

On the Emergence of Inflection Classes*

Ömer Demirok

ORCID: 0000-0002-2536-5247

Boğaziçi University, Department of Linguistics, Bebek 34342, İstanbul

omerfaruk.demirok@boun.edu.tr

(Received 20 October 2022; Accepted 5 December 2022)

ABSTRACT: Laz has a rich verb classification system. While the language presents robust morphological correlates of argument structure, it also exhibits finer morphological distinctions that have been argued to encode less canonical semantic features. This paper argues that these distinctions merely constitute inflection classes in the synchronic grammar of Laz but could be a residue of a grammar where these semantic features were active in exponent selection.

Keywords: inflection classes, conjugation, allomorphy, argument structure

Çekim Sınıflarının Oluşumu Üzerine

ÖZ: Lazca zengin bir eylem sınıflandırma sistemine sahiptir. Dilde üye yapısının güçlü biçimbirimsel yansımaları dışında, önceki çalışmalarda daha atipik anlamsal özellikleri karşıladığı savunulan biçimbirimsel sınıflandırmalar da vardır. Bu çalışma, bu ayrımların Lazcanın eşsüremlî dilbilgisinde sadece çekim sınıflarına karşılık geldiğini ve önerilen anlamsal özelliklerin biçimbirim seçimini belirleyebildiği bir dönemden kalıntı olduğunu savunmaktadır.

Anahtar sözcükler: çekim sınıfları, eylem çekimi, altbiçimlenme, üye yapısı

* I am grateful to my primary consultant for Laz, İsmail Bucaklışı, for sharing his language with us, as well as my colleague Balkız Öztürk for sharing with me the extensive data on the classification of verbs in Laz, gathered in 2012-2014 as part of her project *Thematic suffixes and verb classes in Laz*, which received support from Boğaziçi University Research Fund. I owe my thanks to the two anonymous reviewers of *Dilbilim Araştırmaları Dergisi* for their useful feedback and to the anonymous reviewers of the workshop *Lexical Restrictions on Grammatical Relations* where an earlier version of this paper was presented. All errors are my own.

1 Introduction

It is a well-established fact about natural languages that form-meaning mapping is not often one-to-one. For example, while formal distinctness normally signals semantic distinctness, it may also be spurious as in cases of suppletion, e.g., *good* vs. *bett-er* vs. **good-er* vs. **bett-*. Such examples of suppletion may be explained as “historical accidents” that affected just a handful of individual lexical items and synchronically persist in some corner of the lexicon. However, natural languages may also exhibit spurious formal distinctness more systematically by maintaining what is known as *inflection classes* in their lexicon (Aronoff 1994, Alexiadou and Müller 2008, Barillot et al. 2018). A well-known example of inflection classes is idiosyncratic (non-semantic) gender systems, where semantically or phonologically unmotivated groupings of nouns form inflection classes (cf. Williams et al. 2020). In such systems, a given noun being a member in a particular class may determine, for example, how case or number features are realized on that noun. This results in spurious formal distinctness. To give a hypothetical example: the accusative case can be *-te* for class A nouns while *-gaj* for class B nouns, where membership in class A or B is unpredictable based on form or meaning (Corbett and Fraser 2000).

There are intriguing questions on the synchronic representation as well as the diachronic development of inflection classes. Is the grammar making an abstraction (e.g., positing class features) to derive the effects of inflection classes? How do such idiosyncratic groupings develop in the first place? Investigating fully idiosyncratic inflection classes alone may not easily shed light on such questions. With the hope that it contributes to our understanding of inflection classes and their development, this paper aims to document a classification system which, I will argue, is partially idiosyncratic.

The empirical focus of this study will be on the verb classification system of the Atina (Pazar) dialect of Laz, an endangered South Caucasian language spoken in Turkey.¹ The verb classification system in Laz is fairly well-documented (Öztürk and Pöchtrager 2011, Taylan and Öztürk 2014, Öztürk and Taylan 2017, Öztürk 2021). While the language presents robust morphological correlates of argument structure, it also exhibits morphological distinctions that resist classification in terms of familiar semantic features. In section 2, the systematic morphological reflexes of argument structure will be reviewed. In section 3, I will turn to finer morphological distinctions that have been argued to reflect less canonical semantic features, namely *subevent non-co-temporality* and *physical affectedness*. In section 4, I will argue that these two notions are not synchronically encoded in Laz based on evidence from lexical exceptions and

¹ All reported data comes from fieldwork with native speakers of Laz, unless its source is cited. See acknowledgments.

impossibility of shifting the morphological class. Section 5 concludes the paper with a general discussion of the implications of this partially idiosyncratic verb classification system.

2 Morphological reflexes of argument structure

It is well-established that Laz presents systematic morphological reflexes of argument structure, encoding whether the external argument is present in the structure or not (Perlmutter, 1978). Case alignment and the allomorphy in the imperfective morpheme both encode the presence/absence of the external argument (Öztürk and Pöchtrager 2011, Demirok 2013, Taylan and Öztürk 2014, Öztürk and Taylan 2017, Öztürk 2021).² In section 2.1 and section 2.2, I discuss how case alignment and the imperfective allomorphy encode argument structure, respectively. In section 2.3, I discuss morphological causativity alternations to complete the picture on how Laz encodes argument structure.

2.1 Case alignment

Laz, having an active-ergative case alignment, marks its external arguments with the ergative case while keeping its internal arguments (in particular theme/patient arguments) unmarked (Harris 1985, Holisky 1991, Öztürk and Pöchtrager 2011).

As shown in (1a), with transitive verbs that license both an external argument and an internal argument, the external argument is marked with the ergative case. Animacy is not relevant, as shown in (1b). Similarly, whether the verb is a lexically transitive verb or a derived transitive verb is also irrelevant, as shown in (1c). (See also section 2.3 on causativity alternations.)

- (1) a. bere-**k** urzdenepe ç'inax-u
 child-ERG grape.PL.NOM crush-PST.3.SG
 ‘The child crushed the grapes.’

² Previous studies add verbal agreement markers to this list because under present tense the third person singular marker is *-s* when the external argument is present and *-n* when it is not. Notably, this is not an effect on agreement determination (i.e., which DP can agree) but rather an effect on agreement realization (i.e., how a particular set of phi-features are realized on the verb). Furthermore, these two agreement suffixes are always string adjacent to the imperfective morpheme, which exhibits allomorphy. Hence, it is not possible to determine if the choice between *-s* and *-n* encodes the presence/absence of the external argument or is a local morphological effect due to the adjacent imperfective morpheme. See Demirok (2013) and Blix (2021) on agreement realization in Laz.

- b. *ixi-k* *nca* *e-t'ax-u*
 wind-ERG tree.NOM up-break-PST.3.SG
 'The wind uprooted the tree.'
- c. *dida-k* *ts'its'ila* *o-ğur-in-u*
 old.woman-ERG snake.NOM CAUS-die-CAUS-PST.3.SG
 'The old woman killed the snake.'

Being an active-ergative system, case alignment in Laz is not sensitive to transitivity, namely whether more than one DP is present in the structure (Woolford 2015). Rather it distinguishes the two well-known classes of intransitives: *unergatives* and *unaccusatives*. As shown in (2), the ergative case appears on the sole argument of canonical unergative verbs as well as verbs of emission (sound, smell, etc.), which have also been independently shown to have unergative properties (Rappaport Hovav and Levin, 2000).³

- (2) a. *bere-k* *k'i-u*
 child-ERG scream-PST.3.SG
 'The child screamed.'
- b. *ts'ari-k* *şıřil-u*
 water-ERG burble-PST.3.SG
 'The water bubbled.'
- c. *ayna-k* *farfal-u*
 mirror-ERG shine-PST.3.SG
 'The mirror shone.'
- d. *layç'i-k* *ts'umin-u*
 dog-ERG bark-PST.3.SG
 'The dog barked.'

The sole argument of unaccusative verbs, which is semantically a theme/patient argument, cannot bear the ergative case, as shown in (3). They are unmarked in the language just like objects of transitive verbs, shown in (1) above.⁴

- (3) a. *dida* *do-ğur-u*
 old.woman.NOM AFF-die-PST.3.SG
 'The old woman died.'

³ Although verbs of emission have been reported in Baker (2018) to show mixed behavior in relation to unaccusativity diagnostics across languages, in Laz they exhibit unergative behavior, in line with what Rappaport Hovav and Levin (2000) argue.

⁴ I gloss the prefix *do-* as AFF standing for affirmative, as it cannot show up along with negation. I remain agnostic on the function and distribution of this prefix. See also Öztürk and Pöchtrager (2011).

- b. *mtviri* *do-ndğul-u*
 snow.NOM AFF-melt-PST.3.SG
 ‘The snow melted.’
- c. *bardaği* *do-t’rox-u*
 glass.NOM AFF-break-PST.3.SG
 ‘The glass broke.’
- d. **dida-k doğuru*, **mtviri-k do-ndğul-u*, **bardaği-k dot’roxu*

In the next subsection, we turn to another morphological manifestation of the split.

2.2 Allomorphy in the imperfective morpheme

There is allomorphic variation in the realization of the imperfective morpheme in Laz. There are two sets of imperfective suffixes: the *m*-set (which includes the suffixes *-am* and *-um*) and the *r*-set (which includes the suffixes *-ur* and *-er*), characterized by the final consonants of the imperfective morphemes.⁵ What is crucial for our purposes is that whether an *m*-set suffix or an *r*-set suffix is used to mark the imperfective correlates with the presence/absence of the external argument in the structure.⁶

In particular, an *m*-set suffix is a morphological signal that the external argument (i.e. an ergative marked DP) is present, as illustrated in (4).

(4) the external argument (i.e., an ergative DP) is in the structure

- a. *xordza-k* *toyç’i* *zd-am-s*
 woman-ERG rope.NOM pull-IMPF-PRS.3.SG
 ‘The woman is pulling the rope.’
- b. *bere-k* *k’i-am-s*
 child-ERG scream-IMPF-PRS.3.SG
 ‘The child is screaming.’

⁵ Holisky (1991) reports two other imperfective suffixes *-om* and *-im* to be found in the Pazar dialect of Laz. While I have not been able to identify any roots that accept these suffixes, there is variation with respect to the distribution of these suffixes across Laz varieties. I also put aside root portmanteaus, which are described in Demirok (2021).

⁶ Previous research on what determines case marking in active-ergative alignment systems has identified considerable variation (Mithun, 1991; Donohue and Wichmann, 2008; Baker, 2018). For example, Sorace (2000) reports considerable cross-linguistic variation in how intransitives pattern under well-known unaccusativity tests. Therefore, it is noteworthy that case alignment and the variation in the imperfective markers fully align in the way they classify verbs in Laz.

- c. layç'i-k ts'umin-**am-s**
 dog-ERG bark-IMPF-PRS.3.SG
 'The dog is barking.'
- d. k'oçi-k diřk'a çit-**um-s**
 man-ERG wood.NOM chop-IMPF-PRS.3.SG
 'The man is chopping wood.'
- e. nana-k ont'ule berg-**um-s**
 mother-ERG garden.NOM hoe-IMPF-PRS.3.SG
 'The mother is hoeing the garden.'
- f. ham k'armate-k lazut'i mk-**um-s**
 this mill-ERG corn.NOM grind-IMPF-PRS.3.SG
 'The mill grinds corn.'

By contrast, an *r*-set suffix is a morphological signal that the external argument is not in the structure (i.e. there is no ergative marked DP) as shown by the examples in (5) and (6). The suffix *-ur* is reserved for underived unaccusative roots, as shown in (5).⁷ (Note that *-ur* and *-er* suffixes have the portmanteau forms *-un* and *-en*, in the context of third person singular present tense, blocking the third person singular present tense suffix *-s*.)

- (5) there is no external argument in the structure
- a. ts'its'ila xosk'-**un**
 snake.NOM die-IMPF.PRS.3.SG
 'The snake is dying.'
- b. ham kva var t'rox-**un**
 this stone.NOM NEG break-IMPF.PRS.3.SG
 'This stone does not break.'
- c. ts'ari kor-**un**
 water.NOM get.cold-IMPF.PRS.3.SG
 'The water is getting cold.'
- d. ořk'uri kts-**un**
 apple.NOM rot-IMPF.PRS.3.SG
 'The apple is rotting.'

The suffix *-er* shows up in morphologically *derived* unaccusatives, that is in anti-causatives as in (6a)-(6b) and passives as in (6c)-(6d). The suffix *-er* co-occurs with the pre-root vowel *i-*, glossed as EXP for 'expletive' (following Eren 2021).

⁷ In the next subsection, I clarify what I mean by underived vs. derived.

- (6) there is no external argument in the structure
- a. ham korme var i-ç'v-**en**
 this chicken.NOM NEG EXP-rot-IMPF.PRS.3.SG
 'This chicken is not cooking.'
- b. zimari i-mbar-**en**
 dough.NOM EXP-swell-IMPF.PRS.3.SG
 'The dough is rising (lit: swelling).'
- c. ncalepe arguni-te i-k'vat-**en**
 tree.PL.NOM ax-with EXP-rot-IMPF.PRS.3.SG
 'The trees are being cut down with an axe.'
- d. nçai i-ts'il-**en**
 tea.NOM EXP-pick/harvest-IMPF.PRS.3.SG
 'Tea is being harvested.'

To complete the picture on how Laz encodes argument structure and to clarify what is meant by the terms morphologically *derived* vs. *underived* which I have just used in describing the distribution of *-ur* vs. *-er*, in the following sub-section, I discuss morphological causativity alternations in Laz.

2.3 Causativity alternations

In the previous two subsections, we have seen that the presence vs. absence of an ergative DP in the structure correlates with the choice of the imperfective allomorph (an *m*-set suffix vs. an *r*-set suffix). This section aims to show that the difference between the use of *m*-set suffix vs. an *r*-set suffix is not the primary way of encoding causativity alternations in Laz. Needless to say, these imperfective suffixes only show up when the aspect is imperfective. Therefore, as expected, manifesting information about argument structure is secondary to what the imperfective morpheme primarily contributes.

Let us first see how Laz causativizes unaccusative roots. The root *kts-* 'rot' is an unaccusative root in Laz, as it fails to license an ergative DP as shown in (7b).

- (7) a. oşk'urepe do-kts-**u**
 apple.PL.NOM AFF-rot-PST.3.SG
 'The apples are rotting.'
- b. *dida-k oşk'urepe do-kts-**u**
 old.woman-ERG apple.PL.NOM AFF-rot-PST.3.SG
 'The old woman let the apples rot.'

This correctly predicts that in the imperfective *kts-* requires to combine with *-ur*, as shown in (8a). What is noteworthy is that a simple shift of the imperfective

suffix *-ur* to an *m*-set suffix (i.e., *-am* or *-um*) does not allow the root to be used transitively, as shown in (8b).

- (8) a. ořk'urepe kts-**un**
 apple.PL.NOM rot-IMPF.PRS.3.SG
 'The apples are rotting.'
- b. *dida-k ořk'urepe kts-**um/am-s**
 old.woman-ERG apple.PL.NOM rot-IMPF-PRS.3.SG
 Intended: 'The old woman is rotting the apples.'

Rather, Laz systematically causativizes unaccusative roots (which take *-ur* in the imperfective) adding a prefix *o-* and a suffix *-in*. Furthermore, this stem (which now licenses an ergative DP) will always require the *m*-set suffix *-am*. This is illustrated in the examples in (9).

- (9) a. dida-k ořk'urepe **o-kts-in-am-s**
 old.woman-ERG apple.PL.NOM CAUS-rot-CAUS-IMPF-PRS.3.SG
 'The old woman is rotting the apples.'
- b. bere-k ts'ari **o-kor-in-am-s**
 child-ERG water.NOM CAUS-get.cold-CAUS-IMPF-PRS.3.SG
 'The child is making the water colder.'
- c. mjora-k mtviri **o-ndg'ul-in-am-s**
 sun-ERG snow.NOM CAUS-melt-CAUS-IMPF-PRS.3.SG
 'The sun is melting the snow.'

Likewise, a simple shift in the imperfective suffix is not how Laz builds anticausative forms (i.e., inchoative events) from transitive roots. As illustrated in (10a), the root *nçax-* 'shake' is a transitive root, licensing an ergative DP. It is impossible to use this root intransitively simply by changing the imperfective suffix into *-ur*, as shown in (10b). Rather, building anticausative forms requires the prefix *i-*, glossed as EXP. In accordance with this, the imperfective suffix is changed to *-er*.

- (10) a. xordza-k mjalva nçax-**um-s**
 woman-ERG milk.NOM shake-IMPF-PRS.3.SG
 'The woman is shaking the milk.'
- b. *zuęa nçax-**un**
 sea.NOM shake-IMPF.PRS.3.SG
 Intended: 'The sea is shaking/sloshing (i.e., being wavy).'

- c. zuğa **i-nçax-en**
 sea.NOM EXP-melt-CAUS-IMPF.PRS.3.SG
 ‘The sea is shaking/sloshing (i.e., being wavy).’

In addition to transitive and inchoative roots, there are equipollent roots that are apparently underspecified, requiring the causativizing template in the transitive use and the anticausativizing template in the inchoative use. An example is provided in (11).

- (11) a. bere-k baloni **o-mbar-in-am-s**
 child-ERG balloon.NOM CAUS-swell-CAUS-IMPF-PRS.3.SG
 ‘The child is inflating the balloon.’
 b. zimari **i-mbar-en**
 dough.NOM EXP-swell-IMPF.PRS.3.SG
 ‘The dough is rising (lit: swelling).’
 c. *berek baloni mbarums/mbarams, *zimari mbarun
 Intended: ‘The child is inflating the balloon., The dough is rising.’

To summarize, there are three types of roots in Laz with respect to causativity alternations. Transitive roots which appear in the anticausativizing template in the inchoative use, inchoative roots which require the causativizing template in the transitive use, and underspecified roots which have to appear in the anticausativizing or causativizing template depending on which use is intended. This is schematically shown in (12).⁸

- | | | | |
|------|------------------|-------------------------|----------------------|
| (12) | inchoative | causative event | example |
| a. | root-ur | o-root-in-am | <i>kts-</i> ‘rot’ |
| b. | i-root-er | root-um, root-am | <i>nçax-</i> ‘shake’ |
| c. | i-root-er | o-root-in-am | <i>mbar-</i> ‘swell’ |

Setting aside the anticausativizing template and the causativizing template which respectively require *-er* and *-am*, we have three classes of roots, highlighted in (12) above. Roots that take *-ur*, roots that take *-um*, and roots that take *-am*. Roots that take *-ur* are systematically unaccusative roots that cannot license an ergative DP unless they appear in the causativizing template. Roots that take *-am* or *-um* always license an ergative DP (a property that justifies unifying the two imperfective suffixes under label *m*-set suffixes). Now the question is what, if anything, is the distinction between *-am* and *-um*. In the next section, we will take a closer look at the set of roots that require *-am* and *-um* (setting aside roots

⁸ These forms are given in the present tense imperfective form. Needless to say, when the aspect is not imperfective, the imperfective suffixes *-um*, *-am*, *-ur* and *-er* cannot surface.

that appear in the causativizing template, which systematically requires *-am*) and see if the distinction encodes anything.

3 A finer distinction?

In the previous section, we have established that Laz systematically encodes whether the external argument is in the structure in its case alignment and the imperfective allomorphy. We have also seen the productive causativity alternations, which require additional affixes, namely *i-* in the anticausative template and *o-* *-in* in the causative template.

Setting aside allomorph selection that is entirely predictable, this leaves us with two types of roots: those that take *-um* and those that take *-am*. There is a subclass among the roots that take *-am*: roots that necessarily occur with the prefix *o-* (which we see along with the suffix *-in* in the causativizing template).⁹ Accordingly, we have the three types of roots in (13), labelled CLASS-I, CLASS-II, and CLASS-III for convenience.

- | | | | | |
|---------|------------------------------------|-------------|--------------------------|-----------|
| (13) a. | nana-k | lu | mezlap'- um -s | |
| | mother-ERG | cabbage.NOM | mash-IMPF-PRS.3.SG | |
| | 'The mother is mashing cabbage.' | | | CLASS-I |
| b. | bere-k | kva | o-t'oç- am -s | |
| | child-ERG | stone.NOM | CAUS-throw-IMPF-PRS.3.SG | |
| | 'The child is throwing the stone.' | | | CLASS-II |
| c. | xordza-k | toyç'i | zd- am -s | |
| | woman-ERG | rope.NOM | pull-IMPF-PRS.3.SG | |
| | 'The woman is pulling the rope.' | | | CLASS-III |

In previous research, CLASS-I roots have been argued to denote events whose patients undergo *a change in form* while CLASS-II roots have been argued to denote *two phase achievements* (where the initiation and process subevents are not overlapping) (Öztürk 2011, Taylan and Öztürk 2014, Öztürk and Taylan 2017, Öztürk 2021). Therefore, any other root that can license an ergative external argument (recall this is a general property of *m*-set suffixes) is predicted to end up in CLASS-III. However, this has not been explored in previous work.

⁹ An anonymous reviewer points out that the forms in this sub-class could be causativized verbs rather than lexically causative roots, if we could posit a zero allomorph for the causative suffix. Admittedly, this possibility is hard to refute. However, to the best of my knowledge, there is no independent evidence for positing a null causative suffix in Laz.

3.1 CLASS-I roots

Based on a couple of illustrative examples, Öztürk (2011: 90) notes that roots that take *-um* in the imperfective are typically transitive verbs with patients that “undergo a material change of state”. In later work, the proposed notion of “material change” is characterized as a change in form (shape, constituency, or volume) but not in position (Taylan and Öztürk 2014: 278; Öztürk and Taylan 2017: 212).

For a large set of roots, this characterization appear to be empirically well-grounded. In (14) (and also (13a) and (4d)-(4f)), we have roots that denote events like chopping, roasting, kneading, crushing, etc. where the patient object undergoes a visible change induced by the agent: the physical integrity of the patient object undergoes destruction in (14a)-(14d), the chemical composition of the patient object changes due to heat in (14e)-(14f), the shape of the patient object undergoes change due to force in (14g)-(14h).

- (14) a. nana-k dutsxu xorx-**um**-s
 mother-ERG lime.tree.NOM prune-IMPF-PRS.3.SG
 ‘The mother is pruning the lime tree.’
- b. k’oçi-k nca xaz-**um**-s
 man-ERG tree.NOM hew-IMPF-PRS.3.SG
 ‘The man is hewing the tree.’
- c. bere-k urdzenepe ç’inax-**um**-s
 child-ERG grapes.PL.NOM crush-IMPF-PRS.3.SG
 ‘The child is crushing grapes.’
- d. layç’i-k ili ğerğ-**um**-s
 dog-ERG bone.NOM nibble-IMPF-PRS.3.SG
 ‘The dog is nibbling (at) the bone.’
- e. k’oçi-k xombura dişk’a ç’-**um**-s
 man-ERG dry wood.NOM burn-IMPF-PRS.3.SG
 ‘The man is burning dry wood.’
- f. amedi-k k’romi go-ç’-**um**-s
 Amedi-ERG onion.NOM PV-roast-IMPF-PRS.3.SG
 ‘Amedi is roasting onion.’
- g. ayla-k zimari şol-**um**-s
 Ayla-ERG dough.NOM knead-IMPF-PRS.3.SG
 ‘Ayla is kneading dough.’
 (Taylan and Öztürk 2014: 279)
- h. bere-k sak’izi lağun-**um**-s
 child-ERG gum.NOM chew-IMPF-PRS.3.SG
 ‘The child is chewing the chewing gum.’

Roots in (15), too, can also be argued to denote events with patients that undergo some kind of change even though the nature and the cause of the change is

slightly different in each case. For example, a house being built incrementally increases in volume (15a) whereas milk being drunk (15b) incrementally decreases in volume. In (15c)-(15e), the patient object changes in appearance: dirt removal provides cleaner appearance while patching covers tears/holes in the fabric.

- (15) a. ali-k oxori ts'opx-**um-s**
 Ali-ERG house.NOM build-IMPf-PRS.3.SG
 'Ali is building a house.' (Öztürk 2011: 90)
- b. xordza-k mjalva ř-**um-s**
 woman-ERG milk.NOM drink-IMPf-PRS.3.SG
 'The woman is drinking milk.' (Öztürk 2011: 90)
- c. řana-k oxori pađ-**um-s**
 řana-ERG house.NOM clean-IMPf-PRS.3.SG
 'řana is cleaning the house.'
- d. xordza-k řeepe nax-**um-s**
 woman-ERG laundry.NOM wash-IMPf-PRS.3.SG
 'The woman is washing laundry.' (Öztürk and Taylan 2017: 212)
- e. biç'i-k porça bur-**um-s**
 boy-ERG shirt.NOM patch-IMPf-PRS.3.SG
 'The boy is patching the shirt.'

3.2 CLASS-II roots

There can be two kinds of temporal relationship between the subevents of an event: precedence and overlap (Pinker, 1989; Pustejovsky, 1995; Rappaport Hovav and Levin, 2001; Krifka, 2004). If the initiation subevent temporally precedes the process subevent, then the event unfolds on its own upon initiation, which can be diagnosed by the lack of control that the initiator has on the process. On the other hand, if the initiation subevent is co-temporal with the process subevent, then the initiator is in control of the entire event. Rappaport Hovav (2008:21) points out that this sort of a partition is part of lexicalized meaning of verbs but "does not correspond to any commonly-discussed aspectual distinction".

Taylan and Öztürk (2014:291) argue that roots that are in CLASS-II are transitive achievements with two distinct phases sensitive to the temporal relationship between subevents. In particular, they argue that these roots describe events that unfold on their own upon initiation. For example, the event of *toppling a tree* that (16a) is describing has an initiation subevent. The subject of this subevent is *the men*, whose action leads to the process subevent (i.e., the spatial displacement of the tree), which they cannot control. Once the spatial displacement of the tree is initiated, the initiators lack control beyond that point.

Hence, such an event is a good illustration of the lack of co-temporality between the initiation and process subevents.

- (16) a. k'oç-epe-k nca c[e]-o-ninkt-**am**-an
 man-PL-ERG tree.NOM PV-CAUS-topple-IMPF-PRS.3.PL
 'The men are toppling down the tree.'
- b. bere-k kva o-t'oç-**am**-s
 child-ERG stone.NOM CAUS-throw-IMPF-PRS.3.SG
 'The child is throwing the stone.'
- c. amedi-k xami o-k'apin-**am**-s
 Amedi-ERG knife.NOM CAUS-let.go-IMPF-PRS.3.SG
 'Amedi is dropping the knife.'
- d. gubazi-k mektubi o-ncğon-**am**-s
 Gubazi-ERG letter.NOM CAUS-send-IMPF-PRS.3.SG
 'Gubazi is sending the letter.'
- e. arte-k ts'ari d[o]-o-b-**am**-an
 Arte-ERG water.NOM PV-CAUS-spill-IMPF-PRS.3.PL
 'Arte is spilling water.'
- f. bere-k t'opi o-rgin-**am**-s
 child-ERG ball.NOM CAUS-roll-IMPF-PRS.3.SG
 'The child is rolling the ball.'

Examples like *throwing a rock*, *dropping a knife*, *sending a letter*, *spilling water* in (16) all describe events where the patient undergoes spatial displacement which the agent initiates but lacks control over beyond the initiation phase (Krifka, 2004; Rappaport Hovav, 2008; Osswald et al., 2012). This seems consistent with the fact that the subject of the initiation subevent does not have to be animate, either. To illustrate, in (17a) some property of the pot (e.g., its size) could be seen as initiating (or being responsible for) the overflowing of the milk when the milk starts to boil. That is, once the overflowing starts, what follows is merely the self-action of the boiling milk, i.e., the pot can no longer affect it. It does not seem too far-fetched to take the event of a pot causing the milk to overflow to be on a par with the event of an agent throwing a stone. The initiator leads to a self-unfolding process which it has no control over. Similarly, in (17b), even though there is no spatial displacement of an object in the canonical sense, the lack of co-temporality could also be argued to be true in case of an *igniting* event where the process subevent (the fire doing what it does) is beyond the control of the initiator.

- (17) a. ham tencere-k mjalva ey[o]-o-mpun-**am**-s
 this pot-ERG milk.NOM CAUS-boil-IMPF-PRS.3.SG
 'This pot causes the milk to overflow.'

- b. badi-k daçxuri o-gz-**am**-s
 old.man-ERG fire.NOM CAUS-ignite-IMPF-PRS.3.SG
 ‘The old man is flaring up the fire.’

3.3 *What’s elsewhere: CLASS-III roots*

This is the *elsewhere* class for roots that are able to license an ergative external argument (without appearing in the causativizing template). What constitutes the elsewhere in this case has not been defined in previous research. In CLASS-I, we talked about roots that describe events where a physical change occurs in the patient. In CLASS-II, we spoke of roots that describe events whose initiation and process subevents are not co-temporal. There are both conceptual and empirical questions on the relationship between these semantic properties. Conceptually speaking, are these two semantic properties mutually exclusive? If not, then we have an empirical question: are these features equally accessible in determining the class membership or does one of these features have the priority in determining the class membership of a given root?

Let us start with the conceptual question. The answer seems pretty straightforward. It is easy to conceive of an event where a destruction process (which entails the physical affectedness of the patient) is *not* co-temporal with the subevent that initiates it. For example, while tearing down a tree or dropping a knife may not necessarily affect the physical integrity of the tree and the knife in these events, tearing down a wall or dropping a glass will likely affect the physical integrity of the wall and the glass. Hence, at least conceptually, the lack of co-temporality (the feature that arguably connects CLASS-II roots) does not preclude the physical affectedness of the patient. Given that the two features are not mutually exclusive, we have an empirical question: Which semantic property is prioritized in determining the class membership? Considering the data in (18) and (19), it seems to be the lack of co-temporality feature that needs to be marked.

- (18) a. k’oç-epe-k k’oda c[e]-o-ninkt-**am**-an
 man-PL-ERG wall.NOM PV-CAUS-topple-IMPF-PRS.3.PL
 ‘The men are toppling down the wall.’ CLASS-II
- b. *k’oç-epe-k k’oda ce-ninkt-**um**-an
 man-PL-ERG wall.NOM PV-topple-IMPF-PRS.3.PL
 Intended: ‘The men are toppling down the wall.’ CLASS-I
- (19) a. bere-k bardađı o-k’apin-**am**-s
 child -ERG glass.NOM CAUS-let.go-IMPF-PRS.3.SG
 ‘The child is dropping the glass.’ CLASS-II

- b. *bere-k bardađi k'apin-**um**-s
 child-ERG glass.NOM let.go-IMPf-PRS.3.SG
 Intended: 'The child is dropping the glass.' CLASS-I

This predicts that if a root falls in CLASS-I, the event that it describes *must* exhibit the co-temporality feature. Otherwise, it would have been in CLASS-II. This seems to be the right prediction. For example, the verb in (14a) is describing an action of changing the shape of a lime tree by pruning it. The initiator must clearly be in control of the entire process to effect the intended changes in the appearance of the tree. Indeed, the initiation and process subevents are always co-temporal in events described by CLASS-I roots. For example, in (13a), the action that an agent performs in intending to mash a cabbage and the physical changes that occur in the integrity of that cabbage are co-temporal. Hence, it seems that if a root is a member of CLASS-I, it describes an event whose subevents are co-temporal and whose patient undergoes a visible change in form.

Based on this empirical picture, we can deduce the algorithm in (20) that could plausibly be argued to be active in the grammar of Laz. This also allows us to make predictions on what will be in CLASS-III, i.e., the elsewhere class.

- (20) Let X be a verbal root that licenses an ergative external argument without appearing in the causative template.
- a. If X denotes an event whose initiation and process subevents are *not* co-temporal: then X is in CLASS-II. (i.e., it appears in the *o-X-am* template)
 - b. If X denotes an event whose patient undergoes physical change: then X is in CLASS-I. (i.e., it appears in the *X-um* template)
 - c. Else: X is in CLASS-III. (i.e., it appears in the *X-am* template)

This predicts that the roots in CLASS-III will not have non-co-temporal subevents and furthermore will not have a patient that undergoes physical change. This seems right. All the transitive verbs in (21) describe events where the initiation and process subevents are co-temporal. In each example, the agent's action is co-temporal with the spatial displacement of the object yet the object does not undergo physical change in form but only undergoes spatial displacement.

- (21) a. amedi-k diřk'a mo-đ-**am**-s
 Amedi-ERG wood.NOM PV-bring-IMPf-PRS.3.SG
 'Amedi is bringing wood.' (Öztürk and Taylan 2017: 211)
- b. biç'i-k k'afri ce-ç-**am**-s
 boy-ERG nail.NOM PV-bang-IMPf-PRS.3.SG
 'The boy is banging the nail.'

- c. xordza-k toyç'i zd-**am-s**
 woman-ERG rope.NOM pull-IMPf-PRs.3.SG
 'The woman is pulling the rope.'
- d. dida-k ek'na mola-zd-**am-s**
 old.woman-ERG rope.NOM PV-pull-IMPf-PRs.3.SG
 'The old woman is closing the door.'
- e. bere-k k'uçxe me-dg-**am-s**
 child-ERG rope.NOM PV-put-IMPf-PRs.3.SG
 'The child is taking a step (lit: putting a foot).'

Another class of verbs that systematically appear in CLASS-III is the class of unergatives. Since unergatives do not have non-co-temporal subevents (if at all) and do not have patients, their membership in CLASS-III is correctly predicted.

- (22) a. dida-k barbal-**am-s**, k'i-**am-s**
 old.woman-ERG nag-IMPf-PRs.3.SG yell-IMPf-PRs.3.SG
 'The old woman is nagging, yelling.'
- b. layç'i-k ts'umin-**am-s**
 dog-ERG bark-IMPf-PRs.3.SG
 'The dog is barking.'
- c. bere-k dits'-**am-s**
 child-ERG laugh-IMPf-PRs.3.SG
 'The child is laughing.'
- d. ts'ari-k řiřil-**am-s**, řařal-**am-s**
 water-ERG burble-IMPf-PRs.3.SG
 'The water is burbling.'
- e. ayna-k farfal-**am-s**
 mirror-ERG shine-IMPf-PRs.3.SG
 'The mirror is shining, glowing.'

To summarize, the way Laz classifies its roots that can license an external argument seems to be sensitive to whether or not the initiation subevent overlaps with the process subevent and whether or not the patient is physically affected by the process. This, at the very least, is showing us clues on the similarity-based organization of the lexicon and possibly pointing to semantic features relevant to the grammar of Laz. In the next section, I argue that this apparently semantic partition which surfaces in the form of morphological classes is not part of a synchronic system and propose that lexical selection is at work.

4 Is the classification present in the synchronic grammar?

In section 2, we saw that Laz systematically encodes the presence/absence of the external argument in its case alignment and the imperfective allomorphy. In section 3, we provided ample empirical evidence for a three-way classification of roots that license an external argument, and fleshed out a decision algorithm that determines which morphological class a given root will appear in.

In this section, I will attempt to answer the question in the title of this section, taking a closer look at the three-way classification documented in the previous section. I argue that answering this question boils down to determining if *selection* (or assignment of a root into a morphological class) is static or fluid. By static selection, I intend to describe the scenario in which (the lexical/class information encoded in) the root itself determines which morphological template it occurs in. However this may be modelled in the grammar, it would be on a par with the selection in idiosyncratic inflection classes. On the other hand, if there is fluid selection, the particular situation a verb is used to describe must determine which morphological template it occurs in.

Despite the appearances of a fully semantic/fluid system of selection, I argue that the former is the case in Laz. In other words, I argue that the partition based on the proposed semantic features is *not* part of the synchronic grammar of Laz. I will present two types of evidence for this claim. First, I will demonstrate that there are clear lexical exceptions to the proposed classification. Second, I will discuss cases where the verb is used to describe a situation that deviates from the canonical situations it may be used to describe. Crucially, in each case, the context manipulation predicts a shift in morphological class under the hypothesis that the selection is fluid. In none of the test cases does a shift in morphological class seem possible.

4.1 Lexical exceptions

There are clear exceptions to the proposed classification. As exemplified in (23), there are several transitive verbs that take *-um* and fall in CLASS-I even though they are clearly unlike the vast majority of CLASS-I roots and do not describe events with patients that undergo physical change.

- (23) a. xordza-k mjalva gor-**um**-s
 woman-ERG milk.NOM want-IMPF-PRS.3.SG
 ‘The woman wants milk.’
- b. berek-k t’opi çop-**um**-s
 child-ERG ball.NOM catch-IMPF-PRS.3.SG
 ‘The child is catching the ball.’

- c. arte-k kva tor-**um-s**
 Arte-ERG stone.NOM carry-IMPf-PRS.3.SG
 ‘Arte is carrying the stone.’
- d. řana-k dida tsad-**um-s**
 řana-ERG old.woman.NOM look-IMPf-PRS.3.SG
 ‘řana is taking care of the old woman.’

Furthermore, as shown in (24), there are a couple of unergative verbs in CLASS-I, even though we predict that they should be in CLASS-III.

- (24) a. biç’i-k sp’in-**um-s**
 boy-ERG whistle-IMPf-PRS.3.SG
 ‘The boy is whistling.’
- b. k’oçi-k xval-**um-s**
 man-ERG cough-IMPf-PRS.3.SG
 ‘The man is coughing.’
- c. mruntsxi-k tan-**um-s**
 star-ERG glow-IMPf-PRS.3.SG
 ‘The star is glowing.’
- d. bere-k dozg-**um-s**
 child-ERG poop-IMPf-PRS.3.SG
 ‘The child is pooping.’

There are CLASS-III roots that we would expect to see in CLASS-I since they describe events with patients that undergo physical change, as shown in (25a) and (25b). It is also notable that the roots in (25a) and (25c) describe the same event yet fall in distinct morphological classes.

- (25) a. xordza-k lu z-**am-s**
 woman-ERG cabbage.NOM mash-IMPf-PRS.3.SG
 ‘The woman is mashing cabbage.’ (expected in CLASS-I)
- b. evro-k porça ç’-**am-s**
 Evro-ERG shirt.NOM sew-IMPf-PRS.3.SG
 ‘Evro is sewing a shirt.’ (expected in CLASS-I)
- c. xordza-k lu mezlap’-**um-s**
 woman-ERG cabbage.NOM mash-IMPf-PRS.3.SG
 ‘The woman is mashing cabbage.’

Finally, we have a few CLASS-II roots that describe events with co-temporal subevents, constituting exceptions in this class, as shown in (26).

- (26) a. k'oçi-k araba o-kt-**am**-s
 man-ERG car.NOM CAUS-drive-IMPF-PRS.3.SG
 'The man is driving the car.'
- b. mcveri-k t'ikani o-şk'id-**am**-s
 wolf-ERG lamb.NOM CAUS-catch-IMPF-PRS.3.SG
 'The wolf is strangling the lamb.'
- c. arte-k oxori dişk'a-te o-pş-**am**-s
 Arte-ERG house.NOM wood-with CAUS-fill-IMPF-PRS.3.SG
 'Arte is filling the house with wood.'

The existence of exceptions alone does not refute the possibility that there is semantic selection going on in Laz. Even in a semantic selection system, grammar could be able to tolerate lexical/idiosyncratic selection, simply preempting semantic selection in those particular cases. For example, the fact that English uses suppletive forms of some verbs in the past tense would not in any way imply that *-ed* is not a regular past tense marker. Therefore, in the following subsection, I bring further evidence to argue that the morphological classes in Laz do not synchronically manifest semantic selection.

4.2 No class shift under context manipulation

Sometimes, a verb can be used to describe a situation that deviates from the situations it is canonically used to describe. In accordance with this, we can manipulate the context in a way that predicts a shift in morphological class under the hypothesis that the selection is fluid. These context manipulations reveal that a shift in morphological class is never possible, contrary to the predictions of fluid semantic selection.

Let us take the root *-val-* 'shake', exemplified in (27a). This root can be used to describe various kinds of *shaking* events where the agent's action entails the spatial displacement of the object. However, the co-temporality of the subevents (i.e., the agent's action and the spatial displacement of the object) is intuitively dependent on whether the object is stiff or flexible/bendable. While the event in (27a) could be argued to have the semantic property that CLASS-II roots have, the event of *waving hand* in (27b) certainly does not have the property of non-co-temporality. Nevertheless, it is impossible to shift the class of the root into the elsewhere class CLASS-III, predicted for an event like the one in (27b).

- (27) a. bere-k yaluği o-val-**am**-s
 child-ERG handkerchief.NOM CAUS-shake-IMPF-PRS.3.SG
 'The child is shaking the handkerchief.'

- b. bere-k xe o-val-**am**-s
 child-ERG hand.NOM CAUS-shake-IMPf-PRS.3.SG
 ‘The child is shaking hand (i.e., waving hand).’
- c. *bere-k xe val-**am**-s
 child-ERG hand.NOM shake-IMPf-PRS.3.SG

Similarly, a *sending* event involves an agent who initiates the displacement of an object but lacks control beyond that. This correctly predicts that the root in (28a) is in CLASS-II. However, it is possible to imagine a sending situation where the agent retains control over the movement of the theme. One such context is delivering an object to some recipient by remote controlling a drone. In such a context, we would arguably predict a shift to CLASS-III. Yet, even in this context, the shift is judged to be impossible, as shown in (28b).

- (28) a. gubazi-k mektubi o-ncğon-**am**-s
 Gubazi-ERG letter.NOM CAUS-send-IMPf-PRS.3.SG
 ‘Gubazi is sending the letter.’
- b. *gubazi-k mektubi ncğon-**am**-s
 Gubazi-ERG letter.NOM send-IMPf-PRS.3.SG

A *chewing* event canonically entails irreversible physical change in the object, hence correctly predicted to be in CLASS-I, as shown in (29a). However, even when the object in question is going to be unharmed (i.e., the event essentially only describes the motion that the agent’s jaw is involved in), it is not possible to shift to morphological class to CLASS-III, as shown in (29b).

- (29) a. layç’i-k ili dzağ-**um**-s
 dog-ERG bone.NOM chew-IMPf-PRS.3.SG
 ‘The dog is chewing the bone.’
- b. *layç’i-k metali dzağ-**am**-s
 dog-ERG metal.NOM chew-IMPf-PRS.3.SG
 Intended: ‘The dog is chewing on the metal.’

Finally, *hitting a nail* (when done successfully) inserts the nail further into a surface with each hit. Since this event has co-temporal subevents (i.e., the agent’s action and the motion of the nail) and the object arguably does not undergo physical change, we predict it to be in CLASS-III, as shown in (30a). However, a context where a child is unsuccessfully banging a nail, presumably causing it to bend or break, still does not license using this root with the CLASS-I morphology, as shown in (30b).

- (30) a. k'oçi-k k'afri ce-ç-**am**-s
 man-ERG nail.NOM PV-bang-IMPF-PRS.3.SG
 'The man is banging the nail.'
- b. *bere-k k'afri ce-ç-**um**-s
 child-ERG nail.NOM PV-bang-IMPF-PRS.3.SG
 Intended: 'The child is banging the nail, causing it to bend.'

To summarize, shifts between morphological classes are impossible, which follows under the hypothesis that the selection is static, hence purely root-dependent. If the selection of morphological classes were fluid and hence required looking at the particular situation which a given root is being used to describe, the impossibility of shifting the morphological class of a root would be unexpected.

5 Final Remarks

The overall semantic coherency of the morphological classes in Laz seems robust, as we have tried to demonstrate with ample evidence. However, the fact that the selection of these templates is static (determined by the root itself) is at odds with the transparent semantic groupings that the Laz lexicon seems to present. Perhaps, what Laz presents is the residue of a grammar that synchronically had the proposed semantic partitions among roots that license an external argument. In its current state, Laz may be exhibiting the earlier stages of the path to idiosyncratisation. I hypothesize that the presumed system of fluid selection decayed at some point, resulting in its canonical outputs being stored in the lexicon. It appears that not much has changed in Laz from that point on.

This view on the current state of Laz predicts that genetically related linguistic varieties in the South Caucasian group may be at different stages of this hypothesized diachronic path: ranging from those which still have the fluid selection to those whose lexicon has extensive idiosyncratic assignment to morphological classes. A future direction would be a micro-variation study that compares the status of these morphological classes in different varieties in the South Caucasian family, namely other varieties of Laz and its close relative Mingrelian, as well as Georgian (Cherchi 2003; Hewitt, 2008; Tuite 2017; Baker, 2020, a.o.).

There are also important limitations of this study, two of which I must mention here. First, the idea that the presumed system of fluid selection could have existed at some point in the grammar of Laz requires further synchronic and diachronic justification that the present study cannot provide. As pointed out by an anonymous reviewer, we should, at the very least, be able to determine the proportion of the exceptions to the hypothesized semantic selection. This awaits further data collection, ideally on multiple varieties. Second, the

idiosyncratisation path is not the only direction in which Laz could go. Given that the language is currently endangered, it mainly persists in heritage contexts, with its heritage speakers having varying degrees of proficiency. In heritage contexts, different patterns could be expected to develop, mainly due to reduced linguistic intake. For example, Eren (2022) reports that some heritage speakers of Laz appear to have regularized the distribution of the imperfective markers *-um* and *-am*, using the former to mark the progressive aspect and the latter to mark the habitual aspect. This is a distinction that the proficient baseline speakers lack (i.e., the habitual and progressive forms are always syncretic). I speculate that more extensive fieldwork with heritage speakers of Laz may reveal other novel patterns that go against the hypothesized path of idiosyncratisation.

References

- Aronoff, M. (1994). *Morphology by itself: Stems and inflectional classes*. Cambridge, MA: MIT Press.
- Alexiadou, A., & Müller, G. (2008). Class features as probes. In A. Bachrach, & A. Nevins (Eds.), *Inflectional Identity* (pp. 101-155). Oxford: Oxford University Press.
- Baker, J. (2018). *Split intransitivity: Thematic roles, case and agreement*. Doctoral Dissertation, University of Cambridge.
- Baker, J. (2020). How thematic suffixes in Georgian reveal event structure. *Paper presented at SyntaxLab*, University of Cambridge, 16th June 2020.
- Barillot, X., Bendjaballah, S., & Lampitelli, N. (2018). Verbal classes in Somali: Allomorphy has no classificatory function. *Journal of Linguistics* 54(1), 3-43. DOI:10.1017/S002222671700024X.
- Blix, H. (2021). Spans in South Caucasian agreement. *Natural Language and Linguistic Theory* 39: 1–55. DOI: 10.1007/s11049-020-09475-x.
- Cherchi, M. (2003). How many verb classes are there in Mingrelian? In Holisky, D. A., & Tuite, K. (Eds.), *Current trends in Caucasian, East European and Inner Asian linguistics: Papers in honor of Howard I. Aronson* (pp. 29-39). John Benjamins. DOI: 10.1075/cilt.246.05che.
- Corbett, G., & Fraser, N. M. (2000). Gender assignment: a typology and a model. *Systems of Nominal Classification*, 4, 293-325.
- Demirok, Ö. (2013). AGREE as a unidirectional operation: evidence from Laz. Unpublished MA thesis, Boğaziçi University.
- Demirok, Ö. (2021). Non-linear Blocking Effects on Suppletive Allomorphy. *Dilbilim Arařtırmaları Dergisi* 32(2): 83-109. DOI: 10.18492/dad.804477.
- Donohue, M., & Wichmann, S. (2008). *The typology of semantic alignment*. Oxford University Press.
- Eren, Ö. (2021). Fake arguments as apparent valency changers: Evidence from Laz. In R. Soo, U. Y. Chow, & Nederveen, S. (Eds.), *Proceedings of the 38th West Coast Conference on Formal Linguistics* (pp. 191-200). Cascadilla Proceedings Project.

- Eren, Ö. (2022). Preference for Transparency and Locality in Heritage Laz. *Paper presented at Theoretical Linguistics and Languages of the Caucasus*, İstanbul Bilgi University, 18th June 2022.
- Erguvanlı Taylan, E., & Öztürk, B. (2014). Transitivity in Pazar Laz. *Acta Linguistica Hungarica* 61(3), 271-296. DOI: 10.1556/ALing.61.2014.3.2.
- Harris, A. (1985). *Syntax and semantics 18: Diachronic syntax: The Kartvelian case*. New York: Academic Press. DOI: 10.1163/9789004373143.
- Hewitt, G. (2008). Cases, arguments, verbs in Abkhaz, Georgian and Mingrelian. In G. G. Corbett, & M. Noonan (Eds.), *Case and Grammatical Relations: Studies in honor of Bernard Comrie* (pp. 75–104). John Benjamins. DOI: 10.1075/tsl.81.04cas.
- Holisky, D. A. (1991). Laz. In A. C. Greppin, & A. C. Harris (Ed.), *The Indigenous Languages of the Caucasus. Volume 1: The Kartvelian Languages* (pp.395-472). Delmar/New York: Caravan Books.
- Krifka, M. (2004). Semantic and pragmatic conditions for the dative alternation. *Korean Journal of English Language and Linguistics*, 4,1-32.
- Mithun, M. (1991). Active/agentive case marking and its motivations. *Language* 67(3),510-546.
- Nash, L. (2017). The structural source of split ergativity and ergative xase in Georgian. In J. Coon, D. Massam, & Travis, L. D. (Ed.), *The Oxford Handbook of Ergativity*, ed. Jessica Coon, Diane Massam, and Lisa Demena Travis. Oxford University Press.
- Osswald, R., Jr. Van Valin Jr., R., Fleischhauer, R., Latrouite, A., & Van Hooste, K. (2012). On the syntax-semantics interface of directed transport and caused motion expressions. *Paper presented at Concept Types and Frames in Language*, Düsseldorf, Aug 22-24.
- Öztürk, B., & Pöchtrager, M. (2011). *Pazar Laz*. LINCOM.
- Öztürk, B. (2011). Thematic suffixes. In B. Öztürk, M. Pöchtrager (Eds.), *Pazar Laz* (pp. 89-95). LINCOM.
- Öztürk, B. (2021). Transitive unergatives in Pazar Laz. *Glossa: a journal of general linguistics* 6(1), 1-24. DOI: 10.5334/gjgl.828
- Öztürk, B., and Erguvanlı Taylan, E. (2017). Omnipresent little v in Pazar Laz. In R. D'Alessandro, I. Franco, & A. J. Gallego (Eds.), *The Verbal Domain* (pp. 207-232). Oxford University Press.
- Perlmutter, D. M. (1978). Impersonal passives and the unaccusative hypothesis. *Annual Meeting of the Berkeley Linguistics Society*, 4, 157-190.
- Pinker, S. (1989). *Learnability and cognition: The acquisition of argument structure*. Cambridge, MA: MIT Press.
- Pustejovsky, J. (1995). *The generative lexicon*. The MIT Press.
- 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. (2000). Classifying single argument verbs. In P. Coopmans, M. Everaert, & J. Grimshaw (Eds.), *Lexical specification and insertion* (pp. 269-304). John Benjamins.
- Rappaport Hovav, M., & Levin, B. (2001). An event structure account of English resultatives. *Language* 77(4):766-797.

- Rothstein, S. (2004). *Structuring events: A study in the semantics of lexical aspect*. Wiley-Blackwell.
- Sorace, A. (2000). Gradients in auxiliary selection with intransitive verbs. *Language* 76(4):859-890.
- Tuite, K. (2017). Alignment and orientation in Kartvelian (South Caucasian). In J. Coon, D. Massam, & L. Travis (Eds.), *Oxford Handbook of Ergativity* (pp. 1114-1138). Oxford University Press.
- Williams, A., Pimentel, T., Blix, H., McCarthy, A. D., Chodroff, E., & Cotterell, R. (2020). Predicting declension class from form and meaning. In *Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics* (pp. 6682–6695). Association for Computational Linguistics.
- Woolford, E. (2015). Ergativity and transitivity. *Linguistic Inquiry* 46(3):489–531. DOI: 10.1162/ling_a_00190.