% rural (The World Bank, <https://data.worldbank.org/indicator/SP.RUR.TOTL.ZS>).

¹⁵ Kyriakou (2016, 57 ff) rightly cautions that attitude studies have many factors to consider when interpreting participants’ stigma-reflecting responses.

diglossic situations, such as Cyprus.¹⁶ Accordingly, it could also be termed “diglossic prestige” (cf. Grohmann et al. 2017, 646).¹⁷ Further, co-overt prestige is useful in discussing the koiné and its place in diglossic shift. Simultaneously, it helps address issues of protection of Cypriot Greek in general from endangerment, toward possible near-moribundity reversal.¹⁸

Dialect in Cyprus is not stigmatized in the usual sense of the word (Rowe, Grohmann 2013; also Karyolemou 2000). In fact, it is “highly appreciated” – as in Switzerland and Norway (Auer 2005, 15) – when non-natives acquire and use it. While L is not formally taught in endoglossic societies, Pavlou and Christodolou report that:

Cypriots...mostly advis[e] foreign learners to use [Cypriot Dialect]. If the interlocutors believe...communication is more effective when using [dialect] rather than SMG, then [dialect] is preferred... though SMG is more prestigious – after all, communication is the ultimate goal of learning a foreign language. (2001, 85)

Certainly, the intermediate form – the koiné – is far from stigmatized (see Pavlou, Christodolou 2001, 76; cf. Auer 2005 on prestige types).¹⁹ In an examination of language use in media – a typical H domain – Pavlou (2004; see also Arvaniti 2006, 15) identified acrolectal Cypriot (koiné) in the popular press in situations when SMG would seem too formal and unfriendly. Even by casual observation, CG has been gaining much ground on SMG in oral media (Rowe, Grohmann 2013, 130; Pavlou 2004), usually in the form of the koiné, as its ready occurrence in somewhat lighter fare (yet not limited to dialect humor) shows. Indeed, Arvaniti (2002, in Terkourafi 2007, 81) locates acrolect in both formal and semi-formal oral domains such as court and public speeches, and Ayiomamitou, Yiakoumetti (2017, 2-3) note its appearance in university lectures. Pavlou (2004) identifies dialect use in newspaper quotations, and the author of this chapter observes (non-basilectal) written Cypriot Greek in museum labels quoting local

¹⁶ Kyriakou (2016, 61) does the same work, arguing for CG’s overt prestige for lack of comparison to a [significant] community of SMG speakers (cf. Terkourafi 2007, 80-1). See Rowe, Grohmann 2013, 132.

¹⁷ Rowe, Grohmann 2014 used prestige as one of several tests for diglossia.

¹⁸ Rowe and Grohmann (2013, 137) argue that co-overt prestige itself may help protect against ‘full’ dedialectization, in the event that that process, via continued advergence to SMG by the koiné (Tsiplakou, Armostis, Evripidou 2016, 12), would otherwise be imminent.

¹⁹ A contrasting view is found in Pavlou (2004), who shows how ambivalent the stigma discussion is for Cyprus.

narratives.²⁰ Moreover, CG koiné hybridity has a particular sociolinguistic value that is well captured by the concept of co-overt prestige. This factor also partly explains why certain variants are adopted into the koiné and others not.²¹

4 Ideologies and Diglossic Shift

About twenty years ago, Pavlou (2004, 116) observed that “the Greek Cypriot community [...] for various reasons, *including ideological ones*, [does] not adopt more acrolectal levels of speech” (emphasis added). Now, ideology has shifted toward acceptance of the acrolectal koiné as a third variety.²² Later, Pappas (2009, 313) noted that “[the koiné] is maturing into a robust vernacular”, projecting that it “may yet become a standard, given the right *political* circumstances” (emphasis added). Although Pappas does not elaborate on what those political circumstances might be, it is proposed here that the “predominant drift of social forces” (Fishman 1967, 36) – in this case, an increase in Cypriotism (against Greek-Cypriot/Cypriot Hellenism) – would represent the necessary force for the koiné to step into the space occupied by Standard Greek.²³ As indicated, the intermediate variety has begun to encroach on some canonical H domains, bearing a wealth of Cypriot features, including koiné innovations, constituting evidence of diglossic shift.²⁴

But whence the instability in the Cyprus diglossic setting, given that diglossias endure for centuries? The answer, again, may lie – at least partly – in political ideology: If it is true that diglossias are more stable “[where] linguistic differences are not aggravated by political or religious differences” (Coulmas 1987, 118; in Hudson 2002, 28), then it is certainly expected that Cyprus, with its past

²⁰ Observed in *Hambis – from Painting to Printmaking, 1970-82*; exhibition at the Hambis Municipal Museum of Printmaking, Nicosia, Cyprus 2021-6-3/2023-5-1.

²¹ For discussion of the ‘selection’ of variants for the koiné, including ideological bases, see Terkourafi (2005) and Tsiplakou and Armostis (2020). On the ideology of dialect relating to variant selection, see Pappas 2015 and Tsiplakou and Armostis 2020; also Trudgill (1986). In short, these variants are usually “sufficiently Cypriot” to contrast with SMG (Pappas 2015), but also sufficiently regional (vs. local), toward pan-Cypriot identity (Tsiplakou, Armostis 2020).

²² Leivada and Grohmann (2017) observe a functionally discrete tripartite split in SMG, CG, and CSG (koiné) use within the classroom.

²³ Terkourafi (2007) notes that without codification, full CG standardization is unlikely. Codification depends on an official action developing a written form, which probably requires an extremely progressive liberal government intervention.

²⁴ Fishman (1967, 36) notes: “Without separate though complementary norms and values to establish and maintain functional separatism [...], that language or variety [...] associated with the predominant drift of social forces tends to displace the other(s)”.

and ongoing differences of these types, would host an unstable diglossia. These differences are reflected, among other ways, in the concept of ‘othering’.²⁵

‘Othering’ is “the perception [...] of a [...] group [...] as fundamentally alien from another, frequently more powerful, group”.²⁶ It is not surprising to find othering in diglossic scenarios, since these involve a dichotomy that usually references a large, external political force – e.g., with L vis à vis H in these putatively diglossic settings:

- Swiss Schwyzertütsch (L) vs. exogenous H (*Schriftdeutsch* ‘writing German’, standard German from Germany)
- Norwegian dialects (L) and *nynorsk* (especially in northern, western, and central Norway) vs. exogenous H (Dano-Norwegian *dansk-norsk /bokmål/* ‘dano-norwegian’/‘book language’ based on Danish from Denmark)
- Cypriot Greek (L) in Cyprus vs. exogenous H (*kalamaristika* ‘pen-pusherese’, SMG/*demotiki* from Greece)

These societies’ rather oppositional stance toward the historical dominance of their former rulers (Germany, Denmark, and Greece) enhances the subjective value of the dialect (also seen in the Romantic period in Switzerland and Norway; Watts 1999, 75; Røyneland 2009, 13-14, respectively), with dialect serving as a “badge” of ethnic identity (Watts 1999, 75). Accordingly, there are “mythical claims” (Watts 1999) by (bilectal) speakers of being unable to pronounce or understand Standard (for Cyprus, Tsiplakou, Armostis 2020; for Switzerland, Watts 1999), or at least, overt objections to using H in oral domains (in Norway). Unsurprisingly, all three societies have experienced diglossic shift over the past several years, toward the acrolect assuming many H domains, partly for attitudinal reasons.

5 Divided Cyprus With Views Divided: A Diglossic Nostalgia

There are additional complications in Cyprus, where Greece is regarded as far more than a ‘former ruler’. These ultimately affect the nature of diglossic shift.

Typically, left-wing affiliates and entities in Cyprus see ‘us’ as including Turkish Cypriots and Greek Cypriots (Papadakis 1998), i.e., as ‘one Cyprus’. As proponents of Cypriotism (‘true’ Cyprus nationalism, since 1974; Terkourafi 2007), they usually view Cyprus as a

²⁵ See Ioannidou (2004) for an othering study involving 10- and 11-year-olds in Cyprus.

²⁶ “Othering, n.”. OED Online. March 2023. Oxford University Press.

community where being Cypriot, and of a cross-border pan-Cyprian unification, is foregrounded, with the link to Greece seen as an element of the past. Further, many (usually left-wing) Cypriots blame Greece – the ‘other’ in this scenario – for the coup which ultimately led to war and to the current “Cyprus Problem” (Papadakis 1998).

Commonly, right-wing affiliates and entities, on the other hand, understand ‘us’ as ‘we Greeks’ – Greek Cypriots and Hellenic Greeks, in a panhellenic unity – juxtaposed with Turkish Cypriots, Turkish settlers in Cyprus, and Turks in Turkey (Papadakis 1998).²⁷ As proponents of Greek-Cypriot nationalism/Cypriot Hellenism – despite having relinquished hope of a literal *enosis* with Greece – they generally maintain an ideological union with the ‘motherland’,²⁸ heightened as a product of British colonialism (see Mavratsas 1999, *inter alia*), and further intensified by the war and the ethnic, political, and religious division on the island.²⁹ Accordingly, the nostalgic connection to the ‘motherland’ Greece held by many right-leaning individuals and organizations – especially by (conservative) institutions (church, government, education) – provides a close, powerful ethno-ideological link to the H of the H-leaning state. By contrast, Switzerland and Norway have no similar attachment. ‘Othering’ is played out particularly strongly in the Cyprus right-wing arena, increasing the value of H as more than a useful and practical written and formal oral language: Instead, it reflects a ‘diglossic nostalgia’, with H representing the ‘Greekness’ of (Orthodox) Cypriots in the south, versus the ‘Turkishness’ of (Muslim) Turkish Cypriots (and Turkish settlers) in the occupied north. Thus, it is no surprise that traditionally more conservative institutions embrace this ‘diglossic nostalgia’, where a strict split between H and L domains is highly valued and faithfully

27 The ideological dimension in the division is overtly reflected on the government’s Higher Education: Cyprus Ministry of Education, Sport & Youth page: under “Studies in Cyprus”, a selection under “Illegal Turkish Cypriot - ‘Universities’”, contains a 115-word paragraph in which the following terms are placed in ‘scare quotes’: ‘universities’, ‘institutions’, ‘qualifications’, and ‘Turkish Republic of Northern Cyprus’ (“TRNC”), with lengthy commentary on the Cyprus Problem. <https://www.highereducation.ac.cy/index.php/en/spoudes-cyprus/paranoma-tk-uni>.

28 Meier (2001, 474) notes that: “[t]he Cypriot communities look to Greece and Turkey for ethnic identification, belonging, and protection,” a continuation of the “loyalties to the perceived motherland...at the root of the *enosis* and partition movements” (474).

29 “[The] antagonistic loyalties to Greece and Turkey transplanted the...Greek-Turkish battles to...Cyprus” – an antagonism stoked by Britain to prevent unified anti-colonial action (Meier 2001, 458). This is a primary source of the strong right-wing affiliation with all things Greece (see Hadjioannou, Tsiplakou, Kappler 2011). Meier notes elsewhere that “cross-boundary ethnic ties, preserved through common language, religion, and education [...] created [this] ethnic-based animosity, dividing the communities...and preventing peace” (2001, 476).

observed and promoted.³⁰ The active, official institutional promotion of H in formal domains is a direct and continuing result of the Cyprus political context (Ioannidou 2012), with strength added to the ideology by the fact that “the Cypriot state is built on the foundation of the ethnarchic church” (Alecou 2014).³¹

Ultimately, hopes of the official promotion of the local variety (which would afford it higher status) were dashed when church and government strongly resisted the strategic contrastive use of Cypriot Greek recommended by proponents of education reform in 2010 (Ioannidou 2012). At that point, it became clear that a powerful ideological force for diglossic maintenance dominated, and in the official government and official church domains, diglossia remains largely unchallengeable by progressive or innovative influences.³² The ideological link between Cyprus and Greece is thus tightly bound with ethnic, cultural, and religious (Christian/Muslim) opposition. As such, it provides a ‘sociolinguistic buffer’ against total diglossic resolution, as long as palpable vestiges of the ethno-cultural and historical bond with the perceived ‘motherland’ persist.

6 Forward Movement: Zeitgeist, Ideologies, and Revitalization

Language and variety choice symbolize the Cyprus conflict as well as – and probably better than – any other cultural artifact does.³³ Having said this, there is a Zeitgeist, in which the time is ‘ripe’ for certain movements and ideologies to emerge (Watts 1999, 73). Cypriotism – particularly in its current form (see Mavratsas 1999, *inter alia*, for history) –, is one such movement (Meier 2001, 476). Cross-border antagonisms have waned and from a previous tendency toward Greek-Cypriot nationalism/Cypriot Hellenism in a conservative

30 In addition to the Orthodox/Muslim juxtaposition, the Church has a strong history as a stabilizing force of diglossia, seen in the residual diglossia of Greece (with *katherevousa* as H in the Church) and elsewhere.

31 As far back as the late sixteenth century, the Orthodox Church in Cyprus was the “unchallenged spokesman” for not only religious, but also social, political, and educational matters concerning Greek Cypriots (Coufoudakis 1976, 31).

32 Technically, contrastive education (Siegel 1999) results in codes’ strict separation in learners’ mental representations, so the reformers’ position should, in fact, have been embraced by the institutional powers if diglossia maintenance was the desired outcome. On the political-ideological front, however, the elevation of L could take another direction, toward an additional ‘domain gain’ for L, a fear obviously in the forefront of that discussion.

33 See, e.g., Karyole mou 2000.

political climate, the tide is slowly turning (Meier 2001, 476).³⁴ Since 2003, border crossing between the two polities has been possible at checkpoints and, despite the failure of the Annan reunification plan (2004) to be accepted, populist activities promoting unification and cross-border collaboration have sprung up and taken shape, particularly in the divided capital Nicosia.³⁵ These include the Occupy the Buffer Zone movement (2011), advancing the cause of unification; globally and locally supported activities such as the Peace Players youth league (est. 2006; housed in the Buffer Zone); and ongoing professional bicomunal activities of the intelligentsia, particularly in venues such as the (municipal) Peace Hall (near the Ledras Street Buffer Zone) and the Home for Cooperation (est. 2011 in the Ledra Palace Buffer Zone). These are also reflected in cultural phenomena, such as the Buffer Fringe Festival, and in the music of the bicomunal collaborative band The Island Seeds.³⁶ These are all emblematic of the Cypriotism Zeitgeist that continues to gain strength.³⁷ By way of visual example, as late as 2009, Greek flags were ubiquitous in Cyprus, flown at government buildings and other establishments, and at private homes of many Cypriots (Rowe, Grohmann 2013).³⁸ But even by 2012, the decreased display of the Greek flag alongside the increased display of the flag of Cyprus had become palpable to the keen observer.³⁹

34 “[The] psychological distanc[ing] from Greece and Turkey [...] led to the rise of Cypriotism [...] foreground[ing] [Cypriot] citizenship [...] over the ethnic demands of the [...] motherland[s]” (Meier 2001, 476).

35 See Themistocleous 2021 for an ethnographic monitoring study detailing the ideology of buffer space activity.

36 A subcultural reflex of this Zeitgeist is likely found in the anti-establishment-oriented reggae and (CG) dialect hip-hop scenes in Cyprus, which indirectly reference the Cyprus Problem. Other subcultural reflexes include outward reverence for extraterritorial counterculture rebellions and anti-oppression revolutionary icons.

37 As Meier (2001, 469-70) noted, “a new generation of Greek and Turkish Cypriots now control their respective communities...The wrongs of past generations can be forgiven, placing...people...in a position to embrace peace”. He predicts that “without the nationalist attitudes of their motherlands, the...communities may see each other, not as enemies, but as fellow citizens” (476). Although Meier wrote these words as an optimistic projection of political unification, it certainly captures the popular Zeitgeist, even if the political reality of the two polities remains unchanged.

38 This trend is surely in part a response to the former British colonial-era prohibition of flying Greek flags or openly celebrating Greek national holidays in Cyprus. (An additional motivation may be that the northern polity’s flag - a mirror image design of Turkey’s flag, and sometimes flown alongside it - is visible at border checkpoints; the painted ‘Flag Mountain’ is visible even further, throughout a large part of Nicosia and surrounding countryside, serving for many Greek Cypriots as a constant reminder of the conflict).

39 Papadakis (1998) discusses the display of national symbols (especially flags) of both Greece and Cyprus on the island, commenting on the pre- and post-1974 reality: “[Right-wing] supporters exclusively use the Greek flag, while [left-wing] supporters

Further connected with nationalist *Zeitgeist* are often ideologies of dialect – “a community’s shared beliefs about...its language varieties” – whereby the “symbolic value” of dialect is greater than [...] the Standard and overtly promoted (Watts 1999, 68-9). Populist movements are often bound up with language (particularly with ideology of dialect/vernacular; see Hudson 2002). It was in this atmosphere that Norwegian *Nynorsk* – a Standard based on a dialect amalgamation – was created (Røynealand 2009, 14).⁴⁰ In Norway and Switzerland (and elsewhere in Germanic-speaking Europe), these Romantic-era nationalism-oriented movements were revived in the “ideologically fostered” (Bellmann 1998, 33) dialect renaissance of the ‘radical’ 1960s-1970s (Vikør 2001; Røynealand 2009 for Norway). There, the dialect, among other folk culture elements, was valued and foregrounded, and the Standard and its prescriptivism were associated with extraterritorial nationalism (Watts 2009) and the dominant political culture. Such movements often emerge in post-war scenarios, when dialects become “infused with resistance value” against political invaders (Watts 1999) and so, come to symbolize retention of cultural heritage.⁴¹

The fact that largely grecophone Cyprus became the battlefield for an endoglossic (Greece) and exoglossic (Turkey) country simultaneously surely infuse the dialect with additional resistance value against two different Standards and the war they continue to symbolize. Like *Nynorsk* for Norwegians, the Cypriot koiné provides a self-deterministic edge for Cypriots to establish their own – at least, *de facto* – Standard, independent of extraterritorial political linkages.⁴² This resistance is further expressed by other linguistic means. Floros (2014), for one, uncovers neologistic translations in some formal domains, whereby a unique Cypriot identity is constructed. Floros suggests that this translation practice may reflect an “effort to create a sense of belonging to a cultural formation...distinct from Greece, thus aiming at state identity (covert tendency), despite the (overt) statutory affirmation of Hellenocentrism...aimed at ethnic identity” (423).

In the context of self-deterministic tendencies, hyperdialectism⁴³ – if it does not become a casualty of age-grading – could

[...] use the Cypriot flag...provid[ing] opposed symbolic statements of adherence to political parties, historical narratives, and collective identities” (Papadakis 1998, 155).

40 ‘Speak dialect - Write *Nynorsk*’ was a slogan created to support a full dialectal spectrum in the diglossic society, without Dano-Norwegian H (see Røynealand 2009).

41 Norwegian nationalism since the Romantic period has been expressed especially in pro-local contexts (e.g., promotion of local agriculture, workers/farmers’ rights, ‘no’ to joining EU (*nei til EF*) movement, etc.)

42 Dano-Norwegian koiné was spoken by elite Norwegians in the 1800s. The establishment of *Nynorsk* as a (competing) ‘dialectal standard’, a developed, codified pan-Norwegian dialectal amalgamation mostly for writing, was the response.

43 Rowe 2009; Tsiplakou 2011; Ayiomamitou, Yiakoumetti 2017; Grohmann et al. 2020.

provide a boost to the dialect. According to Armostis and Tsiplakou (2020, 8), “practically obsolete [Cypriot] dialect forms or forms constructed on the basis of dialectal morphological and phonological templates...[reflect]...non-conformity to...prescriptivism”. Since hyperdialectism users are often young Cypriotists, who are ardent promoters of Cypriot ‘language’ [lect] and its use in especially educational settings,⁴⁴ the active engagement of obsolete or near-obsolete basilectal lexis (and other elements) may be more than a passing fad. Beyond youth identity indexation, the motivation behind hyperdialectism is probably two-fold: (1) It reflects a uniquely Cypriot identity. After all, the degree of overlap between CG basilect and SMG (in its purest form) is limited; and (2) it forwards Cypriotism in a linguistic (in addition to a political) way, via preservation and revitalization – given that the moribundity issue is high in the consciousness of Cypriotism proponents. The youthful ‘angle’, then, expressing youth identity itself, would be hyperdialectal neologisms proper within the expanded speech repertoire (in addition to expanded youth dialectal domains, e.g., CG hip-hop; Terkourafi 2007, 80). As Grohmann et al. (2020) note, some hyperdialectisms are active ten years on, and their use apparently productive. This could pave a more likely path for dialect revitalization – at least, more so than the overtly planned revitalization efforts normally required to rescue (genetically unrelated) moribund and/or endangered heritage languages against a dominant exoglossic H.⁴⁵ As Houghton (1968, 1178) notes:

Any use of any word or expression may...[establish it] more firmly in the language. In language..., familiarity breeds not contempt but acceptance, and new words or expressions thrive on publicity, even bad publicity.

In this regard, acceptance through use could be more likely to occur than not. The forms are familiar to speakers of all ages, enhancing their chances of acceptability and community spread – particularly if they come to appear in the koiné.

In summary, given that the ‘Cyprus Problem’ is central to the ethno-cultural Cypriot psyche, it is pervasively embedded in the social – including sociolinguistic – culture. It appears that as long as the reality of a divided Cyprus persists, Cypriotism – and the reasonable prospect of dialect revitalization – will be alive and well. All in all,

⁴⁴ Under one philosophy (e.g., in the Progressive Movement of Students, PKF), the use of textbooks published in Greece is an affront to Cypriot student rights to Cypriot views of their own history and culture. See Tsiplakou, Ioannidou, Hadjoannou (2018), *inter alia*, for educational practices that consistently follow Greece’s model.

⁴⁵ In Norway, these movements gained traction, unlike their more ephemeral counterparts in the Netherlands, and especially in Germany (Hinskens, Auer, Kerswill 2005, 36).

the co-overt prestige of the koiné could help the dialect recover some lost ground. However, restoration of the basilects themselves – so, total moribundity reversal – would need to be in the form of revitalization (likely via admixture of basilectal forms into the koiné or mesolect via, e.g., hyperdialectism). This strategy would simultaneously reflect and heighten speakers' metalinguistic awareness of lectal endangerment. Deliberate planning efforts that have had success in some language (but not usually dialect) scenarios are Western Armenian in Cyprus (Goutsos, Karyolemou 2004, 11), Welsh and Irish Gaelic in the British Isles (Baldauf 2006, *inter alia*), and the reinvigoration of Hebrew in Israel (Spolsky 1991, *inter alia*). If basilectal elements are added to the koiné by speakers (via, e.g., hyperdialectism), this would preserve (or restore) some of what would be lost through diglossic attrition. Much depends not only on (co-overt) prestige, but as said, also on community spread and political ideology. To what extent these events would further destabilize the (already attenuated) diglossic status of Cyprus – particularly in the face of the 'sociolinguistic buffer' posed by institutional H-promotion – is another question that remains to be answered.

7 Epilogue: What about Diglossia?

In the absence of significant political upheavals, diglossia should remain stable (Sotiropoulos 1982, 19). There is, on the other hand, a long history (Hudson 2002) of diglossias breaking down as a result of popular movements, "nativist rebellions" (Kahane 1986, 498; in Hudson 2002, 34), and ideological pressure.⁴⁶ In such scenarios, a "new social order" disrupts the stability otherwise afforded the diglossic state, and "old administrative codes [are] replaced by...vernacular[s]". In the process, lects become more homogeneous (Hudson 2002, 33) and new standards emerge, toward "ethnic identity and independence" (Hudson 2002, 30), as seen in the acceleration of the CG koiné.

Now, on its face, the active promotion of dialect and dialect revitalization, as part of Cypriotism, suggests an impending full diglossic resolution following a state of *diaglossia* (Rowe, Grohmann 2014; cf. Rowe 2009; see Auer 2005, 37). On such *post-diglossic* transitions, then, Auer notes:

In the final stage [from diaglossia to standard-with-dialects] before [dialect] loss, the attitudes towards the now almost extinct [basilect]

⁴⁶ One noteworthy example is that of Demotic ousting Katharevousa in Greece (Frangoudaki 1992, 368), effectively ending diglossia, except for residual diglossia of the Church.

are usually positive again, and folkloristic attempts at rescuing the dialect may set in – usually without success. (Auer 2005, 37)

Based on Auer's observation, Cyprus would already be in a *post-di-glossic* state, toward extreme dialect loss, when young people who self-identify as Cypriotist lament the decline in basilectal forms, and revive some of these to reflect Cypriot identity, often through hyperdialectism.

At the same time, the partial advergence of the koiné to the Standard seems to indicate an ongoing move in Cypriot society 'in the direction of' Type C *diaglossia* and a single continuum (Auer 2005, 21; Auer, Baumann, Schwarz 2011; Rowe, Grohmann 2014; cf. Pappas 2015),⁴⁷ with significant dialect loss. The CG koiné, in that case, is (following Auer 2005, 22) characterizable as a *pre-di-glossic* phenomenon.

Finally, in yet other respects, Cyprus shows itself to be in a state of *diaglossia/dilalia* (mainly, by virtue of both widespread koiné use, domain encroachment, and basilect attrition), and in still others, an attenuated or relative *diglossia* – or in some step in between. The situation is clearly complicated.

Ultimately, whatever the current sociolinguistic status of Cyprus, it cannot be concluded that *diglossia* is completely dissolved – nor that it will be – not only because other tests must be considered (e.g., the native speaker test, Rowe, Grohmann 2014; also Hudson 2002), but also particularly because the 'drift of social forces' is still in full swing. Moreover, without a dominant local prestige group in critical mass (Rowe, Grohmann 2014) who speaks H as its vernacular (Hudson 2002, 7-8) and teaches it to their children as the home language (Ferguson 1959, 331), and as long as there are powerful institutions that "merge" ideologically (Hudson 2002, 38, citing Ferguson 1959, 339) with the H-loaning community, *diglossia*, in some form, will surely remain – even if the loss of (much) basilect, with its resulting homogenization, serves as a sacrifice to the 'greater good' of an ever-strengthening koiné.

On a final note: Often the question raised about whether Cypriot will decline in favor of SMG (cf. Hadjioannou et al. 2016, *inter alia*). It should be noted, in response, that in *diglossic* situations involving two varieties of the same language, the resolution of *diglossia* anyway – despite L attrition – usually favors the rise of L to take over H

⁴⁷ Pappas (2015; but cf. Pappas 2009) sees the development of the koiné as already indicative of a full basilect-to-standard continuum (social dialectia); indeed, koineization often represents "the beginning of the end" for *diglossia* (see Hudson 2002, 32, citing Ferguson 1959, 338). Although this need not be the case yet, it surely signals some degree of *diglossic* resolution in Cyprus, even if *diglossia* does not fully break down eventually (Switzerland and Norway each having an emergent koiné within the relatively stable *diglossic* state; Auer 2005, 10-15).

domains, and only rarely the reverse (Holm 1986; Hudson 2002, 8, 30; Auer 2005; Rowe, Grohmann 2013; 2014). The opposite is true for H/L societal bilingualism – notably here, in the relationship between heritage varieties in Cyprus involving separate languages (Maronite or Armenian vs. majority Greek), where H so readily encroaches on L, requiring active revitalization efforts to reverse language shift.⁴⁸

It seems the ideological drift in Cyprus toward an increase in Cypriotism, plus the robustness of the koiné and continued compartmentalization – alongside co-overt prestige – adds weight to Cypriot ‘in general’, rendering it potentially stronger against extensive encroachment (better: ‘dilution’) by SMG.⁴⁹ Indeed, Kyriakou (2015, 60) considers the vitality of Cypriot (it being the everyday language of all native Cypriots) as likely alone sufficient to prevent its demise. Further, public use of Cypriot by some (especially left-wing) politicians (cf. Terkourafi 2005, 80) as well as (particularly left leaning) teachers, is a sure sign of increased dialect acceptability, even if dialect levels become more acrolectal in the process. So, the question might be phrased not so much as ‘Will Cypriot decline?’, as it is ‘How far will the Cypriot koiné diverge from SMG, by virtue of acquisition issues and ideological trajectories?’⁵⁰ This will be left to further speculation.

It is true, however, that even in situations where the likelihood is greater for L to displace H, H has good traction against an uncoded L – particularly if speakers find it useful, as in Norway, and as Schiffman (2017, n. 13) points out for Switzerland:

[The takeover of some H domains by L] does not mean that diglossia in Alemannic Switzerland is on its way out; many Swiss, while welcoming the expansion of L-variety domains, see a need to retain domains for Hochdeutsch.

If popular desire for Cyprus’ own indigenous Standard for reasons of its autonomy, its sovereignty (Hudson 2002, 32, citing Ferguson 1959, 338), and self-determinism is sufficiently fervent, then Pappas’ (2015) projection may bear fruit, with the koiné positioned to displace SMG as the sole H variety (but see caveat, n. 20). If not, it may displace oral H – or at least, fully encroach on all but the most conservative of official domains (as in Norway). There is good reason to believe

⁴⁸ Although CG is L with respect to SMG, it is (alongside SMG) in the H role with respect to minority heritage languages on the island.

⁴⁹ See Røyneland (2009, 8) on the role of Nynorsk, the constructed dialectal standard, in increasing the subjective value of the dialects.

⁵⁰ See Auer (2005, 41) on the development of ‘new’ Greek dialects in Greece based on a regiolectal koiné which rose to Standard status under Alexander the Great.

(cf. De Francis 1950/1972, 11) that either activism (Bourcier 2015) or a left-wing government espousing the cause of (populist Cypriot) nationalism, could issue a clarion call for linguistic reform, and authorize a koiné writing system to be designed and put into practice in official contexts. If that occurs, the handwriting could be on the wall, so to speak, for SMG in Cyprus.

But whatever the current and projected sociolinguistic statuses of Cyprus - diaglossia, post-diglossia, pre-diglossia, attenuated or even 'relative' diglossia (as in Norway and Switzerland) - the situation could at any point stabilize completely, instead of proceeding to end-stage diglossic breakdown. For now, given the entrenchment of Standard Modern Greek in the establishments with the most socio-political control, the Cyprus sociolinguistic situation maintains its own defenses - a 'sociolinguistic buffer', it could be said - against full diglossic breakdown.

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This volume collects the essays presented at the conference *Heritage Languages and Variation* (HELV), which was held in Limassol, Cyprus in September 2022. It brings together interdisciplinary research from the fields of heritage language study and language variation with a critical eye towards examining issues of bi- and multilingualism, heritage language acquisition, home language development, language teaching methodology and language variation. The essays include a wide range of issues, including the study of different language patterns, the understanding of the grammar of heritage languages, the exposure and input of a particular population by a dominant language, the age of exposure to this input from the dominant language, the grammar properties affected by it, and the overall competence of the heritage speaker and the variation in grammar.



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