

# The Logophoric Complementizer in Laz\*

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**ABSTRACT:** This study investigates the two phenomena associated with the logophoric complementizer in Laz, which is used to introduce the propositional complements of speech and thought predicates. Namely, the allomorphy based on the person and number features of the matrix subject and the indexical shifting observed for the pronominal elements in the embedded clause. We will argue that the allomorphy is the morphological reflection of the identity of the external speaker and the attitude holder and it cannot be analyzed as a case of phi-feature agreement. As for the indexical shifting we will adopt the monster operator account of Sudo (2010).

**Keywords:** complementizer agreement, logophoric complementizer, indexical shifting, monster operator

## Lazca'daki Ussal Tümleyiciler

**ÖZ:** Bu çalışmanın amacı Lazca'da konuşma ve söyleme eylemleriyle kullanılan ussal tümleyicilerle ilgili iki olguyu incelemektir: Tümleyicinin biçimbirimsel formunda ana tümcenin öznesinin kişi ve sayı özelliklerine bağlı olarak gözlenen değişim ve yan tümcede bulunan adsıl öğelerin göndermelerinde gözlemlenen kaymalar. Ussal tümleyicinin biçimbirimsel değişiminin dışsal konuşucunun ve tutum sahibinin göndermelerinin örtüştüğü durumlara bağlı olduğu savunulacak ve bunun kişi-sayı bilgisine bağlı bir tümleyici uyum durumu olamayacağı gösterilecektir. Adsıl öğelerinin göndermelerinde görülen kaymalar içinse, Sudo (2010)'da önerilen canavar işleyici modeli uygulanacaktır.

**Anahtar Sözcükler:** tümleyici uyumu, ussal tümleyiciler, gönderge kayması, canavar işleyici

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## 1 Introduction

Laz, an endangered Caucasian language spoken in Turkey, has two sets of complementizers used in embedded clauses (Emgin and Öztürk, 2011a), namely, the proclitic *na*, given in (1) and also the logophoric

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complementizers *maandya*, which are only compatible with speech and thought predicates as illustrated in (2a) and (2b) respectively. We will discuss the properties of these complementizers in detail in Section 3:

- (1) Arte-k [ma noseri na-vore] iduşun-am-s  
 Arte-ERG 1 smart C-be.1SG think-IMPF-3SG  
 ‘Arte thinks that I am smart.’
- (2) a. Ma [Ali noseri on ] ma p-t’k’v-i  
 1 [Ali smart 3.be ] 1.LC 1-say-1.PST  
 ‘I said that Ali is smart.’  
 b. Arte-k [ma noseri vore] ya iduşun-am-s  
 Arte-ERG 1 smart be.1SG LC think-IMPF-3SG  
 ‘Arte<sub>i</sub> thinks that he<sub>i</sub> is smart.’

The focus of this study is the data on logophoric complementizers in (2). There are two separate issues regarding the logophoric complementizers in PL. The first is the indexical shift observed in the case of logophoric complementizers, but not with the proclitic complementizer *na*. In the case of logophoric complementizers used with the speech predicate *-t’k’v-* ‘say’ and the thought predicate *-iduşun-* ‘think’ given in (3) and (4) respectively, the first person subjects in the embedded clauses are necessarily interpreted as co-indexed with the third person matrix subject, hence depicting a change in their references, which we call *index shift*:

- (3) Arte-k [ma noseri vore] ya iduşun-am-s  
 Arte-ERG 1 smart be.1SG LC think-IMPF-3SG  
 ‘Arte<sub>i</sub> thinks that he<sub>i</sub> is smart.’  
 \*‘Arte thinks that I am smart.’
- (4) Arte-k [ma noseri vore] ya t’k’-u  
 Arte-ERG 1 smart be.1SG LC say-PST.3SG  
 ‘Arte<sub>i</sub> said that he<sub>i</sub> is smart.’  
 \*‘Arte said that I am smart.’

Indexical shifting is obligatory in the case of logophoric complementizers<sup>1</sup>. This contrasts with behavior of the proclitic complementizer *na-* under which indexical shifting is not possible. As illustrated in (5)-(6), the embedded clause first person subject can only refer to the actual first person speaker in the

<sup>1</sup> One of the reviewers suggests that this statement might be too strong. We believe there is no need to weaken this statement because if there is no pronominal indexical in the scope of the logophoric complementizer, the indexical shifting requirement is trivially satisfied.

discourse, but cannot be interpreted as co-indexed with the main clause third person subject:

- (5) Arte-k [ ma noseri na-vore] iduşun-am-s  
 Arte-ERG 1 smart C-be.1SG think-IMP-3SG  
 ‘Arte thinks that I am smart.’  
 \*‘Arte<sub>i</sub> thinks that he<sub>i</sub> is smart.’
- (6) Arte-k [ ma noseri na-vore] t’k’-u  
 Arte-ERG 1 smart C-be.1SG say-PST.3SG  
 ‘Arte said that I am smart.’  
 \*‘Arte<sub>i</sub> said that he<sub>i</sub> is smart.’

In addition to the index shift phenomenon, the second issue that the data in (2) raises is in regards to the allomorphy exhibited by the logophoric complementizers. As seen in (2a), when the matrix subject is third person the logophoric complementizer surfaces as *ya*, however, when the subject in the matrix clause is first person, *ma* is selected as the logophoric complementizer as in (2b). The question is whether this allomorphy stems from an Agree relation between the matrix subject and the complementizer in the left periphery of the embedded clause or not.

The aim of this study to account for these two phenomena associated with the logophoric complementizer in Laz, which we call indexical shift and the complementizer allomorphy observed in the data.

## 2 The Laz Language

Laz forms the south branch of the Caucasian family, along with Georgian, Megrelian and Svan. Laz is mainly spoken in North-Eastern Turkey, but there is a small minority living within the borders of Georgia, as well. In Turkey, Laz is mainly spoken in two cities, Rize and Artvin. The dialects of Pazar (Atina), Ardeshen, and Fındıklı (Viže) are mainly spoken within the borders of Rize, while Arhavi and Hopa are spoken in Artvin (See Figure 1).

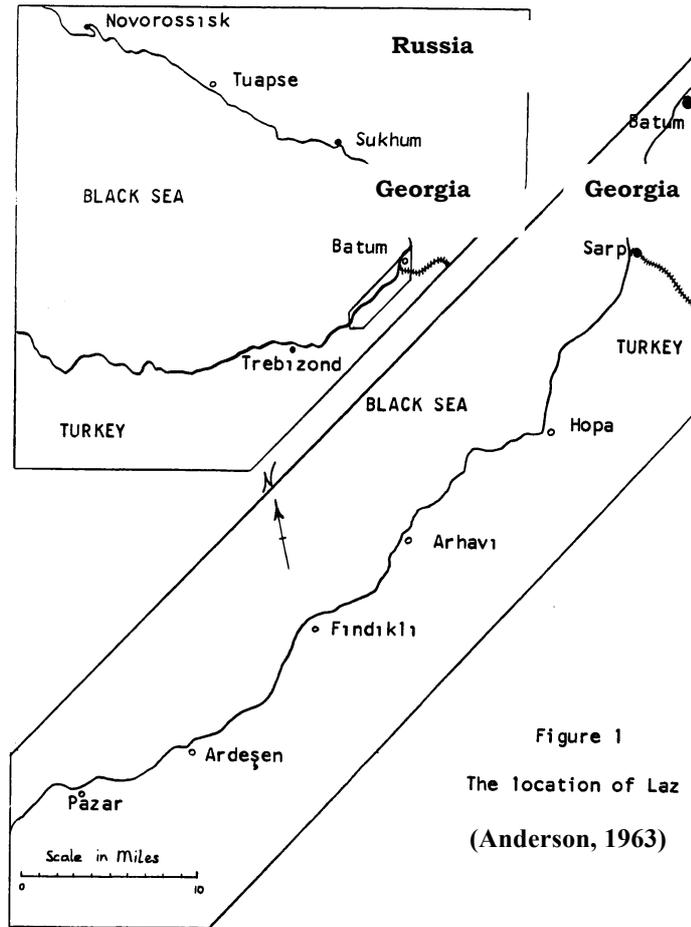
As there is no definite census statistics for the minorities living in Turkey, it is hard to estimate the exact number of speakers of Laz, but the number is assumed to range between 50.000 to 500.000, as indicated in Holisky (1991) and Kutscher (2008).

Throughout history Laz has had an extensive contact with Turkish, Greek, Georgian and Armenian in the region. Currently, as Turkish is the only officially recognized language of the state and the education system in Turkey, Laz people are proficient speakers of Turkish. Most Laz children get exposed to Turkish upon starting primary school the latest, if not earlier. While the older generations (speakers above 40) are typically bilingual

younger people are either monolingual Turkish speakers or passive users of Laz, who can understand but cannot actively speak the language (Kutscher, 2008). As Kutscher (2008) puts forth, in addition to the factors such as the linguistic legislation or the Turkish monolingual education system in Turkey, most Laz parents choose to speak only in Turkish to their children and thus, deny their children of the chance to acquire Laz natively, as they want their children to be proficient speakers of Turkish. Consequently, Laz has definitely become an endangered language as not many children can acquire it as their first language.

Laz is underdescribed. There is extensive dialectal variation, only very little of it is documented. Among the major studies done on Laz, which include grammatical descriptions, dictionaries, as well as text collections we can cite Rosen (1844), Marr (1910), Ćikobava (1936), Dumézil (1937), Anderson (1963), K'art'ozia (1972), Asatiani (1974), Kutelia (1979), (1980), (1985), Holisky (1991), Bucak'liři and Uzunhasanođlu (1999), Kutscher *et al.*(1995), Kutscher (2001, 2005), Gűrpınar (2000), Kojima and Bucak'liři (2003), Amse-de Jong (2004), Abasisi (2005), Bucak'liři, Uzunhasanođlu and Aleksiva (2007), Emgin (2009), Lacroix (2009), Őztűrk and Pűctrager (2011), Őztűrk (2012), Demirok (2013) and Taylan and Őztűrk (2014).

Since 2011, Laz is also being taught as a foreign language at Bođaziĉi University. Thanks to the endeavours of the Bođaziĉi University research group, teaching materials have been prepared for Laz and currently this material is being used in the secondary schools to teach Laz as a foreign language, which we hope to contribute to the revitalization of the language.



### 3 Logophoric complementizers: Descriptive Facts

In the following, we will focus on the properties associated with the indexical shifting phenomenon and the allomorphy exhibited by the logophoric

complementizers in PL. These facts are of crucial for the analysis to be presented later.

### 3.1 Person-variation with Logophoric Complementizer

The logophoric complementizer in Laz exhibits limited allomorphy dependent on the person value of the matrix subject. There are only two variants *ya* and *ma*:

- (7) a. Ma [Ali noseri on] ma p-t'k'v-i  
 1 [Ali smart 3.be] 1.LC 1-say-1.PST  
 'I said that Ali is smart.'  
 b. Si [Ali noseri on] ya t'k'v-i  
 2 [Ali smart 3.be] LC say-2.PST  
 'You said that Ali is smart.'  
 c. Arte-k [ma noseri vore] ya t'k'-u  
 Arte-ERG 1 smart be.1SG LC say-PST.3SG  
 'Arte<sub>i</sub> said that he<sub>i</sub> is smart.'

The logophoric complementizer *ya* is used when the matrix subject is second or third person as illustrated in (7b) and (7c), respectively. The form *ma* is only available for first person *singular* subjects and it is identical in form to the first person singular pronoun *ma* 'I' in Laz as shown in (7a). Interestingly, first person *plural* subjects are incompatible with *ma* but they require the form *ya*, as illustrated in (8) below.

- (8) Şk'u [Ali noseri on] ya p-t'k'v-i-t  
 1.PL Ali smart be.3SG LC 1-say-1.PST-PL  
 'We said that Ali is smart.'

Hence, we could hypothesize that *ma* is a specialized exponent for the case where the main clause subject and the discourse speaker match, while *ya* functions as an elsewhere morpheme, which surfaces in the absence of such a match. Table 1 below summarizes the distribution of the two allomorps:

Table 1. Allomorphs of the logophoric complementizer

Matrix Subject	Logophoric Complementizer
1SG	<i>ma</i>
2SG	
3SG	<i>ya</i>
1PL	
2PL	
3PL	

### 3.2 Indexical shifting

As discussed above, reference shift (indexical shifting) is attested under speech and thought predicates, *-t'k'v-* 'say' and *-iduşun-* 'think'. This contrasts with the behavior of the proclitic complementizer *na-* under which indexical shifting is not possible. While logophoric complementizers can only be realized with the predicates *say* and *think* in Laz as illustrated in (9), the proclitic complementizer *na-* has no similar selectional restriction and can combine with any propositional attitude verb like *think*, *say*, *know* without inducing indexical shifting as given in (10):

- (9) a. Arte-k [ma noseri vore] ya iduşun-am-s  
 Arte-ERG 1 smart be.1SG LC think-IMPF-3SG  
 'Arte<sub>i</sub> thinks that he<sub>i</sub> is smart.'  
 \*'Arte thinks that I am smart.'
- b. Arte-k [ma noseri vore] ya t'k'-u  
 Arte-ERG 1 smart be.1SG LC say-PST.3SG  
 'Arte<sub>i</sub> said that he<sub>i</sub> is smart.'  
 \*'Arte said that I am smart.'
- (10) a. Arte-k [ma noseri na-vore] iduşun-am-s  
 Arte-ERG 1 smart C-be.1SG think-IMPF-3SG  
 'Arte thinks that I am smart.'  
 \*'Arte<sub>i</sub> thinks that he<sub>i</sub> is smart.'
- b. Arte-k [ma noseri na-vore] t'k'-u  
 Arte-ERG 1 smart C-be.1SG say-PST.3SG  
 'Arte said that I am smart.'  
 \*'Arte<sub>i</sub> said that he<sub>i</sub> is smart.'
- c. Arte-s [ma noseri na-vore] uşkun  
 Arte-DAT 1 smart C-be.1SG knows  
 'Arte knows that I am smart.'  
 \*'Arte<sub>i</sub> knows that he<sub>i</sub> is smart.'

The fact that indexical shifting is obligatory with the logophoric complementizers, but not with the proclitic complementizers immediately raises the following question: Are the clauses that the logophoric complementizers introduce cases of true subordination, or can they just be considered as cases of direct quotation? Direct quotations constitute opaque domains which do not interact with the matrix clause. Direct quotation involves direct embedding of an utterance whose content is inaccessible and cannot be manipulated. Clauses with logophoric complementizers inducing indexical shifting phenomenon in Laz, however, can be more straightforwardly distinguished from cases of direct quotation. We can use the following two diagnostic tests to identify indexical shifting.

Firstly, we observe that wh-words in the embedded clause with the logophoric complementizer can take matrix scope and be interpreted as a question to the hearer as shown in (11):

- (11) Tanura-k [ma mi malimben] ya t'k'-u  
 Tanura-ERG 1 who.NOM I.love LC say-3.PST  
 i. "Who did Tanura<sub>i</sub> say he<sub>i</sub> loves?" → Indexical Shifting  
 ii. 'Tanura said "who do I love?'' → Direct Quotation

The data in (11) is two-way ambiguous. While it is possible to interpret the embedded clause as a direct quotation as in (ii), it is also possible to construe it as a case where the first person in the embedded clause refers to the matrix subject Tanura requiring indexical shifting as in (i). The reading in (i) indicates that the wh-word in the embedded clause takes matrix scope, hence the whole sentence in (11) can be interpreted as a question. If (11) were just a case of direct quotation, we would not expect a matrix question reading to be available but only a statement reading where Tanura simply uttered the embedded content "Who do I love?".

Secondly, in the clauses introduced by the logophoric complementizers, the spatio-temporal deictic adverbs should be anchored to the main utterance context. As seen in the example in (12), the spatio-temporal modifiers *andġa* 'today' and *hak* 'here' are anchored to the matrix utterance context, making it impossible for the embedded utterance to be a direct quotation, even though in the original utterance what we have are the modifiers *there* and *tomorrow*.

- (12) Context: Tutaste utters the following on Wednesday:  
‘I will be there tomorrow.’

On Thursday, the external speaker utters:

Tutaste-k ğoma [ma andġa hak vortare] ya t’k’-u.

Tutaste-ERG yesterday 1 today here I.will.be LC say-3.PST

‘Tutaste; said she; would be here today’.

Lit: ‘Tutaste; said I; will be here today’.

When we focus on the indexical shift in (12), we see that the indexical shift only manipulates pronominal indexicals leaving out the spatio-temporal adverbs. While the spatio-temporal adverbs are anchored to the main utterance context, the indexical pronoun *ma* ‘I’ still refers to *Tutaste*, who the embedded report is attributed to. This constitutes robust evidence that indexical shifting is a phenomenon distinct from direct quotation.

### 3.3 Interim Summary of Facts

To summarize, we have seen that the logophoric complementizer are only compatible with the attitude verbs *say* and *think*, while the non-logophoric proclitic complementizer has no such selectional restriction. The allomorphy is contingent on the person-number value of the matrix subject. Furthermore, under the scope of the logophoric complementizer, the pronominal indexicals in the embedded clause must be shifted. The indexical shifting phenomenon is distinct from direct quotation as the indexical shifting merely targets the pronominal indexicals leaving out the other deictic terms like spatio-temporal modifiers. Moreover, wh-words can get matrix scope making the quotational parse impossible.

Given these properties, in the following we will first aim to provide an account of the allomorphy exhibited by the logophoric complementizer, then focus on the indexical shifting. We will argue that the allomorphy phenomenon and the indexical shifting should be treated as two independent phenomena.

## 4 The Allomorphy of the Logophoric Complementizer

The person variation concerning the logophoric complementizer looks like a straightforward morphological problem yet it is theoretically interesting. In this section, we consider two approaches to this morphological variation pattern. The first conceivable approach to this phi-variation problem is phi-agreement (agreement in person-number features) via Agree. We will argue against this approach. The alternative approach we will adopt exploits the representation of pragmatics in syntax, which we will argue fares better for the data from Laz.

#### 4.1 *Is it person agreement?*

As discussed in Section 3, logophoric complementizers exhibit variation based on the phi-features (person and number features) of the matrix subject. At first sight this comes across as a case of a complementizer agreement phenomenon. Complementizer agreement is rarely observed cross-linguistically. The most well-known case is the one found in West Germanic, where the complementizers agree in person and number with the subjects of the embedded clause, as illustrated in (13) for West Flemish:

- (13) a. *Kpeinzenda-j* (*gie*) morgen goat. [West Flemish]  
 I-think that-you (you) tomorrow go  
 ‘I think that you’ll go tomorrow.’  
 b. *Kvindendan* die boeken te diere zyn.  
 I-find that-PL the books too expensive are  
 ‘I find those books too expensive.’ (Haegeman 1992:47)

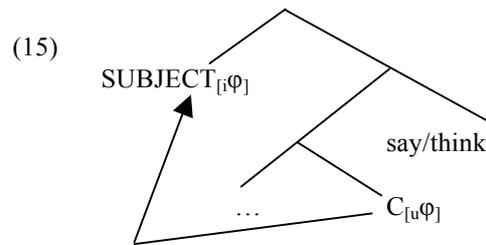
Note that the pattern here is not similar to the one we observe in Laz. In Laz, the complementizer does not agree with the embedded clause subject, but with the matrix subject. Lubukusu – a Bantu language spoken in Kenya, exhibits a more similar complementizer agreement pattern to the one in Laz, where the complementizer agrees with the matrix subject:

- (14) a. *Ba-ba-ndu ba-bol-el-a Alfrediba-li* a-kha-khil-e  
 2-2-people 2S-said-AP-FV 1Alfred 2-that 1S-FUT-conquer  
 ‘The people told Alfred that he will win.’  
 b. *Alfredi ka-bol-el-a ba-ba-ndua-li* ba-kha-khil-e.  
 1Alfred 1S-said-AP-FV 2-2-people 1-that 2S-FUT-conquer  
 ‘Alfred told the people that they will win.’ (Diercks, 2013: 358)

The first conceivable solution to the phi-variation problem observed in the case of complementizer agreement is phi-agreement. This is the standard theoretical treatment of co-variance in phi-features. The well-recognized way of dealing with co-variance in phi-features has been using a downward (c-command-based) Agree operation which involves a valuation relation between a Probe and a Goal that it c-commands (Chomsky, 2001). Complementizer agreement cases like the one in West Germanic neatly fits into this picture as the complementizer agrees with the embedded clause subject which is in its c-command domain.

However, the complementizer agreement pattern observed in languages like Lubukusu or Laz, where the complementizer seems to agree with the *matrix* subject as illustrated in the configuration in (15), is a challenge to the

downward Agree analysis, as the complementizer fails to c-command the matrix subject:



The configuration in (15) involves a Goal that c-commands a Probe and hence valuation cannot happen according to Chomsky (2001). This calls for an alternative version of Agree known as *upward Agree*. (See Baker (2008), Zeijlstra (2010), Bejar and Rezac (2009), and Wurmbrand (2011) for different versions of upward agree.) The literature still has not settled on the issue of Upward Agree. There is a hot debate on whether it exists at all. Some authors argue that there is no convincing set of facts that would force us to reconsider the directionality of probing (e.g. Preminger and Polinsky, 2015). We will not take any stance on this debate. For the sake of argumentation, we will assume that upward Agree is potentially possible and therefore, we have a problem to address. Granted that upward Agree is a part of the grammar, the question we will address is whether what we observe in Laz is phi-agreement at all. Our answer to this question will be negative.

Unlike West Germanic or Lubukusu, we do not observe a full paradigm of complementizer variation based on person and number in Laz. Recall from Table 1 that the variant *ma* is only used for first person singular matrix subjects while all the other subjects, regardless of their person and number features, require the *ya* variant. Strictly speaking, this fact is not incompatible with the phi-agreement analysis but seems particularly odd considering the Laz-internal facts. Laz is a language where two arguments agree with the verb in person and number. There is no person syncretism in the verbal agreement paradigms as shown in (16). If phi-agreement were responsible for the variation in the logophoric complementizer, the extremely syncretic logophoric complementizer allomorphy (*ma* ‘1sg’ vs. *ya* ‘elsewhere’) would be highly exceptional for Laz given that its verbal agreement paradigm is very rich.<sup>2</sup>

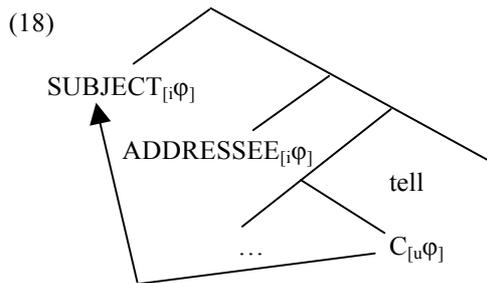
<sup>2</sup> See Demirok (2013) for the details of Laz verbal agreement system.

- (16) g-dzir-em-s  
 2Obj-see-IMPF-3Subj  
 ‘S/he is seeing you (sg).’

More importantly, the LC variation appears to be blind to the locality considerations which are crucial in syntactic phi-valuation via Agree. Note that the locality considerations remain constant no matter which version of Agree we choose. Hence, the phi-agreement account would predict that the person-number values of the closest c-commanding DP will be morphologically reflected on the logophoric complementizer. The prediction of this account is not borne out. As seen in (17), where there is another DP (i.e. *si* ‘you’) that is structurally closer to the complementizer than the matrix subject (i.e. *ma*), phi-variation in logophoric complementizer is not dependent on the closest c-commanding DP but still on the subject DP.

- (17) Ma si [[Alinoseri on] ma/\*ya] g-i-tzv-i  
 1 2 Ali smart 3.be 1.LC/LC 2-APPL-tell-1.PST  
 ‘I told you that Ali is smart.’

The configuration in (18) is the sketchy representation of (17) where the second person singular addressee intervenes between the logophoric complementizer and the first person singular matrix subject. If what we have in Laz were a simple case of upward Agree, given the structural proximity between the complementizer and the addressee we would predict the *ya* variant to be selected as the logophoric complementizer, as *ya* is the form compatible with the second person. However, in (17), we see that *ya* leads to ungrammaticality and the complementizer is selected based on the main clause subject despite the intervening addressee.



Based on the evidence given above, we conclude that the allomorphy depicted by the logophoric complementizer in Laz cannot be reduced to a case of phi-

agreement where the complementizer probes (upwards or downwards) for phi-values of a DP.<sup>3</sup>

#### 4.2 *An alternative analysis – Pragmatics in Syntax*

As discussed above the two-way allomorphic variation of the logophoric complementizer cannot be a case of phi-agreement. However, we still believe the ‘distinct marking’ (i.e. *ma*) that comes with the first person singular matrix subjects is not arbitrary but principled and therefore accountable.

Recall that logophoric complementizers in Laz are only compatible with the attitude predicates ‘say’ and ‘think’ whose subjects are *attitude holders*. What the variant *ma* distinctively marks is very clear: It conveys that the *attitude holder* of the embedded proposition is also the individual who utters the matrix sentence, i.e. the *external speaker*. The form *ya*, on the other hand, indicates that these two are not identical:

#### (19) Logophoric Complementizer

- ma* → Attitude Holder = External Speaker  
*ya* → Attitude Holder ≠ External Speaker

A clarification note is in place here. The attitude holder can also be a group of individuals that includes or excludes the external speaker. For example, in the sentence (20b), it is a group of individuals that exclude the external speaker. However, in the counterpart of (20c) where the matrix subject is “we”, the attitude holder will include the matrix speaker. Hence, the “Attitude Holder ≠ External Speaker” condition should be interpreted as such: *The unique maximal individual that corresponds to the attitude holder contains an atomic individual that is not the external speaker.*<sup>4</sup> This will ensure that in cases where the matrix subject [i.e. the attitude holder] is “we”, the logophoric complementizer surfaces as *ya* because the unique maximal individual that is the attitude holder contains an atomic individual that is not the external speaker [that is, whoever else the external speaker refers to by saying “we”].

<sup>3</sup> Also see Section 6 where we discuss a complex set of data that raises a similar problem for the phi-agreement analysis.

<sup>4</sup> A maximal individual can be a plural or singular individual. In a world, where the only individual is John, the unique maximal individual will be {John}. In a world where the only individuals are John and Mary, the unique maximal individual will be {John+Mary} and there will be two atomic individuals {John} and {Mary}.

- (20) a. Ma [[Ali noseri on ] ma] viduřunam  
 1.SG [Ali smart 3.be] 1.LC think.1SG.PRS  
 ‘I think that Ali is smart.’
- b. Bere-pe-k [[Ali noseri on] ya] iduřunaman  
 child-PL-ERG [Ali smart 3.be] LC think.3PL  
 ‘The children think that Ali is smart.’
- c. řk’u [[Ali noseri on] ya] viduřunamt  
 1.PL [Ali smart 3.be] LC think.1PL.PRS  
 ‘We think that Ali is smart.’

Thus, we see a morphological reflection of the match between the attitude holder and the external speaker on the complementizer in Laz. One supporting fact for the morphological alignment of attitude holder and the external speaker comes from the parallelism between Arabic and Laz complementizer systems. Ross (1970) reports that Arabic makes use of the specialized complementizer <sup>2</sup>*inna* with the attitude predicate ‘say’ iff the attitude holder (i.e. the subject of ‘say’) is first person singular whereas all other persons require the elsewhere complementizer <sup>2</sup>*enna*.

- (21) <sup>2</sup>*aquulu* <sup>2</sup>*inna* lwalada qad taraka lbayta  
 I.say 1.that the.boy left the.house  
 ‘I say that the boy left the house’ (Ross, 1970; ex. 80)

Hence, the same type of complementarity between first person singular and other attitude holders in Arabic is on a par with what is attested in Laz as seen in Table 2:

Table 2. Comparison of Laz and Arabic complementizers

Matrix Subject	Laz	Arabic
1SG	<i>ma</i>	<sup>2</sup> <i>inna</i>
2SG		
3SG		
1PL	<i>ya</i>	<sup>2</sup> <i>enna</i>
2PL		
3PL		

We adopt the view that pragmatics can be represented in syntax (to the extent that it is grammaticalized).<sup>5</sup> We will adopt the implementation in Speas (2004)

<sup>5</sup> This view can be motivated (theory-internally) on the grounds that we find morphological (post-syntactic) and semantic reflexes of certain pragmatics notions

which builds on the cartography of functional projections in Cinque (1999) and the pragmatic roles in Sells (1987).

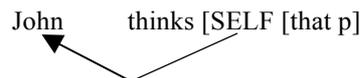
Sells (1987) defines two pragmatic roles. The role SOURCE stands for the intentional agent of the communication, while SELF is for the one whose mental state or attitude the proposition describes. He proposes that the predicates of speech and thought have different Discourse Representations. In embedding speech predicates, both SOURCE and SELF are mapped onto the subject of the embedding verb, while in speech predicates, only SELF is associated with the subject.

Following the implementation in Speas (2004), we assume that Mood<sub>SpeechAct</sub> (SA) and Mood<sub>Evaluative</sub> (EVAL) are *also* present in the left periphery of the embedded clause, which are associated with the two pragmatic roles defined by Sells (1987). While SOURCE is associated with the SA projection in the left periphery, SELF is associated with EVALP. As seen in (22a), while both SOURCE and SELF are available in a speech predicate, only SELF is present in the case of predicates of thought as in (22b):

- (22) a. ...[SUBJECT<sub>i</sub> [*say* [CP SOURCE<sub>i</sub> SA<sup>o</sup> [SELF<sub>i</sub> EVAL<sup>o</sup>...  
[proposition]]]]]]



- b. ... [ SUBJECT<sub>i</sub> [*think* [CP [ SELF<sub>i</sub> EVAL<sup>o</sup>...[proposition]]]]]



In both speech and thought predicates the proposition *p* is attributed to the attitude holder (the subject) which is mapped to the SELF role. We propose that *ma* is used when the embedded SELF is co-referential with the external speaker, which is also syntactically represented in the left periphery of the matrix clause.

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(discourse participants, source of knowledge and so forth) (Speas and Tenny, 2003; Speas, 2004, Krifka, 2014).

- (23) *ma* →  
 [SOURCE<sub>i</sub>SA<sup>o</sup>[SELF<sub>i</sub> EVAL<sup>o</sup>...[...[SUBJECT<sub>i</sub>[*think*[CP[SELF<sub>i</sub>  
 EVAL<sup>o</sup>...[proposition]]]]]]  
*ya* →  
 [SOURCE<sub>k</sub>SA<sup>o</sup>[SELF<sub>k</sub>EVAL<sup>o</sup>...[...[SUBJECT<sub>i</sub>[*think*[CP[SELF<sub>i</sub>  
 EVAL<sup>o</sup>...[proposition]]]]]]

Technically speaking *ma* is the manifestation of a “concord” relationship between the semantically interpreted abstract pragmatic role SELF in the two left peripheries. However, we do not think it is necessary to invoke a long-distance syntactic checking relationship between two left peripheries. Rather, an ungrammatical utterance as in (24) can be explained away as an instance of semantic uninterpretability:

- (24) \*Tanura-k [[Ali noseri on] ma] iduşunams  
 Tanura-ERG Ali smart 3.be 1.LC thinks  
 {Tanura thinks ≠ I think} that Ali is smart

In (24), the semantics of the attitude predicate ‘think’ assigns Tanura to the embedded SELF role while *ma* signals that the proposition describes the attitude of the external speaker. Since the external speaker cannot identify himself/herself as Tanura, what the semantics of ‘think’ brings in and what *ma* conveys contradicts.<sup>6</sup>

We do not undertake the task of formulating the semantic denotations of the pragmatic projections. However, the basic intuition is that the semantics of the attitude predicates makes reference to these embedded pragmatic roles.

We could tentatively use a toy semantic entry for *mathat* that takes the embedded proposition as its argument, adds the presupposition that the speaker in the matrix utterance context is the attitude holder and returns *p*. The elsewhere competing morpheme [[*ya*]] is used whenever the presupposition of [[*ma*]] is not met<sup>7</sup> (Heim, 1991).

- (25) [[*ma*]]<sup>c</sup> =  $\lambda p_{\langle s, t \rangle}$ :the unique *y* such that *y* identifies oneself as the author in *c* = the unique maximal *x* in *c* such that *x* believes that *p*.

<sup>6</sup> One of the reviewers points out that speakers may sometimes refer to themselves in third person instead of first person. We modified the lexical entry in (25) to exclude this case.

<sup>7</sup> See Percus (2006) for a technical implementation of how *Maximize Presupposition* would give us the correct choice between competing morphemes.

## 5 Indexical Shifting

Remember that the attitude verbs ‘say’ and ‘think’ can co-occur with two different complementizers: the logophoric complementizer *ma/ya* and the elsewhere complementizer *na-*. Of the two, only the former can and has to trigger indexical shifting. There are various analyses of indexical shifting in the literature (Anand and Nevins, 2004; Anand, 2006; Sudo, 2012; Podobryaev, 2014). Although there are important technical differences among these theories, all of them use some sort of *operator* (also known as *monster operator*, henceforth *M*) to shift the indexicals. The main motivation for the operator analysis is what is called the Shift Together effect defined in (26) below.

(26) *Shift Together*: All indexicals within a *speech-context domain* must pick up reference from the same context. (Anand and Nevins 2004: 24)

As (27) shows, the indexical shifting phenomenon in Laz respects the Shift Together principle, which arguably justifies the use of *M* for the purposes of indexical shifting. An alternative hypothesis, which does not use *M*, would entertain the possibility that the indexical pronouns are ambiguous in the sense that they can pick up reference from *any* contextually salient speech context, cf. (26). This would predict that all readings in (27) are available rather than only the one where all indexicals shift together.<sup>8</sup> As this is empirically incorrect in Laz, we argue that the pronouns in Laz have invariant denotations as in (28) and are not ambiguous in any relevant sense.

(27)  $Si_k$  [ma<sub>k</sub>[nana- $\xi$ kimik Mp’oli- $\xi$  na-idu] b-dzir-i ya] tkv-i  
 2 [1 [mother-POS1 Istanbul-to C-went] 1-see-1.PST LC] say-2.PST  
 Lit: ‘You said: I saw that my mother went to Istanbul.’

- i. ‘You said that you saw that your mother went to Istanbul’ 2 of 2 indexicals shifted
- ii. \*‘You said that you saw that my mother went to Istanbul’ 1 of 2 indexicals shifted
- iii. \*‘You said that I saw that your mother went to Istanbul’ 1 of 2 indexicals shifted
- iv. \*‘You said that I saw that my mother went to Istanbul’ 0 of 2 indexicals shifted

<sup>8</sup> This argument for a monster operator is presumably weaker for Laz in that the Shift Together effect is more relevant for languages which exhibit optional (rather than obligatory) indexical shifting. However, the obligatoriness of indexical shifting still robustly argues for an operator analysis over an ambiguity analysis.

- (28) a.  $[[ma]]^c = \text{author in } c$   
 b.  $[[si]]^c = \text{addressee in } c$

Under the hypothesis that the logophoric complementizer is a PF signal for the LF-presence of a monster operator, we know that indexical shifting has to happen for all indexicals under the syntactic scope (c-command domain) of the logophoric complementizer. Accordingly, in (27), the indexicals that are in the scope of the monster operator are *ma* ‘I’ and *řkimi* ‘my’. This hypothesis regarding the syntactic scope of *M* makes the correct prediction and account for the Shift Together effect.

To make the account more concrete, we adopt the implementation of Sudo (2010) in Podobryaev (2014) to illustrate how *M* shifts the indexicals under its scope. The denotation of *M* is given in (29) below. *M* takes a variable (of type *k* for context) as its first argument and then takes the embedded clause and rewrites the context parameter with the context variable that it takes.<sup>9</sup> This effectively forces the prejacent of the attitude verb to be interpreted under the new context parameter (as opposed to the matrix evaluation context).

$$(29) \lll[Mi] \varphi \rrr]^{c, g} = \lll\varphi \rrr]^{g(i), g}$$

Compare the sentences in (30) below. While (30a) features the logophoric complementizer (hence by assumption *M*), (30b) does not. We take the PF-presence of the logophoric complementizer to signal the LF-presence of *M*. Therefore, only (30a) exhibits obligatory indexical shifting. That is, the embedded first person indexical will be interpreted as the author in the embedded speech context (i.e. in the modified context *c'* rather than the matrix evaluation context *c*).

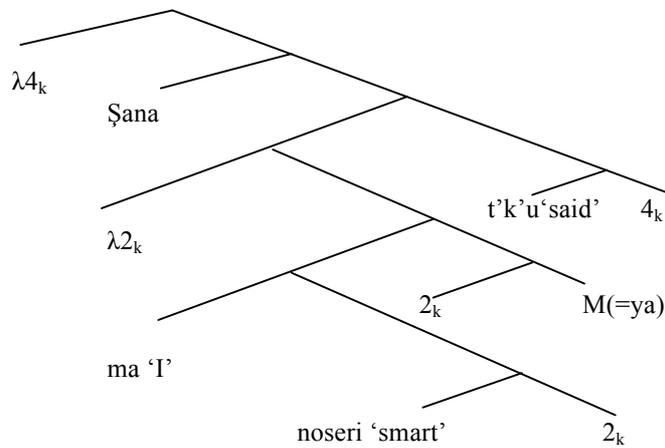
- (30) a. řana-k       $[[ma \text{ noseri vore}]$       ya[=*M*]      t'k'u  
          řana-ERG    1      smart 1.be      LC            said  
          Lit: řana said: I am smart.  
          ‘řana<sub>i</sub> said that she<sub>i</sub> is smart.’  
          ‘\*řana said that I am smart.’

<sup>9</sup> The world-context indices are assumed to be syntactic objects. For further discussion on fully intensional semantics, see Percus (2000), von Stechow and Heim (2015). The syntactic presence of indices are independently justified by the so-called “third readings” that are available in addition to *de re* and *de dicto* readings for quantifiers under intensional predicates. See Chapter 8 of von Stechow and Heim (2015).

- b. Şana-k [ma noseri na-vore] t'k'u  
 Şana-ERG I smart C-1.be said  
 'Şana said that I am smart.'  
 '\*Şana<sub>i</sub>said that she<sub>i</sub> is smart.'

The proposed LF for (30a) is given in (31a) below. Notice that M takes the context variable as its first argument. Given that the denotation of the first person pronoun is as in (30a) and M manipulates the context parameter of its prejacent (by rewriting it with the context index in its sister), the truth conditions for the LF in (31a) will be as in (31b).

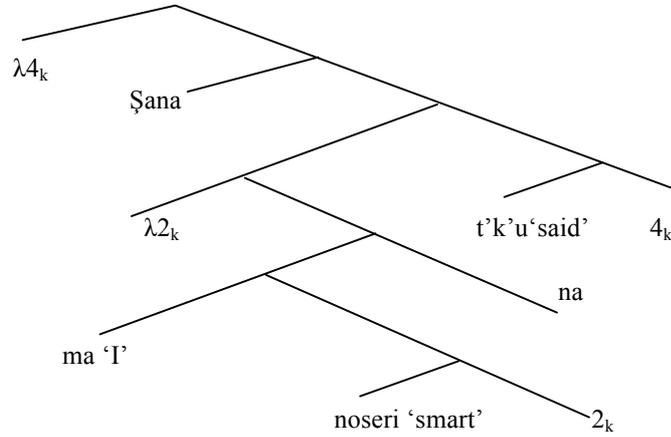
(31) a.



- b.  $[[[(31a)]]^{c,s}]$  is true with respect to  $c$  iff for all  $c'$  such that  $w_{c'}$  is compatible with what Şana says in  $w_c$  and  $s_{c'}$  is the individual that Şana identifies in  $w_c$  as herself,  $s_{c'}$  is **smart in  $w_{c'}$** .

Compare (31a) with (32a) for the sentence in (30b). Notice that (30b) does not feature the monster operator. Accordingly, the context parameter will never be modified and the denotation of the embedded indexical (i.e.  $[[ma]]^c = \text{author in } c$ ) will remain constant throughout the derivation. It will always denote the individual that utters (30b). The truth conditions for the LF in (32a) will be as in (32b).

(32) a.



- b.  $[[[(32a)]]^{c-g}$  is true with respect to  $c$  iff for all  $c'$  such that  $w_{c'}$  is compatible with what Şana says in  $w_c$  and  $s_{c'}$  is the individual that Şana identifies in  $w_c$  as herself,  $s_{c'}$  is smart in  $w_{c'}$ .

Then, the difference of (30a) from (30b) is the presence of  $M$  that rewrites the context evaluation parameter. In (30a), the first person indexical under the scope of  $M$  will be interpreted with respect to the embedded utterance context (see (29)) and hence its denotation will be whoever is the author in the embedded utterance context, in this case Şana. In (30b), however, the context evaluation parameter remains constant throughout the derivation and so does the denotation of the embedded first person indexical. Compare the boldfaced parts of the truth conditions in (31b) and (32b) to see the non-trivial effect of  $M$ . This readily predicts that the effect of  $M$  will be essentially undetectable when there is no indexical that can be shifted under its scope (e.g. when the embedded subject is *John* instead of *I*).

## 6 Concluding Remarks: Allomorphy vs. Indexical Shifting

The accounts we have proposed for 'indexical shifting' and 'logophoric complementizer allomorphy' seem completely independent from each other. In fact, in the way we presented them, they do not appear to inform each other in any meaningful way. We believe a connection between the two phenomena is feasible but they are in fact separate phenomena and call for different mechanisms.

Remember that following Speas (2004), we assumed different subcategorization frames for attitude predicates *say* and *think*. In particular, we assumed (33a) and (33b) hold. Let us add the attitude verb *know* to this

picture. Crucially, the complement of *know* cannot have an *evaluator* disjoint from the matrix speaker. Consider the contrast between ‘John thinks that Mary is smart’ and ‘John knows that Mary is smart’. The former sentence clearly invites the addressee to attribute the proposition [Mary is smart] to the belief state of John in particular; however, no comparable implication is available for the latter sentence. Hence, again following Speas, we assume that the EVAL projection is missing in the complement of *know*.

- (33) a. [*say* [SA° [EVAL°... [proposition]]]]  
 b. [*think* [EVAL°... [proposition]]]  
 c. [*know* ... [proposition]]

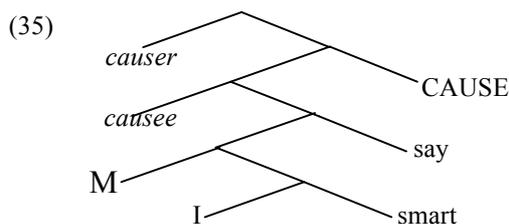
Moreover, we have shown that only *say* and *think* can host the logophoric complementizer which obligatorily yields indexical shifting. Hence, it seems feasible to stipulate that only the EVAL projection can host the logophoric complementizer (hence M) in Laz. This stipulation makes it less arbitrary that indexical shifting is restricted to the verbs *say* and *think*. It also makes the cross-linguistic prediction that whenever indexical shifting is possible under *think*, it will necessarily be possible under *say* because the projections of *say* is the superset of the projections of *think*. What Speas (2004) reports regarding the cross-linguistically attested logophoricity hierarchy is in line with this prediction.

Another important question that needs to be addressed is why we really need different mechanisms for the two phenomena. We present preliminary evidence for this claim from causativized speech predicates. Consider the complex set of data in (34). The data in (34) inform us about two facts. Firstly, the locus of indexical shifting is still the subject of *say*, i.e. causee argument in this case. Secondly, the logophoric complementizer cannot appear as *ma* regardless of the person value of the causee or the matrix subject.

- (34) a. Ma<sub>i</sub> si<sub>k</sub> [[ma<sub>k/\*i</sub> noseri vore] ya/\*ma] g-ozit-ap-i  
 1 2 [1 smart 1.be LC/\*1.LC] 2-say-CAUS-1.PST  
 ‘I made you say that you are smart.’  
 Lit: ‘I<sub>i</sub> made you<sub>k</sub> say that I<sub>k/\*i</sub> am smart.’  
 b. Si<sub>i</sub> ma<sub>k</sub> [ma<sub>k/\*i</sub> noseri vore] ya/\*ma] m-ozit-ap-i  
 2 1 [1 smart 1.be LC/\*1.LC] 1-say-CAUS-2.PST  
 ‘You made me say that I am smart.’  
 Lit: ‘You<sub>i</sub> made me<sub>k</sub> say that I<sub>k/\*i</sub> am smart.’

The fact that the embedded first person indexical is interpreted as the person who makes the report is predicted under our analysis for indexical shifting. If

we assume a structure as in (35) (simplified for expository reasons), the semantics of ‘say’ still identifies the subject of ‘say’ (i.e. *causee*) as the one who is the speaker in the embedded utterance context, i.e. SOURCE role. The CAUSE layer should not have any effect on this. Hence, when M shifts the context, the embedded first person person indexical is correctly interpreted as the causee, i.e. the person who makes the embedded report.



We need to say something about the second fact, i.e. the impossibility of the *ma* variant under causativized speech predicates.<sup>10</sup> Under our hypothesis, the logophoric complementizer cannot appear as *ma* when the unique maximal individual that is the attitude holder is not the external speaker. Let us remember the presupposition that *ma* comes with.<sup>11</sup>

(36)  $[[ma]]^c = \lambda p_{\langle s,t \rangle}$ : the unique  $y$  such that  $y$  identifies oneself as the author in  $c =$  the unique maximal  $x$  in  $c$  such that  $x$  believes that  $p$ .

Intuitively speaking, under a causativized speech predicate, the (embedded) SELF role seems to be no longer anchored to the person who makes the (embedded) report (i.e. embedded SOURCE). The intuition behind this is the fact that there is a contrast between (37a) and (37b) with respect whether the proposition [that Mary is smart] is (by default) ascribed to John’s belief state or not. We think that (37a) naturally allows this while (37b) does not. Moreover, the SELF role does not seem to be associated with Bill, either.

Accordingly, we hypothesize that the CAUSE layer effectively renders the embedded SELF role “undefined”<sup>12</sup>. We illustrate this in (38) by representing (37b).

<sup>10</sup> Also notice that this constitutes an independent argument against the phi-agreement account for the person variation in the logophoric complementizer. See section 4.1.

<sup>11</sup> If [ma] also lexicalizes the monster operator, this entry needs to be revised. But we leave the question whether *ma/ya* lexicalizes M or simply signals its presence to future work.

<sup>12</sup> This may also shed light on the fact that the LC cannot be used with causativized “think”.

- (37) a. John said that *Mary is smart*.  
 b. Bill made John say that *Mary is smart*.

(38) [SOURCE<sub>k</sub> SELF<sub>k</sub> Bill<sub>i</sub> CAUSE John<sub>m</sub> [say [ SOURCE<sub>m</sub> SELF<sub>ø</sub> [p]]]]

Assuming that (38) is right, the presupposition in (36) can never be satisfied under a causativized speech predicate because “the unique maximal x in c such that x believes that p” is undefined under causation. If this intuition is on the right track, then we may at least begin to understand why *ma* in (34b) is bad. However, in this paper, we will not be able to explicate how the Mood<sub>SA</sub> and Mood<sub>EVAL</sub> projections are to be interpreted under causativized attitude verbs and leave this to future work.

In conclusion, we believe that the left-peripheral functional projections and the operator for the indexical shifting are separately needed to capture the asymmetry between the controller of the logophoric complementizer allomorphy and the locus of indexical shifting (the subjects of the attitude verbs).

## References

- Amse-de Jong, Tine H. (2004). *Laz-English Dictionary*. Freudenstadt: Kaukasus Verlag.
- Anand, P. and Nevins, A. (2004). Shifty operators in changing context. In K. Watanabe and R. D. Young (Eds.), *Proceedings of Semantics and Linguistic Theory 14*. CLC Publications.
- Anand, P. (2006). *De de se*. Doctoral Dissertation, MIT.
- Anderson, Ralph D. (1963). *A Grammar of Laz*. Doctoral Dissertation University of Texas at Austin.
- Asatiani, Irine. (1974). *C'anuri (lazuri) t'ekst'ebi*. Tbilissi : Mecniereba
- Baker, M. (2008). *The syntax of agreement and concord*. Cambridge: Cambridge University Press.
- Bejar, S. and M. Rezac. (2009). Cyclic Agree. *Linguistic Inquiry* 40.1, 35-73.
- Bucak'lışı, İ. ve Uzunhasanoğlu, H. (1999). *Lazuri-Turkuli nenapuna. Lazca-Türkçe Sözlük*. İstanbul: Akyüzyayıncılık.
- Bucak'lışı, İ., Uzunhasanoğlu, H. and Aleksiva, İ. (2007). *Didi Lazuri nenapuna-Büyük Lazca Sözlük*. İstanbul: Chiviyazıları.
- Chomsky, N. (2001). Derivation by Phase. In M. Kenstowicz (ed.), *Ken Hale: A life in language* (pp. 1-52). MIT Press, Cambridge/MA.
- Cinque, G. (1999). *Adverbs and functional heads: A cross-linguistic perspective*. Oxford: Oxford University Press.
- Čikobava, A. (1936). *C'anuris gramat'ik'uli analizi t'ekst'ebiturt*. Tbilissi : Mecniereba.
- Demirok, Ö. F. (2013). Agree as a Unidirectional operation: Evidence from Pazar Laz. MA Thesis, Boğaziçi University.
- Diercks, M. (2013). Indirect Agree in Lubukusu complementizer agreement. *Natural Language & Linguistic Theory* 31.2, 357-407.
- Dumézil, G. (1937). *Contes Lazes*. Paris: Institut d'Ethnologie.
- Emgin, B. (2009). *Finiteness and Complementation in Laz*. MA Thesis, Boğaziçi University.

- Emgin, B. and Öztürk, B. (2011a). Complement Clauses. In *Pazar Laz*. LINCOM: Languages of the World Materials, Münich.
- Emgin, B. and Öztürk, B. (2011b). Infinitival Clauses in Pazar Laz. *Proceedings of Current Advances in Caucasian Studies*. Macerata, Italy.
- Gürpınar, T. (2000). *The dialect of Pazar Laz and its case system*. MA Thesis, Boğaziçi University.
- Haegeman, L. (1992). Some speculations on argument shift, clitics, and crossing in West Flemish. Ms., University of Geneva, Geneva.
- Heim, I. (1991). Artikel und Definitheit. In von Stechow, A. and D. Wunderlich (eds.), *Semantik: Ein internationales Handbuch der zeitgenössischen Forschung*, Berlin: de Gruyter, 487–535.
- Holisky, D. A. (1991). Laz. In Harris.A.C. (ed.), *The Indigenous Languages of the Caucasus*, Delmar NY.
- K'art'ozia, G. (1972). *Lazuri t'ekst'ebi*. Tbilissi : Mecniereba.
- Kojima, G., ve Bucak'lışı, İ. (2003). *Lazuri Grameri*. Istanbul : Chiviyazıları.
- Krifka, M. (2014). Embedding Illocutionary Acts. In M. Speas and T. Roeper (Eds.), *Recursion: Complexity in Cognition*. Springer.
- Kutelia, N. (1979). Tanxmovantk'omp'leksebi Lazurşı. *Macne* 2, 122-130.
- Kutelia, N. (1980). Lazuri vok'alizimi. *Macne* 2, 105-120.
- Kutelia, N. (1985). Lazuri k'onsonant'izmi. *Macne* 4, 132-154.
- Kutscher, S. (2001). *Lazuri Nena –The Language of the Laz*. <http://www.unikoeln.de/phil-fak/ifl/asw/forschung/projekte/Lasisch/benningwd.pdf>
- Kutscher, S. (2008). The language of the Laz in Turkey: Contact-induced change or gradual language loss? *Turkic Languages* 12/1, 82-102.
- Kutscher, S., Mattissen, J. and Wodarg, A. (1995). *Das Mut'afi-Lazische*. Köln: Universität Humboldt University Berlin.
- Lacroix, R.(2009). Description du dialecte laze d'Arhavi. Ph.D Dissertation. University of Lumiere Lyon 2.
- Marr, N.(1910). *Grammatika c'anskogo (lazskogo) jazyka s xrestomatijeju islovarem*. Saint-Petersbourg: Akademija.
- Öztürk, B. (2012). Low, High and Higher Applicatives: Evidence from Pazar Laz. In C. Taboada, M. Victoria, A. Jimenez Fernandez, , J. Martin Gonzalez, and R. T., Mariano (Eds.), *Information Structure and Agreement*(pp. 275-295).John Benjamins, Amsterdam.
- Öztürk, B. and Pöchtrager, M. (Eds.). (2011). *Pazar Laz*. LINCOM: Languages of the World Materials, Münich.
- Percus O. (2006). Antipresuppositions. In Uyema A. (Ed.), *Theoretical and Empirical Studies of Reference and Anaphora: Toward the Establishment of Generative Grammar as an Empirical Science* (pp. 52–73).
- Percus, O. (2000). Constraints on some other variables in syntax. *Natural Language Semantics* 8, 173-229.
- Podobryaev, A. (2014). *Persons, Imposters, and Monsters*. Doctoral Dissertation, MIT.
- Preminger O. and Polinsky M. (2015). Agreement and semantic concord: a spurious unification. Ms. [lingbuzz/002363](http://lingbuzz/002363)
- Rizzi, L. (1997). The Fine Structure of the Left Periphery. InL. Haegeman (Ed.), *Elements of Grammar* (pp.281-337). Kluwer Amsterdam.
- Rosen, G. (1844). *Über die Sprache der Lazen*. Berlin: Lemgo et Detmold.
- Ross, J. R. (1970). On declarative sentences. In R. A. Jacobs and P. S. Rosenbaum (Eds.) *Readings in English Transformational Grammar*. Waltham, MA: Ginn.
- Sells, P. (1987). Aspects of logophoricity. *Linguistic Inquiry* 18 (3), 445–479.

- Speas, M. (2004). Evidentiality, logophoricity and the syntactic representation of pragmatic features. *Lingua* 114.
- Sudo, Y. (2010). Person indexicals in Uyghur indexical shifting. In *Proceedings of Berkeley Linguistics Society* 36.
- Sudo, Y. (2012). On the semantics of phi-features on pronouns. Doctoral Dissertation, MIT.
- Speas, P. and Tenny, C. (2003). Configurational Properties of Point of View Roles. In A.-M. Di Sciullo (Ed.), *Asymmetry in Grammar* (pp. 315-344). John Benjamins: Amsterdam.
- Taylan, E. E. and Öztürk, B. (2014). Transitivity in Pazar Laz. *Acta Linguistica Hungarica* 61: 271–296.
- von Stechow, K. and Heim, I. (2015). *Intensional Semantics*. Lecture Notes-2015 Spring, MIT.
- Wurmbrand, S. (2011). Reverse Agree. Unpublished Ms., UConn.
- Zeijlstra, H. (2010). There is only one way to Agree. Paper presented at GLOW 33 in Wrocław.