

2015

## Unifying Nominalized Clauses, Auxiliaries, and Copular Allomorphy in North Azeri

Colin Davis

*University of Minnesota - Twin Cities*, [davi1390@umn.edu](mailto:davi1390@umn.edu)

Follow this and additional works at: [https://repository.stcloudstate.edu/stcloud\\_ling](https://repository.stcloudstate.edu/stcloud_ling)



Part of the [Applied Linguistics Commons](#)

---

### Recommended Citation

Davis, Colin (2015) "Unifying Nominalized Clauses, Auxiliaries, and Copular Allomorphy in North Azeri," *Linguistic Portfolios*: Vol. 4, Article 6.

Available at: [https://repository.stcloudstate.edu/stcloud\\_ling/vol4/iss1/6](https://repository.stcloudstate.edu/stcloud_ling/vol4/iss1/6)

This Article is brought to you for free and open access by theRepository at St. Cloud State. It has been accepted for inclusion in Linguistic Portfolios by an authorized editor of theRepository at St. Cloud State. For more information, please contact [rswexelbaum@stcloudstate.edu](mailto:rswexelbaum@stcloudstate.edu).

# UNIFYING NOMINALIZED CLAUSES, AUXILIARIES, AND COPULAR ALLOMORPHY IN NORTH AZERI<sup>1</sup>

COLIN DAVIS

## ABSTRACT

*In this paper I examine the relationship between auxiliary copular insertion, copular allomorphy, and the nominalization of clauses in North Azeri (Turkic). I argue that in North Azeri an auxiliary copula is inserted at  $T^0$  whenever an aspect head blocks  $V^0$  to  $T^0$  movement. However, allomorphy of the copula obscures the consistency of this morphosyntactic process. I argue that the allomorphy of the copula in North Azeri is conditioned by the features of  $T^0$ , but that in some contexts, including nominalized clauses where  $T^0$  is defective, this conditioning does not occur. I claim that “ol” is the elsewhere form of the copula triggered in such circumstances, which also happens to be the form of the verb “become,” resulting in ambiguity in some contexts.*

## 1.0 Introduction

This work accounts for several interconnected processes in the morphosyntax of North Azeri, a Turkic language spoken primarily in Azerbaijan. This language, which is a close relative of Turkish, has been the subject of little linguistic literature so far. In this paper I centrally analyze clause nominalization, auxiliary copula insertion, and allomorphy of the copula in North Azeri. Using linguistic work on Turkish and Japanese as a comparative basis, I argue that these phenomena are interrelated such that they can be accounted for together in a principled way. In this section, I preview the central data and arguments and provide background on North Azeri.

Nominalized clauses sit at the intersection of the topics of this paper, and so I analyze these first. Subordinate clauses in North Azeri are typically nominalized, and such clauses differ from main clauses in several ways. Nominalized clauses have subjects in the genitive case rather than the usual nominative, and instead of verbal agreement use a nominal agreement paradigm which otherwise occurs in possessive constructions. Nominalized clauses also require unique non-future tense morphology, which is endemic to these clauses.

In section 2, I argue in short that in subordinate clauses of North Azeri  $T^0$  is defective. This means that  $T^0$  lacks a nominative case feature or  $\phi$ -probe, and as such it

---

<sup>1</sup> Thanks to Samir Karimov for all North Azeri data, elicited in the 2013-2014 field methods course at the University of Minnesota, Twin Cities. Thanks to professors Claire Halpert, Tim Hunter, Jean-Philippe Marcotte, Hooi Ling Soh, and my colleague Benjamin Eischens, as well as the audience of Arizona Linguistics Circle 8 and the 2015 LSA meeting. This research was supported by the University of Minnesota’s Undergraduate Research Opportunities Program. All North Azeri data is transcribed in IPA with the following modifications: [ä] = low front vowel, [a] = low back vowel, [ö] = mid front rounded vowel, [i] = back unrounded vowel, [ɾ] = rhotic tap.

The abbreviations used in glosses for North Azeri are: ACC = accusative, AGR = agreement, AOR = aorist, COP = copula, DAT = dative, GEN = genitive, IMPV = imperfective, NEG = negation, NFUT = non-future, PL = plural, PRES = present, PRF = perfect, PROS = prospective, PST = past, SG = singular.

cannot assign nominative case to or agree with the subject. (Chomsky, 2001; Miyagawa, 2012) I identify the aforementioned non-future tense morphology as the exponent of this defective  $T^0$ . Following Ulutaş's (2009) analysis of Turkish, I propose that genitive subject case and nominal agreement in North Azeri nominalized clauses stem from the nominal functional head *little n* ( $n^0$ ). This head is merged to compensate for the defectivity of subordinate  $T^0$ , and results in nominalization of the clause. I go on to claim that this defective  $T^0$  has an impact on copular allomorphy. Before elaborating on this, first it is necessary to discuss auxiliary copula insertion, another process I account for.

This auxiliary process is clearest in nominalized clauses. While all clauses have tense morphology, if a nominalized clause has aspect and tense morphology, the latter must be supported by the auxiliary copular stem *ol*. The bracketed nominalized clause in (1), which is a relative clause, shows this. This nominalized clause with perfect aspect morphology is ungrammatical unless *ol* is inserted to host the non-future tense morphology:

- (1) **Nominalized clause auxiliary**  
 [ o-nun je-mif \*(ol)-duy-u ] halva  
 [ 3SG-GEN eat-PRF COP-NFUT-AGR.3SG ] halva  
 “The halva that he/she has/had eaten”

In contrast, main clauses do not appear to require such an auxiliary copula. However, the copular stem *i* may optionally be used as an auxiliary in main clauses to support past tense morphology when aspect morphology is present, as (2) shows with the perfect once again:

- (2) **Optional main clause auxiliary**  
 gatʃ-mif (i)-di-m  
 run-PRF COP-PST-AGR.1SG  
 “I had run”

In section 3, I provide evidence that an auxiliary copula in fact always arises to host tense morphology when aspect morphology is present, unifying phenomena across several clause types in North Azeri. To account for these auxiliaries, in section 4 I argue that when an aspect head ( $Asp^0$ ) is present,  $V^0$  moves to  $Asp^0$  rather than  $T^0$ , resulting in insertion of an auxiliary copula at  $T^0$ . Following Bjorkman (2011), I assume that this copula insertion occurs to satisfy a requirement that a head's morphology spell out on a verbal stem. Kornfilt (1996) and Kelepir (2001) discuss similar constructions with the copula in Turkish in reference to main clauses. I provide evidence that in North Azeri this auxiliary insertion process occurs widely. However, allomorphy of the copula obscures the consistency of this phenomenon.

In section 5, working within Distributed Morphology (Halle & Marantz, 1993) I argue that in North Azeri the copula's allomorphy is conditioned by the features of  $T^0$ . I have already shown that the auxiliary copula has the form *ol* in nominalized clauses, where I argue that  $T^0$  is defective, while the optional auxiliary copula in past tense main

clauses has the form *i*. Copular allomorphy is also evident in typical copular constructions, where the copula has the form *i* or *-j* in the past tense, and zero in the present tense, as (3) and (4) demonstrate:

- |  |   |
|--|---|
| <p>(3) <b>Past tense: i/-j copula</b><br/>         män xəstā <b>i/-j-di-m</b><br/>         1SG sick <b>COP-PST-AGR.1SG</b><br/>         “I was sick”</p> | <p>(4) <b>Present tense: zero copula</b><br/>         män xəstā-<b>∅-∅-jām</b><br/>         1SG sick-<b>COP-PRES-AGR.1SG</b><br/>         “I am sick”</p> |
|--|---|

I provide evidence that the copular variants in (3) and (4) occur as auxiliaries in main clauses of the respective tenses. But what of nominalized clauses, where the auxiliary form is *ol*? It turns out that the copula also has the form *ol* in copular constructions with aspect morphology, though this use of *ol* is ambiguous between “be” and “become,” as (5) shows:

- (5) **Copular construction with aspect morphology**  
 män xəstā **ol-muʃ-∅-am**  
 1SG sick **COP-PRF-PRES-AGR.1SG**  
 “I have **been/become** sick”

I argue that *ol* has two identities, one of which is the copula's “elsewhere” form. (Harley & Noyer, 1999) I claim that in North Azeri the copula's allomorphy is conditioned by the features of  $T^0$  when adjoined to  $T^0$ , either through auxiliary insertion or  $V^0$  to  $T^0$  movement. However, I argue that the defective  $T^0$  of nominalized clauses lacks the typical features which condition the copula's form.  $Asp^0$ , not being a  $T^0$ , similarly lacks such features. Therefore when an auxiliary copula is adjoined to defective  $T^0$  in nominalized clauses as in (1), or when a copular  $V^0$  moves to  $Asp^0$  rather than  $T^0$  in copular constructions like (5) which I argue have an  $AspP$ , the copula's form is unspecified. As such the elsewhere copular form *ol* is used in both of these contexts. I show that the second identity of *ol* is the  $V^0$  “become,” resulting in ambiguity in cases like (5) where *ol* could be “become” or a copula.

To recapitulate, in this work I argue for an account that connects the auxiliary copula, copular allomorphy, and nominalized clauses in North Azeri. I argue for a general process of auxiliary copula insertion, necessary to support a  $T^0$  whose morphology cannot otherwise be spelled out on a verbal stem. The allomorphy of the copula, which is conditioned by the features of  $T^0$ , obfuscates the consistency of this process. In some contexts the copula's form is unspecified, resulting in the elsewhere form *ol*, which has the same form as “become.” This elsewhere form is needed when the copula is adjoined to an  $Asp^0$  or the defective  $T^0$  of nominalized subordinate clauses. Defective  $T^0$  is also the trigger of clause nominalization.

### 1.1 Background on North Azeri

Before beginning the analysis, here I provide the necessary background on North Azeri, primarily in terms of verbal morphology. As is typical of Turkic languages, North Azeri is syntactically head-final and morphologically agglutinative. Note that North Azeri is a *pro*-drop language, so overt subjects are often absent (Payne, 1997).

### 1.1.1 Clause structure, tense, and aspect

Example (6) below illustrates the basic clausal structure of North Azeri that I argue for. I claim that this language has two separate aspect projections, which I term low aspect (L-Asp) and high aspect (H-Asp) in reference to their relative syntactic distribution.<sup>2</sup>

(6) VP < L-AspP < H-AspP < TP

I assume that the order of the morphemes of verbal inflection is indicative of a hierarchy of corresponding functional projections (Baker, 1985). Following this, the tense and aspect morphology of North Azeri corresponding to the structure in (6) is listed in Table 1:

Low Aspect	High Aspect	Tense
-(j)Ad̄z̄aG = Prospective	-mIf / -(j)Ib = Perfect	-∅ = Present
-(j)Ar = Aorist		-DI = Past
-(j)Ir = Imperfective		-DIG = Non-future

Table 1: Basic tense and aspect morphemes of North Azeri<sup>3 4</sup>

While the L-Asp projection is the position of three distinct forms of aspect, H-AspP is exclusively the domain of the perfect aspect. Example (7) below demonstrates how there are indeed two distinct aspect projections, in addition to TP. Any one of the three forms of low aspect morphology (in parentheses) can occur with both the perfect aspect and past tense:

(7) m̄an gat̄j-(ir/ar/ad̄z̄ay)-mīf-di-m  
 1SG run-(IMPV/AOR/PROS)-PRF-PST-AGR.1SG  
 “I had been running / had used to run / had been going to run”

A present tense interpretation obtains when there is no pronounced tense morpheme, and therefore I assume that North Azeri has a present tense head which is phonologically null. Some instances of this are provided in (8) below. The examples of (8) have a present perfect interpretation, though there is no overt tense morphology:

(8a) o d̄z̄äl-ib-∅-∅  
 3SG come-PRF-PRES-AGR.3SG  
 “He/she/it has come”

(8b) siz d̄z̄äl-ip-∅-siniz  
 2PL come-PRF-PRES-AGR.2PL  
 “You (pl.) have come”

<sup>2</sup> I also assume the presence of at least vP dominating VP, though I abstract away from this detail here.

<sup>3</sup> As is typical of Turkic languages, North Azeri has vowel harmony. I represent harmonizing phonemes as follows: /A/ represents a low vowel underspecified for frontness/backness, and /I/ represents a high vowel underspecified for both frontness/backness and roundness. There is also one harmonizing consonant /G/, a dorsal which is realized as [j] in front vowel contexts, and [G] in back vowel contexts.

<sup>4</sup> The parenthesized [j] is epenthesized to break up potential V-V clusters.

Throughout this paper, I do not gloss the unpronounced present tense unless relevant.

The perfect aspect *-mİf* has the optional form *-(j)İb* with 2nd and 3rd person subjects, which (8) above also illustrates. While Turkish has a homophonous item *-mİş*, this *-(j)İb* allomorphy is unique to North Azeri, perhaps Azeri in general. The North Azeri *-mİf* is also different from its Turkish counterpart in interpretation. The Turkish *-mİş* has evidential uses, indicating the reported or inferred past, as well as the perfect aspect in some contexts (Kornfilt, 1997; Kelepir, 2001; Göksel & Kerslake, 2005). In contrast, the North Azeri equivalent primarily represents the perfect aspect, as Authier (2010) and Schönig (2006) observe, and the findings of this research corroborate. All instances of *-mİf* in this work represent the perfect aspect.

Notice that North Azeri does not have a means of encoding the future tense. The closest equivalent is the prospective *-(j)Ad̄z̄aG*, meaning roughly “going to” (Comrie, 1976). I argue that *-(j)Ad̄z̄aG* is of the aspect category both syntactically and semantically.<sup>5</sup> As a final note on tense and aspect, the aorist *-(j)Ar* is a semantically complex item, the basics of which I describe here. In the present tense, this morpheme carries an interpretation of uncertain futurity, translated “probably will” or “might.” In the past tense, *-(j)Ar* represents the habitual aspect, a use which is associated with proverbs and stories, as Öztöçü (2003) observes, which my informant independently corroborated. These functions may be in contrast to the Turkish aorist, which according to Kornfilt (1997) expresses a general present tense, habitual aspect, and a sense of genericity, among other functions. This work does not investigate the semantics of *-(j)Ar* further.

### 1.1.2 Agreement

As previous examples have shown, North Azeri has subject agreement morphology, which is sensitive to person and number. Agreement morphology is always rightmost on the verbal morphological complex, and varies depending on whether it suffixes to the past tense, or the null present tense. Table 2 below illustrates these two agreement paradigms, and corresponding pronouns:<sup>6</sup>

Person/number	1SG	1PL	2SG	2PL	3SG	3PL
Pronoun	<i>män</i>	<i>biz</i>	<i>sän</i>	<i>siz</i>	<i>o</i>	<i>onlar</i>
Past tense	<i>-m</i>	<i>-G</i>	<i>-n</i>	<i>-z/-nİz</i>	<i>-Ø/-Dİr</i>	<i>-Ø/-Dİr (-lAr)</i>
Present tense	<i>-(j)Am</i>	<i>-(j)İG</i>	<i>-sAn</i>	<i>-sİz/-sİnİz</i>	<i>-Ø/-Dİr</i>	<i>-Ø/-Dİr (-lAr)</i>

Table 2: Subject agreement and pronouns in North Azeri

North Azeri makes no gender distinctions. In the 3rd person, agreement is typically zero. The overt option *-Dİr* is generally absent outside of copular constructions. Plurality in 3rd person agreement is encoded through an additional suffix *-lAr*, which is also the general plural marker. Both of these uses of *-lAr* are colloquially optional, and therefore often absent. Example (9) shows a typical use of *-Dİr* and the optionality of *-lAr*:

<sup>5</sup> Key & Schreiner (2014) has recently argued that the Turkish equivalent *-(y)AcAK* similarly encodes not the future tense, but specifically the prospective aspect.

<sup>6</sup> The *-nİz* and *-sİnİz* agreement forms are a more polite option for general 2nd person reference.

- (9) onlar täläbä-(lär)-Ø-dir-(lär)  
 3PL student-PL-COP-AGR.3P-PL  
 “They are students”

This concludes the introductory information on North Azeri verbal morphology. With the groundwork laid, in the next section I turn to nominalized clauses. My account for clause nominalization forms the foundation for the subsequent analysis of the auxiliary copula, and copular allomorphy in general.

## 2.0 Nominalized clauses

As mentioned, subordinate clauses in North Azeri are typically nominalized.<sup>7</sup> Nominalized clauses differ from main clauses in having genitive subjects, using a separate agreement paradigm, as well as requiring non-future tense morphology, which is endemic to nominalized clauses. Example (10) below illustrates these contrasts. The main clause in (10a) has a nominative subject, which is unmarked, uses the past tense *-di*, and marks 1st person plural agreement with the morpheme *-j*. The closest equivalent nominalized clause, represented by the bracketed relative clause in (10b), differs in three ways. It has a genitive subject, uses the non-future tense morphology *-dij*, and marks 1st person plural agreement with *-imiz*:

- (10a) biz halva je-**di-j**  
 1PL.NOM halva eat-PST-AGR.1PL  
 “We ate halva”
- (10b) [ biz-**im je-dij-imiz** ] halva  
 [ 1PL-GEN eat-NFUT-AGR.1PL ] halva  
 “The halva that we eat/ate”

The agreement morphology in nominalized clauses and genitive case of the subject are the same as the genitive case of possessors, and corresponding agreement on possessed nouns, that occurs in possessive constructions. Therefore this agreement appears to be fundamentally nominal, rather than verbal. Example (11) below demonstrates these parallels. In the possessive construction (11a), the genitive case on the 1st person plural pronoun is *-im*, while the corresponding agreement on the possessed nominal is *-imiz*. In the nominalized clause of (11b), that same genitive case occurs on the 1<sup>st</sup> person plural subject, and the corresponding agreement on the verbal complex is once again *-imiz*:

- (11a) biz-**im** pſij-**imiz**  
 1PL-GEN cat-AGR.1PL  
 “Our cat”
- (11b) [ biz-**im je-dij-imiz** ] halva  
 [ 1PL-GEN eat-NFUT-AGR.1PL ] halva  
 “The halva that we eat/ate”

Table 3 below provides the full paradigm of genitive case and corresponding nominal agreement:

Person/number	1SG	1PL	2SG	2PL	3SG	3PL
Genitive case	<i>-im</i>		<i>-(n)In</i>			
Agreement	<i>-(I)m</i>	<i>-(I)mIz</i>	<i>-(I)n</i>	<i>-(I)nIz</i>	<i>-(s)I</i>	<i>-(lArI)/-(s)I</i>

Table 3: Genitive case & nominal agreement in North Azeri

<sup>7</sup> Subject relative clauses, clauses with the complementizer *ſi* (analogous to Turkish *ki* clauses) and clauses representing a direct quotation are the exceptions to the generalization that subordinate clauses are nominalized.

Turkish nominalized clauses are like those of North Azeri in using genitive subjects, nominal agreement, and a non-future tense morphology.<sup>8</sup> (Kornfilt, 2006; Kornfilt & Whitman, 2011) However, Turkish nominalized clauses have nominative subjects when in an adjunct position. (Kornfilt, 2006; Ulutaş, 2009) The clause preceding "because" in (12) shows this:

- (12) [[ **Sen** opera-ya git-tiğ-in ] için ] ben konser-e  
 [[ **you(SG.,NOM)** opera-DAT go-NIND-2.SG ] because ] I concert-DAT  
 gid-e-me-di-m  
 go-NEGABIL-NEG-PAST-1SG  
 “I couldn't go to the concert because you went to the opera” (Kornfilt, 2006, pp. 150, 11)

The analogous example (13) shows that in this context, North Azeri requires a genitive subject:

- (13) sän [[ **män-im/\*män** mät̄st̄äb-ä d̄zät-mä-dij-im ] it̄jin ]  
 2SG [[ **1SG-GEN/\*1SG.NOM** school-DAT go-NEG-NFUT-AGR.1SG ] because ]  
 äsäbläf-ir-sän  
 be.angry-IMPV-AGR.2SG  
 “You are angry because I did not go to school” (North Azeri)

Kornfilt (2006) and Ulutaş (2009) propose, in different ways, that separate syntactic structures are involved in adjunct versus argument nominalized clauses in Turkish, resulting in nominative subjects in the former and genitive subjects in the latter. All further mention of Turkish nominalized clauses in this work refers to argument clauses, which share all basic traits with North Azeri nominalized clauses in general.

## 2.1 Nominalized clauses as CPs

There is evidence that nominalized clauses in North Azeri are at least CP structures. To demonstrate this I turn first to Japanese, which also has genitive subjects in some subordinate clauses. Specifically, relative clauses in Japanese can have genitive or nominative subjects. Miyagawa (2012) attributes these subject case alternatives in Japanese to separate underlying syntactic structures. Miyagawa (2012) assumes that evaluative adverbs like “honestly” or “unfortunately” are adjoined in the CP region following Cinque (1999). Miyagawa argues that Japanese relative clauses with genitive subjects are bare TPs with no CP, which is why “fortunately” is ungrammatical in those constructions. In contrast, Miyagawa argues that because relatives with nominative subjects are grammatical with “fortunately,” such clauses do have CP. Example (14) below demonstrates this evidence. The adverb *saiwai-ni* (“fortunately”) is ungrammatical in a relative clause with a genitive subject, but is grammatical when the subject is nominative. In contrast, the adverb *kanarazu* (“for certain”) which Miyagawa argues is adjoined lower than CP, is grammatical with either subject case:

- (14a) [ **saiwai-ni** taroo-ga/\*no yomu ] hon  
 [ **fortunately** taro-NOM/GEN read ] book  
 “The book that Taro fortunately reads”

<sup>8</sup> Turkish has two other nominalized clause types. 1: Those using the subjunctive *-mA* rather than non-future. 2: Future nominalizations with *-(j)AcAK*. (Kornfilt, 1997). North Azeri has equivalents of both.



- (14b) [ **kanarazu** taroo-ga/no yomu ] hon  
 [ **for.certain** taro-NOM/GEN read ] book  
 “The book that Taro will read for certain” (Japanese, Miyagawa (2012:133, 26))

When this test is applied to North Azeri nominalized clauses, it turns out that the adverb “fortunately” is grammatical, as in (15):<sup>9</sup>

- (15) [ **xofpächtlijdän** biz-im je-dij-imiz ] jemäj  
 [ **fortunately** 1PL-GEN eat-NFUT-AGR.1PL ] food  
 “The food that we fortunately eat/ate”

Following Cinque (1999) and applying the concepts of Miyagawa’s (2012) analysis of Japanese, this indicates the presence of CP in North Azeri nominalized clauses.

## 2.2 Feature inheritance, defectiveness, and nominalization

In accounting for nominalized clauses, I adopt the view that features on  $T^0$  responsible for subject agreement and nominative case assignment originate at  $C^0$ , and that  $T^0$  inherits those features. (Chomsky, 2008; Miyagawa, 2010; Miyagawa, 2012) These are uninterpretable  $\phi$ -features (the  $\phi$ -probe), and the nominative case feature. As discussed, Miyagawa (2012) argues that Japanese relative clauses which have genitive subjects are bare TPs, while those with nominative subjects are CPs. This analysis suggests that the assignment of nominative case is dependent on the presence of CP. When CP is absent so is nominative case, and the subject of the relative clause is instead in the genitive case in Japanese. Miyagawa argues that this genitive case is assigned by the  $D^0$  associated with the relativized NP, extending Hale (2002)’s analysis of Dagur.<sup>10</sup> Miyagawa claims that  $D^0$  can probe into the embedded clause because there is no  $C^0$  to delineate a phase. That nominative case is absent when CP is absent is expected if the nominative case feature originates at  $C^0$ . If there is no  $C^0$ , then there cannot be a nominative case feature for  $T^0$  to inherit. A head lacking (a full set of) features is termed “defective.”

As mentioned, Turkish nominalized clauses are like those of North Azeri in having genitive subjects, nominal agreement, and non-future tense morphology. Kornfilt & Whitman (2011) analyzes the Turkish non-future morphology *-DIK* as a defective  $T^0$ , which lacks a nominative case feature. As *-DIK* and the North Azeri equivalent *-DIG* occur in nominalized clauses with genitive subjects and nominal agreement, I infer that *-DIK* and *-DIG* both represent defective T heads, which lack a nominative case feature or usual verbal  $\phi$ -probe. Kornfilt & Whitman (2011) and Ulutaş (2009) analyze nominalized clauses in Turkish as CPs, as I have argued for North Azeri. Consequently, while a lack of CP is the cause of defective  $T^0$  in Japanese, a different cause must be at work in Turkish and North Azeri.

Kornfilt (2006) proposes that clause nominalization in Turkish is caused by the category changing head *little n* ( $n^0$ ). Ulutaş (2009) proposes that the merging of  $n^0$  compensates for a

<sup>9</sup> While the adverb *xofpächtlijdän* literally means “from/due to (one’s) happiness,” the interpretation of “fortunately” results when in a syntactically high position.

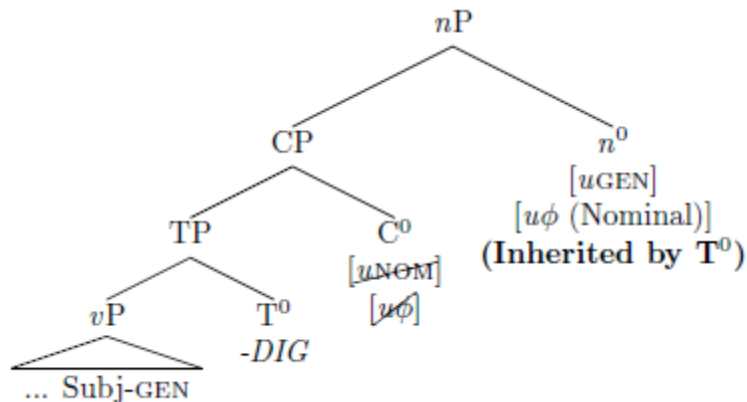
<sup>10</sup> Miyagawa (2012) links other Japanese genitive subjects to the context of weak  $v^0$  plus subordinate  $T^0$ . Miyagawa (2008) also shows that noun complement clauses in Japanese can have genitive or nominative subjects, though such complement clauses do not appear to be sub-TP even in the genitive subject context.

defective  $C^0$  which has no (or not a full set of) features for  $T^0$  to inherit. Ulutaş proposes that  $n^0$  has a  $\varphi$ -probe which results in nominal agreement morphology and that  $T^0$  inherits this probe, allowing  $T^0$  agree with the subordinate clause subject along the nominal paradigm, and consequently assign genitive case to the subject as a byproduct of that agreement. Ulutaş (2009) argues that in this way, nominalization and its concomitant traits are triggered by the defectivity of some subordinate clauses in Turkish.

Extending Ulutaş (2009), I propose that subordinate  $C^0$  in North Azeri is defective, lacking a nominative case feature or verbal  $\varphi$ -probe for  $T^0$  to inherit. Consequently subordinate  $T^0$  cannot agree with or assign nominative case to the subject and as such is a defective  $T^0$ , which is realized as the non-future *-DIG*. To avoid a Case Filter violation for the subject I assume that  $n^0$  enters the derivation, bringing a genitive case feature as well as a  $\varphi$ -probe which results in nominal agreement morphology. Defective  $T^0$  inherits these features, resulting in genitive case assignment to and nominal agreement with the subject.

The tree in (16) below illustrates this nominalization process. Here the defective subordinate  $C^0$  does not have a nominative case feature or  $\varphi$ -probe. These features are shown crossed-out at  $C^0$  to represent that they are simply absent. As such, there are no features for  $T^0$  to inherit. The nominalizing head  $n^0$  takes this defective CP as its complement, bringing a genitive case feature and nominal  $\varphi$ -probe, which defective  $T^0$  inherits:

(16) **Defective subordinate  $C^0$  and merging of  $n^0$**



### 2.3 Details of defective $T^0$

Much of the remainder of this paper hinges on the concept of defective  $T^0$ , which I discuss here in more detail. In accounting for *-DIG*, I assume the framework of Distributed Morphology (Halle & Marantz, 1993) in which phonological information is inserted post-syntactically based on the features of terminal nodes, through a process termed Vocabulary Insertion (VI). I infer that features which determine the interpretation of  $T^0$  and consequently its phonological form, such as [+Past] or [+Present], originate at  $C^0$  just as the  $\varphi$ -probe and nominative case feature do. I propose that when  $C^0$  is defective and lacks any such features for  $T^0$  to inherit, as in (nominalized) subordinate clauses, the resulting defective  $T^0$  takes a default form which obtains when there is no specification. In North Azeri I claim that this elsewhere form for  $T^0$  is *-DIG*. Incorporating the past tense and present tense as well, I propose the following Vocabulary Insertion rules (VI rules) for  $T^0$  in North Azeri:

(17) **VI rules for T<sup>0</sup>**

/-Ø/ ↔ [\_, +Present]

/-DI/ ↔ [\_, +Past]

/-DIG/ ↔ Elsewhere

That the elsewhere case occurring when T<sup>0</sup> is defective has a non-future interpretation, rather than any tense interpretation, I propose is because North Azeri lacks the future tense in general. The closest equivalent is the prospective aspect, *-(j)Ad̂zAG*. I suggest that because North Azeri does not encode reference to the future through tense, even when a T<sup>0</sup> is unspecified, its range of interpretation is restricted to the non-future. Additionally, there is a second nominalization strategy using only the prospective aspect morphology, rather than *-DIG*:

(18) [ män-im je-**jäd̂zäj**-im ] jemäj[ 1SG-GEN eat-**PROS**-AGR.1SG ] food

“The food that I am going to eat”

Due to concerns of space this construction is not analyzed here. The existence of this alternate nominalization form provides another possible explanation for the non-future reading of *-DIG*. While *-DIG* may be truly unspecified, if a future (or more specifically, prospective) reading were intended, the *-(j)Ad̂zAG* nominalization would be used. Therefore, for pragmatic reasons, *-DIG* is interpreted as non-future only.

In this section I have argued that the defectivity of C<sup>0</sup> and T<sup>0</sup> in North Azeri subordinate clauses results in clause nominalization. The next section begins an analysis of auxiliary copulas, and the copula generally, which the concept of defective T<sup>0</sup> in nominalized clauses connects to.

**3.0 Evidence for the auxiliary copula**

In this section I show that North Azeri has a general process of auxiliary copula insertion. Specifically, while some form of tense morphology is always present, when there is also aspect morphology, an auxiliary copular stem is inserted to host tense morphology. Example (19) shows this for all aspects in nominalized clauses, where the auxiliary is *ol* as previously mentioned:

(19a) [ o-nun je-**jir** **ol**-duy-u ] halva[ 3SG-GEN eat-**IMPV** **COP**-NFUT-AGR.3SG ] halva

“The halva that he/she is/was eating”

(19b) [ o-nun je-**jär** **ol**-duy-u ] halva[ 3SG-GEN eat-**AOR** **COP**-NFUT-AGR.3SG ] halva

“The halva that he/she probably will / used to eat”

(19c) [ o-nun je-**mif** **ol**-duy-u ] halva[ 3SG-GEN eat-**PRF** **COP**-NFUT-AGR.3SG ] halva

“The halva that he/she has/had eaten”

- (19d) [ o-nun je-jädzäj ol-duy-u ] halva  
 [ 3SG-GEN eat-PROS COP-NFUT-AGR.3SG ] halva  
 “The halva that he/she is/was going to eat”

If there is only tense morphology and no aspect morphology, this use of auxiliary *ol* is ungrammatical, as (20a) shows in contrast to (20b), which lacks the superfluous auxiliary:

- (20a) \*[ män-im je ol-duy-um ] halva  
 [ 1SG-GEN eat COP-NFUT-AGR.1SG ] halva  
 “The food that I eat/ate”

- (20b) [ män-im je-dij-im ] halva  
 [ 1SG-GEN eat-NFUT-AGR.1SG ] halva  
 “The food that I eat/ate”

At first glance, main clauses do not seem to similarly require auxiliary insertion. Aspect and tense morphology can coexist and affix directly, with no auxiliary, as (21) shows with the imperfective aspect and past tense:

- (21) män gatʃ-ir-di-m  
 1SG run-IMPV-PST-AGR.1SG  
 “I had been running”

However, upon closer inspection evidence to the contrary emerges. First, in simple past tense copular constructions, the copula takes the form *i* or *-j*, which are free variants:

- (22) män xästä i/-j-di-m  
 1SG sick COP-PST-AGR.1SG  
 “I was sick”

Main clauses in the past tense can optionally use the *i* copular allomorph as an auxiliary to carry tense morphology when there is aspect morphology, as (23) shows for all aspects:

- (23a) män halva je-jir (i)-di-m  
 1SG halva eat-IMPV COP-PST-AGR.1SG  
 “I was eating halva”
- (23b) män ufay ol-anda halva je-jär (i)-di-m  
 1SG child COP-when halva eat-AOR COP-PST-AGR.1SG  
 “When I was a child I used to eat halva”
- (23c) gatʃ-mif (i)-di-m  
 run-PRF COP-PST-AGR.1SG  
 “I had run”

- (23d)  $gaf\text{-}ad\text{zay}$  (i)-di-m  
 run-PROS COP-PST-AGR.1SG  
 “I was going to run”

This use of auxiliary *i* is uncommon in the spoken language, associated more with formal or literary contexts. Just like auxiliary *ol* in nominalized clauses, auxiliary *i* in main clauses is ungrammatical when there is no aspect morphology, as (24) shows:

- (24)  $m\text{an}$  je (\*i)-di-m  
 1SG eat COP-PST-AGR.1SG  
 “I ate”

At this point, it appears that both nominalized clauses and past tense main clauses involve a form of auxiliary copular insertion. However, the auxiliary *i* in the latter context is optional. Further evidence from copular constructions reveals that auxiliary *i* is in fact not optional, but can delete for phonological reasons. As shown in (22) above, the copular form in the past tense is *i* or *-j*, which are free variants. The variant *-j* deletes when following a consonant, which can be observed when comparing past tense copular constructions with vowel-final and consonant-final predicates. For example, in (25) below the vowel-final predicate *xästä* (“sick”) occurs with either variant of the copula, and not having an overt copula is ungrammatical:

- |   |   |
|---|---|
| <p>(25a) <math>m\text{an}</math> <i>xästä</i> i/-j-di-m<br/>         1SG sick COP-PST-AGR.1SG<br/>         “I was sick”</p> | <p>(25b) *<math>m\text{an}</math> <i>xästä</i>-Ø-di-m<br/>         1SG sick-COP-PST-AGR.1SG<br/>         “I was sick”</p> |
|---|---|

However, when the predicate is consonant-final, such as  $d\text{zözäl}$  in (26) below, either the *i* allomorph or a zero copula are grammatical, while *-j* is not:

- |  |  |
|--|--|
| <p>(26a) <math>m\text{an}</math> <math>d\text{zözäl}</math> i/*-j-di-m<br/>         1SG pretty COP-PST-AGR.1SG<br/>         “I was pretty”</p> | <p>(26b) <math>m\text{an}</math> <math>d\text{zözäl}</math>-Ø-di-m<br/>         1SG pretty-COP-PST-AGR.1SG<br/>         “I was pretty”</p> |
|--|--|

This pattern indicates that the *-j* copular variant deletes when following a consonant.<sup>11</sup> Recall that all aspect items in North Azeri, *-(j)Ir*, *-(j)Ar*, *-(j)AdzAG* and *-mIf*, end in a consonant. As the hypothetical example (27) shows, auxiliary use of *-j* to host tense morphology renders *-j* adjacent to the final consonant of the aspect morpheme, satisfying the conditions for deletion of *-j*:

- (27) **Hypothetical position of auxiliary *-j***  
 $gaf\text{-}mif\text{-}j$ -di-m  
 run-PRF-COP-PST-AGR.1SG  
 “I had run”

<sup>11</sup> Keleşir (2001) makes a similar claim about the Turkish copular variant *-y-*, which I have drawn from in analyzing copular allomorphy in North Azeri.

Therefore when the *-j* free variant of the past tense copula *i* is used in auxiliary contexts, it deletes in Phonological Form (PF). As a result we see variation between *i* and nothing in constructions like (23), but the auxiliary copula is in fact always present. Following this, the result so far is that both nominalized clauses and past tense main clauses use an auxiliary copula. The form of the copula is different in each case, however, which is addressed later on.

### 3.1 Stress evidence for an auxiliary zero copula

There is evidence that main clauses in the remaining tense form, the present tense, also involve auxiliary insertion to support tense morphology when aspect morphology is present. This is more difficult to diagnose because present tense morphology as well as the auxiliary copula in this context are unpronounced. The key evidence for this claim comes from stress placement.

Kornfilt (1996) argues that in Turkish, some TAM (tense/aspect/mood/modality) items form participle structures which are the complement of a tense-inflected copula. Evidence for this comes from constructions like those shown for North Azeri already, where tense and agreement morphology affix to a copula, rather than directly to the verb stem. For Turkish, Kornfilt (1996) argues that this copula is zero in the present tense, as is common cross-linguistically (Payne, 1997). Example (28) shows such a construction with the aorist:

- (28) *git-ér-Ø-im*  
go-AOR-COP.PRES-1.SG (Turkish: Kornfilt, 1996, p. 97)

Kornfilt (1996) shows that while Turkish typically has word final stress, some Turkish verb forms do not. Such a case is (28) above, where an accute accent shows this non-final stress. Kornfilt claims that the copula in Turkish delineates a domain for stress assignment, causing stress to shift to precede the copula in constructions like (28) with a participle and copula.

Similar stress irregularities are evident in North Azeri. Like Turkish, North Azeri typically has word-final stress, which occurs in verb forms like the simple past:

- |   |   |
|---|---|
| (29a) <i>jat-tí-m</i><br>sleep-PST-AGR.1SG<br>“I slept” | (29b) <i>jat-tí-n</i><br>sleep-PST-AGR.2SG<br>“You (sg.) slept” |
|---|---|

In contrast, present tense verb forms with aspect morphology do not have word-final stress, but stress shifts onto the aspect morpheme, as (30) exemplifies for all aspects:

- |  |   |
|--|---|
| (30a) <i>jat-ír-Ø-am</i><br>sleep-IMPV-PRES-AGR.1SG<br>“I sleep / am sleeping” | (30b) <i>at gatġ-ár-Ø(-dir)</i><br>Horse run-AOR-PRES-AGR.3SG<br>“The horse will probably run”    |
| (30c) <i>oxu-mús-Ø-sunuz</i><br>read-PRF-PRES-AGR.2PL<br>“You (pl.) have read” | (30d) <i>sän jat-adġáy-Ø-san</i><br>2PL sleep-PROS-PRES-AGR.2SG<br>“You (sg.) are going to sleep” |

A similarly non-final stress pattern is evident in present tense copular constructions, where stress shifts onto the predicate:

- (31a) män **täläbá-Ø-Ø-jäm**  
1SG **student-COP-PRES-AGR.1SG**  
“I am a student”
- (31b) sän **täläbá-Ø-Ø-sän**  
2SG **student-COP-PRES-AGR.2SG**  
“You are a student”

This is the same stress pattern seen in past tense copular constructions with the *-j* copula, which show clearly that this irregular stress is precisely pre-copular:

- (32) män **xästá-j-di-m**  
1SG **sick-COP-PST-AGR.1SG**  
“I was sick”

While the *i* or *ol* copular forms trigger a new word boundary, the forms *-Ø* and *-j* in (31) and (32) do not, making apparent the influence of the copula on stress within a single word. While simple past tense verb forms like (29) have default word-final stress, (31) and (32) have non-final stress because they precede the copula. As such, Kornfilt's (1996) claim for Turkish that the copula demarcates a domain for stress assignment also applies to North Azeri. Stress in North Azeri is also not word-final in present tense verb forms with aspect morphology like (30) above, where stress shifts onto the aspect morphology. This suggests that a copula is in linear terms to the right of the aspect morphology in such constructions, shifting stress, as in (33):

- (33) jat-**ír-Ø-Ø-am**  
sleep-**IMPV-COP-PRES-AGR.1SG**  
“I sleep / am sleeping”

This is precisely where the auxiliary copula hosting tense morphology appears in past tense main clauses and nominalized clauses, as shown already in this section. I interpret this stress evidence as indicating the presence of a null auxiliary copula supporting the null present tense morphology in present tense constructions with aspect morphology.

Additionally, a pre-copular stress pattern is apparent in past tense main clauses with aspect morphology that do not have an overt auxiliary. I have argued using phonological evidence that these constructions contain the *-j* allomorph of the copula, which deletes in PF. That stress shifts onto the aspect morpheme in these constructions also, as example (34) shows, provides further evidence that an auxiliary copula is indeed underlying in these contexts:

- (34) män halva je-**jír-Ø-di-m**  
1SG halva eat-**IMPV-COP-PST-AGR.1SG**  
“I was eating halva”

To conclude section 3, it is now evident that when aspect morphology is present, an auxiliary copula arises to host tense morphology in main clauses and nominalized clauses. In typical copular constructions the copula is *i/-j* in the past tense and zero in the present tense, and these same copular forms are used as auxiliaries in main clauses of the respective tenses. However, this is not obvious because the *-j* copular variant deletes in PF in auxiliary contexts, and there is only stress evidence to indicate the presence of the auxiliary zero copula. In

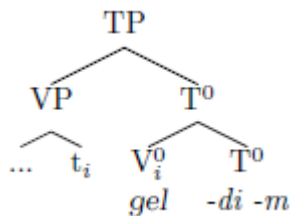
nominalized clauses the auxiliary copula is *ol*, which I have shown in the introduction is also the copular form in copular constructions with aspect morphology. Before accounting for copular allomorphy, in the next section I examine why auxiliary copula insertion occurs.

#### 4.0 Head movement and the auxiliary

Kelepir (2001) builds from Kornfilt's (1996) proposal that some TAM items in Turkish form participles which are the complement of a copula, accounting for that copula syntactically. Kelepir assumes that verbal inflection is built up by head movement, and that  $T^0$  in Turkish has a [Verbal] feature, typically checked by  $V^0$  to  $T^0$  movement. However, when an aspect or modal projection intervenes between VP and TP,  $V^0$  moves to the intervening head, forming a participle structure. This leaves the [Verbal] feature on  $T^0$  unchecked, motivating insertion of a copula bearing a [+Verbal] feature at  $T^0$ . For example, in (35) below where no projection intervenes,  $V^0$  moves to the past tense  $T^0$ , checking [Verbal], and nothing further is required:

- (35a) Ben **gel-di-m**  
 1SG **come-PST**-1SG  
 "I came" (Turkish: Kelepir, 2001, pp. 38, 43; Tree mine.)

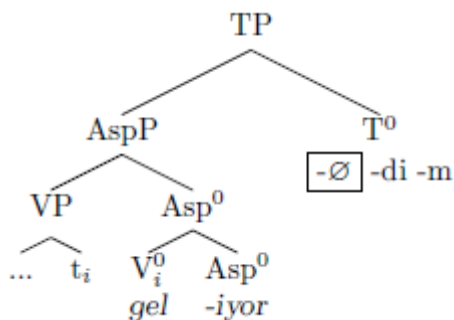
(35b)



However, if an Asp(ect)P intervenes as in (36) below,  $V^0$  moves to  $Asp^0$ . However,  $Asp^0$  cannot then move to  $T^0$ . Kelepir suggests this is because while aspect can be [+Verbal] or [-Verbal] (Ouhalla 1991), in Turkish it is the latter, and so  $Asp^0$  cannot move to check the [Verbal] feature on  $T^0$ . Therefore a copula (here null) is inserted at  $T^0$  to check [Verbal]:

- (36a) Ben gel-**iyor-Ø-di-m**  
 1SG come-**PROG-COP-PAST**-1SG  
 "I was coming" (Turkish: Kelepir, 2001, pp. 36, 39; Tree mine.)

(36b)





Kelepir's evidence that  $Asp^0$  does not move to  $T^0$  in Turkish comes from the possibility of coordination with suspended affixation. This construction involves a coordination of two clauses where each has aspect morphology, but the first clausal conjunct lacks tense and agreement morphology, as in (37):

- (37) Ben para-yi al-iyor ve on-a ver-iyor-du-m  
 I money-ACC take-PROG and s(he)-DAT give-PROG-PAST-1SG  
 "I was taking the money and giving it to him/her" (Turkish: Kelepir, 2001, pp. 37, 42)

Kelepir argues that while each  $V^0$  moves to its local  $Asp^0$ , it cannot be that only the second  $V^0$  moves as high as  $T^0$  in order to gain tense and agreement morphology. This is because these constructions in fact involve an  $AspP$  coordination, and movement of  $V^0$  to  $T^0$  out of only the second  $AspP$  conjunct would violate the Coordinate Structure Constraint. (CSC, Ross, 1967) Kelepir infers that in general,  $V^0$  moves to  $Asp^0$ , but the complex of  $V^0+Asp^0$  does not move to  $T^0$  in Turkish. That such movement does not occur as a general principle is what makes suspended affixation constructions like (37) possible. Suspended affixation constructions are attested in North Azeri also, in main clauses and nominalized clauses, as (38) and (39) show:<sup>12</sup>

(38) **Main clause suspended affixation**

- (38a) män [pul-u tʃöhtyr-yr] vä [o-na ver-ir]-Ø-di-m  
 1SG [money-ACC take-IMPV] and [3SG-DAT give-IMPV]-COP-PST-AGR.1SG  
 "I was taking the money and giving it to him/her"
- (38b) män [pul-u tʃöhtyr-är] vä [o-na ver-är]-Ø-di-m  
 1SG [money-ACC take-AOR] and [3SG-DAT give-AOR]-COP-PST-AGR.1SG  
 "I used to take the money and give it to him/her"
- (38c) män [pul-u tʃöhtyr-myf] vä [o-na ver-myf]-Ø-di-m  
 1SG [money-ACC take-PRF] and [3SG-DAT give-PRF]-COP-PST-AGR.1SG  
 "I have taken the money and given it to him/her"
- (38d) män [pul-u tʃöhtyr-ädzäj] vä [o-na ver-ädzäj]-Ø-di-m  
 1SG [money-ACC take-PROS] and [3SG-DAT give-PROS]-COP-PST-AGR.1SG  
 "I was going to take the money and give it to him/her"

(39) **Nominalized clause suspended affixation**

- (39a) [män-im [dʒör-yr] [bax-ir] [xoʃlu-jur] ol-duy-um ] tʃunol  
 [1SG-GEN [see-IMPV] [look-IMPV] [like-IMPV] COP-NFUT-AGR.1SG ] movie  
 "The movie that I am/was watching, seeing, and liking"

<sup>12</sup> Kelepir's (2001) account predicts that suspended affixation is possible for Turkish nominalized clauses also, though I have not seen this tested. Such constructions in North Azeri nominalized clauses as in (39) make it clear that  $V^0$  cannot be moving as high as  $T^0$ , because auxiliary copular allomorphy does not result in tense and agreement morphology affixing to the second verbal complex in PF, as in main clause contexts like (38).

- (39b) [ män-im [pʃir-är] və [je-jär] ol-duy-um ] halva  
 [1SG-GEN [cook-AOR] and [eat-AOR] COP-NFUT-AGR.1SG ] halva  
 “The halva that I will probably / used to cook and eat”
- (39c) [ män-im [pʃir-mif] və [je-mif] ol-duy-um ] halva  
 [1SG-GEN [cook-PRF] and [eat-PRF] COP-NFUT-AGR.1SG ] halva  
 “The halva that I have/had cooked and eaten”
- (39d) [ män-im [pʃir-ädʒäj] və [je-jädʒäj]-im ] halva  
 [1SG-GEN [cook-PROS] and [eat-PROS]-AGR.1SG ] halva  
 “The halva that I am going to cook and eat”<sup>13</sup>

I follow Kelepir’s (2001) interpretation of suspended affixation, and infer that Asp<sup>0</sup> to T<sup>0</sup> movement does not occur in North Azeri. I assume that when there is no aspect morphology there is no AspP, and that when AspP is not present, V<sup>0</sup> to T<sup>0</sup> movement occurs. When AspP is present, V<sup>0</sup> moves to Asp<sup>0</sup>, and nothing moves to T<sup>0</sup>.

It is in the latter context that Kelepir (2001) claims there is copular insertion at T<sup>0</sup> in Turkish. In section 3, I argued that the presence of aspect morphology always results in auxiliary copular insertion to host tense morphology in North Azeri, and the concepts just discussed provide a more specific way to characterize this: When V<sup>0</sup> does not move to T<sup>0</sup> due to an intervening Asp<sup>0</sup>, the auxiliary copula is required. Before elaborating on this, there is more to be said in the case of North Azeri, which I have argued has two separate aspect projections. These are low aspect (L-Asp), the location of the imperfective, aorist, and prospective aspects, as well as high aspect (H-Asp), which is the position of the perfect aspect.<sup>14</sup> It is possible to form a suspended affixation construction with both L-Asp<sup>0</sup> and H-Asp<sup>0</sup> morphology. Such examples are marked due to their complexity, but grammatically acceptable:

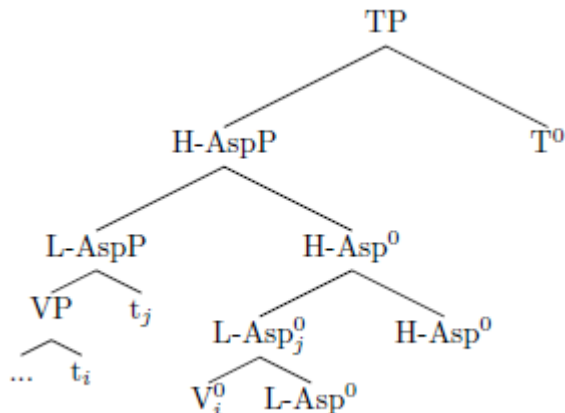
- (40a) ? män [halva je-jir-mif] və [tʃai itʃ-ir-mif]-di-m  
 1SG [halva eat-IMPV-PRF] and [tea drink-IMPV-PRF]-PST-AGR.1SG  
 “I had been eating halva and drinking tea”
- (40b) ? män [halva je-jär-mif] və [tʃai itʃ-är-mif]-di-m  
 1SG [halva eat-AOR-PRF] and [tea drink-AOR-PRF]-PST-AGR.1SG  
 “I had used to eat halva and drink tea”
- (40c) ? män [halva je-jädʒäj-mif] və [tʃai itʃ-ädʒäj-mif]-di-m  
 1SG [halva eat-PROS-PRF] and [tea drink-PROS-PRF]-PST-AGR.1SG  
 “I had been going to eat halva and drink tea”

<sup>13</sup> Example (39d), which uses the prospective aspect, does not contain non-future morphology or any tense morphology whatsoever, as has already been shown to be possible in example (18). This property is unique to nominalizations with the prospective, which I do not analyze in this work. However, suspended affixation is still evident in this example in that agreement morphology is only present in (the vicinity of) the second conjunct.

<sup>14</sup> In accounting for the English auxiliary “have” Bjorkman (2011) also argues for a dedicated perfect projection (PerfP) between a general AspP and TP.

In these cases, I propose that the verbal morphological complex is built up as  $V^0$  moves to  $L\text{-Asp}^0$ , which then moves to  $H\text{-Asp}^0$ , but that movement to  $T^0$  is not occurring. Specifically here,  $H\text{-Asp}^0$  to  $T^0$  movement does not occur, as illustrated by the tree in (41):

- (41)  $V^0 \rightarrow L\text{-Asp}^0, L\text{-Asp}^0 \rightarrow H\text{-Asp}^0, *H\text{-Asp}^0 \rightarrow T^0$



In contrast, a coordinate structure where each verb carries a low aspect morpheme, with suspension of perfect aspect morphology and tense morphology, is not acceptable:

- (42) \*mān [halva je-**jir**] və [tʃai itʃ-**ir**]-**mif-di**-m  
 1SG [halva eat-IMPV] and [tea drink-IMPV]-PRF-PST-AGR.1SG  
 “I had been eating halva and drinking tea”

I interpret this as evidence that  $L\text{-Asp}^0$  to  $H\text{-Asp}^0$  movement is required when both of these projections are present. The CSC prevents such movement in (42) because  $H\text{-AspP}$  sits outside of the  $L\text{-AspP}$  coordinate structure, and so ungrammaticality is the only option.

When there is no aspect morphology, suspended affixation constructions are not grammatical, as in (43) below. Applying Kelepir's (2001) hypothesis for Turkish, it might be predicted that this is because no  $V^0$  can move out of the coordinate structure to check a [Verbal] feature on  $T^0$ . If so, auxiliary copular insertion ought be able to check that feature, and save the example. However, this construction is ungrammatical even with an auxiliary:

- (43) \*mān [pul-u tʃöhtyr] və [o-na ver] (**i**)-di-m  
 1SG [money-ACC take] and [3SG-DAT give] COP-PST-AGR.1SG  
 “I was taking the money and giving it to him/her”

I propose that ungrammaticality is inescapable here because  $V^0$  must, by parameterization, move to its nearest C-commanding head. In (43) that head is  $T^0$ , which is outside of the coordinate structure containing the two instances of  $V^0$ , making such movement impossible due to the CSC.

Bringing the above information together, I argue that in North Azeri  $V^0$  moves to its nearest C-commanding head, which may be  $L\text{-Asp}^0$ ,  $H\text{-Asp}^0$ , or  $T^0$ . When both aspect projections are present,  $V^0$  moves to  $L\text{-Asp}^0$ , and  $L\text{-Asp}^0$  moves to  $H\text{-Asp}^0$ . However, no aspect

projection  $\text{ever}$  moves to  $T^0$ . As mentioned, Kelepir (2001) argues for Turkish that when  $\text{Asp}^0$  is present,  $V^0$  moves to  $\text{Asp}^0$  rather than  $T^0$ , and a copula arises at  $T^0$ . For North Azeri, in section 3 I showed the connection between the presence of aspect morphology and the insertion of the auxiliary to host tense morphology for clauses with one instance of aspect. Examples (44) and (45) below show auxiliary insertion in main and nominalized clauses with both aspect projections filled:

(44) **Main clause double aspect and auxiliary**

(44a) mǎn gatʃ-ir-miʃ (i)-di-m  
1SG run-IMPV-PRF COP-PST-AGR.1SG  
“I had been running”

(44b) mǎn gatʃ-ar-miʃ (i)-di-m  
1SG run-AOR-PRF COP-PST-AGR.1SG  
“I had used to run”

(44c) mǎn gatʃ-adʒay-miʃ (i)-di-m  
1SG run-PROS-PRF COP-PST-AGR.1SG  
“I had been going to run”

(45) **Nominalized clause double aspect and auxiliary**

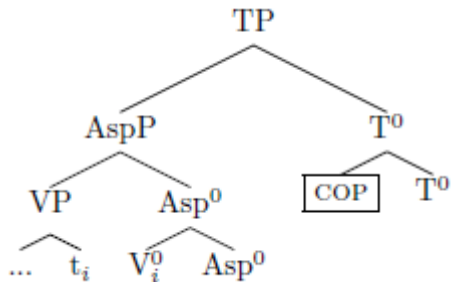
(45a) mǎn [ o-nun gatʃ-ir-miʃ ol-duy-u-nu ] de-di-m  
1SG [ 3SG-GEN run-IMPV-PRF COP-NFUT-AGR.3SG-ACC ] say-PST-AGR.1SG  
“I said that he/she has/had been running”

(45b) mǎn [ o-nun gatʃ-ar-miʃ ol-duy-u-nu ] de-di-m  
1SG [ 3SG-GEN run-AOR-PRF COP-NFUT-AGR.3SG-ACC ] say-PST-AGR.1SG  
“I said that he/she has/had used to run”

(45c) mǎn [ o-nun gatʃ-adʒay-miʃ ol-duy-u-nu ] de-di-m  
1SG [ 3SG-GEN run-PROS-PRF COP-NFUT-AGR.3SG-ACC ] say-PST-AGR.1SG  
“I said that he/she has/had been going to run”

#### 4.1 Auxiliary copula insertion generally

The conditions triggering auxiliary copula insertion in North Azeri can now be formulated precisely. I argue that when there are no aspect projections,  $V^0$  to  $T^0$  movement occurs, and there is no need for auxiliary copular insertion. When there is an  $\text{AspP}$  or multiple  $\text{AspPs}$ , head movement progresses up to the highest  $\text{Asp}^0$ , but not all the way to  $T^0$ . In this circumstance, the auxiliary copula is inserted at  $T^0$ . This occurs in both main clauses and nominalized clauses. The tree in (46) illustrates this general configuration:

(46) **The general auxiliary configuration**

Kelepir (2001) and Göksel & Kerslake (2005) note that Turkish nominalized clauses with aspect morphology require use of *ol*, but do not explicitly connect this to a wider auxiliary copula process, which I have argued for in North Azeri.<sup>15</sup> Such an auxiliary process has good motivation following Bjorkman (2011), which demonstrates that insertion of auxiliary “be” is a cross-linguistically common repair for the verbal inflectional system. Bjorkman argues that auxiliary “be” is inserted post-syntactically in order to satisfy a morphological requirement that a functional head’s features spell out on a verbal stem, in the case that such features cannot be realized on the main  $V^0$  due to structural constraints.

I extend this general proposal to North Azeri as well.<sup>16</sup> I argue that when  $V^0$  to  $T^0$  movement is blocked by  $Asp^0$ ,  $T^0$  morphology cannot be spelled out on the main  $V^0$ . As a repair, auxiliary copula insertion takes place at  $T^0$ , allowing the otherwise stranded  $T^0$  morphology to be spelled out on a verbal stem. As section 3 showed, this occurs even if the morphology of  $T^0$  and the auxiliary are zero, as in the present tense, where the only evidence which reveals this underlying complexity is stress placement. That auxiliary insertion is required even if nothing pronounced is involved supports Bjorkman’s claim that auxiliary “be” specifically satisfies a morphological requirement, and not a phonological one.

We have seen so far that the copula in both typical copular constructions and auxiliary contexts has significant allomorphy in North Azeri. The next section accounts for copular allomorphy generally, linking back to the concept of defective  $T^0$  in nominalized clauses.

### 5.0 Copular allomorphy and the duality of *ol*

Having accounted for the process of auxiliary insertion in North Azeri, in this section I now make a proposal about what conditions copular allomorphy. I have shown that the copula takes the form *i/-j* in the past tense, in both typical copular constructions and when used as an

<sup>15</sup> Göksel (2001) & (2003) argue that *ol* in Turkish (nominalized) object relative clauses is inserted to avoid word size restrictions, or slot-type mismatches. For North Azeri however, I argue that such an *ol* is the contextual allomorph of a more general auxiliary process. I leave comparison of these two languages to future work.

<sup>16</sup> Bjorkman (2011) uses a framework where heads transmit inflectional features to a lower head through a reverse Agree operation. Auxiliary “be” is inserted to spell out features which fail to spell out on  $V^0$ . I do not use the concept of reverse Agree here, but focus on Bjorkman’s observations regarding “be” as an auxiliary verbal stem.

auxiliary in past tense main clauses, though the *-j* variant deletes in auxiliary contexts. I have also shown that the copula, auxiliary or otherwise, is zero in the present tense.

The clear generalization that can be made is that the allomorphy of the copula is connected to tense. I propose that the form of the copula is conditioned by the features of  $T^0$ , upon being adjoined to  $T^0$ . This happens either in copular constructions without AspP where the copular  $V^0$  moves to  $T^0$ , or in auxiliary insertion contexts where an auxiliary copula is post-syntactically inserted at  $T^0$ . In (47) below I state preliminary set of VI rules for the copula in North Azeri:

(47) **Preliminary VI rules for the copula**

/i,-j/ ↔ [,+Past]

/-Ø/ ↔ [,+Present]

This set of rules is preliminary because it does not account for the *ol* allomorph. As shown already, *ol* is the auxiliary copular form used in nominalized clauses, where I argue that  $T^0$  is defective. *ol* is also the copular form used in copular constructions with aspect morphology, where *ol* is ambiguous between “be” and “become,” as example (48) shows for all aspects:

(48) **“be/become” ambiguity of *ol* with aspect morphology**

(48a) män xəstə **ol**-ur-am  
1SG sick COP-IMPV-AGR.1SG  
“I am **being/becoming** sick”

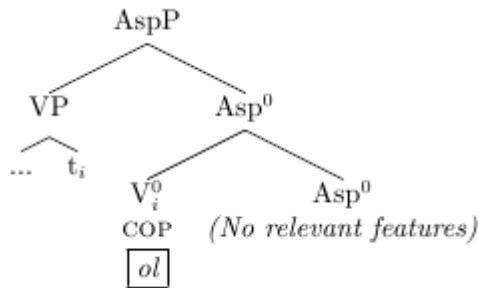
(48b) män xəstə **ol**-ar-am  
1SG sick COP-AOR-AGR.1SG  
“I will probably **be/become** sick”

(48c) män xəstə **ol**-ad̂ʒay-am  
1SG sick COP-PROS-AGR.1SG  
“I am going to **be/become** sick”

(48d) män xəstə **ol**-muʃ-am  
1SG sick COP-PRF-AGR.1SG  
“I have **been/become** sick”

To begin accounting for *ol*, I first propose that *ol* is the elsewhere form of the copula, triggered when the copula receives no specification for form. I propose that this occurs in two contexts: in nominalized clauses, and in copular constructions with AspP.

I have argued that when AspP is present,  $V^0$  moves to  $Asp^0$  rather than  $T^0$ . I have also claimed that the allomorphy of the copula is determined by the features on  $T^0$ , when the copula is adjoined to  $T^0$ . However,  $Asp^0$  is not a  $T^0$ , and so does not have any features characteristic of  $T^0$  which can determine the copula's form. Therefore I argue that in copular constructions with AspP like (48), the copular  $V^0$  moves to  $Asp^0$ , where it cannot be specified for form. This results in the elsewhere copular form *ol*. The tree in (49) illustrates the relevant portion of such a copular construction:

(49) **Partial derivation of copular construction with AspP**

I further propose that the elsewhere allomorph of the copula is triggered at the defective  $T^0$  of nominalized clauses. I have argued that  $T^0$  in nominalized clauses is defective due to having inherited no features from the defective subordinate  $C^0$ , and that defective  $T^0$  consequently lacks tense features like [+Past] or [+Present], which I argue determine copular allomorphy. Following this, a copula adjoined to defective  $T^0$  as an auxiliary must take the elsewhere form *ol*. In short, nominalized clauses and copular constructions with an AspP are both contexts where a copula is ultimately adjoined to a head that cannot specify a copular form.

Second, to account for the “be/become” ambiguity in copular constructions with AspP like (48), I argue that *ol* is also the form of the  $V^0$  “become,” in addition to the copula's elsewhere allomorph. This claim is evidenced by the fact that when the stem *ol* is used without aspect morphology, in this unambiguous context it simply carries the reading “become”:

- (50) at **ol-du-m**  
 horse **become**-PST-AGR.1SG  
 "I became a horse" (Context: A wizard turns you into a horse.)

The ambiguity in copular constructions with AspP is due to this. Use of the stem *ol* with aspect morphology can either involve the  $V^0$  “become” or a copula in the elsewhere form, because of the happenstance that these two have the same phonological form. With this, a final set of VI rules for the copula in North Azeri can now be proposed, along with one additional rule:

(51) **VI rules for the copula**

- /i,-j/ ↔ [\_,+Past]  
 /-Ø/ ↔ [\_,+Present]  
 /ol/ ↔ Elsewhere

- (52) /ol/ ↔ [+Become]

My account of copular allomorphy predicts that the copula will have the form *ol* in a nominalized copular construction, because the copular  $V^0$  will move to the defective  $T^0$  of such a

clause. This prediction is accurate, as (53) below shows. In this example, the bracketed nominalized copular clause uses the copular form *ol*:<sup>17</sup>

- (53) män [ ad̞ʒ **ol-duy-um-a** ] d̞ʒörä halva-ni je-jir  
 1SG [ hungry COP-NFUT-AGR.1SG-DAT ] because halva-ACC eat-IMPV  
 ol-ur-am  
 become-IMPV-AGR.1SG  
 “Because I am hungry I am eating the halva”<sup>18</sup>

With this, the allomorphy of the copula in North Azeri is accounted for. Kelepir (2001) proposes that in Turkish too, the copula’s form is context dependent. Kelepir argues that a copular feature inserted at  $T^0$  has the form *i-/y-/∅*, and that the same inserted at  $V^0$  has the form *ol*. I have argued that North Azeri specific varieties of  $T^0$  implicate certain copular forms, while *ol* lends itself to an elsewhere analysis. I leave a more detailed comparison of these languages to future work.

## 6.0 Conclusion

I have argued for an interconnected account of clause nominalization, auxiliary insertion, and copular allomorphy in North Azeri. I proposed that  $C^0$  in subordinate clauses in this language is defective, resulting in a defective  $T^0$ . This defectivity is the trigger for clause nominalization by way of  $n^0$ , and also has effects in the realm of copular allomorphy. I showed that North Azeri has a general process of auxiliary copular insertion, which applies in both main clauses and nominalized subordinate clauses. I argued that an auxiliary copula is inserted at  $T^0$  whenever  $Asp^0$  blocks  $V^0$  to  $T^0$  movement, though the consistency of this process is obscured by copular allomorphy. I argued that the form of the copula is conditioned by the features of  $T^0$ . However, when adjoined to either an  $Asp^0$  or defective  $T^0$ , which lack the relevant features, the elsewhere form of the copula results. This is *ol*, which also happens to be the form of the verb “become,” resulting in uses of *ol* with aspect morphology. In this way auxiliaries, the copula generally, and clause nominalization in North Azeri are interrelated.

### ABOUT THE AUTHOR

**Colin Davis** graduated from the University of Minnesota with a BA in Linguistics in 2014, and at the time of this work is applying to graduate school. His general research interests are morphosyntax and head-final / Altaic languages. He can be reached at: [davi1390@umn.edu](mailto:davi1390@umn.edu)

**Recommendation:** This paper was recommended for publication by Professor Claire Halpert of the University of Minnesota, Twin Cities. She can be reached at: [halpert@umn.edu](mailto:halpert@umn.edu)

<sup>17</sup> I predict that a nominalized copular construction with  $AspP$  will contain two instances of *ol*: The copular  $V^0$  will have the form *ol* upon adjoining to  $Asp^0$ , as will the auxiliary copula supporting defective  $T^0$ . I have yet to test this.

<sup>18</sup> Notice that in this example the matrix clause has an instance of *ol* between two imperfective aspect morphemes. I do not examine constructions of this nature in this work. While this use of *ol* superficially resembles the nominalized clause auxiliary that has been extensively discussed here, I argue that this use of *ol* represents not an auxiliary, but *ol* as “become” which in such constructions selects  $AspP$  complement, forming a bi-clausal construction.



## References

- Authier, Gilles. (2010). Azeri morphology in Kryz (East Caucasian). In Lars, Joanson. (ed.) *Turkic Languages 14*, 14-42.
- Baker, Mark. (1985). The Mirror Principle and morphosyntactic explanation. *Linguistic Inquiry* 16.3, 373-415.
- Bjorkman, Bronwyn. (2011). *BE-ing default: The morphosyntax of auxiliaries*. Doctoral dissertation, Cambridge, MA: MIT Press.
- Chomsky, Noam. (2001). Derivation by phase. In *Ken Hale: A Life in Language*, ed. M. Kenstowicz: 1-52. Cambridge, MA: MIT Press.
- Chomsky, Noam. (2008). On phases. In Robert Friedin, Carlos Otero, Maria Lusia Zubizarreta, eds., *Foundational issues in linguistic theory*, 133-166. Cambridge, MA: MIT Press.
- Cinque, Guglielmo. (1999). *Adverbs and functional heads*. Oxford: Oxford University Press.
- Comrie, Bernard. (1976). *Aspect*. Cambridge University Press.
- Göksel, Aslı. (2001). The auxiliary verb *ol* at the morphology-syntax interface. In Taylan E. Eser (ed.), *The Verb in Turkish*, 151-181. Amsterdam/Philadelphia: John Benjamins.
- Göksel, Aslı. (2003). Syntactic head or morphological buffer? The dual status of *ol*. In A.S. Özsoy, E. Taylan, A. Koç, D. Akar and M. Nakipoğlu-Demiralp (eds.) *Studies in Turkish linguistics*, 48-57. Boğaziçi University Press.
- Göksel, Aslı., & Celia, Kerslake. (2005). *Turkish: A Comprehensive Grammar*. Abingdon, UK: Routledge.
- Hale, Ken. (2002). On the Dagur object relative: Some comparative notes. *Journal of East Asian Linguistics* 11: 109-122.
- Harley, Heidi & Rolf, Noyer. (1999). Distributed morphology. In *Glott International* 4:4, 3-9.
- Halle, M & A, Marantz. (1993). Distributed morphology and the pieces of inflection. In K. Hale and S.J. Keyser (ed.): *The View From Building 20*, 1-52. Cambridge, MA: MIT Press.
- Key, Greg & Schreiner, Sylvia L.R. (2014). The prospective marker in Turkish: A unified treatment. Handout from *WAFI 10*.
- Kelepir, Meltem. (2001). *Topics in Turkish syntax: Clause Structure and Scope*. Doctoral dissertation, Cambridge, MA: MIT Press.
- Kornfilt, Jaklin. (1996). On some copular clitics in Turkish. In A. Alexandiou, N. Fuhrhop, P. Law and S. Loehken (eds.): *Papers in Linguistics*. Berlin: Zentrum für Allgemeine Sprachwissenschaft 6, 96-155.

- Kornfilt, Jaklin. (1997). *Turkish*. London: Routledge.
- Kornfilt, Jaklin. (2006). Agreement: The (unique and local) syntactic and morphological licenser of subject case. In Costa, João & Silva, Maria C. (eds.) *Studies on agreement.*, 141-171. Amsterdam/Philadelphia: John Benjamins.
- Kornfilt, Jaklin & Whitman, John. (2011). Genitive subjects in TP nominalizations. Handout from *JeNom4, The 4th Workshop on Nominalizations*.
- Miyagawa, Shigeru. (2008). Genitive subjects in Altaic. In *Proceedings of the Workshop on Altaic Formal Linguistics (WAFL 4)*, volume 56, 181-198. MITWPL.
- Miyagawa, Shigeru. (2010). *Why agree? Why move?* Cambridge, MA: MIT Press.
- Miyagawa, Shigeru. (2012). *Case, argument structure, and word order*. New York, NY: Routledge.
- Ouhalla, Jamal. (1991). *Functional categories and parametric variation*. London: Routledge.
- Öztopçu, Kurtuluş. (2003). *Elementary Azerbaijani*. Santa Monica, California.
- Payne, Thomas. (1997). *Describing morphosyntax: A guide for field linguists*. Cambridge, UK: Cambridge University Press.
- Ross, John R. (1967). *Constraints on variables in Syntax*. Doctoral dissertation, MIT.
- Schönig, Claus. (2006). Azerbaijani. In: Lars Johanson & Éva Ágnes Csató (eds.) *The Turkic languages*. London & New York: Routledge. 248-260.
- Ulutaş, Süleyman. (2009). Feature inheritance and subject case in Turkish. In Ay, Sıla., Özgür Aydın, İclâl Ergenç, Seda Gökmen, Selçuk İşsever (eds.) & Dilek Peçenek. *Essays on Turkish linguistics*, 141 - 150. Wiesbaden, Germany: Harrassowitz Verlag.