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Lazuri na-şinaxasere berepe şeni…

Dedicated to the children who will make Laz survive

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(P.S. This has become longer than I had planned! I couldn't keep it short again, Lenore! ☺)

ABSTRACT

Laz is the only South Caucasian language mainly spoken outside Georgia. Its endangered status has been recognized but has not been studied systematically and empirically in reference to actual linguistic data (Haznedar et al. 2018). To fill this gap and to contribute to the documentation and revitalization of Laz, the morpho-syntactic properties of Laz spoken in present-day Rize (Ardeşen, Pazar and Fındıklı), were investigated. Treating Laz as a heritage language (Montrul 2016, Polinsky 2018), (baseline) Laz varieties spoken by (grand-)parental generation were contrasted with younger generation heritage speakers. To this end, one free production task and two grammatically oriented tasks were conducted.

Free narratives of the Frog Story (Mayer 1969) by 73 speakers were examined in terms of the frequency counts of i) distinct content words and spatial prefixes, ii) valency alternating operations, iii) finite embedded clauses, iv) pro-dropped or scrambled clauses and iv) code-mixed utterances. Heritage speakers' production of the relevant variables (except for code-mixing) was found to be statistically significantly lower than that of baseline speakers. Moreover, the most vulnerable aspects of Heritage Laz grammar are verbal morphology and case morphology, especially those aspects grammatically marked differently in Turkish. With ergative case being either treated as a general subject marker or dropped altogether along with structural dative case marking experiencer subjects, Heritage Laz lends support for the status of ergative as a structural case (Emgin 2009, Öztürk 2013) rather than an inherent one (Demirok 2013). Despite the extensive variation and deviation in production, the grammar of Heritage Laz turns out to be quite systematic and rule-governed, though, as heritage speakers reduce allomorphy and irregular (inflectional) morphology regulated by perceptual salience and contextual frequency (Polinsky 2018). Lastly,

linguistic proficiency of speakers increases with age and the amount of time spent in rural and/or higher-altitude areas, which is in line with the endangered status of Laz.

The results of the grammatically oriented tasks indicate that Heritage Laz grammar is regulated by the Principle of Transparency (Aalberse et al. 2019), exhibiting a higher level of analyticity. Heritage speakers produce analytical constructions rather than synthetic ones. The following resilience hierarchy has emerged with respect to valency alternations: *Causativization with o->Higher applicativization with a->High applicatives with -u>High applicatives with i-> Benefactive Reflexives with i->Passivization > Direct object reflexives with i-*. The erosion of the syncretic pre-root vowel *i-* provides evidence for its status as a verbal expletive, leading to a syntax-semantics mismatch and thus a violation of transparency (Eren 2021, c.f. Öztürk & Taylan 2017, Öztürk 2021). As for aspect, the root-dependency of the imperfective markers has been neutralized. The voice-dependency has been maintained, which lends further support for the preference of heritage speakers for more local syntactic dependencies, crucially in the domain of allomorphy reduction. As a result of this simplification conditioned by incipient changes in the baseline varieties and also by transfer effects from Turkish, and the emergent differentiated system conforms to the principle of one-to-one form-meaning mapping where each (transitive) aspect marker bears a distinct meaning, i.e., habituality and progressivity.

GLOSSING CONVENTIONS

1	First person	FUT	Future
2	Second person	GEN	Genitive
3	Third person	IMP	Imperative
ABL	Ablative	IMP	Imperative
ABS	Absolutive	INF	Infinitive
ACC	Accusative	INTR	Intransitive
ADV	Adverbial	IPFV	Imperfective
AFF	Affirmative	LOC	Locative
ALL	Allative	NEG	Negative
AOR	Aorist	NMLZ	Nominalizer
APPL	Applicative	NOM	Nominative
AUX	Auxiliary	OBJ	Object
BEN	Benefactive	OPT	Optative
CAUS	Causative	PASS	Passive
COM	Comitative	PL	Plural
COMPL	Complementizer	POSS	Possessive
COND	Conditional	PROG	Progressive
DAT	Dative	PRS	Present
DER	Derivational Suffix	PRV	Pre-root vowel
DIM	Diminutive	PST	Past
ERG	Ergative	PTCP	Participle

EXIST	Existential
RECP	Reciprocal
REFL	Reflexive
REL	Relative
SBJ	Subject
SF	Stem formant
SG	Singular
SP	Spatial prefix
SUB	Subordinator
TR	Transitive
TR	Transitive
EMPH	Emphatic
EPRV	Expletive pre-root vowel
I/II	Set I/II
MID	Middle voice marker
PRS	Present
TS/THS	Thematic suffixes
VAL	Valency marker

CHAPTER 1

INTRODUCTION

1. General background on Laz

Laz is an endangered and understudied South Caucasian language spoken in Northeastern Türkiye and as such qualifies as the only member of the family spoken mainly outside Georgia (Kutscher 2008). Consisting of high-altitude mountains, the geographical characteristics of the historical and present-day homeland of the Laz people, led them to pursue an isolated life socio-economically. The highly steep nature of the terrain also led to a scattered type of settlement in the area. Consequently, the limited interaction within the Laz-speaking communities along with the speakers of other languages resulted in extensive dialectal and interspeaker variation. The main five dialects of Laz are spoken in the following two cities (Holisky 1991, Bucaklişi 2002): i) Rize: *At'ina* (Pazar), *Art'aşeni* (Ardeşen), *Viǯe* (Fındıklı) and ii) Artvin: *Arǩabi* (Arhavi), *Xopa* (Hopa).

The socio-economic isolation of the Laz people gradually ended with the construction of modern-day roads and tea factories bringing them into closer and more intense contact with speakers of Turkish. For better social, economic, and educational prospects, the Laz started a flow of migration from the higher altitude villages to more urban centers, i.e., either town centers along the coast of the Black Sea or to big cities in the Marmara Region along the Bosporus. With the socio-economic structure and educational system operating only in Turkish, the Laz have gradually abandoned their ethnic language and switched to Turkish. The language shift has eventually resulted in the endangerment of Laz, which is confined to familial interactions at home settings and mostly in rural areas, spoken mainly by older generations (Haznedar et al. 2018).

2. Aims of the dissertation

Despite the emphasis placed on the endangered status of Laz (Kutscher 2008, Haznedar et al. 2018, Öztürk & Pöchtrager 2011), previous studies have not investigated the Laz variety as spoken by the younger generation speakers. To fill this gap, this study aims to investigate the current state of Laz grammar and the synchronic variation it exhibits. For this purpose, Laz is treated as a heritage language and the grammar of Laz spoken by third generation speakers, i.e., Heritage Laz speakers[1], is compared and contrasted with that of second-generation speakers, i.e., baseline speakers, in terms of their morpho-syntactic features. To this end, this study specifically aims to do the following:

i) To identify the morpho-syntactic properties of Heritage Laz grammar along with the common linguistic characteristics of Heritage Laz speakers.

ii) To investigate the production and comprehension of imperfective aspect markers (a.k.a. thematic suffixes), and valency-alternating operations with the purpose of understanding the structure of (in)transitives in Laz.

iii) To examine the linguistic change and synchronic variation in terms of the relevant morpho-syntactic properties, along with the underlying reasons.

[1] Salikoko Mufwene (p.c.) suggests that *Heritage Laz speakers* is ambiguous in that it can refer to all speakers of Laz because almost all speakers of a language qualify as a heritage speaker of that language by virtue of having cultural connections with it. This interpretation is in line with the broad definition of the term *heritage language* (Polinsky & Kagan 2007). In the present work, I adopt a specific definition of heritage languages and define *Heritage Laz speakers* as those younger generation speakers who grew up in bilingual home settings at birth (and during childhood) and have some degree of fluency in Laz. *Speakers of Heritage Laz* might be used to avoid this kind of confusion (Salikoko Mufwene p.c.). Following the tradition in the literature (Polinsky 2018) where no such differentiation is made between the two terms and the former is used more often, I use the term *Heritage Laz speakers* but with the same connotations of *speakers of Heritage Laz* as suggested by Salikoko Mufwene. See § 3.1 for details on the definition of the participant groups.

iv) To systematically investigate the endangerment of Laz by examining the level of linguistic proficiency across different generations depending on their sociolinguistic characteristics (age, settlement type in childhood and village altitude).

v) To contribute to the revitalization efforts for Laz, especially for formal instruction at official and governmental institutions, by discussing the implications of the findings on the current state of the Heritage Laz.

For these purposes, the present study provides answers to the following questions:

a) To what extent do Heritage Laz speakers exhibit the common properties of speakers of other heritage languages?

b) What aspects of Laz grammar have been vulnerable to change and loss due to reduced linguistic input and interrupted acquisition?

c) In what respects do the code-mixing practices of Heritage Laz speakers differ from those of baseline speakers?

d) Is the lexical proficiency of Heritage Laz speakers an indicator of their grammatical knowledge? If so, what aspects of morphosyntax are correlated with lexical proficiency and to what extent?

e) To what extent is the linguistic proficiency of Laz speakers correlated with sociolinguistic factors such as age, settlement type in childhood and geographical altitude? And how does this inform us about the status of Laz as an endangered language?

f) How does the distribution of the imperfective aspect markers and the pre-root vowels in Heritage Laz inform us about the argument structural properties of the Laz language and the related analyses previously proposed in the literature?

g) To what extent does the principle of one-to-one mapping between form and meaning, which is operative at the organization of heritage languages cross-linguistically (Montrul 2016, Polinsky 2018), account for the structural properties of Heritage Laz?
h) How does Heritage Laz contribute to our understanding of the organization of heritage languages in general?

The choice of the grammatical constructions investigated within the scope of this study has been mainly motivated by the existent, albeit limited, literature in Laz, along with the crosslinguistic literature on heritage languages (for a survey, see Montrul 2016, Polinsky 2018). Specifically, the main motivations behind the organization of the present dissertation lied in the following: i) One of the valency alternating operations, namely reflexivization, was observed to be already subject to erosion in Laz (Eren 2023) and it was predicted that a similar change might also extend to other similar operations, and ii) Valency markers and imperfective aspect markers closely interact with one another in Laz and it was hypothesized that linguistic change in the former might also condition a change in the latter, and lastly iii) The distribution of imperfective aspect markers is argued to be conditioned by lexical (aspectual) features as well as argument structural properties of verbs (Öztürk & Taylan 2014, 2017; Demirok 2022), falling into the interface between syntax and semantics, an aspect of grammar that has been noted to be subject to erosion in heritage languages (Aalberse et al. 2019 and references therein).

3. Methodology

In the absence of a standard variety and given the extensive linguistic variation associated with Laz, the scope of investigation is restricted to those Laz varieties spoken in a single city,

namely Rize: Pazar, Ardeşen and Fındıklı. The choice is made based on the following facts. First, living further away from the border with Georgia, the Laz population in Rize are more likely to hold closer interactions with speakers of non-Caucasian languages, and thus exhibit a higher level of contact-induced variation along with endangerment. Second, the two varieties of Laz spoken in Rize, Ardeşen Laz (AL) and especially Fındıklı Laz (FL) are the least documented varieties of Laz. Although not yet fully described, AL is an outlier in the entire South Caucasian family (ERG-ABS) with its impoverished case system (Öztürk 2019). Third, Pazar Laz (PL) is one of the most described and linguistically studied varieties of Laz (Emgin 2009, Demirok 2013, Öztürk & Pöchtrager 2011), allowing us to form hypotheses about the current state of the Laz grammar.

3.1. Participants

Despite the existence of a wide range of definitions in the literature[2], (the term *heritage speaker* refers to "a (simultaneous or sequential) bilingual individual whose L1 bears the status of a minority language and has been replaced at a young age by a majority language, i.e., L2" (Laleko 2010: 3), where L1 and L2 are defined in the chronology of acquisition. This replacement takes place under particular sociolinguistic circumstances, such as migration to another country and insufficient contact with the speakers of the relevant minority language and so on (Montrul 2016, Section 2.3). Although there are exceptions, heritage speakers tend to be more dominant in the majority language while being weaker in their L1, which is usually confined to home and familial settings. In other words, heritage speakers are more competent, fluent, and actively engage in their L2 rather than L1, mainly due to the socio-economic and political conditions favoring the former

[2] See Polinsky & Kagan 2007 for a discussion on the broad and narrow conceptions of heritage languages and their speakers).

over the latter. Therefore, a heritage language can be defined as "the home/minority language of a bilingual who is dominant in the main societal language" (Polinsky 2018:10).

The general trend in research on heritage languages is to conduct comparative studies where heritage speakers are compared against baseline speakers. The term *baseline* refers to the appropriate comparison group, which forms the basis of comparison in heritage language studies. Although the baseline usually tends to correspond to first-generation immigrants, who also qualify as providers of main source of linguistic input to heritage speakers, the baseline group can vary from monolingual speakers in the country of origin to standard language grammars or exchange students/other recently arrived native speakers, or a combination of these (see Aalberse et al. 2019 for an overview of various types of baseline possibilities).

Heritage languages usually, but not necessarily, emerge in the context of immigrant populations. The term *homeland language* therefore refers to the variety spoken by those who live in the country of origin (Polinsky 2018:14). This term is important in stressing the fact that heritage speakers are part of a community which shares not only a language but also a culture and history. Montrul (2016) classifies the heritage language communities into two: i) immigrant communities, and ii) non-immigrant communities. While the former refers to communities whose members migrate in hope of a better life and economic opportunities, the latter refers to indigenous languages that acquire a minority language status due to colonization and territorial annexation. In all these cases, children either move along with their parents (immigrant children) or they are born in the country of migration (children of immigrants). The nature of the contact with the majority language and culture eventually determines the level and characteristics of the bilingualism of these speakers (Sánchez 2003, Escobar 2012).

A total of 73 Laz speakers took part in the fieldwork (December 2021-January 2022) and completed the linguistic tasks prepared for the purposes of this dissertation. All participants[3] are residents of the following districts of Rize: i) Ardeşen (22), Pazar (8), Fındıklı (13) and Çamlıhemşin (30). The majority of participants live in the urban part of these districts, except for summers when they go to their villages for tea cultivation, i.e., the main source of income in the area. The age of the participants ranged between 18-83 (*Mean*=40, *Range*=65). Genderwise, there was almost an equal distribution with 47 female and 51 male participants.

The participants were divided into two main groups: i) Baseline and ii) Heritage based on their onset age of bilingualism. For the purposes of this dissertation, the baseline group are selected from among older generation speakers of Laz ((grand)-parental generation), who grew up in a monolingual home setting until at least the age of 7. Heritage speakers correspond to their children or younger generation speakers, who were raised in a bilingual home setting at birth and onwards and crucially they have some degree of fluency or proficiency.

The industrialization process in Turkey that started in 1950 resulted in the foundation of urban centers. A flow of migration from rural areas to cities was prevalent throughout the entire country. The Laz population also followed this trend, which have made them immigrants in their own country, internal migrants. Particularly affected by this were the second-generation Laz speakers, i.e., the children of first-generation speakers, who were raised as true monolingual speakers of Laz during their childhood due to the absence of education and mass media. Unlike their parents, second-generation speakers were forced to learn and speak Turkish as the only language of formal education, at the age of 7, when they started primary school. The socio-economic dominance of Turkish led these (second-generation) speakers to gradually abandon Laz

[3] The specifics regarding the demographics of the participants are provided later in Chapter 3, Table (11).

and shift to the majority language, namely Turkish. Although their children mostly grew up in a bilingual environment in especially urban areas, Turkish ended up being their dominant language. For some of them who are locally born, their parents were already Turkish-dominant bilingual speakers of Laz, who used Laz mostly, if not exclusively, in home settings and in interacting with older generations. Table (1) summarizes the linguistic profiles of Laz speakers:

Table 1: Patterns of language dominance of heritage speakers and the parental generation

Generation	Possible language characteristics	
First generation (parents)	Dominant in native language	Non-native proficiency in majority language
Second generation (children)	Dominant in the majority language	Low to high proficiency in heritage language
Third generation (grandchildren)	Dominant in the majority language	Ranges from intermediate-low proficiency in heritage language to monolingual in majority language

(from (Montrul 2016: 23))

Given the presence of different conceptualizations and definitions of heritage languages (Polinsky & Kagan 2007), I particularly adopt the definition proposed in Montrul (2016:20):

a. A bilingual individual who grew up in a *bilingual* home and has linguistic proficiency in two languages.

b. The (chronologically) first language, or one of the first languages, spoken at home is a socio-linguistically minority language (the heritage language)
c. The bilingual individual is usually dominant in the societal majority language (although balanced heritage speakers also exist).
d. The heritage language is often the weaker language[4],
e. The degree of proficiency in the heritage language ranges from minimal and receptive ability to fully fluent and native-like.
f. Proficiency in the societal majority language is typically native or native-like (depending on level of education).

Based on this definition, the third-generation Laz speakers qualify and are considered to be the heritage speakers of Laz. Although second-generation Laz speakers were also exposed to Laz at home and to the societal majority language (Turkish) beyond home, viz., at school, at an early age, they do not qualify as heritage speakers according to the above definition as they did not grow up in a bilingual home setting. Almost all of them were first exposed to Turkish when they started school; and before and after that, Laz was the only language in their home settings.

In addressing the issue of linguistic variation in heritage languages, Polinsky & Kagan (2007: 370-371) suggest that heritage languages typically exhibit a greater range of variation than the languages of baseline speakers. In order to deal with this variation, Heritage Laz speakers are classified into three different groups as high-, mid- and low-[5] proficiency speakers, depending on their linguistic (lexical) proficiency, specifically the number of distinct Laz words they produced

[4] *Weaker language* refers to the language that is less commonly preferred in daily interactions, mostly due to having lower proficiency in it.
[5] Salikoko Mufwene (p.c. 2021) suggests using terms other than the ones associated with decreolization prevents any confusion to the literature.

in narrating the Frog Story (Mayer 1969). I assume that these three groups would respectively correspond to acrolectal, mesolectal, and basilectal speakers in Polinsky's classification (1996).

3.2. Data collection, annotation, and analysis

Three tasks were performed to collect data, 2 production and 1 comprehension task. Due to time and COVID-19 (omicron variant) restrictions, a separate task was not carried out for measuring lexical proficiency, and the same grammatically-oriented tasks were used to investigate the pre-root vowels and imperfective markers. The remaining one production task was a free production task where the consultants were given the story book *Frog, where are you?* (Mayer 1969) and asked to narrate it in Laz. The summary of the tasks performed by the language consultants is as listed in Table (2):

Table 2: List of the tasks completed during the fieldwork

	Type	Task performed	Name
1	Production	Free narrative	Frog, where are you? (Mayer 1969)
2	Production	Translation	Valency-changing operations & Imperfective aspect markers
3	Comprehension	Grammaticality judgment	

As a language relying mainly oral transmission and tradition, the recently developed writing system has not been adopted by the Laz, only a small minority of who are literate in Laz. Therefore, the speakers were audio-recorded while working on the relevant tasks. The recordings

of The Frog Story were transcribed by two native and literate speakers of Laz and then cross-checked with a certain group of baseline speakers of each different variety during the annotation and translation process in order to control the potential effects of dialectal variation. Since all 73 speakers completed this task, the results from this task were statistically investigated using the SPSS (Statistical Package for Social Sciences) for Windows 25.0.

As for the grammatically oriented tasks, the participants were asked to translate Turkish sentences into Laz in the production task and to rate (un)grammatical Laz sentences along a Likert Scale (0: Totally Unacceptable-5: Totally Acceptable) if time permitted, and if not, they were asked to note simply grammatical/ungrammatical. Only a subset of the participants (26 baseline and 21 heritage speakers) was able to complete these tasks. The variation in the socio-linguistic profile along with the limited sample size prevented the application of statistical analyses.

4. Outline and overview of the dissertation

Chapter 2 introduces the current sociolinguistic situation of Laz along with the socio-historical and economic context leading to its endangerment. I also present an overview of the morpho-syntactic properties of the Laz varieties examined in this study to show the aspects of linguistic variation documented thus far. The main point of divergence between AL, PL and FL lies in the nominal domain, specifically the absence of case morphology in AL (Harris 1985, Öztürk 2019, Eren 2023), while all varieties pattern alike in terms of the structure of their verbal complex. Lastly, I also provide the typological properties of and differences between Laz (South Caucasian) and Turkish (Turkic), i.e., the dominant language of Laz speakers.

Chapter 3 serves to set the ground for presenting the results on the free narrative task (Frog Story-Mayer 1969), which are presented in the following three chapters (Chapter 4-6). This chapter

first provides a survey of the related literature on heritage languages and common linguistic properties of heritage speakers. I then present the methodology followed to examine the free narrative data, which I use to describe and document the Laz dialects and heritage varieties and to measure linguistic proficiency and classify heritage speakers accordingly. This serves as the basis for identifying the vulnerable aspects of Laz and systematically studying its endangerment.

Chapter 4 investigates the main points of divergence between baseline and heritage speakers in their production skills. The analysis shows that the use of distinct Laz content words and spatial prefixes, finite subordinate (relative and complement) clauses, and valency-increasing operations is significantly lower in the heritage group in comparison to baseline speakers. The former outperformed the latter only in terms of the frequency counts in code-mixed utterances: heritage speakers show a greater, although statistically low in significance, tendency to insert Turkish lexical and grammatical items. A close examination of a smaller set of data shows that Heritage Laz speakers produce significantly less pro-dropped and/or scrambled clauses. This lends further support to the *Interface Hypothesis* (Tsimpli & Sorace 2006, Sorace 2011), which states that interface phenomena with external components of grammar, e.g., syntax-pragmatics, pose challenges to heritage speakers (Aalberse et al. 2019: 151). Overall, the findings point to the vulnerable areas of Laz grammar and confirm the hypothesis that Heritage Laz speakers exhibit the common characteristics of heritage speakers (see Montrul 2016, Polinsky 2018 for a survey).

Chapter 5 investigates the intercorrelations between two potential measures of linguistic proficiency: the lexical proficiency as measured by the total number of distinct Laz words and the rate of speech as measured by the division of the total number of words in a speech sample by the total minutes spent for narration of the Frog Story. Based on the higher correlations between the former and the grammatical variables, I argue that the measure of lexical inventory obtained from

free speech samples serves as a better indicator of linguistic proficiency than the more commonly used one, namely speech rate (Polinsky 2008, Daller et al. 2011, Anstatt 2017). As for the effects of sociolinguistic factors on linguistic proficiency, I show that linguistic proficiency increases along with age, the amount of time spent in rural and/or higher-altitude areas (in childhood), lending scientific and linguistic evidence for the endangerment of Laz (c.f. Haznedar et al. 2018).

Chapter 6 aims to identify the aspects of Laz grammar that are susceptible to change or erosion when Laz is acquired under minimal input. Based on the consistency and similarity of the deviant forms within and across different heritage speakers, I show that despite its immense variation and heterogeneity, the grammar of Heritage Laz, and heritage languages in general, do not lack systematicity (Polinsky & Kagan 2007: 370-371). A clear hierarchy of loss emerges from the analysis: Verbal morphology>Nominal Morphology>Lexicon>Syntax. In this chapter, I also classify heritage speakers into three groups depending on their linguistic proficiency (low-, mid-, and high-) and examine differences in their grammatical knowledge. Specifically, while they converge in their code-mixing practices, the highest level of variation within heritage speakers lies in the following: i) spatial prefixal system, ii) valency alternations, and iii) finite complex clauses.

Chapter 7 investigates the argument structural properties of (in)transitives in Laz in relation to two sets of valency-related markers, i.e., pre-root vowels and imperfective aspect markers. Heritage speakers pattern better with baseline speakers with respect to valency increasing operations, the apparent valency decreasing operations featuring the pre-root vowel *i-* are subject to erosion, lending support for the uniform expletive verbal argument analysis proposed for this marker (Eren 2021, c.f. Lacroix 2009, Öztürk & Taylan 2014, 2017). Specifically, the degrees of vulnerability associated with the valency changing operations are as follows: *Causativization with o->Higher applicativization with a->High applicatives with -u>High applicatives with i-*

>Benefactive Reflexives with i->Passivization>Direct object reflexives with i-. As for imperfective aspect markers, the results indicate that there is extensive variation in the distribution of these markers even across baseline speakers. Amplifying this trend, Heritage Laz speakers have reanalyzed the aspectual system in a way that where each marker is associated with a single meaning. Specifically, while they retained the sensitivity of these markers to the (syntactically) more local trigger of allomorphy (to voice features), the dependency on the lexical features of verbal roots has been neutralized. Arguing for a notion of affectedness that is based on change of state (c.f. physical change, Öztürk & Taylan 2014, 2017; Demirok & Öztürk 2021; Demirok 2022), I propose an account of the relevant linguistic change within the framework of Distributed Morphology (Halle and Marantz 1993, Noyer 1997, Embick & Noyer 2001, Embick 2010, Arregi & Nevins 2012). Overall, the results provide evidence for the preference of heritage speakers to local dependencies and one-to-one mapping between form and meaning (Polinsky 2018: 183).

CHAPTER 2

GENERAL BACKGROUND ON LAZ

Laz is a highly understudied South Caucasian language spoken in Northeastern Türkiye. It is classified as 'definitely endangered' in the UNESCO Atlas of the World Languages in Danger. Figure 1 shows the genetic affiliation of Laz (Holisky 1991), which is a close sister of Georgian, the most widely known member of the South Caucasian language family. Figure 2 shows both where Laz is spoken and the different dialects of Laz, which differ in significant ways.

Figure 1: Genetic affiliation of Laz

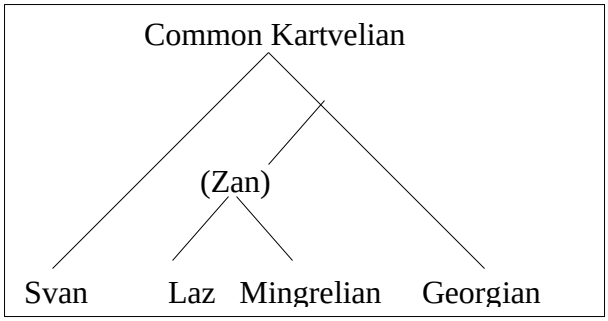
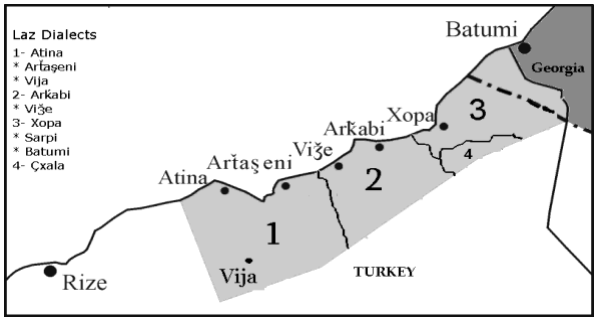


Figure 2: Dialects of Laz



All speakers of Laz are currently bilingual speakers of Laz and Turkish, which is the national language of the country and thus politically and socio-economically more powerful. The majority of younger generation Laz speakers, on the other hand, are monolingual speakers of Turkish. The low intergenerational transmission rate of the Laz language, which eventually resulted in its endangerment, has come about as a result of the language shift due to extra-linguistic factors such as pro-Turkish quasi-scientific propaganda, and the ban on the use of Laz especially in public settings and in the socio-economic structure (Kutscher 2008). These factors have eventually led Laz parents to deliberately refrain from transmitting their heritage language to

younger generations with the fear that Laz would corrupt their children's Turkish, which will render them less competitive in school and professionally (Haznedar et al. 2018).

The shift-induced endangerment of the Laz language has gradually come about through the replacement of Laz with Turkish in more and more domains of uses in daily life. Kutscher argues that Laz is currently restricted to the private sphere while Turkish prevails in the (semi-)public sphere, a fact that has later been confirmed by Haznedar et al. (2018). These authors further show that Laz is mostly spoken in rural areas, especially at home settings and for familial interactions. Due to being socio-economically, culturally, and politically more advantageous than Laz, Turkish has penetrated more and more domains of interaction over time, leading the Laz speakers to abandon their heritage language and shift to Turkish (Kutscher 2008). The situation of Laz therefore seems in line with Mufwene's definition of language shift "the outcome of fewer and fewer opportunities or motivations that particular speakers have to practice their heritage vernacular" (2020a:1).

The aim of this chapter is two-fold: Firstly, I present an overview of the current status of Laz as an endangered language with a special focus on its socio-historical and economic context (§ 1.1-3). Secondly, with the purpose of presenting the main (documented) aspects of grammatical variation exhibited by the Laz language, I present an overview of the morpho-syntax of Laz by specifically focusing on the dialectal variation it exhibits in relation to the main varieties investigated in this dissertation, namely Ardeşen, Pazar and Fındıklı varieties (§ 2). Lastly, I discuss the typological differences and similarities between Laz and Turkish as it will inform us about how the current state of the Laz grammar might have been affected by transfer effects from Turkish, which Laz has been in long and intense contact with (§ 3).

1. The current status of Laz as an endangered language

1.1. Socio-historical and economic context

Adopting an ecological approach to language and endangerment and loss (Mufwene 2001, 2017a), I show in Eren (2023) how the changes in the socio-economic and population structure (Mufwene 1996, 2001) have given rise to language shift and eventually the endangerment of the Laz language. Details aside, the endangerment of the Laz language induced by language shift, i.e., shifting to a new vernacular that is more useful and powerful (Fishman 1991, Pauwels 2016, Mufwene 2017a,b et seq.), is evidenced by the gradual loss of those speakers who identify Laz as their first language and the gradual increase of those who identify it as their second language over time as shown in Table (3), as a result of the changing socio-economic structure and political atmosphere and their effects on the perception and preferences of the Laz speakers.

Table 3: Census data on the Laz speaking population

Year	Laz Speakers		Total	%
1935	First Language: 63.253	Second Language: 5.061	68.314	0.42%
1945	First Language: 39.232	Second Language: 4,956	44.188	0,24%
1950	70. 423 (total)		70.423	0,34%
1955	First Language: 30.566	Second Language: 19,144	49.710	0,21%
1960	First Language: 21.703	Second Language: 38,275	59.978	0,22%
1965	First Language: 26.007	Second Language: 55,158	81.165	0,26%

(from (Dündar 2000))

The most recent census data referring to citizens' linguistic background dates back to 1965, after which the relevant information was taken out the scope of census due to the nationalist policies of the government. The pre-1965 census data (except for 1950) also make a distinction between first and second language, the definition of which changed over time but mainly referred to the language (other than the native one) people can speak the best or well enough to express themselves. Although there seems to be an increase in the overall Laz population from 1935 to 1965, the number of second language speakers has significantly increased over time while the number of first language speakers decreased (more than 50%). Moreover, in 1965 more than two-thirds of the entire Laz speaking population consists of second language speakers. These facts demonstrate that the Laz people have gradually switched to a new vernacular, namely Turkish, which is politically and socio-economically more powerful and prestigious than their ethnic language. The shift-induced endangerment of Laz is further evidenced by the current number of Laz speakers, which is not known for sure due to the absence of official census data. Nevertheless, the Ethnologue (2007) estimates a total of 20,000 speakers, which is less than a quarter of the entire population in 1965.

The Laz people, who are argued to be descendants of the Colchians settled in the south-eastern coast of the Black Sea in antiquity (Bellér-Hann 2018), were in close relation with or ruled under the authority of the Roman and Byzantine, the Archaemenid (Persian), the Pontus and lastly the Ottoman Empire before the establishment of the Turkish Republic in 1923 (see Bucaklişi 2002 for a discussion on the history of Laz in the pre-Ottoman era). The first written historical records regarding the Laz population date back to 1892 when the French orientalist and geographer Vital Cuinet went to the Laz Sanjak, one of the autonomous administrative divisions of the provinces in the Ottoman Empire. Cuinet reported that the Laz constituted the majority (87%) in the Sanjak,

i.e., 138.000 in the total population of 160.000 (Yurt Ansiklopedisi cited from Bucaklişi 2002). The Laz Sanjak consisted of 4 districts as *Atina* (present-day Pazar), *Hopa* (present-day Artvin), *Rize* and *Of,* and the Laz speaking communities primarily resided in the first two districts, which is still currently the case in the present.

The Laz people were reported to engage in cattle breeding and fishing during the Ottoman times. The mountainous nature of their homeland prevented them from engaging in agriculture (other than maize, collards, and beans) and interacting with communities speaking other languages for trade. Furthermore, the (decentralized) administration of the Ottoman Empire did not require them to use Ottoman Turkish for their official interactions with the government, which were mediated through local governors (*pashas* or *mutasarrıf*) (Ceylan 2002 and references therein). All these factors made it possible for the Laz population to keep their ethnic traditions, culture, and language alive.

The fall of the Ottoman Empire and the establishment of the Turkish Republic afterwards led to significant changes in the ecology of Laz. Adopting Westernism as its main policy and following the principles of nationalism, secularism, and modernism, the newly founded Republic launched a series of reforms leading to significant changes in the lives of its citizens (Akyol 2006). Crucial for our purposes is the fact that the national policy of the Republic was constructed based on the monolithic ethnicity of 'Turkishness' and on a single language, namely Turkish. With the approval of the Act of Unification of Education, all educational institutions were combined under a single institution, namely the Ministry of Education, and teaching in any languages other than Turkish was forbidden (Yeni Palabıyık 2017). Moreover, the ban on the use of ethnic languages was not only restricted to educational institutions but extended to all domains of the public sphere,

crucially including the socio-economic structure and any official interactions with the government, as opposed to the case in the Ottoman Empire.

Adopting liberalism as its economic policy, the Republic further aimed at establishing a nationally self-sufficient economic structure by way of starting an industrialization process. Particularly important for the Laz people was the introduction of tea industry in southeastern coast of the Black Sea, where the climate is the most suitable for tea cultivation. Tea cultivation and industry have remained to be the main source of income of the Laz speaking population since then, which also has led to significant social and cultural changes in the life of the Laz people (Taşkın 2011). In addition to making them economically more dependent on and subsidiary to the government, the tea industry also increased the amount of interaction between the Laz and the government, crucially only using the national language of the country, namely, Turkish as opposed to the case during the Ottoman times.

The establishment of tea factories in the area made it necessary to construct modern roads by widening the existing pathways that were not wide enough for vehicles needed for tea production. The construction of the roads brought an end to the hitherto isolated lifestyle of the Laz population, bringing them in closer and more intense contact with the rest of the society. Until then, the Laz population were protected by the natural barriers, namely the high, steep, and rocky nature of the high-altitude mountains. The physical characteristics of the geographical area led not only to social isolation but also to a scattered type of settlement (Özgüner 1970). Bucaklişi (2002: 14) notes in this regard that the distance between two houses in a high-altitude Laz village could reach up to 1 kilometer. The scarcity of interaction with other Laz-speaking communities and with the rest of the society stands as the main reason for the extensive inter-speaker and dialectal variation that exists in the present-day Laz.

The industrialization process which the country has undergone since the very early days of the Republic fostered urbanization and eventually gave rise to the formation of city centers (Keleş 1980). There occurred a flow of migration from rural to more urban areas (especially to the Marmara Region of Türkiye) in the entire country for better social, educational, and economic prospects. Particularly affected by this was the Laz speaking population having difficulty in sustaining their lives solely based on tea agriculture, which has lost its valuable income-generating status over time because of fragmentation of the agricultural lands and population growth (Bucaklişi 2002). Although the main motive behind migration was economic, it had significant socio-cultural and linguistic consequences. Since urban life assumes a kind of fusion, the Laz people started gradually abandoning their cultural and linguistic traits hoping to better integrate into the social and economic structure (Taşkın 2011).

One crucial issue which will remain unknown due to the absence of official historical records is concerned with how language shift proceeded in different parts of the Lazland. The construction of the roads made it easier and possible to access to the urban centers along the coast of Black Sea, i.e., the districts of Pazar, Ardeşen, Fındıklı and Çamlıhemşin, which are currently the centers of administrative and economic activities in the area. However, it is not known in which years the construction of the roads to each different village was exactly completed as well as the extent to which people have started commuting to the coastal urban centers afterwards. The same unclarity also holds for the construction of state schools in the Laz villages, which are scattered on top of the mountains in the area.

One significant fact regarding education is the closing of village schools and the application of mobile teaching in 1998 and afterwards, i.e., state-sponsored transportation of school-age children to schools in urban districts of Pazar, Ardeşen, Fındıklı and Çamlıhemşin (see Küçükoğlu

& Küçükoğlu 2006 for details on mobile teaching). The application of this new education model fostered migration from rural to urban areas, bringing the hitherto Laz speaking communities into contact with the rest of the society. As opposed to their parents, who remained and were educated in villages being first and only exposed to Turkish at school settings, younger generation (heritage) speakers of Laz grew up in urban settings, using and hearing Turkish all around since childhood.

The urbanization history of the relevant administrative districts, namely Pazar, Fındıklı, Ardeşen and Çamlıhemşin, might also bear significance on and thus inform us about how language shift might have proceeded in these areas. Among these four districts, Pazar has the longest history of being the trade center by virtue of being an official administrative center since the Ottoman times. Recall that it was one of the four main districts of the Laz Sanjak. Indeed, even the name of the district, which was changed in the early days of the Republic from *Atina*, translates as *bazaar* thanks to being the center of economic interaction and trade within the Lazland and across the entire Black Sea region. Likewise, Fındıklı has long been a district of first the Trabzon and the Laz Sanjak during the Ottoman times (see Güveloğlu 2020 and references therein). Ardeşen, on the other hand, consisted mostly of villages during the Ottoman times and it was not until 1953 it became an autonomous administrative center for the first time (see Başaran 2018 for details). Previously, the habitants of the present-day Ardeşen mostly remained in their villages and needed to go to either Pazar or Fındıklı for economic and administrative activities. Çamlıhemşin was the last to become an administratively autonomous district in 1957 (Başaran 2018: 219).

Based on the facts listed above, it can be predicted that language shift might have proceeded faster and at a higher level in the Lazland in the following order: Pazar > Fındıklı > Ardeşen > Çamlıhemşin[1]. The geographical nature of the relevant districts along with the number of their

[1] In the absence of historical evidence regarding the urbanization history of the relevant districts, this argument will of course remain unproven.

inhabitants reinforce this ordering as represented in Table (4). Notice that while Pazar seems to be the first in terms of its population density (per meter square), Çamlıhemşin, which has the highest altitude (villages), is the last and there is a sharp and striking difference between the two. This suggests for a more scattered type of settlement in the latter in comparison to the former, namely Pazar (Atina), which would also correspond to less interaction and thus more preservation of ethnic languages and identities.

Table 4: Population density of the districts of Rize

	Population (Total)	%	Surface Area (km^2)	Population density person/ km^2
Pazar	30471	9	110	277
Ardeşen[2]	40341	12	629	64
Fındıklı	15860	5	395	40
Çamlıhemşin	5976	2	700	6
Rize (City)	324152	100	3922	83

(from Koday & Erhan 2013: 43; based on 2002 census data)

1.2. Current socio-linguistic situation of Laz

Based on observations during her fieldtrips in Ardeşen and Pazar districts in Rize, Kutscher (2008) notes that the number of younger generation speakers who are proficient in Laz is quite low

[2] Note also that despite being an official district after Fındıklı and Pazar, Ardeşen has urbanized at such a quite high and fast rate that it is accepted to be more urbanized than the other two districts. My language consultants reported to me that the inhabitants of the other two districts go to Ardeşen for economic and social interactions.

(roughly 5-10%), while the majority of this group of speakers (50-70%) have only passive knowledge, i.e., they can only understand but cannot speak Laz at all. As for fully competent speakers of various ages, Kutscher notes that they often switch to Turkish, which is the language they reported to speak more often in their daily life. Examining Laz under the classification of levels in which language death is proposed to proceed in Sasse (1992), Kutscher shows that the domains in which Laz is used have contracted to the extent that its use is restricted to more rural areas, especially at home settings and for familial interactions while Turkish dominates the public sphere and more urban areas. She concludes that Laz qualifies as an endangered language, which can still be saved if preventive measures are taken.

Kutscher's arguments were then confirmed by Haznedar et al.'s (2018) comprehensive study, in which the language use patterns and linguistic proficiency of 450 Laz speakers were investigated. The examined sociolinguistic variables include, but are not limited to, geographical region (Marmara vs. Black Sea), age, and place of residence, i.e., village, city, and both (dual settlement). The findings on the language preferences indicate that there is a negative correlation between the age of the participants and the rate of Laz being their preferred language, that is, younger generation speakers show a preference for speaking Turkish rather than Laz. As for the other two variables, Haznedar et al. show that Turkish is the preferred language of those who live in more urban areas because i) Those who have migrated to and still reside in big cities (in the Marmara Region) prefer Turkish at a statistically higher rate than those in the Black Sea region, and ii) within the latter group, those who exhibit a dual settlement (live partly in the more urban districts along the coast of the Black Sea and partly in villages) prefer Laz less than those who mostly live in villages.

The results of the self-proficiency reports provide evidence for shift-induced endangerment of the Laz language because it turns out that the general level of proficiency of all participants in Laz is only intermediate while it is advanced in Turkish (Haznedar et al. 2018). Moreover, age is again found to be correlated with linguistic proficiency in that a decrease in age goes hand-in-hand with a decrease in speaking and comprehension skills. As for the effect of place and type of residence on linguistic proficiency, the results indicate that those who live in villages reported to have higher proficiency at a statistically significant higher level than those who live in more urban areas. This finding supports Kutscher's argument that Laz is confined to more rural areas while Turkish prevails in more urban areas and settings.

The intergenerational transmission rate of Laz along with the language use patterns with respect to interlocutors was another significant issue investigated in Haznedar et al.'s (2018) study. The results on the latter indicate an increasing use of Turkish even among the members of core family members which include spouses, parents, siblings and crucially children. The use of Laz for child-directed speech and parental communication turns out to be correlated with the age of the participants, i.e., the older the participants, the more their parents addressed them and each other in Laz during their childhood. Furthermore, the rate of child-directed Laz usage was found to be significantly higher in rural areas in comparison to more urban settings.

The decreasing use of Laz even at home settings has resulted in a decrease in its transmission rate from older to younger generations. The results of the answers regarding whether the participants' children know or speak Laz and if so to what extent, indicate that only one of the four participants has transmitted Laz to their children. More specifically, while almost half of the children (49%) were reported to know or speak Laz only to some extent (possibly qualifying as passive speakers), 28% of them were reported not to have any proficiency in Laz at all. Although

the authors do not provide information regarding the place of residence of the relevant younger generation speakers, given that those who address their children in Laz more frequently was found to be higher in rural areas of the Black Sea region than in the cities of the Marmara region, the remaining 23% younger generation speakers who were reported to be proficient in Laz are more likely to reside in the Black Sea region, especially in villages.

Haznedar et al. (2018) do not provide the details of their findings in relation to the different districts of the Black Sea region, either. Therefore, their study does not help us make or test predictions regarding the current regional differences regarding the shift-induced endangerment rate of the Laz language. As far as the districts of Rize, namely Pazar, Fındıklı, Ardeşen and Çamlıhemşin, are concerned, my search for heritage speakers who are proficient enough to narrate the Frog Story in Laz and complete the grammatically oriented tasks was the most successful in Ardeşen and Çamlıhemşin. The older generation speakers I worked with in the other two districts, Fındıklı and Pazar, reported that Ardeşen and Çamlıhemşin speakers are often more proficient in Laz and so are their children. They further noted that Laz is still being actively used for daily interactions by younger generation speakers who reside in especially higher altitude villages of Çamlıhemşin. Therefore, the majority of heritage speakers I worked with are residents of Ardeşen and Çamlıhemşin and those who were raised or still reside in villages seemed to have higher proficiency in Laz. The situation in Pazar, on the other hand, seemed more alarming in that almost all heritage speakers I worked with turned out to have only passive knowledge and were able to narrate the Frog Story almost only in Turkish[3]. As for Fındıklı, the situation was better in that

[3] Needless to say, the data from these passive speakers were not involved in the statistical analyses conducted in the present dissertation.

finding heritage speakers was easier than in Pazar, but more difficult in comparison to Ardeşen and Çamlıhemşin.

The examination of the level of endangerment on a regional basis in the Black Sea region definitely requires a more in-depth study. Nevertheless, my fieldwork experience and observations along with my interactions with language consultants are in line with the socio-historical and demographic facts I outlined in the previous section. More specifically, the endangerment of Laz seems to be more severe in the districts of Rize which have a longer history of urbanization, namely Pazar and Fındıklı. As for the remaining other districts, Ardeşen seems and was reported to me by the residents of the area to have urbanized at such as fast rate that it has recently become more urbanized than Pazar and Fındıklı. Given this, the rate of proficient heritage speakers might decrease in the future as has happened historically in Fındıklı and Pazar. Therefore, it becomes important to examine the Heritage Laz variety and enhance its education at official institutions before the level of heritage speakers decreases even further and the Laz language becomes extinct.

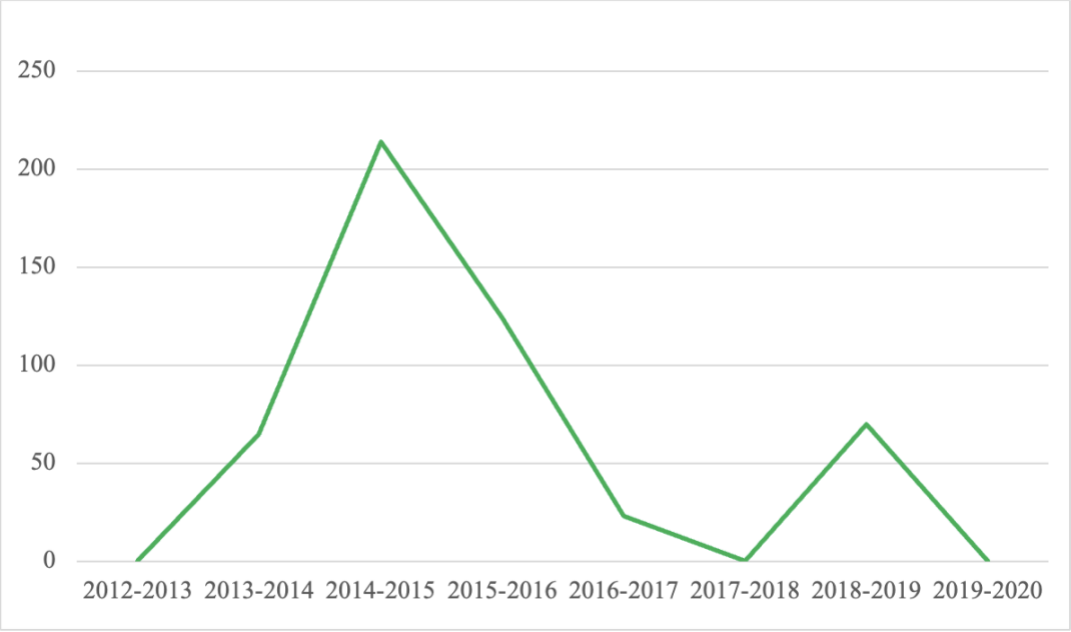
1.3. Formal education in Laz as part of its revitalization

Language teaching policy initiatives for Laz in Türkiye started only in 2002 with the amendment of the "Foreign Language and Teaching Act," first issued in 1983 and renamed the "Foreign Language Education and Teaching along with Learning Different Languages and Dialects Act by Turkish Citizens" (Yeni-Palabıyık 2017). Laz then only started to be taught at certain NGOs (2000-present) and at higher education institutions (2011-present) in Türkiye where the majority of Laz speaking communities reside, mainly in the southeast coast of the Black Sea.

The real milestone for official education in Laz came along with the education reform in 2012, which paved the way for the minority languages of Türkiye to be taught as elective language

courses under the umbrella term “Living Languages and Dialects (LLD)” at secondary schools. The legislation of teaching LLD courses also meant the official recognition of minority languages of Türkiye including Laz. The top-down educational policy initiated by the National Ministry of Education in Türkiye also has positively contributed to the embracement of linguistic and cultural plurality as well as to the promotion of grassroots movements in favor of human rights led primarily by language activists (Bilmez & Çağatay 2021). Nevertheless, as far as Laz is concerned, the lack of a planning element associated with the policy has resulted in Laz courses being not as effective and sustainable as the policy would have potentially done otherwise. Consequently, the enrollment rates have gradually lowered after peaking in 2014-2015 as shown in Figure (3):

Figure 3: Enrollment rates in elective Laz courses between 2012-2020 (Bakay 2020)



The factors leading to the ineffectiveness and unsustainability of elective Laz courses are multiple. The most significant are i) the absence of language teachers who are qualified and

educated to teach Laz as a second language, and ii) the absence of language coursebooks that are suited to the needs and profile of the students, who are (almost) all heritage speakers of Laz. The teachers receive formal training in education sessions organized by the National Ministry of Education, in order to better teach Laz in a classroom setting. Yet, these sessions only focus on the formal properties of the Laz language and the specific features of the Laz culture, but crucially there is no component about how to teach heritage speakers. Moreover, the existent course books are reported to be ineffective and too much grammar-focused by the teachers, who express their demands for the coursebooks to be revised and improved.

The elective Laz courses still continue to be offered with an increasing number of students enrolled in classes, after a pause in 2020 due to the COVID-19 pandemic. The sustainability of these courses is dependent on the existence of language coursebooks and formal professional development sessions for teachers informed by the linguistic profile of heritage learners.

2. Morpho-syntactic properties of Laz varieties

This section aims to provide an overview of the general properties of Laz morpho-syntax, which are relevant for the purposes of the present dissertation. Given the absence of a standard variety of Laz, I first introduce the morpho-syntactic properties of the verbal complex that hold for all varieties of Laz under investigation in the present study, namely AL[4], PL and FL, and then turn to the points of divergences among different varieties, which is mostly concerned with nominal

[4] The variety of Laz spoken in Çamlıhemşin is quite similar to the Ardeşen variety (Kojima & Bucaklisi 2003) although the speakers are located in different administrative districts. Therefore, I discuss both under the same heading in the present dissertation.

morphology. Among these varieties[5] PL is the best-described variety with a dedicated descriptive grammar book (Öztürk & Pöchtrager 2011) while the least studied variety is FL. Thanks to the presence of individual studies focusing mostly on the grammatical expression of spatial relations in AL (Kutscher 2001, 2008, 2011; Kutscher & Genç 2007), AL, on the other hand, falls between the two in terms of the amount of existent descriptive and academic studies. Therefore, with this section and study, I also hope to contribute to the documentation and description of these understudied Laz varieties.

2.1. Overview of morpho-syntactic similarities between different Laz dialects

In this section, I first focus on the verbal domain because verbal morphology in Laz is quite more complex than nominal morphology. Additionally, the three varieties of Laz investigated in this dissertation pattern alike to a great extent in terms of the structure of the verbal complex and the dialectal variation is mostly concerned with certain phonological differences in the shape of the relevant grammatical markers while their functions and ordering remain invariant across dialects. Given that PL is the most described variety, the discussion is done based on PL examples but unless otherwise stated, the facts also hold for the other two varieties.

The verb in Laz has a highly complex composition (Holisky 1991, Boeder 2005, Kutscher 2001). Öztürk and Pöchtrager (2011) identify 16 slots on the verbal complex in PL as in (1):

[5] As for the remaining varieties, see Kojima and Bucaklisi (2003) and, Lacroix (2009) mainly for the Arǩabi variety. Lacroix's documented material can be accessed via The Endangered Language Archive (ELAR).

(1) The verbal complex in PL (Öztürk & Pöchtrager 2011)

a. Pre-root Domain

1	2	3	4	5
Affirmative Particles	Spatial Particles	Person	Valency (pre-root vowels)	Verb Root

b. Post-root Domain

5	6	7	8	9	10	11	12	13	14	15	16
Root	aug	intrans. caus	trans. caus	caus. perf.	Thematic Suffixes	imperf stem f.	Subjunctive	Tense.person	cond	PL	mod

Each slot in this template is filled by only one member of the same group of affixes and crucially in the given fixed order, i.e., there is no stacking of affixes of the same kind in Laz. In this respect, affixes of the same sort stand in a paradigmatic relationship. Needless to say, not all of these 16 slots are necessarily filled all the time, but certain slots need to be filled depending on the finiteness and valency of the predicates.

Table (5) adapted from Demirok (2011:42) introduces the functions of verbal affixes as well as how they are glossed here. This verbal template is common to all Laz varieties under consideration here and the relevant allomorphic variants in these varieties are listed at the following parts of this dissertation:

Table 5: Functions of verbal affixes

#	Affix functions	Gloss
1	Affirmative particles	AFF
2	Preverb denoting direction/manner of an event: Spatial Prefixes	SP
3	Person markers	[1][2][3]SBJ/OBJ
4	Valency-relevant pre-root vowels	PRV
5	Obligatory verbal root	
6	Augmentative stem formant	AUG
7	Causative suffix for intransitives	$CAUS_{INTR}$
8	Causative suffix for transitives	$CAUS_{TR}$
9	Causative suffix for the perfect construction: Experiential marker	EM
10	Thematic suffix: Imperfective aspect markers	IPFV
11	Imperfect stem formant	SF
12	Subjunctive marker	SBJV
13	Two sets of obligatory person markers; +/-past tense-exponence	(PST)[1][2][3]
14	Conditional marker	COND
15	Plurality marker; fused with third person	PL
16	Auxiliaries	AUX

The first slot in the verbal complex is filled with what is referred to as affirmative markers (c.f. particles), which emphasize the taking place of the event or state denoted by the predicate and hence always stressed. In this respect, they are parallel to epistemic modality adverbials like

certainly. Given the meaning they contribute, these verbal affixes are mutually exclusive with the negative particle, i.e., they can never co-occur. These facts are illustrated in (2):

(2) a. b-zir-i
1SBJ-see-PST.1SG
'I saw (it).'

b. ko-b-zir-i
AFF-1SBJ-see-PST.1SG
'I certainly saw (it).'

c. var b-zir-i
NEG 1SBJ-see-PST.1SG
'I didn't see (it).'

d. *var ko-b-zir-i
NEG AFF-1SBJ-see-PST.1SG
'Int: I did NOT see (it).' (Öztürk 2011: 99)

The second slot in the verbal template hosts spatial prefixes, which primarily denote information about and modify the events in terms of location, direction and/or axial orientation (Kutscher 2010 for AL, Öztürk 2011, Eren 2016, Öztürk & Eren 2021b for PL). The verbal spatial prefix system in Laz and its closest sister Mingrelian is more elaborate and complex than in the other members of the South Caucasian language family (Boeder 2005:33). There are 27 spatial prefixes which occupy the second slot in the verbal complex and denote different meanings depending on the semantics of the verbal roots they combine with as in (3). In this particular example, we see that while the spatial prefix bears its canonical meaning in combination with a motion verb, it denotes an adverbial (temporal) reading when it co-occurs with a non-motion verb:

(3) a. Bere xinci-şe meyo-xt-u.
child.ABS bridge-ABL SP-move-PST.3SG
'The child crossed the bridge.'(Lit: The child moved over the bridge from here to the other side.

b. Xordza-k şee-pe meyo-nax-u.
woman-ERG cloth-PL.ABS SP-wash-PST.3SG
'The woman washed the clothes again.'

The third slot in the verbal complex is reserved for person agreement prefixes which cross-reference the properties of core (subjects, objects) and non-core arguments (applied arguments). In addition to these person prefixes, person information is also encoded suffixally in slot 13, i.e., it exhibits discontinuous exponence. In (4a), the properties of the direct object are co-indexed by the object agreement marker while the phi-features of the subject are cross-referenced in the suffixal domain, specifically by the portmanteau morphemes encoding past tense and person features. The simultaneous indexing of all arguments is not licensed in Laz and person agreement relies on a hierarchy between different types of arguments. This is illustrated by the ungrammaticality of the relevant form in (4a) and the obligatory presence of the first person marking when the object information is not overtly expressed as in the case of 3rd person objects as seen in (4b).

(4) a. Ma si ce-k-ç-i / *ce-p-k-ç-i
I.ERG you.DAT SP-2OBJ-beat-PST.1SG / SP-1SBJ-2OBJ-beat-PST.1SG
'I beat you.'
b. Ma himu-s ce-p-ç-i. / *ce-Ø-ç-i.
I.ERG s/he-DAT SP-1SBJ-beat-PST.1SG SP-3OBJ-beat-PST.1SG
'I beat him/her/it.' (Demirok 2011: 47)

Details aside (see Holisky 1991, Emgin 2009, Demirok 2013, Öztürk 2013, for an in-depth analysis of the agreement patterns in Laz), suffice it to say at this point that agreement in Laz is interesting and complex in that it shows sensitivity to the particular properties of different kinds of arguments and to the hierarchical relation among them.

Slot 4 in the verbal template of Laz hosts certain vowels which are related to the argument structure of predicates, called pre-root vowels in the present study, following Öztürk and Pöchtrager (2011), or version vowels in the South Caucasian literature (Holisky 1991). These valency related vowels mainly surface in cases of valency changing operations as well as serve to mark certain classes of verbs, namely unergatives. In (5), we see the obligatory presence of the valency marker *i-* with an unergative verb.

(5) Ma v-i-bir-am. (Unergative)
I.ERG 1SBJ-PRV-dance-IPFV
'I {dance/am dancing}.'

The example in (6b) demonstrates that the increase in the valency of the transitive predicate in (6a) is marked by the valency-related vowel *u-*. (6c) shows that valency-related vowels stand in a paradigmatic relation in that they cannot stack on one another when more than one valency changing operation takes place. The valency marker *u-* required by the applicativization operation in (6b) is overridden when another operation takes place that leads to a change in the argument structure as shown in (6c).

(6) a. Ma dişka p-çit-i. (Transitive)

I.ERG wood.ABS 1SBJ-cut-PST.1SG

'I chopped wood.'

b. Ma koçi-s dişka v-u-çit-i. (Applicativization)

I.ERG man-DAT wood.ABS 1SBJ-APPL-chop-PST.1SG

'I chopped word for the man.'

c. Nana-şkimi-k ma koçi-s dişka m-o-çit-ap-u.

mother-1SG. POSS-ERG I.DAT man-DAT wood 1OBJ-CAUS-chop-CAUS$_{TR}$-PST.3SG

'My mother made me chop wood for the man.' (Causativization of applicativization)

Before closing off the discussion of the verbal prefixal domain, one crucial fact that needs to be mentioned is that although these markers have their designated positions in the verbal template, they also interact with one another (as well as with certain suffixes as will be shown later in this section) in interesting ways. One intriguing fact regarding this issue comes from the co-occurrence restrictions that hold between affirmative particles (Slot 1) and spatial prefixes (Slot 2). The distribution of the two allomorphs of the affirmative marker shows sensitivity to the presence of a following spatial prefix, i.e., whether Slot 2 is overtly filled or not (Öztürk 2011: 96). Specifically, only *ko-* but crucially not *do-* can attach to verbs that take a spatial prefix as illustrated in (7):

(7) Bere-k xordza-s çitabi {ko-/*do-}-me-ç-u.

child-ERG mother-DAT book.ABS AFF-SP-give-PST.3SG

'The child certainly gave the woman the book.'

Likewise, valency-changing operations might also lead to the encoding patterns of person markers in Laz. Like other members of the South Caucasian language family, Laz exhibits one typologically rare pattern referred to as inversion in the South Caucasian literature to yield an ability or experiential reading or to mark psychological predicates (Holisky 1991, c.f. Öztürk 2013). Details aside, in these constructions, the person markers that canonically cross-reference the properties of the direct object argument are used to mark the phi-features of the apparent subjects of the clauses. (8b) exemplifies the inversion construction where the object marker *m-* in (8a) is co-indexed with the (dative-marked) subject argument in this case and the suffixal agreement reduces to default, namely 3rd person.

(8) a. Si ma m-zir-i.
you.ERG I.ABS 2OBJ-see-PST.2SG
'I saw you.'

b. Ma si m-a-zir-u.
I.DAT you.ABS 1SBJ-APPL-see-PST.3SG
'I could see you. / I involuntarily saw you.' (Lit: You appeared to me.)

As for the suffixal domain of the verbal complex in Laz, it looks more complex than the prefixal domain in that there are 11 slots identified in this domain. Therefore, I only focus on the affixes which are significant for the purposes of the present study. Recall that the morphological reflex of valency change on the verbal complex is verbal marking in Slot 4. Additionally, certain operations like causativization also require Slot 7 and/or 8 to be marked with a suffix depending on the transitivity of the basic predicate (*-in* for intranstives and *-ap* for transitives and transitivized

predicates) as shown in (9b) where the transitive predicate in (9a) is causativized. Crucially, this does not hold for all valency increasing operations like applicativization, the morphological marking of which is only restricted to the addition of valency marker in the prefixal domain (9c):

(9) a. Baba-şkimi-k dişka khvat-um-s.
father-1SG.POSS-ERG wood.ABS cut-IPFV-3SG
'My father {cuts/is cutting} wood.'

b. Baba-şkimi-k xordza-s dişka o-khvat-ap-am-s.
father-1SG.POSS-ERG mother-DAT wood.ABS CAUS-cut-CAUS$_{TR}$-IPFV-3SG
'My father {makes/is making} the woman cut the woods.' (Causativization)

c. Baba-şkimi-k xordza-s dişka u-khvat-am-s
father-1SG.POSS-ERG mother-DAT wood.ABS APPL-cut-IPFV-3SG
'My father {cuts/is cutting} wood for the woman.' (Applicativization)

Slot 10 in the verbal template hosts imperfective aspect markers. Perfective aspect, which conveys that the event denoted by the predicate has taken place or been completed, is morphologically unmarked and only implied by past tense inflection. Ongoing or non-completed events are marked by one of the four suffixes, which encode imperfective aspect and present (continuous) tense. Imperfective aspect here covers both habituality and progressivity; the distinction between the two is not normally grammatically marked in Laz but can be differentiated thanks to adverbials as in (10).

(10) a. Ma {panda/huy} nçai p-tzon-um.

I.ERG {always/now} tea.ABS 1SBJ-weigh-IPFV

'I {weigh/am weighing} tea {all the time/right now}.'

b. Ma {panda/huy} guda v-o-çand-in-am.

I.ERG {always/now} bagpipe.ABS 1SG-CAUS-play-CAUS$_{INTR}$-IPFV

'I {play/am playing} bagpipe {all the time/right now}.' (Lit: I am making it play.)

c. Dugun-is {panda/huy} guda i-çand-e(r)-n.

wedding-LOC {always/now} bagpipe.ABS PRV-play-IPFV-3SG

'People {play/are playing} bagpipe at weddings/ the wedding {all the time/right now}.'

Lit: 'Bagpipes are played/being played at (the) wedding(s).'

d. Ali {panda/huy} m-ul-u(r)-n.

Ali.ABS {always/now} SP-move-IPFV-3SG

'Ali {comes/is coming} {all the time/right now}.'

The distribution of the imperfective markers shows sensitivity to both argument structural and lexical (aspectual) properties of verbal roots (Öztürk & Taylan 2017). The particular features which condition the distribution of the allomorphs of the imperfective are the main focus of Chapter 7 of this dissertation where I show that heritage speakers have reduced the allomorphy in an interesting but predictable way. It should also be noted at this point that the distribution of the imperfective allomorphs is also one of the main points of divergence among different Laz dialects. Leaving the details regarding this issue to Chapter 7, suffice it to say at this point that the set of imperfective markers are morpho-phonologically identical to a great extent in all three Laz

varieties as opposed to the eastern varieties of Laz. Table (6) presents us the set of imperfective markers in all Laz varieties.

Table 6: The set of imperfective markers in Laz varieties

	PL	AL	FL	Arhavi Laz	Hopa Laz
Sporadic	*-em*	*-em, -ir*	*-om, -ir*	*-im, -om, ir*	*-ip, -ep, ir*
m-set	*-um, -am*				*-up, -ap*
r-set	*-er, -ur*				

(based on Holisky 1991, Lacroix (2009) and Öztürk & Pöchtrager 2011)

Past tense markers, which imply perfective aspect in the absence of the imperfective markers (a.k.a. thematic suffixes), occupy Slot 13 in the verbal template. These portmanteau morphemes simultaneously encode person and number features of the arguments, mainly those of subjects (c.f. objects, see Demirok 2013 and Eren 2016 for details). (11) presents the three allomorphs of the past tense marker in Laz., whose distribution is conditioned by person and number features of arguments. Lastly, as opposed to the imperfective aspect markers, past tense markers remain the same across the relevant different dialects of Laz investigated in the present study. The only difference is that the final sound of the third person plural marker in AL is *-ey*:

(11) Morphological exponence of past tense markers in Laz

a. *-i*: 1st and 2nd person

b. *-u*: 3rd person

c. *-es*[6] (PL and FL) /*-ey* (AL): 3rd person plural

Lastly, both types of tense-aspect markers along with the agreement markers need to be obligatorily present only in finite constructions. All Laz varieties examined here also feature a participle suffix, namely *-eri*, which is used to derive non-finite embedded clauses (12b) as well as non-finite adverbial clauses (12c)[7]. Notice that the unergative verbal root introduced in (12a) occurs in its bare form in the presence of this marker, namely *-eri*, lacking all of the grammatical markers (pre-root vowels, aspect and tense, and agreement markers) in (12b) and (12c).

(12) Non-finite constructions formed with the participle *-eri*

a. Bere-k i-bgar-(am)-s / i-bgar-u. (Unergative)
child-ERG PRV-cry-IPFV-3SG / PRV-cry-PST.3SG
'The child {cries/is crying/cried}.'

b. Ma [bere bgar-eri] do-m-a-tzon-u. (Non-finite embedded clause)
I.DAT child cry-PTCP SP-1OBJ-APPL-think/assume-PST.3SG
'I believe the child to have cried.' (Emgin 2009: 74)

[6] This form has been listed under plurality markers in Demirok (2011:50). The Frog Story did not provide sufficient data to investigate agreement patterns in Heritage Laz because it is narrated from the perspective of third person singular (see Chapter 6 for details). Therefore, I simply treat it as an allomorph of past tense here.
[7] The adverbial clause also involves reduplication.

c. Bere [bgar-eri bgar-eri][8] şkimi tere m-ul-u(r)-n.

child cry-PTCP cry-PTCP me/my towards SP-move-IPFV-3SG

'The child {comes/is coming} towards me by crying.' (Non-finite adverbial clause)

The formation of finite subordinate clauses requires the addition of the subordinator *na-* to the embedded predicate as shown in (13). Notice that as opposed to the case with the participle marker *-eri*, the embedded verb bears all of its grammatical markers in these constructions. (see Emgin 2009 for a detailed analysis of complementation patterns in Pazar Laz)

(13) Finite complementation patterns formed with the subordinator *na-*

a. Ma [bere-k na-i-bgar-(am)-s] v-ogn-i.

I.ABS child-ERG SUB-PRV-cry-IPFV-3SG 1SBJ-hear-PST.1SG

'I heard that the child {cries/is crying}.'

b. Ma [bere-k na-i-bgar-u] v-ogn-i.

I.ABS child-ERG SUB-PRV-PST.3SG 1SBJ-hear-PST.1SG

'I heard that the child {cries/is crying}.' or 'I heard the child crying.'

2.2. Overview of morpho-syntactic differences between Laz varieties

Variation across dialects in Laz mainly lies in their lexical inventory, pronoun, and demonstrative inventories, as well as in the formation of future tense and evidential verb forms (Holisky 1991: 397). The main point of divergence for our purposes, however, lies in the inventory

[8] This example is adapted from Atlamaz (2011: 143). The original example involves the verb *oditsinu* 'laugh'. I changed the verb to *obgaru* 'cry' for the sake of consistency.

of case markers in AL and the remaining other varieties of Laz, and the effects of this discrepancy on the syntax of the relevant varieties. This discrepancy stems from the loss of case morphology in AL as opposed to the case in other Laz varieties and South Caucasian languages. Table (7) demonstrates that AL stands as an outlier as it lacks case morphology marking core arguments:

Table 7: Partial paradigm of comparative case forms

	Standard Georgian	Standard Laz[9]	AL
Nominative	kac-i	koçi[10]	koçi
Narrarive/Ergative	kac-ma	koçi-k	koçi
Dative	kac-s	koçi-s	koçi

(from Harris 1985:388)

Like other South Caucasian languages, Laz exhibits an Ergative-Absolutive case alignment, where the core arguments are morphologically differentiated. The distribution of case markers in Laz, on the other hand, is directly dependent on the semantic properties of arguments rather than their functional properties as in the case of its sister languages. Ergative in Laz marks not only the subjects of transitives but also that of intransitives whose subjects bear the theta role of actor or initiator (14a, b), while theme arguments are not morphologically marked (14c). Thus,

[9] Standard Laz in Harris' study is intended to refer to all Laz varieties except for AL, not to a standard variety in its canonical sense.
[10] Harris (1985) argues that the epenthetic vowel *-i*, which comes at the end of consonant ending words, was the nominative case marker in Old Laz (p. 73).

case marking in Laz differentiates external vs. internal arguments rather than transitivity, rendering Laz as a language with a true active-ergative alignment (Woolford 2015, Demirok & Öztürk 2021).

(14) a. Bere-k tzari ş-um-s. ← Transitive Subject
child-ERG water.ABS drink-IPFV-3SG
'The child {drink/is drinking} water.'

b. Bere-k i-nçir-Ø-s. ← Intransitive with agentive subjects (unergatives)
child-ERG PRV-swim-IPFV-3SG
'The child {swims/is swimming}.'

c. Bere col-u(r)-n. ← Intransitive with theme subjects (unaccusatives)
child.ABS fall-IPFV-3SG
'The child {falls/is falling}.'

Arguments bearing the experiencer or benefactive theta role, on the other hand, are marked with dative case, which canonically marks indirect object arguments of ditransitives. (15a) shows us the canonical use of dative case marking the indirect object while (15b) exemplifies the use of dative on the subject of a psychological predicate, which obligatorily occurs in an inversion construction (c.f. applicatives Öztürk 2013). Lastly, (15c) illustrates that dative case marking also appears on the benefactor argument in high applicative constructions:

(15) a. Bere-k xordza-s çitabi ko-me-ç-u.
child-ERG woman-DAT book.ABS AFF-SP-give-PST.3SG
'The child gave the book to the woman.' (Indirect Object)

b. Bere-s nana-muşi a-limb-e(r)-n.

child-DAT mother-3SG.POSS APPL-love-IPFV-3SG

'The child loves his/her mother.' (Experiencer subject)

c. Bere-k nana-muşi-s dişka u-kvat-u.

child-ERG mother-3SG.POSS-DAT wood.ABS APPL-cut-PST.3SG

'The child cut wood for his/her mother.' (Experiencer/Applied object)

What is crucial for our purposes is that the theta-role dependent morphological differentiation has been neutralized in AL while the remaining Laz varieties still retain and exhibit an Ergative-Absolutive alignment. Since core arguments are not case marked in AL, it exhibits a neutral type of case alignment[11]. Table (8) summarizes the case patterns of Laz varieties:

Table 8: Distribution of case markers based on semantic roles in Laz

	Standard Laz[12]	AL
Agents/Causers	Ergative	Nominative
Theme	Nominative	Nominative
Experiencers/Benefactives	Dative	Nominative

(from (Öztürk 2019:4))

[11] Examples of AL are not provided here due to space restrictions. Relevant examples will be prevalently provided in the following chapters.

[12] Standard Laz here refers to all Laz varieties except for AL. In Öztürk's study, this table is provided only for PL and AL, but here I use it to include FL (as well as other Eastern dialects LaCroix 2009), which patterns with AL in terms of its case alignment.

The loss of the dative case marker in AL has also resulted in the reduction of the spatial case system of AL because dative is also used to mark location in Laz. The non-marking of location leads to ambiguities in certain cases as illustrated in (16), where the absence of locative case results in an additional reading only in AL but not in PL.

(16) a. Him mektebi on. (AL) b. Himu mektebi-s ren. (PL)
s/he/it school COP.3SG s/he/it school-LOC COP.3SG
i. 'S/he/it is at the school'. 'S/he/it is at the school.'
ii. 'It is a school.' (Eren 2023)

Table (9) presents the spatial case system of the relevant Laz varieties[13]. In addition to the loss of core case markers, the differentiation between allative and ablative case has also been neutralized in AL as opposed to the other varieties (see Kutscher 2010 for the conflation of allative and ablative in AL):

[13] AL also still retains its genitive and instrumental case and patterns with the other Laz varieties in this respect. See Harris (1985) for a phonologically conditioned account for the loss of the dative and ergative case in AL. If Harris' account is on the right track, it becomes clear why AL has retained only allative/ablative, genitive and instrumental, which are monosyllabic involving a nucleus while the lost case markers consist of a single consonant.

Table 9: Spatial case system of Laz varieties

Case	PL/FL	AL
Dative/Locative	*-s*	*-Ø*[14]
Allative	*-şe*	*-şa*
Ablative	*-şen*	*-şa*

The loss of case morphology in AL has also resulted in certain morpho-syntactic consequences, which differentiate it from other Laz varieties. One relevant affected domain is number agreement. (17a) shows that while AL exhibits full number agreement with theme subjects, PL shows optionality in this respect as shown in (17b)[15]:

(17) a. Bere-pe [col-ey/*-u] (AL)
child-PL fall-PST. 3PL/*3SG
'The children fell.'

b. Bere-pe [col-es/-u]. (PL)
child-PL fall-PST.3PL/3SG
'The children fell.' (Öztürk 2019: 13-14)

What is more crucial for our purposes at this point is the sentential properties of AL, on the one hand and PL and FL, on the other. The canonical word order in Laz is SOV but scrambling is licensed to a great extent due to the presence of case morphology. The loss of case morphology in

[14] See Kutscher (2008) for an analysis of the use of Turkish loan adverbial *yeri* 'place' to cover location in the AL variety of Laz as exemplified in (i). Note that the locative argument would be marked with the dative case in FL and PL. The use of the allative marker *-şe/şa* is also acceptable in all of the relevant varieties.

(i) ma ağaci yeri k-e-f-t-i.
I tree place AFF-SP-1SBJ-move-PST.1SG
'I climbed the tree.'

[15] Regarding number agreement, Öztürk (2019) argues that the loss of case morphology in AL has gone hand-in-hand with a loss of sensitivity to the semantic properties of subjects and as a result and it suffices for an argument to be "nominative to act as the structural subject of the construction, regardless of whether it is a theme or agent or causer argument" (p. 18). See Öztürk (2019) for further details about the loss of case morphology on agreement and the application domains of valency changing operations in AL.

AL has resulted in a more configurational syntax because it exhibits more rigid word order restrictions in comparison to PL and FL. (18) shows us that while scrambling of constituents is possible in PL (also in FL) due to the presence of case morphology, the switching of non-case marked arguments in AL is not licensed as switching of positions also corresponds to switching of syntactic functions associated with the arguments:

(18) a. {Fatma Ayşe /*Ayşe Fatma} bere me-ç-u. (AL)
Fatma.ABS Ayşe.ABS child.ABS SP-give-PST.3SG
'Fatma gave the child to Ayşe.'
Inverted order interpretation: 'Ayşe gave the child to Fatma'

b. {Fatma-k Ayşe-s /Ayşe-s Fatma-k} bere me-ç-u. (PL)
Fatma-ERG Ayşe-DAT child.ABS SP-give-PST.3SG
'Fatma gave the child to Ayşe.' (Eren 2023)

The rigidity of word order in AL, on the other hand, is only restricted to cases where agreement markers cannot differentiate between different syntactic functions, i.e., when all arguments are 3rd person, which is zero-marked on the verb. When agreement markers are overtly realized as in the case of 1st person subjects as shown in (19), AL patterns with other Laz varieties and allows for scrambling to the same extent.

(19) a. {Ma Ayşe./ Ayşe ma} bere me-p-ç-i. (AL)
I.ABS Ayşe.ABS child.ABS SP-1SBJ-give-PST.1SG
'I gave the baby to Ayşe.'

b. {Ma Ayşe-s/ Ayşe-s ma} bere me-p-ç-i. (PL)

I.ERG Ayşe-DAT child.ABS SP-1SBJ-give-PST.1SG

'I gave the baby to Ayşe.'

The asymmetry in terms of the scrambling possibilities between different argument configurations in AL also holds for the non-realization of arguments. Laz is a pro-drop language, i.e., arguments need not be overtly expressed thanks to the presence agreement markers. Therefore, when the features of one of the arguments in the sentence is overtly co-indexed on the verb as in (19), that particular argument can be dropped even in the absence of contextual information. However, in cases where all arguments are zero-marked on the verb as in (20), the pro-drop possibilities are more restricted in AL in comparison to other Laz varieties. In the absence of contextual background and phonological cues, the dropping of one argument gives rise to ambiguity only in AL but not in PL or FL due to the presence of case morphology. Although in both varieties the non-dropping of the object argument gives rise to the same meaning, i.e., Fatma gave the book to Ayşe, when this argument (Ayşe) is dropped, only the AL sentence bears an additional reading where Fatma is interpreted as the indirect object:

(20) a. Fatma (Ayşe) çitabi me-ç-u. (AL)

Fatma.ABS Ayşe.ABS book.ABS SP-give-PST.3SG

i. 'Fatma gave the book to him/her/it.'

ii. 'S/he gave the book to Fatma.'

b. Fatma-k (Ayşe-s) çitabi me-ç-u. (PL)

Fatma-ERG Ayşe-DAT book.ABS SP-give-PST.3SG

'Fatma gave the book to him/her/it.'

To recap, the main morpho-syntactic differences between the three Laz varieties lie in nominal morphology, specifically case morphology, and the effects of the loss of case morphology on its word order flexibility and contextual dependency. All three varieties, on the other hand, pattern with one another to a great extent as far as verbal morphology is concerned.

3. Typological properties of Laz and Turkish morpho-syntax

As far as linguistic variation is concerned in the context of endangered languages, it is usually hard to uniquely attribute a particular change or difference to a single factor. Rather, a number of different factors are at issue, which involve but are not limited to language attrition, interrupted acquisition, speaker innovation and pre-existing dialectal variation (Kantarovich 2020 and references therein). One significant factor underlying the linguistic variation and change observed in heritage languages is concerned with transfer effects from the dominant language of heritage speakers. Transfer effects are invoked, for instance, especially for the syntactic properties such as word order differences as well as the (c)overt realization of sentential arguments (see Polinsky 2018, Chapter 6 for a survey). Language transfer is particularly important in the context of heritage languages because it is often observed that heritage speakers amplify a trend that has already come about in the baseline variety (parental or second-generation speakers) due to linguistic transfer between the languages in their repertoire. For word order in Heritage Egyptian

Arabic, see Albirini et al. (2011); DOM in Heritage Spanish: Montrul, Bhatt and Girju (2015); and pro-drop in Heritage Spanish: Otheguy et al. (2007).

Typological properties of the contact languages inform and allow us to make predictions about the nature and direction of change in heritage languages. Given the extensive contact between Laz and Turkish since the Ottoman times and given that Turkish has become the dominant language of the majority of Laz speakers due to language shift, this section aims to provide an overview of the general typological differences and similarities between Laz and Turkish,

Despite being genetically unrelated, Turkish (Altaic/Turkic) and Laz (South Caucasian) share many features in common. The points of convergence between the two languages are mostly related to word order. Exhibiting a head-final phrase structure[16], the canonical word order is SOV in both languages, which also allow for scrambling thanks to the presence of overt case morphology marking core arguments (except for AL as previously mentioned[17]). In other words, despite the difference in case alignment, both Laz (ERG-ABS) and Turkish (NOM-ACC) exhibit variations in the order of the main constituents in the sentence. All of the three arguments of the ditransitive verb can be placed in any order in both languages as shown in (21) for Laz and in (22) the Turkish counterparts:

[16] See Eren (2015) for an analysis of the nominal structure in PL and Öztürk and Eren (2021a) for an extension of that analysis to other Caucasian languages.
[17] See Öztürk (2019) for the morpho-syntactic effects of the case morphology in AL and its relation to the Event Typology proposed by Ritter and Rosen (2000).

(21) a. Ali-k Ayşe-s çitabi ko-me-ç-u.

Ali-ERG Ayşe-DAT book.ABS AFF-SP-give-PST.3SG

'Ali gave the book to Ayşe.'

b. Çitabi Alik Ayşes komeçu.

c. Alik çitabi komeçu Ayşes.

d. Ayşes çitabi Alik komeçu.

e. Alik komeçu çitabi Ayşes.

f. Komeçu Ayşes Alik çitabi. (PL-Göksel 2011: 148)

(22) a. Ali Ayşe-ye kitab-ı ver-di.

Ali.NOM Ayşe-DAT book-ACC give-PST.3SG

b. Kitabı Ali Ayşeye verdi.

c. Ali kitabı verdi Ayşeye.

d. Ayşeye kitabı Ali verdi.

e. Ali verdi kitabı Ayşeye.

f. Verdi Ayşeye Ali kitabı. (Turkish)

The existence of different permutations of main arguments in a sentence does not necessarily mean that Laz and Turkish exhibit free word order. The relevant changes in word order often lead to differences in information structure, together with sentential stress, which falls onto the immediately preverbal constituent in both languages. Therefore, the contrasted or highlighted constituents as well as the new-information seeking elements such as *wh*-words typically occur in this particular position (Göksel 2011: 149). Although neither the stress patterns

nor information structural properties of different Laz varieties have been well-studied thus far, it turns out that both languages do not license the positioning of wh-words in the post-verbal position as shown in (23), which is reserved for recoverable (old) information (see Kural 1994, Göksel 1998, Göksel & Özsoy 2000 for a discussion on the focus field in Turkish).

(23) a. *Çitabi Ayşe-s ko-me-ç-u mi-k?
book. ABS Ayşe-DAT AFF-SP-give-PST.3SG who-ERG
Int: 'Who gave the book to Ayşe?' (PL)

b. *Kitab-ı Ayşe-ye ver-di kim?
book-ACC Ayşe-DAT give-PST.3SG who.NOM
Int: 'Who gave the book to Ayşe?' (Turkish)

As for the overt realization of the core arguments, both Laz and Turkish license the dropping of arguments thanks to having a rich verbal agreement system. While the features of both subject and object are cross-referenced on the verb in Laz, Turkish only exhibits subject-verb agreement. Despite this difference, both languages feature and license pro-drop as shown in (24) and (25) as long as the features of the omitted arguments can be recovered from the agreement markers as well as contextual factors (possibilities see Taylan 1986 and Öztürk 2002, 2006 for a discussion on pro-drop in Turkish).

(24) a. (Ma) (si) ce-k-ç-i. b. (Si) (ma) ce-m-ç-i.

I.ERG you.ABS SP-2OBJ-beat-PST.1SG you.ERG me.ABS SP-1OBJ-beat-PST.2SG

'I beat you.' 'You beat me.' (PL)

(25) a. (Ben) sen-i[18] döv-dü-m. b. (Sen) ben-i döv-dü-n.

I.NOM you-ACC beat.PST-1SG you I-ACC bear-PST-2SG

'I beat you.' 'You beat me.' (Turkish)

Recall that the agreement between the verb and its arguments is morphologically manifested on both the prefixal and suffixal domain of the verbal template in Laz, which constitutes one significant aspect of divergence from Turkish. Unlike Turkish, Laz relies heavily on prefixation (and circumfixation, albeit lower in frequency) both in the nominal and verbal domain (see Kaya 2011: 37). Turkish, in contrast, is a suffixing-only language because it features a quite limited set of prefixes, which are (almost[19]) all borrowings from other languages such as Arabic and Persian (see Göksel & Kerslake 2005: 67 for a full list of loan prefixes).

One of the domains in which the discrepancy between the two languages in terms of prefixation becomes clear is concerned with the expression of spatial relations. Recall that the main means of expressing location and direction in Laz is the complex set of spatial prefixes that attach to the verb. Arguing that these prefixes encode the path (i.e., direction) information in the Motion Event Typology proposed by Talmy (2000a,b), Kutscher (2010) argues that Laz belongs to the class of satellite-framed languages[20]. The term *satellite* in the relevant typology refers to

[18] Given the appropriate context, pro-dropping of objects is also licensed in Turkish.

[19] The only exception to this could be the intensified adjectives that are derived via partial reduplication as in *ince* 'thin' → *ip-ince* 'very thin'. However, the particular shape of the so-called prefix changes depending on the properties of the relevant adjectives.

[20] Based on the co-occurrence restrictions between the spatial prefixes and motion verbs, Eren (2017) argues that Laz does not belong to the class of satellite-framed languages. Building on this analysis, Öztürk and Eren (2021b) argue that it constitutes a new class, i.e., weak verb-framed, and complements Acedo-Matellán's typology (2016).

grammatical units that are associated with the verb such as particles in English (*go+up, down*). Lacking prefixation of any sort, the path or direction information is encoded in the verbal root in Turkish, which is therefore classified as a verb-framed language in the relevant typology. Turkish also lacks the suffixal counterparts of spatial prefixes, as well. (26a) and (26b) exemplify these facts respectively for Laz and Turkish. Note that while Laz pattern (26a) is reminiscent of English verb + particle combinations, e.g., *go up, go down*, Turkish pattern (26b) is of the Latinate verbs in English such as *ascend*, *descend*, and *enter*. Also notice that both languages additionally feature postpositions which serve to further specify the direction and location of movement (26a, b).

(26) a. Bere {oxori-s /oxori-şi doloxe} ama-xt-u.
child.ABS house-DAT / house-GEN inside SP(into)-move-PST.3SG
'The child went into the house.' (PL)

b. Çocuk {ev-e /ev-in iç-in-e} gir-di.
child.NOM house-DAT /house-GEN inside-3SG.POSS-DAT enter-PST.3SG
'The child entered the house.' (Turkish)

Lastly, one of the main differences between Laz and Turkish that is important for our purposes concerns the formation of subordinate clauses. While embedded clauses are mainly non-finite in nature due to involving nominalization in Turkish as shown in (27b), the main strategy in Laz is to mark the embedded finite verb with the subordinator *na-*[21] as in (27a). (Emgin 2009 for an analysis of finiteness and complementation patterns available in Laz). Although PL has been noted to have borrowed the non-finite complementation pattern from Turkish (Emgin 2009, Emgin

[21] Both languages also exhibit an Indo-European pattern (clause initial) with the (Persian) loan complementizer *ki/çi*, which is the counterpart of the English complementizer *that*.

& Öztürk 2011a,b) as exemplified in (27c), this pattern seems not to be common because i) it is only available in control clauses with the verb *ogoru* 'want' as the matrix predicate in PL[22], and ii) it does not exist in other Laz varieties.

(27) a. Ma [Ali na-mo-xt-u] v-ogn-i.
I.ABS Ali SUB-SP-move-PST.3SG 1SG-hear-PST.1SG
'I heard that Ali came.' (PL)

b. Ben [Ali-nin gel-diğ-in-i] duy-du-m.
I.NOM Ali-GEN come-NMLZ-3SG.POSS-ACC hear-PST.1SG
'I heard that Ali came.' Lit: 'I heard Ali's coming.' (Turkish)

c. Ma [Ali-şi çitabi Ayşe-s oçume meçamu-muşi] b-gor-um.
I.ERG Ali-GEN book.ABS Ayşe-DAT tomorrow give-3SG.POSS 1SG-want-IPFV.1SG
'I want Ali to come.' (glosses are mine) (Emgin & Öztürk 2011a: 132)

With this, we are done with the typological properties of Laz and Turkish, which are significant for our purposes in the present dissertation. The relevant facts, which allow us to make predictions about the current state of the Laz grammar as well as the heritage variety, are summarized in Table (10).

[22] This pattern was not attested at all in my free narrative data.

Table 10: Typological properties of Laz and Turkish morpho-syntax

	Laz	Turkish
Language Family	South Caucasian	Altaic
Morphology	Agglutinative: prefixing and suffixing	Agglutinative: only suffixing
Case alignment	Ergative-Absolutive (except for AL)	Nominative-Accusative
Motion Event Typology	Satellite-framed (Kutscher 2010), Weak verb-framed (Öztürk & Eren 2021b)	Strong verb-framed (Talmy 2000a,b)
Phrase Structure	Head final	Head final
Word order	SOV (scrambling licensed)	SOV (scrambling licensed)
Verbal agreement & Pro-drop	Subjects & Objects	Subjects

CHAPTER 3

HERITAGE LANGUAGES & FREE PRODUCTION TASK

This study aims to investigate the current state of Laz grammar and the synchronic variation it exhibits, along with the changes that generated it. For this purpose, Laz is treated as a heritage language (§ 1.1) and the grammar of Laz spoken by third generation speakers, i.e., Heritage Laz speakers, are compared and contrasted with that of first- and second-generation speakers, i.e., baseline speakers, in terms of their morpho-syntactic features.

In order to minimize the effect of existing dialectal variation, which is a significant factor at play in the synchronic variation of Laz, three particular varieties of Laz are analyzed, namely PL, AL, and FL. There are two main reasons for this choice: i) As the best-described variety of Laz, PL requires the least efforts to do preliminary fieldwork, and this way, also allows us to make predictions regarding the current state of the Laz language as well as FL, which has many linguistic features in common, and ii) AL, which is relatively better described than the other varieties, stands as an outlier among other varieties due to the loss of its morphological case system.

The aim of this chapter is to set the ground for presenting the results on the free narrative task, namely, the Frog Story (Mayer 1969), which I use in order to i) understand to what extent heritage Laz speakers pattern with or differ from heritage speakers of other languages as well as baseline speakers of Laz (Chapter 4), ii) investigate the linguistic proficiency of Laz speakers along with the endangerment of Laz in a systematic way (Chapter 5), and iii) identify the current status of the Laz grammar by way of listing the vulnerable domains of Laz grammar in the heritage variety (Chapter 6).

To this end, I firstly present an overview of related literature on heritage language grammars and common characteristics of heritage speakers (§ 1). Informed by the crosslinguistic

literature, in § 2, I then proceed to presenting the specifics regarding the free production task along with the hypotheses I assume with regards to the current state of the Laz grammar as it is spoken by heritage speakers.

1. General properties of heritage languages

This section aims to provide a summary of the related literature regarding heritage languages and crosslinguistic properties of heritage speakers, which inform and allow us to make certain predictions about heritage Laz speakers and grammar. Following Valdés (2000), Scontras et al. (2015: 2) define heritage speakers as "individuals who were raised in homes where a language other than the dominant community language was spoken, resulting in some degree of bilingualism[1] in the heritage language and the dominant language". The heritage language is often the first language a child is exposed to, usually only in the home and familial settings. However, this initial exposure is interrupted and, in some cases, fully stopped as a result of a switch to the majority language, which is often the socially and politically powerful language (Kouritzin 1999).

As a result of this interrupted or arrested acquisition process, heritage grammars have been referred to as divergent, reduced or even *incomplete* versions of their corresponding full-fledged baseline varieties. Variation in heritage languages themselves is also immense because heritage speakers greatly differ from one another in terms of i) the particular stage of their linguistic development at which this interrupted acquisition takes place, and ii) what aspects of their

[1] This definition is referred to as the 'narrow conception' of heritage speakers and it stands in contrast with a broader definition of heritage speakers, which is more inclusive in that no linguistic fluency or competence is assumed. In this latter definition, the focus is more on the cultural connections with a language, therefore, someone whose (grand-) parents speak a language can be referred to as a 'heritage speaker' of that language by virtue of being culturally connected to that language even in the absence of any linguistic knowledge about it (Polinsky & Kagan 2007, Laleko 2010).

grammar are affected by insufficient input, resulting in immense heterogeneity across heritage speakers. Nevertheless, despite this immense variation, the general argument in the literature is that heritage grammars should be viewed as rule-governed and systematic linguistic systems (Polinsky 2005: 352, Laleko 2010: 10). This section therefore aims to provide a background on heritage languages in general with the ultimate purpose of understanding how their internal systems can be characterized and investigated.

1.1. Main sources of divergence and individual variation in heritage languages

Montrul (2016, Chapter 7) highlights the similarities between heritage language and (monolingual) L1 acquisition. Although heritage grammars are natively acquired linguistic systems with their own systematic and consistent properties, it is, however, often the case that they differ from the grammar of monolinguals in significant respects. The main reasons of this divergence can be listed as follows: i) transfer from the dominant language, ii) language attrition, iii) divergent attainment (see Polinsky 2018, Section 1.3 for an extensive discussion). Though the first two terms are to some extent self-explanatory, the last term is worth a brief elaboration as it has been proposed as an alternative to a previously used yet stigmatized one. Due to reduced interactions in their L1, mostly caused by language shift, heritage speakers are exposed to reduced input in comparison to monolingual speakers, eventually rendering their acquisition *incomplete*. The *incomplete* acquisition was argued to be the main source of divergence between heritage languages and their corresponding full-fledged languages. Due to the negative connotations associated with the term *incomplete acquisition* (Putnam & Sanchez 2013, Kupisch & Rothman 2018), Polinsky puts forward and replaces it with *divergent attainment*.

This term is important in showing us the significance of the quality and quantity of input in shaping the overall final state of a grammar. The immense inter-individual variation and heterogeneity among heritage speakers is mainly related to differences in timing, quality, and quantity of input (Aalberse et al. 2019, Chapter 6 for an extensive discussion). More specifically, factors that lead to a change in the ultimate attainment of heritage languages can be listed as follows: i) age of onset of the second language, ii) time spent in the homeland during childhood, iii) parental language strategy and modes of speech, iv) sibling birth order[2], and v) caretaker background, e.g., whether grandparents take care of children or not.

Bohman et al. (2010) show that the ultimate attainment in L1 is equally dependent on the actual use of the language as much as it is on the linguistic input characterized by the factors listed above in the early stages of acquisition. Therefore, in investigating heritage languages, one also needs to take into consideration the following factors: i) language use patterns, ii) domains of language use (Fishman 1991), iii) social embedding in the multilingual community, such as settlement patterns and immigrant networks, language prestige, attitudes, language ideology and power relations and so on.

Elaborating on the effects of each of these factors goes well beyond the scope of this dissertation but suffice it to say at this point that a subset of these factors is usually taken into consideration in studies dealing with heritage languages. In addressing the issue of linguistic variation in heritage languages, Polinsky & Kagan (2007: 370-371) stresses the fact that linguistic variation inevitably exists in any linguistic variety, and "heritage languages are no exceptions". They further suggest that heritage languages typically exhibit a greater range of variation than the

[2] This might not a reliable factor, as different children in the same family can have differing attitudes to their heritage language, owing to different personalities and who they socialize with outside the home (Salikoko Mufwene p.c.).

languages of baseline speakers, sometimes to the extent that they have been argued to lack systematicity, hence are *incomplete*[3].

As an attempt to deal with and represent the individual variation and heterogeneity within heritage speakers, a continuum approach has been adopted in certain studies. Following the tradition in creole studies (Bickerton 1973, Rickford 1987). Polinsky (1996), for instance, classifies Russian heritage speakers into three different groups as *acrolectal*, *mesolectal* and *basilectal* speakers, with language proficiency decreasing respectively[4]. Acrolectal speakers are, therefore, those that are closest to baseline speakers in terms of language proficiency while basilectal speakers refer to the "lowest-proficiency speakers," involving overhearers and passive bilinguals (Polinsky & Kagan 2007: 371, Laleko 2010:12).

1.2. Common characteristics of heritage languages

This section aims to provide a concise overview of the common linguistic characteristics of heritage languages as well as the typical characteristics of the linguistic skills of heritage speakers. As stated earlier, there is a wide range of variability in the linguistic proficiency of heritage speakers, and this is evident not only in their receptive and productive language skills (reading, listening, and writing, speaking respectively) but also in their mastery of different modules of grammar (Montrul 2016: 48). It is also often the case that, like L2 speakers, heritage

[3] This also holds for creole-speaking communities even if the creole is not endangered (Salikoko Mufwene p.c.).
[4] These terms are traditionally associated with decreolization studies, where they are also in correlation with social stratification; a basilect is the least similar variety to the lexifier and is spoken by the least educated speakers while the opposite holds for an acrolect. Mufwene (1997a, 1997b, p.c.), on the other hand, argues that continuum can hold for any speech community and thus it has nothing specifically to do with creoles per se. The use of these terms is different in Polinsky (1996) in that there is no specific reference to social stratification and socioeconomic or educational conditions.

speakers perform differently in certain comprehension and production tasks, showing that divergence is also observed within the same speaker, as well as across different heritage speakers.

Despite this immense variation, there are general properties that are associated with heritage languages. In addition to having lower lexical proficiency, heritage speakers generally favor i) analytical forms over synthetic ones as the former are more transparent[5] by virtue of allowing a more direct mapping between form and meaning (Polinsky 2018: 183); ii) overt forms over covert ones (known as The Silent Problem; Laleko & Polinsky 2017) as the absence of form makes it harder to establish a one-to-one mapping between form and meaning; iii) compositionality over idiosyncrasy, which often lead them to interpret idioms based on the meanings of the words rather than their idiosyncratic meanings (Polinsky 2018, Section 7.1) and also to become innovative and create new constructions not present in the baseline varieties (Backus 1996, Doğruöz & Backus 2009); and lastly, iv) juxtaposition of simple clauses rather than subordination, yielding cases of coordinated simple clauses rather than complex ones (for Heritage English, see Polinsky 2018, Chapter 2).

The rise of analyticity and compositionality in heritage languages has been usually tied to the elimination of inflectional and irregular or syncretic morphology. Morphology is one of the most vulnerable areas as far as heritage attrition is considered; heritage speakers tend to i) simplify/reduce certain distinctions such as using fewer case-marked forms (for Heritage Russian, see Polinsky 2006, 2008), ii) regularize irregular distinctions and over-regularize certain markers such as plural (for Heritage Greek, see Zobolou 2011; and for Heritage Palestinian and

[5] Salikoko Mufwene (p.c.) pointed out that agglutinative morphosyntax is not necessarily more transparent than (poly)synthetic morphology, except in the case of portmanteau morphemes. Transparency needs to be understood as the extent to which there is a one-to-one mapping between form and meaning. It might therefore be better to discuss or define it in reference to specific constructions under investigation rather than making generalizations about a language or groups of languages altogether as being more or less transparent than others.

Egyptian Arabic, Benmamoun et al. 2014), and iii) omit or even do away with certain inflectional markers such as case endings (for Heritage Korean nominative and accusative, Song et al. 1997; Heritage Hindi ergative, Montrul, Bhatt & Bhatia 2012).

As far as morphology is concerned, verbal morphology is more resilient than nominal morphology. The difference is best manifested in agreement patterns; heritage speakers tend to do less well with agreement in the nominal domain in comparison to verbal domain, i.e., agreement between the verb and its arguments (Bolonyai 2007, Albirini et al. 2011). Within the verbal domain, particularly vulnerable are aspectual markers and forms (especially imperfective), which are more subject to overregularization and omission in comparison to tense and agreement (Polinsky 2006, Laleko 2010).

The erosion of case and agreement markers has certain consequences, especially for the basic clause structure and pronominal reference in heritage languages. Due to the interaction between these inflectional markers and word order, heritage languages tend to show a preference for canonical or rigid word order, having difficulty with scrambled or non-canonical word orders (Heritage Spanish and Romanian, Montrul, Bhatt & Girju 2015; Heritage Arabic, Albirini et al. 2011). Another syntactic domain in which heritage speakers diverge from baseline speakers is concerned with long distance dependencies. Kim, Montrul and Yoon (2009) show that Heritage Korean speakers favor local dependencies over long-distance ones in reflexive constructions. Likewise, passive constructions have been shown to pose challenges to heritage speakers (for Heritage Russian; see Polinsky 2009; for Heritage German; see Putnam & Salmons 2013).

The most vulnerable areas in heritage languages are those that involve the interaction of different modules, that is, the interface phenomena. The *Interface Hypothesis* (Tsimpli & Sorace 2006, Sorace 2011) is often cited in studies on heritage languages and states that interface

phenomena “pose processing problems and thus are more vulnerable than aspects of the language that operate within one module.” (Aalberse et al. 2019: 151). Interface phenomena are those which involve the interaction of different modules of language such as phonology, morphology, syntax, and semantics along with the interaction of these (language-internal) modules with non-linguistic or external modules, such as their interfacing between pragmatic or discourse-related factors. Initially proposed for L2 acquisition and then extended to heritage language studies, the Interface hypothesis states that the interfacing with external components is more likely to pose (more) challenges to heritage speakers than the interfacing between/within (more) internal components such as, the syntax-semantics interface.

A nice illustration of the application of the hypothesis to heritage languages comes from the increasing level of divergences attested between Heritage Spanish speakers (in the Netherlands) and monolingual Spanish speakers with respect to mood distinctions. Van Osch et al. (2017) investigate the Spanish mood in three different contexts: when the mood of embedded clauses i) is lexically selected (by the matrix predicates; epistemic verbs require indicative while volitional ones subjunctive), ii) is semantically constrained (by the specificity features of the head noun in relative clauses), and lastly, iii) is dependent on pragmatic considerations (such as the commitment of the speaker to the truth of the propositional content in the embedded clause). Details aside, Van Osch et al. (2017) show that the divergences between heritage speakers from monolingual speakers respectively increase from the last context to the first. Assuming that the relevant three uses of Spanish mood respectively pertain to i) a purely syntactic mechanism, ii) an internal interface phenomenon between syntax and semantics, and iii) an external interface phenomenon (between syntax and pragmatics), the authors argue that the relevant findings can be neatly accounted for under the Interface Hypothesis, which is summarized as in (28):

(28) Interface Hypothesis: *Narrow syntax> Internal Interfaces > External Interfaces*

The fact that the interface phenomena pose challenges to heritage speakers is further evidenced by the difficulty heritage speakers have in i) the unergative-unaccusative distinction, i.e., an internal interface phenomenon between syntax and semantics, (Heritage Spanish, Montrul 2006; Heritage Korean, Lee 2011), and ii) null anaphora resolution in certain pro-drop languages (an external interface phenomenon between syntax and pragmatics) (see Polinsky 2018: 253-262 and Montrul 2016: 80-81 for an overview).

Lastly, the lexical repertoire of heritage speakers has been reported to be restricted in comparison to baseline groups due to exposure to reduced linguistic input and interrupted acquisition (see Montrul 2016, Section 3.2. for an overview). For unbalanced bilingual speakers, it has also been claimed that one strategy to compensate for the inadequacy of lexical knowledge is to borrow from the dominant language, which yields cases of code-mixing (intra-sentential switches between languages) and/or code-switching (inter-sentential switches) (Bernardini & Schlyter 2004, Park-Johnson 2017)[6]. Despite being characteristic of bilingual speech, the issue of code-mixing and code-switching has not been well studied in a systematic way in the context of heritage languages, which leaves us with the assumption that heritage speakers' code-mixing and code-switching practices would be in line with those of bilingual speakers, especially unbalanced ones (Polinsky 2018: 293).

[6] Salikoko Mufwene (p.c.) pointed out that this distinction is not adopted in current approaches to mixed utterances.

1.3. Implications of heritage language studies for linguistic theory

Heritage languages present an interesting testing ground for certain linguistic phenomena and inform the theoretical literature, usually by way of lending support for one theoretical analysis over an alternative one. Benmamoun, Montrul & Polinsky (2013) (BMP 2013 henceforth), for instance, suggest that data from heritage languages support the nature of ergative as a structural case as opposed to an inherent one. This argument relies on the observation that structural cases are less preserved in heritage languages than inherent cases and Hindi ergative case patterns with structural cases like accusative, rather than inherent dative, in terms of omission rates.

Data from heritage languages provide evidence for theories that argue for dissociation between agreement and Case. The extent to which structural case and (subject-verb) agreement markers are maintained in heritage languages is different; the latter is more resilient than the former. If case and agreement licensing were connected, one would expect them both to pattern together in terms of omission rates in heritage languages. Since heritage language data provide counterevidence to this, BMP (2013) conclude that the model of Case licensing should be separate from that of agreement licensing.

As stated earlier, subject-verb agreement is more resilient than nominal agreement in heritage languages. In dealing with this difference, BMP (2013) further note that a similar asymmetry also holds between subject-verb and object-verb agreement in that the latter is more vulnerable than the former in heritage languages. One possibility that they discuss is concerned with subject-verb agreement being a PF phenomenon in languages like Arabic and Hungarian; a well-formed verb needs to bear subject-agreement markers whereas no such requirement exists for object-verb and nominal agreement. In accounting for the asymmetry between verbal and nominal agreement in terms of resilience in heritage languages, Montrul et al. (2012) propose a similar

analysis and argue that while verbal morphology is a reflection of syntactic structure, nominal morphology is post-syntactic, i.e., the relevant grammatical operations take place after Spell-Out in the Distributed Morphology framework. The authors conclude that "language attrition in childhood affects post-syntactic operations, while sparing syntax" (p. 146).

Lastly, regarding the asymmetry between subject-verb agreement and structural Case in terms of maintenance in heritage languages, i.e., the latter being more preserved than the former, BMP (2013) suggest that subject-verb agreement is in some sense like an interpretable feature. This argument mainly relies on the fact that in null-subject languages, the content of null subjects is mainly recovered based on subject-verb agreement. Being non-interpretable, structural Case is, on the other hand, less resilient than subject-verb agreement in heritage languages.

2. Free narrative task and the basics of methodology

Informed by the literature on heritage languages surveyed in the previous section, the main aims of this task are the following: i) to identify the proficiency level of Laz speakers, ii) to understand if their level of proficiency in Laz is correlated with their age and settlement patterns in their childhood (village, town, or both), and, more importantly, iii) to identify the main characteristics of heritage Laz speakers and the general linguistic properties of heritage Laz by comparing the heritage speakers with the baseline group.

Previous studies of Laz have thus far relied only on self-proficiency reports (Haznedar et al. 2018) and researchers' observations (Kutscher 2008) to argue that the inter-generational transmission of the Laz language has significantly decreased over time, leading it to be on the verge of extinction. Engaging Laz speakers from all three generations in the same task and comparing their performances allows us to systematically investigate and demonstrate language

shift. In order to eliminate the effect of any potential factors on the performances of the speakers, a picture-based free narrative task was chosen, where there were no restrictions with respect to time, grammatical constructions, vocabulary, and code-mixing, i.e., use of Turkish words and phrases while speaking mainly in Laz.

A total of 73 participants in the present study completed the free narrative task. The total number of participants who participated in this task was indeed 98. However, it turned out that 25 recordings needed to be eliminated due to the following reasons: i) Elderly participants could not identify what is depicted in the pictures and asked clarification questions, resulting in too many interruptions and/or code-switching (to Turkish) to address the researcher. ii) Another Laz speaker interrupted the narrator to make corrections or comments, iii) Some heritage speakers turned out to be passive speakers completing the task mostly in Turkish. These cases have not been involved in the statistical analyses. The demographics of the participants are as in Table (11).

Table 11: Demographics of the participants

Sociolinguistic Variables		# of participants (N=73)	Percentage (%)
Gender	Male	44	60.3
	Female	29	39.7
Hometown	Ardeşen	22	30.1
	Fındıklı	13	17.8
	Pazar	8	11.0
	Çamlıhemşin	30	41.1
Settlement type in childhood	Village	30	41.1
	Village & Town	32	43.8
	Town	11	15.1
Age	<20	6	8.2
	21-30	15	20.5
	31-40	16	21.9
	41-50	17	23.3
	51-60	12	16.4
	60<	7	9.6

Note that onset age of bilingualism is taken to be 6 or 7 in the baseline group as it is the age compulsory primary school education starts in Türkiye and the majority of this group of speakers expressed that their level of proficiency in Turkish was almost none before starting school. For heritage speakers, on the other hand, the onset of age of bilingualism coincides with

birth because by the time they were born their parents have already shifted to Turkish even at their home settings.

The participants were given the story book titled *Frog, where are you?* (Mayer 1969), which solely consists of series of pictures (crucially no accompanying words) depicting the adventures of a young boy looking for his pet frog. This book has previously been extensively used in the literature for linguistic fieldwork purposes and other language-related scientific studies (Klamer & Moro 2020 and references therein; CHILDES corpora).

Recordings were transcribed by two native Laz speakers who are also literate in Laz[7]. The relevant data points were then tagged and counted mainly based on the transcriptions, and also on the recordings when needed (especially in the identification of sentence/phrase boundaries). Translation and the linguistic annotation of the data were completed in collaboration with the members of Laz community; for each variety of Laz examined here, at least two native speakers of that variety were consulted to eliminate any potential mistakes or misinterpretations that could stem from dialectal variation.

The aspects of Laz grammar that were annotated and statistically examined involve the following: i) the number of Laz content words, ii) valency changing operations, iii) use of spatial prefixes and postpositions, iv) subordinate clauses (complement, relative and adverbial), v) aspectual distinctions, continuous (=imperfective) and past (=perfective) tense usage. The choice of these grammatical aspects has been motivated mainly by the literature on heritage languages laid out in the previous section and the existent literature on Laz surveyed in Chapter 2, which has

[7] There is neither a standard variety of Laz nor a standardized writing system. To maintain consistency between the transcribers, they were first instructed about the main points of writing norms that are used in recent Laz publications. Despite this, the lack of standard writing system caused certain issues during the annotation of the data, which shows the significance of at least a standard writing system (if not a standard variety) for scientific studies as well as the digitalization of the Laz language.

allowed to make certain hypotheses about what aspects of Laz grammar might be more vulnerable to change, in what direction and why.

Additionally, the free production task also yielded a number of cases of code-mixing, i.e., the embedding of linguistic units (from Turkish) into an utterance of another language (Laz). This allowed us to examine the code-mixing patterns of Laz speakers in a systematic way to the best of my knowledge. The free production task was also fruitful in yielding naturally occurring deviant forms (c.f. errors[8]) especially by heritage speakers and also by certain (low-proficient) baseline speakers, albeit low in number in this latter group. Lastly, the database obtained from the free production task also made it possible to examine the linguistic phenomena beyond and between sentences such as resolution of bound anaphora in cases of pro-drop and word order variations conditioned by information structure.

One significant aspect of the free production task concerns its role in determining the proficiency level of the participants in studies on heritage languages. Speech rate, i.e., the average number of words uttered per minute, has been mostly calculated based on participants' performance in free narrative tasks (see Polinsky 2018, Section 3.3.2 for an overview). Speech rate has also been used for measuring linguistic proficiency and it has been reported to be correlated with proficiency in certain grammatical variables (Polinsky 2008) as well as the breadth of lexical repertoire (Kagan & Friedman 2003). Following this line of research, I also consider the possibility of measuring proficiency based on speech rate and contrast this with another measure, namely, lexical proficiency which is determined based on the number of Laz content words produced during the completion of this free narrative task.

[8] Given the negative connotations associated with this term, I choose to use the term *deviant forms*.

For all of the grammatical variables except for complex clauses, in order to eliminate any potential differences that would arise as a result of length, the (raw) number of the relevant constructions were rated (divided by) according to the relevant length indicators: Total number of finite verbs was used for the number of (finite) verbs bearing spatial prefixes, past and continuous tense, or valency change marker and the total number of sentences was taken as the basis for the calculation of rate of code-mixing.

The total number of complex clauses is not rated against some measure of length because as opposed to the other grammatical variables, it is less likely to be affected or dependent on length of the narrative. Consider the number of finite verbs in past/continuous tense or code-mixing: The longer you speak, the more likely it becomes for you to produce more sentences, and thus more past/continuous marked verbs. The same could also be argued to hold for code-mixing. Yet, there is no such expectation as far as the number of embedded clauses are concerned as evidenced by the absence of any complex clauses in the production of certain baseline speakers, whose narration was longer than others in the same group or than the majority of heritage speakers. Additionally, there is nothing about the Frog Story that makes it necessary to construct complex clauses, as opposed to valency changing operations, which become necessary if one wants to focus on and narrate certain details in the story in Laz as shown in Chapter 4 (§ 4). Not all speakers have focused on such details. Yet, observing that the length of the narration was longer for those who did so, I decided to take into consideration the rate of valency changing operations according to length.

2.1. Aims and predictions

The main aims of this dissertation involve identifying the current state of the Laz grammar along with the general linguistic properties of heritage Laz speakers as well as investigating the endangerment of Laz in a more scientific way. Based on the research questions listed in Chapter 1 and in light of the related literature on crosslinguistic studies on heritage languages surveyed in the previous section, the following hypotheses are assumed in relation to the free narrative task, the results of which are presented in the following three chapters, i.e., Chapter 4 (Divergences between Heritage and Baseline Laz Speakers), Chapter 5 (Linguistic Proficiency and Endangerment of Laz) and Chapter 6 (Deviant Forms and Linguistic Variation in Heritage Laz):

i) Given that lexical proficiency can be used to gauge grammatical knowledge (Montrul 2016: 53, Polinsky 2018: 292), lexical proficiency is expected to be corelated with certain grammatical variables, especially with the production rate of spatial prefixes (Kutscher 2008), valency related operations and complex clauses involving subordination, which are reported to be attested less in heritage production (Heritage English, Polinsky 2018: 47; Heritage Turkish, Verhoeven 2004: 439).

ii) Given the endangerment of Laz and its low rate of intergenerational transmission (Chapter 2), it is predicted that those who are older and/or reside(d) in (higher altitude) villages rather than towns (or cities) during childhood will have higher levels of linguistic proficiency in Laz.

iii) It is hypothesized that the most vulnerable areas of Laz grammar are verbal morphology in all varieties of Laz examined here and nominal morphology, specifically case morphology, in FL and AL. As far as the first is concerned, given that Laz is both prefixing and suffixing while Turkish is only suffixing, it is predicted that valency

changing operations and spatial prefixes will be subject to change and/or loss because they both precede, rather than follow, the verb. As for nominal morphology, ergative marking is expected to be dropped in heritage production as it does not exist in their dominant language.

iv) It is expected that the lexical inventory of heritage Laz speakers will be more limited in comparison to the baseline group. Additionally, the inadequacy of lexical knowledge is expected to be compensated by inserting of linguistic units from Turkish, that is, the rate of code-mixing is expected to be higher in the heritage group.

2.2. Basics of the statistical analyses

SPSS (Statistical Package for Social Sciences) for Windows 25.0 was utilized to investigate i) the role of sociolinguistic variables (age, settlement type in childhood, and village altitude) and lexical and grammatical proficiency level in Laz, ii) the level of correlations between lexical and grammatical proficiency, iii) the divergences between the baseline and heritage Laz grammar in production, and lastly, iv) the extent to which heritage speakers differ from one another with respect to production of grammatical constructions and deviant forms.

Table (12) presents the summary of the grammatical variables investigated via the free narrative task:

Table 12: Description of grammatical variables

Grammatical Variables	Description*
Laz content word	Total # of distinct content words in Laz (repetitions of the same word eliminated)
Speech Rate	Total # of words divided by total # of time (minutes) (Average # of words uttered per 1 minute)
SP-Different**	Total # of distinct spatial prefixes (out of 27 spatial prefixes, repetitions eliminated)
Rate of spatial prefixes	Total # of spatial prefixed (finite) verbs divided by total number of finite verbs (Ratio of spatial prefixed verbs to finite verbs)
Valency change-total	Total # of constructions involving valency alternations
Rate of valency changing operations	Total # of constructions involving valency alternations divided by total number of finite verbs (Ratio of valency-change total to finite verbs)
Code-mixing Total	Total # of (distinct) intra-sentential insertions from Turkish
Rate of code-mixing	Total # of intra-sentential insertions from Turkish divided by total # of sentences (Ratio of code-mixing-total to total # of sentences)
NA- total	Total # of subordinate finite clauses with subordinator *na-*

Table 12 (continued)

Grammatical Variables	Description*
Rate of continuous tense	Total # of past tensed verbs divided by total # of finite verbs (Ratio of past tensed verbs to finite verbs)
Rate of past tense	Total # of continuous tensed verbs divided by total number of finite verbs (Ratio of continuous tensed verbs to finite verbs)
Postverbal arguments	Total # of core arguments scrambled into the postverbal domain
Postverbal adjuncts	Total # of adjuncts in the postverbal domain
Rate of postverbal	Total # of sentences with postverbal elements divided by total # of sentences produced (Ratio of Postverbal Argument + Adjuncts to Total # of sentences)
Rate of pro-drop	Total # of pro-drop(ped sentences) divided by total # of sentences produced (Ratio of Pro-drop to Total # of sentences)
Participles with *-eri*	Total # of participles/adverbs formed with the suffix *-eri*
*(Total # corresponds to frequency counts in the narratives) **SP stands for spatial prefixes	

The data set was checked for some preliminary assumptions prior to conducting any statistical analysis. The assumption of normality revealed that speech rate, rate of valency changing operations, SP-Different, rate of past tense and continuous tense were all normally distributed by themselves and between the two main groups of comparison, i.e., heritage vs. baseline speakers. Laz content word, code-mixing total, rate of code-mixing, NA-total, rate of spatial prefixes and lastly valency change-total were either positively or negatively skewed to different extents. To satisfy the requirement of normality, certain transformation operations were applied (Log10 for Laz content word and Square-root for the remaining ones), as a result of which the skewness and kurtosis values of all the relevant variables were within acceptable limits, i.e., -2 and +2 (Bachman 2004).

In order to explore the relationship between lexical proficiency and speech rate, on the one hand, and the other grammatical (valency related operations, subordination, code-mixing, spatial prefixes) and sociolinguistic variables (age, village altitude), separate Pearson product-moment correlations were conducted. The differences between the two main groups of Laz speakers, namely baseline and heritage speakers, on the other hand, were investigated via the application of independent samples t-test for all grammatical variables except for rate of code-mixing, which violated the assumption of normality (even after transformation). This variable was tested by using a non-parametric test (Mann-Whitney U test) due to the violation of the assumptions of the parametric tests. In order to reduce the risk of making a type-1 error that could arise as a result of multiple t-test application, I restricted the aspects of statistical comparison to total scores of the relevant grammatical variables and/or their rate with related other grammatical variables. I provide the mean distributions of the relevant component variables in the relevant subsections in the remainder of this dissertation, where I discuss the results in depth.

As for cases where speakers are divided into more than two groups, i.e., settlement type in childhood (3: village, town, or both) and hometown (4: Pazar, Fındıklı, Ardeşen and Çamlıhemşin) and classification of heritage speakers (high-, mid-, and low-proficiency), the differences between different groups in terms of grammatical proficiency were explored with the application of one-way ANOVA test if the assumptions of this parametric test are satisfied. If not, non-parametric K independent samples tests such as Kruskal-Wallis-H were conducted and reported. Lastly, in cases where parametric tests are applied, the results were cross-checked against the corresponding non-parametric tests to eliminate any potential mistakes that could arise because of the limited size of the sample.

CHAPTER 4

DIVERGENCES BETWEEN HERITAGE AND BASELINE LAZ

Heritage speakers are compared and contrasted with a baseline group, which consists of monolingual speakers in the homeland and/or the first- and second-generation immigrants. In the context of endangered languages, since a homeland variety is usually missing, the baseline group is usually taken from among the older generation speakers (see Polinsky 2018, Chapter 8 for an extensive discussion). Following this tradition, the baseline group here is taken as the grand-parental and parental generation speakers, who were raised as monolingual speakers of Laz until at least they started primary school (age 7), if educated. For the majority of these speakers, who were mostly raised in higher altitude villages rather than town centers by the sea, the use of Turkish remained only restricted to the school settings due also to the absence of mass media and TV as well as the modern roads and vehicles. The modernization and industrialization process in the country, which triggered and fostered language shift, took place at a different pace for different parts of the Laz land (Chapter 2). Therefore, it becomes hard to make a generalization about around what years or age Turkish has become more prevalent than Laz in the area. The divide between baseline and heritage speakers seems to be approximately around 30-40 years of age based on the analysis provided in this dissertation.

In light of the cross-linguistic literature on heritage languages, this chapter aims to i) identify the main areas of divergences between these two groups of Laz speakers, ii) understand to what extent heritage Laz speakers pattern with speakers of other heritage languages in their production skills, and iii) investigate the vulnerable aspects of Laz grammar due to the particular acquisitional characteristics of heritage languages. The findings not only inform us about the current state of the Laz grammar, especially the under-described varieties of Laz, i.e., AL and FL,

but also fill in the gap in the literature that there is not any previous descriptive or comparative work on Heritage Laz. Additionally, given that the main division between the two groups of speakers lies in the onset age of bilingualism and the amount of exposure to the dominant language of the country, the findings are informative about i) the effects of the amount of linguistic input received before a certain age on the ultimate attainment in the two languages of these bilinguals, and ii) whether, and if so, to what extent the two linguistic systems affect one another.

This chapter is organized as follows: § 1 presents the results of the statistical analyses conducted to understand to what extent there is a difference between heritage and baseline speakers in the production of certain grammatical markers and constructions, which are predicted to be vulnerable to change or loss given the common characteristics of heritage grammars. I then turn to and elaborate on each relevant aspect of Laz grammar in the subsequent subsections (§ 2-8), where I also discuss the transfer effects from the dominant language of Laz speakers in giving rise to the attested results. I show that there is a significant decrease in the production of i) distinct Laz content words, ii) spatial prefixes, iii) finite subordinate (*na*-) clauses, and iv) valency changing operations in the heritage variety in comparison to the baseline speakers. These findings not only point to the vulnerable areas of Laz grammar but also confirm the hypothesis that heritage Laz speakers exhibit the common characteristics of heritage speakers (Montrul 2016 and Polinsky 2018). Lastly, I turn to the differences between the two groups in their code-switching practices and show that heritage speakers show a greater, albeit low in significance, tendency to insert Turkish lexical and grammatical items. All these facts also confirm the endangered status of the Laz language in a systematic and scientific way. § 9 summarizes and concludes the discussion.

1. Results of the statistical analyses

This section presents the results of the statistical analyses conducted to contrast the two groups of Laz speakers, i.e., heritage and baseline speakers, in their production of the lexical and grammatical variables investigated here. Table (13) presents the demographics of these groups:

Table 13: Demographics of comparison groups (baseline and heritage)

Variables		Baseline (N=40)		Heritage(N=33)	
		#	**%**	**#**	**%**
Gender	Male	29	72.5	15	45.5
	Female	11	27.5	18	54.5
Hometown	Ardeşen	9	22.5	13	39.4
	Fındıklı	10	25.0	3	9.1
	Pazar	6	15.0	2	6.1
	Çamlıhemşin	15	37.5	15	45.5
Settlement Type in Childhood	Village	27	67.5	3	9.1
	Village & Town	13	32.5	19	57.6
	Town	-	-	11	33.3
Age	>20	-	-	6	18.2
	21-30	-	-	15	45.5
	31-40	4	10.0	12	36.4
	41-50	17	42.5	-	-
	51-60	12	30.0	-	-
	60<	7	17.5	-	-

Descriptive statistics of baseline speakers' and heritage speakers' performances in the free narrative task with respect to the (statistically examined) grammatical variables are presented in Table (14). The explanations on what each variable stands for were provided in Table (12) in Chapter 3 and are further specified and exemplified in the remainder of this chapter. The following four variables correspond to the frequency counts of the relevant grammatical markers or constructions attested in the narratives: i) (distinct) Laz content words, ii) SP-different (distinct spatial prefixes out of a total of 27), iii) NA-total (finite embedded clauses with *na*-), and iv) code-mixing total (insertions from Turkish). The remaining variables define the ratio of the former variables to a related length-based measure, i.e., total number of i) finite verbs (rate of spatial prefixes, valency changing operations) or ii) sentences (rate of code-mixing). Likewise, rate of past and rate of continuous tense respectively correspond to the ratio of past or continuous tensed (finite) verbs to the total number of finite verbs.

Leaving the details to the relevant sections,[1] note that the baseline group outperformed the heritage group with respect to the length of narratives. Precisely, the number of total words (*range*=1589>655, *iqr*=296.75>230), sentences (*range*=170>92, *iqr*=35.5>24.5, *M*=79.32>51.75) and finite verbs (*range*=358>150, *iqr*=48.25>47.5) were all higher in the baseline group. The differences in length preliminarily, albeit not necessarily, indicate the lower level of productive skills in the heritage group, and pointing at lower proficiency in Laz.

[1] I provide the mean distributions of certain other variables along with those constituting the ones tested here, e.g., the number of relative clauses and complement clauses (=NA-total), in the remainder. Here I report the descriptive statistics for only those grammatical variables over which I conduct a statistical test in order to avoid Type-1 mistakes.

Table 14: Descriptive statistics for grammatical variables in baseline and heritage group

	Baseline Group (N=40)				Heritage Group (N=33)			
Variables	M	ss	Min	Max	M	ss	Min	Max
Laz content word	129.65	63.93	58	330	68.73	36.29	19	61
Rate of spatial prefixes	.76	.13	.31	1.05	.48	.17	.21	1.10
SP-Different (out of 27)	14.38	3.821	7	20	8.76	4.00	2	16
Rate of valency changing operations	.1688	.0522	.05	.27	.1192	.0819	0	.33
Valency change-total	19.58	11.91	4	52	8.70	7.80	0	33
NA- total	4.38	4.61	0	23	1.94	3.02	0	10
Rate of code-mixing	.04	.06	0	.40	.09	.33	0	.09
Code-mixing total	2.53	2.88	0	12	4.52	4.74	0	18
Rate of continuous tense	.50	.23	.11	.99	.45	.26	.05	1.00
Rate of past tense	.46	.22	.01	.89	.53	.25	.00	.95
M: Median, *N*: Number of participants, *ss*= Standard Deviation, *Min*=Minimum, *Max*=Maximum								

Independent samples t-tests were conducted to understand whether the difference between the two groups is statistically significant or not. The results indicated that the level of the following was higher in the baseline group (alpha level of .05): i) Laz content word; $t(71)=5.85$, $p<0.001$, ii) valency change-total; $t(71)=5.28$, $p<.001$, iii) rate of valency changing operations; $t(71)=3.007$,

p=.002, iv) rate of spatial prefixes; *t*(71)=3.18, *p*=.002, v) SP-Different; *t*(71)=6.12, *p*<.001, vi) NA-Total; *t*(71)=3.48, *p*<.001, vii) code-mixing total; *t*(71)=-2.13, *p*=.036. All differences except for the last one, namely code-mixing-total, remained significant after the Bonferroni adjustment (alpha level .005). No significant differences were detected between the two groups with respect to their choices for the tense-aspect markers, namely rate of continuous (for imperfective aspect) and past (=perfective aspect) tense under any condition (all *p*s>.05).

Since one of the two code-mixing measures, namely the rate of code-mixing, violated the assumption of normality even after the transformation operations, it was investigated via the application of a non-parametric test. A Mann Whitney-U (*U*= 397, *z*= -2.918, *p*=.004) test showed that heritage group (*Mdn*=.2425, n=33) produced a significantly higher code-mixing cases than baseline group (*Mdn*=.1526, *n*=40), which remained significant after the Bonferroni adjustments.

The examination of scrambling and pro-drop possibilities between the two varieties was conducted based on a smaller subset of speakers due to time restrictions (for data annotation), namely those who stand in a parent-child relationship. The choice for this relied on the assumption that cross-generational studies from the members of the same family would be ideal (Aalberse et al. 2919:118) as the effects of certain other extra-linguistic factors on language acquisition could be kept at minimum to a great extent. The demographics for the relevant group of speakers and the distribution of the grammatical points of comparison are respectively provided in Table (15) and Table (16):

Table 15: Demographics of the family group (baseline=parent, heritage=child)

Variables		Baseline (N=9)		Heritage (N=10)	
		#	%	#	%
Gender	Male	6	66.7	5	50.0
	Female	3	33.3	5	50.0
Hometown	Ardeşen	1	11.1	2	20.0
	Fındıklı	3	33.3	3	30.0
	Pazar	-	-	-	-
	Çamlıhemşin	4	50.0	5	50.0
Age	>20	-	-	2	20.0
	21-30	-	-	5	50.0
	31-40	-	-	3	30.0
	41-50	4	44.4	-	-
	51-60	3	33.3	-	-
	60<	2	22.2	-	-

Table 16: Distribution of scrambling and pro-drop (in the family group)

	Baseline Group (N=9)				Heritage Group (N=10)			
Variables	M	ss	Min	Max	M	ss	Min	Max
Rate of pro-drop	0.31	0.12	.07	.47	0.16	0.08	0	.31
Rate of postverbal	0.10	0.6	0	.19	0.10	0.8	0	.26
Postverbal arguments	7.88	5.06	0	16.00	1.70	1.49	0	5.00
Postverbal adjuncts	2.22	1.71	0	5	3.00	2.62	0	7
M: Median, N: Number of participants, ss= Standard Deviation, Min=Minimum, Max=Maximum								

An independent sample t-test indicated that while the parental generation speakers, i.e., baseline group, produced a significantly higher level (alpha level .05) of placing the arguments of the predicate in the postverbal position ($t(17)=3.177$), $p=.003$) as well as drop the arguments than their children, i.e., heritage speakers ($t(17)=3.060$, $p=.004$). All differences remained significant even after Bonferroni adjustments were made (alpha level .01). As far as the frequency counts of total postverbal constituents and/or postverbal adjuncts, no differences were attested even before Bonferroni adjustments (both ps>.05).

Lastly, I also investigated the co-occurrence of spatial prefixes and their post-positional counterparts for these groups of speakers, which I report in §3. Yet, since the relevant grammatical variables turned out not to satisfy the assumptions of the possible statistical analyses due to either non-normal distribution (for parametric tests) or due to too small sample size (non-parametric ones), I could not run statistical analyses over this data. I leave this to future studies.

2. Lexical proficiency

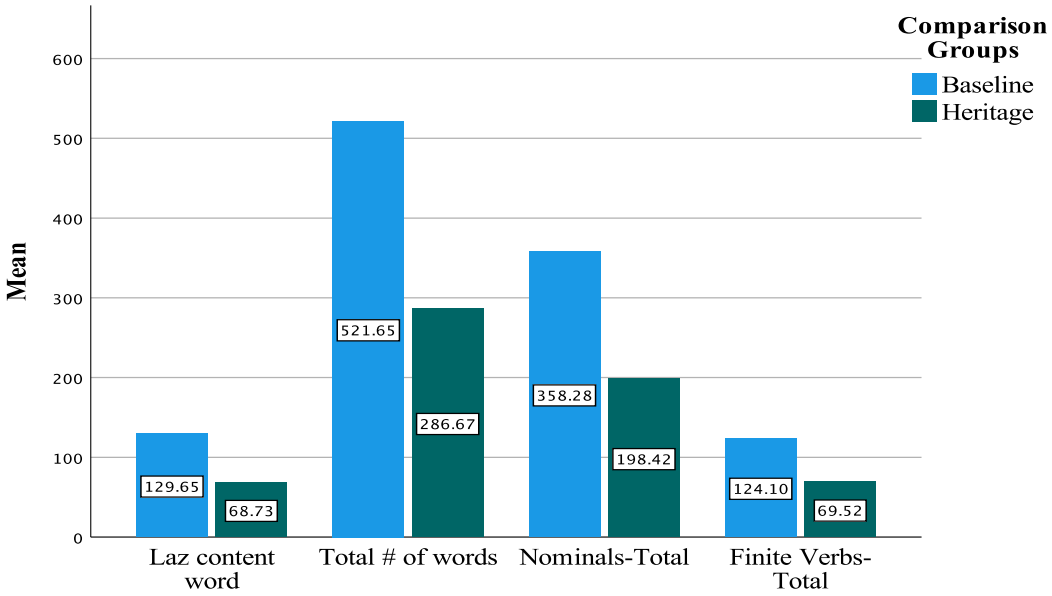
Being context-specific and dependent on frequency and quantity of input, the lexicon has been reported to be reduced in heritage languages. (Polinsky 2018 Chapter 7). Often the lexical repertoire of heritage speakers is restricted to concrete objects that are seen or used frequently in daily life and basic vocabulary, e.g., body parts or kinship terms (Montrul 2016: 48).

A reduced lexicon is seen in the fact that, as opposed to the word for *dog* (*laçi* in AL and PL, *coğori* in FL), almost none of the Heritage Laz speakers was able to use the Laz words for the remaining other animals such as *owl*, *mole*, *deer*, or *frog*, which are no longer seen often in daily life. Having a better command of the words referring to the latter group of animals, baseline speakers were even able to identify distinct words depending on different kinds of the same animal (e.g., *mayari*, *poxo*, *mcvapu* for frog; *mjuju* or *buttuci* for bees), or different forms of wood, e.g.,

log, *firewood*, (*timber*, though not depicted in the story). For the latter, heritage speakers used a single word, i.e., *nca* (Laz) or *ağaç* (Turkish) 'tree'. Given that the majority of this latter group grew up in more urban settings in contrast to the baseline speakers who have spent more time in village settings, these discrepancies become understandable.

The reduced lexical repertoire of heritage speakers is also evinced by the fact that they produced fewer words than baseline speakers both in terms of the distinct Laz content words as well as the total number of words (including repetitions of the same word) as shown in Figure (4). Notice that the majority of these words consist of nominals rather than finite verbs, giving us an idea about the total number of sentences produced by each group.

Figure 4: Mean word counts for baseline and heritage speakers



The results of the statistical analyses indicate not only a statistically significant difference with respect to the Laz content word, which remains even after Bonferroni adjustments, between

the two groups ($t(71)=5.85$, $p<0.001$), but also a sharp decrease in the lexical inventory of the heritage group ($M=68.73$) in comparison to the baseline speakers ($M=129.65$)[2]. Notice that the lexical repertoire of the baseline group is almost twice of the heritage group, i.e., the decrease in the number of distinct Laz words from the (grand-)parental generation to heritage group seems to be around 47%. This discrepancy seems to have come about as a result of the diminishing use of Laz even at home settings and between the members of the nuclear family as reported by Haznedar et al (2018). Moreover, given the correlations between lexical proficiency and grammatical knowledge (Polinsky 1997, 2006; O'Grady et al. 2009), we would also expect to see a similar picture for grammatical proficiency. In the remainder, I show that this prediction is borne out.

3. Expression of spatial relations: spatial prefixes and postpositions

Laz exhibits a highly complex system of spatial prefixes (Holisky 1991, Boeder 2005, Kutscher 2010, 2011 for AL; Eren 2016, Öztürk & Eren 2021b for PL)[3]. Occupying Slot 2 in the verbal complex, these prefixes mainly denote directional or locative meanings (Chapter 2). The majority of spatial prefixes are polysemous and can add idiosyncratic and non-spatial meanings, depending on the semantics of the verbal roots they combine with. These facts are illustrated in (29) and (30) respectively for the spatial prefixes *me-* and *gama-*:

[2] These mean scores belong to the actual (raw) data, i.e., before the transformation operation of Log10 was applied.
[3] All Laz varieties pattern alike in terms of the facts regarding the spatial expressions. Therefore, for space considerations, I choose to represent the relevant facts by PL examples. Note that the AL counterparts of these examples do not bear the ergative and dative case markers as this variety has lost its core cases. The same also holds for the remainder of the present dissertation, i.e., unless otherwise specified, the PL examples also show the relevant AL and FL facts.

(29) a. Fante hisho me-(u)l-u(r)-n. {me-}=thither

Fante there SP-move-IPFV-3SG

'Fante is going there.'

b. Mskala qoda-s me-sk-u(r)-n.

ladder wall-LOC SP-lean-IPFV-3SG {me-}= against a vertical surface

'The ladder is leaning against the wall.'

c. Porça me-m-a-şor-u. {me-}=partially

shirt SP-1OBJ-APPL-get wet-PST.3SG

'My shirt got partially wet.'

d. me- 'thither'+onçhinu 'get tired'= to involve {me-}=idiosyncratic, derivational

(30) a. Oxori-s gama-xt-u. {gama-}= out of a closed space

house-LOC SP-move-PST.3SG

'S/he left home.' or 'S/he came out of home.'

b. Bere-k mjalva gama-ş-u. {gama-}=completely

child-ERG milk.ABS SP-drink-PST.3SG

'The child drank up the milk.'

c.gama-'out'+çodu'finish', cibu'eat'= to eat/finish in one breath {gama}=idiomatic

d. gama- 'out'+kotu 'fold'= to slap {gama}=idiosyncratic

Laz also has a set of postpositions that can co-occur with spatial prefixes like *jin* 'top', which remains invariant in form even when marked with different spatial case markers as in (31).

(31) Botrika masa-şi jin eyo-dg-u(r)-n.

bottle.ABS table-GEN top.LOC SP-stand-IPFV-3SG

'The bottle is standing on the table.'

To the best of my knowledge, there are no studies examining how spatial relations are expressed in heritage languages. Nevertheless, there are a number of different reasons to predict that the spatial prefixal system of Laz would be vulnerable to erosion in the heritage variety. Firstly, the verbal complex in Laz is quite complex with 16 slots occupied by affixes undergoing certain phonological alternations depending on the phonological properties of the following affixes (Öztürk 2011: 101). Despite being more resilient than nominal morphology, verbal morphology is also not unaffected in heritage languages because certain verbal suffixes as well as derivational morphemes were also reported to be omitted and/or simplified (see Montrul 2016: 53-61 for an overview). Given that Turkish (dominant language of Laz speakers) is a heavily or even only suffixing language (Göksel & Kerslake 2005), by virtue of being prefixes, Laz spatial markers are predicted to be subject to change or erosion in Heritage Laz.

Secondly, spatial prefixes are often polysemous ((29)-(30)) and often times they encode very specific information regarding direction or location. Since heritage speakers favor one-to-one mapping between form and meaning, and compositionality over idiosyncrasy (Polinsky 2018: 296), it is expected that spatial prefixes would be vulnerable.

Lastly, in the presence of postpositions which i) are more phonologically salient, ii) are not subject to morpho-phonological alternations and also iii) have a single meaning as opposed to

spatial prefixes[4], heritage speakers might show a tendency to make more use of them, rather than spatial prefixes. Moreover, the latter strategy does not exist in Turkish where spatial relations are mainly expressed through postpositions. Notice that the only difference between Turkish and Laz is the absence of the spatial prefix as shown in (32):

(32) Şişe masa-nın üzeri-nde dur-uyor.
bottle.ABS table-GEN top-LOC stand-PROG.3SG
'The bottle is standing on the table.' (Turkish counterpart of (31))

Based on her observation that even older generation Laz speakers who do not use Laz often enough tend to transfer Turkish-like post-positional constructions, Kutscher (2008) argues that the loss or replacement of the spatial prefixes is a sign of language attrition. Leaving aside the question of what should count as language attrition, heritage speakers might have even been more exposed to postpositional constructions in the linguistic input which they receive from their (grand-)parents, lending further support for the vulnerability of spatial markers.

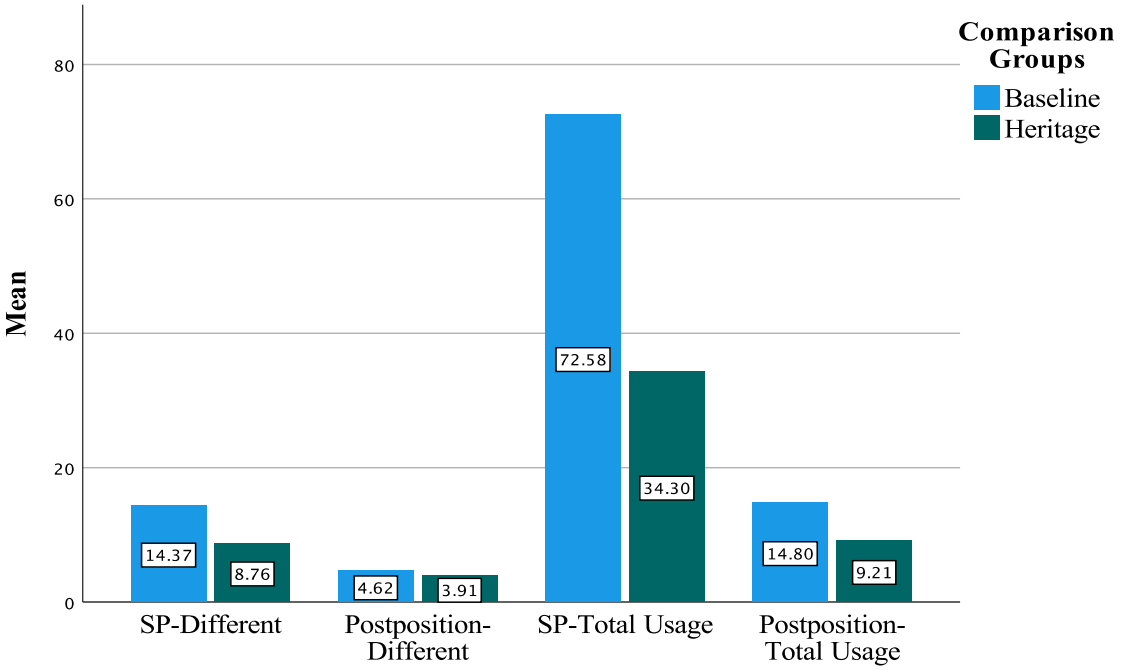
To check if these predictions are borne out or not, I conducted an independent samples t-test, which indicated that the difference in the production count of spatial prefixes between the baseline and heritage group is statistically significant for both variables, namely the number of distinct spatial prefixes out of a total of 27 prefixes (*Baseline M*=14.38, *Heritage M*=8.76) (=SP-Different: $t(71)=6.12$, $p<.001$) as well as the rate of spatial prefixed (finite) verbs to the total number of finite verbs, i.e., the rate of spatial prefixes ($t(71)=3.18$, $p=.002$) (*Baseline M*=.76,

[4] There is a free postpositional counterpart of the majority of spatial prefixes, and as opposed to Slavic languages, the two are not phonologically identical (Eren 2016). There are also exceptions, tough. For instance, there is no postposition for *ela-* 'side/next to' (other than the Turkish loan *yaninde/yani-muşi*) translating as 'near, next to'.

Heritage M=.68) [5]. The sharp decrease of the use of spatial prefixes in the heritage group is also expected as they spend most of their time in urban settings. The majority of baseline speakers spend more time in (mountainous) village settings, where directional and spatial configurations bear more significance.

In order to understand whether the decreasing use of spatial prefixes is correlated with or conditioned by the increasing use of postpositions (due to the transfer effects from Turkish), I firstly investigated the total use of postpositions and the number of distinct postpositions produced during the narration of the Frog Story. The results are presented in Figure (5).

Figure 5: Mean distribution of variables for the expression of spatial prefixes



[5] The mean scores are different from Table (14): The former reflects the mean scores of the data points after the transformation operations. The mean scores in Table (14) reflect the actual scores before transformation was applied. Note that this is the same for all cases involving a transformation operation.

Figure (5) shows that the differences between the two groups in the use of postpositions is not as sharp as in the case of spatial prefixes. This could be due to transfer effects from Turkish (Kutscher 2008) and/or due to the preference of heritage speakers for transparent constructions because spatial prefixes can bear more than one meaning as opposed to postpositions.

Further evidence for the higher preferences for using postpositions in the heritage group comes from the co-occurrence facts between spatial prefixes and their adpositional counterparts. Given the large amount of data and due to time restrictions, I examined this issue only within a restricted set of participants, namely, those who stand in a parent-child relationship[6]. Recall that the majority of spatial prefixes in Laz have a postpositional counterpart, conveying the same or a similar meaning as exemplified in (33). Despite the similarity in their meaning, the two are not mutually exclusive in the baseline variety. The co-occurrence of the two leads spatial information to be further emphasized and/or made explicit. In such cases, what is optional is the postpositional construction while the spatial prefix cannot be dropped (34).

(33)

Prefix	Postposition	Gloss	
a. k'ots'o	tz'oxle	'in front of'	
b. eyo-/goyo-	jin	'on top of'	
c. mok'o-/ek'o-	qap'ula	'behind'	
d. dolo-	doloxe	'(down) inside'	
e. ets'o-	tude	'under/below'	
f. ç'eşk'a-	oşk'enda	'at the center of'	(Eren 2016: 47)

[6] This is the same group that I focused on for the examination of scrambling and pro-drop differences[6] (see Table (15) for the descriptive statistics of the profile of the participants).

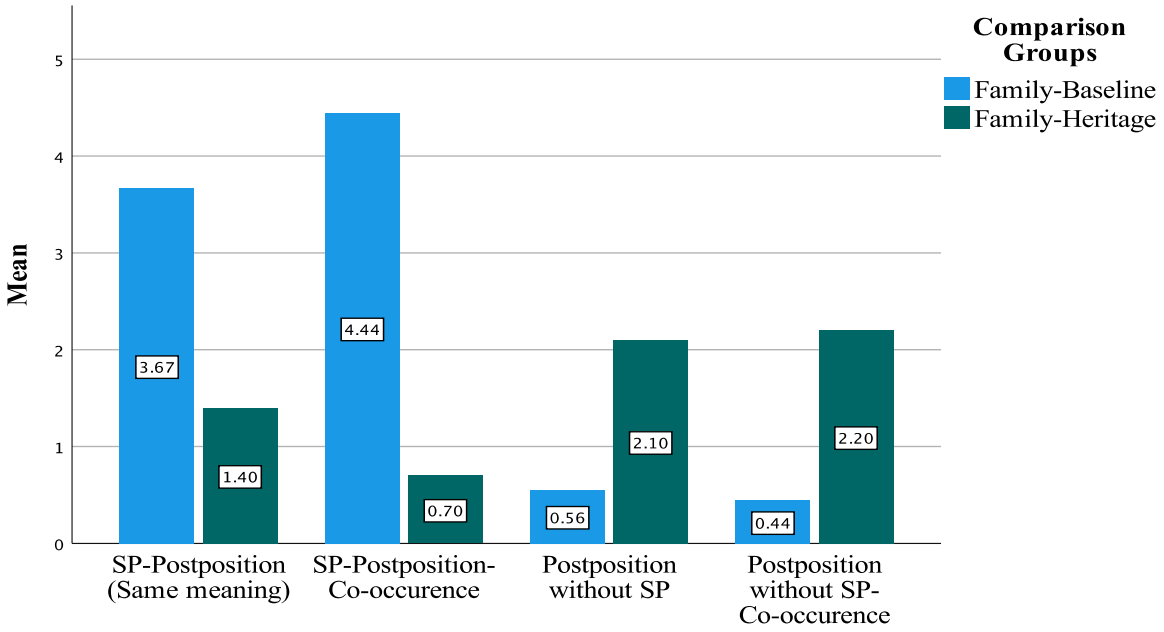
(34) Mturi nekna-şi qaphula (eka)*-x-e(r)-n.

mouse.ABS door-GEN back.LOC SP-sit-IPFV-3SG

'The mouse is sitting behind the door.'

Given their preference for postpositional constructions, we would expect to find less of the above cases in the heritage variety. Likewise, given that heritage speakers make significantly less use of spatial prefixes, we would also expect to find more cases in their production where a postposition is used without its spatial prefixal counterpart. A preliminary examination of the data reveals a picture which supports these two predictions as illustrated in Figure (6).

Figure 6: Mean distribution of spatial prefix-postposition constructions (by family group)



The baseline group outperformed the heritage group in terms of i) the production of the spatial prefixes along with their postpositional counterparts, i.e., producing both members of the

pairs of spatial prefix-position (not necessarily in the same sentence but as far as the entire narration data is concerned) (=SP-Postposition (Same meaning)), and ii) using both in the same sentence (=SP-Postposition-Co-occurrence). These facts are illustrated in (35) and (36):

(35) Hekoni deluği-şa doloxe dolo-tz-e-y mcvabu gor-u-y.
there hole-ALL inside SP-look-IPFV-3SG frog.ABS search-IPFV-3SG
'He is looking (down) inside the hole, looking for the frog.' (Baseline: AL)

(36) Bere-k o arada k'aya-şi jin e[7]-xt-a şk'ule …
child-ERG that time rock-GEN top.LOC SP-move-OPT after
'In the meantime, after the boy climbed over the rock' (Baseline: FL)

Unlike baseline speakers, heritage speakers exhibited a higher level of producing postpositions without having the prefixal counterparts (not necessarily in the same sentence but in their entire narration) (=Postposition without SP) as well as using only the postpositions without an accompanying spatial prefix (=Postposition without SP co-occurrence). Notice the absence of the spatial prefixes in (37) and (38) (c.f. (35) and (36)):

(37) Laçi kavanozi-şi doloxe tsad-u-y.
dog.ABS jar-GEN inside.ALL look-IPFV-3SG
'The dog is looking (down)/checking inside the jar.' (Heritage: AL)

[7] The prefix here is *e-* rather than *eyo-* (c.f. (33)). Note that both prefixes are identical in meaning in this context.

(38) O-tzk-en-an, k'avanozi-ş doloxe coğori-k o-tzk-e(r)-n …

PRV-look-IPFV-3PL jar-GEN inside.ALL dog-ERG PRV-look-IPFV-3SG

'They are looking, inside the jar thedog is looking at…' (Heritage: FL)

The co-occurrence facts imply for a typological change in the expression of spatial relations in the heritage variety of Laz, i.e., typological realignment (Mufwene 2013), that is, a shift from one typological type to another, probably due to transfer effects from Turkish. More precisely, the main means of expressing spatial relations in the baseline variety is through dependent forms, namely, spatial prefixes. Based on this, Laz has been classified as a satellite-framed (Kutscher 2010, Talmy 2000a,b) or weak-verb-framed language (Öztürk & Eren 2021b, à la Acedo-Matellán 2016)[8]. Note that the strong vs. weak division is concerned with whether the spatial marker needs to form one unit (word) with the verb: While it does so in weak languages, it can (phonologically) stand alone in the strong languages. However, the occurrence facts presented above indicate that there is more reliance on postpositional constructions, which are free forms, rather than bound spatial prefixes in the heritage variety. Given this, it might be argued that Laz will be less likely to be classified as a (weak)-satellite framed language in the future. This typological issue requires more in-depth investigation, which I leave to future studies.

4. Valency changing operations

Being understudied in the context of heritage languages, the existent studies on valency alternations are mainly concerned with the production of passive constructions in relation to A-dependencies. Polinsky (2009, Heritage Russian) and Putnam & Salmons (2013, Heritage

[8] Turkish has been classified as a verb framed language because it lacks the counterparts of spatial prefixes.

German) report that heritage speakers have difficulties with passive constructions, thus passives occur less especially in heritage production. Likewise, Dunn (1999) reports that antipassive constructions in Chukchi have undergone erosion due to recessive bilingualism, at least in production (c.f. comprehension). Regarding this issue, Polinsky (2018: 239) suggests that one of the aspects of antipassives that make them vulnerable to erosion is the surface morphology associated with them, given the problems morphology poses to heritage speakers.

As for Laz, it turns out that affixal reflexives have undergone erosion, i.e., their production by younger generation speakers is quite limited (Eren 2023). Leaving the details aside (see Chapter 7), let us now focus on the reasons why valency alternations[9] might be vulnerable.

Firstly, these operations are morphologically marked in Laz, especially in the pre-root domain in the verbal complex. Recall from Chapter 2 that Slot 4 in the verbal complex hosts a set of 4 valency related vowels, which surface depending on the type of operation that is applied (*i-* for passives and reflexives; *i-* & *u-* for applicatives, *o-* for causatives, and *a-* for higher applicatives). Additionally, in FL and PL, but crucially not in AL (as it lost its case morphology), change in the valency is also marked on the relevant NP argument via a certain case marker; Dative in the case of applicatives and causatives. Moreover, the person and number features of the relevant argument also need to be marked on the verbal complex, following a particular person hierarchy (Demirok 2011: 52). These facts are illustrated in (39)[10]:

(39) a. Ma past'a p'-ç'v-i. (Transitive)
I cake.ABS A.1SG-bake-PAST.A.1SG
'I baked a cake.'

[9] I show in Chapter 7 that reflexivization and passivization in Laz are indeed not valency-decreasing operations.
[10] A: Subjects of transitives; D: Dative marked arguments of ditransitives (goal/recipient) and/or applied arguments.

b. Ma bere-s past'a v-u-ç'v-i. (Applicativization-3rd singular)
I.ERG child-DAT cake.ABS A.1-APPL-bake-PST.A.1SG
'I baked the child a cake.'

c. Ma t'k'va past'a g-i-ç'v-i-t. (Applicativization: 2nd plural)
I.ERG you.PL.DAT cake.ABS D.2-APPL-bake-PST.A.1SG-PL
'I baked you (pl.) a cake.' (Demirok 2011: 52)

Given heritage speakers' general problems with morphology (Polinsky 2018: 240), specifically with (structural) case markers (Heritage Korean nominative and accusative, Song et al. 1997; Heritage Hindi ergative, Montrul et al. 2012), valency alternations in Laz are expected to be vulnerable as they have morphological reflexes not only in the verbal complex, i.e., the choice of the necessary pre-root vowel, but also in the nominal domain, i.e., case marking, and an interaction between the two, i.e., the verbal agreement markers. Moreover, given that Turkish, i.e., the dominant language of heritage language, is only suffixing, the prefixal markers in the verbal complex might pose even more challenges to heritage speakers of Laz.

Among different valency alternations, particularly vulnerable could be those constructions that do not exist in Turkish. While Turkish features passivization and causativization and even affixal reflexives (Göksel & Kerslake 2005), it lacks applicativization unlike Laz, which has three different kinds of applicative constructions: i) low applicatives, ii) high applicatives, and ii) higher applicatives (Öztürk 2013). The Frog story has turned out to be a nice tool for collecting data on the applicative constructions because the events depicted in the pictures are mostly expressed via applicative constructions in Laz.

High applicatives are introduced above VP and establish a relationship between an entity and an event (Pylkkännen 2008). The affected applied argument bears either a benefactive or a malefactive reading depending on the context (Demirok 2011: 53). One instance of high applicatives in the Frog Story is concerned with the scene where the boy waves his hand to the frog family towards the end of the story. Since the event of hand-waving is directed towards or aimed at a particular person, it is expressed through a high applicative construction in Laz (40). Notice the applicative prefix *u-* on the verbal complex:

(40) Arti mcvabu-na xe u-val-am-an.
other frog-DIM hand.ABS APPL-wave-IPFV-3PL
'They [=the child and the dog] are waving their hand to the other frog.' (Baseline: AL)

Crucially, while the majority of the baseline speakers expressed this event in an applicative construction, heritage speakers dropped the applicative marker and used a simple transitive construction, in which case a simple action of hand waving is implied with no specific goal (41). Despite being grammatical, this sentence is rated as degraded by baseline speakers:

(41) Bere poxo-muşi e-ç'op-u xe o-val-a-y.
child frog-3SG.POSS SP-catch-PAST.3SG hand.ABS PRV-wave-IPFV-3SG
'The child then took his own frog and is waving his hand.' (Heritage: AL)

Another productive instance of high applicatives in Laz is possessor applicatives, which mostly involve relational nouns like body part or kinship terms (Öztürk 2013, 2016). The Frog

Story also yielded many instances of possessor applicative constructions as shown in (42) and (44)[11]. However, such constructions are mostly attested in the baseline variety while heritage speakers drop the applicative marker, which is found incomplete (43) or even ungrammatical (45):

(42) Laç'ina xolo bere xaray-epe u-losk'-a-y.
dog-DIM still child.ABS cheek-PL APPL-lick-IPFV-3SG
'The dog is still licking the kid's cheeks.' (Baseline: AL)

(43) ?Laçi losk-u-y bere, xazi a-u laçi,
dog.ABS lick-IPFV-3SG child joy APPL-PST.3SG dog.ABS
bere-ti losk-u-y.
child-also lick-IPFV-3SG
'The dog is licking the kid, the dog enjoys it, and the boy is licking, too.' (Heritage: AL)

(44) mtuyi ko-gama-xt-u, bere çxindi n-u-xvat-tu.
mouse.ABS AFF-SP-move-PST.3SG child nose.ABS SP-APPL-bite-PST.3SG
'A mouse came out (of the hole) and bit the boy's nose.' (Baseline: AL)

(45) …* sincabi ko-gamaxtu bere çxindi o-şkom-u.
squirrel.ABS AFF-SP-move-PST.3SG child nose.ABS PRV-eat-PST.3SG
Int: 'A squirrel came out (of the hole) and ate the boy's nose.' (Heritage: AL)

The Frog Story also was fruitful in yielding higher applicative constructions, which are syntactically introduced above (agentive) *v*P and specify that the applied argument is the holder or location of the property denoted in the *v*P (Öztürk 2013, 2016). Details aside, higher applicative constructions in Laz are used to convey dynamic modality as well as unintentional causation

[11] Possessors also bear an affected (benefactive/malefactive) theta role due to the presence of the relational noun.

readings in PL. Morphologically, these constructions require the use of the pre-root vowel *a-* in the verb and the imperfective aspect marker *-er*. An example of this construction is provided in (46), which has an unintentional causation reading:

(46) Laçi kavanozi kafa ko-dolv-a-ğ-u.
dog.ABS jar.ABS head.ABS AFF-SP-APPL-bring-PST.3SG
'The dog unintentionally put his head inside the jar.' (Baseline: AL)

Crucially, the production of these constructions was quite limited in the heritage group. Heritage speakers tended either to fully avoid the relevant cases, or to go for alternative ways of expressing the same scene with simpler grammatical constructions as exemplified in (47):

(47) Laç'i-ti ti-muşi k'avanozi-şi doloxe k-ama-xt'-u.
dog-as for head-3SG.POSS jar-GEN inside.ALL AFF-SP-move-PST.3SG
'As for the dog, his head went into/entered the jar.' (Heritage: AL)

Higher applicatives are additionally used with certain class of verbs to indicate that the event denoted by the verb is acted upon or ends up on the applied argument, i.e., a sense of location. One relevant case in the Frog Story was when the boy gave a hug to the dog. (48) shows us that when the verb *okoru* 'to tie' occurs in the higher applicative construction, it yields the relevant reading of hugging. Likewise, in the scene where the bees are attacking the dog, the verb *gopinu* 'to spread over' needs to be used in a higher applicative construction to mean attacking (49):

(48) Okaçxe bere … laçi vrosi ko-gv-a-kor-u.

later child.ABS ….dog.ABS well AFF-SP-APPL-tie-PST.3SG

'Later, the boy hugged the dog well.' (Baseline: AL)

(49) Hey na-on, mola-xer-tey matsupxe-pe laçi ko-gv-a-pin-ey.

there SUB-COP.3SG SP-sit-PST.3PL bee-PL dog AFF-SP-APPL-spread-PST.3SG

'The bees, who were sitting there [in the hive], attacked the dog.' (Baseline: AL)

These constructions were quite limited in the heritage production, which could be due to either the erosion of the higher applicative constructions and/or the absence of the relevant verbs in their reduced lexical inventory. For the former, we can consider (50), where we see that the heritage speaker knows the verbal root but does not use it in the expected higher applicative construction. Instead, s/he tries to derive the meaning of hugging by using the reciprocal marker and the reflexive marker *i-*. Yet, the yielding reading ends up being different from the desired one:

(50) … laçi şkala k-ok-i-kor-am-an.

dog with AFF-RECP-PRV-tie-IPFV-3PL

'They are tying something around themselves' (Heritage: AL)

As for (49), the majority of the heritage speakers did not use the word *gopinu* in their narration. They either did not narrate this scene at all, or they again went for alternative (grammatically) simpler strategies as shown in (51), where *olva* 'to go' is used:

(51) Kavanozi ar-epe laçi-şa m-ul-u(r)-n.

jar(=hive) bee-PL dog-ALL SP-move-IPFV-3SG

'The bees are coming to(wards) the dog.' (Heritage: AL)

One last construction relevant for our purposes is the set of psychological predicates, which necessarily occur in the same morphological template as the higher applicatives. (Demirok 2011, and Chapter 2). Denoting feelings, emotions, and states of mind, these verbs are analyzed as high(er) applicatives (Öztürk 2013) and as such, they are considered under valency changing operations for the purposes of this dissertation. Interestingly, heritage speakers produce these constructions at almost an equal level as that of baseline speakers as shown in (52) and (53). The higher production of these constructions in contrast to the other high(er) applicative constructions discussed above could stem from the fact that these verbs have a higher frequency of use in daily life and could be learned as frozen forms:

(52) .. coli-şa gama-xt-u-si a mutxa dv-a-gur-u.

lake-ABL SP-move-PST.3SG-ADV one thing SP-APPL-hear-PST.3SG

'When (the boy) went out of the lake, he heard something' (Heritage: AL)

(53) Bere kinçi-şa a-şkurin-e(r)-n.

child bird-ABL APPL-fear-IPFV-3SG

'The child is afraid of the bird (=owl).' (Heritage: AL)

The free narratives also involved cases of passivization (54) and (55), and reflexivization (56) and (57). Albeit low in number, these constructions were mostly produced by baseline

speakers, while their production was quite low in the heritage group, pointing to the erosion of these constructions (see Chapter 7):

(54) Mcvbuna hekole i-mt-e-y steri i-zir-e(r)-n.
frog from.there PRV-escape-IPFV-3SG like/as PRV-see-IPFV-3SG
'It seems (lit: is seen) that the frog escaped from there.' (Baseline: AL-Passive)

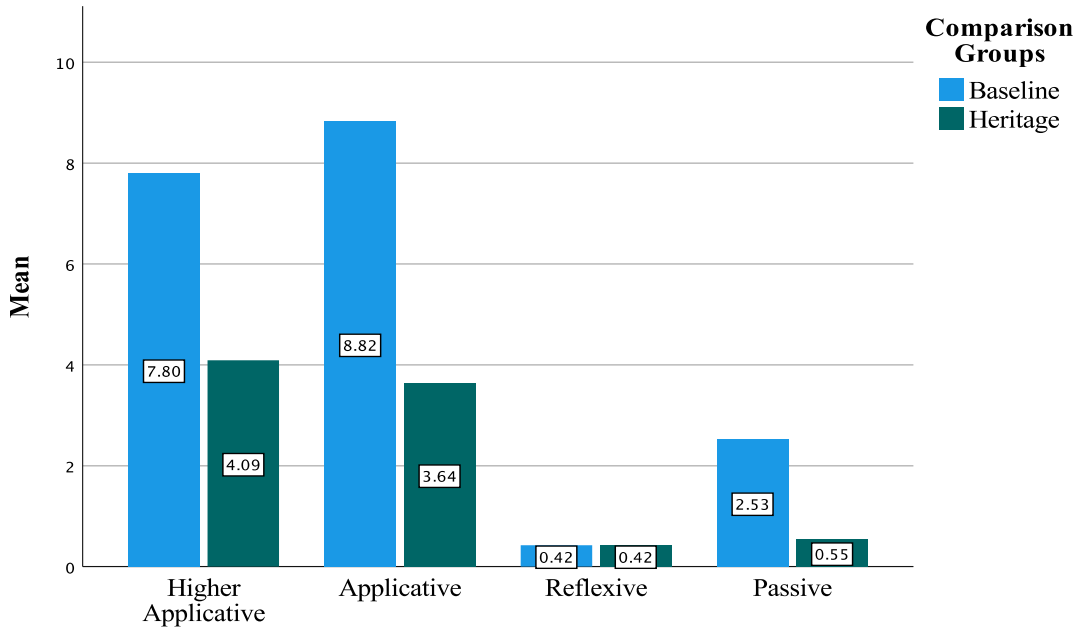
(55) Gale tuta k-on, tuta i-dz-i-n.
outside moon AFF-COP.3SG moon PRV-see-IPFV-3SG
'The moon is outside, the moon is seen.' (Baseline: AL-Passive)

(56) Laçi do bere evedi evedi ko-go-yi-xazir-u.
dog and child quick quick AFF-SP-REFL-prepare-PST.3SG
'The dog and the child got prepared quickly.' (Baseline: AL-Reflexive)

(57) Bere mo-y-sel-am-s.
child SP-REFL-get up-IPFV-3SG
'The child is waking/getting up.' (Heritage: AL-Reflexive)

We are done with the constructions that were taken into consideration in the examination of valency alternations. Figure (7) shows the mean production rates of each relevant construction.

Figure 7: Distribution of constructions involving valency alternations



Note that the baseline group outperformed the heritage group in all constructions, except for reflexives, where the mean distributions of the two groups turned out to be surprisingly identical. This could be due to the fact that the only reflexive constructions depicted in the Frog Story is limited to very canonical cases such as getting ready and/or waking up, which heritage speakers might have learnt as frozen expressions.

As previously stated, the Frog Story turned out to be a quite useful tool for investigating valency alternations in Laz, especially the applicative constructions. By virtue of the free nature of the task, the participants indeed did not have any requirement to make use of any of these constructions. We mainly see this in the heritage group, who either fully skipped the details in the story where Laz requires valency alternations or chose to describe the relevant pictures by using grammatically simpler constructions. Nevertheless, for baseline speakers it turned out that the

more details one focused on in each picture, the more likely they needed to use constructions involving valency alternations, and thus the longer their narration would be.

In order to eliminate any potential effects of length on the statistical analyses, I compare two groups both in terms of the total number of valency alternations (=valency change-total) and with respect to the ratio of this to the total number of finite verbs they produced, i.e., rate of valency changing operations. This latter measure would give us an idea about the extent to which each speaker would show a tendency to produce these constructions depending also on the overall length of their performance. The statistical analysis (valency change-total (($t(71)=5.28$, $p<.001$)) and rate of valency changing operations (($t(71)=3.007$, $p=.002$)) gave us a significant difference (alpha level .005): Baseline group produced significantly more constructions than heritage speakers (valency change-total $M=4.24>2.60$, rate of valency changing operations $M=.1688>.1192$).

The results support the hypothesis that valency alternations might be subject to erosion[12] in the heritage variety due to being morphologically marked in the verbal complex, especially in the prefixal domain. Also, one aspect of the relevant valency alternations which would make them vulnerable is the case marking that appears on the arguments. The examples provided here were all from AL, which has lost its case morphology. Therefore, it is hard to make robust claims about the role of case morphology on the erosion of valency alternations here (see Chapter 6).

[12] The lower production attested here might simply be an avoidance strategy because heritage speakers did better with these constructions when I conducted a translation and comprehension task (Chapter 7).

5. Complex clauses

Scarcity of complex constructions is reported to be a hallmark of heritage production. The frequency counts obtained from Frog Story indicate a significantly lower production of embedded constructions by Heritage English speakers (10%) (c.f. monolingual adult production (20-30%)) (Polinsky 2018: 47). Likewise, the production count of embedded clauses by heritage Turkish speakers was found to be only a quarter of that of the age-matched monolingual Turkish speakers (Verhoeven 2004: 439). Heritage speakers in these studies were found to prefer juxtaposition over subordination, yielding more cases of coordinated simplex clauses. The examination of the structurally complex clauses further reveals that heritage production of relative clauses deviates from that of baseline speakers in that the former involves many degraded and/or unacceptable instances (Heritage English, Polinsky 2018: 60; Heritage Palestinian and Egyptian Arabic, Albirini & Benmamoun 2014a, b).

The avoidance of structurally complex clauses along with the deviant forms indicates that the formation of complex clauses is one of the vulnerable areas in heritage grammars. This is especially relevant when such constructions involve long distance dependencies as in the case of relative clause formation. Note that not all types of complex clauses are equally affected in heritage languages, showing that the level of structural complexity might play a role. Though not well-studied in the context of heritage languages, one relevant example is the production of adjunct (reason) clauses occurring at a higher level than finite complement clauses (Polinsky 2018: 48).

As for Laz, the subordinator *na-* attaches to the finite verb[13] in the dependent clause (Emgin 2009), which then can function either as a nominal adjunct or as a complement of a verb or postposition. Although nothing in the Frog Story particularly requires the use of any sort of the complex clauses discussed so far, it turned out that such constructions were highly attested in the speech samples, but crucially mostly in the baseline production.

Let us first examine the embedded complement clauses. (58a) shows us that the dependent clause marked with *na-* functions as the complement of the matrix clause verb. In (58b), the finite verb bearing the subordinator *na-* functions as the complement of the postposition *şeni* 'for', yielding an adjunct clause modifying the matrix clause in terms of reason:

(58) a. … berena avi na-on var u-şk-u(r)-n.
child deer SUB-COP.3SG NEG APPL-know-IPFV-3SG
'(The boy held the deer's horns) the boy did not know that it was a deer.' (Baseline: AL)

b. Layç'i-ko n-o-tz-es, opşa na-a-limb-en şeni.
dog-ERG SP-PRV-look-PST.3PL a.lot SUB-APPL-love-IPFV-3SG for
'The dog is looking at them (=the frogs), for he loves them.' (Baseline: PL)

As for relative clauses, finite verbs marked with *na-* immediately precede a noun, functioning as a nominal adjunct (59). The head noun of the relative clause can also be dropped, yielding a headless relative clause where the nominal affixes are transferred onto the nominalized

[13] This generalization might not hold for AL (c.f. PL): *na-* seems to be more of a clitic as it can attach to constituents other than the finite verb in the dependent clause, such as the object as shown in (i); a fact not previously reported.

(i) Mondo him na-dudi dol-u-ğmal-ur-t'u şeni,
probably he SUB-head SP-APPL-bring-IPFV-PST.3SG for
'Since the dog put his head inside the jar … ' (Baseline: AL)

verbal complex of the relative clause (60). There are also cases where the adjunct clause follows the head noun (61), which is used to foreground a previously described noun:

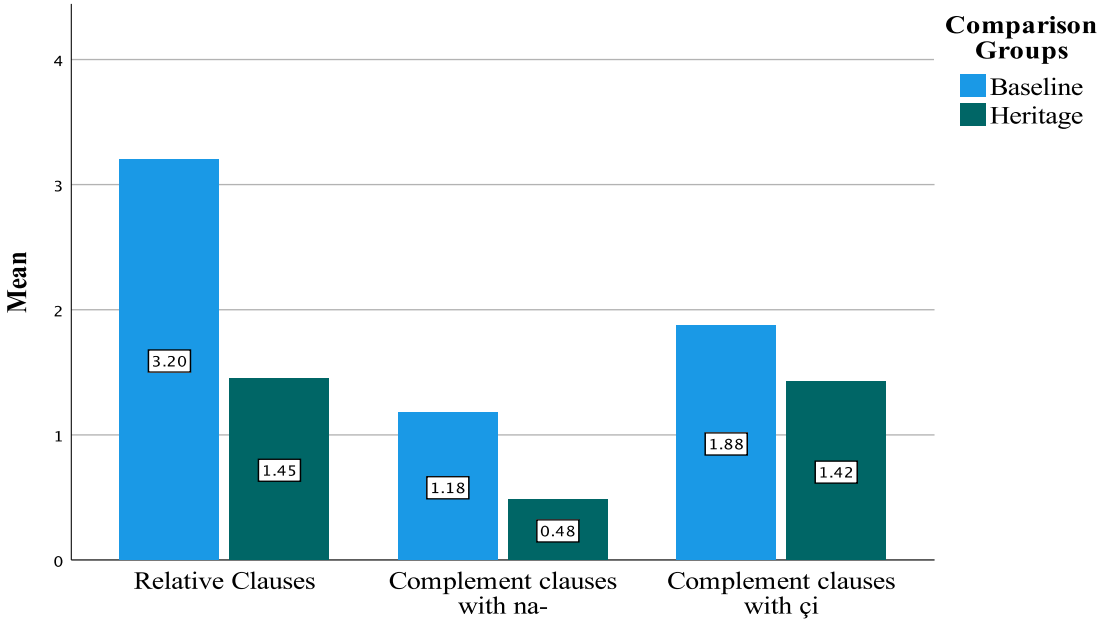
(59) Laç'i do bere abca na-dolo-z-ur-t'u çoki-şi cindo e-xt'-ey.
dog and boy river SUB-SP-lie-IPFV-PST.3SG log-GEN top.ALL SP-move-PST.3PL
'The dog and the boy climbed onto the log, which was floating in the river.' (Baseline: AL)

(60) Geyide na-do-skid-u-pe-s u-3om-es ki …
behind SUB-SP-stay-PST.3SG-PL-DAT APPL-tell-PST.3PL that
'They (=the dog and the boy) told those who stay behind that …' (Baseline: FL)

(61) … laç'i-na na-lal-um-tu buttuc-epe n-a-şk'-u.
Dog-DIM. SUB-bark-IPFV-PST.3SG bee-PL SP-APPL-let.go-PST.3SG
'The dog, who was barking, let the bees go.' (Baseline: AL)

The frequency counts of these constructions indicate that the production of constructions featuring the *na-* subordinator is significantly ($t(71)=3.48$, $p<.001$) higher in the baseline group ($M=1.78$) than in the heritage group ($M=0.89$). Figure (8) shows us that baseline production of relative as well as complement clauses, giving us the total number of *na*-clauses, is more than twice of heritage production. Given the paucity of complex syntactic structures in heritage production (Polinsky 2018:73), these findings i) show that Heritage Laz speakers pattern with speakers of other heritage languages, ii) point to the erosion of *na*-clauses.

Figure 8: Mean distribution of relative clauses and embedded clauses formed with *na*-



The lower production of *na*-clauses might stem from the existence of alternative strategies. Particularly relevant are the finite complement clauses that are formed with the Indo-European loan complementizer *çi* (62), which forms head initial complement clauses in Turkish (*ki* in Turkish) (63) and Laz. Heritage speakers produced these constructions at a higher level than *na*-complement clauses (Figure 8). Given that these constructions also exist in Turkish, the low production, and possibly the erosion, of *na*-clauses might be due to an increasing reliance on this alternative construction[14].

[14] The production level of these constructions is also quite high in the baseline group, suggesting that these constructions might occur frequently enough in daily life and heritage speakers receive sufficient input and thus enough exposure to these constructions. However, in the absence of corpus or frequency studies, this argument will remain unproved and to be checked.

(62) Bere ko-tsad-u ki poxo çizme-muşi var-on.
child AFF-look-PST.3SG COMPL frog boots-3SG.POSS NEG-COP.3SG
'The child saw that the frog was not in his boots.' (Heritage: AL)

(63) Gör-dü ki kurbağa çizme-sin-de yok.
see-PST.3SG that frog boot-3SG.POSS-LOC EXIST.NEG
'He sees that the frog is not in his boots.' (Turkish)

Heritage speakers did not resort to and use this alternative strategy at all cases, though. There were cases where heritage speakers could have made use of this strategy, but they chose to either switch to Turkish as in (64) and (65) or to juxtapose two verbs (66). Note that the embedded verb in (64) is Turkish[15] and the heritage speaker uses the Turkish embedded clause formation structure, namely Genitive-Possessive construction. In (65), we see the formation of a relative clause in Turkish. Lastly, (66) shows the juxtaposition of two verbs without a subordinator[16].

(64) Bere [kurbağa-şi kaç-tığ-ın-ı] a-z-i-y.
child frog-GEN run away-NMLZ-3SG.POSS-ACC APPL-see-IPFV-3SG
'The child sees that the frog has escaped.' (Heritage: AL)

(65) Bere [kavanozi-şi içinde ol-an kurbağa]-yi var a-zir-u-si …
child jar-GEN inside become-REL frog-ACC NEG APPL-see-PST.SG-ADV
'When the child did not see the frog, which was in the jar, …' (Heritage: AL)

[15] Underlining is used to represent code-mixed utterances, i.e., insertions from Turkish, in the present study.
[16] Baseline speakers rated this sentence acceptable only to some extent and only when uttered with a particular intonation.

(66) Bere mcvabu menda-xt'-u tsad-u[17].

child frog SP-move-PST.3SG see-PST.3SG

'The child saw that the frog left.' (Heritage: AL)

Lastly, heritage speakers are quite adept at forming adverbial clauses in that they even outperformed baseline speakers in this respect as shown in Figure (9) below. The particularly relevant two types of temporal adverbial clauses are those that are formed with the suffix i) *–(s)i(s),* which forms when-clauses (67), and ii) *-şani*, forming while-clauses as shown in (68).

(67) … coli-şa gama-xt-u-si a mutxa dv-a-gur-u.

lake-ABL SP-move-PST.3SG-ADV one thing SP-APPL-hear-PST.3SG

'When the child went out of the lake, he heard something.' (Heritage: AL)

(68) Ok'açxe bere i-bi-Ø-y-te-şani dv-a-cin-u.

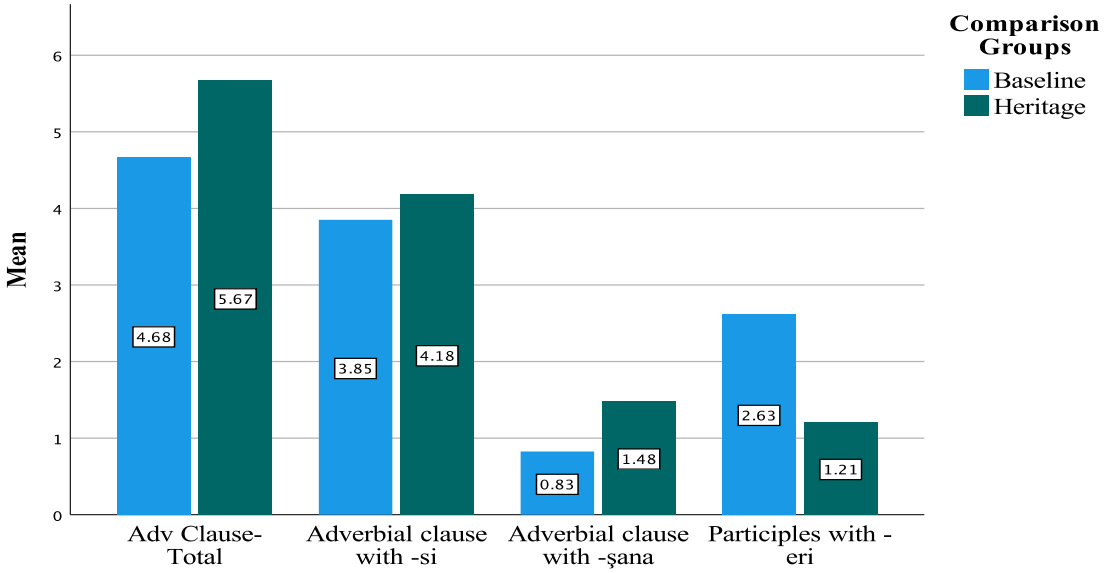
later child PRV-play-IPFV-3SG-SF-ADV SP-APPL-lie-PST.3SG

'Later, while the child was playing, (the dog) slept.' (Heritage: AL)

Like the subordinator *na-*, these markers also attach to finite verbs, but they are suffixed, while *na-* is prefixed. Heritage speakers could be more proficient in these constructions given that they are also accustomed to suffixation thanks to speaking Turkish. Leaving the discrepancy between *na*-clauses and adverbial clauses to future studies, the higher production of the latter shows us that heritage speakers seem not to avoid all types of complex clauses, as also reported for other languages. (Heritage English, Polinsky 2018: 48; Turkish, Verhoeven 2004: 439).

[17] Note that this sentence requires a special intonation and a pause after the embedded verb in the baseline variety to be rated as acceptable.

Figure 9: Mean production counts of adverbial clauses in baseline and heritage group[18]



6. Aspect and tense

Aspect and mood are reported to be more vulnerable than tense and agreement markers in heritage languages (see Montrul 2016: 61-71). The distinction between tense and aspect are not always clear-cut because often these categories are encoded simultaneously where tense morphemes also mark aspectual distinctions. Given this, heritage speakers produce one temporal-

[18] The participle suffix *-eri* forms non-finite clauses that can also be embedded and take part in Exceptional Case Marking constructions (ii)-(iii). The subjects of th*ese* clauses bear nominative case, but crucially not ergative as in (i). See Emgin (2009) for the complementation patterns in PL. Being non-finite, they are excluded from the discussion regarding the complex clauses here. They are included in Figure (11) because participles formed with the suffix *-eri* can also function as adverbs, especially when re-duplicated as in (iii).

i) Bere-k i-bgar-s .
child-ERG PRV-cry-3SG
'The child is crying'.

ii) Ma [bere bgar-eri] do-m-a-tzon-u.
I.DAT child.ABS cry-PTCP SP-1SG-APPL-think-PST.3SG
'I thought that the child cried.' (Emgin 2009: 53, glosses are mine)

iii) Bere ar mcvabu xe-pe cela-xun-eri ul-u(r)-n.
child one frog hand-PL SP-sit-PTCP move-IPFV-3SG
'The child is leaving with a frog placed in his hands.'

iv) Laç'i k'riyin-eri ul-u(r)-n
dog cry-PTCP move-IPFV-3SG
'The dog is leaving by crying.'

aspectual category more than the other. Van Buren (2012) shows that the production of the preterit (marking perfective) in Heritage Spanish is overextending while that of the imperfect (also imperfective aspect) is decreasing. Details aside, the preference for a particular aspectual category is accounted for in reference to differing degrees of sensitivity heritage speakers show to the level of grammar (lexical, sentential and/or pragmatic) where the aspectual distinctions are encoded (Heritage Russian, Laleko 2010; Heritage Spanish, Montrul 2009).

The viewpoint aspect in Laz is encoded along with tense in that past tense also implies perfective aspect and continuous tense imperfective aspect. While imperfective aspect exhibits allomorphy in that there are 4 different markers, whose distribution is governed by the argument structural and lexical properties of predicates, there is only a single morphological exponence for past tense/perfective aspect for each person (see (11) in Chapter 2), and thus it exhibits person-based allomorphy. Given heritage speakers' preference for transparency (Polinsky 2018: 61), the imperfective aspect would be predicted to pose more challenges to them, as there are 4 different forms associated with a single meaning and their distribution is more complex.

In line with this, I show in Chapter 6 that heritage speakers produced deviant forms (c.f. errors) only with imperfective aspect markers (68) while their production of past tense markers was accurate. This shows the aspectual category that exhibits more allomorphic distinction poses more challenges to heritage speakers, and thus becomes more vulnerable to change (Chapter 7).

(68) Layç'i k'urbağa-şi[19] zir-a-y. (c.f. baseline zir-u-y)
dog frog-GEN see/find-IPFV-3SG
Int: 'The dog sees/finds the frog.' (Heritage: AL)

[19] The object here should not bear genitive case marker, either.

Leaving the details aside, the aim here is to check if heritage speakers would show any preference for narrating the story by making more use of past tense and thus perfective aspect rather than continuous tense (=imperfective aspect marker). Given the differences noted above, it is expected to find a higher level of past tense usage in the heritage group to avoid the morphologically more complex continuous tense (=imperfective aspect). However, the results of the statistical analysis do not seem to support this prediction.

When the two groups of Laz speakers were contrasted in terms of the level of past tense and continuous tense usage (past or continuous tense total divided by the total number of finite verbs[20]), the independent samples t-tests did not yield any statistically significant difference (all *p*s>.05). This means both groups of speakers made use of both tenses at a similar rate. Despite not being statistically significant, the comparison of the mean scores shows that while baseline speakers made more use of continuous tense (*M*=.50) than past tense (*M*=.46), we see the opposite pattern in the heritage group, whose past tense usage (*M*=.53) was higher than continuous tense usage (*M*=.45). This is in line with the proposed hypothesis, which needs to be checked against further production data. I leave this issue to future studies.

7. Syntax-pragmatics interface

The aspects of grammar that fall within the interface of different modules tend to be the most susceptible to change and erosion in heritage languages (Aalberse et al. 2019: 151). The Interface Hypothesis (Tsimpli & Sorace 2006; Sorace 2011), for instance, suggests that external interfaces where syntax interacts with pragmatics are the most vulnerable. Word order alternations

[20] Since the number of finite forms would differ depending on the length of the narration, in order to eliminate the effect of this on the statistical analyses, these variables were relativized according to length, giving us a better idea about the tendency of the participants to prefer one temporo-aspectual form over the other.

constitute a nice example and testing ground in this respect because variations in the order of basic constituents (if licensed in a language) usually are conditioned or accompanied by information structural distinctions such as contrast, backgrounding etc. The examination of word order facts in heritage languages indicates that word order is susceptible to transfer effects (Heritage Hungarian, Fenyvesi 2005; Heritage Egyptian Arabic, Albirini et al. 2011; Heritage English, Polinsky 2018). The impoverishment of case morphology prevalent in heritage languages might also have an effect on restricting the word order possibilities, leading heritage speakers i) to prefer canonical or rigid word order, and ii) to have difficulty with scrambled or non-canonical word orders (Heritage Spanish and Romanian, Montrul, Bhatt & Girju 2015).

Another relevant phenomenon is null anaphora resolution. Usually in the presence of verbal agreement, arguments of verbs in a sentence could be omitted, i.e., pro-dropped, because the relevant information regarding the silent arguments is recoverable from verbal agreement markers as well as contextual clues. There is a large body of research reporting an increased level of overt pronoun usage instead of dropping arguments (Polinsky 2018: 254 for an overview). This becomes understandable given heritage speakers' general preference for overt forms over covert ones (The Silent Problem, Polinsky & Laleko 2017) and given that silent items are harder to process and keep track of while overt forms have clear and transparent meanings. Moreover, the majority of studies that report the increased use of overt pronouns are based on pro-drop languages that are spoken as heritage languages in the context of English, which is a non-pro-drop language. Therefore, the increased overt pronoun usage is usually associated with transfer effects from English. When both languages license pro-drop, to what extent it is possible to find the same preference for overt pronouns has not been well-studied.

Heritage Laz presents an interesting testing ground in this respect. Both Turkish and Laz are typologically similar in terms of licensing dropping of arguments and scrambling. One apparent exception to this generalization could be AL which lacks overt case morphology and thus more restricted in these respects (Eren 2023). However, it turned out that baseline AL speakers also produced many instances of these constructions, given that the Frog Story provided a context that serves for the resolution of potential ambiguities.

Given the parallelisms between Turkish and Laz, if heritage Laz speakers show a preference for using overt pronouns or arguments as well as the canonical SOV word order, this preference is less likely to be conditioned by transfer effects. Rather, it tells us something about the general properties of heritage grammars. The examination of the data in this respect seems to support this hypothesis: Heritage speakers produced significantly lower instances of dropping and scrambling of arguments, i.e., placing them in the postverbal position.

The free narratives of the baseline speakers involved many instances of arguments scrambled into the postverbal position by virtue of conveying old information[21]. Among different types of arguments, subjects exhibited the highest frequency of occurring post-verbally, being followed by direct and applied objects, as illustrated in (69)-(72). Note that dative marked subjects of applicative constructions also occur post-verbally as shown in (70).

(69) K'avanozi dolo-tz-er-an laç'i-na do bere.
jar SP-look-IPFV-3PL dog-DIM and child
'It is into the jar that the boy and the child are looking.' (Subject- Baseline: AL)

[21] The same also holds for Turkish in that the post verbal position cannot host focused or new-information seeking phrases such as *wh*-words (Göksel & Özsoy 2000, also see Chapter 2).

(70) Guri d-a-nç-e(r)-n bere-s.

heart SP-APPL-hurt-IPFV-3SG child-DAT

'The boy is upset. (Lit: The boy's heart is aching.)' (Applied Subject- Baseline: FL)

(71) Hekepe-s go-um-an mjvabu.

there-PL search-IPFV-3PL frog

'They(=the dog and frog) are searching for the frog all around.' (Direct Object- Baseline: FL)

(72) Hişeni nena mo ik-um ya u-tzom-e-y laç'i

therefore noise NEG do-IPFV COMPL APPL-say-IPFV-3SG dog

'Therefore (the boy) told the dog not to make any noise.' (Applied Object- Baseline: AL)

The children of the baseline speakers also produced constructions where arguments are scrambled into post-verbal position. However, the frequency of such constructions was quite low. (73) shows that the subject of the clause is scrambled into the postverbal position. (74) demonstrates that the object of the clause, namely the frog, immediately follows the verb:

(73) Eşi-muşi k'ala mjvabu zir-um-an. Uk'açxe o-tzk-e(r)n-an

spouse-3SG.POSS with frog see-IPFV-3PL Later PRV-look-IPFV-3PL

ar daha berepe-ti u-on-un-an tzuta mjvabu-pe.

one more child-PL-also APPL-have-IPFV-3PL small frog-PL

'They (=the dog and the boy) find the frog along with his/her spouse. Later, they look (and see) that the little frogs also have children.' (Heritage: FL)

(74) Coğori-s-ti k'avanozi ti-s ge-x-e-n. O-tzk-e(r)n-an
dog-DAT-also jar head-LOC SP-sit-IPFV-3SG PRV-look-IPFV-3PL
o-tzk-e(r)n-an ama var zir-um-an mjvabu
PRV-look-IPFV-3PL but NEG find-IPFV-PL frog
'The jar is on top of the dog's head. And they (the boy and the dog) are looking and looking but they don't see/find the frog.' (Heritage: FL)

The above examples are also important for showing the pro-drop facts: In all cases where the subject is not scrambled into the post verbal domain (71, 72 and 74), the subjects of the clauses are omitted as they can be recovered from the context as well as the verbal agreement markers. Dropping of arguments of different sorts is attested in both groups of speakers contrasted here.

Adjuncts were also found in postverbal position in both groups. Crucially, heritage speakers showed a greater tendency to place adjuncts after the predicate in comparison to the baseline speakers as shown in (75) and (76). Due to their limited proficiency in the Laz language, they might choose to form the sentence in a grammatically correct way by placing all arguments first and leave the extra-information providing constituents for later. Given that the verb occurs at the end of the sentence in Laz and placing adjuncts before predicates renders the predicate further away from its arguments, with which it has to agree in terms of phi-features.

(75) Okaçxe berena-ti menda-xt-u laçina-şi yanda-şa.
then child-also SP-move-PST.3SG dog-GEN side-ALL
'Then the child went next to the dog.' (Baseline: AL)

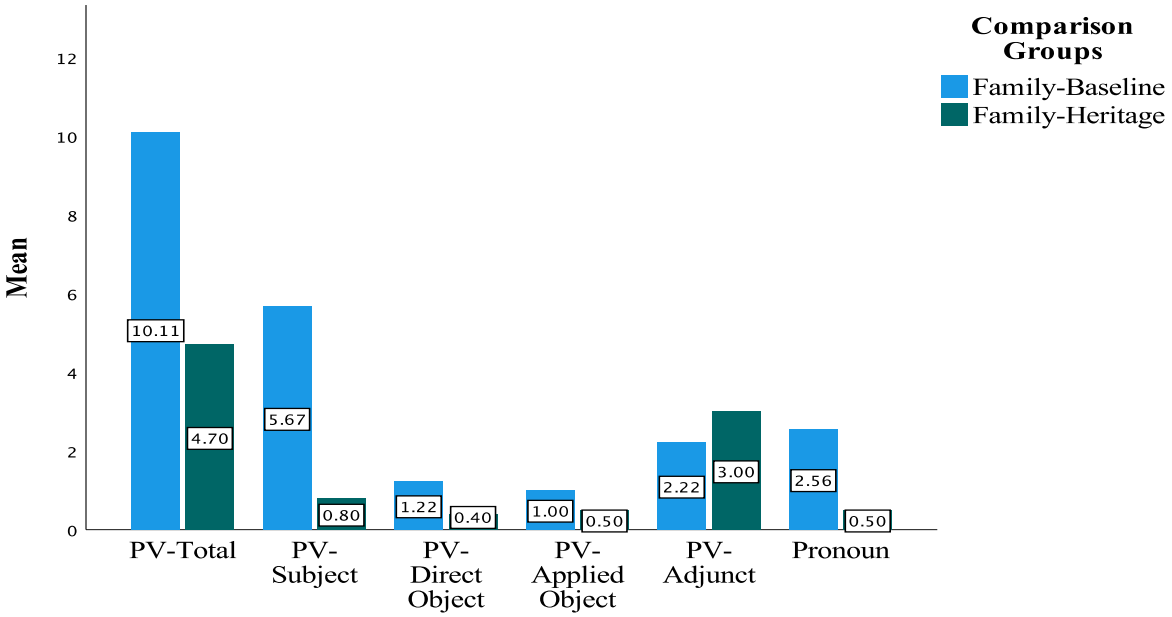
(76) Bere a sotxa menda-xt'-u laç'i şk'ala.

child one place SP-move-PST.3SG dog with

'The child went somewhere else with the dog.' (Heritage: AL)

Figure (10) presents the mean frequency counts of the relevant constructions:

Figure 10: Mean frequency counts of postverbal and dropped arguments by family group



The parental generation (baseline) speakers outscored their children in all respects except for the number of postverbal adjuncts, where we see just the opposite. Despite this, the baseline group still outperformed the heritage group in terms of the total frequency count of postverbal constituents (=PV-Total), which includes all postverbal arguments as well as adjuncts. The same also holds for the use of anaphoric elements like pronouns, which are significantly lower in the

heritage group. Given heritage speakers' problems with long distance dependencies, (Montrul 2016: 72, Polinsky 2018: Chapter 6 for an overview), the lower use of overt pronouns is expected.

As for the statistical analyses, the parental generation speakers were compared with their children in terms of i) rate of pro-drop (the total number of pro-drop divided by the total number of sentences produced), ii) rate of post-verbal-total (the total number of postverbal elements divided by the total number of sentences produced), iii) postverbal arguments, and lastly, iv) postverbal adjuncts. Given that the number of arguments and their positioning relative to the verb would change depending on the length of the narration, the relevant total scores were relativized according to the total number of sentences, giving us a better idea about the tendency of the relevant speakers to drop and/or scramble the arguments in a given discourse. Additionally, in order to understand if argumenthood plays a role in the participants' scrambling preferences, the two groups were also compared with respect to the number of postverbal arguments vs. adjuncts.

The results of the independent samples t-test indicated a statistically significant difference in terms of i) rate of pro-drop ($t(17)=3.060$, $p=.004$) and ii) post-verbal arguments ($t(17)=3.177$), $p=.003$). As for, rate of postverbal arguments and adjuncts, no differences were attested (both ps>.05). The significantly lower production level of pro-drop (*Heritage M*=0.16 vs. *Baseline M*=0.31) and postverbal arguments (*Heritage M*= 1.70, *Baseline M*=7.88) in the heritage group is expected given heritage speakers' preference for the canonical word order (Heritage Spanish and Romanian, Montrul, Bhatt & Girju 2015) and overt elements (Polinsky & Laleko 2017). These differences are hardly attributed to transfer effects from Turkish, which patterns with Laz in terms of the contrasted grammatical variables. Therefore, what we observe in the case of heritage Laz, especially the preference for overt arguments rather than pro-drop, is more likely to be attributed to the general properties of heritage languages (c.f. Polinsky 2018: 254).

One word of caution is about even the smaller sample size of participants, i.e., those stand in a close family relationship. The results might be different if the entire corpus is examined, which was not possible due to time restrictions. Moreover, scrambling was examined only in terms of occurring in postverbal position although the narratives also involved cases of scrambling in the pre-verbal position. Since we do not know much about the information structural properties of the relevant Laz varieties, especially in the pre-verbal domain, I leave these issues to future studies.

8. Code-mixing patterns

Code-switching and code-mixing, which are characteristic of bi-/multi-lingual speech, respectively refer to inter-sentential and intra-sentential switches between different languages (Clyne 2003 and Muysken 2000 for an overview). Heritage speakers are simultaneous or sequential bilinguals speaking a minority language as their first language (Laleko 2010:3). Despite the emphasis on bilingualism in the definition of the term, code-switching and code-mixing practices of heritage speakers are not well-studied (Polinsky 2018: 293).

Being a free production task, the Frog Story was very fruitful in generating many instances of code-switching and mixing. Given the focus on the morpho-syntactic properties of Heritage Laz in the present dissertation, the scope of the analysis is narrowed down to intra-sentential switches (code-mixing), which have been extensively analyzed from a grammatical point of view (Backus 1996). Therefore, I leave inter-sentential switches to future studies.

Given long-term language contact between the Turkish and Laz language and in the absence of historical evidence, the identification of bilingual switches becomes a challenging task. As noted in the literature (Poplack & Sankoff 1984, Muysken 2000: 72, Myers-Scotton 2002:41), it is hard to draw a line between single-word loans and single-word switches. The lexical inventory

of heritage Laz speakers is quite restricted, and they showed a greater tendency to use the Turkish terms. Having a better grasp of Laz vocabulary, not all baseline speakers knew the Laz words for certain animals such as *deer* or certain objects such as *hive, clothes*. Like heritage speakers, they made use of words that exist in Turkish lexicon. Given i) the absence of a standard (written) variety of Laz and true monolingual Laz speakers and ii) the dialectal and inter-individual variation, it becomes impossible to know which of these words have been borrowed into Laz, and thus do not constitute a case of bilingual switch, while which other words would do so[22].

As a solution, I decided to focus on the single occurrences of only one particular class of words, namely verbs, specifically finite verbs. There are three main reasons behind this choice: Firstly, the finite verb is the kernel of the sentence determining the structural frame of sentences. Secondly, while the class of nominals is quite larger by virtue of subsuming a number of different parts of speech, the set of verbs is more restricted cross-linguistically and lastly, iii) all the attested finite Turkish verbs in the speech samples also bear Turkish inflectional endings, i.e., there are no cases where a Turkish loan verb root bears Laz verbal morphology, constituting relatively more certain cases of switchers rather than loans. Needless to say, in addition to single occurrences of finite verbs, constituents that are larger such as verbal (and nominal) phrases involving only Turkish words were taken into consideration.

Before turning to the statistical and theoretical analyses and the constructions that were examined for this purpose, let us lastly see for what kinds of purposes the participants switched to Turkish. The two groups of speakers switch to Turkish for different purposes. Baseline speakers mostly did so to clarify what they said in Laz, assuming that their listeners (including me as the

[22] For the same reasons, only those words that we know for sure to be Laz and not Turkish were taken into consideration in determining the number of Laz content words.

researcher) would have lower levels of proficiency. In (77)[23], the baseline speaker uses a deverbal Laz word, i.e., *xuttuloni* derived from the verb *oxuthxonu* 'carve, drill' and provides the Turkish counterpart of this particular word later in her speech to make it explicit. Similarly, the baseline speaker in (78) firstly provides a translation for the word *t'at'a*, which refers to a specific type of stool found in traditional Laz houses. After using this word in a sentence, he feels the need to further explain the meaning of the word also in Laz because this word is no longer frequently used.

(77) Ar xutt'ul-oni ağaci yeri, haşşo ağaci steri, deluk-li ağaci steri heko …
one hole-DER tree place like.this tree like hole-DER tree like from there
'One tree with holes, like a tree, like a tree with holes,…' (Baseline: AL)

(78) Turkçe tabure da Lazca t'at'a. T'at'a dg-i-n. T'at'a
Turkish stool but Laz stool stool SP-stand-IPFV-3SG stool
de-duğ-umuz yani do-xun-oni.
say-NMLZ-1PL.POSS that.is SP-sit-DER (Baseline: FL)
'It is (called) tabure in Turkish, but t'at'a in Laz. The stool is standing there. What we call t'at'a is something to sit on.'

Heritage speakers switch to Turkish mostly to compensate for their lack of lexical or grammatical knowledge in Laz. Consider the two examples in (79) and (80), where the heritage speakers explicitly acknowledge their lack of knowledge.

[23] Switches to Turkish are underlined in the remainder of this section.

(79) K'urbağa gor-um-an, seslen-iyor-lar. Lazca-sın-ı bil-m-iyor-um.

frog search-IPFV-3PL call out-PROG-3PL Laz-POSS-ACC know-NEG-PROG-1SG

'They are searching for the frog, calling him out. I don't know what this word is in Laz.'

(80) Bere geyiği ee bil-m-iyor-um. Ee geyik saldır-ıyor.

child deer know-NEG-PROG-1SG deer attack-PROG-3SG

'The child, the deer [hesitation] I don't know. The deer is attacking.' (Heritage: AL)

Although similar kind of switches were also attested in the production of baseline speakers, these speakers often provided a translation[24] of what they said in Turkish right after as in (81).

(81) Hayla bir goruntu var, ottzkom-ila ren.

still one image EXIST show-DER COP.3SG

'There is still/yet another image. There is another image. ' (Baseline: FL)

Turning to the different types of code-mixing patterns that were examined for and included in the statistical analysis[25], the first and most common pattern was single occurrences of finite verbs, which occur sentence finally and function as the predicate of intransitive[26] clauses. This pattern was prevalent in both groups. However, the majority of the cases in the baseline data was

[24] Not all cases of this sort seem to stem from lack of or problems with retrieval of Laz words. There were also cases where baseline speakers just switch to Turkish by virtue of being bilingual speakers. In such cases they realized they switched to another language and switch back to Laz and thus provide a translation.

[25] The examples in (77)-(81) were not included in the statistical analysis because they either involve single occurrences of nominals or they constitute cases of inter-sentential switches.

[26] The heritage data also involved cases of transitive verbs, as exemplified (i). The object of the transitive verb does not receive accusative case marking necessary in Turkish. Therefore, I took this as a single verb switch.

(i) Kartali bere yakal-iyo.

eagle child catch-PROG.3SG

'The eagle is catching the boy.'

concerned with a certain group of verbs, which appears not to exist in Laz. Some speakers spent time to think of the Laz alternatives but could not find an exact translation. Examples include *uğraşıyor* 'try to do something' (82) and *uğurluyorlar* 'send off' (83) [27].

(82) Laç'i nca eyo-lv-a şeni uğraş-ıyor.
dog tree SP-move-INF for try-PROG.3SG
'The dog is trying to climb the tree.' (Baseline: AL)

(83) Majuani mjvapu-ti na-do-skid-u(r)-n beye-pe kala uğurl-uyo-lar,
other frog-also SUB-SP-stay-IPFV-3SG child-PL with send off-PROG-3PL
'The other frog send them with the children who stay there.' (Baseline: FL)

The frequency of single finite verb switches in heritage data was quite higher because the relevant cases involved a wide range of different verbs and were not only restricted to a particular set of verbs as shown in (84). Although it is hard to combine all the relevant verbs under a single semantic class, the majority of cases involved i) psychological verbs (85), which necessarily occur in the so-called inversion constructions (see § 4), ii) motion verbs that would be necessarily expressed with spatial prefixes in Laz (86), and iii) cases that would require valency changing operations in Laz (87). Given the lower level of production of the spatial prefixes and valency alternations in the heritage group, that heritage speakers switch to Turkish for these particular instances becomes understandable. Based on this, code-mixing seems as a(n avoidance) strategy heritage speakers resort to to compensate for their lack of knowledge. It is hard to prove this claim in the absence of separate comprehension-based tasks and studies, thus I leave it to future studies.

[27] Other relevant verbs are *kavuşuyor* 'reunite', *buluşuyor* 'meet', *cebelleşiyor* 'struggle', *vedalaşıyor* 'say goodbye'.

(84) Mjvabu k'avanozi-şen eş-ul-u(r)-n ve kaç-ıyor.

frog jar-ABL SP-move-IPFV-3SG and run away-PROG.3SG

'The frog jumps out of the jar and runs away.' (Heritage: FL)

(85) Co-l-u-si putuc-epe az-di.

SP-move-PST.3SG-ADV bee-PL get angry-PST.3SG

'When the hive fell down, the bees got angry.' (Heritage: PL)

(86) Bere ağacişi cindo çık-tı.

child tree-GEN top.ALL climb-PST.3SG

'The child climbed the tree.' (Heritage: AL)

(87) Bere-ti laççi şeni pencereşa ko-n-u-kapp-u, sarıl-dı.

child-also dog for window-ABL AFF-SP-APPL-jump-PST.2SG hug-PST.3SG

'The child jumped out of the window for the dog and hugged him.' (Heritage: AL)

The second most common pattern of code-mixing involved cases of verbal phrases, i.e., phrases that are headed by finite verbs but involve more than a single verb such as the complements and/or adjuncts of the verbs. As opposed to single word switches, VP switches in the baseline group were quite low and the attested cases are mostly restricted to frozen expressions and/or idioms as exemplified in (88)[28]. For other (regular, non-frozen or idiomatic) VP-switches, it should be noted that the baseline speakers often switched back to Laz and provided a Laz translation right after. One interesting case is in (89), where the baseline speaker switches to Turkish and uses a placeholder word as the object of the helping verb 'make', but later she provides the Laz word:

[28] Other cases involve *dört nala kalktı* 'gallop', *yola çıktiler* 'set out', *piyasada yok* 'vanish' so on.

(88) Dağı tere i-mt'-e(r)-n ama … k'iyamet cid-eyur.

mountain towards PRV-escape-IPFV-3SG but apocalypse go-PROG.3SG

'He is escaping into the mountains but (bees are attacking him) there is a chaos.' (Baseline: PL)

(89) Him ora şk'ule hakole şey yapiyor, xe u-val-am-s.

that time after from.there thing make-PROG.3SG hand APPL-wave-IPFV-3SG

'Later on, the boy is doing something, he is waving hands (to the frog family)' (Baseline: FL)

The frequency of VP-switches in the heritage group was quite higher and involved very few instances of idiomatic or frozen expressions. Instead, they consisted mostly of transparent VP constructions involving direct objects and/or adjuncts. In (90), the entire VP is in Turkish, while in (91) the object is in Laz while the adjunct and the verb are both in Turkish. In (92) and (93), part of the genitive construction that functions as the location of the event is in Laz while the rest of the predicate is in Turkish. Note that all these instances involve VPs that are compositionally derived and thus bear transparent readings:

(90) Laçi-muşi bere-şi, çocuğ-un yanağ-ın-ı yaladı.

dog-3SG.POSS child-GEN child-GEN cheek-3SG.POSS lick-PST.3SG

'His dog licked the child's cheeks.' (Heritage: AL)

(91) Kva-z haşo xe-ti hava-ya kaldır-ıyor.

rock-LOC like.this hand-also air-DAT raise-PROG.3SG

'On the rock, he raises his hand like this.' (Heritage: FL)

(92) Him sira puttuci-ti bereşi peşine saldurdi.

that time bee-also child-GEN back-DAT attack-PST.3SG

'At that moment, the bees attacked the boy from the back.' (Heritage: PL)

(93) Bere geyiği-şi kafasine tak-il-di.

child deer-GEN head-3SG.POSS-DAT hang-PASS-PST.3SG

'The child was hung on the deer's head (=among its horns).' (Heritage: AL)

The higher occurrence of VP switches is accompanied by switches that involve nominal phrases, all constituents of which come from Turkish. In order to eliminate any potential doubts on whether we are dealing with loans rather than bilingual switches, I only included fully Turkish non-verbal phrases, and excluded cases where one of the words bears a Laz ending such as the genitive marker. While non-verbal phrasal switches were more prevalent in the heritage data, it was quite limited and restricted to frozen expressions in the baseline narratives (94). Phrasal switches in the heritage group mostly served to compensate for lexical gaps (95) and involved postpositional constructions (96) and (97).

(94) Bere can havli ile a kaya k-eka-ntob-u.

child soul strength with one rock AFF-SP-hide-PST.3SG

'The boy hid behind a rock desperately.' (Baseline: AL)

(95) Bere arı yuva-sı ko-ziru.

child bee nest-3SG.POSS AFF-find-PST.3SG

'The child found a hive (lit: bee nest)' (Heritage: AL)

(96) Çimen-ler-in ara-sın-dan geyiği gam-ul-u(r)-n.
grass-PL-GEN side-3SG.POSS-ABL deer SP-move-IPFV-3SG
'The deer is coming out from among the grass.' (Heritage: AL)

(97) Bere-ti laç'i-ti camdan dışarı tsad-um-an.
child-also dog-also glass-ABL outside look-IPFV-3PL
'The child and the dog are both looking out of the window.' (Heritage: AL)

The higher frequency of phrases in the heritage data is significant in that bilingual switches tend to be longer in this group. This is further evidenced by the higher occurrences of (full) clausal switches attested mostly in heritage production. Despite being quite adept at forming adverbial clauses (§ 5), heritage speakers inserted a full Turkish adverbial clause (of different sorts), which constituted the highest portion of the clausal switches (98) and (99). Additionally, there were also cases of relative clause insertion, albeit low in frequency, as shown in (100).

(98) Sabah ol-duğ-un-da bere do coğori o-tzked-an …
morning become-COMPL-3SG.POSS-LOC child and dog PRV-look-3PL
'In the morning (lit: When it became morning), the boy and the dog look ….' (Heritage: FL)

(99) Him go-şaş-eri bayaği uzak-laş-tuk-ten sonra …
he SP-surprise-PTCP a.lot far-DER-NMLZ-ABL after
'After getting far away in a surprised way, he … ' (Heritage: PL)

(100) Bere kavanozi-şi içinde ol-an kurbağa-yi var a-zir-u-si …
child jar-GEN inside become-REL frog-ACC NEG APPL-see-PST.SG-ADV
'When the child did not see the frog, which was in the jar, …' (Heritage: AL)

Albeit low in number, full clausal Turkish insertions were also attested in the baseline production. As opposed to the case in phrasal switches, full clausal switches were not restricted to frozen or idiomatic expressions, though. Two particular examples are provided in (101), where a full purpose clause is inserted, and (102), where a full Turkish sentence is conjoined:

(101) laç'i-ti eyo-tz-e-y <u>bere k'urtar-a-yim diye</u> ama geyiği …
dog-also SP-look-IPFV-3SG child rescue-OPT-1SG COMPL but deer
'And the dog is looking up so that he can save the child but the deer … ' (Baseline: AL)

(102) ceyiği … cindo beri co-tz-e(r)-s ama <u>yap-acak bişe yok.</u>
deer top back SP-look-IPFV-3SG but do-REL anything EXIST.NEG
'The deer is looking back from above but there is nothing to do.' (Baseline: PL)

The final code-mixing pattern of our concern involves transfer of Turkish case morphology onto Laz nominals. There were a number of cases where heritage speakers insert structural accusative marker (103), and (lexical and spatial) ablative (104) and dative case (105) markers onto Laz nominals. The insertion of ablative seen in (104) is also particularly interesting given that AL still retains ablative case and instead of using this already available case marker, the heritage speaker (consistently) makes use of Turkish spatial case markers in his narration. (105) is also significant because it shows us that the heritage speaker transfers the lexical dative case marker that occurs with the Turkish verb *çalış*-.

(103) Layç'i him i-gzir-u, bere-yi ko-gam-i-ğ-u.

dog him PRV-see-PST.3SG child-ACC AFF-SP-PRV-carry-PST.3SG

'And the dog saw him and took the boy out of the water.' (Heritage: AL)

(104) Geyiği cin-den goyo-tz-e(r)-y.

deer top-ABL SP-look-IPFV-3SG

'The deer is looking down from above.' (Heritage: AL)

(105) Huy omtinu-ye çaliş-iyur heralde.

now run away.INF-DAT try-PROG.3SG probably

'The frog is now trying to run away.' (Heritage: AL)

The frequency of case marker insertions in the baseline group is quite low and restricted to cases where the verb of the sentence immediately follows and governs the case on its complement. The Turkish verb *kurtar-* 'save, rescue' requires accusative case on its object[29] in (106a). Another interesting fact comes from (106b), where the baseline speaker uses dative case marker. The case marker is required by the Turkish predicate of the sentence and the baseline speaker uses the Laz counterpart of dative case marker to satisfy the selectional requirements of the Turkish predicate[30].

(106) a. Bere-yi kurtar-dı, bere na-i-şk'idet'-u yeri-şa…

child-ACC rescue-PST.3SG child SUB-PRV-drown-PST.3SG place-ABL

'The dog saved the child, (he is taking him away) from the place where he was drowning.'

b. Ağaci dali-şa tut-un-du. (c.f. dali ko-mv-a-kn-u)

[29] This particular case could also be considered as noun insertions into VPs.

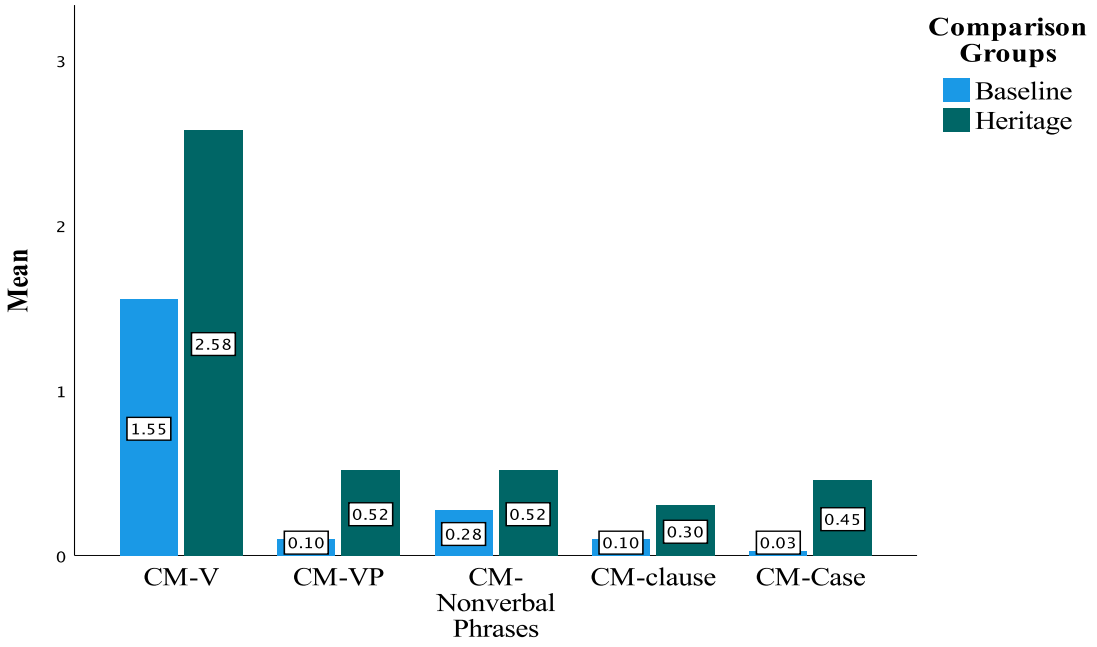
[30] This was not taken into consideration in the statistical analysis given that the case marker is not in Turkish.

tree branch-ALL hold-REFL-PST.3SG branch AFF-SP-APPL-hold-PST.3SG

'He held the branch of the tree.' (Baseline: AL)

Figure (11) presents the frequency counts of the cases of code-mixing presented above:

Figure 11: Mean frequency counts of code-mixing patterns of baseline and heritage groups



In all cases, the heritage group outscored the baseline group, as opposed to what we have seen so far with respect to the other grammatical variables examined thus far. The results of the statistical analyses ($t(71)=-2.13$, $p=.036$) also indicate a significantly higher production level of code-mixing patterns in the heritage group ($M=1.80>1.28$). In order to avoid the potential effects of the length of speech on the number of code-mixed utterances, I also relativized the total number of code-mixing utterances according to the total number of sentences participants produced (=rate

of code-mixing). And the statistical analysis (U= 397, z= -2.918, p=.004) yielded a statistically significant difference in that heritage group (*Mdn*=.2425>.1526) outperformed baseline speakers.

Given the lower proficiency of heritage speakers, it seems that they use code-mixing as a strategy to compensate for their lack of knowledge in Laz. Nevertheless, this finding and code-mixing in general should not necessarily be taken as an indication of lack of linguistic proficiency (Weinreich 1979, c.f. Muysken 2000). Park-Johnson (2017) shows that code-mixing is independent of linguistic proficiency because Heritage Korean speakers do not code-mix less as they become more dominant and proficient speakers of English. One reason to believe that code-mixing may not necessarily directly correlate with linguistic proficiency is that baseline Laz speakers also exhibited many instances of code-mixing despite having higher linguistic proficiency. Additionally, given that the code-mixed utterances examined here only come from a constrained production task, we should also be skeptical about the generalizability of the results. If a different task had been conducted such as one where participants are left completely free to tell something of their choice or about their life, the results could have been completely different.

Despite not being indicative of linguistic proficiency, the code-mixed utterances are informative about the interaction of the two linguistic systems in the minds of the bilingual Laz speakers. There is a growing body of research that argues that the code-mixed utterances do not occur randomly but are systematic and rule governed. Providing a full summary of this literature and the examination of all of the data here falls outside the scope of this dissertation (Backus 1996 & Muysken 2000). I briefly discuss the findings under one particular model, namely the Matrix Language Framework (MLF) (Myers-Scotton 1997, Myers-Scotton & Jake 2009), and leave a more in-depth analysis to future studies. The reason behind the choice of this model is that the

MLF model is one of the most recent models proposed for accounting for code-switching in a universal fashion (Türker 2000).

Adopting an insertional approach to code-switching (c.f. linear switching Poplack 1980), Myers-Scotton (1997) proposes two sets of crucial distinctions in the structures of intra-sentential switches. The first is between the Matrix Language and Embedded Language and the second is between content and system morphemes. Asymmetry is central to the MLF model in that two (or more) languages in a language contact setting are (usually) not of equal status and this asymmetry is also reflected in the structures of switches. Under the MLF model, it is assumed that one language (=the Matrix Language) determines the grammatical frame of switches with the help of system morphemes (mostly function words and inflections). The other language referred to as the Embedded language provides content morphemes (usually nouns, verbs, and adjectives and some adpositions). Since the elements from the Embedded Language is inserted into the frame built up by the Matrix language, the MLF model is a paradigmatic model. The model also rests on the assumption that we can identify the base language for mixed utterances, which is also dynamic in that it can change from context to context and even from one utterance to another.

In the MLF model, three different patterns of intra-sentential code-mixing are identified: i) Insertion, ii) Alternation, and iii) Congruent lexicalization. These patterns differ from one another on structural, psycholinguistic, and sociolinguistic grounds. Insertions involve the temporary deactivation of one linguistic system during the process when elements from one language are inserted into the structure of the other. Alternation involves switches in activation between two linguistic systems because each language provides the structure of a distinct constituent one after another. Lastly, in congruent lexicalization, where a shared grammatical structure is filled with lexical materials from different languages, two linguistic systems are argued to share their

processing systems partially. Details aside, there is a transition zone between insertion and alternation because the longer fragments that are inserted, the more complete activation of the relevant language at issue. Length therefore is proposed as a criterion that distinguishes insertions from alternations in that the longer switched utterances, the more likely that we are dealing with alternation rather than insertion (Muysken 2000: 97).

As far as Laz is concerned, the typological similarities between Turkish and Laz (Chapter 2) in terms of nominal and sentential phrase structure as well as their morphological typology (both agglutinative) make it difficult determine which language provides the morpho-syntactic frame of the mixed utterances. However, since the presence of system morphemes are helpful in the identification of the Matrix Language, the fact that Turkish case morphology appears on Laz nominals in the mixed utterances produced by the heritage group, especially the structural accusative case, implies that the Matrix Language is Turkish in the majority of the mixed utterances of this group of speakers. Furthermore, the mixed utterances of heritage speakers also involved cases where nominals bear a case marker that is only required by Turkish but crucially not Laz. One relevant case is in (107), where the heritage speaker follows the morpho-syntactic frame of Turkish embedded clauses, namely Genitive-Possessive constructions, where the subject of the embedded clause bears genitive and the nominalized verb receives possessive endings. Although subjects of embedded clauses in Laz do not bear genitive case marker, the heritage speaker here marks the Laz word with the Laz genitive case marker, which shows us that the morpho-syntactic frame of the embedded clause is set up based on Turkish. Additionally, heritage speakers also mark Laz nominals with Turkish plural marker as exemplified in (108), a pattern that was not attested in the baseline group at all. The use of this (early) system morpheme provides

further evidence for the fact that Turkish indeed functions as the base language in the mixed utterances of heritage speakers more than it does in the baseline group:

(107) Bere [kurbağa-şi kaç-tığ-ın-ı] a-z-i-y.
child frog-GEN run away-NMLZ-3SG.POSS-ACC APPL-see-IPFV-3SG
'The child sees that the frog has escaped.' (Heritage: AL)

(108) Matzupxe-ler-den i-mt-e(r)-n.
bee-PL-ABL PRV-run away-IPFV-3SG
'The dog is running away from the bees.' (Heritage: AL)

The second important and related fact concerns the length of the mixed utterances. The higher frequency of phrasal and clausal switches attested in the heritage group indicates that the mixed utterances produced by this group of speakers are longer. Although some of these switches could still be analyzed as insertions, since longer switched fragments tend to be classified as alternations (Muysken 2000: 97), it could also be expected that heritage speakers produce more alternational switches in comparison to baseline speakers. Given that higher activation of different linguistic systems is expected in longer fragment switches and especially alternations, it could be argued that the level of the activation of Turkish linguistic system would be higher in the heritage group. This seems in line with the fact that Turkish is the Matrix Language in many of their code-mixed utterances as discussed above.

The higher activation of the Turkish linguistic system in the heritage group is also expected given the linguistic background of these speakers, specifically their particular language acquisition path. The majority of these speakers are simultaneous bilinguals whose more dominant language

is Turkish because their acquisition of Laz is interrupted especially when they start primary school. Baseline speakers are raised as monolingual speakers until the age of 7, after which the level of exposure to Turkish was still restricted by virtue of living in rural areas and in the absence of mass media channels. Given the difference between the two groups in terms of the onset age of bilingualism, it becomes clear why Turkish would be more activated in the mixed utterances of the heritage group but not less so in the baseline group. However, the confirmation of this argument would require a more in-depth analysis based on a more comprehensive set of data and more psycholinguistic studies. Therefore, I leave this to future studies.

9. Summary

The comparison of the heritage speakers with the baseline group indicated that the former's production count of the following grammatical variables is significantly lower in comparison to that of the latter group: i) Laz content words, ii) valency alternations, iii) distinct spatial prefixes, iv) complex clauses. The results remained similar when these measures were relativized according to length (total number of finite verbs produced), i.e., i) rate of spatial prefixes and ii) rate of valency alternations. Given the general properties of heritage languages (Montrul 2016 & Polinsky 2018 for an overview), these results are not surprising because heritage speakers are reported to have a reduced lexicon, prefer simplex clauses over complex constructions, and have problems with morphology, which seems to have affected those aspects of Laz that are prefixed in the verbal complex, namely, spatial prefixes and valency changing operations. Also, in the case of spatial relations, we observed that heritage speakers show a greater tendency to use postpositional constructions rather than synthetic spatial prefixes, probably due to transfer effects from Turkish, lending further support for the increased analyticity in heritage languages (Polinsky 2018: 183).

As for valency alternations and complex clause formation, heritage speakers tend either i) to avoid these constructions altogether, ii) to produce deviant forms, or lastly iii) to switch to Turkish. The examination of the code-mixed utterances seemed to indicate that code-switching stands as an avoidance strategy to compensate for lack of knowledge in Laz. The results of the statistical analyses supported this conclusion in that variables of code-mixing (code-mixing total and rate of code-mixing) were found to be negatively correlated with all grammatical variables. Moreover, the heritage group produced more mixed utterances than the baseline group.

The examination of pro-drop and scrambling facts showed that heritage speakers produced less of these constructions where the subjects are omitted and/or the arguments of the verb are scrambled into the postverbal domain. The findings support the claim that heritage speakers prefer overt forms because they struggle with silent ones in general and not necessarily always due to transfer effects from their dominant language (Polinsky 2018: 254).

Lastly, the results are also significant in showing the endangered status of the Laz language. The lower production attested in the heritage group in the majority of the grammatical variables scientifically confirm and contribute to the argument in the literature that the Laz population have undergone language shift, rendering Laz endangered (Kutscher 2008, Haznedar et al. 2018).

CHAPTER 5

LINGUISTIC PROFICIENCY & ENDANGERMENT OF LAZ

Language proficiency is a hard concept to define as it receives a different interpretation depending on circumstances in which languages are used. While its scope can be limited to productive skills (speaking and/or writing), it can also cover receptive or comprehension skills (reading and/or listening) in certain other cases. Despite the absence of a singular definition, language proficiency can be broadly defined as the level of ability of language users in different components of grammar including, but not limited to, phonology, morphology, syntax and/or pragmatics.

Recall from Chapter 3 that assessing linguistic proficiency has been used as a strategy in studies on heritage languages i) to understand the immense individual variation and heterogeneity among heritage speakers, and also, ii) to investigate the effects of certain sociolinguistic factors, such as age of onset of bilingualism, language use patterns and practices (see Aalberse et al. 2019 for a survey). Different measures have been used to identify the linguistic proficiency of heritage speakers, ranging from standardized written tests (cloze and/or proficiency tests if available) to oral and/or comprehension tasks such as targeted tasks of vocabulary knowledge (picture naming tasks, e.g., Peabody Picture Vocabulary Task Revized, Dunn & Dunn 2007). Measures such as speech rate (average number of words uttered per minute) or Mean Length of Utterance (the rate of total number of words or morphemes to total number of utterances) based on speech samples obtained through free production tasks constitute another commonly used strategy in heritage language studies (see Polinsky 2018, Chapter 3 and Montrul 2016, Chapter 6 for an overview).

All of the strategies listed above have been shown to be accurate and efficient to different extents and the choice of the relevant measure is reported to be dependent on the particular profile of language speakers and the particular aims of studies. In the context of endangered languages

such as Laz, the relevant proficiency measure should not rely on literacy skills (reading and/or writing,) given that Laz has been an orally transmitted language and only a minority of speakers has recently developed literacy skills. This leaves us with oral or comprehension tasks and certain measures that can be derived from them.

Based on the performance of the participants in narrating the Frog Story (Mayer 1969), I consider two possibilities for measuring proficiency. The first is the number of distinct Laz words (Laz content word), where each lexical word is counted only once (repetitions of the same word, including the inflected forms, are eliminated) and grammatical words such as determiners and copula are also left out. The second is the rate of speech, i.e., the average number of words uttered per minute, calculated by dividing the total number of words (repetitions included) by total number of minutes spent for narrating the story. Speech rate has been used and reported as an effective measure of proficiency as it has been shown to correlate with grammatical proficiency (Polinsky 2008, Daller et al. 2011, Anstatt 2017). Despite not being directly used to assess proficiency to the best of my knowledge, the number of content words turns out to be a really nice indicator of proficiency given the tight correlation between lexical proficiency and certain grammatical variables (Polinsky 1997, 2006; O'Grady et al. 2009)[1].

This chapter is organized as follows: First, I provide the results of the statistical analyses conducted to explore the relationship between i) the two potential measures of proficiency, on the one hand, and the relevant grammatical and sociolinguistic variables, on the other (§ 1). § 2 then discusses the results and specifically shows that the number of content words yields higher correlations with not only grammatical variables but also sociolinguistic ones, i.e., age and village

[1] Lexical proficiency was measured via a separate task such as translation of Swadesh's list or body part naming task. This was not possible due to time, weather and COVID restrictions during my fieldwork. I managed to complete this type of task with only a limited subset of participants and thus I could not use them for measuring proficiency here.

altitude). Taking Laz content word as the basis for measuring linguistic proficiency, I further show that the level of proficiency decreases along with the age of the participants, providing evidence for the status of Laz as an endangered language. § 3 summarizes and concludes the discussion.

1. Results of the statistical analyses on lexical proficiency vs. speech rate

Assuming that the grammatical variables obtained from the free narrative data introduced in the previous chapter (see Table (12) in Chapter 3 for definitions) are indicative of grammatical knowledge, their intercorrelations with Laz content word and speech rate were investigated via separate Pearson product-moments. Additionally, the total number of participles formed with the suffix *-eri* was also taken into consideration as it turned out to be a nice indicator of lexical knowledge, despite being not frequently produced by the participants in their narratives.

As for the information regarding the sociolinguistic profile of the participants, since age and village altitude are the only two numeric data (as opposed to the others such as settlement type or hometown, which are categorical) are included in the correlation calculations. I provide the results of the performances of different age groups at the following parts of the relevant sections.

Table (17) presents the results of the separate Pearson product-moments conducted to explore the intercorrelations between the relevant grammatical and sociolinguistic variables:

Table 17: Intercorrelations between grammatical and sociolinguistic variables[2]

	Laz content word	Speech rate	Age	Village altitude
Rate of spatial prefixes	.441**	.262*	.466**	.467**
SP-Different	.882**	.541**	.641**	.400**
NA-total	.767**	.482**	.405**	.269*
Code-mixing total	-.160	.017	-.252*	-.393**
Rate of codemixing	-.412**	-.109	-.395**	-.468**
Valency change-total	.882**	.491**	.575**	.416**
Rate of valency changing operations	.300**	-.020	.348**	.294*
Rate of continuous tense	-.116	-.074	.017	-.306**
Rate of past tense	.037	.024	.080	.296*
Participles with *-eri*	.571**	.282*	.280*	.087
Laz content word	---	.609**	.644**	.386**
Speech rate	.609**	---	.361**	.292*
Age	.644**	.361**	---	---
Village altitude	.386**	.292*	---	---
*$p < .05$, ** $p < .01$				

[2] Due to space constraints and to avoid redundancy, the intercorrelations between different grammatical variables and the code-mixing parameters are not included. The results that are significant for our purposes are as follows: i) rate of code-mixing & rate of spatial prefixes ($r = -.494$, $p < .01$), ii) rate of code-mixing & rate of valency changing operations ($r = -.311$, $p < .01$), iii) Rate of code-mixing & NA-total ($r = -.362$, $p < .01$), iv) SP-Different ($r = -.419$, $p < .01$) and lastly, v) valency change-total ($r = -.379$, $p < .01$)
Also note that code-mixing total was found to be significantly correlated with i) rate of spatial prefixes ($r = -.424$, $p < .01$) and ii) rate of valency changing operations ($r = -.331$, $p < .01$), but crucially not with the counterparts of these measures that are not relativized according to length.

Lexical proficiency is measured here as the number of Laz content words and it correlated with all grammatical variables except for the total number of code-mixed utterances (=code-mixing total), rate of continuous and past tense. The highest correlations were between Laz content word and i) the number of distinct spatial prefixes produced, i.e., SP-Different (r =.882, p < .01), ii) the total number of valency changing operations, i.e., valency change-total (r =.882, p < .01), and iii) the total number of complex clauses formed with the subordinator *na-*, i.e., NA-Total (r =.767, p < .01). Laz content word also had significant correlations with i) the number of participles formed with the suffix *-eri* (r =.571, p < .01) as well as ii) two particular grammatical measures that are relativized to length, i.e., the rate of spatial prefixed verbs (with respect to the number of finite verbs produced) (r =.441 p < .01) and the rate of code-mixing (with respect to total number of sentences produced) (r =.-412, p < .01). The only measure that was found to be negatively correlated with Laz content word was rate of codemixing[3].

The rate of speech as measured here as the average number of words uttered per minute, had significant correlations with i) SP-different (r =.541, p < .01), ii) NA-Total (r =.571, p < .01), and lastly, iii) valency change-total (r =.491, p < .01). Speech rate also was found to exhibit low correlation with i) rate of spatial prefixes (r =.262, p < .05) and ii) participles with *-eri* (r =.282, p < .05) while it was not (significantly) correlated with i) code-mixing total, ii) rate of valency changing operations, iii) rate of code-mixing, and vi) rate of past or continuous tense(d verbs). None of the statistically significant intercorrelations for speech rate was negatively directed as opposed to the case in Laz content word, which was found to be negatively correlated with rate of codemixing (r =-.412, p < .01).

[3] The direction of correlation between Laz content word and code-mixing total as well as rate of continuous was also negative. Since these intercorrelations were not found to be statistically significant, I do not include them here.

A comparison of the two potential measures of linguistic proficiency reveals that Laz content word has stronger[4] correlations with the grammatical measures than speech rate. Precisely, the intercorrelations between Laz content word and the relevant other measures were moderate (rate of spatial prefixes, rate of code-mixing and participles with *-eri*) to high (NA-total) or very high (SP-Different and valency change-total). The intercorrelations with respect to speech rate were less strong in all variables: Low (rate of spatial prefixes and participles with *-eri*) to moderate (SP-Different and NA-total). Moreover, the significant intercorrelations associated with Laz content word outnumbered those of speech rate: The former is significantly correlated with 7 (out of 10) variables while the latter (speech rate) correlated with only 5. Note that neither variables correlated with rate of past or continuous tense(d finite verbs).

Despite the discrepancies between the two different measures of linguistic proficiency, they are correlated with one another to a (very) high extent (r =.609, p < .01). Furthermore, they both exhibited a similar level of correlation (low) with one of the sociolinguistic variables, i.e., village altitude, although Laz content word had a slightly higher level of correlation (r =.386, p < .01) than speech rate (r =.292, p < .05).

The intercorrelations between village altitude and the grammatical variables turned out to be surprisingly informing and significant. The altitude of the village one has grown up in or come from was found to be significantly correlated with all grammatical variables to differing extents except for participles with *-eri*. Specifically, the intercorrelations between village altitude and the relevant grammatical variables were found to be moderate (rate of spatial prefixes, SP-Different,

[4] The following scale of Pearson's Correlation Coefficient has been used in the interpretation of the results:
a) $0 < r \leq 0.19$ → Very low correlation
b) $0.2 \leq r \leq 0.39$ → Low correlation
c) $0.4 \leq r \leq 0.59$ → Moderate correlation
d) $0.6 \leq r \leq 0.79$ → High correlation
e) $0.8 \leq r \leq 1.0$ → Very high correlation

rate of code-mixing) to low (code-mixing total[5], NA-total, rate of valency changing operations, and rate of past or continuous tense). Notice also that in addition to rate of continuous (r =-.306, p < .01), village altitude is also negatively correlated with code-mixing total (r =-.393, p < .01) and rate of code-mixing (r =-.468, p < .01).

As for age, which bears more significance for the endangerment of Laz, the highest correlations were between age and i) SP-Different (r =.641, p < .01), and ii) Laz content word (r =.644, p < .01). The intercorrelations between age and the remaining grammatical variables were found to be low (code-mixing total, rate of codemixing, rate of valency changing operations, participles with *-eri*, and speech rate) to moderate (rate of spatial prefixes, NA-total, and valency change-total). Notice that as in the cases of the intercorrelations with respect to speech rate, Laz content word and village altitude presented above, the only negative correlation was attested between age and code-mixing, namely Code-mixing total (r =-.252, p < .05) and rate of code-mixing (r =-.395, p < .01). Likewise, the only two grammatical variables that were not significantly correlated with age were rate of continuous and rate of past (tensed verbs) as also observed in the case of Laz content word and speech rate.

The examination of the data with respect to the other two sociolinguistic variables, namely settlement type in childhood (village, town, or both, i.e., dual settlement) and hometown (Pazar, Ardeşen, Çamlıhemşin and Fındıklı) was conducted with the application of non-parametric tests due to the limited size of the sample and the uneven distribution of the sample size of the relevant groups. A Kruskal-Wallis test showed that the four groups of Laz speakers residing in Pazar (*Mdn*=1.94), Ardeşen (*Mdn*=1.95), Çamlıhemşin (*Mdn*=1.98) and Fındıklı (*Mdn*=2.02) do not significantly differ from one another with respect to either of the two measures of linguistic

[5] The strength of the correlation between code-mixing total and village altitude is very close to moderate (r =-.393, p < .01) despite being reported here as low.

proficiency considered here, namely speech rate ($H(3)=4.12$, $p=.249$) and/or Laz content word ($H(3)=1.98$, $p=.575$). Settlement type in childhood differs: The results of a Kruskal-Wallis test indicated that there was a difference between those who grew up and/or currently live in i) villages, ii) towns or iii) partly in both, i.e. dual settlement ($H(2)=28.51$, $p<0.001$). Post-hoc Mann-Whitney U tests were used to compare all pairs of the relevant three groups. Since there were multiple statistical analyses on the same variable, Bonferroni adjustment was conducted to avoid any Type-1 error (alpha level .017). The results indicated that while those who grew up and still reside in villages ($Mdn=2.07$, $n=30$) differ from the dual-settlers ($Mdn=1.92$, $n=32$) ($U=223$, $z= -3.621$, $p=<.001$), and both groups outperformed those who grew up or live in towns ($Mdn=1.60$, $n=11$) (Village & Town: $U=7.5$, $z=-4.635$, $p=<.001$; Dual & Town: $U= 68$, $z= -3.008$, $p=0.002$)[6].

2. Discussion on linguistic proficiency and endangerment of Laz

In light of the findings from the statistical analyses, the aim of this section is two-fold: Firstly, I show that, though not used in the heritage language literature thus far to the best of my knowledge, the number of content words obtained from free speech samples can be used as an effective measure of linguistic proficiency serving better to gauge grammatical knowledge in comparison to speech rate, a more commonly used proficiency measure in the context of heritage languages (see Polinsky 2018, Chapter 3 and Montrul 2016, Chapter 6). Secondly, I hope to

[6] The results for the differences between the three groups ($H(2)=12.69$, $p=0.002$) with respect to speech rate is different in that no significant difference was attested between the village ($Mdn=69.85$, $n=30$) and dual-settlement ($Mdn=63.07$, $n=32$) group ($U=223$, $z=-.725$, $p= 0.468$) while it was found that both of these two groups do significantly better than the last group, namely those who grew up in or still live in town settings ($Mdn=61.51$, $n=11$) (Village & Town: $U=58$, $z=-3.148$, $p=.001$) (Dual & Town: $U=55$, $z=-3.368$, $p<.001$).

provide a scientific ground to the endangered status of Laz by showing the effects of sociolinguistic factors, i.e., age, settlement type in childhood and village altitude, on linguistic proficiency.

2.1. Lexical proficiency over speech rate

In studies on heritage languages, speech rate has been one of the most commonly used methods to measure linguistic proficiency (Polinsky 2008, Daller et al. 2011, Anstatt 2017). A second common method is to conduct vocabulary translation or production tasks because i) lexical proficiency has been shown to be indicative of grammatical knowledge and ii) by virtue of being easily and quickly assessed, it qualifies as a practical measure of linguistic proficiency (Polinsky 2018: 110). Following the trend in research on heritage languages, I considered both possibilities for measuring linguistic proficiency. Since the circumstances did not allow me to conduct a separate vocabulary task during the fieldwork, I considered the possibility of using another measure, Laz content words obtained from the free speech sample.

The results of the statistical analyses have proved that this new measure of lexical proficiency qualifies as a better indicator of grammatical knowledge in comparison to the more commonly used measure of rate of speech, although the two also correlate with one another to a great extent (r =.609, p < .01). With respect to all of the grammatical measures investigated here, Laz content word exhibited a higher correlation. Particularly important are the strong intercorrelations between Laz content word, on the one hand and the number of distinct spatial prefixes (r =.882, p < .01), the number of complex (except for adverbial) clauses (r =.767, p < .01), and the total number of valency related operations (r =.882, p < .01)[7], on the other hand. This

[7] Albeit lower in strength, Laz content word was significantly correlated with the grammatical measures relativized according to the length of the entire speech sample, i.e., rate of spatial prefixes and rate of valency changing operations.

finding not only lends further support for the argument in the literature that lexical proficiency can be used to gauge grammatical knowledge (Polinsky 2018: 292), but also confirms the hypothesis that lexical knowledge is indicative of grammatical proficiency, specifically of those that are attested less in cross-linguistic heritage production (for complex clauses Heritage English, Polinsky 2018; for valency changes Heritage German, Putnam & Salmons 2013) and in Laz (Kutscher 2008 for spatial prefixes).

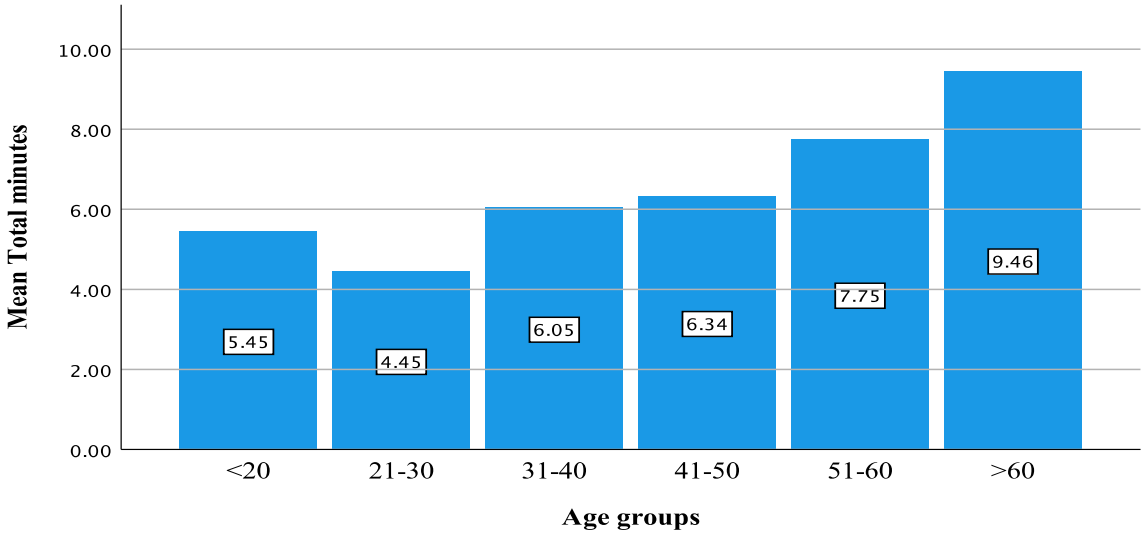
Given that heritage speakers tend to have lower levels of linguistic proficiency due to divergent attainment, interrupted acquisition and lower levels of (heritage) language use, the grammatical constructions that are attested less in heritage production might be argued to be indicative of low linguistic proficiency. If so, the extent to which a grammatical measure is correlated with especially these grammatical measures, it might qualify as a better indicator of linguistic proficiency in general. Considered in this respect, speech rate turns out to be a less reliable indicator of linguistic proficiency than Laz content word. Moreover, speech rate was also not significantly correlated with rate of valency changing operations unlike Laz content word, which correlated with it, albeit low in strength (r =.300, p < .01).

As for the reasons underlying the discrepancies between speech rate and Laz content word, they seem to arise from the following: i) Speech rate is calculated relative to the amount of time (in minutes) while Laz content word is not time-sensitive, and ii) While both are measures of word-count, only in the former are (inflected) repetitions of the same word eliminated.

Time-sensitivity of speech rate might have played a role in obtaining the attested results given the (free) nature of the task conducted and the diversity in the profile of the speaker groups. Specifically, since I worked with speakers from across different generations, the performances of the participants were affected by certain extra-linguistic factors as follows: i) Due to vision

deficiencies, some older generation speakers had difficulty identifying the pictures, and thus needed more time to interpret them, ii) Older generation speakers also tended to speak more slowly, taking longer to complete the task in comparison to younger speakers, and lastly, iii) By virtue of receiving more years of formal education, younger generation speakers have more experience in engaging with picture or book-based tasks and thus tend to finish the task faster. These factors led older generation speakers to spend more time completing the task. Figure (12) gives us the mean[8] total time spent by different age groups (based on an interval of 10):

Figure 12: Mean total time spent to narrate the Frog Story across age groups

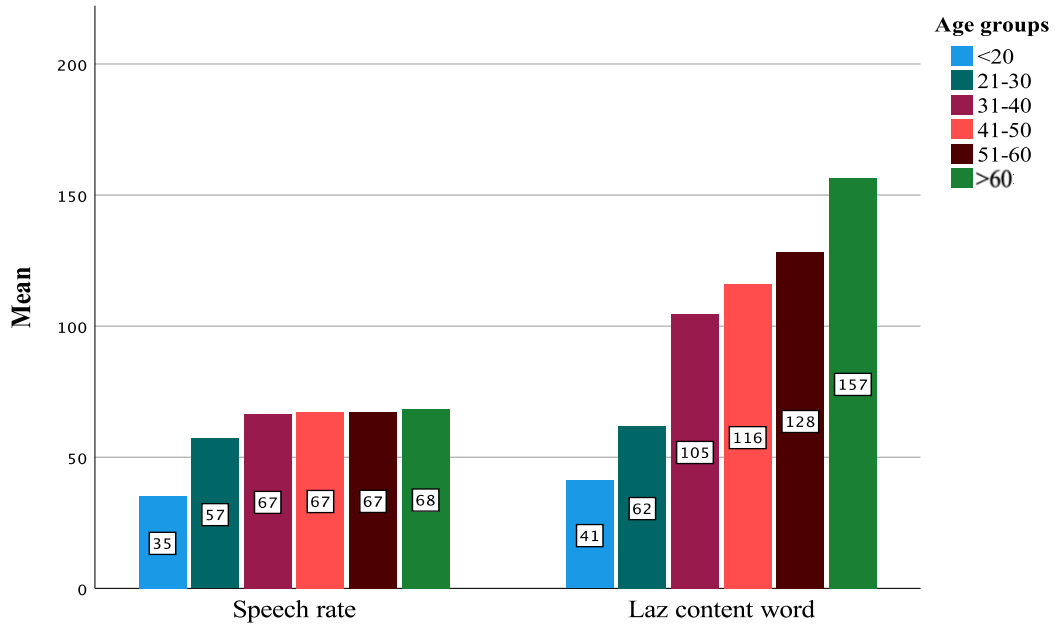


The discrepancy in terms of the length of the time is counterbalanced by the length of the narration, i.e., the total number of words produced by the participants. Having a better grasp of the Laz language, older generation speakers tended to produce more words while younger generation

[8] I did not run any statistical tests on these measures in order to keep the number of statistical tests to a minimum in order to avoid any potential Type-1 error, which could come about as a result of the application of multiple tests.

speakers produced less. Although the narratives of the latter group mostly involved the repetition of the same words and even sentences, since repetitions are not eliminated in the calculation of the rate of speech, the total number of words produced by younger generation speakers remained high enough for speech rate to evenly distribute between different age groups as shown in Figure (13).

Figure 13: Mean speech rate and number of Laz content words across different age groups



In contrast to speech rate, Laz content word, is not relative to time and it does not take into account repetitions. Moreover, the grammatical words such as determiners and articles or (inflected) copula, occurring and repeated a lot in the production of especially younger speakers, are also not taken into consideration. Along with the loss of sensitivity to time, these criteria eliminate not only the effects of extra-linguistic factors that could interfere in the calculation of speech rate, but also the effects of the hallmarks of heritage production, e.g., repetitions, long

pauses, or dysfluencies (Polinsky 2018: 40). Consequently, we do not observe the counterbalancing effects attested in the case of speech rate calculation, and the number of content words does not distribute as evenly as speech rate. Instead, we see an increase correlated with age. This discrepancy is exactly what causes the discrepancies between the intercorrelations between speech rate and Laz content word.

Three things are in order before proceeding to the discussion on the effects of sociolinguistic variables on linguistic proficiency. The first is concerned with the rate of continuous and past tense marked verbs, which turned out not to be correlated with either speech rate or Laz content word. Recall from Chapters 2 and 4 that while past tense has a single morphological exponence for each person, there are four main different markers for continuous tense, namely *-um*, *-am*, *-ur*, and *-er*. Although there are no reasons for assuming any kind of correlation between linguistic proficiency and the choice of tense markers in general, these two variables are included in the correlation calculations due to the ongoing change that is observed in Laz: Heritage speakers have reorganized the aspectual system in Laz and reduced the number of imperfective markers (Chapter 7). The results indicated that there is neither any correlation between linguistic proficiency and the choice of a particular aspect and/or tense nor any tendency to choose one aspect over the other depending on one's linguistic proficiency level.

The second interesting fact is concerned with the distribution of the participle marker *-eri* used to form non-finite embedded clauses in Laz (see examples in (12) in Chapter 2). Being non-finite, these constructions were excluded from the discussion on the subordinate clauses so far (in reference to NA-total) since *na*-clauses are finite in form. Nevertheless, it turned out that the non-finite *-eri* constructions are moderately correlated with lexical proficiency (r =.571, p < .01). Given

the low occurrence rate in heritage languages such as Heritage Turkish (Verhoeven 2004: 439), non-finite clauses are also expected to correlate with lexical proficiency to a certain extent.

Lastly, the only significant correlation regarding the measures of code-mixing was found between Laz content word and the rate of code-mixing (r =-.412, p < .01). Speech rate was not to be correlated with either of the two code-mixing measures. More importantly, the only attested negative correlation was associated with code-mixing in both and all cases. This is expected if it is assumed that one would not switch to or insert elements from another language if they have a full or better command of their heritage language. However, this assumption could be misleading given that code-mixing is a common characteristic of bi-/multi-lingual speakers and code-mixing might not always be an indication of lack of proficiency (see Park-Johnson 2017 for an overview).

To sum up, between the two possible proficiency measures drawn from speech samples, the number of lexical content words stands as a better indicator of grammatical knowledge in comparison to speech rate. Therefore, in the remainder of this dissertation, I measure linguistic proficiency based on this particular parameter. Based on the observed strong and direct correlations with the grammatical constructions that are observed to occur less in heritage languages, one could make predictions about (at least) the production level of the relevant grammatical forms and constructions based on the lexical repertoire of Laz speakers. In this respect, the number of Laz content words drawn from speech samples could be used as a practical and feasible measure of linguistic proficiency in future studies, as well.

2.2. Sociolinguistic variables and endangerment of Laz

This section examines the interplay between linguistic proficiency and the following sociolinguistic factors: i) age, ii) village altitude, iii) settlement type in childhood (village, town,

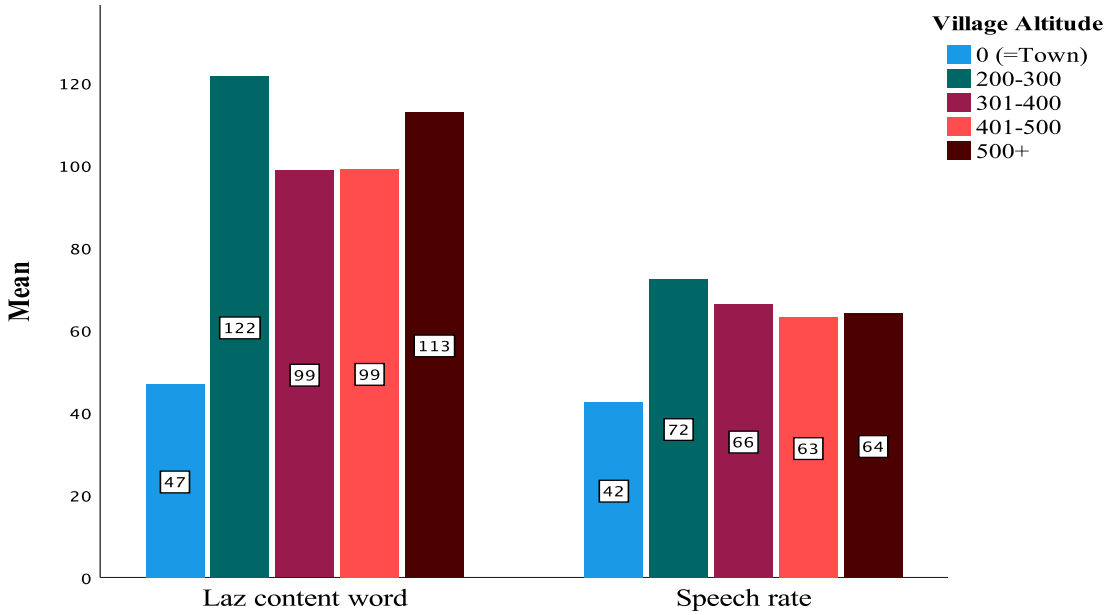
or both, i.e., dual settlement), and lastly, iv) hometown (Pazar, Fındıklı, Ardeşen and Çamlıhemşin). I firstly discuss the results of the bi-variate correlation analyses with respect to the first two sociolinguistic factors and show that both turn out to be quite informing not only about the linguistic proficiency level of Laz speakers but also about the endangerment of the Laz language. Specifically, I show that the decrease in the production of Laz grammatical constructions as well as that of its content words is accompanied with a decrease in age as well as village altitude, albeit to a lesser extent in the latter. As for the remaining two sociolinguistic factors, namely settlement type in childhood and hometown, while the former plays a role in the ultimate attainment of the Laz language, the latter does not in that those who reside and thus speak the different Laz varieties do not differ from each other in terms of linguistic proficiency.

Overall, the findings seem to support the hypothesis that those who are younger and/or reside(d) in urbanized areas such as town rather than (higher altitude) villages tend to have lower levels of linguistic proficiency. Furthermore, the results also provide a scientific ground to the often-noted observation in the literature that Laz is not transmitted to younger generations. This argument has been proposed based on either self-proficiency reports (Haznedar et al. 2018) or researchers' fieldwork observations (Kutscher 2008) but none of the previous studies has ever empirically investigated the endangerment of Laz in a systematic way. In this respect, the present section also fills this gap in the literature.

I have identified the basis for measuring linguistic proficiency as the number of Laz content words as it gives us higher intercorrelation scores with the grammatical variables. As far as the sociolinguistic variables are concerned, it turns out that a similar picture emerges: While the intercorrelation between age and Laz content word is high (r =.644, p < .01), speech rate gives us only a low level of correlation (r =.361, p < .01). Likewise, Laz content word also is better

correlated with (village) altitude (r =.386, p < .01) than speech rate (r =.292, p < .01), which stands as another reason why the former should be chosen over the latter as the measure of linguistic proficiency. I had already discussed the reasons underlying the discrepancies with respect to age in the previous section (see Figure (13)) and it again turns out that speech rate is more evenly distributed in comparison to Laz content word with respect to village altitude, most probably due to its sensitivity to time and the non-elimination of repetitions. Note that although Laz content word is more evenly distributed according to village altitude in comparison to age (see Figure (13)), the discrepancy in the means[9] of different groups is larger in the case of age than in village altitude as in Figure (14):

Figure 14: Mean distribution[10] of Laz content words and speech rate across village altitudes[11]



[9] Statistical tests are again not conducted to avoid Type-1 error.
[10] The number of participants for each group are as follows: 0(=Town): N=11, 201-300: N=15, 301-400: N=4, 401-500: N=10, and 500+: N= 33
[11] Altitude is investigated in the metric system. The groups are formed based on 100-meter intervals.

Leaving the reasons as to why speech rate is more evenly distributed with respect to village altitude aside, the crucial facts for our purposes here are the following: Firstly, the higher correlation rate between village altitude and Laz content word is in line with the fact that those who live in higher altitudes tend to be pursue a more isolated life than those who reside in more urbanized areas such as towns[12]. Thanks to this isolation, they tend to be more conservative and/or more active users of Laz, retaining and possibly using more content words in Laz. Also notice the sharp discrepancy between zero altitude, namely those who grew up or still reside in towns and, those who reside(d) in higher altitude villages both in terms of Laz content word and speech rate. The discrepancy demonstrates that (village) altitude bears significance in the linguistic proficiency level of Laz speakers, regardless of which measure is taken as the basis for measuring linguistic proficiency. Secondly, the high correlation between Laz content word and age shows us that younger generation speakers tend to use fewer content words in Laz in comparison to older generation speakers[13]. Notice that the decrease in Laz content word is accompanied by the decrease in age as seen in Figure (13). This finding provides evidence for the endangered status of the Laz language in that due to the low frequency of usage in daily life and especially with the children (Haznedar et al. 2018), the amount of vocabulary learned by younger generations seems to be gradually decreasing depending on age across different generations[14].

The examination of the intercorrelations of age with respect to the grammatical variables reveals a similar picture and points to a decreasing rate of transmission of the Laz grammar, especially to the youngest generation speakers. Along with the number of content words, the

[12] Zero altitude here corresponds to towns, which are located right by the (Black Sea) seaside. I elaborate on the effects of town lifestyle (c.f. village) on the linguistic proficiency level later in this section.
[13] I showed in Chapter 4 that the difference in the number of Laz content word between heritage and baseline speakers is statistically significant.
[14] Needless to say, this argument is valid only for productive vocabulary as younger generations probably know more than they have actually produced and/or use in their daily life.

highest intercorrelation correlation was attested with the number of distinct spatial prefixes, i.e., SP-Different, (r =.641, p < .01), which was followed by the total number of constructions involving valency alternations (r =.575, p < .01) and the number of embedded clauses formed with *na-*, i.e., NA-total (r =.405, p < .01). The high level of direct correlation between age and these particular variables is also seen more clearly when the mean measures of the relevant grammatical measures are compared across different age groups, as shown in Figure (15). Note that a similar picture emerges when the relativized (according to length of narration) scores of the relevant grammatical variables are examined, namely, rate of i) valency changing operations (r =.348, p < .01) and ii) spatial prefixes (r =.466, p < .01), eliminating any potential effects of length (of narration) on the results of the statistical analyses and giving us ideas about the tendencies of the particular groups of speakers to produce the relevant forms. This is represented in Figure (15):

Figure 15: Mean distribution of grammatical variables across different age groups

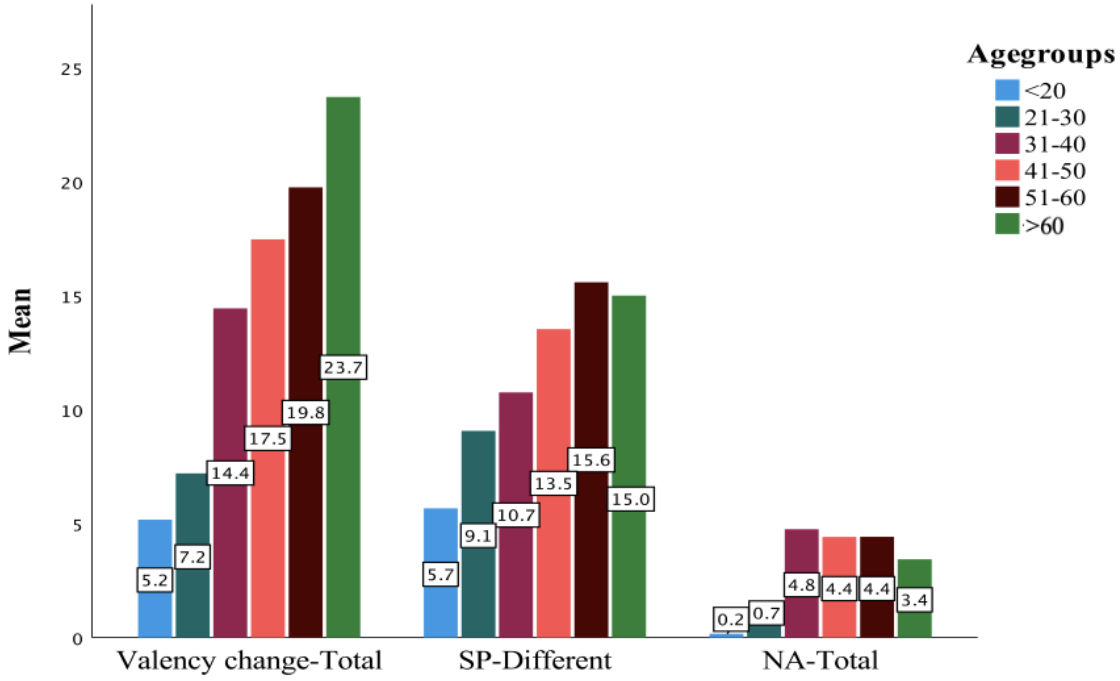
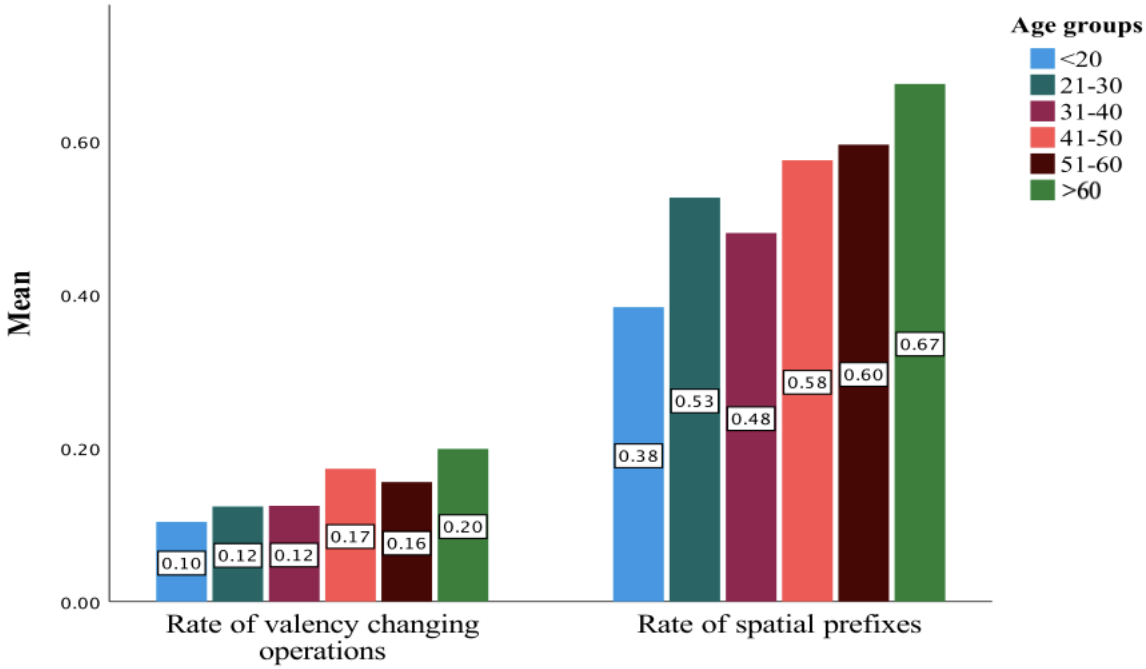


Figure 16: Mean rates of grammatical variables across age groups (relativized wrt. length)



A combination of different factors might have given rise to the observed gradual decrease in the mean frequency of the relevant grammatical variables along with age. Firstly, it is due to the limited exposure to and use of the Laz language as a result of (gradual) language shift across different generations, which might have prevented the acquisition of certain grammatical constructions. This seems especially relevant for the embedded clauses where we observe the sharpest difference between the first two youngest age groups and those who are older: In all other cases except for NA-total, the mean distribution of different grammatical variables increases in a more evenly fashion across different age groups. However, whether the peculiarities of the embedded *na*-clauses are due to a difference in its acquisitional path (in that its acquisition starts at an age later than valency changing operations or spatial prefixes and the total interruption of acquisition takes place before this period) will remain unknown in the absence of acquisitional research on the Laz language. Additionally, the frequency of data might also have played a role in yielding the relevant discrepancies. Notice that among all grammatical constructions, NA-total has the lowest mean and thus occurrence across all age groups, showing us that its frequency is lower. If so, the lower frequency of embedded structures might have resulted in the late acquisition of these constructions. In the absence of frequency or corpus and acquisition studies, I leave this issue to future studies.

The results of the statistical analyses regarding (village) altitude inform us further about the effects of language shift on the linguistic proficiency of the Laz speakers. The statistically significant moderate intercorrelations between village altitude and the number of distinct spatial prefixes (r =-.400, p <.01), rate of spatial prefixes (r =-.467, p <.01) and the total number of valency changing operations (r =-.416, p <.01) are explained if we assume that higher geographical altitude results in more isolation from the rest of the society, sustaining the use of Laz in daily life, and

eventually bringing about more conservative language users that are less affected by language shift. Recall also that those who live(d) in higher altitudes tended to have a larger inventory of Laz vocabulary (r =.386, p < .01). These findings altogether suggest that an increase in altitude tends to result in or at least correlate with higher linguistic proficiency.

The examination of the intercorrelations with respect to code-mixing practices gives us ideas about the language use practices of the Laz speakers possibly conditioned by language shift, and its potential influence on their linguistic proficiency level in the Laz language. Throughout the statistical analyses, the only attested negative correlations came from the data regarding code-mixing, i.e., rate of code-mixing and i) Laz content word (r =-.412, p < .01), ii) age (r =-.395, p < .01), and, iii) (village) altitude (r =-.468, p < .01) and code-mixing-total a) age (r =-.252, p < .05), and c) (village) altitude (r =-.393, p < .01)[15]. In the absence of intercorrelations that are strong(er) in strength and given that code-mixing might not always be indicative of linguistic proficiency (Park Johnson 2017 and references therein), it becomes hard to make any robust claims about the relationship between code-mixing practices and linguistic proficiency[16]. Nevertheless, as far as the sociolinguistic factors are concerned, the attested negative intercorrelations suggest that those who are younger and live(d) in lower altitudes tend to insert more items from Turkish in speaking Laz (or narrating a story in Laz in the context of the present study). This would be expected given that language shift would proceed faster in urban settings or areas that are less mountainous and have lower altitude thanks to higher levels of interaction not only with the other members of the Laz community but also in the dominant language, namely Turkish.

[15] The same also holds for the intercorrelations between code-mixing parameters and the other grammatical variables, i.e., the direction of intercorrelations are always negative.

[16] The discrepancies between the two indicators of code-mixing with respect to their intercorrelations with the other variables are interesting. We get higher and significant correlations only when the number of total code-mixings is relativized to the total number of sentences. Given the absence of significant correlations with respect to the non-relativized variable, I refrain from making robust claims on the interrelations between code-mixing and other variables.

Increases in altitude also correspond to a change in the type of settlement in that in higher altitudes we find more rural settlements like villages while urban settings are located in lower altitudes, right along south-eastern shore of the Black Sea. It has been observed and noted in the literature that the increasing level of Turkish usage in urban settings has restricted the use of Laz to more rural areas (Kutscher 2008, Taşkın 2011). Recall from Chapter 2 that Haznedar et al. (2018) compared the language preferences of 450 Laz speakers with respect to place of residence (village, town vs. city and both (dual settlement)) and showed that Turkish is the preferred language of those who live in urban areas (Laz: 21%) while Laz is preferred more in villages in a statistically significant way (Laz: 71%). The language preferences of dual settlers stand in somewhere in between (Laz: 38%). Haznedar et al. (2018: 76) also investigated the differences between these three groups of Laz speakers with respect to their linguistic proficiency level. Their self-proficiency reports indicated that the oral and literacy skills of the participants from village contexts are significantly higher than those who live in more urbanized areas such as towns.

The majority of the participants in the present dissertation fall into the group of dual settlers, i.e., they live partly in town centers and partly in villages. Since it would be hard to quantify the amount of time spent in each different settlement type for each participant, I focused on the type of settlement in childhood, i.e., until the age of 7 and/or later. This was important because I noticed that the majority of heritage high proficient speakers either grew up and/or still live in (higher altitude) villages while the low-proficiency heritage speakers grew up mostly in towns, in contrast to the majority of baseline speakers who spent the majority of their childhood

in villages[17]. The participants were divided into three groups depending on (mostly) where they spent their childhood: i) village, ii) town, and iii) both (dual settlers).

The results of the statistical analyses ($H(2)=28.51$, $p<0.001$) are in line with the findings in the literature (Haznedar et al. 2018) in that those who grew up (and/or still reside) in villages (*Mdn*=2.07, *n*=30) were found to produce Laz content words significantly more than dual settlers (*Mdn*=1.92, *n*=32) (*U*=223, *z*= -3.621, *p*=<.001), who in turn know more words than those who grew up in town settings (*Mdn*=1.60, n=11) (*U*= 68, *z*= -3.008, *p*=0.002). Given the strong intercorrelations between Laz content word and the grammatical variables presented above, it can be argued that those who grew up and/or still reside in village contexts might tend to have higher levels of grammatical proficiency in comparison to those in urban settings. The higher level of linguistic proficiency associated with the village context does not come as a surprise given that Laz is mostly and more frequently spoken in rural areas and the increased use of the language in daily life results in higher levels of proficiency (Haznedar et al 2018). However, since none of the previous studies has ever investigated this issue in reference to actual linguistic data, this finding also fills in this gap in the literature and points to a direct correlation between the time spent in rural context, especially during childhood, and linguistic proficiency.

The last sociolinguistic variable examined concerns the geographical districts of Laz speakers, which partly correspond to different Laz varieties (Fındıklı, Ardeşen, Çamlıhemşin and Pazar). Despite being officially distinguished from Ardeşen, the variety of Laz spoken in the Çamlıhemşin is almost identical to the Ardeşen variety (Chapter 2). Çamlıhemşin was examined for contrast, to test the hypothesis that villages at higher altitudes are more isolated, and this might

[17] It would be ideal to check the effects of settlement type in childhood only within the heritage group. However, the low sample size of different groups as well as the uneven distribution across different groups make it hard to run statistical analyses. I therefore leave this to future studies.

correlate with higher levels of linguistic proficiency[18]. Pazar and Fındıklı have been the centers of trade for longer than Ardeşen, which was established and urbanized later than the other districts (Chapter 2). Given that urbanization can foster language shift by bringing in more interaction between Laz and non-Laz speakers and less isolated style of life, I hypothesized that there might be a difference between the speakers of Laz in these four districts, with higher proficiency in Çamlıhemşin and/or Ardeşen than in Fındıklı and Pazar. However, this prediction was not supported by the results of the statistical analyses[19]. Rather, there is no statistically significant difference between these groups in terms of number of Laz content words ($H(3)=1.98$, $p=.575$) or speech rate ($H(3)=4.12$, $p=.249$). Since a number of different socio-economic and political factors other than village altitude or trade might have affected the language use practices of these different groups of Laz speakers and given the high amount of interaction (transportation, marriage, trade etc.) among different districts, I leave this issue to future studies.

3. Summary

Lexical proficiency measured via the number of content words produced in the free narratives (=Laz content word) data turns out to be a nice indicator of linguistic proficiency. This argument mainly relied on the fact that this newly proposed measure correlates better with grammatical knowledge than with speech rate, which is more commonly used in the literature in heritage languages. Based on this, I identified Laz content word count as the basis for measuring linguistic proficiency for the purposes of this study.

[18] I also observed that the majority of high-proficient heritage speakers either grew up or still live in the villages of Çamlıhemşin.
[19] See § 1 for the median scores of the relevant four groups.

As for the relationship between linguistic proficiency and the endangerment of Laz, the examination of the data with respect to the sociolinguistic variables revealed the following:

i) The grammatical variables investigated in the present study, especially the number of Laz content words, distinct spatial prefixes, valency changing operations and complex clauses, exhibit a direct correlation with age. In other words, younger generation speakers produce less of these constructions in comparison to older generation speakers,

ii) (Village) altitude turns out to be indicative of linguistic proficiency because higher altitudes bring in a more rural and/or isolated lifestyle,

iii) The amount of time spent in rural areas such as villages, especially during childhood, might be indicative of higher linguistic proficiency and lastly,

iv) Laz speakers in different districts of Rize do not differ from each other in terms of their linguistic proficiency.

All these findings based on actual linguistic data and a relatively larger size of participants are in line with the endangered status of the Laz language that has come about as a result of language shift, a fact that has been noted in the literature (Kutscher 2008; Haznedar et al. 2018) before but not investigated in a systematic way.

CHAPTER 6

DEVIANT FORMS & LINGUISTIC VARIATION IN LAZ

This chapter aims to identify the aspects of the Laz grammar that are vulnerable to change or erosion by taking into consideration the divergences between heritage and baseline production along with deviant forms produced by heritage speakers, i.e., forms that are not considered acceptable by proficient speakers of Laz[1] (c.f. errors). Although the grammar of Heritage Laz exhibits a greater range of variation than baseline grammar by virtue of these deviant forms, it does not lack systematicity. Heritage speakers of different (socio)linguistic profile produce similar forms diverging from those of baseline speakers in predictable ways. In other words, the deviant forms seem not to be produced by heritage speakers on a random basis but in a systematic way because i) different heritage speakers produce similar kinds of deviant forms, and ii) a particular heritage speaker consistently and systematically produces similar deviant forms.

Following the tradition to deal with and represent the individual variation and heterogeneity within heritage speakers (Polinsky 1996, Polinsky & Kagan 2007, Laleko 2010), Heritage Laz speakers are classified into three groups depending on their proficiency level: Low-, mid-, and high-proficiency. Given that lexical proficiency is a nice indicator of grammatical knowledge (Chapter 5), this classification relies on the lexical proficiency of speakers as measured by the number of distinct Laz content words produced by each speaker, i.e., Laz content word (c.f. speech rate). The distribution of deviant forms was found to be negatively correlated with the level of both lexical and grammatical knowledge, lending support for the correlation between the two.

[1] The dialectal and inter-speaker variation exhibited in Laz made it hard to identify the deviant forms. Therefore, I had to work with a group of high proficient speakers of each different Laz variety examined here, namely AL, FL, and PL. I excluded the cases where the language consultants were not sure if an attested form might exist or sound better in some other variety of Laz. I only included those constructions that they were sure to be unacceptable or ungrammatical in the relevant given context.

The highest production level of deviant forms was in the low-proficiency group, followed by mid-proficiency speakers. High-proficiency speakers were found not to produce any deviant forms. In line with these findings, there were statistically significant differences between different groups: Low-proficiency speakers produced i) distinct spatial prefixes, ii) complex clauses, and iii) valency alternations, significantly fewer than mid- and high-proficiency speakers.

The investigation of the deviant forms shows us the vulnerable aspects of Laz grammar when Laz is acquired under minimal input. It turns out that the most vulnerable areas are verbal morphology, especially the prefixes in the verbal template, as well as nominal (case) morphology. Specifically, heritage speakers have difficulty in making accurate use of all the prefixal markers in the verbal template, namely affirmative particles, spatial prefixes, and pre-root vowels. Additionally, in the suffixal domain, they have problems with temporal-aspectual suffixes, which exhibit an intriguing kind of allomorphy in the baseline variety. As for nominal morphology, heritage speakers have been found to produce deviant forms with spatial cases as well as structural and inherent case markers, i.e., dative, and ergative.

The findings from the deviant forms are in line with the findings from the comparative statistical analyses conducted in Chapter 4, namely the low(er) production of i) distinct content words, ii) valency alternations, iii) distinct spatial prefixes, in the heritage variety, as well as the findings from the crosslinguistic literature on heritage languages. Aspectual morphology (Heritage Russian, Polinsky 2006 and Laleko 2010) and case morphology (Heritage Korean nominative and accusative, Song et al. 1997; Heritage Hindi ergative, Montrul, Bhatt & Bhatia 2012) are shown to be subject to overregularization and omission in heritage languages, rendering morphology the most vulnerable component. The results also support the prediction that the aspects of Laz

grammar that are prefixally marked on the verbal complex are more vulnerable because the dominant language of Laz speakers (Turkish) relies only on suffixation and lacks prefixation.

This chapter is structured as follows: §1 introduces the deviant forms produced by heritage Laz speakers in their free narratives of The Frog Story. The attested forms are divided into four groups as verbal morphology, case morphology, lexical, and syntax. Based on a careful examination of the deviant forms and their frequency counts, I show that the most vulnerable aspect of Laz grammar is verbal and nominal morphology. In § 2, I present the specifics and results of the statistical analyses conducted to explore the relationship between the production level of deviant forms, lexical proficiency and grammatical knowledge of heritage speakers. Specifically, I show that lexical proficiency is indicative not only of grammatical knowledge but also of production level of deviant forms, and as such, it qualifies as a nice tool for measuring linguistic proficiency. In order to handle the interspeaker variation, I classify heritage speakers into three groups depending on their linguistic proficiency (low-, mid-, and high-) and examine if and if so how they differ with respect to their grammatical knowledge. § 3 concludes the discussion.

1. Deviant forms

Having received insufficient linguistic input at differing degrees during childhood, Heritage Laz speakers' productions exhibit a great deal of variation, involving forms whose grammaticality is questionable to different extents. In this respect, they pattern with the speakers of other heritage languages whose productions have also been reported to exhibit immense variation and also to involve many deviant forms (c.f. errors[2]) (Montrul 2016 & Polinsky 2018 and

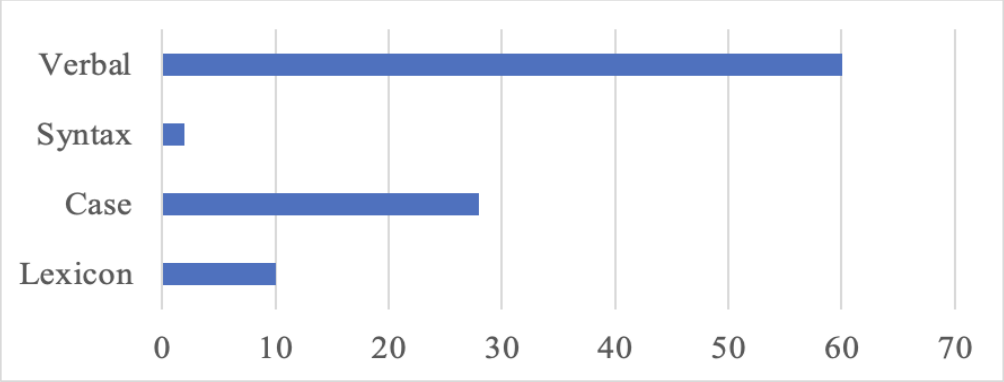
[2] Given the negative connotations associated with the term *error*, I use the term *deviant forms*. This is important for heritage speakers as they refrain from using their heritage language for being afraid of making mistakes and being criticized. They need to be encouraged to use their heritage languages for their maintenance (Aalberse 2016), though.

see Laleko 2010: 35 for the focus on production 'errors' in language acquisition and heritage language studies). Consequently, heritage grammars are referred to as divergent, reduced or even *incomplete* versions of their corresponding full-fledged baseline varieties (Polinsky 2018: 24-28). However, a careful examination of the relevant forms indicate that heritage grammars are rule-governed and systematic linguistic systems (Polinsky 2005: 352, Laleko 2010:10).

The examination of the deviant forms in my data lends further support for the systematicity of heritage grammars and the inherent heterogeneity of heritage speaker populations. Evidence for this comes from the existence of deviant forms similar to one another within and across speakers: i) Different speakers produced deviant forms in the same morpho-syntactic levels, showing the vulnerable aspects of Laz, ii) Deviant forms produced by different speakers are similar to one another, and lastly iii) (Same) Speakers produced similar deviant forms in an internally consistent way, showing that these forms are not randomly produced but rely on a systematic pattern.

Despite the extensive variation in the deviant forms, it became possible to analyze them under four main groups: verbal morphology, case morphology, lexicon, and syntax. In terms of frequency, the highest production level belonged to the domain of verbal morphology, followed by nominal morphology, specifically case markers. Given Heritage Laz speakers' reduced lexical inventory (Chapter 4), they also used (content) words that are not appropriate in a given context, which constituted the third most frequent type. The least frequent type was in the domain of syntax, specifically word order, and its interaction with pragmatics, i.e., pro-drop possibilities. The distributional facts related to different types of deviant forms are summarized in Figure (17):

Figure 17: Frequency distribution of different types of deviant forms (%)



1.1. Verbal morphology

The verbal complex in Laz has a highly complex composition, consisting of 4 prefixal and 11 suffixal slots (see the Tables (1) in Chapter 2). Given heritage speakers' general problems with morphology (Polinsky 2018: 240), this highly complex system is predicted to pose challenges to them. Especially vulnerable would be the prefixal domain because the dominant language of these speakers is Turkish, which relies only on suffixation. The examination of the deviant forms demonstrates that this prediction is borne out. Despite the differences in their sociolinguistic background, the free narratives of heritage speakers involved many finite verbs deviating from

those of baseline speakers in terms of their morphological composition, encompassing almost[3] all of the prefixes and only two of the suffixes (imperfective and (suffixal) agreement markers)[4].

The pre-root domain in the Laz verbal complex involves 4 slots, respectively filled by affirmative particles, spatial prefixes, person agreement markers and valency markers (pre-root vowels) (Öztürk & Pöchtrager 2011: 19). The free narratives involved overgeneralization, overmarking and omission of certain markers as well as inappropriate substitution of one marker for another, which are reported to be the hallmarks of heritage production (Polinsky 2018: 40).

The first set of markers that poses challenges to heritage speakers is the affirmative particles, which emphasize the taking place of events and yield a reading parallel to epistemic modality adverbs like *certainly*. Therefore, these markers are not compatible with continuous events and negative particles. The distribution of the two allomorphs, namely *ko-* and *do-*, is conditioned by the presence or absence of a following spatial prefix[5] as shown in (109b), where only *ko-* can co-occur with the spatial prefix *e-*:

[3] The third slot in the verbal complex in Laz hosts prefixal agreement markers (see Chapter 2). Simultaneous indexing of all arguments is not licensed and person agreement relies on a hierarchy between subjects, direct and applied objects (see Demirok 2013 for a comprehensive study on agreement in Laz). Details aside, the exponence of third person prefixal agreement is zero in Laz. Since the Frog Story is depicted and narrated from the perspective of the protagonist (in third person), it turned out not to be suitable to investigate the prefixal agreement. In the entire database, there is only one narrative narrated from the perspective of first person. Yet, this narrative belongs to a high-proficiency heritage speaker and does not involve any deviant forms related to agreement patterns. The only deviant form which we were able to find was (i), where the heritage speaker uses the 1st person marker with the 3rd person subject:

(i) Bere-k (*b-)gor-um-s xolo.
child-ERG 1SG-search-IPFV-3SG still
'The boy is still searching for the frog' (MID: FL)

Nevertheless, since this was only attested once in the entire narration of this speaker but crucially not in a consistent way, (i) seems to be a general production or pronunciation error, rather than having something to do with subject-verb agreement. Therefore, I excluded this from the discussion as well as the statistical analyses. The status of prefixal agreement in Heritage Laz requires an in-depth investigation, which I leave to future studies. As for suffixal agreement, there are a couple cases involving deviant number agreement patterns and I discuss them below.

[4] Since 'absence of evidence is not evidence of absence' (Laleko 2010: 39), the absence of the deviant forms associated with the remaining suffixes does not indicate that heritage speakers do not exhibit deviation and do well with them.

[5] The underlying reason seems to be the existence of a homophonous spatial marker, which indicates that an event proceeds towards or ends up in the ground or a specific surface on the ground.

(109) a. e-f-(x)t-i
SP-1SBJ-move-PST.1SG
'I went up/ climbed (it).'

b. {k(o)/*do}-e-f-(x)t-i
AFF-SP-1SBJ-move-PST.1SG
'I certainly went up/climbed (it).'

c. var e-f-(x)t-i
NEG SP-1SBJ-move-PST.1SG
'I didn't go up/climb (it).'

d. *var {k(o)/*do}-e-f-(x)t-i
NEG AFF-SP-1SBJ-move-PST.1SG
Int: 'I (certainly) did NOT go up/climb (it).'

Heritage speakers show sensitivity to the co-occurrence restrictions of affirmative particles to different extents. Specifically, the free narratives did not involve any instances where the affirmative particles are used with the negative particle or where the particle *do-* is followed by a spatial prefix. However, the aspectual restrictions on the use of affirmative particles seem to be violated because these markers are used with the imperfective aspect markers rather than the desired past tense (=perfective aspect) markers as shown in (110) and (111):

(110) mutxa (*ko)-gam-ul-u(r)-n, pencere-şa (*ko-)gam-ul-u(r)-n.
something AFF-SP-move-IPFV-3G window-ABL AFF-SP-move-IPFV-3SG
Int: 'Something is going out, it [the dog] is going out of the window.' (MID: AL)

(111) okaçxe cur tane kurbağa (ko*-)zir-am-an.
then two piece frog AFF-find-IPFV-3PL
Int: 'Then they find two frogs.' (MID: AL)

Despite not using the affirmative particle *do-* with spatial prefixes, heritage speakers seem not to show sensitivity to the further selectional restrictions. With verbs that do not bear a spatial

prefix, the distribution of the two allomorphs of the affirmative particles is lexically conditioned: While the majority of verbs are compatible with both markers, there is also a class of verbs that are only compatible with one particular marker, but not the other[6]. The verb *otsadu* 'look', for instance, only selects for *ko-* but not *do-*. Yet, heritage speakers produced forms where this restriction is violated (112). The lack of sensitivity to the relevant selectional restrictions resulted in ungrammatical finite verbs simultaneously bearing both markers (overmarking), as in (113):

(112) Bere geyiği-şi cindo do-tsad-u. (c.f. ko-tsad-u)
child deer-GEN top.ABL AFF-look-PST.3SG
Int: 'The child looked from above the deer.' (LOW: AL)

(113) Xe (*ko-)d-u-val-am-an, i-gzal-am-an.
hand AFF-AFF-APPL-wave-IPFV-3PL PRV-walk-IPFV-3PL
Int: 'They (=the boy and the dog) are waving hands and leaving.' (MID: AL)

Additionally, heritage speakers do not seem to know in what particular contexts the affirmative particles need to be used. Since even in the absence of these markers the event can get an affirmative reading, these markers are required only in certain contexts. When these conditions are not met, the use of these markers leads to ungrammaticality. In (114), the marking on the first sentence is redundant as the event of sleeping is first introduced into the context and thus it should not be emphasized. However, the use of the affirmative particle in the following sentence is licensed and required thanks to the presence of the previously introduced event but crucially in

[6] My language informants indicated no difference between the two markers when they both are compatible with the same verb. Yet, the fact that certain verbs are only compatible with one particular marker indicates that there might be interpretational differences between them. I leave this issue to future studies.

relation to a different subject. The free narratives of heritage Laz speakers involved many of such instances where they overmark a series of verbs with affirmative particles. Notice, for instance, that the (mid-proficiency) heritage speaker in (115) continuously mark all finite verbs with affirmative particles. It seems that these speakers have lost sensitivity to the contextual properties of the affirmative particles and generalized them as perfectivity or past markers. These speakers did not use these markers together with imperfective markers, either.

(114) Bere (*ko)-d-i-cin-u. Laçi-ti himu şk'ala ko-d-i-cin-u.
child AFF-SP-PRV-lie-PST.3SG dog-also him with AFF-SP-PRV-lie-PST.3SG
Int: 'The child lay down. The dog also lay down with him.' (LOW: AL)

(115) Ora do-tan-u-si bere k(o)-ey-i-sel-u.
time AFF-shine-PST.3SG-ADV child AFF-SP-PRV-wake up-PST.3SG
Int: 'When it became morning, the child woke up.'

(*Ko)-tsad-u-si poxo var on, i-mt-u.
AFF-look-PST.3SG-ADV frog NEG COP.3SG PRV-run away-PST.3SG
Int: 'When he looked, (he saw that) the frog was not there, it ran away.' (MID: AL)

The opposite pattern, i.e., the absence of affirmative particles when required by context, is also prevalent. The omission of the affirmative particle in (116) leads to unacceptability as in its absence, this sentence implies that the boy expects to find a mouse instead of his pet frog in the hole, going against the plot of the story. Likewise, the breaking of the jar inside which the dog put his head after it falls from the window needs to be emphasized given all the previous background. However, heritage speakers do not grammatically mark the distinctive nature of this event (117).

(116) bere him deluği-şa o-tz-er-teşa fare (ko)*-gama-xt-u.
child that hole-ALL PRV-look-IPFV-ADV mouse AFF-SP-move-PST.3SG
Int: 'While the boy was looking at/checking the hole, a mouse came out.' (LOW: AL)

(117) Çizmepe-ti dol-i-kun-u. Kavanozi (do)*-trox-u.
shoes-also SP-PRV-wear-PST.3SG jar AFF-break$_{INTR}$-PST.3SG
Int: '(The boy) put on his shoes. The jar broke.' (MID: AL)

As in the case of overmarking, reduction of affirmative particles also suggests that the contextual sensitivity of these markers has been neutralized in Heritage Laz. This is expected, i) given that Turkish does not grammatically mark such distinctions, and also ii) given heritage speakers' general problems with the interface phenomena such as linguistic phenomena beyond and between sentences (Aalberse et al. 2019: 151, Polinsky 2018).

Within the South Caucasian language family, along with Mingrelian, Laz has the most complex and intricate spatial prefixal system (Boeder 2005), consisting of 27 prefixes (Kutscher 2010, Eren 2016, Öztürk & Eren 2021b). Recall from Chapter 4 (§ 3) that heritage speakers have a significantly more reduced repertoire of spatial prefixes than baseline speakers. This is further evidenced by i) their inappropriate substitution of one marker for another, ii) overmarking of verbs that do not take spatial prefixes, and iii) overgeneralization patterns, i.e., consistent use of a different marker other than the desired one within and across different speakers.

(118) illustrates the first pattern prevalently attested in the free narratives i.e., the use of a spatial prefix that is inappropriate in the relevant context. In an attempt to describe the scene where the dog's head is stuck into the jar, the heritage speaker ends up saying that the dog climbed onto the jar. Despite being grammatically correct, this sentence is unacceptable in the given context as

the jar is depicted on the dog's head. The closest possible alternative would be to use the prefix *ama-* 'into', a form not attested in the entire narrative of this particular speaker. This suggests that s/he has not acquired this prefix at all, or it is not part of his/her productive vocabulary.

(118) #Layç'i k'avanozi-şa e-xt'-u. (c.f. ama-xt-u)
dog jar-ALL SP-move-PST.3SG
'The dog went up onto the jar.' Int: 'The dog's head is inside the jar.' (LOW: AL)

The second pattern involves the use of spatial prefixes with verbs that do not take the relevant prefixes, showing us that heritage speakers do not have a solid grasp of the co-occurrence restrictions holding between verbs and spatial prefixes. In (119), the verb *omtinu* 'run away' is marked with the prefix *eyo-* describing an upward movement. By virtue of encoding motion, this verb is expected to be compatible with spatial prefixes. However, the use of a spatial marker with this verb leads to unacceptability (see Eren 2016 and Öztürk & Eren 2021b for the co-occurrence restrictions between motion verbs and spatial prefixes). The deviant forms of this sort indicate that heritage speakers are adept at the canonical spatial (c.f. idiosyncratic) senses of spatial prefixes and they generalize they freely and compositionally combine with motion verbs of all kinds.

(119) Laçi (*ey-)i-mt-u. (MID: AL)
dog SP-PRV-run away-PST.3SG
Int: 'The dog ran away by making an upward movement and ending up on a higher surface.'

For those cases where a motion verb is compatible with spatial prefixes, heritage speakers diverge from baseline speakers in consistently using one marker instead of another, constituting an instance of overgeneralization. In (120) and (121), heritage speakers of different sociolinguistic profiles use the same spatial marker, namely *eşka-*, instead of the desired marker *e-*. Although both prefixes denote a similar kind of meaning (upward movement) and are compatible with the motion verb *olva* 'move', the combination of the former with this verb further implies a gradually increasing diagonally upward movement. The subject of the sentence is therefore understood to walk when this prefix is used. The other prefix, namely *e-* lacks this kind of implication and simply implies an upward movement. Having lost sensitivity to this contrast, based on the similarity in their meaning, heritage speakers overgeneralized *eşka-* and used it in lieu of the desired *e-* marker. The overgeneralization seems to be governed by phonological salience in that heritage speakers prefer the phonologically longer and thus more salient prefix. This is in line with the crosslinguistic tendency that perceptually salient forms are 'generalized and extended over their original domain in the baseline' (Polinsky 2018: 165).

(120) Bere i-d-u ar tane kva-şa k-eşka-xt-u. (c.f. e-xt-u)
child PRV-go-PST.3SG one piece stone-ALL AFF-SP-move-PST.3SG
Int: 'The boy left and then went up onto the stone.' (MID: AL)

(121) Sonra kva-s eşa-xt'-u. (c.f. e-xt-u)
then stone-DAT SP-move-PST.3SG
Int: '(The boy) then went up onto the stone.' (MID: FL)

Like mid-proficiency speakers, the low-proficiency speaker in (122) has chosen one of the most phonologically heavy prefixes in Laz, namely *menda-* (see Eren 2016 for a full list of spatial prefixes in Laz) and used it as a general spatial marker encompassing a variety of different meanings. This prefix denotes a movement long away from the subject in the baseline variety. In addition to this (122a), the application domain of this prefix is extended to cover that of *e-* 'upwards movement' (122b) and *gama-* 'out of a closed space' (122c). By virtue of consisting of a closed syllable followed by an open one, the disyllabic prefix *menda-* is phonologically heavier and thus perceptually more salient than both of the other two:

(122) a. Laçi menda-xt'-u… Butt'uce-pe-ti laç'i şk'ala menda-xt'-u.
dog SP-move-PST.3SG bee-PL-also dog with SP-move-PST.3SG
'The dog went away. The bees also went away with him.'

b. Bere ağacişi k'ovuği[7] menda-xt-u (c.f. k-e-xt-u.)
child tree-GEN hole SP-move-PST.3SG
Int: 'The boy went up to the hole on the tree.'

c. Mcvabu k'avanozi-şa menda-xt-u. (c.f. ko-gama-xt-u)
frog jar-ALL SP-move-PST.3SG
Int: 'The frog went to/out of the jar.' (LOW: AL)

The last type of deviant forms with spatial prefixes is concerned with their derivational use. Spatial prefixes are polysemous in that they can give rise to idiosyncratic (and/or idiomatic) readings when combined with certain verbs (Chapter 2, 4). The meaning of the verb *oyoxu* 'call

[7] The absence of the allative marker on the goal of the movement contributes to the unacceptability of this sentence.

out to' changes to *scold* when prefixed with the spatial marker *do-*. Unaware of these idiosyncratic uses, heritage speakers compositionally combine the spatial prefixes with verbs solely based on their canonical spatial senses. In (123), since the well is located on the ground, the heritage speaker chooses to use *do-*, which indicates an action directed towards the ground. The loss of sensitivity to idiosyncratic meanings and reliance on compositionality instead is also noted to be quite common across heritage languages (Polinsky 2018: 237).

(123) ar kuyi ko-zir-am-an. Xolo (*d(o)-)i-yox-a-y.
one well AFF-find-IPFV-3PL still SP-PRV-call out-IPFV-3SG
'They find a well. #The boy keeps scolding it.'
Int: 'They find a well. The boy keeps calling out into the well.' (MID: AL)

The fourth and the last slot in the verbal complex hosts valency (pre-root) vowels. These vowels mainly surface in cases of valency changing operations as well as serve to mark certain classes of verbs, namely unergatives. Among the 4 prefixal vowels, the one that exhibits the widest distribution is *i-* as represented in (124) (see Chapter 7 for details).

(124) The distribution of pre-root vowels in Laz

a. {*i-*}: Unergatives, (Benefactive) Reflexives, Passives, High applicativization (1&2 person)

b. {*u-*}: High Applicativization (3rd person)

c. {*a-*}: Higher applicativization (a.k.a. inversion)

d. {*o-*}: Causativization

Heritage speakers overgeneralize this marker and use it in lieu of others. (125) shows that the heritage speaker extends its use to transitives, which is not licensed in the baseline variety. The heritage speaker in (126) uses the intransitive verb *otzenu* 'to look' but marks it with *i-*, rather than the desired *o-* marker. This verb is one of the few irregular verbs in Laz; in the baseline variety it takes the pre-root vowel *o-*, rather than the expected *i-* marker. The verb in (127) is another example taking the pre-root vowel *u-* (see Eren 2016 and Öztürk & Eren 2021b for classes of motion verbs in PL). The overgeneralization of *i-* shows that the heritage speakers are not aware of irregularities, and they simply follow the regular rule of marking unergatives with *i-*:

(125) Bere dere-şa col-u. Layç'i him (*i)-zir-u. (c.f. (a-)[8]zir-u)
child river-ALL fall-PST.3SG dog him PRV-see-PST.3SG
Int: 'The boy fell into the river. The dog saw him and…' (LOW: AL)

(126) Layç'i-ti (*kurbağa) *i-tz-e(r)-n. (c.f. (n-)[9]o-tz-e(r)-n)
dog-also frog PRV-look-IPFV-3SG SP-PRV-look-IPFV-3SG
Int: 'The dog is looking at the frog.' (LOW: AL)

(127) Poxo kavanozi-şa *dol-i-kap-u. (c.f. dol-u-kap-u)
frog jar-ALL SP-PRV-jump/run-PST.3SG
Int: 'The frog jumped into the jar.' (MID: AL)

[8] The verb *oziru* has two meanings, namely, 'to see' and 'to find'. It is used as a transitive verb in PL and FL in both senses but without the *i-* marker. In AL, it obligatorily occurs in an applicative construction in its *seeing* sense because it is a verb of perception (Chapter 2). Under its second sense of finding, it is used as a transitive verb. The heritage speaker here reduces the meaning of this verb only to one and uses it only as a verb of perception. However, this heritage speaker treats it as a transitive verb, patterning with PL and FL speakers.
[9] The presence of the spatial marker, *me-* or *no-* 'thither' would license the direct object here. Also, in FL and PL, this argument would also bear dative case.

The opposite pattern where heritage speakers make use of a different pre-root vowel instead of the *i-* marker is also prevalently attested. Recall from Chapter 4 (§ 4) that valency alternations are attested significantly lower in the narratives of heritage speakers. Even in those cases where they attempted to produce such constructions, they produced deviant forms where the substitution of the required valency marker yields an undesired reading. The substitution of the marker *u-* for the desired *i-* in (128) implies the presence of a third party as the latter marker is used for forming reflexive interpretations, while the former is for 3rd person applied arguments (124).

(128) Xe d-u-kaç-u poxo, oteye götür-di[10]. (c.f. d-i-kaç-u)
hand AFF-APPL-hold-PST.3SG frog away take-PST.3SG
'The boy held the frog in his hand (for someone's benefit or toward them).'
Int: 'The boy held the frog in his hand.' (MID: AL)

(129) shows that the presence of the causative vowel in the participle leads to a difference in the meaning: The object of the clause, i.e., the boy, is interpreted as the subject of the clause due to the presence of the causative marker and the omission of the real subject of the clause (the deer). The absence of case morphology in AL contributes to the coming about of the ambiguity.

(129) Bere k'afa c-o-xun-eri laç'i kovala-dı. (c.f. ce-xun-er-i)
child head SP-CAUS-sit-PTCP dog chase-PST.3SG
'The child chased the dog with something (seated) on his head.'
Int: 'The deer chased the dog with the boy (seated) on its head.' (LOW: AL)

[10] The underlining represents insertions from Turkish, i.e., code-mixed utterances.

Lastly, (130) illustrates the last common type of deviant forms: The absence of the required valency alternating operation leads to an undesired reading. In (130), the absence of the benefactive reflexive construction yields an intranstive clause, which results in the failure of theta-role assignment, i.e., the boy does not receive any theta role. Deviant forms of this sort provide evidence for the vulnerability of valency changing operations (as noted in Chapter 4 (§ 4)).

(130) (*Bere) k'urbağape xe ko-cela-xed-u. (c.f. ko-cel-i-xun-u)
child frog-PL hand AFF-SP-sit-PST.3SG
'The frogs sat on the hand.' Int: 'The child put the frog in his hand.' (LOW: AL)

One thing is in order before proceeding to the suffixal domain in the verbal complex. Heritage speakers avoided using the pre-root vowel *i*- and use more analytical constructions when they were asked to translate sentences featuring it (Chapter 7). The overextension of *i*- observed in the free narrative task might therefore seem to contradict with this fact (Karlos Arregi p.c.). The overgeneralization observed in the free narrative task concerns the illicit substitution of *i*- for other pre-root vowels, that is, its use in contexts where it is not licensed in the baseline variety. Its erosion observed in the grammatically oriented tasks, on the other hand, concerns heritage speakers' avoidance of the constructions in which this marker is required or rather the replacement of the relevant synthetic constructions with more analytical ones. Given the presence of deviant forms where *i*- is replaced with other pre-root vowels as exemplified in (128) and since the findings from the grammatically oriented tasks were more consistent and more robust across heritage speakers, it could be concluded that the erosion facts are more illustrative than the overgeneralization facts.

With this, we are done with the types of deviant forms that have to do with the prefixal domain in the verbal complex. As for the suffixal domain, heritage speakers deviate and diverge from baseline speakers with respect to the aspectual and person agreement markers, both of which were reported to be cross-linguistically vulnerable in heritage languages (For agreement, Bolonyai 2007 and Albirini et al. 2011; for aspectual distinctions, Polinsky 2006 and Laleko 2010).

Imperfective aspect markers also encode continuous tense in Laz in the absence of a following past tense marker. There are 4 allomorphs of the imperfective marker, and their distribution is dependent on the properties of the lexical verbal roots and their argument structural properties as in Table (18) (see Chapter 7 for a detailed analysis).

Table 18: Syntactic and semantic correlates of imperfective markers

Valency	TS	Arg. Structure	Lexical Aspect	3rd person
Ø	*-am/-um*	Transitive	Activity, accomplishment	*-s*
i-	*-am*	Unergative	Activity	*-s*
i-	*-er*	Unaccusative	Activity, Accomplishment, achievement	*-n*
Ø	*-ur*	Unaccusative	Achievements	*-n*

(from (Öztürk & Taylan 2017: 10))

The *-am* marker exhibits the widest distribution as it occurs with transitives as well as unergatives. Notice the tight correlation between the valency markers and imperfective markers: While transitives and one group of unaccusatives (underived ones, see Chapter 7) do not take any pre-root vowels, the other two markers are compatible with the marker *i-*.

The overgeneralization of *-am* constitutes the most common type of aspectual deviant forms. The transitive verb *oziru* in Laz has two meanings in the baseline variety as *to find* and *to see*, and regardless of this homophonic variation, it takes *-um*. However, heritage speakers firstly restrict the meaning of this verb to only one of its two senses and mark with the *-am* marker. The heritage speaker in (131) consistently uses this verb under its seeing sense and the speakers in (132) and (133) in its finding sense. Crucially, all speakers extend the domain of the *-am* marker to this particular verb, rather than using the desired *-um* marker.

(131) Layç'i k'oğona-pe zir-a(m)-y. (c.f. zir-u(m)-y)
dog hive-PL see-IPFV-3SG
Int: 'The dog sees the hives.' (LOW: AL)

(132) … cur tane kurbağa (*ko-)zir-am-an.
two piece frog AFF-find-IPFV-3PL
Int: '… they (=the boy and the dog) find two frogs.' (MID: AL)

(133) ağaci-şi k'ovuği-şa o-tz-e(r)n-an, herhalde poxo zir-am-an (c.f. zir-um-an)
tree-GEN hole-ALL PRV-look-IPFV-3PL probably frog find-IRFV-3PL
Int: 'They look at the hole on the tree, probably they find the frog.' (MID: AL)

(134) provides further evidence for the overgeneralization of *-am*. As a psych-verb, *oşkurinu* 'to fear' necessarily occurs in an applicative construction (Öztürk 2013). Details aside, the verb necessarily bears the *-er* suffix in the imperfective in these constructions (see Öztürk 2016 for the derivation of the higher applicative constructions). The heritage speaker here substitutes *-am* for the desired *-er* marker. Note that the speaker is aware of the morphological effects of the

relevant substitution in that the subject is marked with the ergative case and the final agreement slot is *-s* rather than the desired *-n* (see Table 15). The presence of the ergative marker is also not licensed here. Yet, it is compatible with *-am* which marks transitives and unergatives.

(134) Bere-(*k)-ti a-şk'urin-am-s. (c.f. a-şkurin-e(r)-n)
child-ERG-also APPL-fear-IPFV-3SG
Int: 'The child is afraid (of the owl).'

The second most frequent pattern involves regularization of the set of irregular verbs which take a different imperfective marker rather than the expected *-am* marker. Patterning with speakers of other languages (Heritage Arabic, Benmamoun et al. 2014; Heritage Korean, Choi 2003; Heritage English, Polinsky 2018), Heritage Laz speakers follow the general pattern found in their languages. Specifically, they mark unergative verbs with *-am*, eliminating the irregularity that holds for a certain set of verbs in Laz. The unergative verb *otzedu* in AL and *otzkedu* in FL 'to look' is expected to take *-am* yet it takes *-ur*. Eliminating this irregularity, heritage speakers follow the general rule in the language and mark it with the expected *-am* marker as in (135) and (136):

(135) Kova-şa o-tzed-a(m)-y. (c.f. o-tzed-u(r)-n)
bucket PRV-look-IPFV-3SG
Int: 'The boy is looking at the hive' (LOW: AL)

(136) Coğoyi merakli hekti o-tzked-am-s (c.f. o-tzked-u(r)-n)
dog-also curious there.ABL PRV-look-IPFV-3SG
Int: 'The dog is looking from there, too.' (MID: FL)

Despite not constituting deviant forms, further instances of the same kind of overregularization are observed in the class of irregular unergative verbs not taking any markers (or take the zero allomorph) in imperfective, e.g., *onçiru* 'swim', *obaru* 'to blow (wind)' and *obgaru* 'cry'. Heritage speakers regularize these verbs and mark them with *-am* (137) and (138):

(137) Ormanli-şa i-gzal-a-y. (c.f. i-gzal-s)
forest-ALL PRV-walk-IPFV-3SG
'He is going to the forest.' (LOW: AL)

(138) Coğoyi butkuci kala i-stey-am-s (c.f. i-ste-s)
dog bee with PRV-play-IPFV-3SG
'The dog is playing with the bees.' (MID: FL)

Albeit lower in frequency, the opposite pattern where imperfective markers are omitted was also attested and their absence results in ungrammaticality (139). This lends further evidence for the vulnerability of the aspectual categories in heritage languages (Laleko 2010, Montrul 2016).

(139)… bere do coğori o-tzked-an … (c.f. o-tzked-un-an)
child and dog PRV-look-3PL
Int: 'The child and the dog look ...' (MID: FL)

The free narratives of heritage speakers also involved cases where the domain of imperfective markers extends into that of perfective. Past tense inflection in Laz simultaneously implies perfective aspect, i.e., the event denoted in the predicate is completed. In adverbial clauses

headed by the postposition *şkule* 'after', the dependent verb needs to be marked with past tense morphology in AL. (140) shows that the heritage speaker uses imperfective markers instead.

(140) Kurbağa-pe ko-zir-am[11] şukule i-gzal-am-an. (c.f. ko-zir-ey)
frog-PL AFF-see-IPFV after PRV-walk-IPFV-3PL
Int: 'After seeing the frog, they leave.' (MID: AL)

The use of imperfective marker on an achievement verb leads to unacceptability but it is prevalently produced by heritage speakers (141)-(142). Although heritage speakers use the desired (*-um*) marker with the verb *oziru*, the use of this marker is restricted to only one of its two senses, i.e., 'to see'. Under its 'finding' sense, it occurs in perfective for denoting an instantaneous event.

(141) …tsad-um-an tsad-um-an var zir-um-an.
look-IPFV-3PL look-IPFV-3PL NEG find-IPFV-3PL
Int: 'They are looking and looking but cannot find (the frog).' (MID: AL)

(142) … jur mjvabu zir-um-an. (c.f. zir-es)
two frog find-IPFV-3PL
Int: 'They find two frogs.' (MID: FL)

As for past tense and agreement morphology, heritage speakers pattern well with baseline speakers. Past tense markers are portmanteau morphemes which simultaneously encode person and number features (*-i:* 1 &2 person, *-u:* 3rd person, *-es/-ey*: 3rd plural). Despite this, heritage

[11] In the baseline variety this verb receives the *-um* marker. Also, the 3rd person plural marker is omitted. Even in the presence of the number morphology, the sentence is still unacceptable because of the aspectual mismatch.

speakers did not produce any deviant forms[12]. As for subject agreement markers, there was only one deviant form in the entire database: (143) is doubly marked 3rd person in the imperfective:

(143) Ar daha ar teyi mtuyi m-ul-u(r)-n-s. (c.f. m-ul-u-n).
one more one piece mouse SP-move-IPFV-3SG-3SG
Int: 'One more mouse is coming.' (MID: FL)

The lower level of deviant forms related with past tense and agreement morphology in comparison to the (imperfective) aspectual markers is in line with the crosslinguistic observations on heritage languages. Montrul (2016: 71) concludes that within verbal morphology, tense and agreement are more resilient than aspect and mood. Likewise, Polinsky (2018: 175) invokes structural salience to account for the better preservation of and the absence of overmarking in tense markers in comparison to aspectual markers in Heritage English. The more resilient nature of past tense (=perfective aspect) in comparison to the imperfective in Laz is also expected given that the latter exhibits more complicated allomorphy than the former. Recall from Chapter 4 (§ 6) that the statistical analyses did not yield a significant difference between heritage and baseline speakers in terms of their level of producing past (=perfective aspect) vs. continuous tense (=imperfective aspect) but only a tendency in the heritage group to use past tense more. The examination of the deviant forms, on the other hand, indicates that imperfective aspect is more vulnerable than

[12] The only example was the one in (i). The predicate bears 3rd person plural marker although the subject of the clause is singular. Yet, the sentence is also problematic for various other reasons: the presence of the allative marker, the use of an object, i.e., frog, with an intransitive verb. We were not able to identify what the speaker intended to mean here.
(i) **Bere ar tane kuyi-şa kurbağa ko-tsad-ey.
child one piece well-ALL frog AFF-look-PST.3PL
Intended: Not identified

perfective, confirming the prediction that it would pose more challenges to heritage speakers due to its (more complicated) allomorphic nature.

1.2. Nominal morphology

Heritage speakers of languages featuring overt number, gender and case morphology are reported not to use the relevant markers in a consistent way to the extent that nominal morphology is argued to be more vulnerable than verbal morphology (see Montrul 2016: 54-74). In Laz, the frequency of the related deviant forms is quite high (28%), constituting the second most common type of deviant forms after verbal morphology (60%) (see Figure (17) above)[13].

Within nominal morphology, case morphology seems to be the most affected because no deviant forms were found regarding the plural morpheme. Case markers that mark core arguments as well as those that mark spatial relations are both affected. While the former is only concerned with FL and PL, the latter is relevant for all Laz varieties, involving AL that exhibits a neutral case alignment (Harris 1985; Öztürk 2019).

Laz (except for AL) exhibits an ERG-ABS case alignment, where the distribution of case markers is sensitive to the thematic roles associated with the arguments in the following way: Agent/Initiator → Ergative, Theme →Absolutive, Experiencer →Dative. In addition to experiencer subjects, dative in PL also marks indirect objects as shown in (144) and (145):

[13] This could have been higher if more (mid- and high-proficiency) heritage speakers of FL and PL, i.e., the two varieties of Laz exhibiting an ERG-ABS case alignment, had participated in the fieldwork.

(144) Ali-k Ayşe zir-u. (Agent Subject: Erg, Theme Object: Abs)

Ali-ERG Ayşe.ABS see-PST.3SG

'Ali saw Ayşe.'

(145) a. Ali-s Ayşe a-limb-e-n. (Experiencer Subject: Dative)

Ali-DAT Ayşe.ABS APPL-love-IPFV-3SG

'Ali loves Ayşe.'

b. Ali-k Ayşe-s para me-ç-u. (Indirect Object: Dative)

Ali-ERG Ayşe-DAT money.ABS SP-give-PST.3SG

'Ali gave the money to Ayşe.'

Despite the tight correlation between theta roles and the relevant case markers, there is disagreement about the status of ergative in Laz. Based on evidence from case preservation under A movement and triggering full number agreement, Emgin (2009) treats ergative as a structural case, i.e., assigned in structural configurations (see also Öztürk 2013 for a structural analysis of ergative assignment in PL). Demirok (2011, 2013) and Eren (2014) challenge this claim and argue that ergative is an inherent case, i.e., inherently associated with certain theta positions.

The crosslinguistic literature on heritage languages inform us that the case patterns of heritage speakers might be used as a testing ground to answer this question. Specifically, case marking is reported to be differentially affected in heritage languages: Inherent cases are more resilient and thus less subject to omission than structural cases by virtue of the former's tighter association with its licensing expression. (146) shows the order in which different types of cases are affected in heritage languages (Spanish *a* as DOM or in prototypical dative constructions, Montrul 2004 and Montrul & Bowles 2010; Hindi ergative and dative, Montrul et al. 2012). The

status of case markers is proposed to be determined based on the following reasoning: If a case marker is a structural case, it is predicted to be omitted (or rather replaced by an unmarked case). If it is an inherent case, it is better preserved (Benmamoun, Montrul & Polinsky 2013: 160)

(146) Vulnerability degrees of different case morphology in Heritage Languages

Structural case > Inherent case > Lexical case

Ergative case in Laz is subject to omission at a high level in the heritage variety of FL[14]. Notice that the heritage speakers consistently drop the ergative marker on the subjects of both transitive and unergative predicates as respectively shown in (147)-(148) and (149)-(150):

(147) Beye letta-s a xutula ziy-um-s.
child ground-DAT one hole see-IPFV-3SG
Int: 'The child sees a hole on the ground.' (MID: FL-Transitive)

(148) Mjvabu-pe bere-pe ko-no-svar-es.
frog-PL child-PL AFF-SP-order-PST.3PL
Int: 'The frog lined up the(ir) children.' (LOW: FL-Transitive)

(149) Coğoyi-ti butkuci kala i-ste-s.
dog-as for bee with PRV-play-3SG
Int: 'As for the dog, it is playing with the bees.' (MID: FL-Unergative)

[14] Since the only two heritage speakers of PL are both high-proficiency speakers in this study, their narratives did not involve any case-related deviant forms. Therefore, the status of ergative case in this variety remains to be investigated. However, given the difficulty of finding heritage speakers of this variety (Chapter 2), testing this against heritage speakers seems difficult. I leave this issue to future studies.

(150) Bere coğori şkala i-bi-s ama i-duşun-s.

child dog with PRV-play-3SG but PRV-think-3SG

Int:‘The child is playing with the dog but also is also thinking …’ (LOW: FL-Unergative)

(151) exemplifies the omission of ergative in a ditransitive clause while the dative case on the indirect object is retained. The consistent omission of the ergative marker provides evidence for its structural status, rather than an inherent (c.f. Demirok 2013, Eren 2014).

(151) Mjvabu ar teği beye-muşi biçi-s me-ç-am-s.

frog one piece child-3SG.POSS child-DAT SP-give-IPFV-3SG

Int: ‘The frog gives one of his children to the boy.’ (MID: FL-Ditransitive)

The free narratives of heritage speakers also involve cases of overmarking, i.e., the domain of ergative extends into that of unaccusatives. The heritage speaker in (152) not only marks the subjects of transitives (152a) with ergative but also the unaccusatives as in (152b) and (152c).

(152) a. K'avanozi-ti do-tax-um-s[15] coğori-k ge-xt-u şk'ule.

jar-also AFF-break-IPFV-3SG dog-ERG SP-move-PST.3SG after

Int: ‘The dog also breaks the jar after falling down.’ (MID: FL-Transitive)

b. Coğori-k i-mt'-e(r)-n butk'uce-pe-şen.

dog-ERG PRV-run away-IPFV-3SG bee-PL-ABL

Int: ‘The dog is running away from the bees.’ (MID: FL-Unaccusative)

[15] This form implies that the dog broke the jar fully intentionally. Baseline speakers use the inchoative version of the verb *break*, namely *otroxu* to describe this scene.

c. Coğori-k ge-xt-u.

dog-ERG SP-move-PST.3SG

Int: ‘The dog went down.’ (MID: FL-Unaccusative)

While baseline speakers completely reject the presence of ergative with unaccusatives, heritage speakers also find it (totally or more) acceptable. Based on this, it could also be argued that this particular speaker shows a tendency to generalize ergative case as a marker of subjecthood, rather than initiatorhood in the baseline variety. Further evidence for this comes from the code-mixed utterances of this speaker (153) where the subjects of predicates headed by Turkish verbs are also marked with ergative, although Turkish is a nominative-accusative language. The use of ergative as a subject marker seems also in line with the argument that it is a structural case rather than an inherent one, as suggested by Emgin (2009) and Öztürk (2013).

(153) coğori-k pencere-şan düş-üyor .... Coğori-k-ti sevin-iyor.

dog-ERG window-ABL fall-PROG dog-ERG-also be happy-PROG

‘The dog falls from the window …. The dog becomes happy.’ (MID: FL-Code-mixed)

As for dative, which marks experiencer subjects and recipient or goal arguments in Laz, the picture that emerges is similar to that of Heritage Spanish (Montrul 2004, Montrul & Bowles 2009) and Heritage Hindi (Montrul et al. 2012): Dative subjects are more affected than (indirect) objects. The heritage speakers in (154)-(156) omit the dative marker on the experiencer subjects of applicative constructions:

(154) Bere a-şkurin-u, Coğori-ti a-şkurin-u i-mt-u.

child APPL-fear-PST.3SG dog-also APPL-fear-PST.3SG PRV-run away-PST.3SG

Int: ‘The child got scared. The dog also got scared and ran away.’ (LOW: FL-Dative subject)

(155) Baykuşi k-a-zir-e(r)-n bere.

owl AFF-APPL-see-IPFV-3SG child

Int: ‘The child was able to find the owl.’ (LOW: FL-Dative subject)

(156) mjvabu ayle u-yo(n)-(u)n-s.

frog family APPL-have$_{Animate}$-IPFV-3SG-3SG

Int: ‘The frog has a family.’ (MID: FL-Dative subject)

As for the objects, the same speakers keep the dative case marker on the applied (157) and indirect objects (158) ((151) reproduced here for ease of reference). The observed asymmetry between subjects and objects provides further evidence for the sensitivity of heritage speakers to the structural functions and positions of arguments in the reorganization of the case-assignment mechanisms, rather than theta roles, as also suggested by Benmamoun et al. (2013).

(157) u-cox-om-s bere, mjvapu-s u-cox-om-s.

APPL-call out-IPFV-3SG child frog-DAT APPL-call out-IPFV-3SG

Int: ‘The boy is calling out, calling out to the frog.’ (LOW: FL-Applied object)

(158) Mjvabu ar teği beye-muşi biçi-s me-ç-am-s.

frog one piece child-3SG.POSS child-DAT SP-give-IPFV-3SG

Int: ‘The frog gives one of his children to the boy.’ (MID: FL-Indirect object)

Further evidence for the preservation of the dative case in non-subject positions comes from the fact that all heritage speakers seem to retain and use it to mark location as shown in (159) and (160). The first dative case in (159) and (160) marks location in space and time respectively. In (160), we also see a further instance of the dative case marking the goal of an intranstive verb, namely *otzkenu* 'to look'.

(159) oda-s kavanozi-s doloxe na-on kurbağa i-mt-e(r)-n.(c.f. kavanozi-şi)
room-DAT jar-DAT inside SUB-COP.3SG frog PRV-run away-IPFV-3SG
Int: 'In the room, the frog which is in the jar is running away.' (LOW: FL)

(160) Seri-s … coğori do bere mcvabu-s o-tzk-e(r)n-an …
evening-DAT dog and child frog-DAT PRV-look-IPFV-3PL
Uk'açxe kutuği-s doloxe geride a o-tzk-e(r)n-an …(c.f. kutuği-şi)
then log-DAT inside back one PRV-look-IPFV-3PL (MID: FL)
Int: 'In the evening, the dog & boy are looking at the frog... Then they look behind the log…'

The preservation of dative for marking location does not necessarily mean that heritage speakers have a full grasp of the spatial case system of Laz. Indeed, the last use of the dative case in both of examples (159) and (160) is not appropriate as the relevant nouns need to be marked with genitive. These examples indicate that the heritage speakers show a tendency to extend the domain of use of dative case. Further evidence comes from (161) and (162), where dative is used in lieu of the desired ablative marker *-şen*:

(161) Eeee pencere-s gama-tzk-e(r)-n. (c.f. pencere-şen)

FILLER window-DAT SP-look-IPFV-3SG

Int: 'He is looking out of the window.' (LOW: FL)

(162) … coğori-muşi … penceye-s me-(u)l-u. (c.f. pencere-şen)

dog-3SG.POSS window-DAT SP-move-PST.3SG

Int: 'The dog fell from the window.' (MID: FL)

The ablative case also undergoes phonological erosion, and its final vowel consistently gets deleted. What we are dealing with here is not a simple phonological simplification because the derived form happens to be the same as the allative marker in FL, namely *-şe*, leading to ungrammaticality in certain cases. (163) ends up giving the opposite readings of what is depicted in the Frog Story because in the absence of the final nasal, the sentence is understood to mean that the goal of the frog's running away is the jar, rather than the source.

(163) Mjvabu-ti merakli-yen i-mt-e(r)-n kavanozi-şe. (c.f. kavanozi-şen)

frog-also curious-COP.3SG PRV-run away-IPFV-3SG jar-ABL/ALL

Int: 'The frog is curious; it runs away from the jar.' (MID: FL)

The simplification observed in Heritage FL seems to have historically also taken place in AL, which resulted in the conflation of ablative and allative (Kutscher 2010). Therefore, it is possible that the observed change might also stem from the interaction between the speakers of different Laz varieties. The issue of inter-dialectally conditioned language change is by itself also very interesting but falls outside the scope of this dissertation. Therefore, I leave it to future studies.

As for Heritage AL, the loss of overt case morphology makes it difficult to investigate the effects of heritage language acquisition on the case alignment patterns. Despite its impoverished case system, its only available spatial case, namely ablative/allative, is subject to reduction. (164) show that the absence of the required spatial case leads to unacceptability because the goal of the coming event, namely *bere* 'the child', remains as an argument that does not receive a theta role in the absence of the spatial case marker:

(164) Ar(ı)-epe bere ko-mo-xt-ey. (c.f. bere-şa)
bee-PL. child AFF-SP-move-PST.3PL
Int: 'The bees came to(wards) the child.' (LOW: AL)

One final but significant fact is concerned with the use of this particular marker by those heritage speakers who are learning Laz as a second language at official institutions. The teachers of these courses reported to me that these younger generation speakers show a tendency to use this marker in ditransitive constructions, marking the indirect object. Recall that indirect objects are marked with dative case in Laz in general (except for AL). In the baseline variety of AL indirect objects are unmarked and the word order is used to indicate it in the absence of verbal (subject and object) agreement markers. The first NP in the sentence (165a) is interpreted as the subject of the clause, the second one as the indirect object and the immediately preverbal one as the direct object of the clause. (165b) shows that changing the positions of the relevant arguments is accompanied by a switch in the grammatical functions.

(165) a. Koçi oxorca bere me-ç-u.

man.ABS woman.ABS child.ABS SP-give-PST.3SG

'The man gave the child to the woman.' (Baseline: AL)

b. Oxorca koçi bere me-ç-u.

woman.ABS man.ABS child.ABS SP-give-PST.3SG

'The woman gave the child to the man.' (Baseline: AL)

What the students in Heritage Laz classes do, instead, is to mark the indirect object with the allative case as shown in (166). Dative and allative readings are simultaneously encoded by the case marker *-(y)A* in Turkish as shown in (167a) and (167b). The teachers of the Heritage Laz classes reported that *-şa* is explicitly taught to be the counterpart of Turkish *-(y)A*, giving rise to the attested pattern in (166). This example shows the significance of heritage language education in shaping the direction of linguistic change. Crucially, none of the heritage speakers I worked with produced and/or accepted the pattern in (166) and it is only produced by Laz students.

(166) Koçi oxorca-şa bere me-ç-u.

man.ABS woman-ALL/ABL child.ABS SP-give-PST.3SG

'Int: The man gave the child to the woman.' (Heritage: AL)

(167) a. Kadın İstanbul-a git-ti.

woman.NOM İstanbul-DAT go-PST.3SG

'The woman went to İstanbul.' (Turkish: Allative)

b. Adam kadın-a çocuğ-u ver-di.

man.ABS woman-DAT child-ACC give-PST.3SG

'The man gave the child to the woman.' (Turkish: Dative)

1.3. Lexicon

Being context-specific and dependent on the quantity of linguistic input (Montrul 2016: 48), the lexicon stands as one of the most vulnerable areas of heritage grammars (Polinsky 2018 Chapter 7). In Chapter 4 (§ 2), I showed that there is a striking difference between the lexical repertoire of Heritage Laz speakers and that of baseline speakers, i.e., the size of the former is lower than that of the latter by almost 47%. The vulnerability of lexicon is further evidenced by the high level of lexical deviant forms (10%) attested in the free narratives of heritage speakers, constituting the third most frequent type of deviant forms.

The first type of lexical deviant forms is concerned with the use of Laz words that are inappropriate in the relevant context. This mostly covers the class of verbs but there are also instances involving nominals, albeit lower in frequency[16]. (168) exemplifies one of the latter cases where the heritage speaker makes use of the word *dişka* 'brushwood' to refer to the log floating on the river in the story. This word only refers to a certain type of wood that is meant to be burnt in Laz. The speaker here overgeneralizes the meaning of this word to all phases of chopped (c.f. alive) trees. Likewise, (169) illustrates the overgeneralization of the verb *oru* 'bark' acquiring the general sense of screaming or yelling, and thus being (consistently) used with human subjects.

[16] This mainly stems from the fact that heritage speakers seem to resort to borrowing or inserting lexical items from Turkish to compensate for their limited lexical knowledge in Laz. (See Chapter 4, § 8)

(168) Didi dişka k-a-zir-u. (c.f. çutuği/çoki)
big wood AFF-APPL-see-PST.3SG
'He saw a big brushwood.' 'Int: 'He saw a big log.' (MID: AL)

(169) Bere ur-a-y, laçi-ti ur-a-y. (c.f. kri-a-y)
child bark-IPFV-3SG dog-also bark-IPFV-3SG
'The child is barking (c.f. yelling), and the dog is barking too.' (LOW: AL)

The second most frequent type of deviant forms is attested within the class of verbs and has to do with their argument structural properties. The inchoative or intransitive version of the verb *otaxu* 'break' is expressed in a distinct lexical root in Laz, namely *otroxu* 'break', as opposed to the case in English or Turkish[17]. Lacking the latter form in their productive lexicon, heritage speakers use the transitive version consistently and frequently (170). The cause of the breaking of the glass is the event of falling rather than the dog itself intentionally breaking it as implied by the verb in (170). The opposite pattern where the intransitive verb is substituted for the transitive verb is also attested, e.g., use of falling instead of dropping, i.e., *cetoçu*, as in (171).

(170) coğori-k pencere-şan düş-üyor. Uk'açxe k'avanozi do-tax-um-s. (do-trox-u-n)
dog-ERG window-ABL fall-PROG then jar AFF-break-IPFV-3SG
Int: 'The dog falls from the window. Then the jar breaks.'

[17] In English, the same root can be used both transitively (*John broke the glass*) and intransitively (*The glass broke*). In Turkish, the root *kır-* is lexically transitive (i), and the intransitive version is derived via passivization (and the addition of the adverb *kendiliğinden* 'by itself' for anticausatives reading) (ii).

(i) Ali bardağ-ı kır-dı. (ii) Bardak kendiliğinden kır-ıl-dı.
Ali glass-ACC break-PST.3SG glass by itself break-PASS-PST.3SG
'Ali broke the glass.' 'The glass broke (by itself).'

(171) Layç'i-ti col-u… Layç'i k'oğonape-şi k'ovani col-u. (c.f. ce-toç-u.)

dog-also fall-PST.3SG dog fly-PL-GEN hive fall-PST.3SG

Int: 'The dog also fell… The dog dropped the (bees') hive.' (LOW: AL)

Lastly, the free narratives of heritage speakers involved deviant forms due to lack of locational or directional postpositions. Heritage speakers have a large inventory of postpositions, which might be used as an alternative to their reduced spatial prefixal system (Chapter 4). Yet, this does not necessarily mean that they have a grasp of full postpositional system. They overgeneralize certain postpositions and consistently use them instead of others that are absent in their narratives. In (172), the heritage speaker uses the postposition *cindo* 'top' instead of the desired *doloxendo* 'out of'. (173) shows that the absence of the suffix *–(n)dele*, which brings in a directional reading to postpositions, leads to an undesired reading: The postposition undergoes some sort of incorporation and together with the verb acquires a new meaning, i.e., *returning*, and thus it implies that the dog went in the opposite direction of the boy and probably ended up at home.

(172) Deluğişi cindo baykuşi çık-tı. (c.f. doloxendo). Ar(ı)-epe bere-şi cindo on.

hole-GEN top owl exit-PST.3SG bee-PL child-GEN top COP.3SG

Int: 'The owl came out of the hole. The bees are all over (lit: on top of) the child.' (LOW: AL)

(173) Laçi-ti himu-şi ceri i-d-u. (c.f. cerindele-muşi)

dog-also he-GEN back PRV-go-PST.3SG

'The dog returned (Lit: The dog went to the boy's back).' (MID: AL)

Int: 'The dog went after (=followed) the boy.'

1.4. Syntax and word order

The last and the least common type of deviant forms is concerned with word order variation. In Chapter 4 (§ 7), I showed that heritage speakers exhibited a significantly lower rate of argument dropping (pro-drop) as well as scrambling of arguments into the postverbal domain. Overall, they seem to instead stick to the canonical word order SOV where all arguments are overtly expressed. Nevertheless, deviations from this common standard were also attempted, albeit lower in frequency (2% of all deviant forms), often resulting in unacceptability.

The relevant cases mostly come from the heritage speakers of AL because it lacks overt case morphology, which would prevent potential ambiguities as in the case of other Laz varieties. (174) shows that switching the positions of the two preverbal elements corresponds to a change in the syntactic functions of the relevant arguments. Since they bear the same *phi*-features (person & number), verbal agreement markers do not play any role in the identification of core arguments. The cases of this sort seem to be scarce within and across heritage speakers. In other words, none of the speakers have consistently produced and thus exhibited a different type of canonical word order other than SOV. This shows us that word order is resilient in Heritage Laz, most probably because Turkish is also SOV. [18]

(174) bere baykuşi a-ntxoz-er-t-u. (c.f. baykuşi bere)
child owl APPL-chase-IPFV-SF-PST.3SG
'The child is chasing the owl.' (Int: The owl is chasing the boy.) (MID: AL)

[18] There is a large immigrant Laz population in Germany. It remains to be investigated if and if so how the word order of Laz was affected by the SVO and SOV word order patterns attested in German. I leave this issue to future studies.

(175) shows that the mid-proficiency heritage speaker consistently places the source-denoting adjunct in the postverbal position. However, the relevant word order forces a reading where the spatial case-marked argument is interpreted as the goal of the event, rather than the source, yielding inappropriateness in context (175a) and/or even ungrammaticality (175b). In other words, the allative and ablative conflation in AL (exponed in the case marker *-şa*) (Kutscher 2010) (see § 1.3 here) is resolved thanks to word order in AL.

(175)a. Bere-ti ce-xt-u pencere-şa. (c.f. pencere-şa ce-xt-u)
child-also SP-move-PST.3SG window-ALL/ABL
'The boy went down to the window.' Int: 'The boy fell from the window.'

b. Çutuği-şi cin k-ela-xt-u ruba-şa. (c.f. ruba-şa.k-ela-xt-u)
log-GEN top AFF-SP-move-PST.3SG river-ALL/ABL
Int: 'The boy climbed onto the log from the river.' (MID: AL)

As for the effects of pro-drop on the interpretation of sentences, the example in (176) shows that the intended indirect object of the sentence ends up being interpreted as the subject of the clause in the absence of the overt (pro-dropped) subject, namely *the boy*. Note that the relevant undesired ambiguity could also be resolved by way of changing the head of the predicate to a verb that is compatible with the applicative morphology, which would make it clear that the dog is the goal of the embedded clause even in the absence of the overt subject.

(176) Laçi-muşi su-yi ya tk-u. (c.f. u-tz-u)
dog-3SG.POSS silent-BE.IMP.2SG COMPL say-PST.3SG
'The dog said 'Be silent!'.' Int: 'The boy told the dog to remain silent.' (MID: AL)

Lastly, albeit lower in number, the free narratives also involved ungrammaticality due to theta criterion violation, i.e., a mismatch between the number of arguments available in the sentence and that in the theta-grid of the predicate. In (177), in the absence of the locative case marker, the word for 'hand', namely *xe*, gets to be interpreted as the object of the predicate *eçopu* 'take', rather than the desired one *poxo* 'frog'. In more technical terms, since the transitive predicate *eçopu* 'take' can assign a theta role to and thus license two and crucially only two arguments, (177) is ungrammatical because of having a unlicensed argument. Likewise, the extra argument in (178) headed by an intranstive verb leads to ungrammaticality.

(177) Xe-muşi on poxo, poxo (*xe) e-ç'op-u.
hand-3SG.POSS COP.3SG frog frog hand SP-catch-PST.3SG
Int: 'The frog is on his hand, he took the frog in his hand.' (MID: AL)

(178) Buttuc-epe bere(*-şa) u-kap-u.
bee-PL child-ALL PRV-run-PST.3SG
Int: 'The bees ran towards the boy.'/ 'The bees attacked the boy.' (MID: AL)

2. Deviant forms and linguistic variation in Heritage Laz

The aim of this section is two-fold: Firstly, I investigate the intercorrelations between the production level of deviant forms and the lexical proficiency of heritage speakers. Given their reduced lexical inventory and the correlations between lexical and grammatical knowledge, we would expect to find a negative correlation between the frequency counts of deviant forms, distinct Laz content words, and grammatical markers and constructions investigated within the scope of this dissertation. Based on bi-variate correlation analyses, I show that this prediction is borne out and lexical proficiency stands as a nice indicator of the production level of deviant forms as well as that of grammatical knowledge. The second aim of this section is to classify heritage speakers based on their linguistic proficiency in order to understand if these groups differ from one another in terms of their production counts of certain grammatical constructions. This allows us to deal with the heterogeneity of this group of speakers not only in their linguistic skills and socio-linguistic profile but also in their educational needs. I classify heritage speakers in three groups as high-, mid-, and low- proficiency speakers and show that these groups differ from one another in terms of their production of constructions that involve i) distinct spatial prefixes, ii) valency alternations, and lastly iii) complex clauses.

Separate Pearson product-moment correlations were carried out to identify the relationship between the frequency counts of deviant forms and the production of the grammatical variables along with the sociolinguistic variable age. The results of the statistical analyses are in Table (19):

Table 19: Intercorrelations between deviant forms and grammatical variables

	Deviant Total	Age
Laz content word	-.396*	.551**
Valency change-total	-.633**	.394*
Rate of valency changing operations	-.576**	.109
SP-Different	-.543**	.477**
Rate of spatial prefixes	-.273	.319
NA-total	-.410*	.578**
Code-mixing total	.398*	-.569**
Rate of code-mixing	.436*	-671**
Rate of past tense	-.333	.170
Rate of continuous tense	.363	-.189
Age	.-.338	-
*$p < .05$, ** $p < .01$		

The results of bi-variate correlation analyses demonstrate that lexical proficiency is further an adequate indicator of the production level of deviant forms as well as a good indicator of grammatical knowledge (Chapter 5). The intercorrelation between Laz content word and the total number of deviant forms is very close to moderate[19] (r =-.396, $p < .05$) as is also the case for the other grammatical variables, namely a) the number of finite complex clauses, i.e., NA-total (r =-.410, $p < .05$), b) the number of distinct spatial prefixes, i.e., SP-Different (r =-.543, $p < .01$), c)

[19] See Chapter 4 for the quinquepartite scale of strength adopted for the interpretation of the bi-variate correlations.

rate of valency changing operations (r =-.576, p < .01)[20]. The direction of all the attested correlations is negative as predicted assuming that as the production level of lexical and grammatical constructions increases in the free speech samples, one tends to produce fewer forms that are rated unacceptable.

Deviant forms and the production of code-mixed utterances are positively correlated and the intercorrelations between the two are either moderate (rate of code-mixing; r =-.436, p < .05) or very close to moderate (code-mixing total; r =-.398, p < .05). These findings suggest that the more items a heritage speaker inserts from Turkish into their narration, the more likely for that speaker to produce deviant forms, and thus they are in line with the fact that the dominant language of heritage Laz speakers has become Turkish. Additionally, although heritage speakers use code-mixing as a strategy to compensate for their limited knowledge in Laz (Chapter 4, § 8), it does not prevent them from producing deviant forms.

The negative moderate (code-mixing total; r =-.569, p < .01) and high level (rate of code-mixing; r =-.671, p < .01) intercorrelations between age and code-mixing variables further indicate that as the age of heritage speakers decreases, the rate of their Turkish usage increases in their narration. This further informs us about the endangerment of Laz by showing how language shift proceeds gradually, as a result of which younger generation speakers have become more active users of Turkish. Although no significant correlation was found between age and the frequency counts of deviant forms, the endangerment of Laz is further evidenced by the moderate level intercorrelations between age and the remaining variables, namely Laz content word (r =.551, p <

[20] The strongest correlation with the deviant forms has been attested with the total number of constructions involving valency alternations, i.e., valency change-total (r =-.633, p < .01). This implies that it may also qualify as a nice indicator of grammatical accuracy and/or proficiency.

.01), SP-Different (r =.477, p < .01) and NA-Total (r =.578, p < .01) as well as valency change-Total (r =.394, p < .05)[21].

Lastly, no significant correlations were attested between the level of deviant forms and the rate of past and continuous tense use, which respectively mark perfective and imperfective aspect. Recall that the latter exhibits allomorphy and has 4 different exponents depending on the lexical and argument structural properties of verbs (see Chapter 2 and Chapter 4 (§ 6)) whereas the former has only two person-based allomorphs. Given heritage speakers' preference for one-to-one mapping between form and meaning, leading to the reduction or simplification of allomorphy in many other heritage languages (see Polinsky 2018, Chapter 5 for an overview), one would expect the continuous tense (=imperfective aspect) to pose more challenges to heritage speakers of Laz, leading to a higher production of deviant forms. Nevertheless, this prediction is not supported by the results of the bi-variate correlation analyses.

In order to deal with and represent the individual variation and heterogeneity within heritage speakers, and to further investigate the relationship between lexical proficiency and grammatical knowledge, I classified heritage speakers into three groups depending on their lexical proficiency[22] following the continuum approach adopted in the literature (Polinsky 1996, Polinsky & Kagan 2007: 371, Laleko 2010:12). Table (20) presents the demographics for these groups of speakers:

[21] These findings are expected given the intercorrelations between age and the relevant variables that were examined in relation to all of the 73 participants in Chapter 5.

[22] The classification was made based on the number of Laz content word (*M*=68.73, *Mdn*=61, *Min*=19, *Max*=161) and the division was made as follows: i) <45: Low-proficiency, 45-85: Mid-proficiency, and >85: High-proficiency speakers. Given the absence of any previous proficiency scales for the Laz language, these boundaries are rather arbitrary, though. Nevertheless, this classification also yields an almost an equal distribution of participants across the three different groups, which is required for the sake of statistical analyses.

Table 20: Demographics of three groups of heritage speakers

Variables		Low Proficiency (N=12)		Mid proficiency (N=12)		High Proficiency (N=9)	
		#	**%**	**#**	**%**	**#**	**%**
Gender	Male	1	8.3	8	66.7	6	66.7
	Female	11	91.7	4	33.3	3	33.3
Hometown	Ardeşen	4	33.3	5	41.7	4	44.4
	Fındıklı	1	8.3	2	16.7	-	-
	Pazar	-	-	-	-	2	22.2
	Çamlıhemşin	7	58.3	5	41.7	3	33.3
Settlement type in childhood	Village	-	-	1	8.3	2	22.2
	Village & Town	5	41.7	7	58.3	7	77.8
	Town	7	58.3	4	33.3	-	-
Age	>20	5	41.7	1	8.3	-	-
	21-30	5	41.7	7	58.3	3	33.3
	31-40	2	16.7	4	33.3	6	66.7

In order to understand if there are significant differences in the performances of different proficiency level heritage speaker groups, separate one-way ANOVA tests were conducted for those grammatical variables that satisfy the assumptions of normality and homogeneity of variance-covariance matrices (Tabachnick & Fidell 2007)[23]. All the related assumptions were met

[23] Given the small sample size, in addition to the parametric tests, I also conducted separate Kruskal Wallis tests, namely, the non-parametric alternative to the one-way ANOVA. Both types of tests indicate a significant difference for the same variables: i) valency change-total (H (2)=17.98, p=<.001), and ii) SP-Different (H (2)=24.15, p=<.001). No significant differences were attested for other variables after Bonferroni adjustments were made (all ps>.05).

for all variables except for the total number of complex clauses formed with the subordinator *na-*, i.e., NA-total. For this variable, the non-parametric counterpart of one-way ANOVA, namely a Kruskal Wallis test, was conducted.

The results of one-way ANOVA tests and the Kruskal Wallis test (for NA-total) revealed a significant difference (after Bonferroni adjustments were made; alpha level .005) between the three groups with respect to the production of constructions involving i) valency alternations ($F(2,30)=17.56$, $p=<.001$), ii) distinct spatial prefixes ($F(2,30=45.41)$, $p=<.001$), and iii) complex clauses with *na-* ($H(2)=17.20$, $p=<.001$). No differences were attested with respect to the other grammatical variables (all *p*s>.05). Post-hoc comparisons using the Bonferroni test indicated that high-proficiency speakers produced constructions with distinct spatial prefixes ($M=13.56$, $SD=1.94$) and valency alternations ($M=4.14$, $SD=.84$) at a significantly higher level than both mid-proficiency speakers (Distinct spatial prefixes; $M=9.00$, $SD=2.25$ & Valency change-total; $M=2.47$, $SD=.92$) and low- proficiency speakers (Distinct spatial prefixes; $M=4.92$, $SD=1.92$ & Valency change-total; $M=1.58$, $SD=1.12$). As for the differences between mid- and low-proficiency speakers, the mean of the mid-proficiency group was significantly higher than that of low-proficiency speakers only with respect to the production of distinct spatial prefixes, while no significant difference was attested between the two groups with respect to the production of constructions involving valency alternations[24]. Likewise, separate Mann Whitney U-tests conducted for the production of complex clauses with *na-* indicated no difference between mid-

[24] Mann Whitney U-tests which were conducted after Kruskal Wallis tests give us the same results. High proficiency speakers (*Mdn*=13.00, *n*=9) outperformed mid-proficiency speakers (*Mdn*=8.50, *n*=12) ($U=9.50$, $z=-3.199$, $p<.001$) and low-proficiency speakers (*Mdn*=5.00, *n*=12) ($U=.00$, $z=-3.858$, $p<.001$) in terms of the number of distinct spatial prefixes they produced. The same also holds for the total number of constructions involving valency alternations in that high proficiency-speakers (*Mdn*=3.87, *n*=9) produced significantly more of constructions involving valency alternations than mid-proficiency group (*Mdn*=2.34, *n*=12) ($U=10.00$, $z=-3.137$, $p<.002$) and low-proficiency speakers (*Mdn*=1.73, *n*=12) ($U=.00$, $z=-3.851$, $p<.001$). As for the comparison between mid- and low-proficiency speakers, it turns out that the former produced more distinct spatial prefixes ($U=9.50$, $z=-1.559$, $p<.001$). No differences were attested between the two groups in terms of the frequency counts of valency alternations ($p>.05$).

proficiency group (*Mdn*=1.00, *n*=12) and low-proficiency speakers (*Mdn*=.00, *n*=12) (*U*=38.50, *z*=-2.319, *p*=.052), while high proficiency speakers (*Mdn*=5.00, *n*=9) outperformed both mid-proficiency group (*U*=12.50, *z*=-3.007, *p*=.002) as well as low-proficiency speakers in this respect (*U*=8.00, *z*=-3.627, *p*=<.001).

The statistically significant differences between different groups show the inherent heterogeneity of heritage speaker populations encompassing a variety of psycho-linguistic and socio-linguistic profiles. Although the three groups investigated here consist of individuals from different age groups (see Table (20)), it turns out that they exhibit similar characteristics in terms of their linguistic skills, differing from those of other groups in significant respects. The highest amount of variation has been attested in terms of the number of distinct spatial prefixes, where all three groups significantly differ from one another. As for the constructions that involve valency alternations and finite embedded clauses, there is less variation across different proficiency-groups in that the majority of heritage speakers (73%), namely mid- and low-proficiency speakers, performed similarly but their production was significantly lower than high-proficiency speakers.

Another aspect of heritage production where we do not see much variation is concerned with code-mixing practices. Statistical analyses yielded no significant differences between any of the three contrasted groups in this respect, that is, regardless of their proficiency level, heritage speakers insert Turkish items in their narration at a similar level of frequency. Given the negative (moderate) correlations attested between lexical proficiency and the frequency of code-mixed utterances as well as the significantly lower level of code-mixed utterances attested in the baseline group (Chapter 5, § 8), one would at least expect to find a (significantly) lower production of code-mixed utterances in the high-proficiency group. However, this prediction is not supported by the statistical analyses. The examination of the mean scores of each group indicates that low-

proficiency speakers (*M*=5.58) tend to code-mix more than mid- (*M*=3.83) and high-(*M*=4) proficiency speakers. Nevertheless, the fact that all groups of heritage speakers code-mix at a similar level shows us that code-mixing is necessarily not indicative of linguistic proficiency.

Lastly, the three groups were not found to significantly differ from one another with respect to their preferences for the temporal-aspectual markers. Given that continuous tense (=imperfective aspect) exhibits a more complicated sort of allomorphy than past tense(=perfective aspect) that might pose more challenges to less proficient speakers of Laz, one would expect to find a higher preference for past tense in the lower proficiency speakers. Nevertheless, the results of statistical analyses do not support this prediction but instead indicate no variation across different heritage speaker groups. The examination of the mean scores of each group gives us even a more interesting picture in that while high proficiency speakers used past tense (*M*=.48) at a higher level than continuous tense (*M*=.51), mid- and low- proficiency speakers showed a slightly higher tendency to use continuous tense (*M*=.51 for both groups) rather than past tense (*M*=.46 and *M*=48 respectively). This finding goes against the prediction that lower proficiency speakers would avoid from using continuous tense and show a preference for past tense. Despite the absence of significant correlations between the choice of temporal-aspectual markers and the production of deviant forms, one wonders if the higher preference for past tense in the high-proficiency group has had any effects on the absence of deviant forms produced by this group. This issue requires a more in-depth analysis based on a larger set of focused data. Therefore, I leave it to future studies.

3. Summary

The examination of the deviant forms in the free narratives of heritage speakers showed that the most vulnerable areas of Laz grammar when it is acquired under minimal input are

respectively the following: Verbal morphology, nominal morphology, lexicon, and lastly syntax. Constituting the highest production level in deviant forms (88%), the highly complex nature of the verbal complex in Laz, along with its developed nominal case system (except for AL), seem to pose challenges to heritage speakers the most. This is in line with the cross-linguistic observation on heritage languages in that morphology is one of the most vulnerable areas in heritage grammars. Within morphology, it turned out that the most vulnerable aspects mainly overlapped with those aspects of Laz grammar that differentiate it from the grammar of Turkish, i.e., the dominant language of heritage speakers. Specifically, Heritage Laz speakers produced deviant forms with the prefixal markers in the verbal complex along with the case markers of subjects (omission of ergative and dative on the subjects). Given that Turkish is only suffixing where subjects are always unmarked, the presence of the relevant deviant forms does not come as a surprise. However, the fact that the deviant forms were not restricted to only prefixes but also involved suffixes such as the imperfective aspect markers makes it hard to posit transfer effects as the sole factor to account for the vulnerability of morphology.

The overmarking and omission of verbal inflectional markers along with case morphology have been widely reported in the crosslinguistic literature on heritage languages, though not necessarily associated with transfer effects from the majority language (Polinsky 2018, Chapter 5 and Montrul 2016 Chapter 3 for a survey). Leaving aside the role of transfer effects, the findings on Heritage Laz are most informative about the nature of ergative case, i.e., whether it is a structural case assigned to arguments by virtue of occupying a structural position (Emgin 2009, Öztürk 2013) or an inherent case that occurs in a certain theta position (Demirok 2013, Eren 2014). The omission of ergative along with dative on subjects lends support for the structural nature of the relevant case markers, as was previously noted in the literature for other heritage languages

(Spanish *a* as DOM or in prototypical dative constructions, Montrul 2004 and Montrul & Bowles 2010; Heritage Korean nominative and accusative, Song et al. 1997; Heritage Hindi ergative, Montrul, Bhatt & Bhatia 2012)

The consistent production of similar deviant forms within the same and across different heritage speakers indicates that despite the heterogeneity of heritage speakers, the grammar of heritage Laz grammar is not unsystematic as previously suggested for other heritage languages (see Polinsky & Kagan 2007: 370-371 for an overview). The systematicity of the Heritage Laz is indicated by the overgeneralization patterns, i.e., the extension of one marker's or allomorph's domain into the others. Specifically, the overgeneralization patterns attested in the free narratives of heritage speakers were conditioned by i) the perceptual saliency of the relevant forms in that phonologically heavier forms are chosen over less perceptually salient ones (e.g., the spatial prefix *eşka-* being substituted for the *e-* marker; the spatial prefix *menda-* being used as a general marker of directionality), and ii) the distributional patterns in that the form or allomorph that exhibits the widest distribution wins over (e.g., the substitution of the imperfective marker *-am* and the pre-root vowel *i-* for the other allomorphs).

The examination of the production level of deviant forms and that of distinct Laz words indicated that lexical proficiency is a reliable indicator of the former along with the grammatical knowledge. The classification of heritage speakers based on their lexical repertoire indicated that the highest level of variation lies in the domains of spatial prefixal system, valency alternations, and lastly complex finite clauses. Heritage speakers seem to converge in terms of the production of code-mixed utterances along with their preferences for temporal-aspectual markers.

CHAPTER 7

VALENCY-RELATED VERBAL MARKERS IN (HERITAGE) LAZ

The present chapter focuses two particular sets of markers, namely the pre-root vowels (*versionizer* or *pre-radical* vowel in South Caucasian literature, Holisky 1991) and imperfective markers (*series* in Holisky 1991; *thematic suffixes* in Öztürk & Pöchtrager 2011). These two sets of markers are interdependent despite being manifested in different parts of the verbal complex. Although pre-root vowels are prefixes (Slot 4 in the verbal complex, right before the root) and imperfective aspect markers are suffixes (Slot 10), there is a tight correlation between the two, which stems from their dependency on the valency of the predicates. Depending on the argument structural properties and/or alternations, there either hold certain co-occurrence restrictions between these markers or changes occur in the realization of both sets of markers in a systematic way.

In order to understand how the relevant two sets of valency-related markers inform us about the structure of (in)transitives in (Heritage) Laz, two grammatically-oriented tasks were conducted. This chapter presents the results from these tasks and specifically aims to provide answers to the following research questions:

i) What is the exact status of the syncretic pre-root vowel *i-* in Laz and how does its distribution in the heritage variety help us answer this question?

ii) What governs the distribution of the imperfective markers in Laz? Specifically, to what extent do heritage speakers show sensitivity to the semantic and argument structural features of verbal roots that play a role in the choice of the imperfective markers?

iii) What is the role of transfer effects from Turkish in regulating the current status of the pre-root vowels and imperfective markers?

iv) To what extent do heritage speakers pattern with baseline speakers in the application of

valency-changing operations? Does the nature of valency change, i.e., whether there occurs an increase or decrease in the number of arguments, play a role in shaping the nature of the relevant operations in the heritage variety?

v) How does the structure of Heritage Laz inform us about the role of Transparency, i.e., one-to-one form-meaning correspondence, in shaping heritage grammars in general?

The present chapter is organized as follows: I firstly present the documented facts regarding the distribution of pre-root vowels along with their interaction with the imperfective markers. In § 2, I provide a survey of the literature on the valency of predicates in (baseline) Laz with a special focus on the syncretic pre-root vowel *i-*, the imperfective aspect markers, and the relevant crosslinguistic literature on heritage languages regarding the preference for transparency and the resultant increase in analyticity. In § 3, I present the predictions about the argument structure in (Heritage) Laz (§ 3.1) and then introduces the two grammatically-oriented tasks (§ 3.2). In the remainder of this section, I present the findings from the relevant tasks and discuss the implications of the findings respectively for the distribution and structural properties of the pre-root vowels and imperfective markers. In § 4, I provide a theoretical account for the spell out of the relevant markers and structures within the framework of Distributed Morphology. Lastly, § 5 summarizes and concludes the discussion in the present chapter.

1. Distributional facts on the pre-root vowels and imperfective markers

Laz features a set of valency markers occupying Slot 4 in the verbal complex and are positioned right before the verb root (see Tables in (1) in Chapter 2). There are four allomorphs of the relevant markers in Laz, namely *o-*, *a-*, *u-* and *i-*. Except for a set of irregular forms (see

example in (126) in Chapter 6 and Lacroix 2009 for a full list), the first three markers surface only when valency changing operations apply while the (last) marker *i*- additionally serves to mark unergatives. Unergatives in Laz bear the pre-root vowel *i*- and the imperfective marker -*am* and occur in the template [*i*-verb-*am*] as shown in (1):

(1) Koçi-k i-bgar-am-s.
man-ERG PRV-cry-IPFV-3SG
'The man is crying.' (Unergative= *i*-verb-*am*)

Additionally, this marker also surfaces in (derived) unaccusative constructions. The external argument in (2a) is missing in the derived unaccusative construction (2b) and the verb bears the pre-root vowel *i*- and the imperfective marker -*er*, yielding the template [*i*-verb-*er*]. Also note the absence of the pre-root vowel *i*- in the transitive clause in (2a).

(2) a. Koçi-k dişka tax-um-s.
man-ERG wood.ABS break-IPFV-3SG
'The man is cutting woods.' (Transitive-Type 1[1]: Ø-verb-*um*)
b. Dişka i-tax-e(r)-n.
wood.ABS PRV-break-IPFV-3SG
'The woods are (being) cut.' (Derived Unaccusative/Passives: *i*-verb-*er*)

[1] I discuss the reasons why I classify this verb as Type-1 in § 3.3.2.

The pre-root vowel *i-* also establishes two types of reflexive constructions in Laz. I refer to these two constructions as direct object reflexives and benefactive reflexives. The verb bears the imperfective marker *-am*, leading both constructions to occur in the same morphological template as that of unergatives, namely [*i*-verb-*am*]. (3) shows that the subject of the clause is interpreted as co-referential with the direct object, bearing the theta roles of agent/initiator and theme/patient. (4a) illustrates the use of the *i-* marker in an applicative construction where the subject of the clause is interpreted to be the beneficiary of the event. (4b) shows that the pre-root vowel remains invariant regardless of the features of the subject.

(3) a. Xordza-k koçi zir-um-s.
woman-ERG man. ABS see-IPFV-3SG
'The woman is seeing a man.' (Transitive-Type 1: *Ø*-verb-*um*)

b. Xordza-k i-zir-am-s.
woman-ERG PRV-see-IPFV-3SG
'The woman is seeing herself.' (Direct object reflexive: *i*-verb-*am*)

(4) a. Koçi-k dişka i-tax-am-s.
man-ERG wood.ABS PRV-break-IPFV-3SG
'The man is cutting wood for himself.'

b. Ma dişka v-i-tax-am.
I.ERG woods.ABS 1SBJ-PRV-break-IPFV
'I am cutting wood for myself.' (Benefactive Reflexives: *i*-verb-*am*)

The last environment where the *i-* marker surfaces is high applicative constructions with 1st or 2nd applied arguments (5a,b) (Demirok 2013; Öztürk 2013, 2016). As opposed to benefactive reflexives, in high applicatives, the applied object bears the benefactive theta role rather than the subject (c.f. (4)). That the distribution of the pre-root vowel shows sensitivity to the person features is evidenced by the use of the marker *u-* with 3rd person arguments (5c):

(5) a. Koçi-k ma dişka m-i-tax-am-s.
man-ERG I-DAT wood.ABS 1OBJ-APPL-break-IPFV-3SG
'The man is cutting wood for me.'

b. Koçi-k si dişka g-i-tax-am-s.
man-ERG you-DAT wood.ABS 2OBJ-APPL-break-IPFV-3SG
'The man is cutting woods for you.'

c. Koçi-k dida-s dişka u-tax-am-s.
man-ERG old woman-DAT wood.ABS APPL-break-IPFV-3SG
'The man is cutting wood for himself.' (High Applicatives: *i-/u-*verb-*am*)

The distribution of the remaining two pre-root vowels, namely *a-* and *o-*, is quite restricted just like *u-*, but unlike the syncretic *i-* vowel, which exhibits the widest distribution. These markers respectively surface in a certain type of applicative constructions, namely higher applicatives (6) (Öztürk 2013, 2016) and causativization (7). (6) shows the use of the *a-* marker in a higher applicative construction, which yields an ability (dynamic modality) or unintended causation reading. As opposed to high applicatives, the pre-root vowel remains invariant regardless of the

person features of the applied subject bearing the dative case[2], and the verb bears the imperfective marker *-er*, resulting in the morphological template [*a*-verb-*er*].

(6) a. Koçi-s dişka a-tax-er-n.
man-DAT wood.ABS APPL-break-IPFV-3SG
i.'The man was able to cut the wood.' (Dynamic Modality)
ii. 'The man unintentionally cut the woods.' (Unintentional Causation)
b. Ma dişka m-a-tax-e(r)-n.
I.ERG wood.ABS 1OBJ-APPL-IPFV-3SG
'I {was able to/unintentionally} cut the wood.' (Higher applicatives: *a*-verb-*er*)

As for causativization, the verb is marked with *o-* independently of the person features of the arguments. Unlike applicativization (both high and higher), causativization further involves the addition of the causative suffix depending on the transitivity of the base predicate. (7) demonstrates that intransitive predicates take the *-in* suffix while transitive bases are marked with *-ap*. Regardless of the transitivity of the base predicate, the causativized predicate has the imperfective marker *-am*, leading to the morphological template [*o*-verb-*in/ap-am*].

(7) a. Xordza-k koçi o-bgar-in-am-s.
woman-ERG man.ABS CAUS-cry-CAUS$_{INTR}$-IPFV-3SG
'The woman is making the man cry.' (Causativization of intransitive: *o*-verb-*in-am*)

[2] These constructions appear to be inversion constructions in Georgian (Harris 1981, 1982, 1985) because the canonical object markers cross-reference the properties of the applied subject, which also does not govern the suffixal agreement. See Öztürk (2013) for a discussion on how these constructions differ from the inversion constructions in Georgian and constitute an instance of higher applicatives that are constructed based on *v*P.

b. Xordza-k koçi-s dişka o-tax-ap-am-s.

woman-ERG man-DAT wood.ABS CAUS-break-$CAUS_{TR}$-IPFV-3SG

'The woman is making the man cut the wood.' (Causatives of transitive: *o*-verb-*ap*-*am*)

Imperfective markers occupy Slot 10 in the verbal complex and are realized as suffixes, as opposed to the pre-root vowels. Imperfective markers render eventualities temporally present and aspectually imperfective, encompassing both the habitual and the progressive. Additionally, these markers also indicate the valency of predicates in that their distribution is dependent on the argument structure of the predicates as well as the semantic properties of lexical verbal roots (Öztürk & Taylan 2017; Demirok & Öztürk 2021; Demirok 2022). Among the four relevant suffixes *-am, -um, -ur* and *-er*, the first exhibits the widest distribution because it marks unergatives (as was shown in (1)) along with a certain type of transitive predicates termed as Type-2 here in (8). Like Type 1 transitives, these predicates lack a pre-root vowel, and occur in the templates [*Ø*-verb-*am/-um*], and their subjects are marked with ergative like unergatives (1):

(8) Koçi-k toyçi zd-am-s.

man-ERG rope.ABS pull-IPFV-3SG

'The man is pulling the rope.' (Transitive-Type 2: *Ø*-verb-*am*)

(9) Koçi-k dişka tax-um-s.

man-ERG wood.ABS break-IPFV-3SG

'The man is cutting woods.' (Transitive-Type 1: *Ø*-verb-*um*)

The remaining two imperfective markers, namely *-er* and *-ur*, both yield an unaccusative construction with subjects bearing absolutive case. While *-ur* marks single argument verbs such as (degree) achievements (10), *-er* derives external argumentless (unaccusative) constructions (out of (in)transitives) as was shown in (2b), and thus occurring in the morphological template [*i*-verb-*er*]. Crucially, these two unaccusative constructions also differ with respect to the presence of a pre-root vowel *i-*. While the imperfective marker *-er* obligatorily co-occurs with this pre-root vowel *i-*, the *-ur* taking verbs crucially lack it, occurring in the template [*Ø*-verb-*ur*]:

(10) Koçi ğur-u(r)-n / m-ul-u-n.
man.ABS die-IPFV-3SG / SP-move-IPFV-3SG
'The man is dying/coming.' ((Underived) Unaccusative: *Ø*-verb-*ur*)

The distinctions between the four imperfective markers in the morphological marking of their nominal arguments along with verbal agreement provide evidence for their sensitivity to the valency of predicates as shown in Table (21). Based on these morphological criteria along with the final vowels of the imperfective markers, verbs are divided into two classes in Laz (Lacroix 2009, Öztürk & Pöchtrager 2011) (c.f. Holisky 1991): *r*-set markers mark unaccusative constructions, *m*-set markers mark transitives with the exception of the *-am*, also marking unergatives[3].

[3] There are a handful of intransitive verbs that are marked with *-um* such as *oxvalu* 'cough', *otanu* 'to shine', *ospinu* 'whistle' and/or *otrağodu* 'sing'. A closer examination of these verbs indicates that the rough translations provided in dictionaries might be misleading. The verb for *cough* was reported by my consultants as translating as 'clearing throat', and the verb *shine* translates as 'make something/somewhere lighter/brighter'. The other two verbs can also be conceived of as verbs of creation; if so, that these apparent intransitives marked with *-um* does not come as a surprise.The number of the relevant cases is low enough to be treated as exceptions (Demirok 2022: 104).

Table 21: Classification of verbs in Laz

	Imperfective Markers		Subject Marker	Argument Structure	3rd agreement
Class 1	*m*-set	*-um, -am*	Ergative	Unergatives, Transitives	*-s*
Class 2	*r*-set	*-ur, -er*	Absolutive	Unaccusatives	*-n*

(based on Lacroix 2009, Öztürk & Pöchtrager 2011))

The sensitivity of imperfective markers to valency is further evidenced by the fact that changes in valency also lead to a change in the imperfective marker. (11) shows that the *-ur* taking (underived) unaccusative verb *oğuru* 'die' receives *-am* after causativization. Type 1-transitive verbs also necessarily take *-am* when applicativized (12b) and/or causativized (12c):

(11) a. Koçi ğur-u(r)-n.
man.ABS die-IPFV-3SG
'The man is dying.' ((Underived) Unaccusative: *Ø*-verb-*ur*)

b. Xordza-k koçi o-ğur-in-am-s.
woman-ERG man.ABS CAUS-die-CAUS$_{INT}$-IPFV-3SG
'The woman is killing the man.' (Causativization: *-ur* → *-am*)

(12) a. Koçi-k dişka çit-um-s.
man-ERG wood.ABS 1SBJ-cut-IPFV-3SG
'The man is chopping wood.' (Transitive-Type 1: *Ø*-verb-*um*)

b. Koçi-k xordza-s dişka u-çit-am-s.
man-ERG woman-DAT wood.ABS APPL-chop-IPFV-3SG
'The man is chopping wood for the woman.' (Applicativization: *-um* → *-am*)

c. Xordza-k koçi-s dişka o-çit-ap-am-s.

woman-ERG man-DAT wood.ABS CAUS-chop-CAUS$_{TR}$-IPFV-3SG

'The woman is making the man chop wood.' (Causativization: *-um* → *-am*)

(13) demonstrates the application of more than one valency changing operations to the same predicate, specifically the applicativized predicate in (12b) undergoing causativization. While no change occurs in the imperfective marker, the pre-root vowel changes from the 3rd person applicative *u-* to *o-*, showing that pre-root vowels stand in a paradigmatic relationship, and they do not stack on one another. There is a restriction in Laz that there can be only one pre-root vowel per finite verb. This is further evidenced by the fact that the syncretic *i-* marker is overridden by *o-* of causativization as was shown in (7a).

(13) a. Xordza-k ma koçi-s dişka m-o-çit-ap-am-s.

woman-ERG I.DAT man-DAT wood 1OBJ-CAUS-chop-CAUS$_{TR}$-IPFV.3SG

'The woman is making me chop wood for the man.' (Causativization of applicatives)

Table (22) summarizes the facts presented thus far. The main difference between varieties of Laz, which all pattern alike in the composition of the verbal complex (Chapter 2), concerns case morphology. Having lost its overt case morphology, AL patterns with PL and FL in the distribution of the pre-root vowels and imperfective markers and differ from them only in term of i) the case of the subject/object, which are unmarked, and ii) third person agreement marker being consistently *-y*, rather than *-s* as in AL and FL.

Table 22: Distribution of pre-root vowels and imperfective markers

Argument Structure	PRV	Imperfective Marker	Template	3rd	Subject
Transitives-Type 1	*Ø-*	*-um*	*Ø*-verb-*um*	*-s/-y*	ERG
Transitives-Type 2	*Ø-*	*-am*	*Ø*-verb-*am*	*-s/y*	ERG
Unergatives	*i-*	*-am*	*i*-verb-*am*	*-s/-y*	ERG
(Underived) Unaccusatives	*Ø-*	*-ur*	*Ø*-verb-*ur*	*-n*	ABS
(Derived) Unaccusatives	*i-*	*-er*	*i*-verb-*er*	*-n*	ABS
Affixal (Benefactive) Reflexives	*i-*	*-am*	*i*-verb-*am*	*-s/-y*	ERG
(High & Low) Applicativization	*i-:* 1st & 2nd *u-:* 3rd	*-am*	*i-/u*-verb-*am*	*-s/-y*	ERG
Higher Applicatives	*a-*	*-er*	*a*-verb-*er*	*-n*	DAT
Causativization	*o-*	*-am*	*o*-verb-*in/ap-am*	*-s/-y*	ERG

2. Previous theoretical analyses of pre-root vowels and imperfective markers

Distribution-wise, the syncretic vowel *i-* is the most intriguing as it exhibits the widest distribution, while the distribution of the remaining vowels is more restricted and straightforward, being associated with certain valency increasing operations. When the distribution of the counterparts of the pre-root vowels in genetically related languages is taken into consideration as

in Table (23), the *i-* marker again stands out. Although other pre-root vowels exhibit variation across in the South Caucasian languages, *i-* is invariantly part of all four languages:

Table 23: South Caucasian pre-root vowels in the etymological dictionaries

Version	ProtoKarchetype	Georgian	Svan	Mingrelian	Laz
Locative	**a*	*a-*	*a-*	*o-*	*o-*
Relative	**e-*	*e-*	*e-*	*a-*	*a-*
Subjective	**i-*	*i-*	*i-*	*i-*	*i-*
Objective	**u-*	*u-*	*u-*	*u-*	*o-*

(from Rostovtsev-Popiel 2016, cited from Klimov 1998; Fähnrich, Sarǯvelaʒe 2000)

Extending the traditional South Caucasian description to Laz, Holisky (1991) argues that *i-* in Laz is used to construct subjective version (p. 438) and to "express passive reading (p. 422). The term *subjective* traditionally indicates that the denoted action is for the benefit of the grammatical subject (Deeters 1930: 82) and therefore it coincides with benefactive reflexive constructions (example (4b)). Lacroix (2012:166) notes that as in Laz the same *i-* marker also takes part in the formation of passive constructions in the sister languages of Laz. Lacroix further notes that the syncretic nature of the relevant vowel has not received a uniform account even in the best studied language, namely Georgian. Arguing that Georgian unergatives, which bear *i-*, are underlyingly stative verbs, Nash (2017, 2021) recently offers a unified account where it is taken to be a (reflexive and/or medio-passive) voice head.

The examination of the South Caucasian pre-root vowel system reaches far beyond the scope of this dissertation (see Tuite 2020 and Okumuş 2019 and for discussion). Crucially, the voice system of the relevant languages and the distribution of the related markers, do not overlap to the extent that the previous analyses cannot be directly extended to Laz (see Nash 2017, 2020).

In the remainder, I firstly provide an overview of the previous analyses proposed to account for the syncretism of *i-* in Laz (§ 2.1-3). Then in § 2.4, I turn to the literature on the interrelated imperfective aspect markers. Understanding the nature, functions and structure of these markers is significant for making predictions about and accounting for their current status in Heritage Laz also based on the crosslinguistic properties of heritage languages as discussed in § 2.5.

2.1. Analysis 1: *i-* as a voice head

Based on a comprehensive description of the Arhavi dialect of Laz, Lacroix (2009, 2012) argues that different functions and uses of *i-* can be subsumed under the middle voice. This argument mainly rests upon the typological account proposed for middles in Kemmer (1993). Middles feature two participants (Initiator & Endpoint), which are not physically and conceptually differentiated from one another, and this is what sets middles apart from prototypical transitive and intransitive events. Despite cross-linguistically having a wide range of uses as exemplified in relation to the *si* marker in Italian (14), Kemmer argues that there is a semantic property common to the nature of middle because they are associated with 'semantic/pragmatic contexts', or in more technical terms situation types (p. 7). The two main characteristics of middles are the following: i) the Initiator of the event is also the affected entity, i.e., the Endpoint; and ii) the event is of a low degree of elaboration. Precisely, the degree of the distinguishability of the various components of middle events such as the participants or the conceivable subevents is low in comparison to

reflexives or two-participant events, which have higher degrees of participant distinguishability and are more likely to be encoded in transitive constructions:

(14) Italian (ital1282, Indo-European, Italic)

radersi ‘shave’	GROOMING	
alzarsi ‘stand up’	CHANGE IN BODY POSTURE	
girarsisi ‘turn (intr.)’	NON-TRANSLATIONAL MOTION	
spostarsi ‘move (intr.)’	TRANSLATIONAL MOTION	
arrabbiarsi ‘get angry’	EMOTION	
immaginarsi ‘envisage’	COGNITION	
sciogliersi ‘melt’	SPONTANEOUS EVENT	
combattersi ‘fight’	RECIPROCAL	
colpirsi ‘hit oneself’	REFLEXIVE	
si va ‘one goes’	IMPERSONAL	
si vende ‘is sold’	PASSIVE	
si taglia (facilmente) ‘is (easily) cut’	FACILITATIVE	(cited from Inglese 2021: 492)

Kemmer’s scalar approach is based on the claim that the degree of distinguishability of distinct participants rests partly upon valency changing operations such as passive and reflexive and partly on specific lexical domains such as *grooming*, *cognition* as shown in (14) for Italian. (Inglese 2021 provides a recent criticism of Kemmer’s account.) Relying mainly on this generalization, Lacroix simply notes that different uses of *i-* in Laz correspond to and are typically

expressed with middle markers in other languages. Based on these typological correspondences, he concludes that *i-* can be uniformly analyzed as a middle voice marker in Laz.

Lacroix's analysis runs into problems in accounting for the consistent use of *i-* with unergatives (15) (and (1)), and the (morphological) similarities between reflexives, unergatives and transitives. Firstly, in relation to the constructions with a reflexive interpretation, Lacroix argues that the middle marker decreases the valency of the predicates (2009: 462), rendering the subject-object co-reference (direct object reflexives) as in (16) intransitive (2012: 190). The presence of the so-called middle marker with the unergative verb in (15) is problematic given that this simple predicate along with other unergative intransitives in Laz is not associated with any sort of valency decrease. Lacroix (2012: 183) treats these verbs as 'lexicalized/frozen' middle verbs 'which do not have any corresponding non-derived forms'.

(15) Unergatives

Bere-pe-muşi-k	i-bgar-nan.
child-PL-3SG.POSS-ERG	MID-cry-I3P
'Her children cry.'	(Lacroix 2012: 182, cited from Žɣent'i 1938: 81.7)

Additionally, Lacroix's valency-decreasing voice head analysis falls short of accounting for the presence of the ergative case on both unergatives and direct object reflexives in parallel with the subjects of transitives (16a).

(16) a. Transitive-Type 1

Bozo-k	bee	bon-um-s	do	cxon-um-s.
girl-ERG	child	wash-THS-I3S	and	comb-THS-I3S

'The girl washes and combs the child.'

b. Subject Object coreference (Direct object reflexives)

Bee-k	i-bon-s	do	i-cxon-s.
child-ERG	MID-wash-I3S	and	MID-com-I3S

'The child washes [himself] and combs his hair.' (Lacroix 2012, p. 176)

As for external argumentless constructions (as in (2b)), Lacroix simply notes that they constitute instances of passives rather than anticausatives because the base subject is implied, though not overtly reintroduced into the derived clause (Creissels 2006: 31). He further argues that the passive uses of *i-* might have developed from its middle senses as in the case of other Romance languages (Creissels 2006: 32) (p. 185). Despite being consistent with the valency decreasing analysis proposed for reflexive constructions, it remains unclear how the extension of middles into passives has happened, leading to the crosslinguistic differences between these two operations such as the presence or absence of implied agents (see Bhatt & Pantcheva 2007).

2.2. Analysis 2: *i-* as an argument

Öztürk and Taylan (2014, 2017) argue that all eventualities in Laz are syntactically mapped into a transitive syntax. There are no genuinely intransitive verbs in Laz, i.e., neither unergatives nor unaccusatives. This analysis mainly relies on the argument that *i-* is an argument rather than a voice head (c.f. Lacroix 2009, 2012). *i-* does not surface in transitive constructions but does occur

in unergatives along with unaccusative constructions formed with the imperfective marker *-er* as summarized in Table (24):

Table 24: Syntactic and semantic correlates of imperfective markers

Valency	TS	Arg. Structure	Lexical Aspect	3rd	Subject Case
Ø-	*-am/-um*	Transitive	Activity, accomplishment	*-s*	Ergative
i-	*-am*	Unergative	Activity	*-s*	Ergative
i-	*-er*	Unaccusative	Activity, Accomplishment, Achievement	*-n*	Nominative
Ø-	*-ur*	Unaccusative	Achievements	*-n*	Nominative

(from (Öztürk & Taylan 2017:10))

For unergatives, Öztürk and Taylan argue that *i-* occupies the direct object position. Evidence for this comes from the fact that unergatives in PL are not compatible with cognate objects (17). Further evidence comes from the parallelisms between unergatives and transitives in the morphological markings on the subject and third person agreement marker. Subjects of unergatives take ergative case like transitives and both in turn take the same 3rd person agreement marker, namely *-s* as seen in Table (24).

(17) Ali-k (*nciri) i-ncir-s.
Ali-ERG sleep.ABS VAL-sleep-PRS.3SG
'Ali sleeps a sleep.' (Öztürk & Taylan 2017: 16)

The transitive syntax proposed for unergatives is an extension of the role performed by *i-* in (direct object) reflexives. There are two ways to establish reflexive constructions in Laz: Via the use of a free pronominal (18b) or the *i-* marker (for affixal reflexives) (18c). Based on the mutual exclusivity of *i-* with the (Turkish loan) reflexive pronoun *çendi* (18c), Öztürk and Taylan argue that *i-* saturates the object position and is co-indexed with the ergative marked subject. (17) with the unergative verb *onciru* 'sleep' is therefore argued to receive the interpretation 'Ali is making himself sleep'.

(18) a. Ahmedi-k yali-s ma m-zir-u. (Transitive-Type 1)
Ahmet-ERG mirror-DAT I.ABS 1OBJ-see-PST.3SG
'Ahmet saw me in the mirror.'

b. Ahmedi-k yali-s çendi zir-u. (Pronominal Reflexive)
Ahmet-ERG mirror-DAT self see- PST.3SG
'Ahmet saw himself in the mirror.'

c. Ahmedi-k yali-s (*çendi) i-zir-u. (Affixal Reflexive)
Ahmet-ERG mirror-DAT self.ABS REFL-see-PST.3SG
'Ahmet saw himself in the mirror.' (Öztürk & Taylan 2017: 14)

For unaccusative patterns, these constructions are argued to underlyingly involve a transitive syntax, with a syntactically projected external and internal argument position. Specifically, these constructions are of two types under this analysis: i) The imperfective morpheme *-er* surfaces in the presence of an active impersonal voice where *i-* necessarily saturates the external argument position, ii) The imperfective marker *-ur* surfaces in the presence of an

undergoer voice, which highlights the inherent/intrinsic property or natural state of the internal argument to undergo the event denoted in the verb.

In active impersonal constructions, Öztürk and Taylan show the presence of a syntactically projected argument based on their compatibility with purpose clauses, instrumentals, and initiator-oriented adverbials as in (19):

(19) Cami k'asi-te amolva şeni ç'ak'uç'i-te i-t'ax-e-n. (p. 21)
glass.ABS intention-with enter for hammer-with VAL-break-TS-PRS.3SG
'The glass is intentionally broken with a hammer to enter.' (Derived Unaccusatives)

Further evidence for the syntactically active external argument position is argued to come from (20), where the (Turkish loan) reflexive pronoun *çendi* (Turkish *kendi*) is licensed. Öztürk and Taylan argue that the external argument position is filled with *i-* in impersonal constructions (20b), acting also as the licensor for the reflexive pronoun in parallel to the overt DP initiator in the transitive clause (20a):

(20) a. Ali-k çendi var msk'v-am-s.
Ali-ERG self.ABS NEG praise-TS-PRS.3SG
'Ali does not praise himself.' (Transitive-Type 2)
b. Çendi var i-msk'v-e-n. (p. 22)
self.ABS NEG VAL-praise-TS-PRS.3SG
'One does not praise oneself'. (Lit: *Himself/herself is not praised.) (Derived Unaccusatives)

Lastly, the authors argue that the presence of *i-* in the external argument position disallows the introduction of the implied agent into the clause via *by-clauses*. Citing Chierchia (1995) they argue that as the morphological reflex of the initiator introduced through the agent introducing *v*P layer, *i-* semantically closes the initiator, and this leads to the systematic lack of *by-phrases* of any sort (including *by-itself*) in Laz. This is in parallel and consistent with the mutual exclusivity facts that hold between *i-* and the reflexive pronouns in (direct object) reflexives and the cognate objects in the (seemingly) unergative constructions.

Consider the second type of unaccusative constructions (underived unaccusatives in our terms), which pattern with active impersonal constructions in licensing purpose clauses as in (21):

(21) a. Ham metali matzindi oyapu şeni ndrukh-u-n.
this metal.ABS ring.ABS make for bend-TS-PRS.3SG
'*This metal is bending to make a ring.'

b. Yağı xalva oyapu şeni ndgul-u-n.
butter.ABS halva.ABS make for melt-TS-PRS.3SG
'*The butter is melting to make halva.' (Öztürk & Taylan 2017, p. 26-27)

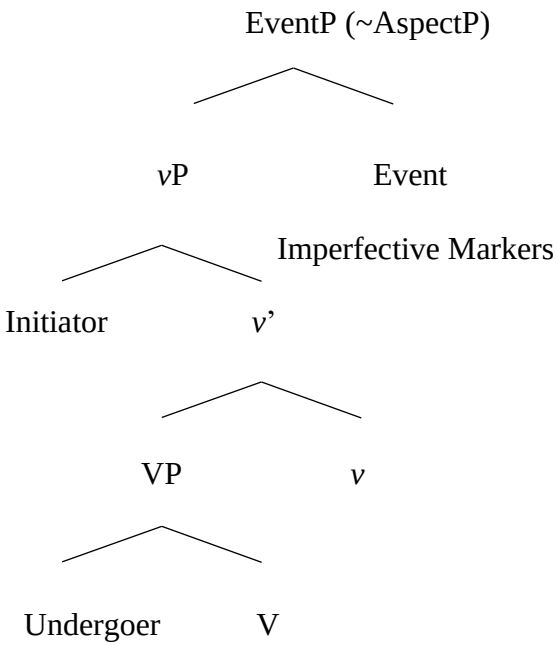
Öztürk and Taylan argue that these constructions also have an underlyingly transitive structure with a syntactically active external and internal argument position, the latter of which is filled with the apparent/surface subject DPs in the relevant clauses. This is in line with the cross-linguistic treatment of unaccusative verbs. Precisely, the majority of the verbs that occur in these constructions denote a (scalar) change of state (verbs of directed motion, e.g., *go, fall*., verbs of scalar change, e.g., *get dark* and lastly achievements, e.g., *explode, pop, die*). These verbs cross-

linguistically tend to be mapped into a genuine unaccusative syntax, lacking a syntactically active external argument position where the surface subjects of the clauses indeed underlyingly occupy the undergoer position (Perlmutter 1978).

Despite the crosslinguistic parallelisms, Öztürk and Taylan argue that PL lacks true unaccusative verbs, leading to the generalization that the little *v* which introduces the external argument is omni-present and all eventualities are mapped onto a transitive structure in syntax. Their analysis can be summarized as in (22).

(22) Structure of eventualities in Laz (Öztürk & Taylan 2017)

a.



b. Transitives: [DP-erg [DP V]] *v*: Initiator

c. Unergatives/Direct object reflexives: [DP-erg$_j$ [*i*-$_j$ V]] *v*P: Initiator

d. (Derived) Unaccusatives [*i*- [DP V]] *v*P: Active Impersonal

f. (Undervied) Unaccusatives [Ø [DP V]] *v*P: Undergoer

Despite being cross-linguistically intriguing and theoretically compelling, the proposed uniform structure is not unproblematic. Firstly, it falls short of accounting for the differences between the two types of unaccusatives with respect to the presence of *i-*. It is obligatorily used in active impersonals, saturating the external argument position, while it is obligatorily absent in the other and its presence leads to ungrammaticality (23):

(23) Nteli (*i-)ndruk-u(r)-n.
Metal.ABS PRV-bend-IPFV-3SG
'The metal is bending.' ((Underived) Unaccusatives)

Secondly, Öztürk and Taylan argue that *i-* stands for the reflexive undergoer that is co-indexed with the initiator in the (apparent) unergative constructions. In active impersonals, the same marker is argued to saturate the external argument position and act as a licensor a potential full pronominal anaphor in the undergoer position. Remaining agnostic about its exact nature (featural composition), they do not make it clear i) how the same pronominal element acts as the target and licensor of syntactic binding, and ii) how the impersonal interpretation arises in active impersonals, i.e., what is the semantic contribution of *i-*? In a later work, following Legate (2014)'s analysis for Icelandic, Öztürk (2021) argues that *i-* is a referential pronominal clitic referring to humans and thus it can antecede reflexive anaphors in Laz (20b). If on the right track, the question is how *i-* receives a co-referential interpretation with the external argument in unergatives and (direct object) reflexives overriding the proposed obligatory generic human interpretation.

2.3. Analysis 3: *i-* as a verbal expletive

Building on Öztürk and Taylan (2014, 2017) and Öztürk (2021), I argue in Eren (2021) for a uniform analysis for the syncretism and interpretation of *i-*. Challenging the non-uniform analysis previously proposed for its interpretation, I argue that *i-* is an expletive that saturates certain argument positions only syntactically but crucially not semantically. Disputing Lacroix's voice head analysis, I also show how the semantically vacuous nature of *i-* appears to result in valency decrease by virtue of occupying argument positions but actually it is not a voice head.

The first context in which the syncretic *i-* marker surfaces is (direct object) reflexives along with unergatives in Laz. Building on the structure proposed in Öztürk and Taylan (2014, 2017), I argue that *i-* occupies the internal argument position, and thanks to its presence the subject is consistently marked with ergative case as in transitives. However, contrary to the previous analyses, the reflexive interpretation does not arise as a result of syntactic binding, i.e., co-indexation between the external argument and *i-*. Instead, it readily follows from how its semantically vacuous nature as an expletive leads the semantic derivation to proceed. In doing so, I follow i) Lidz (2001), where the so-called reflexive marker in Kannada is argued to only imply the presence of an argument that is not matched with a theta role, and ii) the analysis proposed for the *-st* clitic in Icelandic in Wood (2015).

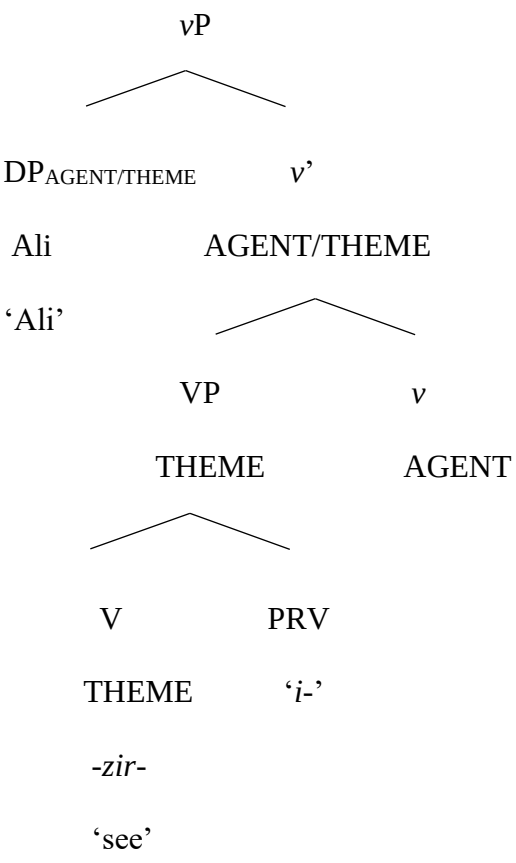
Let us now see the specifics regarding how the apparent co-referential interpretation arises in (direct object) reflexives. As an expletive, the semantic denotation of *i-* is an identity function, which simply identifies the denotation of its sister with the denotation of its mother node. In (direct object) reflexives, *i-* occupies the internal argument position as in (25). (26) demonstrates how the semantic derivation proceeds and gives rise to the reflexive interpretation associated with these constructions:

(25) a. Ali-k i-zir-u.

Ali-ERG EPRV-see-PST.3SG

'Ali saw himself.'

b.



(26) Semantic derivation of (direct object) reflexives

a. ⟦ V ⟧ ↔ $\lambda y_e.\lambda e_s$. see (y, e)

b. ⟦ PRV ⟧ ↔ λP.P

c. ⟦ VP ⟧ ↔ $\lambda y_e.\lambda e_s$. see (y, e) → (c) comes from (a) and (b) via Function Application

d. ⟦ *v* ⟧ ↔ $\lambda x_e.\lambda e_s$. AGENT (x,e)

e. ⟦ *v*' ⟧ ↔ $\lambda x_e.\ \lambda e_s$. AGENT (x,e) Λ see (x, e)

(e) comes from (c) and (d) via Predicate Conjunction

f. ⟦ *v*P ⟧ ↔ λe_s. AGENT (Ali,e) Λ see (Ali, e)

The lexical verb 'see' is an open predicate of type <e, <st>>, which needs to combine with an argument that would semantically saturate its Theme theta role. Being an identity function, *i-*,

only syntactically saturates the requirements of this predicate but semantically it only copies the denotation of the lexical word and map it to their mother node, viz., VP. Being an unsaturated predicate, the VP combines with the little *v* head, which introduces the AGENT theta role, via Predicate Conjunction because both are of the same type, namely <e, <st>> (26e). Crucially, the application of Predicate Conjunction gives rise to a reflexive interpretation because the (semantic) arguments of both the little *v* and VP are bound by the same variable (as represented with the same argument x in (26e)). Thanks to this, when the external argument (of type e) is introduced in the specifier position of *v*P, this argument gets to be interpreted as both the theme and agent of the event. Because of the semantically vacuous nature of *i-*, the theme theta role gets passed up on the tree and ends up being saturated by the same argument as the agent theta role, yielding the co-referential interpretation between the external and internal argument present in direct object reflexives. Following the proposal that unergatives are transitive internally caused events proposed by Öztürk and Taylan (2014, 2017) for Laz and by Nash (2016) for Georgian, I also extend this analysis to unergatives in PL by positing that unergatives necessarily select for *i-* in Laz, rather than full DP arguments as in (direct object) reflexives. This allows us to account for the parallelisms between transitives and the remaining relevant construction with respect to the subject case marker along with the third person agreement marker, which remains as a puzzle under Lacroix (2009, 2016).

As for the unaccusative constructions featuring *i-* (derived unaccusatives in our terms), they constitute instances of passivization, rather than active impersonals (c.f. Öztürk & Taylan (2014, 2017), Öztürk (2021)) because they do not receive an obligatory human interpretation (27) and cannot license subject oriented depictives (28). Following Legate et al. (2020), I take these

two facts as an indication that the relevant constructions exhibit the properties of passives rather than impersonals (as in the case of a language like Turkish).

(27) a. Yazi-s çayir-epe-s i-kaph-e(r)-n.
summer-LOC meadow-PL-LOC EPRV-run-TS-3SG
'One(=humans and animals) run in the meadows in summer.'

b. Ğermaşe-pe-s i-ki-e(r)-n.
mountain-PL-LOC EPRV-howl-TS-3SG
'✓It is howled in the mountains.' (no semantic anomaly)

(28) a. Ali-k meveleri o-xoron-am-s.
Ali-ERG hungry PRV-dance-TS-3SG
'Ali is dancing (when he(=Ali) is) hungry.'

b. *Meveleri var i-xoron-e(r)-n.
hungry NEG EPRV-run-TS-3SG
'*It is not danced hungry.'

(Eren 2021: 196)

Further evidence comes from the non-licensing of pronominal elements. Based on the compatibility of the Turkish loan anaphor *çendi*, Öztürk and Taylan argue that *i-* here is a pronominal with a generic human interpretation and as such it functions as a binder for reflexive pronouns in derived unaccusatives (20b). Yet, these facts constitute only prima facie evidence: Laz origin anaphor *ti-muşi* is not licensed in (29), unlike the Turkish loan *çendi*, which has emphatic uses in (30). The status of *kendi* in Turkish as a genuine reflexive anaphor has further been questioned (Meral 2013).

(29) a. Çendi i-mskv-e(r)-n. b. (*Timuşi) i-mskv-e(r)-n.

self.ABS EPRV-praise-TS-3SG self.ABS EPRV-praise-TS-3SG

'One praises oneself (by oneself).' 'One doesn't praise oneself.' (Eren 2021: 197)

(30) Ali (*kendi-ni)/kendi yık-an-dı.

Ali.NOM self-acc / self.EMPH wash-REFL-PST.3SG

'Ali showered (by) himself.' (Turkish; Göksel & Kerslake 2005)

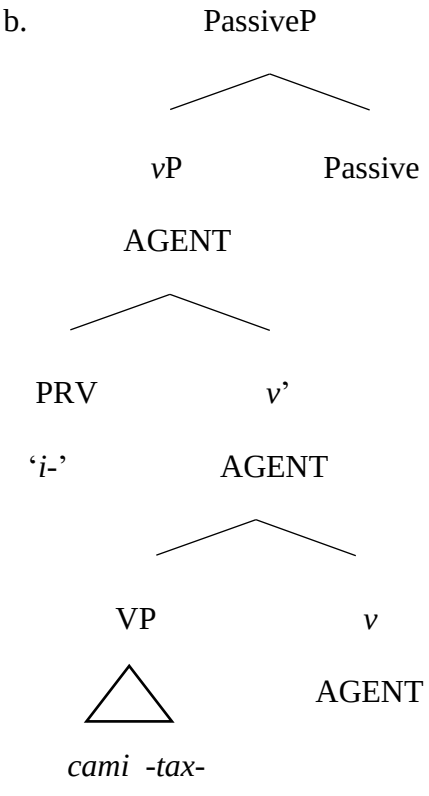
The unacceptability of reflexive anaphors in unaccusative constructions with *i-* follows from its semantically vacuous nature in Eren (2021), where it is uniformly treated as an expletive. It occupies the external argument position, as in (31) along with its semantic derivation (32).

(31) a. Cami i-tax-e(r)-n.

window.ABS EPRV-break-TS-3SG

'The window is broken (by someone).'

b.



'break the window'

(32) Semantic derivation of passives (=derived unaccusatives)

a. ⟦ VP ⟧ ↔ λe_s. break (the window, e)

b. ⟦ *v* ⟧ ↔ $\lambda x_e.\lambda e_s$. AGENT (x, e)

c. ⟦ *v*' ⟧ ↔ $\lambda x_e.\lambda e_s$. AGENT (x, e) Λ break (the window, e)

(c) comes from (a) and (b) via Event Identification

d. ⟦ PRV ⟧ ↔ λP.P

e. ⟦ *v*P ⟧ ↔ λx_e. λe_s. AGENT (x, e) Λ break (the window, e)

(e) comes from (d) and (e) via Function Application

f. ⟦ Passive ⟧↔ $\lambda f_{<e\ <s\ t>>}$. $\lambda e_s.\exists x_e$ [f(x)(e) Λ ANIMATE(x)]

g. ⟦ PassiveP ⟧ ↔ $\lambda e_s.\exists x_e$. AGENT (x,e) Λ ANIMATE(x) Λ break (the window, e)

Here, the event of window-breaking combines with the Agent-introducing little *v* head via Event Identification (32c). Then, the expletive pre-root vowel is inserted in the specifier position of *v*P. Crucially, by virtue of being an identity function *i*- cannot saturate the AGENT theta role, leading the derivation to crash. To prevent this, the Passive head is inserted, and the unsaturated theta role gets saturated by the existentially closed variable in the denotation of the Passive head.

Crucially, *i*- here receives the same denotation as in the case of (direct object) reflexives and the different interpretations associated with the constructions in which the syncretic *i*- marker occurs comes from its semantically vacuous nature and how the semantic derivation proceeds in the vicinity of this verbal expletive. The non-licensing of reflexive anaphors also follows from the absence of a c-commanding referential pronominal element in the structure contrary to the previous non-uniform accounts, where it is treated as an impersonal pronoun in unaccusatives and a reflexive anaphor in unergatives and reflexives.

The expletive analysis for *i-* has further advantages because it accounts for the existence of benefactive reflexives. As in (4b), *i-* is inserted into the specifier position of the Applicative Head, which introduces the BENEFACTIVE theta role. As in reflexives and passives, the verbal expletive cannot saturate this role and it passes up to the next available argument, viz., the external argument bearing the AGENT theta role. It is the saturation of two distinct roles by the same argument that gives rise to the co-referential interpretation in benefactive reflexives; see Eren (2021: 200) for the semantic derivation.

The verbal expletive argument analysis also provides a uniform account for the distribution of *i-* in Laz. Its presence in the (derived) unaccusatives coincides with the presence of an implied agent as shown in (19). Given its obligatory absence in the other type of *-ur* taking unaccusatives (underived in our terms) as in (23), we would expect not to find an implicit agent. Based on the prima facie compatibility of purpose clauses, Öztürk and Taylan argue that these constructions are also underlyingly transitive, involving an external argument position. Crucially only purpose clauses of generic type (such as bending a metal for making a ring as in (33)) are allowed while specific or uncanonical purpose clauses (like bending a metal for fixing a drilled pot) are not. Moreover, the fact that there are additional factors leading to the licensing of generic purpose clauses is evidenced by i) the unacceptability of agentive adverbials like *intentionally* (33) and ii) the role of contextual factors such as the presence of the speaker as a discourse participant[4] in licensing control into purpose clauses (34).

[4] Chris Kennedy (p.c.) suggested that the goals of other discourse participants such as the addressee might also be involved in these cases. That is, if the speaker and/or the addressee aim(s) to make a ring for instance, then these sentences might be contextualized in the following lines: 'This metal is bending so (that) we can make a ring.'

(33) Ham metali (matzindi oyapu şeni) (*kasite) ndrukh-u(r)-n.
this metal.ABS ring.ABS make for intentionally bend-IPFV-3SG
‘*This metal is bending to make a ring.’

(34) Context: I, as the speaker, live alone in a studio.
Ham metali matzindi oyapu şeni *ndrukh-u(r)-n/ i-ndrikh-e(r)-n,
this metal.ABS ring.ABS make for bend-IPFV-3SG/ PRV-bend-IPFV-3SG
haberi var miğuntaşa / ma vincirtaşa.
me being unaware of it/ while I was sleeping
‘*This metal is bending to make a ring without my awareness/while I was sleeping.’

Since these constructions do not pass the tests of agentivity (Bhatt & Pantcheva 2017), I conclude that they do not involve an implicit agent and thus a syntactically projected external argument position and as such they constitute genuine (underived) unaccusatives. In the absence of this layer, the absence of *i-* in these constructions and the distribution of this marker in Laz is (uniformly) accounted for, confirming the correlation between the presence of *i-* and an implied agent. Since Laz features canonical unaccusatives, Öztürk and Taylan’s claim that the agent-introducing little *v* layer is omni-present in Laz becomes untenable.

2.4. Imperfective markers

Interacting with the pre-root vowels in intriguing ways, the imperfective markers show sensitivity to the valency of predicates. This is firstly evidenced by the distribution of these markers in transitives (including the apparent unergative patterns in Laz, which are underlying transitive), on the one hand, and unaccusative patterns, i.e., derived unaccusatives as explained in § 2.3 and

underived unaccusatives, on the other. While transitive constructions with ergative marked subjects are compatible with either *-am* or *-um*, unaccusative patterns with absolutive subjects are compatible with either *-ur* or *-er*. The presence or absence of the ergative marked external argument correlates with the imperfective marker ending respectively in *-m* or *-r* in Laz as shown in Table (25) (Table (21) reproduced here for ease of reference).

Table 25: Classification of verbs in Laz

	Imperfective Markers		Subject Marker	Argument Structure	3rd agreement
Class 1	*m*-set	*-um, -am*	Ergative	Unergatives, Transitives	*-s*
Class 2	*r*-set	*-ur, -er*	Absolutive	Unaccusatives	*-n*

(based on Lacroix 2009, Öztürk & Pöchtrager 2011, Öztürk & Taylan 2017, Demirok 2022)

The distribution of the *r*-set markers is quite predictable. *-ur* marks genuine unaccusatives denoting (scalar) change of state predicates and lacking an external argument position in their syntax (Eren 2021, c.f. Öztürk & Taylan 2014, 2017). *-er* surfaces in the unaccusatives derived from transitive bases (=passives) along with the pre-root vowel *i-*.

The distribution of the imperfective markers in cases of valency-alternating operations lends further evidence for their sensitivity to valency. The application of causativization and/or applicativization always results in the realization of the imperfective marker *-am*, overriding other markers associated with the verbal roots (see (12)). This constitutes another domain in which the distribution of the imperfective markers is quite predictable.

Excluding these two totally predictable cases, the realization of the *m*-set markers is intriguing because it seems lexically conditioned. Transitive verbal roots select for either *-um* or *-am* in the imperfective. I refer(red) to the former as Type 1, and to the latter as Type 2 verbs.

Selection in Laz of the two markers is argued to be predictable, not idiosyncratic (Öztürk & Taylan 2014, 2017 and Demirok 2022). The main argument is that the choice of the two markers is dependent on the two semantic features encoded in the lexical verbal roots, which are further argued not to be synchronically active in the grammar of Laz (Demirok 2022). The relevant two features are the lack of co-temporality between sub-events, and theme-affectedness, i.e., physical change in constituency/form/shape.

Öztürk & Taylan argue that the selection between *-am* and *-um* with transitive verbal roots in PL rests upon whether the object argument is affected or not in the lexical specification of the verbal roots, based on the distribution of the imperfective markers with transitives (without a pre-root vowel) in PL. They claim that while transitives with affected objects receive *-um*, those with unaffected objects take *-am* as in (35) (Öztürk & Taylan 2014: 278).

(35) a. *bring, hit, pull, plant, open, close, wash dishes* etc. [Unaffected objects]

b. *break, knead, fry, chew, build, fold, draw, drink, wash laundry* etc. [Affected objects]

Crucially, affectedness in these studies is not understood to correspond to general notion of change of state, but is restricted to 'change in form/shape/constitution/volume' (physical change in short) (Öztürk & Taylan 2014: 278).This argument is proposed to account for the occurrence of *-am* with verbs like *open, close, bring* and *plant*, which (canonically) denote a change of position and/or state but their undergoer arguments remain invariant in their physical shape. Another

example is the event of washing, which is expressed in two different roots depending on whether the physical shape of the object argument changes as in laundry-washing (36a) or does not change as in dishwashing (36b). The former verb takes *-um,* the latter verb takes *-am*, correlating respectively with the presence or absence of the proposed type of affectedness associated with the undergoer argument:

(36) a. Amedi-k şee-pe nax-um-s.
Ahmet-ERG laundry-PL.ABS wash-TS-PRS.3SG
'Ahmet is washing/washes laundry' (Öztürk & Taylan 2017: 8)

b. Amedi-k tabaxi çx-am-s.
Ahmet-ERG plate.ABS wash-TS-PRS.3SG
'Ahmet is washing/washes the plates.' (Öztürk & Taylan 2014: 279; 2017: 7)

Within the class of transitives, Öztürk and Taylan (2014) argue for the presence of a subclass, which obligatorily take the pre-root vowel *o-* and the imperfective marker *-am*, and thus occurring in the template [*o*-verb-*am*]. These verbs are argued to be transitive achievements, consisting of two distinct phases where the initiator of the event is only involved in the first phase. The initiator initiates a process which leads to a change in the undergoer argument, but the initiator has no control over this change. An example is in (37), where the initiator *Ahmet* sets the ball in motion, constituting the initial phase, but then the ball undergoes an independent movement, constituting the second phase:

(37) Amedi-k kva o-toç-am-s.

Ahmedi-ERG stone VAL-throw-TS-PRS.3SG

'Ahmet throws/is throwing the stone.' (Öztürk & Taylan 2014: 291)

Demirok (2022) provides further examples and proposes a three-partite classification of transitive verbs. He argues that transitives constitute three morphological classes, and the assignment of these roots into these classes is governed by two peculiar semantic features that are not synchronically active: i) Lack of co-temporality between the subevents of eventualities, and ii) Physical affectedness of the undergoer argument. The algorithm proposed by Demirok is summarized in (38):

(38) The morphological classification of verbs in Laz (Demirok 2022)

a. Events whose initiation and process sub-events are NOT co-temporal occur in the morphological template [*o*-verb-*am*], e.g., *topple down, throw, send, spill, roll* etc.

b. (Co-temporal) events whose patient undergoes physical change occur in the morphological template [*Ø*-verb-*um*], e.g., *prune, hew, crush, nibble, roast, knead, chew, build, drink, clean* etc.

c. Elsewhere: (Co-temporal) events whose patient does NOT undergo physical change occur in the morphological template [*Ø*-verb-*am*], e.g., *bring, bang, pull, close, open, washing plates* etc.

The first class of verbs in (38) corresponds to transitive achievements in Öztürk and Taylan's analyses, and the remaining two classes are differentiated based on Öztürk and Taylan's definition of affectedness, with the only exception that they are argued to lack co-temporality under Demirok's analysis. Thinking in a featural system, these accounts can be summarized as in (39):

(39) Distribution of *m*-set markers in transitives in the literature

Semantic features		Morphological class/template
a. [- co-temporal]	→	[*o*-verb-*am*]
b. [+ co-temporal, + affected object]	→	[*Ø*-verb-*um*]
c. [+ co-temporal, - affected object]	→	[*Ø*-verb-*am*]

Relying on two peculiar semantic features (Demirok & Öztürk 2021), this classification system falls short of exhaustively accounting for all transitive verbs. Acknowledging this by stating 'grammar should tolerate lexical/idiosyncratic selection' (p. 18), Demirok provides a list of these exceptional verbs. Two sets of these verbs important for our purposes are in (40):

(40) Exceptions to the proposed classification system in the literature (Öztürk & Taylan; Demirok)

a. Verbs that do NOT involve physical change of the object argument but take *-um* (c.f. *-am*)

e.g., *ogoru* 'to want', *oçopu* 'to catch', *otoru* 'to carry', *otsadu* ' to look after' etc.

b. Verbs that involve physical change of the object argument but take *-am* (c.f. *-um*),

e.g., *ozu* 'to smash', *oçu* 'to sew (a shirt)' etc.

Lastly, Demirok (2022) also investigates the question of whether the semantic selection is static (root-based) or fluid (context-based). Showing that context manipulation does not lead to a change in the choice of the imperfective markers, he concludes that the semantic selection is totally root-based and as such the proposed semantic features are not synchronically (but could only be historically) active in exponent selection. Two relevant examples are provided in (41) and (42). (41) shows that changing the object to one that cannot undergo physical change, like a metal, does

not trigger a shift in the class of the *-um* taking verb *odzağu* ‘to chew’, that is, it does not license the use of *-am* that verbs with unaffected objects.

(41) Layçi-k ili/metali dzağ-um-s (*dzağ-am-s).
dog-ERG bone.ABS/metal.ABS chew-IMPF-PRS.3SG
‘The dog is chewing the bone/metal.’ (Demirok 2022: 19)

(42) involves the verb of shaking with two different objects, namely *handkerchief* and *hand*. The handkerchief-shaking event might be conceptualized as non-co-temporal as the object’s movement is (partially) out of the initiator’s control. However, the inalienably possessed body part hand always requires co-temporality and full control of the initiator over the event. Regardless of this discrepancy, the verb *ovalu* ‘to shake’ always occurs in the same morphological structure and the co-temporality reinforced by the use of a body part does not lead to a shift to a different morphological class, viz., [*Ø*-verb *-am*], marking co-temporal verbs with unaffected objects.

(42) a. Bere-k yaluği/xe o-val-am-s (*val-am-s).
child-ERG handkerchief.ABS/hand.ABS PRV-shake-IMPF-PRS.3.SG
‘The child is shaking the handkerchief.’ (Demirok 2022: 20)

2.5. Form-meaning correspondences in heritage languages

A survey of related cross-linguistic literature on heritage languages allows us to make predictions about the distribution and linguistic properties of pre-root vowels and imperfective markers in Heritage Laz. One of the guiding principles of heritage grammars is transparency,

resulting in increased analyticity (Polinsky 2018: 183). This generalization rests upon the observation that heritage speakers, owing to being exposed to reduced linguistic input, show a tendency to reduce irregularities, idiosyncrasies, and allomorphic variation by either eliminating or restructuring the grammatical distinctions in their heritage language (e.g., case morphology in Heritage Korean, Song et al. 1997; Heritage Hindi, Montrul, Bhatt & Bhatia 2012; gender features in Heritage Russian, Polinsky 2008). Omission, overgeneralization, regularization and/or overmarking of grammatical markers and constructions in both nominal and verbal domain have been reported for several heritage languages (see Polinsky & Kagan 2007).

Given the vast literature on the morphological simplification and/or reorganization in heritage languages, I focus on how extant research informs us about the following two questions, which guide us through making predictions about the current status of the relevant two sets of valency-related markers in Laz: i) Is there any mechanism that governs the reduction of irregularity and allomorphy in heritage languages? and, ii) What is the general outcome of the overgeneralization and overregularization processes commonly attested in heritage languages?

In relation to the first question, Polinsky (2018: 181) argues that perceptual and structural salience along with frequency of occurrence account for the loss of an inflectional marker altogether (reduction to zero) and the selection of the winner marker in cases of allomorphy where different realizations of the same morpheme stand in a competition.

Higher perceptual salience correlates with phonetically heavier material, which are less prone to erosion and thus have a higher chance of survival in comparison to (perceptually) lighter competitors. Polinsky compares the differential object marker *a* in Heritage Spanish and *pe* Romanian with regards to the role of phonetic salience in the maintenance of inflectional markers. She argues that while the former undergoes erosion (Montrul et al. 2015) by virtue of consisting

of a single vowel (thus perceptually not salient especially before vowel initial nominals) whereas the Romanian marker (Montrul & Bateman 2017), being phonologically heavier, resists erosion and even extends its domain to mark a larger set of nouns than in the baseline variety. As for cases where allomorphs compete with one another, heritage speakers regularize the more audible marker, leading to the neutralization of the allomorphic distribution rule. This is observed in the case of Korean nominative marker, the (post-vocalic) *-ka* overriding the (post-consonantal) marker *-i* in the heritage variety, where sensitivity to the final sound of the stem existent in the baseline variety ceases to play a role in the distribution of the allomorphs (Polinsky 2018: 170, facts cited from Choi 2003; Laleko & Polinsky 2016). Lastly, structural salience is concerned with structural height. Linguistic units occupying structurally higher positions are less susceptible to loss. The higher maintenance i) of articles in comparison to plural marker, and ii) tense markers other than aspect markers in Heritage English, is accounted for via structural salience (Polinsky 2018: 175).

Besides salience, frequency of allomorphs also plays a role in regulating allomorphic reduction. The most frequently used (or heard) exponent is more likely to win and thus to be extended into the domains of others. In addition to the overgeneralization of the *-ax* marker as the general oblique case in the plural in Heritage Russian (Polinsky 1996, Polinsky & Kagan 2007), Polinsky further exemplifies this via the elimination of stem alternations in Korean. Heritage speakers overgeneralize the allomorphs of the verbal stems in the intimate register, which they are most familiar with and thus most frequently hear and use, rather than the other (formal/deferential/polite) registers (Choi 2003). The Korean example is also significant because heritage speakers also reanalyze the register marker (*-a/-ə*) as part of the stems (*tul- ə* 'listen' rather than the baseline stem '*tul-*'), showing their preference for phonologically heavier forms.

Frequency of use or exposure, however, falls short of accounting for the distribution of certain markers as heritage speakers often exhibit patterns of uses not present in the baseline variety. The reflexive marker *se* co-occurs with verbs that do not have a reflexive reading in Heritage Spanish unlike in the baseline variety (43). Absent in the baseline input, the overuse of this marker could be due to the fact that heritage speakers have reanalyzed it "as the marker of a well-formed predicate"[5], leading its domain of uses to extend into a larger set of verbs (Polinsky 2018: 177).

(43) a. El lobo se perseguió el conejo.
the wolf se chased the rabbit
'The wolf chased the rabbit.'

b. El submarine se pasa el barco.
the submarine se passes the boat
'The submarine passes the boat.'

c. Nosotros se[6] olvidamos la regla.
we se forgot the rule
'We forgot the rule.' (Heritage Spanish, Polinsky 2018: 177)

[5] Polinsky does not elaborate on how or in what way the *se* marker establishes the grammatical well-formedness of predicates in Heritage Spanish. Given this vagueness, one might expect this marker to occur with all predicates regardless of valency (changes) in Heritage Spanish, possibly being contentless and simply required for pure phonological reasons. This requires further investigation. I am grateful to Karlos Arregui for pointing the vagueness of a 'grammatical well-formedness marker' to me.

[6] Karlos Arregui (p. c.) has pointed out that the verb *olvidar* in Spanish requires a reflexive clitic that agrees with the subject. Therefore, the correct form of the sentence involves the pronoun *nos*, rather than *se*. This being the case, what is special about this particular example is not the presence or overgeneralization of the *se* marker but the mismatch in agreement in the person features. One could possibly argue that *se* overextends into the domains of the other pronouns of the same kind.

Turning to the question of what the outcome of grammatical reorganization is, regardless of the underlying or triggering motive, the result is the elimination of multiple mappings and the concurrent rise of uniformity in grammatical marking. The erosion or overextension of differential object marking in Spanish and Romanian results in more uniform marking of direct objects, despite the difference in their trajectory of linguistic change. Mentioning the maintenance of the Spanish dative case only to mark indirect objects but not for experiencer subjects (Montrul et al. 2015), Polinsky notes that a single form is mapped to a single syntactic position, and thus being associated with a single theta role in the heritage variety. Overall, she concludes that 'case restructuring is subject to pressures from one-to-one mapping and overgeneralization' (p. 184).

Another aspect of grammar that is affected by one-to-one mapping concerns featural oppositions. Heritage speakers tend to avoid under-specification and consequently they favor equipollent oppositions, where all members of a contrastive set are fully specified for a relevant grammatical feature, rather than privative oppositions, where only one member is fully specified and the other remains under-specified or un-specified.

The first piece of evidence for this comes from the reanalysis of the opposition between the two past-tense markers in Turkish, namely *-DI* and *-mIş*. Showing that while the (evidential). *-mIş* marker is specified with respect to the information source, encoding indirectly acquired information, the other marker is underspecified because it can be used to report (in)directly acquired information, Polinsky argues that the two markers indeed stand in a privative opposition in (baseline) Turkish. The use of these two markers by heritage speakers in Germany (Arslan et al. 2015), however, indicates that the privative opposition has been replaced with an equipollent contrast as in (44):

(44) The distribution of past tense markers in (Heritage) Turkish (Polinsky 2018: 188-191)

	Baseline Turkish	Heritage Turkish
-mIş:	[+indirect evidence]	[+indirect evidence]
-DI:	[+&-indirect evidence] → underspecified	[-indirect evidence] → Fully specified

Based on the aspectual oppositions between perfective and imperfective in (Heritage) Russian, Laleko (2008, 2010) provides further evidence for the tendency of heritage speakers to create equipollent oppositions by way of eliminating privative ones, where the functions or domains of uses associated with the aspectual markers are rendered fully specified and thus become clearly differentiated. Laleko argues that grammatical aspect in Russian operates at the level of i) lexical semantics, ii) syntax (phrasal and sentential), and iii) discourse-pragmatics as represented in (45), where at every level the grammatical elements or constituents play a role in shaping the aspectual interpretation. The argument is that aspectual interpretation in Russian is dependent on not only the lexical (telicity) features of the verbal roots, but it is conditioned by contextual factors outside the verb, namely the semantic (non-quantizing/delimiting) features of objects in the VP (e.g., *I ate an apple in an hour* vs. *I ate apples *in/for an hour*), and/or aspectual adverbs such as for/in an hour at the sentential (IP) level as well as discourse-pragmatic factors (at the CP-level) such as the shared knowledge (or common ground in more technical terms) between the speaker and the addressee.

(45) Calculation of aspectual properties in (Heritage) Russian (adapted from Laleko 2008, 2010)

V-Aspect	-	VP-Aspect	-	IP-Aspect	-	CP-Aspect
[lexical telicity]		[quantization by object]		[adverbs, operators]		[contextual factors]

The effects of contextual factors (beyond the sentence) play a crucial role in the determination of featural distinctions between imperfective and perfective because they provide the key argument for the underspecified nature of imperfective with respect to event-completedness. While perfective is specified with respect to the completion of events, encoding completed events, the imperfective is underspecified because under certain circumstances, imperfective can also be used to refer to completed events as well as uncompleted ones. This use of imperfective in Russian is referred to as the general factual imperfective and serves to encode statement of fact, reversed action, and backgrounding (Forsyth 1970: 90, 194; see Laleko 2010, Chapter 5). (46), uttered in the context of *Goldilocks and the Three Bears*, illustrates one of such uses of the imperfective in Russian, where it marks a completed event but further implies that the completion of the event needs to be confirmed as it is inferred on the basis of indirect evidence:

(46) Kto jel moju kašu?
who.NOM ate.IPFV [my porridge].ACC
'Who ate my porridge?' (completed event) (Russian; Polinsky 2018: 193)

Laleko shows that while heritage speakers of Russian (depending on their proficiency level) are quite adept at compositionally deriving the aspectual interpretation by taking into consideration the (semantic) features of verbal internal arguments along with sentential operators and adverbs, all heritage speakers (even high-proficiency speakers) have lost their sensitivity to the factors beyond this level. The loss of sensitivity to the contextual factors, i.e., the general factual uses of the imperfective, results in the reorganization of the aspectual system in a way that the under-specification associated with the imperfective is gone, and the featural opposition

between the perfective and imperfective ends up being fully specified, relying on an equipollent opposition, rather than the case in the baseline variety. This is summarized (47):

(47) Featural opposition of imperfective and perfective in (Heritage) Russian (Laleko 2010)

	Baseline Russian	Heritage Russian
	Privative Opposition	Equipollent Opposition
Perfective:	[+completed]	[+completed]
Imperfective:	[+/-completed] → underspecified	[-completed] → Fully specified

In addition to reanalyzing grammatical distinctions and reorganizing sets of grammatical markers in a way that they conform to the principle of one-to-one mapping between form and meaning, heritage speakers favor analytical constructions if available rather than more synthetic alternatives. The increased analyticity is conditioned by one-to-one form-meaning correspondence because analytical constructions are more transparent where 'each piece of construction is clearly mapped to a particular meaning' (Polinsky 2018: 183)[7]. Heritage Turkish speakers in Netherlands exhibit a preference to make use of temporal deictics (such as o zaman 'then') rather than using verbal morphology (tense-aspect-modality suffixes) (Rehbein & Karakoç 2004: 142). Likewise, Heritage Spanish speakers opt for the more analytical periphrastic form consisting of the verb *go* followed by the infinitive form of the verb, rather than the simple synthetic form (Silva-Corvalán 1994, 2014). The avoidance of synthetic forms is evidenced by Heritage Polish speakers using the [go + infinitive] to refer to future events, rather than [go + participle] as the latter requires subject-verb agreement, and thus the use of synthetic markers (Brehmer & Czahór 2012).

[7] Recall that analytical constructions need not necessarily be more transparent than synthetic ones (Salikoko Mufwene p.c., see Chapter 3, § 1.3)

The increased analyticity observed in heritage languages has been reported for bilingual speakers in contact situations i.e., the parental generation of and the main input providers of heritage speakers. De Groot (2005, 2008) shows that immigrant Hungarian speakers use periphrastic analytical constructions. These speakers differ from their counterparts in their homeland, who show a tendency to use more synthetic constructions as shown in Table (26):

Table 26: Synthetic vs. analytical constructions in Hungarian

	Hungarian in the mainland	Hungarian outside Hungary
Modality	Ki-me-het-ek? out-go-mod-1sg 'May I go out?'	Ki tud-ok men-ni? out be.able-1sg go-inf 'May I go out?' (Ukraine)
Reflexive	Szépít-kez-ett beautify-refl-past.3sg.indef 'She beautified herself.'	Szépít-ette magá-t beautify-past.3sg.def oneself-acc 'She beautified herself.' (Ukraine)
Causative	Meg-rajzol-tat-ta pvb-draw-caus-past.3sg.def the a szék-et. chair.acc 'S/he had the chair designed.'	Hagy-ta a szék-et rajzol-ni. permit-past.3sg.def the chair-acc draw-inf 'S/he had the chair designed.' (Austria)
Compounding	tag-létszám member-number 'number of members'	tag-ok létszám-a member-pl number-3sg.poss 'number of members'

(from (De Groot 2005: 365))

As for nominal domain, bilingual speakers prefer to use more analytical constructions rather than an existent synthetic construction available in their heritage language. Polinsky notes that bilingual speakers of Moroccan Arabic and Dutch in the Netherlands tend to use the analytical genitive construction rather than the synthetic form illustrated in (48).

(48) a. (Synthetic genitive construction)

ras l-kelb

head DEF-dog

'the dog's head'

b. (Analytical genitive construction)

r-ras dyal l-kelb

head of DEF-dog

(Polinsky 2018: 183, taken from Boumans 2006: 214)

3. Findings from grammatically-oriented tasks on valency-related markers

3.1. Predictions on Heritage Laz

In this section, I list the hypotheses I have assumed in light of the related literature laid out in the previous section.

3.1.1. Predictions for valency alternating operations and the pre-root vowel *i-*

Despite the differences in their nature, the four valency-related operations in Laz, namely i) reflexivization, ii) impersonal Passivization (Lacroix 2009, Eren 2021 c.f. Öztürk & Taylan 2017), iii) applicativization, and iv) causativization, all have morphological reflexes in both nominal (case-related, except for AL) and verbal domain (pre-root vowels, change in imperfective markers, distinct markers *-in/-ap* for causativization). Given their general problems with morphology (Polinsky 2018: 240), all these operations are predicted to pose challenges to heritage

speakers, and thus be subject to erosion to differing extents. As a matter of fact, we have previously seen i) that the production of valency-alternating operations is significantly lower in the heritage group (Chapter 4), and ii) heritage speakers produced deviant forms in their attempts to apply valency alternating operations (Chapter 6). Given these findings and also their preference for transparency, leading to an increase in analyticity (Rehbein & Karakoç 2004, Brehmer & Czahór 2012, Polinsky 2018, De Groot 2008), heritage speakers of Laz are predicted to avoid synthetic constructions and instead prefer and/or produce more analytical constructions if available in Laz.

The existent theoretical analyses differ with respect to the operations featuring the *i-* marker. Reflexivization and passivization are valency decreasing operations under Lacroix's middle analysis, while the apparent valency decrease is only spurious under analyses where *i-* is treated as an argument (Öztürk & Taylan 2017, Eren 2021): *i-* saturates the argumental positions and leads the structure to remain underlyingly transitive. Thus, only the former analysis directly leads to a prediction that two types of valency alternations (as increase vs. decrease) might be differentially affected. Lastly, one (so-called) valency decreasing operation, namely *reflexivization*, would be more subject to erosion than valency increasing operations as the former but not the latter leads to a multiple mapping between arguments and theta roles, and a violation of transparency.

Leaving aside the differences in accounting for the distribution of ergative case and/or the agentivity tests in baseline Laz, the existent three analyses proposed for the *i-* marker make different predictions regarding the distribution of the pre-root vowel *i-* in Heritage Laz. The uniform accounts proposed by Lacroix (middle voice head) and Eren (verbal expletive) predict that this marker would be affected uniformly in all constructions where it occurs; a prediction that does not necessarily follow from Öztürk and Taylan's and Öztürk's analysis. Given heritage

speakers' preference for transparency, Eren's analysis also further predicts that *i-* is subject to erosion. By virtue of being an expletive, it leads to a syntax-semantics mismatch as a marker that has a form lacking (referential) meaning. Needless to say, all analyses predict *i-* to be to be subject to loss in the heritage variety (along with the other pre-root vowels) as it is exponed in the morphologically complex verbal template in Laz.

As for the presence and/or absence of *i-* in (un-)derived unaccusative constructions, Lacroix's voice head analysis allows the reintroduction of agents in adjunct clauses in Heritage Laz also given that this is licensed in their dominant language Turkish (Göksel & Kerslake 2005, Legate et al. 2020). The argumental analyses of *i-* (Öztürk (& Taylan), Eren) would prohibit this as the external argument position is readily filled by the *i-* marker. As for underived unaccusatives, while Öztürk's and Taylan's analyses allow their proposed omni-present external argument position to be filled by *i-*, Eren's analysis prohibits this as these verbs are treated as genuine unaccusatives lacking a syntactic (argumental) position that would host *i-*.

3.1.2. Predictions for the imperfective markers

The allomorphy of the imperfective markers is intriguing as it is dependent on both the argument structural properties of predicates and the semantic features of verbal roots. The intricate nature of the allomorphy is thus predicted to pose challenges to heritage speakers, who tend to reduce multiple mappings between form and meaning and favor uniformity and transparency. Given all four allomorphs are perceptually and structurally salient to the same extent by virtue of consisting of a closed syllable (V+C) and occupying the same structural position, it becomes hard to make predictions (based on perceptual and/or structural salience) about which allomorph would overgeneralize and extend into the domains of the others. Nevertheless, assuming that the form

that exhibits the widest distribution would have the highest frequency in occurrence, it is predicted that *-am* would win the competition, resulting in the uniform marking of irregular forms. We have seen ample evidence in favor of this in heritage speakers' deviant forms before (Chapter 6).

To what extent the domain of this overgeneralization extends into is quite interesting and remains to be investigated. At this point, the distribution of *-am* in transitives and its competition with *-um* bears more significance because valency sensitivity that plays a role in the allomorphic contrast gets neutralized and the difference reduces down to the semantic features of the verbal roots. The relevant semantic features proposed in the literature, which are noted to be peculiar by the authors (Demirok & Öztürk 2021), are reproduced here in (49) for ease of reference:

(49) Distribution of *m*-set markers in transitives in the literature (Demirok 2022)

Semantic features		Morphological class/template
a. [- co-temporal]	→	[*o*-verb-*am*]
b. [+ co-temporal, + affected object]	→	[*Ø*-verb-*um*]
c. [+ co-temporal, - affected object]	→	[*Ø*-verb-*am*]

Leaving aside the contrast based on the peculiar sub-event co-temporality feature[8], the difference between the *m*-set markers when used with transitives narrows down to the nature of affectedness. The argument is that those (transitive) verbs that lexically specify their object to undergo a physical change (in shape/volume/constituency) select for *-um*, while those that do not have such a specification take *-am*. Restricting the notion of affectedness to physical change, the emergent analysis relies on an equipollent opposition where the markers are fully specified (50):

[8] In § 3.3.2, I discuss the advantages of eliminating of the subclass of verbs dependent on this feature.

(50) Equipollent distribution of *m*-set markers in transitives in Öztürk and Taylan (2014, 2017)

a. If [+affected object] → *-um*

b. If [- affected object] → *-am*

Given that there is a large set of verbs posing challenges to this generalization where a verb with an unaffected object takes *-um* as noted by Demirok (2022) as in (40), a possible competing analysis would be one where the featural opposition relies on a privative opposition with *-um* being underspecified for affectedness while *-am* is fully specified as represented in (51).

(51) Distribution of *m*-set markers in transitives based on privative opposition

a. If [-affected object] → *-am*

b. If [-affected object] or [+affected object] → *-um* (underspecified)

Note that the privative opposition provided in (51) is intended to account for the occurrence of *-um* with non-affected verbs that constitute exceptions to the equipollent opposition in (50). Therefore, it simply states that non-affected object verbs are compatible with both members of the *m*-set markers but it does not specify which of the relevant verbs take *-am* and which ones take *-um*. In other words, (51) overgenerates and thus it needs to be restricted in a way that it correctly predicts which verbs are associated with which *m*-set marker[9]. Given that the main focus in this section is on heritage speakers, who I predict to prefer the equipollent opposition (50) rather than the privative one (51) following Laleko (2010), I remain agnostic about the correct characterization of the distribution of the *m*-set markers based on (51) in the baseline variety at this point. elaborate

[9] I am indebted to Karlos Arregui for pointing this out.

on and propose an analysis for the distribution of the relevant markers in the baseline variety later in the present chapter (see § 3.3.2).

Assuming the validity of the affectedness feature in the literature, given heritage speakers' preference for full specification and compositionality (Laleko 2010, Polinsky 2018), the following predictions can be made: i) Heritage Laz speakers would produce and/or prefer forms that are based on the equipollent opposition in (50), rather than the privative one (51), ii) The likelihood for the affectedness feature to be synchronically active and thus be manipulated by object-related and contextual factors would be higher in the heritage variety given their preference for compositionally deriving the aspectual interpretation (Laleko 2010).

3.2. Grammatically-oriented tasks

To understand if, and if so, which of the predictions are borne out, I carried out two grammatically-oriented tasks with a subset of the same group of speakers who completed the free narrative task. Given the discrepancy between the production and comprehension skills of heritage speakers, both types of tasks were conducted. The participants (a total of 47, Table (27)) involved all those who stand in a parent-child relationship (9 baseline, 10 heritage) with additional 17 baseline and 11 heritage speakers, who do not necessarily belong in the same family.

Table 27: Demographics of the participants completing the grammatically-oriented tasks

Variables		Baseline (N=26)		Heritage (N=21)	
		#	**%**	**#**	**%**
Gender	Male	21	80.7	11	52.4
	Female	5	19.3	10	47.6
Hometown	Ardeşen	7	26.9	7	33.2
	Fındıklı	4	15.4	3	14.3
	Pazar	5	19.3	2	9.6
	Çamlıhemşin	10	38.4	9	42.9
Age	>20	-	-	2	9.6
	21-30	-	-	10	47.5
	31-40	4	15.4	9	42.9
	41-50	12	46.2	-	-
	51-60	4	15.4	-	-
	60<	6	23	-	-

As for the proficiency level of heritage speakers, 7 high-, 9 mid-, and 5 low-proficiency speakers participated, giving us a total of 21 heritage speakers. The small sample size of the participant groups and the heterogeneity both in the profile of the participants along with their answers and judgments prevented me from running formal statistical analyses.

Given time limitations, consultant fatigue and unfamiliarity with grammatical elicitations (c.f., free narrative task), and due to COVID-19 restrictions, I used a single production and

comprehension task to test the production and comprehension skills of the participants with regards to the pre-root vowels and imperfective markers. Ideally there would have been separate tasks for each marker and construction.

The production task was a translation task[10]. Participants were given certain sentences in Turkish and asked to translate them into Laz. The test items involved a set of sentences with i) transitive roots (Type 1 and Type 2), ii) unergatives, and iii) (underived) unaccusatives, and iv) psych-verbs which necessarily occur in applicative constructions, with a total of 15 verbs. In order to test the predictions regarding the role of the affectedness feature in regulating the selection of *m*-set markers with transitives in the heritage variety, transitive verbs involved those that constitute exceptions to the generalization proposed in the literature and listed in (40) (Öztürk & Taylan 2014, 2017; Demirok 2022), in addition to regular ones under these analyses. After constructing simple (in)transitive sentences, participants were asked to translate sentences that involve different sorts of valency alternating operations compatible with the relevant predicates. Lastly, all the test items were temporally present and aspectually imperfective in order to investigate the distribution of the imperfective markers. Examples of the relevant test/target items[11] are provided in (52)-(55).

(52) a. Koçi-k çxomi çop-um-s. (Transitive- Type 1: [*Ø*-verb-*um*])
man-ERG fish.ABS catch-IPFV-3SG
'The man {is catching/catches} fish.'

[10] The participants were indeed given two options: i) Being shown videos and/or pictures along with a set of Laz words and then freely construct Laz sentences by making use of the words given to them, ii) Being given a set of Turkish sentences (corresponding to and depicting the exact same scenarios in the other visually oriented task) and then translate them into Laz. The former task required setting up a laptop, which was not possible all the time because due to COVID-restrictions, winter-weather permitting, I had to hold my meetings at outdoor places. Also, almost all of the participants opted for the latter option because they reported they are more familiar with this type of task, and this task would be less time-consuming. Respecting their choices and in order to keep the number of participants at maximum, I carried out the translation task, rather than the visually oriented task.
[11] The corresponding AL sentences would not involve the case markers as it exhibits a neutral case alignment.

b. Çxomi i-çop-e(r)-n. (Derived unaccusative/Passive: [*i*-verb-*er*])

fish.ABS PRV-catch-IPFV-3SG

'The fish is (being) caught.'

c. Koçi-k çxomi i-çop-am-s. (Benefactive Reflexives: [*i*-verb-*am*])

man-ERG fish.ABS PRV-catch-IPFV-3SG

'The man {is catching/catches} fish for himself/his own benefit.'

c. Koçi-k bere-s çxomi u-çop-am-s. (High applicative: [*i-/u*-verb-*am*])

man-ERG child-DAT fish.ABS APPL-catch-IPFV-3SG

'The man {is catching/catches} fish for the child.'

d. Koçi-k bere-s çxomi o-çop-ap-am-s. (Causativization: [*o*-verb-*ap*-*am*])

man-ERG child-DAT fish.ABS CAUS-catch-$CAUS_{TR}$-IPFV-3SG

'The man {is making/makes} the boy catch fish. '

e. Koçi-s çxomi a-çop-e(r)-n. (Higher Applicativization: [*a*-verb-*er*])

man-DAT fish.ABS APPL-catch-IPFV-3SG

i. 'The man is able to catch fish.' ii. 'The mean {is catching/catches} fish unintentionally'.

(53) a. Mjalva nçx-u(r)-n. (Underived unaccusative: [*Ø*-verb-*ur*])

milk.ABS heat up-IPFV-3SG

'The milk {is heating/heats} up.'

b. Mjvalva bere-s u-nçx-u(r)-n. (High Applicative of unaccusative: [*u*-verb-*ur*])

milk.ABS child-DAT APPL-heat up-IPFV-3SG

'The milk {is heating/heats} up for the child.'

c. Koçi-k mjvalva o-nçx-in-am-s. (Causativization: [*o*-verb-*in*-*am*])

man-ERG milk.ABS. CAUS-heat up-IPFV-3SG

'The man {is heating up/heats up} the milk.'

(54) a. Koçi-k i-çaliş-am-s. (Unergative: [*i*-verb-*am*])

man-ERG PRV-work-IPFV-3SG

'The man {is working/works}.'

b. Koçi-k bere-s u-çaliş-am-s. (High applicative: [*i-/u*-verb-*am*])

man-ERG child-DAT APPL-work-IPFV-3SG

'The man {is working/works} for the child('s benefit).'

(55) Koçi-s bere a-orop-e(r)-n. (Psych-verb: [*a*-verb-*er*])

man-DAT child.ABS APPL-love-IPFV-3SG

'The man loves the boy.'

The comprehension task was conducted after the completion of the production task. Participants were given a set of sentences in Laz and asked to rate a set of Laz sentences on a Likert scale (0: Totally Unacceptable-5: Totally Acceptable) if time permitted, and if not, they were asked to note simply grammatical or ungrammatical. The test items involved i) verbs and/or predicates bearing a different imperfective marker different than the desired one in the baseline variety (56), ii) cases where either the context or the direct object is manipulated forcing the use of a different imperfective marker (57), iii) passive constructions with/out an accompanying adjunct clause reintroducing the implied agent (58), iv) synthetic and analytical constructions involving valency alternations (59), v) applicative constructions with (un)acceptable readings, i.e., (un)licensed theta role association with the applied argument (60). The unacceptable cases were

accompanied with grammatical sentences of the same sort, albeit lower in number, to prevent any biases for showing a tendency to underrate all the test items:

(56) Illicit substitution of imperfective markers

a. *Koçi-k sifteri çop-am-s. (Transitive-Type 2)
man-ERG falcon.ABS catch-IPFV-3SG
Int: 'The man {is catching/catches} the bird(s).'

b. *Koçi-k toyçi zd-um-s. (Transitive-Type 1)
man-ERG rope.ABS pull-IPFV-3SG
Int: 'The man {is pulling/pulls} the rope.'

(57) Manipulation of argumental and contextual factors

a. *Koçik {sakizi/metali cencareri} lağ-am-s.
man-ERG {gum/coin}.ABS chew-IPFV-3SG
Int: 'The man is chewing {a gum/a coin}.'

b. Context: The man knows that it is hard to take the stains out of silicone cups. Therefore, he washes them so hard and under really hot running water that the cup melts and/or tears apart.

*Koçi-k tabaxi çx-um-s.
man-ERG plate.ABS wash-IPFV-3SG
Int: 'The man {is washing/washes} the (silicone) plate.'

(58) Passive clauses with/out implied agents in adjunct clauses

Koçi-k (*Omeri kale) i-il-e(r)-n / d-i-il-u.
man-ERG Omer by/side PRV-shoot-IPFV-3SG / AFF-PRV-shoot-PST.3SG
'The man was killed (by Ömer).'

(59) Synthetic and Analytical constructions with identical readings

a. Koçi-k ti-muşi yali-s zir-um-s. (Analytical reflexive)
man-ERG self-3SG.POSS mirror-DAT see-IPFV-3SG
'The man {is seeing/sees} himself in the mirror.'

b. Koçi-k yali-s i-zir-am-s. (Synthetic reflexive)
man-ERG mirror-DAT PRV-see-IPFV-3SG
'The man {is seeing/sees} himself in the mirror.'

(60) (Un)acceptable applicative constructions

Nana-k bere-s u-çaliş-am-s. (Öztürk 2016: 7, glosses are mine)
mother-ERG child-DAT APPL-work-IPFV-3SG

i. 'The mother of the child is working for the child.' (Benefactive θ-role)

ii. *'The mother of the child is working.' (No Possessor θ-role)

3.3. Results and discussion

The grammatically-oriented tasks mostly relied on specific verbal roots, which play the key role in the selection of the pre-root vowels along with the imperfective markers. This made their application difficult with the heritage group. Given their reduced lexical inventory (Chapter 4, § 2 and Chapter 6, § 1.3), heritage speakers turned out not to know certain targeted verbs[12], resulting in the partial completion of the tasks with especially mid- and low-proficiency speakers.

[12] One common innovative strategy employed by heritage speakers was to produce alternative verbal constructions based on direct translation from Turkish as exemplified in (i) for the verb *oşinaxu* 'to respect'.

i) Ma mualimi-şkimi saygı v-o-tzir-am. (from Turkish *saygı göster-* 'show respect')
I.ABS teacher-1SG. POSS respect.ABS 1SBJ-PRV-show-IPFV
'I respect my teacher.' (LOW: AL) (c.f. *baseline* p-şinax-um)

Moreover, almost none of the language consultants, heritage or baseline, were familiar with elicitation sessions, therefore some of them had difficulties producing the targeted constructions in the translation task and/or understanding the particular interpretations, especially context-dependent ones tested in the comprehension task. Lastly, given that all Laz speakers are bilingual with Turkish being their dominant language, some of them (especially heritage speakers) were often not quite sure of their judgments.

Given the difficulties with the data collection procedure, and the heterogeneity of the answers provided by the heritage group, in the remainder of this section, I only report the most frequently produced data and the most robust judgments in my fieldwork data. Needless to say, the same reasons also prevent us from running formal statistical analyses.

3.3.1. Pre-root vowels and valency alternations

The most robust finding regarding the divergences between heritage and baseline speakers concerns the distribution of *i*- and its interaction with the (apparent) valency alternating operations. The production of the reflexive and derived unaccusatives constructions featuring *i*- is quite low in the heritage group. For (affixal) reflexive constructions it was almost close to zero in the low-proficiency group, and quite limited in mid-proficiency speakers, while high-proficiency speakers were more adept at them, patterning with baseline speakers to a great extent. Lower proficiency heritage speakers produced more analytical constructions when asked to translate the corresponding Turkish sentences with reflexive interpretations into Laz. They made use of (overt) pronominals in order to derive reflexive interpretations as shown in (61) and (62).

(61) Direct object reflexives

a. Pronominal construction=Heritage (all groups)/Baseline (higher frequency in all groups)

Xordza-k ekrani-s ti-muşi zir-am-s. (c.f. baseline zir-um)

woman-ERG screen-DAT self-3SG.POSS see/find-IPFV-3SG

'The woman {is seeing/sees} herself in the screen.'

b. Synthetic construction=Baseline/High-prof. Heritage (lower in frequency in both groups)

Xordza-k ekrani-s i-zir-am-s.

woman-ERG screen-DAT PRV-see/find-IPFV-3SG

'The woman {is seeing/sees} herself in the screen.'

(62) Benefactive reflexives

a. Pronominal construction=Low- & Mid-proficiency Heritage speakers

Xordza-k çendi/ti-muşi şeni dişka tax-um-s.

woman-ERG self(>Turkish)/self-3SG.POSS for wood.ABS break-IPFV-3SG

'The woman is cutting woods for herself.'

b. Synthetic construction: Baseline/High-proficiency Heritage

Xordza-k (çendi/ti-muşi şeni) dişka i-tax-am-s.

woman-ERG self(>Turkish)/self-3SG.POSS for wood.ABS PRV-break-IPFV-3SG

'The woman is cutting woods for herself.'

As for derived unaccusatives, heritage speakers resorted to more analytical and transparent transitive constructions with either overt indefinite (3rd singular) pronouns or ((c)overt) 3rd person plural pronouns occupying the subject position but yielding a generic or indefinite reading (63):

(63) Derived Unaccusative constructions (=passives)

a. Analytical construction-Type 1: Heritage (all groups)/Baseline (higher frequency in heritage)

(Hini-k) kalati tor-um-an.

they-ERG basket.ABS carry-IPFV-3PL

'The bag is (being) carried.' (Lit: They are carrying the/a bag.)

b. Analytical construction-Type 2: Heritage (all groups)/Baseline (higher frequency in heritage)

Mitxa-k kalati tor-um-s.

someone-ERG basket.ABS carry-IPFV-3SG

'The bag is (being) carried.' (Lit: Somebody is carrying the/a bag.)

c. Synthetic construction= Baseline/High-proficiency Heritage

Kalati i-tor-e(r)-n.

basket.ABS PRV-carry-IPFV-3SG

'The bag is (being) carried.'

The facts regarding the production of the relevant constructions indicate the following:

i) The production of *i-* in establishing subject-object co-reference is the lowest in all groups, crucially involving the baseline speakers. All speakers of Laz show a tendency to establish direct-object-subject coreference via overt pronominals, corroborating the preliminary findings based on a more limited number of baseline speakers in Eren (2016, 2023). The erosion of this construction in the heritage variety therefore seems to involve the amplification of an incipient trend in the baseline variety.

ii) The erosion in direct object reflexives does not directly extend into benefactive reflexives, where the subject is interpreted to be co-referential with the applied argument, because baseline

and high-proficiency heritage speakers are more proficient in these constructions. Lower proficiency heritage speakers drop the applicative marker and make use of a simple transitive construction with a postpositional phrase bearing benefactive interpretation (62a).

iii) Like benefactive reflexives, baseline and high-proficiency heritage speakers are quite proficient in deriving (overt) external argumentless (passive) constructions. However, while the latter show a higher tendency to produce alternative analytical constructions with indefinite or generic subjects, patterning alike with the lower proficiency heritage speakers, the first produced and preferred pattern of baseline speakers is the synthetic construction featuring *i-*. Lastly, the production of synthetic constructions was quite low by the lower proficiency heritage speakers.

Leaving aside the discrepancy between the two types of reflexive constructions, the significant erosion observed in the production of (direct object) reflexives and derived unaccusatives is in line with the predictions of the uniform analyses proposed for the *i-* by Lacroix (2009, 2012) and Eren (2021). This is in contrast to the analysis of Öztürk and Taylan (2017) and Öztürk (2021), who argue that *i-* is an anaphoric pronominal in reflexive constructions and also treated as an (impersonal) pronominal bearing a generic human interpretation in external argument-less constructions. Under this non-uniform analysis, it becomes harder to account for the concurrent (decaying) fate of both of the (apparently) different constructions in a similar manner in the heritage variety. Likewise, the middle voice head analysis would also not directly make any predictions about the erosion of the *i-* marker as it would be associated with a meaning of a valency-decreasing voice head. However, the verbal expletive analysis proposed in Eren (2021) correctly predicts the erosion of *i-*. As an expletive, this marker has a (morpho-phonological) exponence, i.e., a form, but crucially not a referential meaning. Given the principle of transparency operative in heritage grammars, this form is uniformly predicted to be subject to

loss as it leads to a violation of one-to-one mapping between form and meaning, and thus create a syntax-semantics mismatch.

As for intransitives, while unergatives (template: [*i*-verb-*am*]) are better maintained in the heritage variety, (underived) unaccusatives (template: [*Ø*-verb-*ur*]) are subject to erosion and change: i) Heritage speakers pattern alike with baseline speakers only in the construction of the former but crucially not the latter, and ii) Their (lexical) inventory of unergatives seems better preserved than that of unaccusatives. For those (underived) unaccusative existent in their lexical inventory, the most frequent and significant divergence from the baseline group concerns the presence of *i*- which is not licensed in the baseline variety, as exemplified in (64).

(64) Underived unaccusatives in Heritage Laz: Low- & Mid- proficiency speakers

a. Çiçeği i-xomb-u(r)-n. (c.f. xomb-u(r)-n)
flower.ABS PRV-wither-IPFV-3SG
'The flower {is withering/withers}.'

b. Zamani i-çod-u(r)-n. (c.f. çod-u(r)-n or i-çod-e(r)n)
time.ABS PRV-run out-IPFV-3SG
'Time {is running out/runs out.}.'

These constructions are genuine unaccusatives lacking a syntactically projected external argument position in Eren (2021), argued to be omni-present in Laz by Öztürk and Taylan (2014, 2017). Therefore, the presence of the *i*- marker is only predicted by the latter analyses. However, this prima facie evidence needs to be checked against further data in the future given that the presence of *i*- in unaccusatives seems also very likely to be considered an instance of overmarking.

There is ample evidence in the free narratives of the heritage speakers where *i-* is extended into the domain of the other pre-root vowels (Chapter 6). Its presence with underived unaccusatives, could therefore be an extension of this overgeneralization, rather than providing evidence for the presence of a syntactically projected external argument position. If so, what we see in the case of Laz is reminiscent of the overmarking of the *se* marker in Heritage Spanish (43), possibly reanalyzed as a grammatical well-formedness marker (Heritage Spanish, Polinsky 2018: 177). Moreover, the unergative-unaccusative distinction, i.e., an internal interface phenomenon between syntax and semantics, poses challenges to heritage speakers (Heritage Spanish, Montrul 2006; Heritage Korean, Lee 2011). Given this, the discrepancy observed in the maintenance of unergatives and unaccusatives in Laz is predicted even under Eren's (2021) account.

The better preservation of the unergatives in the heritage variety goes against the predictions of the argumental analyses of *i-* because unergatives are given the same analysis (*i-* saturating undergoer position) as direct object reflexives, which are significantly more subject to erosion. Lacroix argues that unergatives are 'lexicalized middle verbs', constituting frozen forms. The higher preservation of unergatives might therefore be better expected under Lacroix's account. However, the overgeneralization facts on *i-* demonstrate that heritage speakers are aware that it is a distinct marker on its own, but crucially not a lexicalized part of (unergative) verbal roots. Therefore, Lacroix's account also seems to fall short of accounting for these facts.

As for derived transitive constructions, i.e., applicativization and causativization, the divergence between heritage and baseline speakers turns out to decrease to a great extent as opposed to reflexives and (un)derived unaccusatives. Regarding applicative constructions (template: [*i-/u*-verb-*am*]), low- and mid-proficiency groups showed a tendency to (additionally) produce analytical applicative constructions where the benefactive reading is provided in a

postpositional construction as shown in (65a). All speaker groups, involving lower proficiency heritage speakers, seemed proficient almost to the same extent in the production of the affixal construction (65b). The only difference was that the lower proficiency speakers showed a greater tendency to include the postpositional phrase in addition to the applicative marked verbal predicate, possibly to make the sentence maximally explicit and clear interpretation-wise.

(65) High applicative constructions

a. Pronominal construction=Low- & Mid-proficiency Heritage speakers

Xordza-k	himu	şeni	dişka	tax-um-s.
woman-ERG	him.ABS	for	wood.ABS	break-IPFV-3SG

'The woman {is cutting/cuts} woods for me/him.'

b. Synthetic construction with the pre-root vowel *u*-: Baseline/Heritage (all groups)

Xordza-k	himu-s	dişka	u-tax-am-s.
woman-ERG	him-DAT	wood.ABS	APPL-break-IPFV-3SG

'The woman {is cutting/cuts} woods for him.'

Maintenance of the high applicative constructions with the *u*- marker in (65b) stands in opposition with those cases where the pre-root vowel is *i*- with 1st or 2nd person applied arguments. Precisely, especially the low-proficiency heritage groups showed a greater tendency to express those constructions in an analytical construction rather than the synthetic one (66). The lower rate of maintenance associated with *i*- is similar to the benefactive reflexive constructions, where the same group of speakers prefer analytical constructions (62).

(66) High applicative constructions

a. Pronominal construction=Low- proficiency heritage speakers

Xordza-k şkimi/skani şeni dişka tax-um-s.

woman-ERG me.ABS/you.ABS. for wood.ABS break-IPFV-3SG

'The woman {is cutting/cuts} woods for me/him.'

b. Synthetic construction with the pre-root vowel *i-*: Baseline/High-&mid-proficiency Heritage

Xordza-k ma/si/bere-s dişka m/g-i-tax-am-s.

woman-ERG me/you.ABS/child-DAT wood.ABS 1/2OBJ-APPL-break-IPFV-3SG

'The woman {is cutting/cuts} woods for me/you.'

Although none of the previous theoretical accounts for *i-* has extended to high applicative constructions with overt applied arguments, the parallelisms between the relevant constructions point to the fact that *i-* might be differentially affected in the heritage variety in all constructions in which it occurs. Additionally, the discrepancy between the resilience of *i-* and *u-* might be related with the agreement facts. Specifically, while the 1st and 2nd person marking *i-* marker needs to be preceded by corresponding overt agreement markers (*m-* for 1st and *g-* for second person as in (66b)), the *u-* marker appears to stand on its own because the 3rd person (object) marker has zero exponence in Laz. Given that agreement poses challenges to heritage speakers (Polinsky 2018, Chapter 5), Heritage Laz speakers might prefer the analytical constructions simply to avoid the additional inflectional marking.

The 'avoidance of agreement markers' argument runs into problems when the production of higher applicative constructions is taken into consideration. These constructions involve an (dative marked in PL and FL) experiencer subject and denote a dynamic modality or unintentional

causation reading. Crucially, there is a switch in the cross-referencing of agreement markers in that canonical object markers cross-reference the properties of the experiencer subject, while suffixal agreement reduces to zero, namely 3rd person (67).

(67) Higher Applicative Constructions: Baseline/Heritage (all groups)

a. Dynamic modality/ Unintentional causation

Ma/Si/ Xordza-s	dişka	m/g/Ø-a-tax-e(r)-n.
I/you.DAT/woman-DAT	wood.ABS	1/2/3OBJ-APPL-break-IPFV-3SG

i. 'I/You/The woman {am/is/are} able to cut woods.'

ii. 'I/You/The woman {am/is/are} unintentionally cutting the woods.'

b. Psych-predicates and verbs of perception with experiencer subjects

I/you.DAT/woman-DAT	layçi	m/g/Ø-a-limb-e(r)-n.
woman-DAT	dog.ABS	1/2/3OBJ-APPL-hear/understand-IPFV-3SG

'I/You/The woman love(s) the dog.'

Öztürk (2013, 2016) argues that these constructions are higher applicative constructions (c.f. *inversion* in the South Caucasian family such as in Georgian) that are based on *v*P. The applicative head yields a location interpretation where a mental state or a property holds and is predicated of the experiencer subjects, which are taken to be 'mental locations' under Landau (2010). Bearing experiencer subjects, psych-verbs necessarily occur in these constructions in Laz.

Crucially, heritage speakers of all proficiency level were quite proficient in these constructions, which are argued to be based on (impersonal) constructions (bearing *-er*) with the object agreement markers cross-referencing the (experiencer) subject (Öztürk 2016: 12).

Therefore, we expect these constructions to be subject to erosion. As a matter of fact, the production of these constructions (along with high applicatives) was found to be quite lower in the heritage group (Chapter 4).

The resilience of the higher applicative constructions makes it hard to relate the erosion of high applicatives featuring *i-* with the difficulty of low-proficiency heritage speakers with agreement between the verb and its (core) arguments. The facts reported here regarding the better maintenance of the higher applicatives rely on a very limited set of high-frequency verbs, such as canonical psych-verbs such as *love*, *hear*, *see* etc., and additionally a translation task rather than a free narrative one. Therefore, these findings need to be checked against further data, which I leave to future studies.

As far as valency increasing operations are concerned, the most striking and resilient construction turns out to be causativization (template: [*o*-verb-*in*/*ap-am*]). Leaving aside certain cases of overmarking, i.e., doubly marked causatives prevalent especially in low- and mid-proficiency heritage groups (68a), all groups of heritage speakers were most proficient in forming causatives. As for agreement, except for certain low-proficiency speakers, heritage speakers were surprisingly proficient in establishing the cross-reference between the causee object and the verb:

(68) Causativization: Baseline (except for overmarking)/Heritage (all groups)

a. Xordza-k ma/si/bere-s çxomi
woman-ERG me/you.DAT/child-DAT fish.ABS
m/g/ Ø-o-çop-(*in)-ap-am-s.
1/2/3OBJ-CAUS-catch-CAUS$_{INTR}$-CAUS$_{TR}$-IPFV-3SG
'The woman {is making/makes} {the boy/me/you} catch fish.'

b. Xordza-k koçi o-ğur-in-am-s.

woman-ERG man.ABS CAUS-die-CAUS$_{INTR}$-IPFV-3SG

'The woman killed the man.' 'Lit: 'The woman {is making/makes} the man die.'

The results of the production task regarding valency alternating operations indicate that heritage speakers do better with valency increasing operations while they have problems forming the (apparent) synthetic valency decreasing operations. Instead, they resort to analytical constructions. The relevant synthetic operations can be ordered as in (69) according to their level of resilience and maintenance in Heritage Laz:

(69) Degrees of resilience of valency alternations in Heritage Laz

Causativization with o->Higher applicativization with a->High applicatives with -u>High applicatives with i->Benefactive Reflexives with i->Passivization>Direct object reflexives with i-

The first crucial fact concerns the higher resilience of valency increasing operations in comparison to the (apparent) valency decreasing ones, i.e., causativization and high(er) applicativization vs. reflexivization and passivization. While there is a distinct argument introduced into the structure in the former type of operations, this is not the case in the latter. Given heritage speakers' preference for one-to-one mapping between form and meaning, the presence of a distinct argument bears great significance on the distribution of the theta roles on a one-to-one basis and thus it can account for the differential resilience of the relevant constructions in the heritage variety. Precisely, the argument introduced in the valency increasing operations (in the specifier of the relevant voice heads, *v*P and High(er) ApplicativeP) receives the causer and

benefactive/malefactive or experiencer theta role respectively. In reflexives and passives, there is a mismatch between the number of arguments and that of theta roles. In the former, the same argument (subject) bears two theta roles, i.e., Agent-Patient/Theme in direct object reflexives, and Agent-Benefactive in benefactive reflexives. In passivization, although there is an implied agent, Agent role is not directly mapped onto an overt argument as reintroduction of implied agent in an adjunct clause is not licensed in Laz.

Unlike the argumental analyses of *i-*, where no valency decrease is assumed thanks to the presence of this marker, Lacroix's middle voice head analysis might more easily account for the discrepancy between valency increasing and decreasing operations as such a distinction is more readily drawn. Nevertheless, this analysis would need to posit a homophonous *i-* marker for valency increasing cases which is distinct from the *i-* marker in reflexive constructions. Moreover, Lacroix's analysis cannot readily account for the case-related facts (the systematic occurrence of ergative case in direct object reflexives, unergatives and transitives). Lastly, a formal analysis is not offered for the proposed middle voice head. For these reasons, I do not further go into the details of this analysis here and simply note that such an analysis if fleshed out might help us account for the discrepancy between the valency alternations in Heritage Laz.

Turning to the occurrence of *i-* in applicatives and benefactive reflexives, the latter constructions are derived via the introduction of the expletive *i-* in the specifier position of HighApplicative head and the passing up of the benefactive theta role introduced by the relevant voice head up to the external argument due to the semantically vacuous nature of expletive *i-* (see Eren 2021, p. 200 for the derivation). Although benefactive reflexives also involve high applicativization, the differential affectedness of high applicatives with overt arguments vs. benefactive reflexives again seems to follow from the difference in the mapping of theta roles to

arguments. While benefactive theta role is mapped onto the same argument in benefactive reflexives, yielding the reflexive interpretation, in canonical high applicative constructions it is mapped to a distinct argument, namely, the applied argument. This one-to-one mapping available in only in the high applicative construction seems to have resulted in better preservation.

As for the discrepancy between *u-* and *i-* within the canonical high applicatives, it is not related with only the differences in the agreement markers given the resilience of the relevant markers in higher applicatives and causatives. The discrepancy can again be attributed to the principle of transparency. While *i-* is associated with more than one type of arguments or feature, namely 1st and 2nd person (in the baseline variety), *u-* is with only one type of argument, i.e., 3rd person. Given the multiple mappings only observed in the case of *i-* but crucially not *u-* it is expected that only the former poses challenges to heritage speakers, leading to the less resilient nature of the relevant constructions, while the latter form and constructions in which it occurs would be subject to less erosion, as attested and was shown in (65) and (66). Note that Lacroix's (middle) voice head would fall short of accounting for the relevant discrepancy as both markers would have the same status, namely simply a voice head.

The differential trajectory of change associated with the relevant valency operations and the pre-root vowels discussed thus far is only valid for the production of the relevant constructions. In terms of their comprehension, heritage speakers turned out to be quite competent in almost all (synthetic) constructions and operations, patterning almost totally with baseline speakers. The results of the grammatically judgment task indicate the following:

i) Heritage speakers can fully and easily understand all synthetic (and analytical) constructions even if they do not produce them at all or in the same way as baseline speakers. This finding is expected given that cross-linguistically heritage speakers' comprehension skills tend to be better

than their production skills (Polinsky 2018: 86). The only significant fact is that among all the constructions investigated, heritage speakers of lower proficiency had hard and longer time to get a reflexive interpretation from the affixal direct object reflexives (61b)[13]. This construction is the maximally affected one among all the operations and constructions investigated here. Additionally, heritage speakers also indicated a higher preference for maximally clear sentences provided to them. To name one example, while they preferred to have the postpositional constructions headed by the postposition *şeni* 'for' in higher applicatives even in the presence of the overt applied argument in the structure in synthetic constructions (70), their acceptability was lower in the baseline group as the relevant double presence leads to redundancy (71):

(70) Heritage Laz

Xordza-k	Ali-s	himu	şeni	dişka	u-tax-am-s.
woman-ERG	Ali-DAT	(him	for	wood.ABS	APPL-break-IPFV-3SG

'The woman is cutting woods for Ali.'

(71) Baseline Laz

Xordza-k	Ali-s	(??himu	şeni)	dişka	u-tax-am-s.
woman-ERG	Ali-DAT	(him	for	wood.ABS	APPL-break-IPFV-3SG

'The woman is cutting woods for Ali.'

ii) As far as the applicative constructions and the relevant interpretational facts presented in (Öztürk 2013, 2016) are concerned, heritage speakers fully pattern with baseline speakers. Given

[13] Salikoko Mufwene (p.c.) pointed out that English has a merger of reflexives and emphatics, and the former is an extension of the latter. In other words, not all constructions involving the reflexive *-self* necessarily bears a reflexive interpretation (e.g., *I myself wrote the letter*). Given that Turkish *kendi* also has emphatic uses, this may explain why speakers of Heritage Laz have difficulties particularly with reflexive constructions.

the absence of divergences between the two groups, I do not repeat and report all the findings here due to space-restrictions. To name one, heritage speakers do not associate and get a possessor reading from high applicativization of unergatives just like the baseline speakers (72):

(72) Comprehension of applicative constructions: Heritage=Baseline

Nana-k	bere-s	u-çaliş-am-s.	(Öztürk 2016: 7, glosses are mine)
mother-ERG	child-DAT	APPL-work-IPFV-3SG	

i. 'The mother is working for the child.' (Benefactive θ-role)

ii. *'The mother of the child is working.' (No Possessor θ-role)

iii) The reintroduction of the implied agents in passives is not possible in Heritage Laz although such an effect would be expected given that by-clauses are licensed in Turkish. Laz lacks by-clauses altogether. The only approximation to these forms is constructed with the postposition *kale* 'side', which is canonically associated with a directional reading. Patterning with baseline speakers, regardless of their proficiency level, heritage speakers completely rejected the presence of an overt implied agent in an adjunct clause as shown in (73). This is already accounted for under the argumental analyses for *i-* because it readily occupies the external argument position. This fact is harder to account for under Lacroix's analysis because it leaves this position open and thus makes it possible to have an overtly expressed subject, albeit in an adjunct clause. All groups of speakers indicated that this sentence is unacceptable under the intended reading. The only available reading associated with this sentence is directional, that is, the metal is bending toward the side of Ömer or the men.

(73) The reintroduction of implied agents in passives: Heritage=Baseline

*Nteli (Ömeri/ koçepe kale) i-ndrik-e(r)-n / i-ndrik-u.

metal.ABS. Ömer/man-PL side PRV-bend-IPFV-3SG/ PRV-bend-PST.3SG

Int: 'The metal is being bent/bended by Ömer/the men.'

3.3.2 Imperfective (aspect) markers

The intriguing allomorphy exhibited by the imperfective markers is dependent on both the argument structural and lexical properties of verbal roots and predicates. While the *r*-set (*-ur* & *-er*) markers imply the absence of an overt external argument ((un)derived unaccusatives), the *m*-set markers (*-am* & *-um*) surface in cases where there is an ergative external argument. Leaving aside the application of valency increasing operations, the distribution of *m*-set markers is regulated via lexical selection, that is, verbal roots select for either *-am* or *-um*. It is argued that this selection process is indeed quite predictable as in the case of intransitives and derived transitives because it is regulated by two peculiar and synchronically inactive semantic features of i) physical affectedness of the undergoer argument and ii) lack of co-temporality between the sub-events of events (whether the initiator of the event has full control over the event after the initiation takes place).

The main aim of my grammatically-oriented tasks was to investigate to what extent heritage Laz speakers show sensitivity to the proposed semantic features. Given heritage speakers' preference for compositionality and (fully specified) equipollent oppositions rather than privative ones (involving underspecification) (Laleko 2010, Polinsky 2018) and assuming the validity of the proposed semantic feature of physical affectedness, it was predicted that heritage speakers might regularize the distribution of the *-um* marker and restrict it to only those verbs whose objects

undergo physical change, that is, eliminate the apparent numerous irregular forms in (40) and associate the *-um* marker with [+affected object] feature as in (74). It was further hypothesized that heritage speakers would show a greater sensitivity to the contextual factors that imply a change in the nature of the physical affectedness, that is, the factors external to the verbal root would override the root-based selectional requirements. As for cases where the distribution of the imperfective markers is regular and predictable, i.e., (derived) unaccusatives and unergatives, it was hypothesized that these cases would be less affected in Heritage Laz given the absence of the root-based nature of the allomorphy that is present in the lexical transitives.

(74) Predictions for the *m*-set markers with transitives in Heritage Laz: [*Ø*-verb-*um/-am*]

a. Equipollent opposition (c.f. (51)): [-affected object] → *-am*, [+affected object] → *-um*

b. Exception #1: No physical change but *-um* (Expected form in the heritage variety: *-am*)

e.g., *ogoru* 'to want', *oçopu* 'to catch', *otoru* 'to carry', *otsadu* 'to look after' etc.

c. Exception #2: Physical change but *-am* (Expected form in the heritage variety: *-um*)

e.g., *ozu* 'to smash', *oçu* 'to sew (a shirt)'

The results indicated that there is immense inter-dialectal and inter-speaker variation in the production and comprehension of the *m*-set markers not only in the heritage group but also and more importantly among baseline speakers, too. As far as baseline production is considered, the most significant fact concerns the occurrence of *-um* with the following set of verbs in Laz varieties except PL, which led the previous analyses to narrow down affectedness to only physical change (in volume/shape/constituency) rather than the more general notion of change of state: *open, close, drag*. As for the cases that constitute an exception to the generalization based on physical

affectedness, i.e., the forms listed in (74c), it turned out that the two exceptions, namely *smash* and *sew*, take *-um* in AL and FL as opposed to PL. These facts are summarized in (75). Lastly, as for the first set of exceptions listed in (74b), the reported facts for PL remained invariant to a great extent[14] across different Laz varieties.

(75) The production of *m*-set markers with transitives across baseline Laz varieties

	PL	AL		FL
		AL-Urban	AL-Villages & Çamlıhemşin	
gontzu 'open'	*-am*	*-um>-am*	*-um*	*-um*
molazdu 'close'	*-am/-um*	*-um>-am*	*-um*	*-um*
ozdu 'drag'	*-am*	*-um*	*-um>-am*	*-um*
ozu 'smash'	*-am*	*-um>-am*	*-um>-am*	*-um*
oç'u 'sew'	*-am*	*-am>-um*	*-um*	*-um*

[14] Only one AL speaker from the urban (town) of Ardeşen produced *ogoru* and *oçopu* with *-am*, rather than *-um*.

As for the comprehension task, the acceptability of the cases where the produced imperfective marker is replaced with the other marker (if *-um* is produced, it is replaced with *-am* and vice versa) is quite higher than expected and reported (c.f. Demirok 2022). Apart from the very high proficient baseline speakers strictly rejecting the use of a different marker other than the ones they produced, the majority of baseline speakers indicated that the alternative forms given to them sound equally fine (crucially with no meaning difference). They further noted that they have heard speakers of other Laz dialects produce such forms, although they were not able to pinpoint or identify which particular variety. Regarding the test items where the contextual factors are manipulated, the forced changes in the affectedness feature of the undergoer argument does not lead to changes in the choice of the imperfective marker, neither in production nor in comprehension. In line with Demirok (2022), it can be concluded that the proposed feature of physical affectedness does not synchronically play a role in the selection of these markers.

The results from the baseline group crucially indicate that the distribution of *-um* and *-am* is subject to inter-dialectal and speaker variation. Despite the observed variation, the following generalizations can be made: i) PL appears to stand out with respect to the occurrence of *-am* as opposed to *-um* with a larger set of verbs (75). ii) AL speakers who either grew up in lower altitude villages close to the present-day town center of Ardeşen and/or currently reside therein exhibited the highest amount of variation in their production in comparison those who live in higher altitude villages of Ardeşen and Çamlıhemşin. iii) The variation in AL notwithstanding, the occurrence of the *-um* marker is higher than *-am*, with the only exception of the use of *-am* with the verb *oç'u* 'to sew' in the urban areas of Ardeşen. vi) The occurrence of *-am* seems to increase as the speakers get closer to the Pazar district (see Figure 2 in Chapter 2 for the geographical locations), and the increased use of the *-am* marker might be conditioned by interaction with PL speakers.

Given the ongoing nature of the change in the baseline grammar, the reported facts for PL in the literature cannot be directly extended into AL and FL, rendering the predictions assumed in the present dissertation for the heritage variety (formulated before the fieldwork) void to a great extent. As opposed to PL, the higher and consistent use of *-um* with the verbs listed in (75) and (74b) in other Laz varieties demonstrates that this marker is more consistently used with those verbs that denote a change of state, rather than being only restricted to physical change as previously argued for PL (Öztürk & Taylan 2014, 2017; Demirok 2022). Note that although there does not necessarily occur a change in the physical shape of an object like a door after being opened or closed (and dragged), the relevant Laz verbs select (more) for *-um* in AL and FL, unlike in PL. There occurs a change in the state of the relevant object (*open* vs. *close*), though and this is grammatically marked with *-um* in the imperfective. In addition, under the '*-um* marking change of state' argument, the proposed exceptional nature of the set of verbs listed in (74b & 74c) does not hold as these verbs such as *oçopu* 'to catch' or *ozu* 'to smash' all encode a certain type of change in state, be it in physical change or change in location.

As for the remaining intriguing event of washing used by Öztürk and Taylan to delimit the notion of affectedness to only physical change (*laundry-washing* vs. *plate/dish-washing*) (36), the AL facts are in line with PL. While the physical change entailing event of laundry washing selects for *-um,* dish washing can additionally select for *-am.* At first glance, this seems to pose challenges to the '*-um* as a change of state marker' argument because both events on the surface seem to be associated with a change of state. However, a closer examination of the verbal roots reveals that the root *oçxu* involved in dishwashing, does not translate directly as *washing* or *cleaning* but denotes *splashing water* (Demirok & Öztürk 2021), a fact that was also reported to me by the AL language consultants. Given this, this verb seems not necessarily to be classified as a change of

state verb, unlike laundry-washing (*onaxu*) and therefore it becomes clear why the former verb does not necessarily select for *-um* in AL and even in PL. Furthermore, as far as this verb is concerned, the variation exhibited in the AL variety might be attributed to the difference in the interpretation assigned to this verb by different speakers, that is, while those who interpret this verb as referring to a washing/cleaning event might choose *-um*, the (alternative) interpretation of splashing water is associated with *-am*. Nonetheless, both verbs consistently select for *-um* in FL, lending further support for the change of state encoding nature of *-um*.

Another piece of evidence comes from the fact that the dialectal variation decreases with those verbs that clearly denote a change of state taking place in the object argument. Notice the consistent use of *-um* with the illustrative set of verbs in (76), which is based on the data from my fieldwork tasks along with in Öztürk's research project (2012)[15].

(76) *-um* taking (identical) verbal roots across all Laz varieties

a. *otaxu* 'break', *oç'irdu* 'tear apart', *ozlaphu* 'smash', *ok'vatu* 'cut', *olağunu* 'chew' etc.

b. *onç'aru* 'write', *ok'oçu* 'burn, roast', *oşolu* 'knead (dough)', *oşu* 'drink', *oxvat'u* 'nibble' etc.

c. *oxesapu* 'calculate', *ontzonu* 'measure', *oşinaxu* ' show respect', *otsadu* 'look after/heal' etc.

d. *otoru* 'carry', *oşk'u* 'send (animate object)', *odgalu* 'place', *odvalu* 'put', etc.

Note that the affectedness as physical change analysis proposed for PL can account for the occurrence of *-um* with canonical change of state verbs as in (76a) and verbs of (incremental) consumption/creation as in (76b) because the objects of the relevant verbs undergo an observable physical change. However, this analysis faces (more) challenges in accounting for the selection of

[15] I would like to express my gratitude to Prof. Balkız Öztürk Başaran for kindly and generously sharing the data collected within the scope of this research project with me.

-um with those verbs which proceed in an incremental fashion but do not lead to a physical change as in (76c) and those verbs which lead to a change in the location of the object arguments as in (76d). These examples, which constitute an exception to the 'affectedness as physical change' analysis, can be better captured under the 'affectedness as change of state' as they could be more easily conceptualized to involve a change in state in general or in location.

In addition to better accounting for the dialectal variation and distribution of the *m*-set markers with transitives in Laz, the 'affectedness as change of state' analysis seems to further provide an explanation for the surprising occurrence of *-am* in PL with certain verbs listed in (75). Consider the pairs of sentences in (77), which I elicited from the baseline speakers after completing the grammatically-oriented tasks with the baseline group of all Laz varieties with the purpose of understanding to what extent the 'affectedness as change of state' holds in PL.

The two verbs in (77) are (caused) motion verbs where the object argument appears to be associated with change in location as a result of the initiator's efforts. Although these verbs were treated alike before, a closer examination of these verbs indicates that for the majority of the PL baseline speakers, while only *otoru* 'to carry' necessarily leads to a change of location, *ozdu* 'drag' does not necessarily do so, as shown by the discrepancy in the (degrees of) unacceptability in (78).

(77) a. Bere-k xemençe zd-am-s. b. Bere-k xemençe tor-um-s.
child-ERG bag.ABS pull-IPFV-3SG child-ERG bag.ABS carry-IPFV-3SG
'The child {is pulling/pulls} (the) bags.' 'The child {is carrying/carries} (the) bags.'

(78) a. Bere-k xemençe zd-am-s[16], and ?it is not somewhere else. (Baseline: PL)

b. Bere-k xemençe tor-um-s, and #it is not somewhere else. (on the back of the person)

As for the event of opening, while *gontzu* 'to open' does not lead to a change of state (at least for some of the baseline speakers of PL), the cancellation of the relevant change of state in the continuation after the verb *gonç'amu* 'open wide' across-the-board leads to unacceptability for all baseline speakers of Laz, as shown in (79) and (80).

(79) a. Bere-k nekna gontz-am-s. b. Bere-k nekna gonç'am-um-s.

child-ERG door.ABS open-IPFV-3SG child-ERG door.ABS open-IPFV-3SG

'The child{is opening/opens}the door.' 'The child{is opening/opens}the door wide.'

(80) a. Bere-k nekna gontz-am-s,?but the door is not open. (Baseline: PL)

b. Bere-k nekna gonç'am-um-s, #but the door is not open.

The baseline speakers of other Laz varieties found it harder (or impossible) to cancel all the relevant implications in comparison to baseline PL speakers. Lastly, those speakers of AL, who patterned with PL speakers and marked these forms with *-am*, patterned with the non-PL speakers in their judgments on the cancellation of the relevant change of states. This shows that the occurrence of *-am* attested in certain AL-urban varieties has come as a result of (morpho-phonological) spreading of the relevant marker, without necessarily affecting the meanings associated with them.

[16] For all the examples the use of the perfective (marked via past tense) form of the relevant predicates does not lead to a change in the judgments reported here.

A further interesting fact concerns the verb *ozdu* 'to drag', which selects for *-am* in PL, unlike in other varieties of Laz. In line with the findings in (77)-(80), the further specification of the (result of the) event via a spatial prefix led a group of baseline PL speakers to mark this verb with *-um* (81). (81a) shows that while baseline PL speakers tend to use *-um* when the otherwise *-am*-taking verb *ozdu* 'drag' bears a spatial prefix that specifies the nature/result of the event. (81b) shows that the verb 'close' indeed could be decomposed into two parts in PL, consisting of a spatial prefix (*mola-*) along with the verb 'drag', i.e., dragging the door in a certain direction yields the reading of closing. In such cases certain baseline PL speakers preferred to use *-um*. A related verb that clearly bears a change of state reading, namely *cenkolu* 'to lock' is only compatible with *-um*, as would be expected under the 'affectedness as change of state' analysis.

(81) a. Geyiği-k bere e-zd-{um/am}-s.
deer-ERG child.ABS SP-drag-IPFV-3SG
'The deer is lifting (lit. drag upwards) the boy.'

b. Xordza-k nekna mola-zd-{um/am}-s/ cenkol-um-s.
woman-ERG door.ABS SP-drag-IPFV-3SG/lock-IPFV-3SG
'The woman is closing (lit. drag inwards to oneself, pull the door close/locks the door.'

The cancellation facts only hold for a quite limited number of verbs in PL and ideally all verbs need to be examined in this respect. Leaving this big scale fieldwork project for the future, for the purposes of the present dissertation, I tentatively argue that i) the restricted definition of physical affectedness proposed for PL (Öztürk & Taylan 2014, 2017; Demirok 2022) falls short of accounting for the dialectal variation in Laz, ii) affectedness instead needs to be defined in

relation to the notion of change of state, and iii) *-um* marks those transitive verbs which lexicalize their undergoers to be affected, i.e., undergo a change of state/location in Laz (except for or at least to some extent in PL).

The association of *-um* with affected object verbs involving change-of-state has certain implications for the distribution of *-am* in Laz varieties other than PL. Although this issue requires an in-depth investigation, based on my fieldwork data and existent data (Öztürk 2012), it seems that *-am* occurs with transitive verbs that are not (necessarily) associated with change of state along with unergatives as illustrated in (82)[17].

(82) a. Oxorca-k kuçxe me-dg-a(m)-y.
woman-ERG foot.ABS SP-put-IPFV-3SG
'The woman is taking/putting a step.' (Baseline: AL)

b. Oxorca-k t'art'al-a(y).
woman-ERG nag-IPFV-3SG
'The woman is talking too much/nagging' (Baseline: AL)

c. Oxorca-k i-çaliş-a(m)-y.
woman-ERG nag-IPFV-3SG
'The woman is working.' (Baseline: AL)

[17] The relevant facts in (82) based on AL examples hold for FL and PL (see Demirok 2022 for PL examples).

The occurrence of *-am* with unergatives is expected, given that these verbs either lack an argument altogether as shown in (82b) or obligatorily take *i-* as in (82c), which only saturates the argument position (and triggers ergative marking on the external argument) but crucially cannot be associated with change-of-state due to its semantically vacuous nature.

As for the set of verbs which take *-am* along with the pre-root vowel *o-* in PL and occur in the template [*o*-verb-*am*], e.g., *topple down, throw, send, spill, roll*, these verbs were argued to form a separate class marking lack of co-temporality (Demirok 2022). These verbs did not constitute a part of my grammatically-oriented tasks, and thus in the absence of sufficient data, I refrain from making robust claims. Nevertheless, the later examination of the some of the relevant forms in Laz varieties other than PL based on the existent data (Öztürk 2012), indicated that the relevant PL facts hold to a great extent for AL and FL, with the only exception that the additional occurrence of *-um* with these verbs were also reported for AL. Under the present analysis, since these verbs do not take *-um* marker (except for the cases reported in AL), they would be (ideally) predicted not to lexicalize their objects to be affected, i.e., not involving a change of state. At this point, I tentatively consider the possibility that these verbs do either not form a separate class of verbs on their own or even if they do, the available cases where they are associated with change of state would be considered as exceptions to the '*-um* marking change of state' analysis.

The argument for the former is based on the similarities between the relevant forms and the canonical causativization. Both constructions involve the consistent use of the pre-root vowel *o-* and the imperfective marker *-am* as in (83) and (84), with the only difference being the absence of the suffixal exponent of causativization in the proposed class of transitive verbs:

(83) Bere-k topi o-toç-am-s. (Template: [*o*-verb-*am*])

child-ERG ball.ABS PRV-throw-IPFV-3SG

'The child is throwing the ball.' (Non-co-temporal trans.-Demirok 2022:99, glosses are mine)

(84) a. Bere-k i-bgar-s.

child-ERG PRV-cry-3SG

'The child is crying.'

b. Nana-k bere o-bgar-in-am-s. (Template: [*o*-verb-*in/ap-am*])

mother-ERG child.ABS CAUS-cry-CAUS$_{INTR}$-IRFV-3SG

'The mother is making the child cry.'

Nevertheless, a closer examination of the available data also indicates that some of the reported cases feature this marker as shown in (85).

(85) a. Amedi-k xami o-k'apin-am-s. (c.f. ok'apu=jump/run)

Ahmet-ERG knife.ABS PRV-let go-IPFV-3SG

'Ahmet is dropping the knife.' (Demirok 2022: 99-glosses are mine)

b. Bere-k topi o-rgin-am-s. (c.f. i-rg-en: Demirok 2013: 75)

child-ERG ball.ABS PRV-roll-IPFV-3SG

'The child is rolling the ball.' (Demirok 2022: 99-glosses are mine)

Note that the forms listed in (85) feature the causative marker in (84b). The evidence in the first case comes from the availability of the verbal root to the exclusion of *-in*, namely *ok'apu* 'to jump/run', which denotes a quick movement in a vertical fashion (as in the case of jumping) in

parallel to the motion the object (knife) would undergo in the relevant example in (85a). As for the second case, *-in* taken as part of the verbal root in the literature as in (85b) could be dropped when this verb occurs in a derived unaccusative construction translating as 'the ball is rolling (lit. the ball has been set in a (circular) motion)', i.e., *i-rg-en*. These facts suggest that the relevant forms, and possibly other verbs belonging to the same class, could have (historically) been derived via causativization, and *-in* could have been reanalyzed as part of the verbal roots over time. Needless to say, this argument would require checking all the relevant cases in all Laz varieties along with their historical development over time, if possible. Leaving this to future studies, since the argument that these verbs constitute a separate class on their own (marking lack of co-temporality) overlooks the similarities between these constructions and regular cases of causativization, I simply contend that these verbs might not constitute a separate class.

As for the nature of the proposed class of verbs that denote change of state, almost all the reported cases involve spatial displacement, where the object argument can be intuitively conceived of as involving change of location, under a looser interpretation of 'change of state'. Given this, these forms would be expected to take *-um* under the analysis proposed here, which is indeed the case for some speakers of AL as reported by Öztürk (2012). As for speakers of other Laz varieties, the extent to which these forms involve change of state needs to be checked, i.e., whether a potential change entailed in the verb can be cancelled or not. In any case, the relevant forms are as exceptions to the 'change-of-state'-based analysis.

One advantage of eliminating this class of verbs in this way is that the proposed classification system relies on the general and commonly accepted notion of change of state (Levin 1993, Bhatt & Pancheva 2005, Rothstein 2004, Ramchand 2008, Rappaport Hovav & Levin 2010), rather than the peculiar features of lack of co-temporality along with 'affectedness as physical

change'. Citing Rappaport Hovav (2008:21), Demirok (2022: 98) acknowledges that although (non-)co-temporality is part of the lexicalized meanings of verbs, it 'does not correspond to any commonly discussed aspectual distinction'. Given this, even if this is possible, a system that does not directly rely on the co-temporality feature but on change of state would be theoretically more compelling. Moreover, this class of verbs are the only ones with a designated pre-root vowel, namely *o*-, in the class of transitives, while the remaining ones lack a pre-root vowel as represented in (49). Therefore, treating them as exceptions (or cases involving causativization, possibly with a null suffixal marker) would yield a more uniform account of transitives in Laz.

One last advantage of the analysis proposed here concerns the elimination of the large number of exceptional verbs that do not involve a physically affected object but take *-um* instead (see (40) for this list). Given the large inventory of the verbal roots available in Laz (Bucaklişi et al. 2007), any classification system proposed for Laz verbs would be likely to run into exceptional cases, as already remarked by Demirok (2022: 105). Under the present analysis, too, those non-co-temporal verbs would constitute exceptions to the bipartite classification system proposed here. At this point, the choice might be done based on the quantity of exceptions identified by different analyses. The analysis that yields fewer exceptions would be preferred over the other as its generalizability or power of prediction would be higher. In the absence of sufficient data on the distribution of the non-co-temporal verb class along with all transitive verbal roots in all Laz varieties, it is hard to choose one analysis over the other, though. For now, I simply argue that the relevant forms could be considered as exceptions.

To recap, due to the absence of sufficient data, I leave the exact role of the proposed co-temporality feature to future studies and only focus on the transitive verbs which do not take any pre-root vowel and occur in the template [*Ø*-verb-*um*/-*am*], which were the main focus of my

fieldwork tasks. I conclude that the distribution of *m*-set markers relies on the presence or absence of an affected object, where affectedness is defined relative to the notion of change of state (Beavers 2011, 2013, Lundquist & Ramchand 2012, see Levin 2019 for an overview): *-um* marks those verbs whose objects are lexicalized as being affected, and *-am* marks the remaining cases, i.e., non-affected transitives. Since *-am* also marks unergatives, it exhibits a wider distribution, rendering it as the default form. Lastly, I refer(ed) to those verbs that take the *-um* marker as Type 1 and those taking the *-am* marker as Type 2. The relevant arguments are summarized in (86).

(86) Let x be a transitive verb that does not take a pre-root vowel. If x lexicalizes a change of state holding of its object argument, its object is affected.

a. Insert *-um* after x in the imperfective if it is object is affected.

→ *-um*: [+affected object] > x is of Type 1 and occurs in Template: [*Ø*-verb-*um*]

b. Otherwise, i.e., if not affected (or affectedness is not relevant), insert *-am*.

→*-am*: [-affected object] > x is of Type 2 and occurs in Template: [*Ø*-verb-*am*]

With this we are done with the findings on the baseline Laz varieties. In the remainder, I present the findings from the heritage group. One significant thing to note is the scarcity of heritage speakers of PL (especially mid- and low-proficiency speakers). Recall from Chapter 2 that i) being the westmost district where Laz is spoken (surrounded by speakers of Turkish on the west hand side (see the map in Figure (2)), ii) having the highest population density (Chapter 2) and thanks to having the longest history of being a trade and administration center, PL speakers have been the most affected by the language shift. Consequently, almost all heritage speakers (below the age of 30) turned out to have only passive knowledge and thus they could not complete my fieldwork

tasks. The only two Heritage PL speakers turned out to be high-proficient, growing up in the higher altitude villages, and their judgments and production were in parallel with baseline speakers to a great extent, with certain crucial differences especially in comprehension. The unexpected scarcity of Heritage PL speakers prevented me from putting my grammatically-oriented tasks into application to test the validity of the 'affectedness as physical change' feature: Since PL turned out to differ from AL and FL and thus stand out with respect to the distribution of *m*-set markers, the relevant predictions about the role of physical change affectedness and how the Heritage PL would inform us about this issue have unfortunately remained unknown. However, the findings from the heritage speakers of other Laz varieties along with the two high proficiency PL heritage speakers turned out to be quite interesting.

The reduced lexical inventory of heritage speakers (Chapter 4, 6) prevented them from fully completing the production task, given the verbal root-dependent nature of the relevant tasks at hand. Nevertheless, the results from the production task indicated that the amount of variation exhibited in the heritage group is higher than the baseline group. While almost all of the high-proficiency speakers patterned with baseline speakers in their choice of the imperfective markers with the relevant test items in (75) and (76), the lower proficiency speakers showed a greater use of *-am*, with a higher level attested in the low-proficient group. The variation was extensive and the verbs which were produced with *-am* by these two groups of speakers did not form a semantic or natural class of any sort. Despite the variation, given that the majority of the relevant targeted verbal roots involve change of state (in shape and/or location), the increased use of *-am* with these verbs was significant in showing that heritage speakers do not show sensitivity to the nature of the affectedness encoded in the lexical roots and thus root dependency does not play an active role in Heritage Laz at least as much as it does in baseline Laz.

The results of the comprehension task[18] indicated that the increased use of *-am* in the heritage group was not haphazard or random, but indeed relies on a systematic difference in the comprehension of the *m*-set markers. In comparison to the baseline group, the acceptability of the illicit substitutions of one marker with the other was significantly higher in the heritage group, crucially involving the high-proficiency speakers. At first glance, this finding might be attributed to the commonly reported *yes-bias* observed mostly in L2 learners and heritage speakers, who tend to correctly accept grammatical structures but to avoid rejecting ungrammatical ones due to uncertainty (see Polinsky 2018: 96). However, a closer investigation revealed that it relies on a systematic association of a distinct meaning with each of the two *m*-set markers. When asked if there are any clear meaning differences between the occurrence of the two markers with the same verbal root, lower proficiency-heritage speakers indicated that *-am* implies that the event is understood to take place quite more often and generally, while the use of *-um* with the transitive verb indicates that the relevant event is taking place at the moment of speech.

High-proficiency speakers (involving Heritage PL speakers), who mostly patterned with the baseline speakers in their production, did not initially report the relevant meaning difference. However, upon being asked to what extent acceptable the relevant differentiation holds (after the completion of the task), the acceptability was higher in the (high-proficiency) heritage speakers in comparison to the baseline speakers. The latter group did not indicate any clear meaning difference, and they totally rejected the type of differentiation attested in the heritage variety. For baseline speakers, both markers can indicate both a habitual and ongoing (continuous) meaning,

[18] The increased use of the *-am* marker did also not coincide with and thus cannot be attributed to the manipulation of the contextual or argumental factors. The relevant test items did not yield any significant generalization, further showing that heritage speakers do not show sensitivity to the targeted semantic features or contextual factors, as also reported for the synchronic grammar of PL by Demirok (2022).

with only one particular marker being selected depending on the verbal root, i.e., being of Type 1 or Type 2. Since the relevant aspectual differentiation in the heritage variety becomes clearer with time adverbials, I also checked this issue using time adverbials. The relevant facts are exemplified and summarized in (87) and (88):

(87) Heritage Laz: Comprehension (all groups), Production (Low-proficiency>Mid-proficiency)

a. Ma (huy) xemençe p-tor-um. Progressive: *-um*

I.ERG now bag.ABS 1SBJ-carry-IPFV

'I am carrying (the/a) bag(s) (right now).'

b. Ma (panda) xemençe p-tor-am. Habitual: *-am*

I always bag.ABS 1SBJ-carry-IPFV

'I always carry (the/a) bag(s).'

(88) Baseline Laz: Comprehension & Production (excluding the previously noted variation)

a. Ma (huy/panda) xemençe p-tor-um. (Type 1) Progressive & Habitual: *-um*

I now/always bag.ABS 1SBJ-carry-IPFV

'I {am carrying/carry} (the/a) bag(s) {right now/all the time}.'

b. Ma (huy/panda) xemençe b-zd-am. (Type 2) Progressive & Habitual: *-am*

I now/always bag.ABS 1SBJ-carry-IPFV

'I {am dragging/drag} (the/a) bag(s) {right now/all the time}.'

A related significant difference between the two groups concerns the acceptability and production of *-um* with valency increasing operations. While baseline speakers strictly rejected *-um* with causativization, (especially lower proficiency) heritage speakers were more accepting of

these cases as in (89). Upon being asked if the relevant meaning difference between the two *m*-set markers still holds for these (derived) transitives or not, the majority of heritage speakers answered positively, with the acceptance level being the highest in the low-proficiency group:

(89) Heritage group: Comprehension (excluding high-prof.) & Production (Low-prof)

a. Tzitzila-k mturi o-ğur-in-um-s. [Baseline: Ungrammatical]
snake-ERG mouse.ABS CAUS-die-CAUS$_{INTR}$-IPFV-3SG
'The snake is killing (the/a) rat(s) right now.' (c.f. habitual reading with *-am*)

b. Ma bere-s xemençe v-o-tor-ap-um[19]. [Baseline: Ungrammatical]
I child-DAT bag.ABS 1SBJ-CAUS-carry-CAUS$_{TR}$-IPFV
'I am making the child carry (the/a) bag(s) right now.' (c.f. habitual reading with *-am*)

The crucial fact regarding the availability of the differentiated aspectual readings concerned the unacceptability of the use of *m*-set markers with verbs that have a single argument. As opposed to the case in (derived) transitives, all groups of speakers (even low-proficiency speakers) strictly rejected the use of *m*-set markers under the intended readings with unergatives and (underived) unaccusatives as shown in (90a) and (90b) respectively. Note that the desired and

[19] Some heritage speakers indicated that the use of *-um* with causatives of transitives additionally bear an experiential reading, where the agent is interpreted to have experienced/carried out the event denoted in the causativized verb, i.e., *I have made the child carry the bag before*. They associate these structures with the experiential perfect constructions available in baseline Laz (i). The relevant constructions do not bear a causativization reading despite the obligatory presence of the transitive causative marker *-ap* (c.f. *-in*). Notice the difference in the pre-root vowel and the imperfective marker between the experiential perfect constructions and the test cases in (89). See Öztürk (2013, 2016) for a higher applicative analysis for the relevant constructions in PL.

(i) Ma zuğa-s m-i-nçir-ap-u(r)-n[19].
I sea-DAT 1OBJ-APPL-go-CAUS$_{TR}$-IPFV-3SG
'I have swum in the sea before.'

attested forms in (90a) do not only bear a habitual reading but crucially also bear a progressive reading as in the baseline variety:

(90) *m*-set markers with intransitives: Heritage & Baseline-Production & Comprehension

a. *Bere-k huy i-çaliş-um-s/barbal-um-s. (Correct forms: i-çaliş-am-s, barbal-am-s)
child-ERG now PRV-work-IPFV-3SG/ PRV-nag-IPFV-3SG
Int: 'The boy is working/nagging right now.' [*-*am* with only habitual reading]

b. *Bere huy ğur-um-s / ul-um-s. (Correct forms: ğur-u(r)-, ul-u(r)-n)
child.ABS now die-IPFV-3SG / move-IPFV-3SG
Int: 'The child is coming.'

Certain heritage speakers of FL produced forms where they regularized and reanalyzed certain unaccusative verbs, especially motion verbs, which normally take *-ur* in the baseline variety, as unergatives and mark them with the expected *-am* marker as shown in (91):

(91) Bere-k huy ormanluği-şa i-(u)l-am-s. (Correct form: ul-u(r)-n)
child-ERG now forest-ALL PRV-move-IPFV-3SG
'The child {is going/goes} to the forest right now.' (LOW: FL)

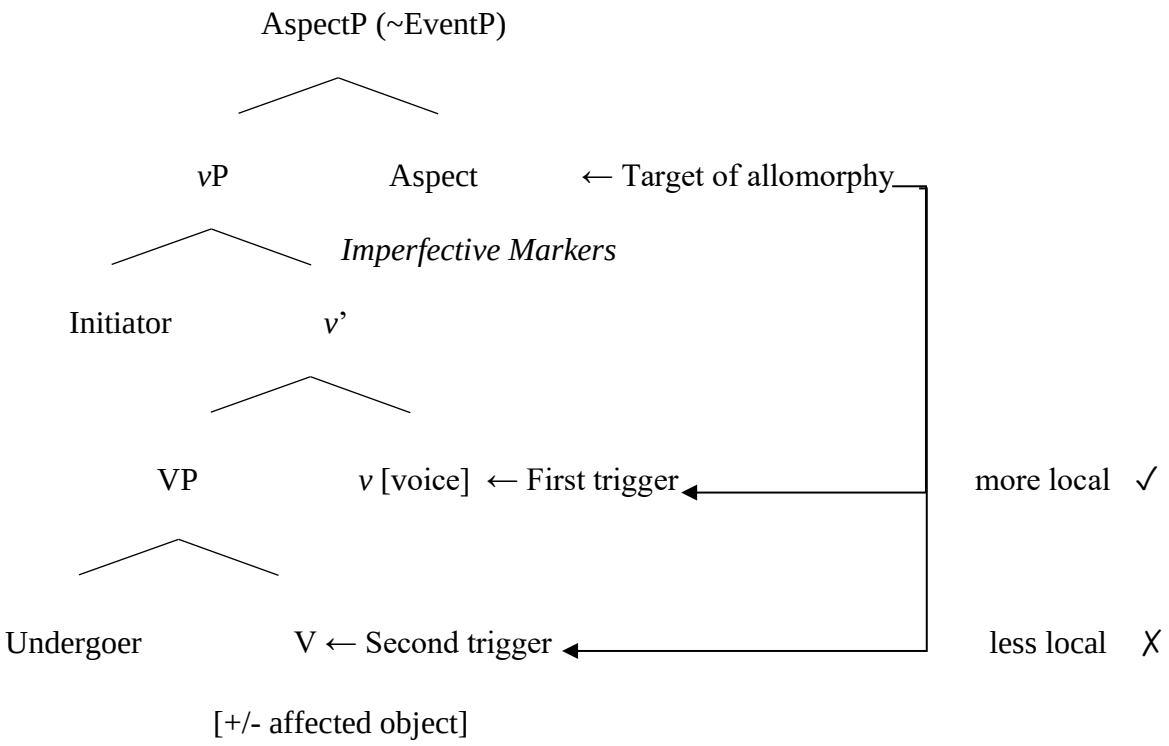
This is expected given the resultant forms are in line with how unergatives are marked in Laz, i.e., template [*i*-verb-*am*] and given heritage speakers' tendency to overregularize grammatical distinctions available in their heritage language (Polinsky 2018: 40). Crucially, none of the relevant innovations was attested or compatible with *-um.* As for the remaining cases of

single argument verbs, heritage speakers patterned well with the baseline speakers in their comprehension of the imperfective markers. Both of the two *r*-set markers (*-er* & *-ur*) encode both progressivity and habituality. These facts indicate that the differentiated aspectual system was crucially only restricted to transitives but has not extended into the domain of intransitives.

The restrictedness of the finer grained aspectual system to only transitive constructions in Heritage Laz demonstrates that heritage speakers have retained the sensitivity of these markers to argument structural properties of verbal roots. The increased and consistent use of *m*-set markers with the same verbal roots in the heritage variety with clear meaning differences shows that as opposed to the sensitivity to the voice specifications, the root-dependent sensitivity of the relevant markers (to the lexical meanings of verbs) has been neutralized. This holds regardless of whichever analysis needs to be adopted to capture the distribution of the relevant markers in the baseline variety, be it dependent on change of state or the affectedness as physical change.

Structurally speaking, the differential maintenance of the sensitivity to the conditioning factors of allomorphy indicates that while heritage speakers have maintained the structurally more local relation holding between the trigger and target of allomorphy, they have lost the sensitivity that holds with the less local trigger. Assuming that the imperfective aspect markers occupy the Aspect head position in the structure above the *v*P, these facts are represented as in (92).

(92) Maintenance of more local relations in the aspectual system of Heritage Laz



Note that the lexical V(erb) head, which triggers the insertion of *-um* (in baseline Laz) when it bears the [affected object] feature, is further away from the target of allomorphy (Aspect Head) in comparison to the little *v* head. Little *v* is what bears the voice specification and triggers the insertion of the *m*-set markers with transitives and *r*-set markers in unaccusative constructions.

The emergent aspectual system as a result of the erosion of the less local dependency holding between the lexical features of verbal roots has resulted in a system that is more transparent with regards to form-meaning correspondence. As a result of the further specification and differentiation of the aspectual meanings, each of the two *m*-set markers (with transitives) is associated with a distinct sense of imperfectivity, i.e., *-um* encodes progressivity, and *-am*

habituality. This one-to-one mapping stands in contrast with the multiple senses associated with the relevant markers in the baseline variety. Both baseline *m*-set markers can encode both progressivity and habituality and the differentiation is made (if necessary) depending on the contextual or sentential factors such as the availability of time adverbials. The discrepancy between the two Laz varieties with respect to the mapping relations are summarized in (93):

(93) Distribution of *m*-set markers with transitives in (Heritage) Laz

	Heritage Laz	Baseline Laz
-um	Imperfective (Progressive)	Imperfective (Progressive & Habitual) (Differentiation based on verbal root)
-am	Imperfective (Habitual)	

The observed specification of imperfectivity in Heritage Laz seems only to be restricted to transitives but have not (yet) extended into intransitives in any of the speaker groups, involving even the low-proficiency heritage speakers. Precisely, as far as the meanings associated with the *r*-set markers are concerned, the relevant markers give rise not to a subset but to all of the meanings available in the baseline variety. Production-wise, at least as far as the limited set of verbs investigated in the grammatically-oriented tasks are concerned, heritage speakers patterned with baseline speakers in their choices and comprehension of the *-er*, *-ur*[20] and *-am* markers, with the only exception of the decreasing use of the first marker in production due the erosion of passivization. The relevant facts regarding are summarized in (94):

[20] Heritage speakers overmarked some of these forms with the pre-root vowel *i-* as was shown in (64). Nevertheless, their choice of the imperfective markers was in line with those of the baseline speakers to a great extent.

(94) Distribution of imperfective markers with intransitives in (Heritage) Laz

	Heritage Laz	Baseline Laz
-ur	Imperfective (Progressive & Habitual)	
-er (subject to erosion in production)		
-am (unergatives)		

To recap, the aspectual system of Laz has been reanalyzed by heritage speakers with the structurally more local voice-dependent sensitivity of imperfective markers being maintained (as evidenced by the relatively better maintenance of the *r*-set markers and the consistent use of *-um* with only transitives) but the structurally less local root-sensitivity being eroded (as evidenced by the use and acceptance of the *m*-set markers with different transitives). With the better-preserved sensitivity to valency-related properties, the resultant aspectual system makes a semantic distinction between only the *m*-set markers when they mark transitives and crucially the relevant distinction is regulated by the principle of transparency operative in heritage grammars cross-linguistically (Polinsky 2018: 183).

The fact that long-distance relations between two grammatical elements pose challenges to heritage speakers have been previously and abundantly reported in relation to their difficulties with (person, number and/or gender) agreement between the verb and its arguments (see Polinsky 2018: 204-215) along with(in) the nominal domain between the head noun and its modifiers and specifiers (Montrul et al. 2012, Benmamoun et al. 2013 and references therein). Likewise, the reported facts regarding how binding relations are established in heritage languages, i.e., the resolution of the referents of anaphoric elements in a sentence, show that heritage speakers prefer

more local resolutions over long-distance ones (Heritage Korean; Kim et al. 2009). Being in line with these findings, the maintenance of more local relations and erosion of the less local ones as observed here provides further evidence for the preference of local relations in heritage grammars. Heritage Laz facts further demonstrate the effects of locality on the reduction of allomorphy, which to the best of my knowledge has not been previously reported. Therefore, the facts are also significant in showing a novel aspect of the organization of heritage languages.

As for the domain of the ongoing aspectual change, it is mostly operative at the comprehension level of all groups of heritage speakers regardless of their proficiency level. Production-wise, we see the effects of proficiency, though. The differentiated use of the *m*-set markers is attested in a negatively corelated (albeit not statistically) with linguistic proficiency, with the highest occurrence attested in the low-proficiency speakers and zero production in the high-proficiency heritage speakers. For baseline speakers, the relevant aspectual differentiation does not exist at all, i.e., neither in production nor in comprehension. Nevertheless, the fact that the relevant two markers can optionally mark certain transitive verbs in the production of especially AL(-urban) speakers (see (75)) along with the tolerance of the hitherto illicit substitution of one marker for the other in comprehension suggests that the loss of sensitivity to the semantic features is rooted in the baseline variety. Given this, the emergent system in Heritage Laz might have come about as a result of heritage speakers amplifying this incipient change. Such an amplification process has also been previously reported for other grammatical phenomena such as differential object marking in Spanish (Montrul & Sánchez-Walker 2013), the genitive of negation in Russian (Polinsky 2000, 2006), and plural formation in Egyptian and Palestinian Arabic (Benmammoun et al. 2014).

Another source of the relevant change could be transfer effects from Turkish, which marks the difference between progressive and habitual imperfective aspect with two different grammatical markers as shown (95). While the aspectual marker *-Iyor* is used to encode progressivity (95a), the aorist marker is used to indicate habituality (95b). Therefore, when a verb such as weigh is used with *-Iyor*, it is analogous to the use of *-um* and the use of the same verb with the aorist marker is similar to the *-am* marker in Heritage Laz as shown in (96). Details aside[21], since Turkish makes a similar grammatical distinction, it could also be the case that Heritage Laz speakers have transferred this into Laz. It is also likely that transfer effects and incipient changes in the baseline variety in combination might have given rise to the relevant change as it is often that linguistic change relies on multiple causes. Transfer effects from dominant languages of heritage speakers are ample, especially reported for word order changes (Polinsky 2018: 286-288).

(95) Turkish

a. Ben çay tart-ıyor-um.
I.NOM tea weigh-PROG-1SG
'I am weighing tea (right now)'.

b. Ben çay tart-ar-ım.
I.NOM tea weigh-AOR-1SG
'I weigh tea (generally, always).'

(96) Heritage Laz

a. Ma nçai p-tzon-um.
I.ERG tea.ABS 1SG-weigh-IPFV
'I am weighing tea (right now).'

b. Ma nçai p-tzon-am.
I.ERG tea.ABS 1SG-weigh-IPFV
'I weigh tea (generally, always).'

Lastly, the intricate system of allomorphy in the baseline variety, which is dependent on two different triggers, does not pose challenges to heritage speakers as it has been reanalyzed in a

[21] *-Iyor* in (95a) could also be extended to habitual event while aorist cannot be used to mark progressivity in Turkish, though. See Yavaş (1979), Nakipoğlu-Demiralp (2002), Göksel & Kerslake (2005) for how imperfectivity is encoded.

way that has become systematic and consistent. A piece of evidence for this comes from the fact that Heritage Laz speakers did not avoid using imperfective markers in their free narratives. The production level of imperfective markers marking continuous tense is almost the same as the frequency of the use of perfective aspect via past tense markers in both groups of speakers, leaving slight differences in the mean scores aside (see § 6 in Chapter 4). Nevertheless, it does not mean that all heritage speakers have fully mastered or reanalyzed the aspectual system in the same way and to the same extent given that their free narratives also involve deviant forms (Chapter 6). To what extent the attested deviant forms are indicative of their internal grammatical system or simply 'production/speech errors' requires an in-depth study. Therefore, I leave this issue to future studies.

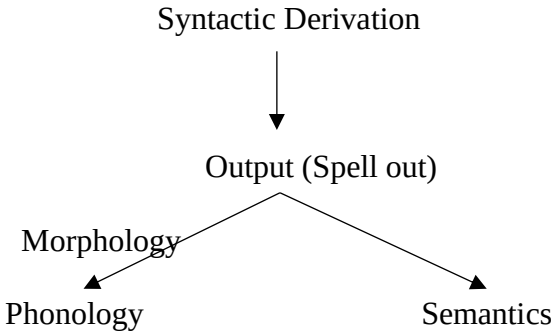
4. Spelling out the imperfective aspect markers

The main point of divergence between heritage and baseline Laz speakers lies in the aspectual domain while the two groups pattern alike in the placement of the pre-root vowels in the verbal complex to a great extent. Therefore, I propose in this section a theoretical account for the (morpho-phonological) realization of the imperfective aspect markers in (Heritage) Laz. Adopting the framework of Distributed Morphology (DM for short), I show how these markers get to be pronounced in the desired and attested way in the Laz language based on their semantic features along with the positions they occupy in the underlying syntactic structure.

In the (late-) realizational framework of DM (Halle and Marantz 1993, 1994, Noyer 1997, Embick & Noyer 2001, Embick 2010, Arregi & Nevins 2012)[22], the assumed general architecture of the grammar and the primary hypotheses regarding the interaction between different components of grammar are as summarized as in (97) and (98) respectively (Bobaljik 2017):

[22] See Bobaljik (2017) for an overview of the Distributed Morphology.

(97) The General Architecture of Grammar in DM



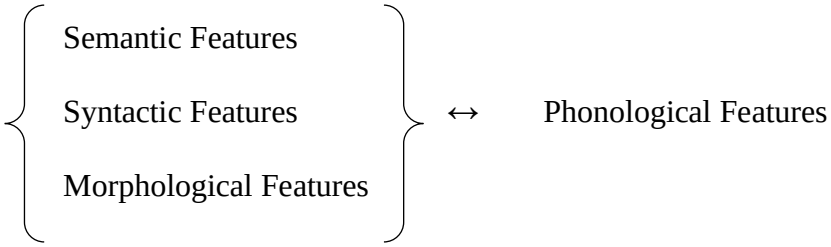
(98) Key principles of DM (reported from Bobaljik 2017: 2)

a. Syntax-all-the-way-down: The primary mode of meaningful composition in the grammar, both above and below the word-level, is the syntax. Syntax operates on sub-word units, and thus (some) word-formation is syntactic.

b. Late Insertion / Realization: The pieces manipulated by the syntax (functional morphemes) are abstract, lacking phonological content. The pairing of phonological features with the terminals of the syntax (Vocabulary Insertion or Exponence) happens post-syntactically, in the mapping from syntax to phonological form (PF).

The basic units in DM, which establish the connections between the phonological, morphological, semantic, and syntactic features are referred to as *Vocabulary Item*, are given the following structure in (99) and are assumed to add phonological, and only phonological but crucially not semantic/syntactic features to terminal nodes:

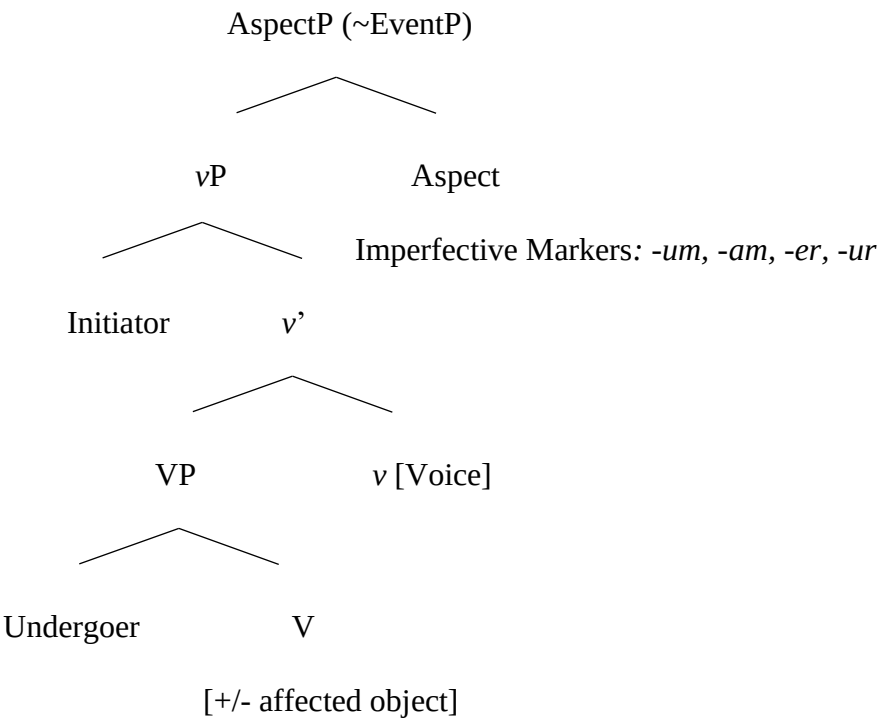
(99) Basic Unit of Morphology in DM (Halle & Marantz 1994: 1)



A key aspect of DM is concerned with the exact nature of how the vocabulary items provide the phonological content to (syntactic) terminal nodes. When Vocabulary Insertion takes place (in post-syntax), it is assumed that it suffices for a vocabulary item to have a subset of the (syntactic, semantic and/or morphological) features specified in a terminal node to realize (or be inserted into) the relevant syntactic node. In other words, the feature set contained in items need not to fully match with those specified in the terminal node, which often results in more than one (underspecified) item(s) to compete for the insertion into a node. In cases where there is more than one potential item to realize a node, the most highly specified item (having the greatest number of matching features) wins over the others (Halle & Marantz 1994: 276-*Underspecification*)

Assuming the core principles of DM along with the structure in (100), in baseline Laz, I propose that the imperfective aspect markers, associated with the vocabulary items listed in (101), realize the Aspect head when it is not perfective:

(100) Structure of the verbal complex in Laz



(101) Vocabulary Items for the imperfective aspect markers in Baseline Laz

a. [-Perf] $_{\text{Aspect}}$ ↔ /-um/ / [+Affected]$_{V}$ $v_{\text{transitive}}$ ___

b. [-Perf] $_{\text{Aspect}}$ ↔ /-er / / v_{passive} ___

c. [-Perf] $_{\text{Aspect}}$ ↔ /-ur/ / $v_{\text{unaccusative}}$ ___

d. [-Perf] $_{\text{Aspect}}$ ↔ /-am/ elsewhere

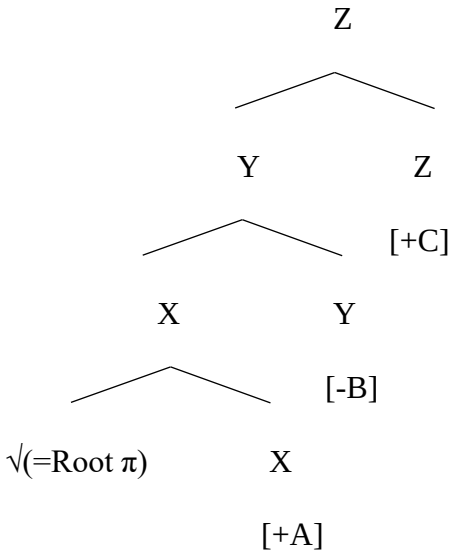
Recall that in (101) *-am* is treated as the default form as it exhibits the widest distribution in Laz, marking i) transitives with non-affected objects, ii) unergatives (as well as when valency increasing operations apply). More importantly, the vocabulary item for *-um* has the most specified context for it to be inserted into the [-perfective] Aspect head because it shows sensitivity not only

to the lexical features of the verbal root but also to the voice specification of the little *v* head. Together these two allow us to account for the root-dependency and valency dependency of this marker, i.e., its occurrence with transitive verbs whose objects are associated with a change of state. The other marker that occurs with transitives, namely *-am*, marks those (transitive) verbs which either do not specify or bear the [-affected object] feature by virtue of being the default marker.

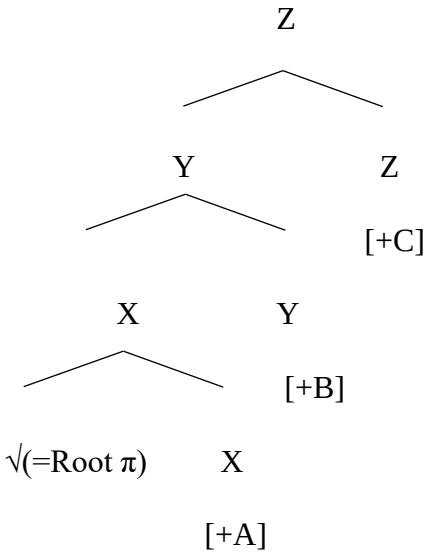
The obligatory occurrence of *-am* with causativization and applicativization in Laz follows from *default by intervention* and crucially it can be triggered by some covert items in Laz. Default by intervention refers to cases where a more specific vocabulary item loses the competition and instead a more general one is inserted into a terminal node because the context for the former is available, but it is rendered inaccessible due to the presence of an intervening (c)overt item (see Paparounas 2022 for a detailed discussion on this issue based on Greek). This phenomenon rests upon the following assumptions: i) hierarchical structures established in syntax are transformed into linear strings capable of being pronounced via (post-syntactic) Concatenation, Pruning and Vocabulary Insertion (VI) (Embick 2010), and also, ii) "Allomorphy is only possible with elements that are concatenated" (Node Adjacency Hypothesis-Embick 2010, 2012).

As an illustration, let us work on the spell out of the two structures in (102) along with the vocabulary items listed in (103).

(102) a. Structure #1: [Pronunciation: π-α-γ]



b. Structure #2: [Pronunciation: π-α-β-μ]



(103) Vocabulary Entries for the structures in (102)

a. [+C] $_{Z}$ ↔ / γ / / [+A] $_{X}$ __

[+C] $_{Z}$ ↔ / μ / elsewhere

b. [+B] $_{Y}$↔ / β / / [+A] $_{X}$ __

[-B] $_{Y}$ ↔ /-Ø/

c. [+A] $_{X}$ ↔ /α/

Only the spell-out of Structure #2 involves default by intervention while Structure #1 does not. The derivation of both structures proceeds the same way until the Y node is lexicalized, i.e., both the root and X are realized the same way in both structures. The crucial step giving rise to the difference lies in the realization of the Y node and its effects on the realization of Z. Specifically, in Structure #1 the Y node bears [-B] feature is first realized as a null morpheme first and then deleted due to Pruning. The deletion of Y brings X and Z nodes next to one another. Given the

Node-Adjacency Hypothesis (Embick 2010), the former can condition allomorphy for the latter, that is, the conditions for the more specific vocabulary item in (103), namely [γ], to be inserted are met and thus it wins the competition over the less specific one (the default/elsewhere case) [μ]. However, in Structure #2, Pruning does not apply because Y is realized by the overt vocabulary item [β]. Note that Pruning is argued to delete only null morphemes and crucially only some of them (Embick 2010: 42). Since Y is not deleted, X and Z are not adjacent as opposed to the case in Structure #1. This leads to the insertion of the less specific vocabulary item in (103a) rather than the more specific one, that is, [μ] is chosen over [γ]. Although the context is available for the insertion of a highly specific item, it loses the competition over a less specified one due to the presence of an overt intervener, i.e., Default by intervention.

With these assumptions, let us now take a look at the effects of valency increasing operations on the determination of the imperfective aspect markers. Both causativization and applicativization are not compatible with *-um.* With Type-2 transitive verbs (104a), changes in valency are accompanied by a change in the imperfective marker as shown in (104b) and (104c).

(104) a. Ali-k xemençe tor-um-s.
Ali-ERG bag.ABS carry-IPFV-3SG
'Ali {is carrying/carries} (the) bags.' (Transitive-Type 2: *Ø*-verb-*um*)

b. Ayşe-k Ali-s xemençe o-tor-ap-am-s.
Ayşe-ERG Ali-DAT bag.ABS CAUS-carry-CAUS$_{TR}$-IPFV-3SG
'Ayşe {is making/makes} Ali carry (the) bags.' (Causativization: [*o*-verb-*in*/-*ap*-*am*]

c. Ayşe-k Ali-s xemençe u-tor-am-s.

Ayşe-ERG Ali-DAT bag.ABS APPL-carry-IPFV-3SG

'Ayşe {is carrying/carries} (the) bags for Ali.' (Applicativization: [*i-/u*-verb-*am*])

The use of *-am* and the incompatibility of *-um* with the relevant (derived) constructions follows from the Default by Intervention effects. When the relevant syntactic structures are concatenated, the relevant syntactic heads associated with the causativization and applicativization come in between the [lexical verb+voice] heads, which together define the context for the insertion of the highly specific vocabulary item posited for the *-um* marker (101a). Given that the Aspect head is not adjacent to the two triggers of the *-um* marker, the condition for its insertion is not met due to a violation of Node-Adjacency Hypothesis. Instead, a less specific vocabulary item, namely the default marker *-am* is inserted. Notice that the Default by Intervention effect works better for causativization due to the presence of an overt intervening suffixal marker realizing the relevant causativization head, i.e., *-in* (for intransitive roots) or *-ap* (for transitives) as schematized in (105).

(105) Valency increasing operations (Default by intervention following Embick 2010)

a. Causativization: $\text{Object}_{\text{Causee}}$ $[\text{+Affected}]_{\text{V}}$⌒ $\text{v}_{\text{transitive}}$⌒ Causative⌒ Aspect

-in,-ap

Template: [*o*- ROOT- *in/ap*-…-*am*/*-um]

b. Applicativization[23]: $\text{Object}_{\text{Applied.}}$ $[\text{+Affected}]_{\text{V}}$⌒ HApplicative⌒ $\text{v}_{\text{transitive}}$⌒ Aspect

-Ø

Template: [*i*- (1&2)/*u*- (3)-ROOT- *Ø -am*/*-*um*]

[23] It needs to be assumed that like [$v_{\text{transitive}}$] the voice specification [$v_{\text{unaccusative}}$] needs to be above the HighAppl head in applicativization of unaccusatives as in (53b), which allow us to account for the insertion of *-ur* rather than *-am*.

As for applicativization, which does not have a designated suffixal marker (or vocabulary item in more technical terms), it might be expected that the HighApplicative head would be deleted via Pruning given that it has zero exponence, making it possible for *-um* to mark applicativized constructions. In order to prevent this and given that the application domain of Pruning is not clear (Embick 2010: 42) and also the look-ahead problems associated with it (Moskal & Smith 2015), I argue that Pruning does not operate in Laz, and thus null heads can block allomorphy. Therefore, covert elements such as HighAppl head can give rise to default by intervention effects in Laz.

Turning to the heritage variety of Laz, where the sensitivity to the nature of the affectedness of the object has been neutralized, I propose the vocabulary items listed in (106) for imperfective aspect markers:

(106) Vocabulary entries for Heritage Laz

a. [-Perf, +Progressive] $_{\text{Aspect}}$ ↔ /-um/ / $v_{\text{transitive}}$ ___

b. [-Perf] $_{\text{Aspect}}$ ↔ /-ur/ / $v_{\text{unaccusative}}$ ___

c. [-Perf] $_{\text{Aspect}}$ ↔ /-er/ / v_{passive} ___

d. [-Perf] $_{\text{Aspect}}$ ↔ /-am/ elsewhere

The only difference between the items listed here in (106) and the ones for the baseline variety (101) lies in the specification of the *-um* marker along with what the relevant difference implies for the use of *-am* with transitives. (107) demonstrates the reanalysis of the aspectual system in Heritage Laz with reference to the proposed vocabulary entries in the relevant two Laz varieties. Note that the form that was vulnerable to change in the heritage variety was the most specific entry, namely the one for *-um* (107a). Heritage speakers have lost the dependency of the

aspectual markers on the features of the non-local syntactic head, namely the lexical V head's affectedness feature (107b). In return of this simplification, heritage speakers simply have further specified the meaning associated with the *m*-set markers, which is captured by the addition of the feature [+Progressive] to the Aspect head in the vocabulary entry for *-um* (107c). The specification of the entry associated with *-um* in Heritage Laz is accompanied by the further specification of the contexts in which the elsewhere marker, namely *-am*, is used, restricting its use to habitual sense of imperfectivity with the exclusion of progressivity as shown in (107d).:

(107) The discrepancies between the heritage and baseline Laz's aspectual markers

a. [-Perf] $_{\text{Aspect}}$ ↔ /-um/ / [+Affected]$_{\text{V}}$ $v_{\text{transitive}}$ ___ (Baseline Laz)

b. [-Perf]$_{\text{Aspect}}$ ↔ /-um/ / ~~[+Affected]$_{\text{v}}$~~ $v_{\text{transitive}}$ ___ [V less local than $v_{\text{transitive}}$]

c. [-Perf, +Progressive]$_{\text{Aspect}}$ ↔ /-um/ / $v_{\text{transitive}}$ ___ (Heritage Laz)

d. [-Perf, +Habitual] $_{\text{Aspect}}$ ↔ /-am/ / $v_{\text{transitive}}$ _ (as part of the context of the elsewhere marker *-am*)

5. Summary

The results of the grammatically-oriented production and comprehension tasks indicate the following regarding the structure of (in)transitives in (Heritage) Laz:

i) Although heritage speakers of all proficiency level pattern with baseline speakers in their comprehension of the valency alternating operations, their production of the relevant constructions involve less of synthetic constructions that are established with verbal markers. Instead, they show a tendency to produce more analytical constructions.

ii) Of all the valency alternating operations, the most vulnerable one in the heritage variety seems to be direct object reflexives (formed with the pre-root vowel *i*-). Even baseline speakers showed a tendency to produce these constructions with overt pronominals.

iii) While heritage speakers do better with valency increasing operations than (seemingly) decreasing ones, especially causativization, the production of reflexive and passive constructions that are synthetically established with *i*- is quite low. The erosion of these constructions lends further support to the uniform analysis where *i*- is analyzed as a verbal expletive (Eren 2021). Lacking a referential meaning, this marker leads to a mismatch between syntax-and-semantics and violates the principle of one-to-one correspondence between form and meaning, which is operative in heritage grammars (O'Grady et al. 2011, Polinsky 2018: 183-184, Aalberse et al. 2019: 153).

iv) The distribution of the imperfective aspect markers across Laz varieties indicates that there is extensive dialectal and inter-speaker variation in this domain of (baseline) Laz grammar. The results of the production task show that the arguments previously proposed for Laz based on the PL variety are not directly extendable to other Laz varieties, namely FL and AL. In these varieties, and probably in PL too, the distribution of the two markers that occur with transitive verbal roots relies on the nature of affectedness associated with the undergoer argument with respect to whether a change of state is predicated of the object argument, rather than solely whether there occurs a change in the physical shape/constituency/form as previously proposed for PL (Öztürk & Taylan 2014, 2017; Demirok & Öztürk 2021; Demirok 2022).

v) Regardless of the analysis proposed for the baseline varieties, the root-dependent sensitivity of the imperfective *-am* and *-um* markers in the heritage variety has been neutralized in the heritage varieties of Laz, leading to the restructuring of the aspectual system where the former form marks habituality and the latter progressivity. Guided by the principle of transparency, the relevant change is significant in showing the preference and thus the maintenance of more local syntactic dependencies in the resolution and reduction of allomorphy, a finding that has not been reported thus far in the cross-linguistic literature on heritage languages.

CHAPTER 8

CONCLUSION

1. Summary of the findings

Induced by language shift, the endangerment of Laz (South Caucasian) is evidenced by its low frequency of use in daily life along with its low intergenerational transmission rate (Haznedar et al. 2018). Mainly used for interaction with the grand-parental generation, Laz is reported to be mainly spoken in rural areas and confined to home settings in urban areas (Kutscher 2008). The scattered type of settlement present in the Lazland due to high-altitude mountains decreases the interaction within Laz speaking communities. These factors along with the absence of a standard linguistic variety have led the Laz language to exhibit a great deal of inter-speaker and inter-generational linguistic variation.

The systematic investigation of the linguistic proficiency of Laz speakers of three different dialects and generations has for the first time provided empirical evidence for the current socio-linguistic situation of Laz. Exhibiting a higher correlation with grammatical variables, lexical proficiency has turned out to be a better indicator than speech rate, a more commonly used proficiency metric in heritage language research (Polinsky 2008, Daller et al. 2011, Anstatt 2017). The statistical analyses based on the free narratives of the Frog Story (Mayer 1969) indicated that linguistic proficiency is positively correlated, albeit to different extents, with age, village altitude, and the amount of time spent in rural areas (in childhood). That is, those who are older, live(d) in higher altitudes and more rural areas are more active users of Laz and thus are more proficient in it. These findings empirically support the previous researchers' observations (Kutscher 2008) and self-proficiency-based studies on Laz (Haznedar et al. 2018).

Heritage Laz speakers exhibited the hallmarks of crosslinguistic heritage production (Polinsky 2018: 40). With their more limited lexical repertoire and statistically lower production of embedded clauses and valency changing operations, younger generation heritage speakers pattern with the speakers of other heritage languages in their productive skills (Montrul 2016, Polinsky 2018). The examination of the deviant forms indicated that verbal morphology and case morphology were the most vulnerable aspects of Laz, posing the most challenges to heritage speakers. The tripartite proficiency-based classification of heritage speakers showed that while they pattern alike in their code-mixing practices, the highest level of variation and divergence lies in the domain of spatial prefixal system, valency alternations, and finite complex clauses.

Despite this variation, the grammar of Heritage Laz turned out to be systematic and rule governed. In addition to nominal (ergative and dative) markers, heritage speakers omitted and/or overused verbal markers such as affirmative particles, spatial prefixes, imperfective markers. Moreover, they overregularized certain verbal markers, namely the spatial prefix *eşka-* for *e-*, the pre-root vowel *i-* and the imperfective aspect marker *-am* for their allomorphic counterparts. However, allomorphy is reduced in a systematic and predictable way regulated by structural salience, contextual frequency and most importantly by transparency. Therefore, the emergent system that is based on reduced linguistic input bears systematicity to a great extent.

The argument structural properties of Laz were investigated via using Heritage Laz as a testing ground. To this end, the distribution of the two set of valency related markers, namely pre-root vowels and imperfective aspect markers, was examined. With regards to the former, the constructions involving the pre-root vowel *i-* were found to be subject to a significant and gradual erosion in the heritage variety. This indicates that this syncretic vowel qualifies as a verbal expletive rather than a voice head or a pronominal argument (Eren 2021, c.f. Lacroix 2009, Öztürk

& Taylan 2014, 2017). As for the three remaining pre-root vowels marking different valency changing operations, they were found to be more resilient. The most resilient operation was causativization, which was followed by higher and high applicativization. In contrast, reflexivization and passivization were found to be subject to erosion, replaced by more analytical constructions available in Laz.

The findings on the second set of valency-related markers, namely imperfective markers, indicated that there is immense variation in the distribution of the *m*-set markers that co-occur with transitives even in the baseline variety (c.f. Demirok 2022). The gradual loss of sensitivity to the lexical properties of verbal roots in the baseline variety has been amplified in Heritage Laz. The selective sensitivity of heritage speakers only to the more local trigger of allomorphy, namely voice specifications, has resulted in the neutralization of allomorphic distinctions and restructuring of the aspectual system. Regulated by the principle of transparency, the emergent system exhibits one-to-one mapping between form and meaning, where each of the two *m*-set markers encodes a distinct aspectual meaning.

Overall, the results indicate that the grammar of Heritage Laz exhibits more analyticity and transparency. Synthetic constructions are eroded to different extents; violations of form-meaning correspondences are eliminated; more direct associations of case markers are established with structural positions. In this respect, the findings are in line with the crosslinguistic observations on heritage languages (O'Grady et al. 2011, Polinsky 2018, Aalberse et al. 2019: 153).

2. Implications for linguistic theory and heritage linguistics

Heritage Laz speakers were shown to exhibit the characteristics associated with cross-linguistic heritage production (Montrul 2016 and Polinsky 2018) because a preference for the following was attested: i) transparent and analytical constructions over synthetic ones (reflexive, passive, and applicative constructions), ii) overt forms over covert ones (decreased use of pro-drop and bound pronouns), iii) canonical word order (less scrambling of arguments into post-verbal domain), iv) local dependencies over less or non-local ones (neutralization of root-sensitivity in the resolution of imperfective allomorphy).

Additionally, the findings regarding the vulnerability of Laz grammar when acquired under minimal input are also in line with the cross-linguistic literature (Montrul 2016: 71). Being the most vulnerable, morphology seems to pose the most challenges to heritage speakers, leading them to produce deviant forms. Within verbal morphology, in addition to a sharp decrease in the use of spatial prefixes, past tense and agreement turned out to be less affected than aspect. Unlike tense, aspect in Laz has undergone reanalysis conditioned by the Principle of Transparency, which states that one-to-one form-meaning mappings are easier to learn and retain (Aalberse et al. 2019: 153, O'Grady et al. 2011). As for nominal morphology, despite relying on a small sample size, the findings indicate that heritage speakers (of FL) omit (ergative and dative) case morphology.

Case morphology is reported to be differentially affected because structural cases are more subject to erosion than inherent cases (Benmamoun, Montrul & Polinsky 2013: 160). The consistent omission or the consistent use of the ergative case on subjects thus provide evidence for its structural status in Laz (Emgin 2009, Öztürk 2013), rather than an inherent one (Demirok 2013, Eren 2014). Dative on indirect objects is better preserved than on dative subjects, in line with findings for Heritage Spanish (Montrul 2004, Montrul & Bowles 2009) and Hindi (Montrul et al.

2015). As for the interaction between case and agreement, although the findings on the latter is limited, the resilience of agreement markers in the grammatically oriented tasks and the erosion of case morphology point to the dissociation of the two. This is in line with the crosslinguistic observation that case and agreement are differentially affected in heritage languages and thus their licensing mechanisms should also be separate (Benmamoun, Montrul and Polinsky 2013).

Besides the parallelisms with other heritage languages, Heritage Laz is significant in at least three respects for making novel contributions. First, the decreased use of covert forms and pro-drop could be attributed to the general properties of heritage languages because the contributing languages converge to a great extent in their word order and information structural properties. This finding is significant because it lends support for the Interface Hypothesis (Tsimpli & Sorace 2006, Sorace 2011, Aalberse et al. 2019: 151). Furthermore, the majority of the studies that report the increased use of overt pronouns is associated with transfer effects from a non-pro-drop majority language (Laleko & Polinsky 2017). Second, the fact of aspectual restructuring lends further support to a preference for local and shorter distance dependencies, which have been examined in the domain of agreement (Polinsky 2018: 204-215) and/or binding (Heritage Korean, Kim et al. 2009). Heritage Laz facts are the first, to the best of my knowledge, in showing the locality effects in the domain of allomorphy resolution and reduction. Last, the erosion of the constructions involving the pre-root vowel *i-* demonstrates the preference for one-to-one mapping between form and meaning in heritage languages. Crucially this is in relation to an expletive (leading to a syntax-semantics mismatch) rather than multiple associations holding between form and meaning as amply reported in the literature (Eren 2021, c.f. Lacroix 2009, Öztürk & Taylan 2014, 2017, Öztürk 2021).

3. Implications for linguistic complexity

In studies on heritage languages, researchers commonly use the words *simplification* or *simplified* in dealing with a wide range of different phenomena. This stems from heritage speakers' tendency to drop inflectional markers, minimize irregularities, and/or favor compositional expressions over idiosyncratic ones. These aspects of heritage languages, albeit being mostly restricted to production rather than comprehension, led to many scholars to intuitively argue that heritage grammars are less complex than baseline grammars. These terms, however, are not intended in the same sense as in the complexity literature. To the best of my knowledge, there does not exist any work specifically examining heritage languages in relation to complexity.

Linguistic complexity is not easily defined or measured. The main reason for this is that complexity has been used in reference to a variety of different things. To name a few, computational complexity refers to the amount of time and effort that is required to process utterances while structural complexity focuses on the variety and elaborateness involved in linear and hierarchical arranging different units and components (Sinnemäki 2011). The metric changes depending on what type of complexity is to be measured (Kortmann & Szmrecsanyi 2012).

Adopting a relativist approach to complexity, Kusters (2003:51-57, 2008) evaluates complexity from the point of view of different language users, i.e., speaker, hearer, L1 acquirer and L2 learner. Kusters argues that agreement markers pose challenges to speakers and L2 learners while facilitating the task of the other two groups of language users, that is, hearer and L1 acquirer. Central to this analysis is the question *what is complex to whom*? Kusters (2003: 6-7) takes the point of view of adult language learners (or *generalized learner* in his terms) in his evaluation of complexity of verbal inflection. Therefore, those aspects of a linguistic system, in which L2 learners experience difficulty, are defined as complex.

The criteria used in this analysis are Economy, Transparency, and Isomorphy. The Economy Principle requires "as few semantic categories or category combinations as possible should be expressed morphologically" (p. 21). This principle is violated, for instance, when tense, aspect, number, and person have distinct exponents. The Principle of Transparency requires that the relation between form and meaning is one-to-one, that is, as transparent as possible. Deviations of this principle involve cases of fusion, fission, homonymy and allomorphy. Lastly, the Isomorphy Principle requires that "the morphological order must reflect a semantic/pragmatic hierarchy of features ordered along the dimension of relevance to the verb stem" (p.21). Based on psycho-linguistic evidence, Kusters argues that L2 speakers show preference for Isomorphy while less Economy and non-Transparency pose challenges to them. Therefore, a language will be complex to the extent that it involves (non-transparent) inflectional morphology and/or allomorphy.

Explaining Kusters' analysis or the examination of the findings in relation to linguistic complexity exhaustively goes beyond the scope of this dissertation. Yet, taking the perspective of L2 learners is significant in the context of endangered and/or heritage languages such as Laz and for their revitalization and its education. Under this analysis, Heritage Laz appears to be less complex than its respective baseline varieties for the following reasons: i) The increased analyticity conditioned by the principle of Transparency and ii) The elimination of allomorphy as evidenced by overgeneralization and regularization patterns (Chapter 6), and iii) The reanalysis of the aspectual system favoring one-to-one mapping between form and meaning (Chapter 7), and iv) The elimination of case morphology (dative and ergative on subjects) (Chapter 6), and v) The preference for the canonical word orders (rather than alternative scrambled ones) (Chapter 4).

This conclusion needs to be approached with caution because it relies mostly on the productive skills of heritage speakers and on a particular interpretation of complexity. A number of studies show that heritage speakers perform differently on production and comprehension skills. As a matter of fact, Heritage Laz speakers were found to pattern with baseline speakers in their comprehension of the constructions which they had problems in producing (passives and applicatives, Chapter 7). Moreover, linguistic complexity is an inherently relative and scalar notion and often times only one component (morphology) is taken into consideration, with the interaction between different sub-components of grammar ignored. Mufwene et al. (2017) highlight the significance of this interaction in contributing to the subject matter of complexity.

The grammar of Heritage Laz seems most similar to the AL variety of Laz, which lacks overt case morphology and being more constrained in its flexibility in word order (Chapter 2). Under a quantity-based approach to linguistic complexity (McWhorter 2001), AL and Heritage Laz might be argued to be less complex than other Laz varieties because of featuring a lower number of inflectional markers. Nevertheless, this preliminary conclusion is misleading. The loss of case morphology in AL has resulted in a more configurational syntax, where there are more syntactic rules governing the positions of constituents. Moreover, the loss of the case system in AL has given rise to more ambiguous cases as a result of dropping overt arguments. The resolution of the relevant ambiguities relies on a complex background of potential inferences (Eren 2023). Therefore, although the loss of the inflectional morphology decreases morphological complexity in AL, this is counter-balanced by syntactic and pragmatic complexity (Bisang 2014). Consequently, the conclusion that trade-offs between different modules lead all languages to be of equal complexity seems to be borne out.

All things considered, any claims on the relative complexity of one language to another need to be interpreted within the adopted framework and interpretation of complexity. Therefore, decreased complexity does not render a language (as suggested for Heritage Laz or AL) less sophisticated or less worthy or easier to be taught or learned. This issue is also especially relevant and significant for creoles, which were argued to exhibit less complexity (McWhorter 2001), although not all creolists subscribe to this position (Salikoko Mufwene p.c.).

4. Implications for the revitalization of Laz and its education

Elective language classes in Laz have been offered at governmental schools since 2013. This was also the date of the first official acknowledgment in the country's history for the status of Laz as a distinct language. The existence of official education in Laz has contributed to its revitalization by changing Laz speakers' perception of their heritage language in a positive way (Bilmez & Çağatay 2021). Previously, they considered Laz less prestigious, less modern, and more rural than Turkish (Taşkın 2011). I personally experienced and observed these negative attitudes during my fieldwork as the majority of my participants found it surprising and interesting that Laz is the subject of a scientific study. For some of these speakers, Laz is simply a local communication code or system but does not qualify as a real language like Turkish or English by itself. However, my presence as a researcher and as a second language speaker of Laz also showed to the community members that their language is worthy of scientific study and being learned.

Laz classes are conducted based on an official curriculum and language course book, which I had a chance to co-author and develop. The coursebook, however, had to be heavily focused on grammar because of time limitations. Teachers of these courses have pointed out the difficulties

this causes to them. They also requested the book be revised such that it becomes appropriate to the profile of the heritage speakers (Bakay 2020, Bilmez & Çağatay 2021, Eren *In preparation*).

In addition to contributing to the documentation of the under-described varieties of Laz such as AL and FL, the present dissertation is also the first to study and describe the heritage Laz varieties. The fact that heritage Laz speakers pattern with heritage speakers of other languages in their productive skills (Chapter 3-6) suggests that the Laz curriculum and course-books need to be revised within the general framework of heritage language education (Brinton et al. 2008, Kagan et al. 2017). Currently students of various ages are enrolled in the same class and use the same course book regardless of their proficiency level. Given the variation and heterogeneity in their productive skills (Chapter 6), if needed, Heritage Laz speakers can be supplemented with additional materials. This would minimize the negative effects they might experience due to the discrepancies in their proficiency level. In the absence of proficiency tests, proficiency could be easily and practically measured by counting the number of content words, given the intercorrelations between lexical proficiency and grammatical knowledge (Chapter 5).

The application of the findings from the present dissertation to the education of Laz reaches beyond the scope of this dissertation. Not only is it significant for the revitalization of Laz, but also it might even be important in shaping the direction of linguistic change Laz undergoes. The pattern, in which indirect objects are marked with allative, used only by heritage students demonstrates the effects of education on shaping language change (Chapter 6).

5. Limitations of the dissertation and future directions

Due to time limitations on data annotation and in order to keep the scope of the present dissertation manageable, the following issues needed to be restricted and/or left out: code-

switching patterns and practices, scrambling in pre-verbal domain and pro-drop patterns of all participants, co-occurrence facts on postpositions along with spatial prefixes and their typological implications. Additionally, since the Frog Story is narrated from the perspective of third person, it did not allow us to thoroughly examine the agreement patterns of Heritage Laz speakers. Lastly, the distribution of imperfective markers and pre-root vowels were investigated via the application of a single task. This limited the number of verbs that were examined, especially intransitives and psych-verbs. Given the amount of variation in the aspectual domain, the findings need to be examined with a larger set of verbs and via a more focused task.

The way heritage speakers pronounce words and speak Laz seem to be phonologically different from baseline speakers. The heritage data feature fewer ejective sounds and more words that are phonologically modified according to Turkish, such as the Indo-European loan complementizer *çi* pronounced as *ki* 'that'. These phonological divergences were not investigated due to time restrictions. Yet, they might bear a great deal of significance because ejectives, for instance, are contrastive sounds in Laz (Bucaklişi & Kojima 2003, Pöchtrager 2010).

The database constructed here will be made available at The Endangered Language Archive (ELAR). Given the endangered status of Laz, it becomes important to investigate this data set in all possible grammatical aspects and to conduct additional data collection. I hope that the present dissertation paves way for further research on (Heritage) Laz and informs policy makers about the significance of the education and maintenance of the Laz language for the cultural and social identity of its speakers.

REFERENCES

Aalberse, S. (2016). A Language Contact Perspective on Heritage Languages in the Classroom. In *Springer international handbooks of education* (pp. 1–11). Springer Nature (Netherlands). https://doi.org/10.1007/978-3-319-38893-9_51-1

Aalberse, S., Backus, A., & Muysken, P. (Eds.) (2019). *Heritage languages: A language contact approach.* John Benjamins Publishing Company. https://doi.org/10.1075/sibil.58

Acedo-Matellán, V. (2016). *The morphosyntax of transitions: A case study in Latin and other languages*. Oxford: Oxford University Press. https://doi.org/10.1093/acprof:oso/9780198733287.001.0001

Akyol, M. (2006). *The origin of Turkey's Kurdish question: An outcome of the breakdown of the Ottoman ancien régime* [Unpublished master's thesis]. Boğazici University, Istanbul, Turkey.

Albirini, A., & Benmamoun, E. (2014a). Aspects of second-language transfer in the oral production of Egyptian and Palestinian heritage speakers. *International Journal of Bilingualism, 18*(3), 244–273. https://doi.org/10.1177/1367006912441729

Albirini, A., & Benmamoun, E. (2014b). Concatenative and Nonconcatenative Plural Formation in L1, L2, and Heritage Speakers of Arabic. *The Modern Language Journal*, *98*(3), 854–871. https://doi.org/10.1111/modl.12126

Albirini, A., Benmamoun, E., & Saadah, E. (2011). Grammatical features of Egyptian and Palestinian Arabic heritage speakers' oral production. *Studies in Second Language Acquisition*, *33*(2), 273–303. https://doi.org/10.1017/s0272263110000768

Anstatt, T. (2017). Language attitudes and linguistic skills in young heritage speakers of Russian in Germany. In L. Isurin and C. M. Riehl (Eds.), *Impact* (pp. 197–224). John Benjamins Publishing Company. https://doi.org/10.1075/impact.44.07ans

Arregi, K., & Nevins, A. (2012). Morphotactics: Basque auxiliaries and the structure of spellout. In *Springer eBooks*.https://doi.org/10.1007/978-94-007-3889-8

Arslan, S., Bastiaanse, R., & Felser, C. (2015). Looking at the evidence in visual world: eye-movements reveal how bilingual and monolingual Turkish speakers process grammatical evidentiality. *Frontiers in Psychology*, *6*. https://doi.org/10.3389/fpsyg.2015.01387

Atlamaz, Ü. (2011). Adverbial clauses. In B. Öztürk and M. Pöchtrager (Eds.), *Pazar Laz* (pp. 51-68). Münich: LINCOM: Languages of the World Materials. ISBN: 9783862881499

Bachman, L. (2004). *Statistical Analyses for Language Assessment Book (Cambridge Language Assessment)*. Cambridge: Cambridge University Press. doi:10.1017/CBO9780511667350

Bakay, Ö. (2020). *Seçmeli Lazca Dersi Raporu 2013-2020*. The Laz Institute Repository. https://www.lazenstitu.com/laz-enstitusu-2013-2020-secmeli-lazca-dersi-raporunu-yayimladi/

Başaran, S. (2018). Rize'de Kurulan Belediye Teşkilatlarının Tarihçesine Genel Bir Bakış . *Iğdır Üniversitesi Sosyal Bilimler Dergisi* , (15) , 209-231. https://dergipark.org.tr/tr/pub/igdirsosbilder/issue/66820/1044988

Beavers, J. A. (2011). On affectedness. *Natural Language & Linguistic Theory*, *29*(2), 335–370. https://doi.org/10.1007/s11049-011-9124-6

Beavers, J. A. (2013). Aspectual classes and scales of change. *Linguistics*, *51*(4). https://doi.org/10.1515/ling-2013-0024

Bellér-Hann, I. (2018). Laz. In K. Fleet, G. Krämer, D. Matringe, J. Nawas, and . Rowson (Eds.) *Encyclopaedia of Islam, THREE.* Brill. doi:http://dx.doi.org/10.1163/1573-3912_ei3_COM_30686.

Benmamoun, E., Albirini, A., Montrul, S., & Saadah, E. (2014). Arabic plurals and root and pattern morphology in Palestinian and Egyptian heritage speakers. *Linguistic Approaches to Bilingualism*, *4*(1), 89–123. https://doi.org/10.1075/lab.4.1.04ben

Benmamoun, E., Montrul, S., & Polinsky, M. (2013). Heritage languages and their speakers: Opportunities and challenges for linguistics. *Theoretical Linguistics*, *39*(3–4), 129-181. https://doi.org/10.1515/tl-2013-0009

Bernardini, P., & Schlyter, S. (2004). Growing syntactic structure and code-mixing in the weaker language: The Ivy Hypothesis. *Bilingualism: Language and Cognition*, *7*(1), 49–69. https://doi.org/10.1017/s1366728904001270

Bhatt, R., & Pancheva, R. (2005). Aspect: an overview. The Syntax and Semantics of Aspect, LSA Institute-June 27, 2005. [LSA 130 Lecture Notes]. http://web.mit.edu/rbhatt/www/lsa130/l1.pdf

Bhatt, R., & Pancheva, R. (2017). Implicit Arguments. *The Wiley Blackwell Companion to Syntax, Second Edition*, 1–35. https://doi.org/10.1002/9781118358733.wbsyncom118

Bickerton, D. (1973). The Nature of a Creole Continuum. *Language*, *49*(3), 640. https://doi.org/10.2307/412355

Bilmez, B. & Çağatay, İ. (2021). *An unclaimed right: Elective Language Courses on Living Languages and Dialects in the Context of Language Rights*. Laz Kültür Derneği Repository. https://laz.org.tr/_img/RaporLKDMaster.pdf

Bisang, W. (2014). Overt and hidden complexity – Two types of complexity and their implications. *Poznan Studies in Contemporary Linguistics*, *50*(2). https://doi.org/10.1515/psicl-2014-0009

Bobaljik, J. D. (2017). Distributed morphology. In M. Aronoff (Ed.), *Oxford Research Encyclopedia of Linguistics*. https://doi.org/10.1093/acrefore/9780199384655.013.131

Boeder, W. (2005). The South Caucasian languages. *Lingua*, *115*(1–2), 5–89. https://doi.org/10.1016/j.lingua.2003.06.002

Bohman, T. M., Bedore, L. M., Peña, E. D., Pérez, A. M., & Gillam, R. B. (2010). What you hear and what you say: language performance in Spanish–English bilinguals. *International Journal of Bilingual Education and Bilingualism*, *13*(4), 479. https://doi.org/10.1080/13670050.2010.491231

Bolonyai, A. (2007). (In)vulnerable agreement in incomplete bilingual L1 learners. *International Journal of Bilingualism*, *11*(1), 3–23. https://doi.org/10.1177/13670069070110010201

Boumans, L. (2006). The attributive possessive in Moroccan Arabic spoken by young bilinguals in the Netherlands and their peers in Morocco. *Bilingualism: Language and Cognition*, *9*(3), 213–231. https://doi.org/10.1017/s1366728906002598

Brehmer, B., & Czachór, A. (2012). The formation and distribution of the analytic future tense in Polish-German bilinguals. In K. Braunmüller and C. Gabriel (Eds.), *Hamburg studies in multilingualism* (pp. 297–314). John Benjamins Publishing Company. https://doi.org/10.1075/hsm.13.20bre

Brinton, D., Kagan, O., & Bauckus, S. (Eds.) (2008). *Heritage Language Education: A New Field Emerging*. Routledge. ISBN 9780415995887

Bucaklişi, İ. A. (2002). *Lazlarda Sosyokültürel Değişim* [Unpublished master's thesis]. Marmara University, İstanbul.

Bucaklisi, İ. A., Uzunhasanoglu, H. & Aleksiva, İ. (2007). *Didi Lazuri nenapuna- Büyük Lazca Sözlük*. Istanbul: Chiviyazilari.

Ceylan, E. (2002). The millet system in the Ottoman Empire. In J. M. Upton-Ward (Ed.), *New Millennium Perspectives in the Humanities* (pp. 245-266). Global Scholarly Publications. ISBN 10: 0972491805

Chierchia, G. (1995). The Variability of Impersonal Subjects. In E. Bach, E. Jelinek, A. Kratzer and B. H. Partee, B.H. (Eds.) *Studies in linguistics and philosophy* (pp. 107-143). Springer Nature (Netherlands). https://doi.org/10.1007/978-94-017-2817-1_6

Choi, H. W. (2003). Paradigm leveling in American Korean. *Language Research-Seoul, 39*(1), 183-204. https://s-space.snu.ac.kr/bitstream/10371/86266/1/8.%202224407.pdf

Clyne, M. (2003). *Dynamics of language contact: English and immigrant languages*. Cambridge University Press. DOI:10.1017/CBO9780511606526.005

Creissels, D. (2006). *Syntaxe générale:* une introduction typologique: *Tome 2 La phrase*. Paris: Hermes Science Publications. ISBN: 2746214008

Daller, M., Yıldız, C., De Jong, N. H., Kan, S., & Başbaği, R. (2011). Language dominance in Turkish-German bilinguals: methodological aspects of measurements in structurally different languages. *International Journal of Bilingualism*, *15*(2), 215–236. https://doi.org/10.1177/1367006910381197

De Groot, C. (2005). The grammars of Hungarian outside Hungary from a linguistic-typological perspective. In A. Fenyvesi (Ed.), *Hungarian Language Contact Outside Hungary* (pp. 351–370). https://doi.org/10.1075/impact.20.18gro

De Groot, C. (2008). Morphological complexity as a parameter of linguistic typology. In M. Miestamo, K. Sinnemäki and F. Karlsson (Eds.), *Language complexity: Typology, contact, change*. John Benjamins Publishing. https://doi.org/10.1075/slcs.94.13gro

Deeters, G. (1930). *Das kharthwelische Verbum: vergleichende Darstellung des Verbalbaus der südkaukasischen Sprachen*. Leipzig: Markert und Petters. OCLC: 41447960

Demirok, Ö. F. (2022). On the emergence of inflection classes. *Dilbilim Araştırmaları*, *33*(2), 87–110. https://doi.org/10.18492/dad.1192280

Demirok, Ö. F. (2013). *Agree as a unidirectional operation: Evidence from Laz* [Unpublished master's thesis]. Boğazici University, Istanbul, Turkey.

Demirok, Ö. F. (2011). Valency Operations and Pre-Root Vowels. In B. Öztürk and M. Pöchtrager (Eds.), *Pazar Laz* (pp. 51-68). Münich: LINCOM: Languages of the World Materials. ISBN: 9783862881499

Demirok, Ö. F. & Öztürk, B. B. (2021). *On the status of semantic inflection classes in Laz verbs* [Unpublished manuscript]. Boğazici University, Istanbul, Turkey.

Doğruöz, A. S., & Backus, A. (2009). Innovative constructions in Dutch Turkish: An assessment of ongoing contact-induced change. *Bilingualism: Language and Cognition*, *12*(1), 41–63. https://doi.org/10.1017/s1366728908003441

Dündar, F. (2000). *Türkiye Nüfus Sayımlarında Azınlıklar*. İstanbul: Çiviyazıları. ISBN: 9789758086771

Dunn, M. J. (1999). *A Grammar of Chukchi*. [Unpublished doctoral dissertation]. Australian National University, Kanberra. https://openresearchrepository.anu.edu.au/handle/1885/10769

Dunn, L. M., & Dunn, D. M. (2007). *PPVT-4: Peabody picture vocabulary test*. Bloomington, MN: Pearson Assessments.

Embick, D. (2010). Localism versus Globalism in Morphology and Phonology. In *The MIT Press eBooks*. https://doi.org/10.7551/mitpress/9780262014229.001.0001

Embick, D., & Noyer, R. (2001). Movement Operations after Syntax. *Linguistic Inquiry*, *32*(4), 555–595. https://doi.org/10.1162/002438901753373005

Emgin, B. (2009). *Finiteness and complementation patterns in Pazar* Laz [Unpublished master's thesis]. Boğazici University, Istanbul, Turkey.

Emgin, B. & Öztürk, B. B. (2011a). Complement clauses. In B. Öztürk and M. Pöchtrager (Eds.), *Pazar Laz* (pp. 128-135). Münich: LINCOM: Languages of the World Materials. ISBN: 9783862881499

Emgin, B. & Öztürk, B. (2011b). Infinitival Clauses in Pazar Laz. In V. Tomelleri, M. Topadze and A. Lukianowicz (Eds.), *Languages and Cultures in the Caucasus: Proceedings of the Current Advances in Caucasian Studies* (pp. 245-257). Münich: Otto Sagner. https://doi.org/10.3726/b11946

Eren, Ö. (2014). *Ergative as an inherent case* [Unpublished manuscript]. Boğazici University, Istanbul, Turkey.

Eren, Ö. (2015). An articleless DP language: Pazar Laz. In K. Ershova, J. Falk, J. Geiger, Z. Hebert, R. E. Jr. Lewis, J. B. Phillips and B. Pillion (Eds.), *Proceedings of Chicago linguistic society (CLS) 51*, (pp. 137–148). Chicago Linguistic Society. ISSN 0577-7240

Eren, Ö. (2016). *Spatial prefixes of Pazar Laz: A nano-syntactic approach* [Unpublished master's thesis]. Boğazici University, Istanbul, Turkey.

Eren, Ö. (2021). Fake arguments as apparent valency changers: Evidence from Laz. In R. Soo, U. Y. Chow and S. Nederveen (Eds.), *Proceedings of the 38th West Coast Conference on Formal* Linguistics, (pp. 191-200). Somerville, MA: Cascadilla Proceedings Project. ISBN 978-1-57473-479-9

Eren, Ö. (2023). Linguistic variation and complexity in Laz. In Z. Ünlü and B. G. Hewitt (Eds.), *Lazuri: An endangered language from the Black Sea*, (pp. 83-101). Vernon Press. ISBN: 978-1-64889-221-9

Escobar, A. M. (2012). Bilingualism in Latin America. In T. K. Bhatia and W. Ritchie (Eds.), *The handbook of bilingualism and multilingualism*, (pp. 725-744). Blackwell Publishing, Ltd. https://doi.org/10.1002/9781118332382.ch29

Fähnrich, H. & Sarǯvelaɜe, Z. (2000). *Kartvelur enata et'imologiuri leksik'oni* [Etymological Dictionary of the Kartvelian Languages]. Tbilisi: Pedagogical University Press.

Fenyvesi, A. (Ed.). (2005*). Hungarian Language Contact Outside Hungary*. John Benjamins Publishing Company. https://doi.org/10.1075/impact.20

Fishman, J. A. (1991). *Reversing Language Shift: Theoretical and Empirical Foundations of Assistance to Threatened Languages*. Multilingual Matters. ISBN: 1853591211

Forsyth, J. (1970). *A grammar of aspect: Usage and meaning in the Russian verb*. Cambridge University Press. ISBN: 0521145007

Göksel, A. (1998). Linearity, Focus and the Postverbal Position in Turkish. In L. Johanson, E. A. Csato, V. Locke, A. Menz and D. Winterling (Eds.), *The Mainz Meeting: Proceedings of the Seventh International Conference on Turkish Linguistics*, (pp 85-106). Wiesbaden: Otto Harrassowitz Verlag.

Göksel, A. (2011). Word order, sentential stress and intonation. In B. Öztürk and M. Pöchtrager (Eds.), *Pazar Laz* (pp. 146-159). Münich: LINCOM: Languages of the World Materials. ISBN: 9783862881499

Göksel, A. & Kerslake, C. (2005). *Turkish: A comprehensive grammar*. London & NY: Routledge. ISBN: 0415114942

Göksel, A., & Özsoy, A. S. (2000). Is there a focus position in Turkish?.In A. Göksel and C. Kerslake (Eds.), Studies on Turkish and Turkic languages, *Studies on Turkish and Turkic Languages: Proceedings of the Ninth International Conference on Turkish Linguistics* (pp. 219-228). Wiesbaden: Harrasowitz. ISBN: 3-447-04292-1

Güveloğlu, G. K. (2020). Türkiye Cumhuriyeti Devlet Salnamelerinde Rize (1925-1929). *Journal of History and Future*. https://doi.org/10.21551/jhf.751954

Halle, M., & Marantz, A. (1993). Distributed Morphology and the pieces of inflection. In K. Hale & S. J. Keyser (Eds.), *The view from Building 20: Essays in linguistics in honour of Sylvain Bromberger* (pp. 111– 176). Cambridge, MA: MIT Press. ISBN: 9780262581240

Halle, M., & Marantz, A. (1994). Some key features of distributed morphology. *MIT Working Papers in Linguistics, 21,* 275–288. https://nyuscholars.nyu.edu/en/publications/some-key-features-of-distributed-morphology

Harris, A. (1981). *Georgian Syntax: A Study in Relational Grammar*. Cambridge: CUP. ISBN: 9780521109710

Harris, A. C. (1982). Georgian and the Unaccusative Hypothesis. *Language, 58*(2), 290–306. https://doi.org/10.1353/lan.1982.0028

Harris, A. C. (1985). *Diachronic syntax: the Kartvelian case*. Orlando, FL: Academic Press Inc.

Haznedar, B., Avcı-Bucaklişi, İ., & Bakay, Ö. (2018). *The current status of the Laz language-2018*. The Laz Institute Repository. https://www.lazenstitu.com/the-current-status-of-the-laz-language-in-turkey-2018/

Holisky, D. A. (1991). Laz. In A. C. Harris (Ed), *The Indigenous languages of the Caucasus: The Kartvelian languages* (pp. 397-472). Delmar, NY: Caravan Books. ISBN: 0882060694

Inglese, G. (2021). Towards a typology of middle voice systems. *Linguistic Typology*, *26*(3), 489–531. https://doi.org/10.1515/lingty-2020-0131

Kagan, O. E., Carreira, M. M., & Chik, C. H. (2017). *The Routledge Handbook of Heritage Language Education: From Innovation to Program Building*. Routledge. ISBN: 9781032402246

Kagan, O., & Friedman, D. L. (2003). Using the OPI to Place Heritage Speakers of Russian. *Foreign Language Annals*, *36*(4), 536–545. https://doi.org/10.1111/j.1944-9720.2003.tb02143.x

Kantarovich, J. (2020). *Argument structure in language shift. Morphosyntactic variation and grammatical shift in resilience in Modern Chukchi* [Unpublished doctoral dissertation].: The University of Chicago, Chicago. https://knowledge.uchicago.edu/record/2623

Kaya, N. (2011). Derived substantives. In B. Öztürk and M. Pöchtrager (Eds.), *Pazar Laz* (pp. 37-42). Münich: LINCOM: Languages of the World Materials. ISBN: 9783862881499

Keleş, R. (1980). Urbanization and environment: Turkey. *Ekistics*, 349-352. https://www.jstor.org/stable/43619777

Kemmer, S. (1993). *The Middle Voice. Typological Studies in Language*. John Benjamins Publishing Company. https://doi.org/10.1075/tsl.23

Kim, J., Montrul, S., & Yoon, J. H. S. (2009). Binding Interpretations of Anaphors by Korean Heritage Speakers. *Language Acquisition: A Journal of Developmental Linguistics*, *16*(1), 3–35. https://doi.org/10.1080/10489220802575293

Klamer, M., & Moro, F. (2020). What is "natural" speech? Comparing free narratives and Frog stories in Indonesia. *Language Documentation & Conservation*, *14*, 238–313. https://irinsubria.uninsubria.it/handle/11383/2095192

Klimov, G. A. (1998). *Etymological Dictionary of the Kartvelian Languages*. Walter de Gruyter. ISBN: 311015658X

Koday, Z., & Erhan, K. (2013). Rize ilinin idari coğrafya analizi. *Atatürk Üniversitesi Sosyal Bilimler Dergisi*, (50), 39-54. https://dergipark.org.tr/tr/pub/ataunisosbd/issue/2807/37685

Kojima, G., & Bucaklişi, I. A. (2003). *Lazuri grameri (Laz grammar)*. Istanbul: Chiviyazilari Yayinevi. ISBN: 9758663550

Kortmann, B., & Szmrecsanyi, B. (Eds.). (2012). *Linguistic complexity: Second language acquisition, indigenization, contact*. Walter de Gruyter. https://doi.org/10.1515/9783110229226

Kouritzin, S. G. (1999). *Face[t]s of First Language Loss*. Routledge. ISBN: 9780805831863

Küçükoğlu, A., & Küçükoğlu, K. T. (2006). Taşımalı eğitim üzerine bir araştırma. *Atatürk Üniversitesi Kazım Karabekir Eğitim Fakültesi Dergisi*, (13), 11-18. https://dergipark.org.tr/tr/pub/ataunikkefd/issue/2774/37135

Kupisch, T., & Rothman, J. (2016). Terminology matters! Why difference is not incompleteness and how early child bilinguals are heritage speakers. *International Journal of Bilingualism*, *22*(5), 564–582. https://doi.org/10.1177/1367006916654355

Kural, M. (1994). *Scrambling in Turkish* [Unpublished manuscript]. UCLA. Los Angeles.

Kusters, W. (2003). *Linguistic Complexity, the Influence of Social Change on Verbal Inflection*. [Unpublished doctoral dissertation]. University of Leiden, Utrecht: LOT. https://www.lotpublications.nl/Documents/077_fulltext.pdf

Kutscher, S. (2001). *Nomen und nominales Syntagma im Lasischen: eine deskriptive Analyse des Dialekts von Ardeşen*. Lincom Europa. ISBN: 9783895864476

Kutscher, S. (2008). The language of the Laz in Turkey: Contact-induced change or gradual language loss? *Turkic Languages*, *12*(1), 82–102. https://ids-pub.bsz-bw.de/files/3413/Kutscher_Language_of_Laz_in_Turkey_2008.pdf

Kutscher, S. (2010). When 'towards' means 'away from': the case of directional-ablative syncretism in the Ardeşen variety of Laz (South-Caucasian). *Language Typology and Universals*, *63*(3), 252–271. https://doi.org/10.1524/stuf.2010.0021

Kutscher, S. (2011). On the Expression of Spatial Relations in Ardesen-Laz. *Linguistic Discovery*, *9*(2), 49-77. https://doi.org/10.1349/ps1.1537-0852.a.394

Kutscher, S., & Genç, N. S. (2007). Laz positional verbs: semantics and use with inanimate Figures. *Linguistics*, *45*(5part6), 1029-1064. https://doi.org/10.1515/ling.2007.031

Lacroix, R. (2009). *Description du dialecte laze d'Arhavi (caucasique du sud, Turquie): Grammaire et texte* [Unpublished doctoral dissertation]. Université Lumière Lyon 2, Lyon.

Lacroix, R. (2012). Laz middle voice. In G. Authier and K. Haude (Eds.), *Ergativity, Valency and Voice* (pp. 165–198). De Gruyter. https://doi.org/10.1515/9783110227734.165

Laleko, O. (2008). Compositional telicity and Heritage Russian aspect. In M. Grosvald and D. Soares (Eds.), *Proceedings of the Thirty-Eighth Western Conference on Linguistics (WECOL)*, (pp. 150-160). California State University Fresno

Laleko, O. V. (2010). *The Syntax–Pragmatics Interface in Language Loss: Covert Restructuring of Aspect in Heritage Russian* [Unpublished doctoral dissertation]. University of Minnesota, Minneapolis.

Laleko, O., & Polinsky, M. (2016). Between syntax and discourse: Topic and case marking in heritage speakers and L2 learners of Japanese and Korean. *Linguistic Approaches to Bilingualism*, *6*(4), 396–439. https://doi.org/10.1075/lab.14018.lal

Laleko, O., & Polinsky, M. (2017). Silence is difficult: On missing elements in bilingual grammars. *Zeitschrift Fur Sprachwissenschaft*, *36*(1), 135–163. https://doi.org/10.1515/zfs-2017-0007

Landau, I. (2010). The Explicit Syntax of Implicit Arguments. *Linguistic Inquiry*, *41*(3), 357–388. https://doi.org/10.1162/ling_a_00001

Lee, T. (2011). Grammatical knowledge of Korean heritage speakers. *Linguistic Approaches to Bilingualism*, *1*(2), 149–174. https://doi.org/10.1075/lab.1.2.02lee

Legate, J. A. (2014a). Voice and v. In *The MIT Press eBooks*. https://doi.org/10.7551/mitpress/9780262028141.001.0001

Legate, J. A., Akkuş, F., Šereikaitė, M., & Ringe, D. (2020). On passives of passives. *Language*, *96*(4), 771–818. https://doi.org/10.1353/lan.2020.0062

Levin, B. (1993). *English Verb Classes and Alternations: A Preliminary Investigation*. University of Chicago Press. ISBN: 0226475336

Levin, B. (2019*). Mind your manners: Regularity (and idiosyncrasy) in manner verb argument realization*, LSA Institute-July 13-14, 2019. [Lecture notes]. http://web.stanford.edu/~bclevin/davis19hitting.pdf

Lidz, J. (2001). The Argument Structure Of Verbal Reflexives. *Natural Language and Linguistic Theory*, *19*(2), 311–353. https://doi.org/10.1023/a:1010676623092

Lundquist, B., & Ramchand, G. (2012). Contact, animacy, and affectedness in Germanic. In. P. Ackema, R. Alcorn, C. Heycock, D. Jaspers, J. van Craenenbroeck and G. V. Wyngaerd (Eds.), *Linguistik aktuell Comparative Germanic Syntax: The state of the art* (pp. 223–248). John Benjamins Publishing Company. https://doi.org/10.1075/la.191.08lun

Mayer, M. (1969). *Frog, Where Are You?* New York: Dial. ISBN: 9780803728813

McWhorter, J. (2001). The worlds simplest grammars are creole grammars. *Linguistic Typology*, *5*(2–3). https://doi.org/10.1515/lity.2001.001

Meral, H. M. (2013). Binding as an A'-phenomenon?: Some remarks from Turkish. *IBERIA: An International Journal of Theoretical Linguistics*, 5(1), 45-68.

Montrul, S. (2004). Subject and object expression in Spanish heritage speakers: A case of morphosyntactic convergence. *Bilingualism: Language and Cognition*, *7*(2), 125–142. https://doi.org/10.1017/s1366728904001464

Montrul, S. (2006). On the bilingual competence of Spanish heritage speakers: Syntax, lexical-semantics and processing. *International Journal of Bilingualism*, *10*(1), 37–69. https://doi.org/10.1177/13670069060100010301

Montrul, S. (2009). Knowledge of tense-aspect and mood in Spanish heritage speakers. *International Journal of Bilingualism*, *13*(2), 239–269. https://doi.org/10.1177/1367006909339816

Montrul, S. (2016). *The Acquisition of Heritage Languages*. Cambridge University Press. ISBN: 1107007240

Montrul, S., & Bateman, N. (2017). Differential object marking in Romanian as a heritage language in the United States. In A. Mardale and S. Montrul (Eds.), *The acquisition of differential object marking* (pp. 285-311). Amsterdam: John Benjamins. https://doi.org/10.1075/tilar.26.11mon

Montrul, S., & Bowles, M. A. (2009). Back to basics: Incomplete knowledge of Differential Object Marking in Spanish heritage speakers. *Bilingualism: Language and Cognition*, *12*(03), 363. https://doi.org/10.1017/s1366728909990071

Montrul, S., & Bowles, M. A. (2010). Is Grammar Instruction Beneficial for Heritage Language Learners? Dative Case Marking in Spanish. *Heritage Language Journal*, *7*(1), 47–73. https://doi.org/10.46538/hlj.7.1.3

Montrul, S., & Sánchez-Walker, N. (2013). Differential Object Marking in Child and Adult Spanish Heritage Speakers. *Language Acquisition: A Journal of Developmental Linguistics*, *20*(2), 109–132. https://doi.org/10.1080/10489223.2013.766741

Montrul, S., Bhatt, R. M., & Bhatia, A. (2012). Erosion of case and agreement in Hindi heritage speakers. *Linguistic Approaches to Bilingualism*, *2*(2), 141–176. https://doi.org/10.1075/lab.2.2.02mon

Montrul, S., Bhatt, R. M., & Girju, R. (2015). Differential object marking in Spanish, Hindi, and Romanian as heritage languages. *Language*, *91*(3), 564–610. https://doi.org/10.1353/lan.2015.0035

Moskal, B., & Smith, P. (2016). Towards a theory without adjacency: hyper-contextual VI-rules. *Morphology*, *26*(3–4), 295–312. https://doi.org/10.1007/s11525-015-9275-y

Mufwene, S. S. (1996). The Founder Principle in Creole Genesis. *Diachronica*, *13*(1), 83–134. https://doi.org/10.1075/dia.13.1.05muf

Mufwene, S. S. (1997a). Introduction: Understanding Speech Continua. *World Englishes 16* (2), 181-184. https://doi.org/10.1111/1467-971x.00058

Mufwene, S. S. (1997b). Kitúba. In S. Thomason (Ed.), *Contact Languages: A Wider Perspective* (pp. 173-209), John Benjamins Publishing. https://doi.org/10.1075/cll.17.09muf

Mufwene, S. S. (2001). *The Ecology of Language Evolution*. Cambridge University Press. https://doi.org/10.1017/cbo9780511612862

Mufwene, S. S. (2013). Simplicity and Complexity in Creoles and Pidgins: What's the Metric? *Journal of Language Contact*, *6*(1), 161–179. https://doi.org/10.1163/19552629-006001005

Mufwene, S. S. (2017a). Language vitality: The weak theoretical underpinnings of what can be an exciting research area. *Language*, *93*(4), e202–e223. https://doi.org/10.1353/lan.2017.0065

Mufwene, S. S. (2017b). It's still worth theorizing on LEL, despite the heterogeneity and complexity of the processes (Response to commentators). *Language*, *93*(4), e306–e316. https://doi.org/10.1353/lan.2017.0074

Mufwene, S. S. (2020). Language Shift. *The International Encyclopedia of Linguistic Anthropology*, 1–9. https://doi.org/10.1002/9781118786093.iela0357

Mufwene, S. S., Coupé, C., & Pellegrino, F. (eds.). (2017). *Complexity in language: Developmental and evolutionary perspectives*. Cambridge University Press. https://doi.org/10.1017/9781107294264

Muysken, P. (2000). *Bilingual Speech: A Typology of Code-Mixing*. Cambridge University Press. ISBN: 9780521771689

Myers-Scotton, C. (1997). *Duelling Languages: Grammatical Structure in Codeswitching*. Oxford University Press. ISBN: 019823712X

Myers-Scotton, C.─(2002). *Contact Linguistics: Bilingual Encounters and Grammatical Outcomes*. Oxford University Press, USA. ISBN: 0-19-829953-2

Myers-Scotton, M., & Jake, J. (2009). A universal model of code-switching and bilingual language processing and production. In B. E. Bullock and A. J. Toribio (Eds.), *The Cambridge Handbook of Linguistic Code-switching* (pp. 336-357). Cambridge: Cambridge University Press. https://doi.org/10.1017/cbo9780511576331.020

Nakipoğlu-Demiralp, M. (2002). The referential properties of the implicit arguments of impersonal passive constructions. In E. E. Taylan (Ed:), *The verb in Turkish* (pp. 129-150). John Benjamins Publishing Company. https://doi.org/10.1075/la.44.06nak

Nash, L. (2016) *What versionizers tell us about the structure of trivalent verbs and dative arguments*, South Caucasion Chalk Circle, Paris 22- 24 September, 2016. [Lecture notes]. http://paris2016.mariapolinsky.com/wp-content/uploads/2015/11/SCCC-Version-LNASH-handout.pdf

Nash, L., (2017). The Structural Source of Split Ergativity and Ergative Case in Georgian. In J. Coon, D. Massam, and L. D. Travis (Eds.), *The Oxford Handbook of Ergativity*, Oxford Handbooks 2017). https://doi.org/10.1093/oxfordhb/9780198739371.013.8

Nash, L. (2021). Nonunitary structure of unergative verbs in Georgian. *Natural Language & Linguistic Theory*, *40*(4), 1201–1267. https://doi.org/10.1007/s11049-021-09529-8

Noyer, R. (1997). *Features, Positions, and Affixes in Autonomous Morphological Structure*. Taylor & Francis. ISBN: 0815327595

O'Grady, W., Schafer, A. J., Perla, J., Lee, O., & Wieting, J. (2009). A Psycholinguistic Tool for the Assessment of Language Loss: The HALA Project. *Language Documentation & Conservation*, *3*(1), pp. 100-112. https://scholarspace.manoa.hawaii.edu/bitstream/10125/4427/1/ogrady.pdf

O'Grady, W., Lee, O., & Lee, J. Y. (2011). Practical and Theoretical Issues in the Study of Heritage Language Acquisition. *Heritage Language Journal*, *8*(3), 315–332. https://doi.org/10.46538/hlj.8.3.2

Okumuş. R. L. (2019). *Aspect and thematic suffixes in Şavşat Georgian* [Unpublished master's thesis]. Boğazici University, Istanbul, Turkey.

Otheguy, R., Zentella, A. C., & Livert, D. (2007). Language and Dialect Contact in Spanish in New York: Toward the Formation of a Speech Community. *Language*, *83*(4), 770–802. https://doi.org/10.1353/lan.2008.0019

Özgüner, O. (1970). *Köyde Mimari Doğu Karadeniz [Village Architecture, Eastern Black Sea]*. Middle East Technical University Faculty of Architecture, Ankara. ISBN: 9789759958596

Öztürk, B. (2002). Turkish as a non-pro-drop language. In E. E. Taylan (Ed:), *The verb in Turkish* (pp. 239-259). John Benjamins Publishing Company. https://doi.org/10.1075/la.44.06nak

Öztürk, B. (2006). Null arguments and case-driven Agree in Turkish. In C. Boeckx (Ed.), *Minimalist essays* (pp. 268-287). John Benjamins Publishing Company. https://doi.org/10.1075/la.91.18ozt

Öztürk, B. (2011). The verb. In B. Öztürk and M. Pöchtrager (Eds.), *Pazar Laz* (pp. 95-113). Münich: LINCOM: Languages of the World Materials. ISBN: 9783862881499

Öztürk, B. (2012). *Thematic Suffixes and Verb classes in Laz*. BAP: S kodlu Bilimsel Araştırma Projesi: Boğaziçi University. https://linguistics.boun.edu.tr/lazcadaki-tematik-ekler-ve-eylem-siniflari

Öztürk, B. (2013). Low, High and Higher Applicatives: Evidence from Pazar Laz. In V. Camacho-Taboada, Á. L. Jiménez-Fernández, J. Martín-González and M. Reyes-Tejedor (Eds.), *Information Structure and Agreement* (pp. 275–296). John Benjamins Publishing. https://doi.org/10.1075/la.197.10ozt

Öztürk, B. (2016). *Applicatives in Pazar Laz*. South Caucasion Chalk Circle, Paris 22- 24 September, 2016. [Lecture notes]. http://paris2016.mariapolinsky.com/wp-content/uploads/2015/11/SCCC-ozturk.pdf

Öztürk, B. (2019). The loss of case system in Ardeshen Laz and its morphosyntactic consequences. *Language Typology and Universals*, *72*(2), 193–219. https://doi.org/10.1515/stuf-2019-0008

Öztürk, B. (2021). Transitive Unergatives in Pazar Laz. *Glossa*, *6*(1), 1-24. https://doi.org/10.5334/gjgl.828

Öztürk, B. & Eren, Ö. (2021a). The Nominal Domain in Languages of the Caucasus. In Maria Polinsky (Ed.), *The Oxford Handbook of Languages of the Caucasus* (pp. 811–843). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780190690694.013.22

Öztürk, B., & Eren, Ö. (2021b). Pazar Laz as a weak verb-framed language. *Linguistic Variation*, *21*(1), 247–279. https://doi.org/10.1075/lv.00038.ozt

Öztürk, B. & Pöchtrager, M. (Eds). (2011). *Pazar Laz*. Münich: LINCOM: Languages of the World Materials. ISBN: 9783862881499

Öztürk, B. & Taylan, E. E. (2014). Transitivity in Pazar Laz. *Acta Linguistica Hungarica 61*(3), 271-296. DOI: 10.1556/ALing.61.2014.3.2.

Öztürk, B. & Taylan, E. E. (2017). Omnipresent little vP in Pazar Laz. In R. D'Alessandro, I. Franco and A. Gallego (Eds.). *The Verbal Domain* (pp. 207-232), Oxford University Press. https://doi.org/10.1093/oso/9780198767886.003.0009

Paparounas, L. (2022). Visibility and Intervention in Allomorphy: Lessons from Modern Greek. *Linguistic Inquiry*, 1–41. https://doi.org/10.1162/ling_a_00479

Park-Johnson, S. K. (2017). Code Mixing as a Window into Language Dominance: Evidence from Korean Heritage Speakers. *Heritage Language Journal*, *14*(1), 49–69. https://doi.org/10.46538/hlj.14.1.3

Pauwels, A. (2016). *Language maintenance and shift*. Cambridge University Press. https://doi.org/10.1017/CBO9781107338869

Perlmutter, D. H. (1978). Impersonal Passives and the Unaccusative Hypothesis. *Proceedings of the Annual Meeting of the Berkeley Linguistics Society*, *4*, 157-189. https://doi.org/10.3765/bls.v4i0.2198

Pöchtrager, M. A. (2011). Phonology. In B. Öztürk and M. Pöchtrager (Eds.), *Pazar Laz* (pp. 5-21). Münich: LINCOM: Languages of the World Materials. ISBN: 9783862881499

Polinsky, M. (1996). *American Russian: An endangered language* [Unpublished manuscript]. USC-UCSD, California. https://www.academia.edu/661237/American_Russian_An_Endangered_Language

Polinsky, M. (1997). American Russian: language loss meets language acquisition. In W. Brown et al. (Eds.), *Formal Approaches to Slavic Linguistics, Cornell Meeting*, (pp. 370–407). Ann Arbor, MI: Michigan Slavic Publications. ISBN: 0-930042-79-4

Polinsky, M. (2000). The Composite Linguistic Profile of a Speaker of Russian in the US. In O. Kagan and B. Rifkin (Eds.), *The learning and teaching of Slavic languages and culture,*. (pp. 437-65). Bloomington: Slavica. https://slavica.indiana.edu/bookListings/textbooks/Learning_and_Teaching_Slavic

Polinsky, M. (2005). Word class distinctions in an incomplete grammar. In R. A. Berman (Ed.), *Perspectives on language and language development: Essays in honor of Ruth A. Berman* (pp. 419-434). Springer Science & Business Media. https://doi.org/10.1007/1-4020-7911-7_3

Polinsky, M. (2006). Incomplete Acquisition American Russian. *Journal of Slavic Linguistics*, *14*(2), 191. http://scholar.harvard.edu/mpolinsky/publications/incomplete-acquisition

Polinsky, M. (2008). Gender Under Incomplete Acquisition: Heritage Speakers' Knowledge of Noun Categorization. *Heritage Language Journal*, *Volume 6*(6.1 (Spring, 2008)), 40–71. https://doi.org/10.46538/hlj.6.1.3

Polinsky, M. (2009). *What breaks in A-and A-bar chains under incomplete acquisition* [Poster presentation]. 22nd Annual CUNY Conference on Human Sentence Processing. University of California, Davis. https://scholar.harvard.edu/files/mpolinsky/files/CUNY2009-chains_poster.latest.pdf

Polinsky, M. (2018). *Heritage languages and their speakers.* Cambridge University Press. https://doi.org/10.1017/9781107252349

Polinsky, M., & Kagan, O. (2007). Heritage languages: In the 'wild' and in the classroom. *Language and Linguistics Compass, 1*(5), 368-395. https://doi.org/10.1111/j.1749-818x.2007.00022.x

Poplack, S. (1980). Sometimes I'll start a sentence in Spanish YTERMINO EN ESPAÑOL: toward a typology of code-switching1. *Linguistics, 18*(7–8). https://doi.org/10.1515/ling.1980.18.7-8.581

Poplack, S., & Sankoff, D. (1988). A variationist approach to languages in contact [updated version of "Code-switching']. In U. Ammon, N. Dittmar and K. J. Mattheier (Eds.), *Sociolinguistics: An international handbook of the science of language and society* (pp. 1174-80). Berlin: Walter de Gruyer. http://ci.nii.ac.jp/ncid/BA0368003X

Putnam, M. T., & Salmons, J. C. (2013). Losing their (passive) voice. *Linguistic Approaches to Bilingualism, 3*(2), 233–252. https://doi.org/10.1075/lab.3.2.05put

Putnam, M. T., & Sánchez, L. (2013). What's so incomplete about incomplete acquisition? *Linguistic Approaches to Bilingualism, 3*(4), 478–508. https://doi.org/10.1075/lab.3.4.04put

Pylkkänen, L. (2008). *Introducing arguments*. MIT Press. https://doi.org/10.7551/mitpress/9780262162548.001.0001

Ramchand, G. C. (2008). *Verb Meaning and the Lexicon: A First Phase Syntax*. Cambridge University Press. ISBN: 9780521842402

Rappaport Hovav, M. (2008). Lexicalized meaning and the internal temporal structure of events. In S. Rothstein (Ed.), *Crosslinguistic and Theoretical Approaches to the Semantics of Aspect* (pp. 13-42). John Benjamins, Amsterdam. DOI: 10.1075/la.110.03hov

Rappaport Hovav, M. & Levin, B. (2010). 2 Reflections on Manner/Result Complementarity. In M. Rappaport Hovav, E. Doron and I. Sichel (Eds.), *Lexical Semantics, Syntax, and Event Structure* (pp. 21-38). Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199544325.003.0002

Rehbein, J. & Karakoç, B. (2004). On contact-induced language change of Turkish aspects: Languaging in bilingual discourse. In: C. B. Dabelsteen & J. N. Jørgensen (Eds.), *Languaging and language practices* (pp. 125–149). Copenhagen: Copenhagen Studies in Bilingualism. https://www.academia.edu/41476077/

Rickford, J. R. (1987). *Dimensions of a Creole continuum: History, texts & linguistic analysis of Guyanese Creole*. Stanford University Press. ISBN: 978-0804713771

Ritter, E., & Rosen, S. (2000). Event structure and ergativity. In C. Tenny and J. Pustejovsky (Eds.), *Events as grammatical objects* (pp. 187-238). https://www.researchgate.net/publication/285363044

Rostovtsev-Popiel, A. (2016). *Verbal valency in the Kartvelian languages* [Unpublished manuscript]. Mainz: Gutenberg University of Mainz. https://www.academia.edu/29965204

Rothstein, S. (2004). *Structuring events: A study in the semantics of lexical aspect*. Wiley Blackwell. ISBN: 978-1-405-10668-9

Sánchez, L. (2003). Quechua-Spanish Bilingualism. *Language Acquisition & Language Disorders*. https://doi.org/10.1075/lald.35

Sasse, H.-J. (1992). Theory of language death. In B. Matthias (Ed.) *Language death*: *Theoretical and factual explorations with special reference to East Africa* (pp. 7-30). Berlin: Mouton de Gruyter. https://doi.org/10.1515/9783110870602.7

Scontras, G., Fuchs, Z., & Polinsky, M. (2015). Heritage language and linguistic theory. *Frontiers in Psychology*, *6*, 1-20. https://doi.org/10.3389/fpsyg.2015.01545

Silva-Corvalán, C. (1994). *Language Contact and Change: Spanish in Los Angeles*. Oxford: Oxford University Press. ISBN: 0198242875

Silva-Corvalán, C. (2014). *Bilingual Language Acquisition: Spanish and English in the First Six Years*. Cambridge: Cambridge University Press. ISBN: 9781107673151

Sinnemäki, K. (2011). *Language universals and linguistic complexity. Three case studies in core argument marking* [Unpublished doctoral dissertation]. University of Helsinki, Helsinki. http://urn.fi/URN:ISBN:978-952-10-7259-8

Song, M., O'Grady, W., Cho, S., & Lee, M. (1997). The learning and teaching of Korean in community schools. *The Korean Language in America*, 111-127. https://www.jstor.org/stable/42922216

Sorace, A. (2011). Pinning down the concept of "interface" in bilingualism. *Linguistic Approaches to Bilingualism*, *1*(1), 1–33. https://doi.org/10.1075/lab.1.1.01sor

Tabachnick, B. G., & Fidell. L. S. (2001). *Using multivariate statistics (4th Edition)*. Boston. MA: Allyn and Bacon. ISBN: 978-0321056771

Talmy, L. (2000a). *Toward a cognitive semantics: Concept structuring systems, vol. 1*. Cambridge, MA: MIT Press. https://doi.org/10.7551/mitpress/6847.001.0001

Talmy, L. (2000b). *Toward a cognitive semantics: Concept structuring systems, vol. 2*. Cambridge, MA: MIT Press. https://doi.org/10.7551/mitpress/6848.001.0001

Taşkın, N. (2011). *Representing and performing Laz identity: This is not a rebel song* [Unpublished master's thesis]. Boğazici University, Istanbul, Turkey.

Taylan, E. E. (1986). Pronominal vs zero representation of anaphora in Turkish. In D. I. Slobin and K. Zimmer (Eds.), *Studies in Turkish Linguistics* (pp. 209-232). Amsterdam: John Benjamins. https://doi.org/10.1075/tsl.8.12tay

Tsimpli, L., & Sorace, A. (2006). Differentiating interfaces: L2 performance in syntax-semantics and syntax-discourse phenomena. In D. Bamman, T. Magnitskaia, & C. Zaller (Eds.), *BUCLD 27: BUCLID 30: Proceedings of the Annual Boston University Conference on Language Development* (Vol. Vols 1 & 2, pp. 653-664). (Proceedings of the Annual Boston University Conference on Language Development). Cascadilla Press.

Tuite, K. (2021*). On the origin of Kartvelian version*. LINCOM Studies in Caucasian Linguistics 22. LINCOM. ISBN: 9783969390375

Türker, E. (2000). *Turkish-Norwegian codeswitching: Evidence from intermediate and second generation Turkish immigrants in Norway* [Unpublished doctoral dissertation]. University of Oslo, Oslo.

Valdés, G. 2000. The teaching of heritage languages: an introduction for Slavic teaching professionals. In O. Kagan and B. Rifkin (Eds.), *The Learning and Teaching of Slavic Languages and Cultures* (pp. 375–404). Bloomington: Slavica. https://www.researchgate.net/publication/281605667

Van Buren, J. K. (2012). *Language change in Spanish heritage speakers: The interaction between lexical and grammatical aspect*. [Unpublished master's thesis]. University of Montana, Missoula.

Van Osch, B., Hulk, A., Sleeman, P., & Aalberse, S. (2017). Knowledge of mood in internal and external interface contexts in Spanish heritage speakers in the Netherlands. In *Issues in Hispanic and Lusophone linguistics* (pp. 67–92). John Benjamins Publishing Company. https://doi.org/10.1075/ihll.13.04osc

Verhoeven, L. (2004). Bilingualism and Narrative Construction. In S. Strömqvist, L.T.W. Verhoeven, A.; Aksu-Koç (Eds.), *Relating events in narrative: Typological and contextual perspectives* pp. 435-454. Psychology Press. https://doi.org/10.4324/9781410609694

Weinreich, U. (1979). *Languages in Contact: Findings and Problems*. Berlin, New York: De Gruyter Mouton. https://doi.org/10.1515/9783110802177

Wood, J. (2015). *Icelandic Morphosyntax and Argument Structure*. Dordrecht: Springer. https://doi.org/10.1007/978-3-319-09138-9

Woolford, E. (2015). Ergativity and Transitivity. *Linguistic Inquiry*, *46*(3), 489–531. https://doi.org/10.1162/ling_a_00190

Yavaş, F. (1979). The Turkish Aorist. *Kansas Working Papers in Linguistics, 4*, 41–49. https://doi.org/10.17161/KWPL.1808.656

Yeni Palabıyık, P. (2017). Developing a language teaching policy for the endangered languages in Turkey. *ELT Research Journal, 6*(1), 154-171. https://dergipark.org.tr/en/pub/eltrj/issue/28779/308002

Yurt Ansiklopedisi (1982). Rize Maddesi. In *Yurt Ansiklopedisi IX*, (pp. 6340-635). Anadolu Yayın A.Ş., İstanbul.

Žγent'i, S. (1938). *Č'anuri t'ekst'ebi (arkabuli k'ilok'avi)[Laz texts (dialect of Arhavi)]*. Tbilisi, SSRK'Mecnierebata Ak'ademiis Pilialis Gamomcemloba.

Zobolou, K. (2011). Attrition in Greek Diaspora: grammars in contact or incomplete acquisition. In K. Ihemere (Ed.), *Language Contact and Language Shift: Grammatical and Sociolinguistic Perspectives* (pp. 50-67). LINCOM. https://westminsterresearch.westminster.ac.uk/item/8zw90/language-contact-and-language-shift-grammatical-and-sociolinguistic-perspectives.