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

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UNIFYING NOMINALIZED CLAUSES, AUXILIARIES, AND COPULAR ALLOMORPHY IN NORTH AZERI

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...
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 \( \text{little } n \) \( (n^b) \). 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**

\[
\begin{array}{c}
[ \text{o-nun je-mif} *(ol)-\text{duy-u} ] \text{halva} \\
[ 3SG-GEN eat-PRF COP-NFUT-AGR.3SG ] \text{halva}
\end{array}
\]

“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**

\[
\begin{array}{c}
\text{gatʃ-mif (i)-di-m} \\
\text{run-PRF COP-PST-AGR.1SG}
\end{array}
\]

“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\(^b\)) 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:

(3) **Past tense: \(i/-j\) copula**

\[
\begin{align*}
\text{män xästä } &\text{ \(i/-j\)-di-m} \\
1SG &\text{ sick \ COP-PST-AGR.1SG} \\
&\text{“I was sick”}
\end{align*}
\]

(4) **Present tense: zero copula**

\[
\begin{align*}
\text{män xästä } &\text{-∅-∅-jäm} \\
1SG &\text{ sick-\ COP-PRES-AGR.1SG} \\
&\text{“I am sick”}
\end{align*}
\]

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**

\[
\begin{align*}
\text{män xästä } &\text{ol-muf-∅-am} \\
1SG &\text{ sick \ COP-PRF-PRES-AGR.1SG} \\
&\text{“I have \ been/become \ sick”}
\end{align*}
\]

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.2

(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:

<table>
<thead>
<tr>
<th>Low Aspect</th>
<th>High Aspect</th>
<th>Tense</th>
</tr>
</thead>
<tbody>
<tr>
<td>-(j)AχγG = Prospective</td>
<td>-mI/- (j)Ib = Perfect</td>
<td>-Ø = Present</td>
</tr>
<tr>
<td>-(j)Ar = Aorist</td>
<td></td>
<td>-DI = Past</td>
</tr>
<tr>
<td>-(j)Ir = Imperfective</td>
<td></td>
<td>-DIG = Non-future</td>
</tr>
</tbody>
</table>

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) män gat-j-(ir/ar/ADʒaγ)-mIʃ-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 ADʒaI-Ø
    3SG come-PRF-PRES-AGR.3SG
    “He/she/it has come”

(8b) siz ADʒaI-pØ-siniz
    2PL come-PRF-PRES-AGR.2PL
    “You (pl.) have come”

---

2 I also assume the presence of at least VP dominating VP, though I abstract away from this detail here.
3 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.
4 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 -\(ml\) has the optional form -(\(j\)Ib with 2nd and 3rd person subjects, which (8) above also illustrates. While Turkish has a homophonous item -\(ml\), this -(\(j\)Ib allomorphy is unique to North Azeri, perhaps Azeri in general. The North Azeri -\(ml\) is also different from its Turkish counterpart in interpretation. The Turkish -\(ml\) 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 Schöning (2006) observe, and the findings of this research corroborate. All instances of -\(ml\) 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 -(\(j\)A\(\ddot{g}\)aG, meaning roughly “going to” (Comrie, 1976). I argue that -(\(j\)A\(\ddot{g}\)aG is of the aspect category both syntactically and semantically.\(^5\) 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 Öztöpçu (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.\(^6\)

<table>
<thead>
<tr>
<th>Person/number</th>
<th>1SG</th>
<th>1PL</th>
<th>2SG</th>
<th>2PL</th>
<th>3SG</th>
<th>3PL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pronoun</td>
<td>män</td>
<td>biz</td>
<td>sän</td>
<td>siz</td>
<td>o</td>
<td>onlar</td>
</tr>
<tr>
<td>Past tense</td>
<td>-m</td>
<td>-G</td>
<td>-n</td>
<td>-z/-nlz</td>
<td>-Ø/-Dlr</td>
<td>-Ø/-Dlr (-lAr)</td>
</tr>
<tr>
<td>Present tense</td>
<td>-((j)Am</td>
<td>-((j)IG</td>
<td>-sAn</td>
<td>-sIz/-sInlz</td>
<td>-Ø/-Dlr</td>
<td>-Ø/-Dlr (-lAr)</td>
</tr>
</tbody>
</table>

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 -Dlr 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 -Dlr and the optionality of -lAr:

\(^5\) Key & Schreiner (2014) has recently argued that the Turkish equivalent -(\(y\)A\(\dddot{A}\)K similarly encodes not the future tense, but specifically the prospective aspect.

\(^6\) The -nlz and -sInlz agreement forms are a more polite option for general 2nd person reference.
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 nominalize. 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 1st person plural subject, and the corresponding agreement on the verbal complex is once again -imiz:

(11a) biz-im pʃi-j-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:

<table>
<thead>
<tr>
<th>Person/number</th>
<th>1SG</th>
<th>1PL</th>
<th>2SG</th>
<th>2PL</th>
<th>3SG</th>
<th>3PL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genitive case</td>
<td>-im</td>
<td>-(n)In</td>
<td>-lmj</td>
<td>-(l)miz</td>
<td>-ln</td>
<td>-(l)miz</td>
</tr>
</tbody>
</table>

Table 3: Genitive case & nominal agreement in North Azeri

---

7 Subject relative clauses, clauses with the complementizer ši (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.\(^8\) (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:

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

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

\[(13)\]  
\[
\text{sän [ män-im/*män mätʃəb-ā dʒät-mä-dij-im ] itʃin ]} \\
2SG [ 1SG-GEN/*1SG.NOM school-DAT go-NEG-NFUT-AGR.1SG ] because ] \\
äsäbläf-ir-sän \\
be.angry-IMPV-AGR.2SG \\
“You are angry because I did not go to school” (North Azeri)
\]

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:

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

---

\(^8\) 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 taro-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):  

(15) [xoʃpäxtlijdän 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 T₀ responsible for subject agreement and nominative case assignment originate at C₀, and that T₀ inherits those features. (Chomsky, 2008; Miyagawa, 2010; Miyagawa, 2012) These are uninterpretable φ-features (the φ-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 D₀ associated with the relativized NP, extending Hale (2002)'s analysis of Dagur.  

Miyagawa claims that D₀ can probe into the embedded clause because there is no C₀ to delineate a phase. That nominative case is absent when CP is absent is expected if the nominative case feature originates at C₀. If there is no C₀, then there cannot be a nominative case feature for T₀ 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 T₀, 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 φ-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 T₀ 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 (n₀). Ulutaş (2009) proposes that the merging of n₀ compensates for a

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

10 Miyagawa (2012) links other Japanese genitive subjects to the context of weak v₀ plus subordinate T₀. 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 $T^0$ to 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:
That the elsewhere case occurring when \( T^0 \) 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)\( \bar{A} \bar{D} \bar{A}G \). I suggest that because North Azeri does not encode reference to the future through tense, even when a \( T^0 \) 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) \[
\text{[ män-im je-\( \bar{a} \bar{D} \bar{A} \bar{j} \)-im ] jemäj} \\
\text{[ 1SG-GEN eat-PROS-AGR.1SG ] food} \\
\text{“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)\( \bar{A} \bar{D} \bar{A}G \) 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 \( C^0 \) and \( T^0 \) 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 \( T^0 \) 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:

(19) \[
\begin{align*}
(19a) \ & \text{[ o-nun je-\( \bar{j} \bar{r} \) ol-duy-u ] halva} \\
& \text{[ 3SG-GEN eat-IMPV COP-NFUT-AGR.3SG ] halva} \\
& \text{“The halva that he/she is/was eating”} \\
(19b) \ & \text{[ o-nun je-\( \bar{j} \bar{r} \) ol-duy-u ] halva} \\
& \text{[ 3SG-GEN eat-AOR COP-NFUT-AGR.3SG ] halva} \\
& \text{“The halva that he/she probably will / used to eat”} \\
(19c) \ & \text{[ o-nun je-\( \bar{m} \bar{i} \) ol-duy-u ] halva} \\
& \text{[ 3SG-GEN eat-PRF COP-NFUT-AGR.3SG ] halva} \\
& \text{“The halva that he/she has/had eaten”}
\end{align*}
\]
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 uʃaʃ ol-anda halva je-jər (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-miʃ (i)-di-m
    run-PRF COP-PST-AGR.1SG
    “I had run”
(23d)  gatʃ]-adʒaγ (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)  män 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:

(25a)  män xästä i/-j-di-m
       1SG sick COP-PST-AGR.1SG
       “I was sick”

(25b)  *män xästä-O-di-m
       1SG sick-COP-PST-AGR.1SG
       “I was sick”

However, when the predicate is consonant-final, such as *dʒözäl* in (26) below, either the *i* allomorph or a zero copula are grammatical, while *-j* is not:

(26a)  män dʒözäli/-j-di-m
       1SG pretty COP-PST-AGR.1SG
       “I was pretty”

(26b)  män dʒözäl-O-di-m
       1SG pretty-COP-PST-AGR.1SG
       “I was pretty”

This pattern indicates that the *-j* copular variant deletes when following a consonant.11 Recall that all aspect items in North Azeri, -(j)Ir, -(j)Ar, -(j)AdʒAG and -mIʃ, 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***
       gatʃ]-mif-j-di-m
       run-PRF-COP-PST-AGR.1SG
       “I had run”

11 Kelepir (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 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/modal) 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 accuate 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) jat-ti-m
     sleep-PST-AGR.1SG
     “I slept”

(29b) jat-ti-n
     sleep-PST-AGR.2SG
     “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) jat-ir-Ø-am
     sleep-IMPV-PRES-AGR.1SG
     “I sleep / am sleeping”

(30b) at gatʃ-áɾ-Ø(-dir)
     Horse run-AOR-PRES-AGR.3SG
     “The horse will probably run”

(30c) oxu-múɾ-Ø-sunuz
     read-PRF-PRES-AGR.2PL
     “You (pl.) have read”

(30d) sän jat-adʒáy-Ø-san
     2PL sleep-PROS-PRES-AGR.2SG
     “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:
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 xästä-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-ir-O-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-O-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.
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 T0 in Turkish has a [Verbal] feature, typically checked by V0 to T0 movement. However, when an aspect or modal projection intervenes between VP and TP, V0 moves to the intervening head, forming a participle structure. This leaves the [Verbal] feature on T0 unchecked, motivating insertion of a copula bearing a [+Verbal] feature at T0. For example, in (35) below where no projection intervenes, V0 moves to the past tense T0, 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, V0 moves to Asp0. However, Asp0 cannot then move to T0. Kelepir suggests this is because while aspect can be [+Verbal] or [-Verbal] (Ouhalla 1991), in Turkish it is the latter, and so Asp0 cannot move to check the [Verbal] feature on T0. Therefore a copula (here null) is inserted at T0 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 Asp⁰ does not move to T⁰ 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 V⁰ moves to its local Asp⁰, it cannot be that only the second V⁰ moves as high as T⁰ in order to gain tense and agreement morphology. This is because these constructions in fact involve an AspP coordination, and movement of V⁰ to T⁰ out of only the second AspP conjunct would violate the Coordinate Structure Constraint (CSC, Ross, 1967). Kelepir infers that in general, V⁰ moves to Asp⁰, but the complex of V⁰+Asp⁰ does not move to T⁰ 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:¹²

(38) Main clause suspended affixation

(38a) män [pul-u tʃöhtyr-yr] vá [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] vá [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-myʃ] vá [o-na ver-myʃ]-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-ədʒäj] vá [o-na ver-ədʒäj]-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-duʃ-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”

¹² 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 V⁰ cannot be moving as high as T⁰, 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).
I follow Kelepir’s (2001) interpretation of suspended affixation, and infer that Asp$^0$ to T$^0$ 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$^0$ to T$^0$ movement occurs. When AspP is present, V$^0$ moves to Asp$^0$, and nothing moves to T$^0$.

It is in the latter context that Kelepir (2001) claims there is copular insertion at T$^0$ 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$^0$ does not move to T$^0$ due to an intervening Asp$^0$, 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. It is possible to form a suspended affixation construction with both L-Asp$^0$ and H-Asp$^0$ morphology. Such examples are marked due to their complexity, but grammatically acceptable:

(40a) ? män [halva je-jir-mdi-ʃ] vā [tʃai itʃ-ir-mdi-ʃ]-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-mdi-ʃ] vā [tʃai itʃ-är-mdi-ʃ]-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-mdi-ʃ] vā [tʃai itʃ-ädʒäj-mdi-ʃ]-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”

---

13 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.

14 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 V⁰ moves to L-Asp⁰, which then moves to H-Asp⁰, but that movement to T⁰ is not occurring. Specifically here, H-Asp⁰ to T⁰ movement does not occur, as illustrated by the tree in (41):

(41) \( V⁰ \rightarrow L-Asp⁰, L-Asp⁰ \rightarrow H-Asp⁰, *H-Asp⁰ \rightarrow T⁰ \)

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) *män [halva je-\( \text{\textaj} \)jir] vä [\( \text{\textaj} \)i\( \text{\textai} \)u\( \text{\textaj} \)-ir]-mi\( \text{\textaj} \)-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-Asp⁰ to H-Asp⁰ movement is required when both of these projections are present. The CSC prevents such movement in (42) because H-AspP sits outside of the L-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 V⁰ can move out of the coordinate structure to check a [Verbal] feature on T⁰. 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) *män [pul-u ˓├jöhtyr] vä [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 V⁰ must, by parameterization, move to its nearest C-commanding head. In (43) that head is T⁰, which is outside of the coordinate structure containing the two instances of V⁰, making such movement impossible due to the CSC.

Bringing the above information together, I argue that in North Azeri V⁰ moves to its nearest C-commanding head, which may be L-Asp⁰, H-Asp⁰, or T⁰. When both aspect projections are present, V⁰ moves to L-Asp⁰, and L-Asp⁰ moves to H-Asp⁰. However, no aspect
projection 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:

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

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

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

(44c) män gaṭʃ-adʒay-ˈmɪʃ (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) män [ o-nun gaṭʃ-ir-ˈmɪʃ 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) män [ o-nun gaṭʃ-ar-ˈmɪʃ 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) män [ o-nun gaṭʃ-adʒay-ˈmɪʃ 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:
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. 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 V⁰ due to structural constraints.

I extend this general proposal to North Azeri as well. I argue that when V⁰ to T⁰ movement is blocked by Asp⁰, T⁰ morphology cannot be spelled out on the main V⁰. As a repair, auxiliary copula insertion takes place at T⁰, allowing the otherwise stranded T⁰ morphology to be spelled out on a verbal stem. As section 3 showed, this occurs even if the morphology of T⁰ and the auxiliary are zero, as in the preset 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 T⁰ 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

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15 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.

16 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 V⁰. 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

\[
/i,-j/ \leftrightarrow [_,+Past] \\
/-\emptyset/ \leftrightarrow [_,+Present]
\]

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) măn xăstä ol-ur-am

1SG sick COP-IMPV-AGR.1SG

“I am being/becoming sick”

(48b) măn xăstä ol-ar-am

1SG sick COP-AOR-AGR.1SG

“I will probably be/become sick”

(48c) măn xăstä ol-ədʒəy-am

1SG sick COP-PROS-AGR.1SG

“I am going to be/become sick”

(48d) măn xăstä 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:
I further propose that the elsewhere allomorph of the copula is triggered at the defective T₀ of nominalized clauses. I have argued that T₀ in nominalized clauses is defective due to having inherited no features from the defective subordinate C₀, and that defective T₀ consequently lacks tense features like [+Past] or [+Present], which I argue determine copular allomorphy. Following this, a copula adjoined to defective T₀ 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 V₀ “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 V₀ “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**

\[
/\text{i,j}/ \leftrightarrow [\_,-\text{Past}]
\]

\[
/-\text{Ø}/ \leftrightarrow [\_,\text{+Present}]
\]

/ol/ \leftrightarrow \text{Elsewhere}

(52) /ol/ \leftrightarrow [+Become]

My account of copular allomorphy predicts that the copula will have the form ol in a nominalized copular construction, because the copular V₀ will move to the defective T₀ of such a
clause. This prediction is accurate, as (53) below shows. In this example, the bracketed nominalized copular clause uses the copular form \textit{ol}:\footnote{I predict that a nominalized copular construction with AspP will contain two instances of \textit{ol}: The copular V\textsuperscript{0} will have the form \textit{ol} upon adjoining to Asp\textsuperscript{0}, as will the auxiliary copula supporting defective T\textsuperscript{0}. I have yet to test this.}

\begin{equation}
\begin{aligned}
\text{m\text{"a}n} \ [ \text{ad} & \ddot{\text{\v{z}}} \ \text{ol-du} \text{-} \text{um-a} \ ] \ \ddot{\text{\v{z}}} \text{\d{\text{\v{a}}}r\ddot{\text{\v{a}}} \ halva-ni \ je} & \text{-jir} \\
1SG \ [ \text{hungry COP-NFUT-AGR.1SG-DAT} ] \because \text{halva-ACC eat-IMPV} \text{-AGR.1SG-DAT} \\
\text{ol-ur-am} \ & \text{become-IMPV-AGR.1SG} \\
\end{aligned}
\end{equation}

“Because I am hungry I am eating the halva”\footnote{Notice that in this example the matrix clause has an instance of \textit{ol} between two imperfective aspect morphemes. I do not examine constructions of this nature in this work. While this use of \textit{ol} superficially resembles the nominalized clause auxiliary that has been extensively discussed here, I argue that this use of \textit{ol} represents not an auxiliary, but \textit{ol} as “become” which in such constructions selects AspP complement, forming a bi-clausal construction.}

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\textsuperscript{0} has the form \textit{i-/-y-/\text{Ø}}, and that the same inserted at V\textsuperscript{0} has the form \textit{ol}. I have argued that North Azeri specific varieties of T\textsuperscript{0} implicate certain copular forms, while \textit{ol} lends itself to an elsewhere analysis. I leave a more detailed comparison of these languages to future work.

\section*{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\textsuperscript{0} in subordinate clauses in this language is defective, resulting in a defective T\textsuperscript{0}. This defectivity is the trigger for clause nominalization by way of \textit{n}\textsuperscript{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\textsuperscript{0} whenever Asp\textsuperscript{0} blocks V\textsuperscript{0} to T\textsuperscript{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\textsuperscript{0}. However, when adjoined to either an Asp\textsuperscript{0} or defective T\textsuperscript{0}, which lack the relevant features, the elsewhere form of the copula results. This is \textit{ol}, which also happens to be the form of the verb “become,” resulting in uses of \textit{ol} with aspect morphology. In this way auxiliaries, the copula generally, and clause nominalization in North Azeri are interrelated.

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