Senturia, Isabella. 2025. A morphosyntactic analysis of the Turkish inflectional system. *Glossa: a journal of general linguistics* 10(1). pp. 1–50.
DOI: https://doi.org/10.16995/glossa.18721

Open Library of Humanities

A morphosyntactic analysis of the Turkish inflectional system

Isabella Senturia, Yale University, isabella.senturia@yale.edu

This paper explores the cross-linguistically long-attested dichotomy between 1st and 2nd person on the one hand, and 3rd on the other, in the case of Turkish verbal inflection. Motivated by both syntactic and morphological data, I decompose pronouns and verbal inflectional morphology and claim that 3rd person in Turkish does not have person features the way that 1st and 2nd person do. I propose a syntactic analysis for person verbal inflection: a clitic-doubling account in the case of 1st and 2nd person, and in the case of third person, that what looks like person/number agreement is really zero-number agreement coupled with cliticization. Along with this, I discuss the morphological decomposition of four different person inflection categories, giving the vocabulary items and insertion rules underlying the syncretisms across the two nominal and two verbal categories within the framework of Distributed Morphology (Halle & Marantz 1993; Embick 2015).

1 Introduction

Linguists have long drawn a dichotomy between 1st and 2nd person (1/2), on the one hand, versus 3rd person (3) on the other. Many languages' 1st and 2nd person behave very similarly semantically and syntactically, while 3rd person has different behaviors entirely. Some of those factors identified by Forchheimer (1953) as restated by Harley & Ritter (2002) are the following:

i. 3rd person agreement is often zero, while 1st/2nd is overt.
ii. Many languages have distinct 1st and 2nd person pronouns only; for 3rd person they use demonstratives.
iii. 1st and 2nd person are often similar in form and inflection but dissimilar from that of 3rd person.

Turkish conforms to all of the above criteria. The unique behavior of the 3PL verbal agreement morpheme (3SG verbal agreement is null) in Turkish as compared to the 1/2 agreement morphemes has long been observed by Turkish linguists in many different domains of linguistics: not only morphosyntactically (Good & Yu 1999a; 2000; Kelepir 2001), but also phonologically and prosodically (Güneş 2021; Göksel 2010).

In this paper, I propose an account of the distinction of 1/2 vs. 3 utilizing data from two different domains:

i. **Syntax**: 1/2 agreement morphemes appear in different clausal positions than 3.
ii. **Morphology**: 1/2 agreement morphemes show related morphology distinct from 3, both with respect to pronouns and with respect to verbal agreement morphology.

Similarly, my proposal is two-fold. I propose a clitic-doubling account of verbal agreement on Turkish verbs (in the case of 1/2), and that 3PL agreement in Turkish is not agreement at all. Rather, it is the nominal plural morpheme originating from the subject when the subject is null but the plural is overt. I claim that 3rd person does not have grammatical person features the way that 1st and 2nd person do. This results in 1/2 having pronominal structures in the syntax reflecting their person features, i.e. 1/2 are PersonP phrases, whereas 3 has a different structure. These two general facts, that 1/2 are distinct from 3, and that person verbal agreement in Turkish may in fact be clitic-doubling, have been observed/proposed somewhat independently but have not been tied to an analysis in the way I propose. In addition to developing this syntactic analysis, I propose vocabulary items and insertion rules that incorporate this within the framework of Distributed Morphology (DM, Halle & Marantz 1993; Halle & Marantz 1994).

The paper proceeds as follows. In Section 2, I introduce the relevant morphosyntax of Turkish. Section 3 presents the syntactic and morphological puzzles. The analysis is given in Section 4 with three components: an initial morphological decomposition of pronouns and some of the

agreement morphemes, a clitic-doubling proposal motivated by those decompositions for 1/2, and an analysis for 3PL. Section 5 develops the morphological side of the work, with vocabulary items and insertion rules for all four inflectional paradigms. Section 6 concludes.

2 Background

Turkish is a head–final, SOV, suffix–based language characterized by its vowel harmony[1] and its agglutination across all classes of words. All inflection takes place in the form of suffix morphemes: nouns inflect for case, possession, and possessors, while verbs inflect for subject agreement, tense, and negation.[2,3] Given below is first an example of a simple sentence comprised of a verb inflected for tense-aspect-mood (TAM) and person, and then an example demonstrating the word ordering, agglutination, and inflectional features of Turkish.

(1) Git-me-yeceğ = im.
go-NEG-FUT = 1SG
'I will not go'.

(2) Ben kitap-lar = ınız-ı al-ma-yacağ = ım.
I book-PL = POSSESSEE.2PL-ACC take-NEG-FUT = 1SG
'I will not take your (pl.) books'.

2.1 Copula

One important feature of Turkish is its copula, which plays a role in my proposed analysis. It has been proposed that Turkish has a (mostly) null copula (Kornfilt 1996). So example (1) can be revised to include the null copula.[4]

(3) Git-me-yeceğ ∅ = im.
go-NEG-FUT COP = 1SG
'I will not go.'

Kornfilt (1996) not only proposes the existence of this copula, but also argues that the majority of the agglutinization argued for in the Turkish verbal domain is actually cliticization of the copula, which inflects for person/number features, onto the verb, as opposed to the verb itself inflecting for person/number features. She argues that there are only two true verbal tenses, past(with the suffix *-dI*) and conditional (with the suffix *-sE*). Aside from these, the first instance

[1] In this paper, capital letters will be used to represent underspecified vowels.
[2] Glossing conventions are specified at the end of this paper. Note that the POSSESSEE gloss will be renamed in the next subsection, to better facilitate the cross-paradigm syncretisms that I will analyze.
[3] All data are examples constructed by myself and verified with native speakers.
[4] An anonymous reviewer also helpfully pointed out that Göksel (2001) and Nakipoğlu & Yumrutaş (2009) present stress facts providing evidence towards the copular clitic's existence.

of all other TAM markers is followed by the copula. Then when this first instance is followed by additional TAM markerss or affixes, those are not directly attaching onto the first TAM marker but instead attach onto the copula following the first TAM marker. A non-copular construction is given in (4), whereas a complex form with two TAM markers, and hence copula after the first, is given in (5).

(4) Git-se = m.
go-COND = 1SG
'I will/would go.'

(5) Git-se-y-di = m.
go-COND-COP-PST = 1SG
'If I had gone.'

The most straightforward argument for the existence of this copula is formal registers and local Anatolian dialects of Turkish which overtly pronounce *i-* in all the locations that the copula is proposed to exist. It is argued that this *i-* is the non-null realization of the copula in that register, as given in (6).[5]

(6) Git-se i-di = m.
go-COND COP-PST = 1SG
'If I had gone.'

2.2 Agreement paradigm

The previous examples demonstrate a variety of agreement morphemes on nouns and verbs inflecting for person. I give a more complete paradigm of this below.

Please note that glosses P_1 and P_2 are somewhat unconventional and normally glossed as GEN and POSS. I have chosen to gloss these categories differently because I would like to stay neutral as to whether or not this work connects to case theory, and because one of the aims of this paper is to reanalyze the cross-paradigm syncretisms as stemming from their being underlyingly the same morpheme.

(7) *Person morphemes for the following categories:*

i. Possessor (P_1): nouns denoting possessors,
ii. Possessed (P_2): nouns denoting possessees (which inflect for the person possessing them),

[5] As noted by an anonymous reviewer, the 'i-' form of the copula cannot host stress, meaning it should be considered to be outside of the phonological word domain of the previous word (Kornfilt 1996; Fenger 2020).

iii. Verbs where the last suffix is not simple past or conditional (V_1), also known as the z-paradigm,[6] and
iv. Verbs where the last suffix is simple past or conditional (V_2), also known as the k-paradigm (Good & Yu 1999b).[7]

Pronouns and four inflectional categories					
Person	Pronoun	P_1	P_2	V_1	V_2
1SG	Ben	-(I)m	-(I)m	-(I)m	-(I)m
2SG	Sen	-(I)n	-(I)n	-sIn	-(I)n
3SG	O	-(n)In	-(s)I	∅	∅
1PL	Biz	-(I)m	-(I)mIz	-(I)z	-(I)k
2PL	Siz	-(I)n	-(I)nIz	-sInIz	-(I)nIz
3PL	Onlar	-(n)In	-(s)I	∅ *or* -lEr	∅ *or* -lEr

An example with P_1 and P_2 is given in (8):

(8) Ben-im kitab=ım.
1SG-P_1.1SG book=P_2.1SG
'My book.'

The person dichotomy in Turkish can immediately be observed in (7): the inflectional paradigms all show a stark distinction between the morphology of 1/2 and of 3. For example, one can see that 3SG morphology is null in V_1 and V_2, and 3PL inflection in those categories is *-lEr* or a null morpheme. These are very distinct from the morphemes for 1/2 in these same categories.

V_1 and V_2 are more well-known as the *z-paradigm* and *k-paradigm*, respectively, after the 1PL distinctions (originally coined by Good & Yu 1999b). In fact, the two verbal tenses not followed by the copula are exactly those which take k-paradigm endings, not z-paradigm endings, whereas those constructions with one TAM marker taking z-paradigm endings are actually inflecting the copula (as in (3)). Part of the goal of the paper to provide an analysis of the morphosyntax of verbal agreement in Turkish, taking into account the fact that there are so many distinct forms of this agreement. In this paper, I discuss the clitic-doubling syntax with respect to the z- and k-paradigms (V_1 and V_2). The aim is an analysis that can be extended to the other two nominal inflectional paradigms as well. As such, I provide vocabulary items and insertion rules in Section 5 for the inflectional categories of all four categories of verbal and pronominal

[6] These are also the suffixes which attach directly to the null copula.

[7] V_2 is not typically considered to include the (I) vowel because both TAM markers that use V_2 endings end in a vowel. I assume that in these cases the vowel is there but does not surface, as the vowel's existence reflects the parallelism across the four classes which I analyze in this paper.

categories,[8] which abstract away from the syntax of possession and exactly how features are manipulated in the syntax. A future goal is to further refine the clitic-doubling machinery in order to account for the syntactic component of the nominal inflection.

2.3 1/2 vs. 3 in nominal possession

The syntactic distinction between the behavior of 1/2 vs. 3 has been previously observed, and there is an analysis of the nominal possession dichotomy by Kunduracı (2013) which is particularly relevant for this work.[9]

Kunduracı claimed that the third-person possession suffix *-(s)I*, as seen in column P_2, is specified only for a possession feature, as opposed to first- and second-person possession suffixes which are specified for both possession and person features. In other words, what is normally treated as the possession suffix *marking* third person is in fact just a possession suffix, and contains no person features. One implication of this would be that possession is an independent grammatical category in Turkish. A consequence of this is the fact that the first and second person possession markers are fusional, i.e. they mark both person and possession, whereas the third person possession marker simply marks possession. They do not co-occur because the possession suffix *-(s)I* is overridden by the more specific markers containing both person and possession, in the case of 1/2.

Kunduracı's analysis is based on a few facts:

i. 3SG verbal inflection is non-existent (or null).

ii. The third person possession morphology does not mark plurality/agree in plurality with the subject with respect to the person plural marking *-Iz* (I derive this person plural marker later). In comparison, 1/2 possession suffixes indicate plurality of the subject.

iii. The 3PL possession suffix has behavior which is morphologically distinct from the first and second person morphemes, such as the fact that the latter can be followed by some derivational suffixes but the former cannot.

Kunduracı claims that this aligns with the fact that third person in Turkish is generally unmarked.[10]

---

[8] I focus on these cases because the relationship between pronouns and verbal agreement has a long history in theoretical work (Rizzi 1982; Zwicky & Pullum 1983; Rohrbacher 1999). As suggested by Güliz Güneş (p.c.), it would be worth investigating whether this can be extended to other cases where similar forms appear, such as relative clauses.

[9] As noted by an anonymous reviewer, the question of the distinction between 1/2 vs. 3 has been engaged with in the context of the third-person possession suffix *-(s)I* by Hayasi (1996); Yükseker (1998); Clark (1998); Erdal (2004); Tat (2013); Kharytonava (2011); Öztürk & Taylan (2016), among others.

[10] "It also accords with another fact, i.e. there is no specific pronoun for 3rd person; rather, the demonstrative *o* 'that' is used. This case might be important in the following way: if I assume that person agreement necessitates pronominal motivation, for example, the fact that Turkish even has no "pronoun" for 3rd person implies that this value, 3rd, will not be marked by morphology" (Kunduracı 2013: 6).

This argument directly parallels much of what I will argue in the case of 1/2 vs. 3 dichotomy in the context of verbs—namely, that 3PL verbal morphology does not contain any person features, but rather is just the overt plural morpheme coming directly from the nominal subject.

2.4 Clitics in Turkish and the clitic/affix distinction

The distinction between clitics vs. affixes is a far-reaching issue in morphosyntax. Zwicky & Pullum (1983) established a set of well-known diagnostics to distinguish the two. Nevins (2011) argues against some of these diagnostics with various examples of elements which morphosyntactically pattern as clitics but would be wrongly categorized as affixes using the criteria from Zwicky & Pullum (1983), such as the condition that clitics not display allomorphy: Nevins (2011) argues that it is extremely difficult to find a clitic that does not demonstrate any allomorphy whatsoever (e.g. Romance clitics). Yuan (2021) also cautions against morphological diagnostics for distinguishing clitics and affixes, using a case-study of two related Inuit languages and demonstrating that object DPs in one of the languages, Inuktitut, express properties of doubled clitics, whereas in the other, Kalaallisut, they express properties of agreement. In both cases, the distinction is not perceivable from a morphological standpoint. Kramer (2014) also explores object agreement morphology, using Amharic, and argues for both—that there is clitic-doubling, but that the object marker also undergoes Agreement prior to movement and M-merger of the clitic.[11]

In Turkish, previous work has proposed that the verbal person agreement morphemes in the z-paradigm originate from clitic-doubling of the pronominal subjects (Erdal 2000; Good & Yu 2000; Kelepir 2001). Erdal (2000) argues that the cliticized pronoun cannot bear stress, similar to the case in French, which is why the (non–cliticized) subject is often overt. The non–cliticized subject occurs because of the subject clitic, not the other way around, as is assumed with agreement morphology. Despite the fact that the verbal agreement has been acknowledged as originating via clitic-doubling, to my knowledge the specific machinery of proposed clitic-doubling in Turkish has never been worked out as this paper attempts to.[12]

I motivate the clitic-doubling analysis of 1/2 by first exploring the dichotomy of 1/2 vs. 3 through syntactic and morphological data, which naturally leads to the analysis of agreement as clitic-doubling for 1/2.

3 Puzzles and decompositions/pronominal structures

I begin by presenting the syntactic puzzles involving the z-paradigm.

---

[11] See also Preminger (2009); Paparounas & Salzmann (2024); Culbertson (2010); Baker & Kramer (2018), among others.

[12] Work on the morphosyntax of Turkish inflection with slightly different assumptions and goals includes Güneş (2021); Good & Yu (1999a; 2000).

3.1 Syntactic puzzle

There is a plethora of syntactic data pointing to the presence of such a dichotomy between 1/2 and 3. This paper will examine data that can be divided roughly into three categories: optional vs. obligatory inflection, verbs with multiple TAM markers, and polar questions. I will discuss the person dichotomy via the unique behavior of 3PL inflection in comparison to 1/2 inflection by exploring these three types of data in turn.

3.1.1 Optional vs. obligatory verbal inflection

For 1/2 subjects in verbal sentences, the subject is entirely optional but the verb is required to inflect for person. The parentheses with the asterisk in example (9) indicate that the utterance is grammatical without person inflection on the verb.

(9) a. **(Ben)** gid-iyor-∅ = ***(um)**.
(I) go-PRS-COP = **1SG**
'I am going.'

b. Gid-iyor.
go-PRS
'3SG is going'
≠'I am going.'

The ungrammaticality of the relevant reading of (9b) stems from the fact that attempting to convey a 1SG subject by omitting both the subject and the verbal inflection one results in uttering a sentence with a 3SG subject, because null agreement on the verb can only be interpreted as a 3SG subject.

In comparison, in the case of 3PL sentences, if the 3PL subject is overt, the person inflection *-lEr* on the verb is in fact dropped. If the 3PL subject is covert, the *-lEr* on the verb is *obligatory*. The curly braces indicate the complementary distribution of the contents of the two sets of braces—if one is present, the other is absent, and vice-versa.

(10) a. **{Onlar}** gid-iyor = **{lar}**.
3PL go-PRS = **3PL**
'They are going.'

b. #%**Onlar** gid-iyor = **lar**.
3PL go-PRS = **3PL**
Int.: 'They are going.'

c. *O gid-iyor = **lar**.
3SG go-PRS = **3PL**
Int.: 'They are going.'

The markedness of (10b) varies by speaker—many find it acceptable, but some report it is either ungrammatical or, oftentimes, "redundant", because of the overt plurality of the subject, which is a fact emphasizing that these requirements only hold of third person and not 1/2.[13,14] This observation immediately links the plural verbal agreement morpheme to the 3PL subject's plurality much more closely than the 1/2 verbal morphology's connection to the 1/2 pronouns. Pronunciation of the 1/2 subject overtly along with the 1/2 verbal agreement morphology does not lead to such markedness/redundancy.

Hence, there is a very distinct difference in the distribution of person agreement on the verb with respect to 1/2 vs. 3—for the former, person inflection on the verb is required but an overt subject is optional, while in contrast 3PL verbal inflection is optional.

If one is to argue that the 3PL marker on the verb is universally accepted and that this is simply doubling, then the difference in my analysis would amount to a difference in targets of the person agreement morphology. However, as stated above, there is a distinction/preference for some speakers to omit the 3PL morpheme on the verb, and this is a distinct asymmetry as compared to 1/2 morphology: there are not speakers who freely allow the 3PL morpheme on both the subject and object, but omit the 1/2 morphology on the verb (as seen in the strict ungrammaticality in (9)).

As a final note, I did not include the copula in the third-person constructions—there is reason to believe that the copula is not present in those, as they behave differently under question formation. This will be addressed in the next few subsections.

3.1.2 Multiple TAM markers

I now move on to the second type of syntactic data, where I explore the location of the person inflection morpheme for 1/2 as compared to 3 in words with multiple TAM markers. In verbs that have multiple TAM markers, the first– and second–person inflection always follows the second TAM marker, word-finally.[15] In (11), it is clear that 2SG must follow the reportative aspect marker *-mIş* (11a), and it cannot precede it (11b).

(11) a. Sen gid-iyor-∅-muş = **sun**.
you go-PRS-COP-EVI = **2SG**
'(Apparently) you are going.'

[13] Fascinatingly, even within the three anonymous reviewers, there was a strong discrepancy–one explicitly disagreed with the markedness of (10b), asking whether the "redundant" reading that some speakers get ever actually reaches unacceptability, whereas the other two reviewers did not comment on the markedness claim.

[14] An anonymous reviewer notes that previous work has associated the overt 3PL marking on the verb with the location of the subject in the tree, meaning that full agreement (3PL) is realized on the verb as well as the noun when the tree has a particular configuration (Öztürk 2006).

[15] These comments do not apply to the person inflection of the *reduced-z paradigm*, as discussed in Güneş (2021).

b. *Sen gid-iyor-∅=**sun**-muş.
you go-PRS-COP=**2SG**-REP
Intended: '(Apparently) you are going.'

However, the 3PL inflectional morpheme generally appears between two TAM morphemes (directly after the first). In (12), we see that the 3PL morpheme precedes the reportative aspect marker *-mIş*. As noted in the final paragraph of 3.1.1, there is reason to believe the copula is not present before the 3PL morpheme, unlike for 1/2. Because of this, in the following example, it occurs after the 3PL morpheme due to the existence of the second TAM marker.

(12) Gid-iyor=**lar**-∅-mış.
go-PRS=**3PL**-COP-REP
'(Apparently) they are going.'

Again, this is a very distinct distribution—in this case, exactly complimentary—of the position of the person morphology for 3 as compared to 1/2.[16,17] This is also the case for the third type of syntactic data, pertaining to the position of these agreement morphemes with respect to the polar question particle.

3.1.3 Polar questions

Polar questions in Turkish are formed by the addition of a (usually) sentence–final question clitic *mI*.[18] For 1/2 subjects in verbal sentences in the form of polar questions, the person inflection **must** move to the end of the question particle, along with the copula. It is realized as its overt form /y/ when the person inflection begins with a vowel and the preceding sound is a vowel.[19]

[16] As pointed out by Güliz Güneş (p.c.), the 3PL morpheme can also be positioned at the end of the word, as well as has the ability to appear in both places simultaneously. However, these options are often quite marked and not all speakers accept them. This is a question for future work. Additionally, the conditions under which this is possible appear to be drastically different than 1/2, so I will be focusing on the general dichotomy and contrast between 1/2 and 3PL.

[17] Some speakers also allow *-lEr* to double, and in cases like these examples some speakers allow it to be positioned word-finally. I focus on the most neutral distribution of this morpheme and generate the complimentary, word-medial distribution as the standard case. This implies that the doubling case and word-final cases are the result of some unique additional process. Due to time and space, I do not give an explanation or analysis of how this special case occurs, but see Güneş (2020) for an interesting account of this.

[18] See Kamali (2011); Atlamaz (2023); Kamali (2015); Kamali & Krifka (2020) for more on the question particle being a clitic, as provided by an anonymous reviewer.

[19] In fact, the story is slightly more complicated. The approach I use in this paper, in particular with respect to the copula and the cross-paradigmatic morphological syncretisms, must take into account the fact that two sequential vowels are resolved in two different ways. The first is via an overt /y/ in the z-paradigm first person inflection, as seen in (13b). The second, as noted in footnote 7, is by deletion of the /I/ in the k-paradigm first person inflection. I take the underlying forms to be syncretic across these four categories, and so take the overt /y/ realization in the case of the former and the vowel hiatus rule in the case of the latter as two separate distributions to be accounted for. I set this issue aside for now, and return to discuss this in more detail in Appendix A.

(13) a. Gid-iyor-∅ = **uz**.
go-PRS-COP = **1PL**
'We are going.'
b. Gid-iyor = mu-y = **uz**?
go-PRS = Q-COP = **1PL**
'Are we going?'
c. *Gid-iyor-∅ = **uz** = mu?
go-PRS-COP = **1PL** = Q
Int.: 'Are we going?'

However, in 3PL sentences the 3PL marker *-lEr* does not move to the end of the question particle. It instead remains after the first TAM marker.

(14) a. Gid-iyor = **lar**.
go-PRS = **3PL**
'They are going.'
b. *Gid-iyor = mu = **lar**?
go-PRS = Q = **3PL**
Int.: 'Are they going?'
c. Gid-iyor = **lar** = mı?
go-PRS = **3PL** = Q
'Are they going?'

Because there is no overt realization of the copula at the end of the question particle, I posit that the copula does not exist in the third-person constructions.

We can also examine data with both multiple TAM markers and question particles. Turning an utterance with 1PL subject in (15a) into a question results in (15b), where the overt copula is found directly preceding the second TAM marker and the person inflection occurs word-finally, else the utterance is ungrammatical as in (15c). On the other hand, an utterance with 3PL subject in (16a) cannot be expressed as a question in the same way. The copula still occurs after the first TAM marker, but the 3PL morpheme must directly follow the first TAM marker as in (16c), and the copula and second TAM marker must occur after the question particle. Attempting to move the 3PL morpheme along with the copula and question particle, as in (16b), is ungrammatical.

(15) a. Gid-iyor-∅-muş = **uz**.
go-PRS-COP-EVI = **1PL**
'We are apparently going.'
b. Gid-iyor = mu-y-muş = **uz**?
go-PRS = Q-COP-EVI = **1PL**
'Are we apparently going?'

c. *Gid-iyor-∅-muş = **uz** = mu?
go-PRS-COP-EVI = **1PL** = Q
Int.: 'Are we apparently going?'

(16) a. Gid-iyor = **lar**-∅-muş.
go-PRS = **3PL**-COP-REP
'They are apparently going.'
b. *Gid-iyor = mu = **lar**-∅-muş?
go-PRS = Q = **3PL**-COP-REP
Int.: 'Are they apparently going?'
c. Gid-iyor = **lar** = mı-y-mıs?
go-PRS = **3PL** = Q-COP-REP
'Are they apparently going?'

Then we can see that the copula always precedes the second TAM marker, and this copula along with the second TAM marker, and in the case of 1/2, the person inflection, all move to the end of the question particle.

To summarize the data observed in these three different categories, we can generalize as follows. In verbs with multiple TAM markers and in polar questions, the 3PL morpheme *–lEr* is consistently attached to the (primary) TAM marker. And, as mentioned previously, *–lEr* is entirely optional on the verb, as opposed to 1/2 verbal morphology.

All of the above data was within the z-paradigm. With respect to the k-paradigm, the multiple TAM markers (with or without the question particle) behave the same. However, in the case of utterances with one TAM marker and the question particle, the 1/2 person inflection does not move to the end of the question particle. This can be attributed to the lack of the copula between the first TAM marker and the k-paradigm inflectional morphemes. In this respect, then, the 1/2 and 3PL paradigms behave identically.

(17) a. Git-ti = **k**.
go-PST = **1PL**
'We went.'
b. Git-ti = **k** = mi?
go-PST = **1PL** = Q
'We went?'
c. *Git-ti = mi = **k**?
go-PST = Q = **1PL**
Int.: 'We went?'

(18) a. Git-ti = **ler**.
go-PST = **3PL**
'They went'.

b. Git-ti = **ler** = mi?
go-PST = **3PL** = Q
'They went?'

c. * Git-ti = mi = **ler**?
go-PST = Q = **3PL**
Int.: 'They went?'

To conclude, the patterns can be schematized as follows. Recall that the determination of whether the z- or k-paradigms are used is whether the final TAM marker is *-sE* or *-dI* (which take k-paradigm suffixes) or not. When there are multiple TAM markers in an utterance, we index them with subscripts, TAM_1 and TAM_2, as determined by their linear order.

(19) *Morpheme orderings for z- and k-paradigms*

Pronouns and four inflectional categories			
Person type	Utterance type	Utterance	Question formation
	z-paradigm		
1/2	One TAM	verb + TAM + copula + 1/2	verb + TAM + Q + copula + 1/2
	Two TAM markers	verb + TAM_1 + copula + TAM_2 + 1/2	verb + TAM_1 + Q + copula + TAM_2 + 1/2
3	One TAM	verb + TAM + 3	verb + TAM + 3 + Q
	Two TAM markers	verb + TAM_1 + 3 + copula + TAM_2	verb + TAM_1 + 3 + Q + copula + TAM_2
	k-paradigm		
1/2	One TAM	verb + TAM + 1/2	verb + TAM + 1/2 + Q
	Two TAM markers	verb + TAM_1 + copula + TAM_2 + 1/2	verb + TAM_1 + Q + copula + TAM_2 +1/2
3	One TAM	verb + TAM + 3	verb + TAM + 3 + Q
	Two TAM markers	verb + TAM_1 + 3 + copula + TAM_2	verb + TAM_1 + 3 + Q + copula + TAM_2

Note that the usual assumption in Turkish is that the copula is inserted to carry tense (Kornfilt 1996). This paper takes a different approach, and so these orders correspond to the analysis presented in Section 4.

3.2 Morphological puzzle

I explore the 1/2 vs. 3 dichotomy not only with the z-paradigm (as is the case with the TAM marker and question particle syntactic data), but with all four inflectional categories, repeated from the original table (7), below.

(20) *The pronouns and verbal inflection of the z-paradigm*

Pronouns and four inflectional categories					
Person	Pronoun	P_1	P_2	V_1	V_2
1SG	Ben	-(I)m	-(I)m	-(I)m	-(I)m
2SG	Sen	-(I)n	-(I)n	-sIn	-(I)n
3SG	O	-(n)In	-(s)I	∅	∅
1PL	Biz	-(I)m	-(I)mIz	-(I)z	-(I)k
2PL	Siz	-(I)n	-(I)nIz	-sInIz	-(I)nIz
3PL	Onlar	-(n)In	-(s)I	-lEr	-lEr

As before, the distinction between the 1/2 vs. 3 rows can be observed, and the similarities are insular within each category: each 1/2 row resembles another 1/2 row to a high degree, whereas the 3 rows are especially distinct with respect to V_1 and V_2 and do not resemble any 1/2 rows. There is an additional distinguishing fact of the 3PL agreement morpheme *-lEr*: it is syncretic with the nominal plural. Johanson (1976) and Keskin (2017) support this account by giving the historical perspective that most likely, the verbal *-lEr* is the same as this nominal *-lEr*, with the idea that the verbal *-lEr* originated as the nominal *-lEr* before changing type, from nominal to verbal. In my account, the verbal *-lEr* is actually still the nominal *-lEr*—the PL morpheme on the subject is exactly the morpheme that ends up on the verb and is identified as the 3PL verbal morpheme.

4 Analysis

The clausal spine that I propose, which invokes the existence of a clitic-licensing phrase PersonP,[20] as well as a phrase containing the copula, CopP,[21] is shown in (21). The gray nodes and edges indicate optionality of the TAM marker and copular phrases, depending on the utterance. The TAMP can be repeated consecutively should there be more than one additional TAM marker.[22] This proposed structure of the clausal spine is based on the previously-referenced dichotomy of 1/2 vs. 3, which has been extensively substantiated cross-linguistically (Forchheimer 1953; Harley & Ritter 2002).[23]

---

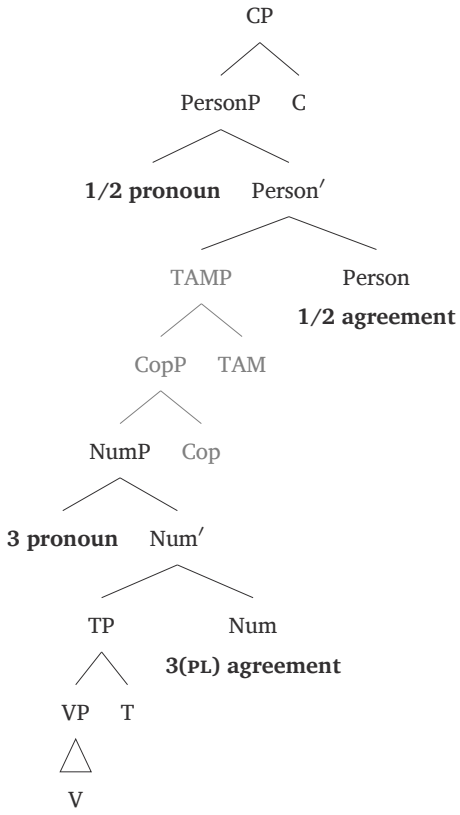
[20] See Sportiche (1996); Cardinaletti & Shlonsky (2004); Sigurðsson & Holmberg (2008); Shlonsky (1989); Myler (2017), though see Harbour (2007) for arguments against the existence of a PersonP.

[21] Güneş (2021) analyzes the *-I* vowel in the z-paradigm affixes in (7) as an instantiation of the copula, and also assumes that there is an instance of the copula after each TAM marker. This leads to the ability for multiple instances of the copula to exist in a single utterance (one for every TAM marker, and one within a z-paradigm affix). An anonymous reviewer also notes the existence of additional data indicating the copula can appear in more than one position within the syntax. In this work, because the second TAM marker is either a k-paradigm licensing tense, or *-mIş*, which ends in a consonant, there is no phonological evidence to suggest there is a second instance of the copula (after the second TAM marker). And, due to the nature of this work as unifying the four person affix paradigms into one via syncretisms, it would not make sense for only one out of four of the categories of affixes (the z-paradigm category) to contain the copula, especially when there is not extensive positive phonological evidence.

[22] I omit the vP layer for sake of space and simplicity, but nothing would change if it was added.

[23] Similar to our implementation, Arregi & Nevins (2012) discuss the fact that Basque third person absolutive arguments do not project clitics, but do trigger agreement with T. There are a few differences between their implementation and mine: their agreement is for both person and number, whereas in mine Turkish third person does not have person features and only will undergo number agreement (with Num-head as opposed to T). Despite the more specific differences between these two approaches, I mention this here to indicate the way that this cross-linguistic 1/2 vs. 3 dichotomy is reflected in Arregi & Nevins (2012)'s analysis of Basque, and shares many overarching similarities (including the big-DP clitic-doubling approach that we will use) with my analysis.

(21) *Clausal spine of clitic-doubling:*[24]



In particular, the claim is that 1/2 agreement markers are clitics licensed in Person-head. In comparison, 3 is just number agreement in Num-head. In the analysis of many languages, agreement of all three persons is assumed to involve the same head. I claim there are two distinct cases here because third person inflection is just number, not person, and it originates from the 3PL subject itself. In other words, third person does not have an actual person feature (such as the [±Auth] feature that I introduce in Section 4.1 below) that 1/2 do. In order to fully understand the syntactic distinction between 1/2 vs. 3 in the clausal spine, I examine the subject and z-paradigm affix morphological decompositions.

4.1 Morphological decomposition

I propose that the pronouns can be viewed as bimorphemic, and claim the following decomposition:[25]

[24] This analysis addresses verbal agreement. Güneş raises the very interesting question as to how to treat agreement on nominalized embedded clauses, which unfortunately cannot be discussed here due to space constraints.

[25] Note that the morphological account given in this paper for the pronouns and four inflectional morpheme classes is different from the account in Güneş (2021), which was based on somewhat distinct theoretical assumptions and goals. One goal of the present analysis, for example, is to account for the patterns in a decompositional way that reduces accidental homophony as much as possible (see Embick 2003: 156 on "Avoid Accidental Homophony"). A full comparison of the two approaches is, however, beyond the scope of this paper.

(22) *Bimorphemicity of 1/2:*

	Pronoun		**Person**		**Number**
1SG:	ben	=	/b-/	+	/-en/
2SG:	sen	=	/s-/	+	/-en/
1PL:	biz	=	/b-/	+	/-iz/
2PL:	siz	=	/s-/	+	/-iz/

In this paper I use the [±Auth] (author) and [±PL] (plural) features to characterize person and number for 1/2.[26,27] Then the four pronouns are comprised of an initial morpheme, *b-* ([+Auth]) or *s-* ([-Auth]), determining whether the pronoun is first or second person, and the final morpheme, *-en* ([–PL]) or *-iz* ([+PL]), which indicates the SG vs. PL feature. On the other hand, the 3PL pronoun contains not the plural marker *-Iz*, but in fact the nominal plural marker *-lEr*. The 3PL pronoun can be then morphologically decomposed as in (23):

(23) *Bimorphemicity of 3PL:*

3PL: onlar = /on-/ + /-lar/

Then 3PL is really *o*, the 3SG pronoun (syncretic with the demonstrative 'that'), followed by the standard plural marker *–lEr*, with [n] between the two.

There is good reason to believe that [n] is actually a part of the underlying form of demonstratives, disappearing with nominative case. Example (24) demonstrates what happens when three different demonstratives (including *o*) have different cases applied to them: all forms contain [n] except the nominative form.

(24) *Suffixes of three different demonstratives:*

bu (*"this"*)		şu (*"that"*)		o (*"that"/"he/she/it"*)	
NOM:	bu	NOM:	şu	NOM:	o
ACC:	bu-**n**-u	ACC:	şu-**n**-u	ACC:	o-**n**-u
DAT:	bu-**n**-a	DAT:	şu-**n**-a	DAT:	o-**n**-a
LOC:	bu-**n**-da	LOC:	şu-**n**-da	LOC:	o-**n**-da
NOM-PL:	bu-**n**-lar	NOM-PL:	şu-**n**-lar	NOM (PL):	o-**n**-lar
ACC-PL:	bu-**n**-lar-ı	ACC-PL:	şu-**n**-lar-ı	ACC (PL):	o-**n**-lar-ı
DAT-PL:	bu-**n**-lar-a	DAT-PL:	şu-**n**-lar-a	DAT (PL):	o-**n**-lar-a
LOC-PL:	bu-**n**-lar-da	LOC-PL:	şu-**n**-lar-da	LOC (PL):	o-**n**-lar-da

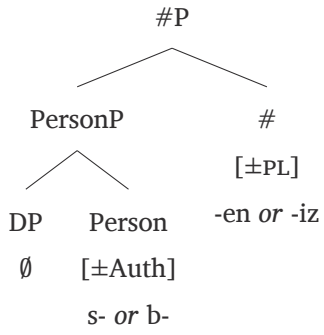
[26] See Harley & Ritter (2002) for relevant work on feature geometries of person and number.

[27] 1/2 are generally considered to be [+Part], as they are both speech participants, but I use the more general term "Person" to characterize them.

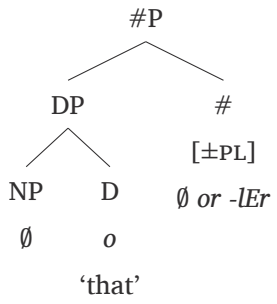
As such, we take the underlying form of 3SG (and the other demonstratives) to be */on-/*, and propose that the /n/ is deleted when adjacent to nominative case.

The fact that the pluralization of first and second person is a different plural marker *–Iz*, which I deem the *true-human plural,* is starkly different from third person subjects/person markers following the standard plural *–lEr*. This motivates the following proposed structure of the two types of pronouns:[28]

(25) a. *Structure of 1/2 pronoun*



b. *Structure of 3 pronoun*[29]



In other words, the 1/2 pronouns have a structure involving the author features associated with personhood and number in the context of person, whereas 3PL is structured like a simple, pluralized noun. Re-examining the agreement markers of the z-paradigm/V_1, it can be observed that they are similar to these [±Auth] and [±PL] morphemes. The agreement morphemes may then be decomposed as well, so as to examine the relationship between the pronouns and the agreement morphology of the z-paradigm.[30]

---

[28] See similar proposals by Cardinaletti & Starke (1999) and Déchaine & Wiltschko (2002), among others.

[29] Third person does not have its own syntactic projection, unlike 1/2, for reasons addressed above.

[30] The vocabulary item irregularities are fleshed out in Section 5.

(26) *Morphology of 1/2 agreement morphemes in the z-paradigm:*

Pronoun	Inflection		Person		Number
1SG:	-Im	=	-Im	+	∅
2SG:	-sIn	=	-sIn	+	∅
1PL:	-Iz	=	∅	+	-Iz
2PL:	-sInIz	=	-sIn	+	-Iz

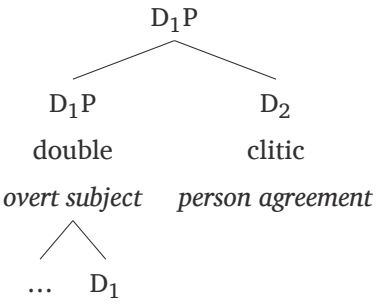
Having seen how pronouns can be decomposed into person and number, I now explain how apparent agreement works.

4.2 Clitic-doubling analysis for 1/2

As mentioned earlier, it has been proposed that the z-paradigm agreement morphemes derive diachronically from the pronouns themselves (the k-paradigm agreement morphemes are thought to have originated from the possession suffixes P_1 and P_2) and that the agreement morphemes themselves are clitics (Erdal 2000; Good & Yu 2000; Kelepir 2001). I will connect this to the larger body of work on the syntax of clitic-doubling, as the morphology of the pronouns and the agreement morphology of 1/2 are similar enough that they motivate a clitic-doubling analysis.[31] I begin by stating the features of my proposal.

First, doubled clitics of 1/2 have a big-DP structure,[32] where the double is the overt subject and the original clitic is what I have been referring to as the person agreement morpheme on the verb. The big-DP structure inspired by Uriagereka is the following:[33]

(27) *Big-DP structure:*



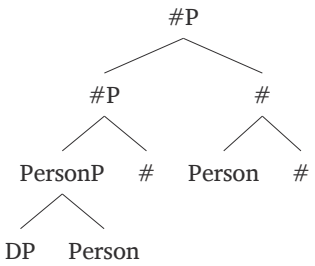
[31] Despite the fact that the clitic vs. affix diagnostics presented in Zwicky & Pullum (1983) are no longer as widely used, the z-paradigm endings do pattern more like clitics than affixes with these criteria (Senturia in prep.).

[32] Originally proposed by Uriagereka (1995) and then developed and extended by Arregi & Nevins (2012) and Tyler (2019). See Harizanov (2014), Sportiche (1996), and Anagnostopoulou (2017) for alternative approaches to clitic doubling, which may or may not be compatible with the rest of the analysis proposed here.

[33] Subscripts are utilized to indicate adjunction in order to make clear that the left DP has not been projected from the D-head clitic. We only use these in the template, and omit them from the actual doubled structure used in this paper, for simplicity.

In our case, then, the doubled clitic looks like:

(28) *Doubled-clitic structure structure:*



The right child, [# [Person] [#]], is the adjoined clitic, not projecting its own phrase, which is the person agreement we've been referring to, while the left child is the pronoun itself. I refer to it as big-DP, to parallel Uriagereka, but of course in our case it is is 'big-#P'.

This big-DP doubled-clitic structure originates in its argument position—in this case, VP. Throughout the derivation, the overt subject moves to spec-PersonP (clitic-licensing phrase) while the clitic ends up in Person-head.[34] Finally, one last important aspect of the analysis is that 1/2 number is also realized in Num-head, in addition to the number realized in the clitic. The motivation for this is due to morphological specifics of the clitics themselves, which are discussed in Section 5.[35] Finally, it can be observed these movements appear on the surface to violate various conditions on movement, such as the Head Movement Constraint. However, this is the case for the big-DP clitic structure in general, not just this analysis, as our analysis aligns with how others in the literature have used the big-DP structure for clitic doubling (Uriagereka 1995; Roberts 2010; Nevins 2011; Arregi & Nevins 2012; Tyler 2019). So these apparent violations, should they be taken as such, are a larger issue for the big-DP analysis of clitic doubling.

4.2.1 z-paradigm syntax

I now give the syntactic derivations. I first discuss the simplest case, the z-paradigm with one TAM marker. Recall I am positing the existence of a number phrase, NumP, which is the phrase that probes the subject for number.[36,37]

---

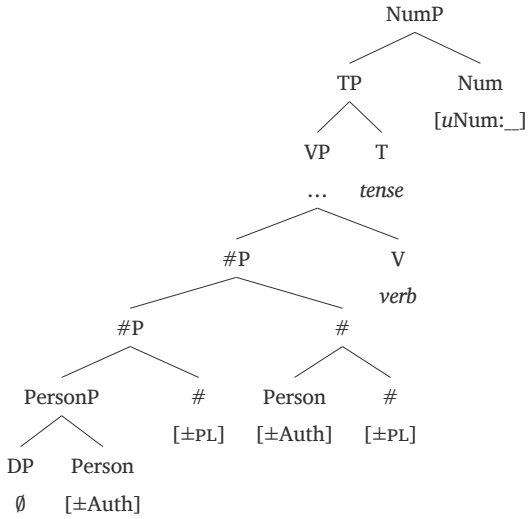
[34] An anonymous reviewer points out that an explanation is needed for why the entire big-DP structure does not move, instead of the clitic itself. This is a larger issue for the big-DP analysis of clitic doubling (e.g. "As noted in section 3.2, it is entirely possible that in other Romance languages the entire DP in (2a) does move to Spec Agr_OP," Uriagereka 1995: 106). The general idea as to why the big-DP would not move is that, as presented in Arregi & Nevins (2012), the clitic needs to be licensed via movement to a clitic-licensing host: "In a big-DP analysis, where the clitic is generated forming a constituent with the doubled argument, the validity of generating an argument with a clitic is thus determined after the argument has been merged in its base position" (Arregi & Nevins 2012: 57). If the big-DP structure is moved, instead of the clitic itself, this licensing of the original structure cannot obtain.

[35] This parallels Kramer (2014)'s analysis with respect to the fact that the surface-level forms are being explained with a combination of clitic-doubling and agreement (with respect to the Person-head probing for number).

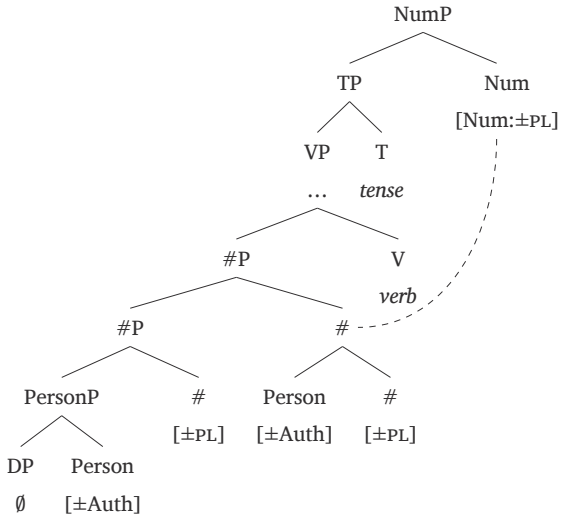
[36] There have been proposals for the existence of such phrases in other languages, such as in Tyler (2019); Poletto (2000); Shlonsky (1989); Myler (2017); Sigurðsson & Holmberg (2008).

[37] I assume for simplicity's sake an unaccusative structure, but nothing would change if this were transitive, unergative, etc.

(29) a. **Step 1:** The initial tree.



b. **Step 2:** Num-head probes and finds the #-head. [*u*Num] in Num-head is valued, resulting in the number morphology of the clitic being reflected in Num-head.[38]

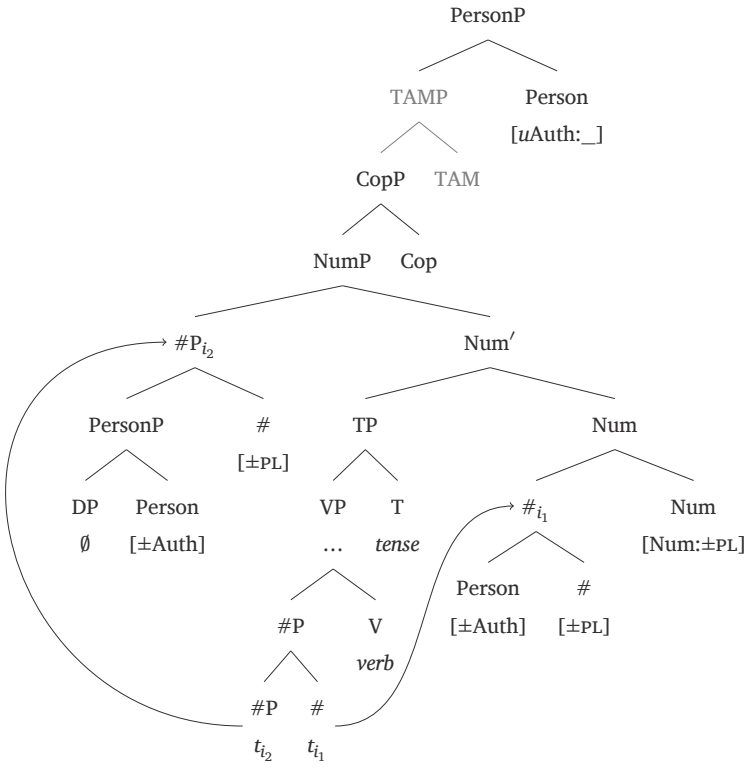


c. **Step 3:** Because of the Agree relation, the overt subject is prompted to move into Spec-NumP while the subject clitic moves to Num-head. I claim that the head movement occurs via standard left-adjunction.[39] Note that this kind of subextraction from a subject raises many questions but is fairly common on literature of cliticization.[40]

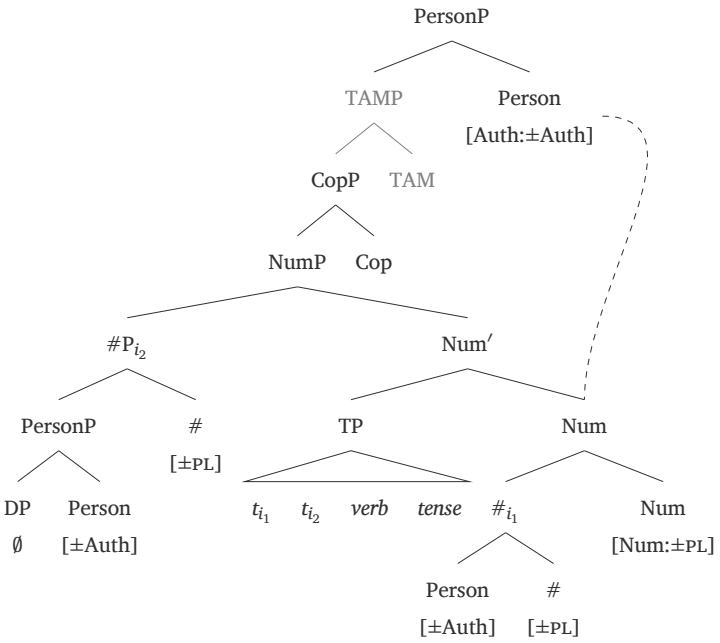
[38] I assume the head and its specifier are both available as goals, which is potentially the reason why both the clitic and the subject phrase move.

[39] I assume that the head adjoins to the target of movement, in line with other analyses of clitic movement/long head movement (Uriagereka 1995; Sportiche 1996; Harizanov 2014; Harizanov & Gribanova 2019).

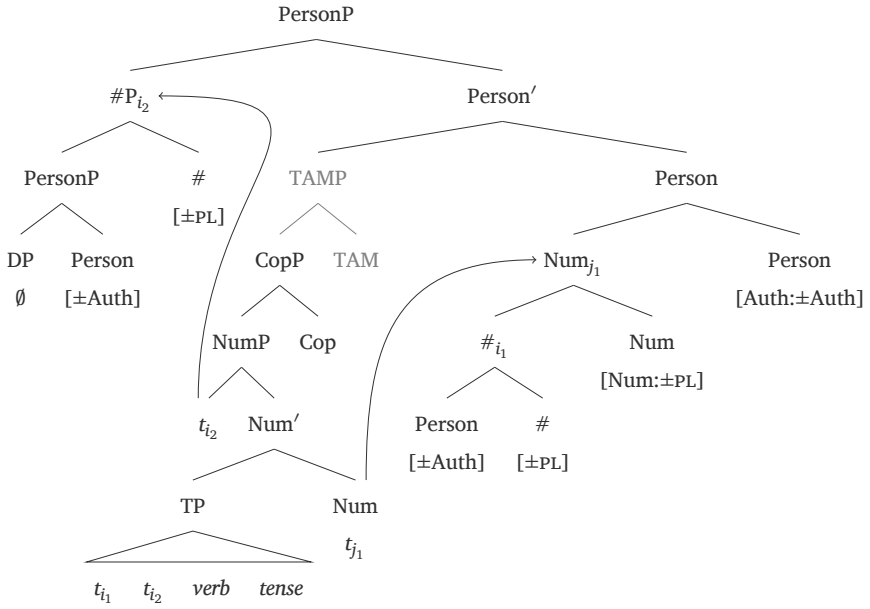
[40] One attempt to amend some of these issues is rebracketing, as proposed by Harizanov (2014).



d. **Step 4:** Person-head probes to value its author feature and finds the clitic (or subject) within Num-head (or Spec-Num). It values this feature, which has a null realization.



e. **Step 5:** Again, this valuation results movement of the overt subject and subject clitic (which brings along the Num-head) up to the specifier and head of PersonP, respectively.



There are a few variations on this general analysis, depending on the type of sentence:

- If there is a question particle, it would sit in C-head. The copula would have some feature, which the C-head would probe for and satisfy. This would prompt movement of the copula up to the question particle in C-head. It would stop in Person-head along the way, picking up the person clitic to the right of it (as it is left-adjoining). I posit that the copula adjoins to the right of C-head, and so it would end up to the right of the question particle.
- In the case of a second TAM marker, the TAMP would exist.
- In the case of a second TAM marker *and* a question particle, the Cop-head first stops at TAM-head, adjoining to the left, and then this whole complex (Cop + TAM) moves up as usual, resulting in Q + Cop + TAM + person clitic + number + person(null).

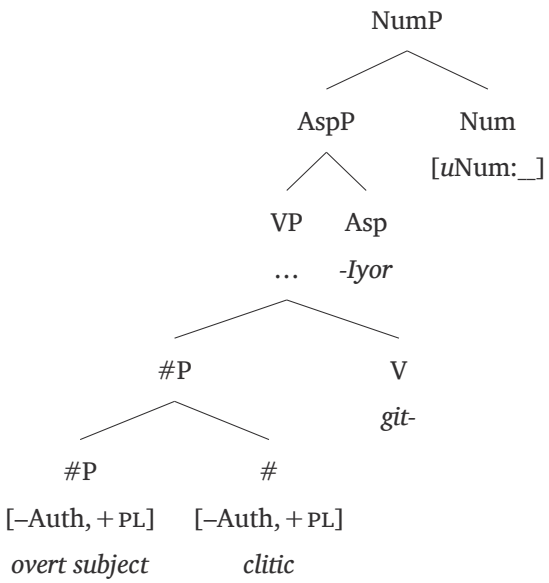
I now give a basic example derivation. I omit the internal structure of the pronoun and clitic, for simplicity, and because the morphological system is presented in depth in the following section.[41]

[41] An anonymous reviewer points out that the series of movements given in the previous derivation predict a particular reading when it comes to sentences containing quantifiers and negation, such as:

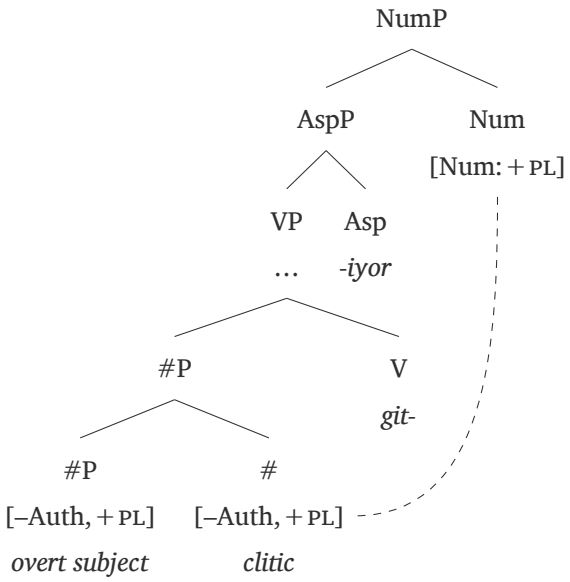
(i) Onlar-ın hepsi gel-me-miş-ler.
3PL.P$_1$ all come-NEG-EVI-3PL
'Not all of them came.' *or* 'All of them did not come.'

(30) a. **Siz** gid-iyor-**sun-uz**.
you.PL go-PRS-**2-PL**
'You pl. are going.'

b.

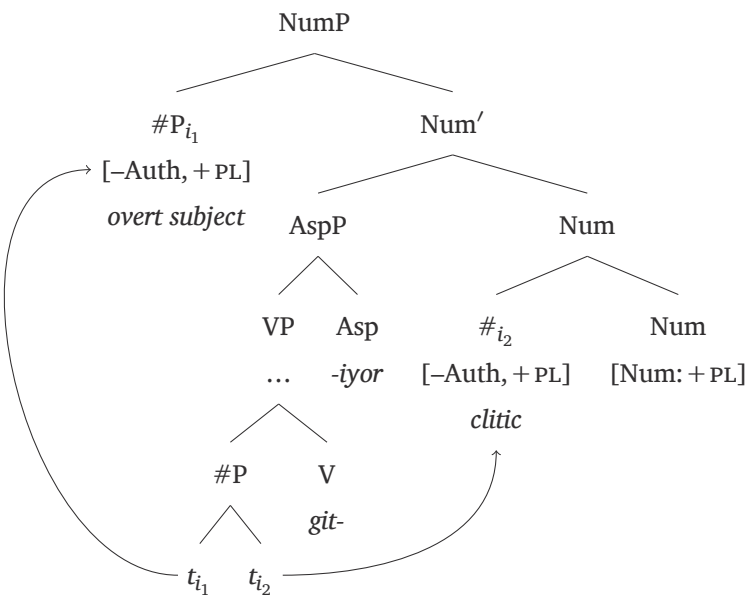


c.

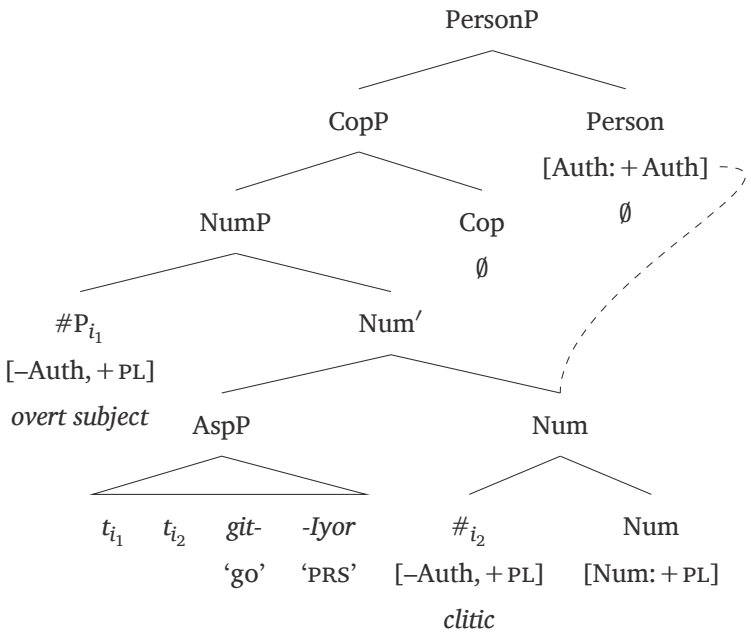


They state that both of the given readings should be available, given the movements proposed, whereas their judgements say that this is not the case. This is an interesting question which, due to considerations of space and the scope of this work, must be left for future research.

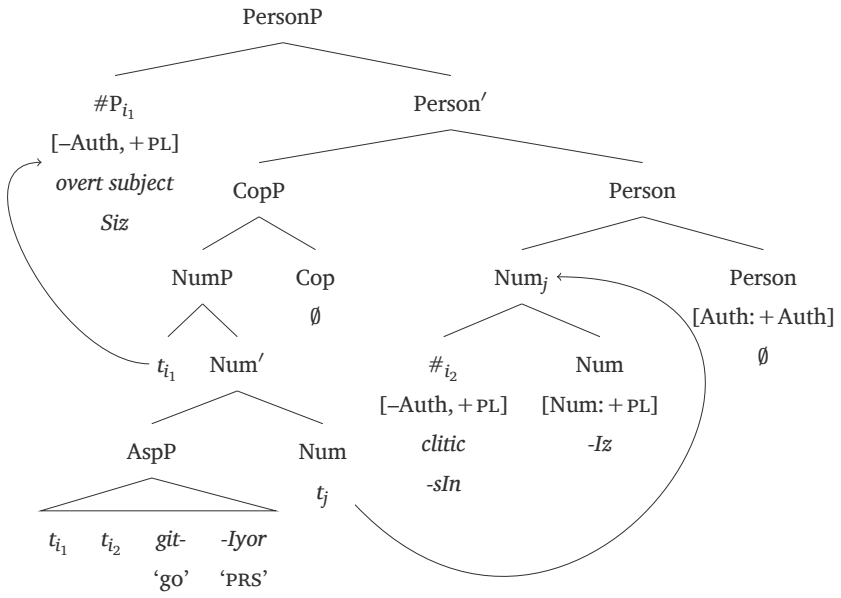
d.


NumP
#P$_{i_1}$
[–Auth, + PL]
overt subject
Num′
AspP
Num
VP
Asp
#$_{i_2}$
Num
…
-iyor
[–Auth, + PL]
[Num: + PL]
clitic
#P
V
git-
t_{i_1}
t_{i_2}

e.


PersonP
CopP
Person
[Auth: + Auth]
∅
NumP
Cop
∅
#P$_{i_1}$
[–Auth, + PL]
overt subject
Num′
AspP
Num
t_{i_1}
t_{i_2}
git-
‘go’
-Iyor
‘PRS’
#$_{i_2}$
[–Auth, + PL]
clitic
Num
[Num: + PL]

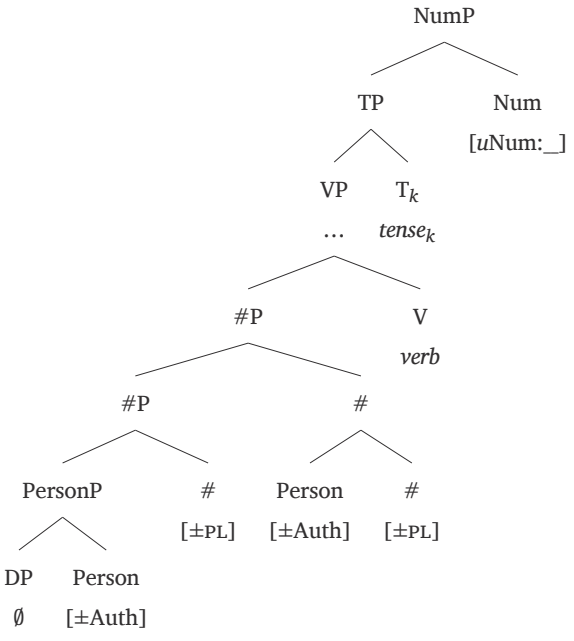
f.



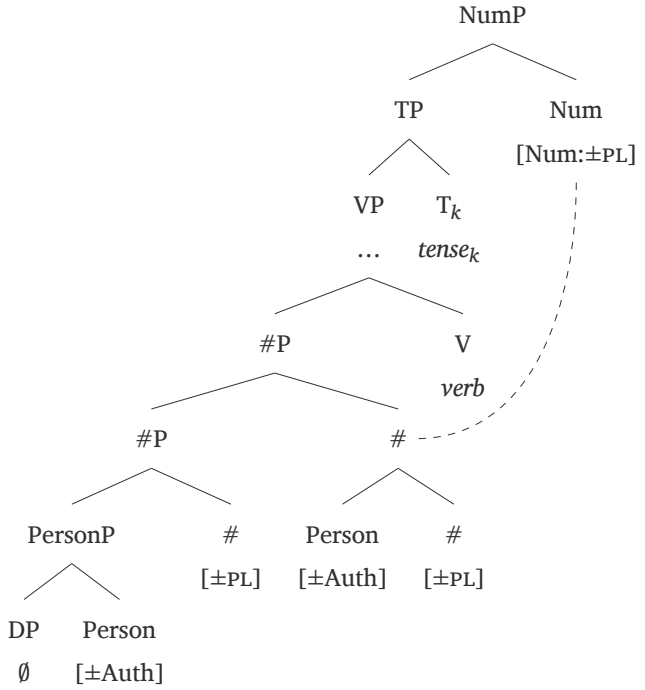
4.2.2 k-paradigm syntax

In the case of the k-paradigm, there would be no copula (unless there is a second TAM marker). I posit that the k-tenses are marked, because there are different vocabulary items which I propose occur because of fusion and obliteration rules. These rules will be discussed in depth in Section 5—for now, I omit them, and simply show the syntactic outline. Note that nodes and edges in gray indicate optionality—in particular, demonstrating where a second TAM marker (and its corresponding copula) would sit in the tree, should it exist in the utterance.

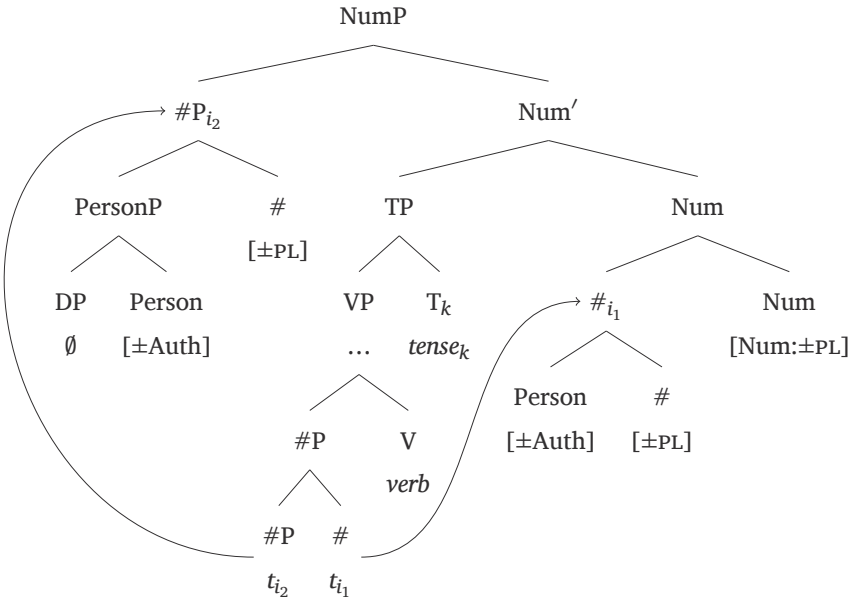
(31) a. **Step 1:** The initial tree.



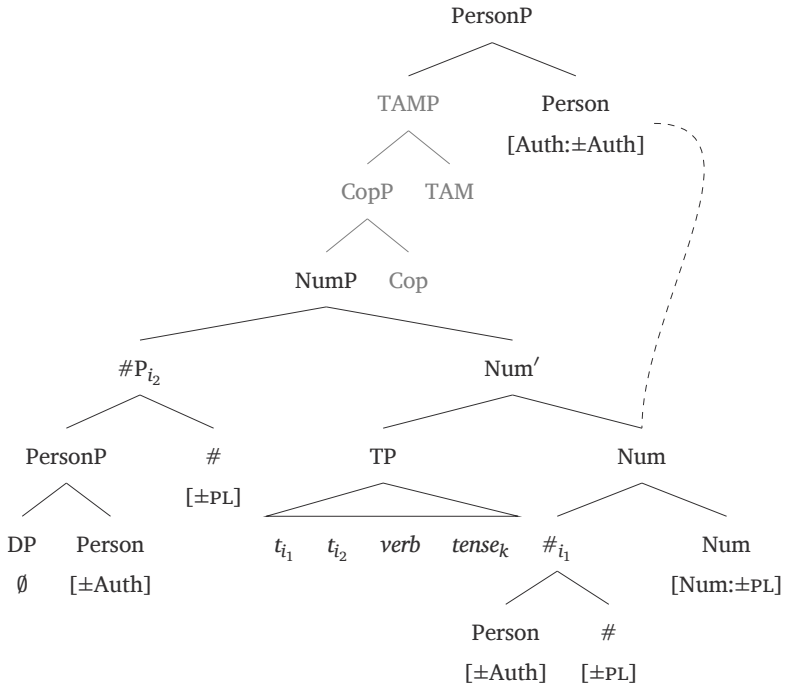
b. **Step 2:** Num-head probes for number feature and finds the # head. Number feature in Num-head is valued, resulting in the number morphology of the clitic being reflected in Num-head.



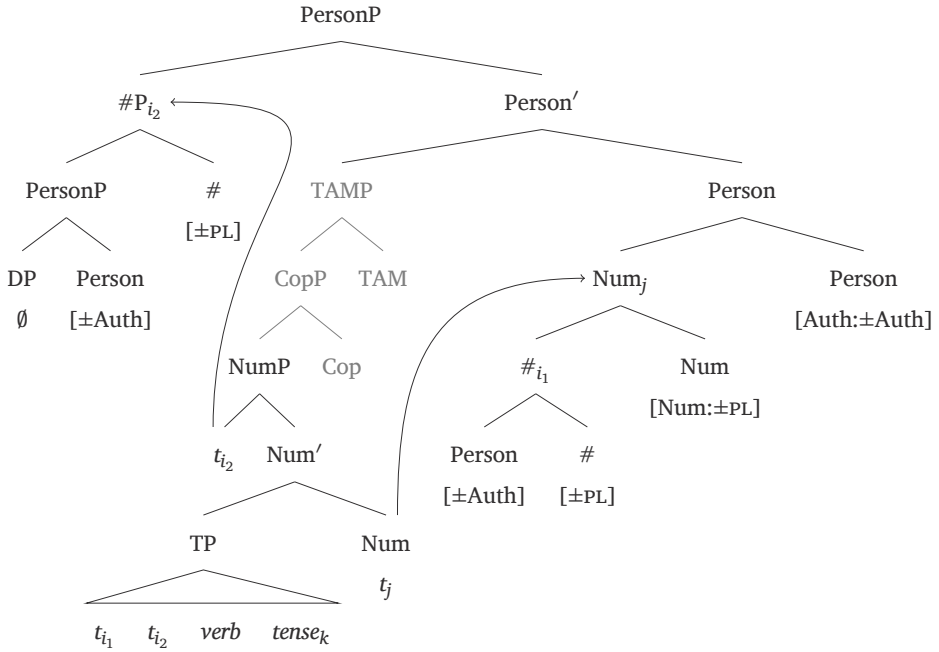
c. **Step 3:** Because of the Agree relation, the overt subject is prompted to move into Spec-NumP while the subject clitic moves into Num-head. I claim that the standard head movement occurs via left-adjoining.



d. **Step 4:** Person-head probes to value its author feature and finds the clitic (or subject) within Num-head (or Spec-Num). It values this feature, which has a null realization.



e. **Step 5:** Again, this valuation results movement of the overt subject and subject clitic (which brings along the Num-head) up to the specifier and head of PersonP, respectively.



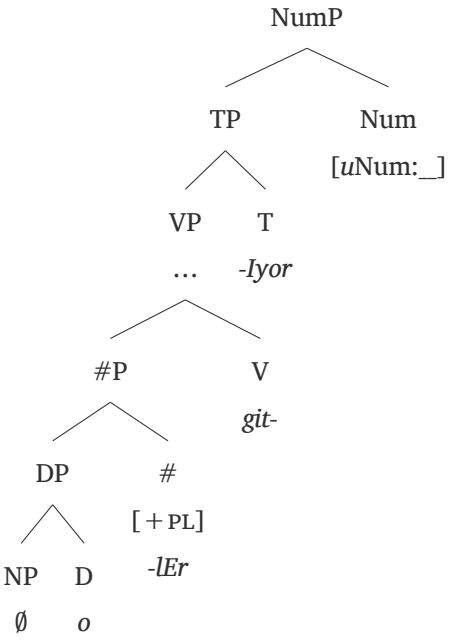
I make the following observations:

- If a TAM head is merged into the structure, a Cop-head is also required. This is equivalent to the claim that CopP only exists if TAMP exists.
- This means that in the case of the occurrence of a question particle in C-head, there will be no movement of the person inflection to the end of the question particle, because the copular phrase is not present. Hence, it is a property of the copula that it moves to C when C is [+Q]. This captures the observation from the data that the person inflection does not move to the end of the question particle in the k-paradigm, unless there is a second TAM marker and hence also a copular phrase (which would move up as before, taking the copula, the second TAM marker, and the clitic up to the end of the question particle).

4.3 Null subject analysis for 3

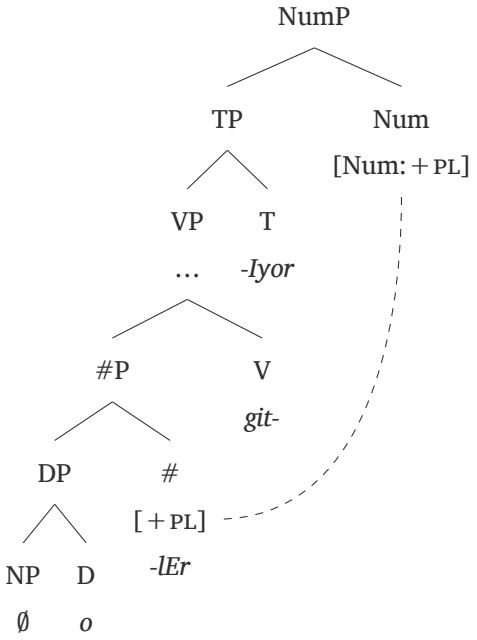
On the other hand, I claim the 3PL verbal morphology is not doubling at all—it is simply the plural marker from the 3PL pronoun, when the subject is covert.[42] In other words, the plural morpheme *-lEr* is always overt. It is the nominal subject that is either overt or covert—when overt, *-lEr* remains on the subject, as seen in the following. Note the usage of the NumP in this derivation as well: the probe is successful because it reaches the #P which is specified for number. Note also that there is no PersonP, as there was with 1/2, due to our claim that third-person is not specified for person (it has no [±Auth] feature) the way that 1/2 are. There is also no CopP, unless a TAM marker exists, as with the k-paradigm.

(32) a. **Step 1:** The initial tree.

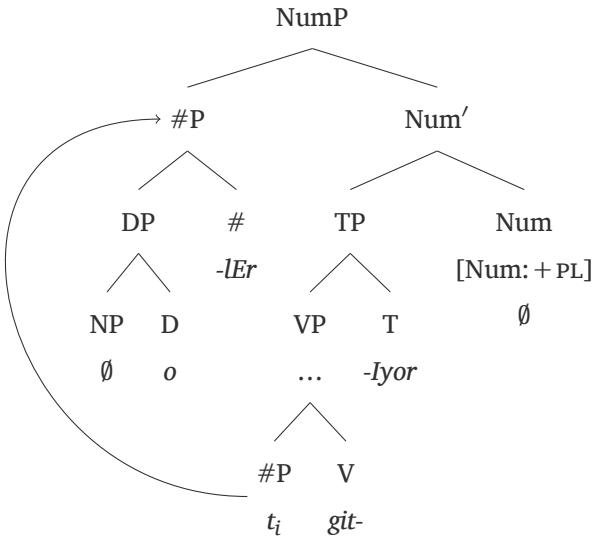


[42] Consider Cardinaletti & Starke (1999).

b. **Step 2:** Num-head probes for number feature and finds the 3PL subject. The number feature is valued.

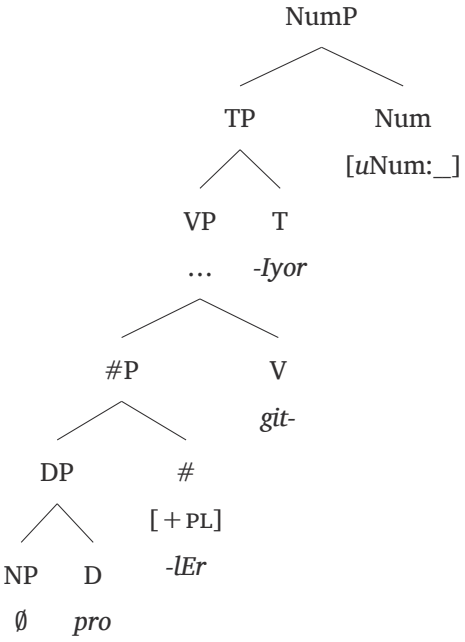


c. **Step 3:** Because of the Agree relation, the overt subject is prompted to move into Spec-NumP, but no movement into Num-head occurs and Num-head has no overt realization.

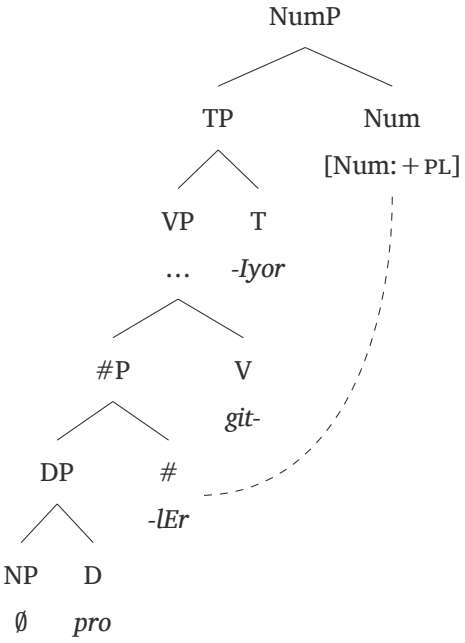


On the other hand, when the subject is covert, it is a null *pro* (without any number features). This lack of number features means that the Num-head probing cannot be satisfied by reaching its DP goal *pro* in spec-TP. The derivation is rescued by the existence of *-lEr*, which is inherently specified for plural and subsequently cliticizes onto Num-head.

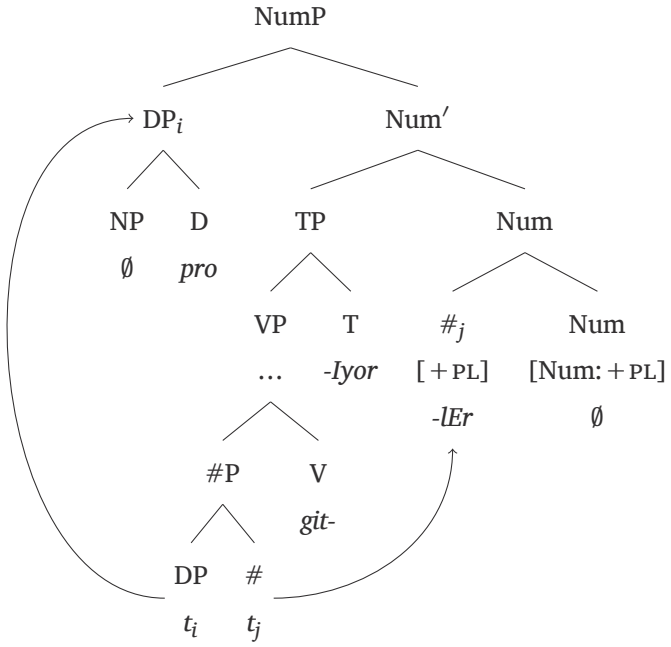
(33) a. **Step 1:** The initial tree.



b. **Step 2:** Num-head probes for number feature and finds not the entire 3PL subject, but the #-head where *-lEr* is housed with plural features. The number feature is valued.



c. **Step 3:** Because of the Agree relation, the null DP moves into spec-NumP and the #-head moves into Num-head.



Recall that example (10b), when *-lEr* is present both on the subject and the verb, had an acceptability jugement of #. Syntactically, this surface form can be understood as an instance of clitic-doubling of the plural morpheme *-lEr*, which then appears both on the subject and on the verb. This explains the redundancy of this example for those speakers who label it as such: the same exact morpheme is being doubled and repeated.

5 Vocabulary items and insertion rules

I will now present the morphological side of the proposal with vocabulary items and insertion rules which achieve the surface forms.

I assume a DM framework, as originally proposed by Halle & Marantz (1993) and Halle & Marantz (1994) and discussed in Arregi & Nevins (2012). To begin with, features are housed in various nodes in syntactic trees. The features used here are [±Auth], person, and [±PL], number. There are rules which manipulate these features on trees: fusion (combining two seperate feature bundles into a singular feature bundle), impoverishment (a feature becoming its underspecified, or default, form, the details of which will be discussed), and obliteration (the complete elimination of a feature and its valuation). These features are mapped to phonological forms via rules which specify individual mappings of feature bundles to a phonological form. Finally, phonology occurs, resulting in the surface phonological forms from the phonological forms specified from the feature-to-phonology mapping, which also takes into account other factors (such as vowel harmony). This last step is not discussed in this work.

Having developed the syntactic machinery for the z-paradigm, I develop a morphological system for this paradigm as well.[43] However, I also demonstrate simple modifications to the insertion rules in the case of the k-paradigm and the possession paradigms (P_1 and P_2) which result in the correct surface morphemes for those paradigms as well. I repeat the morphological paradigm here:

(34)

Pronouns and four inflectional categories					
Person	Pronoun	P_1	P_2	V_1	V_2
1SG	Ben	-(I)m	-(I)m	-(I)m	-(I)m
2SG	Sen	-(I)n	-(I)n	-sIn	-(I)n
3SG	O	-(n)In	-(s)I	∅	∅
1PL	Biz	-(I)m	-(I)mIz	-(I)z	-(I)k
2PL	Siz	-(I)n	-(I)nIz	-sInIz	-(I)nIz
3PL	Onlar	-(n)In	-(s)I	-lEr	-lEr

I now give the initial vocabulary items which are extended to create subsequent forms. They are enumerated so they can be referred to later on as they are modified.

(35) *Initial vocabulary items for [±Auth] and [±PL]*:

i. [+Auth] ⟷ [LABIAL, +voice]
ii. [–Auth] ⟷ /s-/
iii. (a) [–PL] ⟷ /-In/
(b) [–PL] ⟷ ∅ / _[–PL]$_{D°}$
v. [+PL] ⟷ /-lEr/
v. [+PL] ⟷ /-Iz/ / [±Auth]_

For our purposes, I claim that the most underspecified labial sound in Turkish is [b]. Hence, the [LABIAL] feature will materialize as [b] on its own (in pronouns), as opposed to the cases when it combines with other vocabulary items to labialize them (in the case of all four nominal and verbal inflectional morphemes). I use the feature [LABIAL] because it can be realized as either [b] or [m], as I discuss below.

[43] See Keine & Müller (2025) for an overview of these mechanisms and how they're used in this theory. In brief, impoverishment is generally used to account for metasyncretisms and the emergence of an unmarked form in a marked environment, obliteration is used to distinguish between an unmarked form and the absence of any form, and movement is commonly used to account for the dependency between a clitic's surface position and the argument it is related to. These mechanisms are fairly common in DM analyses of morphologically complex languages, including Basque (Arregi & Nevins 2012), Northern Italian dialect subject clitics (Calabrese 1995), Korean (Chung 2007a and Chung 2007b), Arabic (Hewett 2023), Spanish (which is analyzed as containing head movement, in addition to distributed morphology operations of impoverishment and obliteration) (Halle & Marantz 1994), and so on.

5.1 Pronouns

In the case of the pronouns, I have already proposed their structures. The vocabulary items are identical to the above, except for [–PL]—the vowel is *e*, not *I*.[44,45,46]

(36) *Morphology of 1/2 pronouns:*

Person	Pronoun		Person		Number
1SG:	[+Auth,–PL]	=	[+Auth]	+	[–PL]
	ben	=	[LABIAL, +voice]	+	/-en/
		=	/b-/	+	/-en/
2SG:	[–Auth,–PL]	=	[–Auth]	+	[–PL]
	sen	=	/s-/	+	/-en/
1PL:	[+Auth,+PL]	=	[+Auth]	+	[+PL]
	biz	=	[LABIAL, +voice]	+	/-iz/
		=	/b-/	+	/-iz/
2PL:	[–Auth,+PL]	=	[–Auth]	+	[+PL]
	siz	=	/s-/	+	/-iz/

The insertion rules that explain how these same morphemes combine in slightly different ways to yield the z-paradigm surface morphology are next given.

5.2 z and k-paradigm morphological rules

The V_1/z-paradigm and V_2/k-paradigm sections of the morphological table are repeated here:

(37) *The z and k-paradigms:*

Person	Pronoun	V_1	V_2
1SG	Ben	-(I)m	-(I)m
2SG	Sen	-sIn	-In
3SG	O	∅	∅
1PL	Biz	-(I)z	-(I)k
2PL	Siz	-sInIz	-InIz
3PL	Onlar	-lEr	-lEr

Recall that the syntactic framework utilizes the number of the clitic being reflected in the Auth-head. As such, the rules will involve two instances of the number feature.

[44] Recall that terminalogically I use *E* to represent the vowel that changes to either *e* or *a*, while *I* can become four different vowels.

[45] In what follows for the two verbal paradigms, I only demonstrate the morphological decomposition of the 1/2 morphology, as 3 is straightforward and has already been discussed.

[46] As mentioned above, this involves the assumption that [b] is the elsewhere, or most unmarked, labial sound in Turkish.

On the other hand, the same should not hold for the author feature: the author feature should be realized only once. Observe that that the clausal spine in (21) contained a PersonP as the highest phrase, which has a ±Auth feature in its head. This is in addition to the ±Auth feature housed in the subject clitic. The author feature should be realized in this subject clitic before the number features. In order to prevent two separate realizations of two author features, I claim that the second author feature, housed in the Person-head, is unrealized because the vocabulary items containing an ±Auth feature apply only to interpretable author features. The PersonP being a part of the clausal spine motivates its valued author feature to be uninterpretable and hence inaccessible for vocabulary insertion.[47]

(38) *Insertion rules for the z-paradigm:* Observing the z-paradigm, notice that the 1SG morpheme appears to be the labialized version of the singular morpheme. That is, the 1 morpheme [LABIAL] and the SG morpheme /-In/ have combined. This motivates the following rule:

i. **Place assimilation**:

$$[+\text{Auth}] + [-\text{PL}] = [\text{LABIAL}] + \text{/-In/} \rightarrow \text{/-Im/}$$

The place assimilation rule explains why the person agreement for 1SG is not *-bIn*, but rather */-Im/*, because the labial feature of 1SG does not become [b] but rather labializes the [n] in */-In/* to become */-Im/*.

The next observation is that in the syntactic structure, there are two number features, one in the clitic and one in Num-head. In the case of 2PL, /-sInIz/, it appears that the first realization of number is in fact /-In/, the singular number morpheme. This motivates an impoverishment rule which changes a plural number feature to singular if it adjacent to Person and adjoined to the Num-head. In particular, I follow Calabrese (2011) in assuming that this occurs via deletion of the marked value and then insertion of the unmarked version of that value. In this case, the unmarked version of the plural feature is [–PL], so impoverishment will result in [+PL] becoming [–PL].

2. **Impoverishment** of number for 2PL:

$$[+\text{PL}]_{\#} \rightarrow [-\text{PL}]_{\#} / [\text{Num } [\# \text{ Person } \_\_\_] \text{ Num}_{[+\text{PL}]}]$$

Our final observation for the z-paradigm is that the entirety of the author feature and first number feature are not existent in the 1PL morpheme /-Iz/, and that there is only one singular number morpheme for singular subjects (not two, despite there being two heads with number features). This leads to the following obliteration rules:

[47] Given that there are also two instantiations of the ±PL feature but it is indeed realized twice, one in the clitic and one in the clausal spine from the NumP, I claim the restriction on vocabulary items *only* applies to person features (±Auth).

3. **Obliteration**

   a. of the clitic's [+Auth] feature when it is 1PL:[48]

$$[+\text{Auth}]_{\text{Person}} \rightarrow \emptyset / [\text{Num } [\# \_\_\_ \#] \text{ Num}_{[+\text{PL}]}]$$

   b. of the clitic's number feature when the subject is singular:

$$[-\text{PL}]_{\#} \rightarrow \emptyset / [\text{Num } [\# \text{ Person } \_\_\_] \text{ Num}_{[-\text{PL}]}]$$

The obliteration rule above deletes the entire node, along with the marked feature. Impoverishment replaces a deleted feature with the underspecified/elsewhere version, whereas obliteration removes this possibility altogether because the node along with the feature has been deleted. For the k-paradigm, one difference I note is that the second-person pronouns appear to have no /s-/ morpheme, which I claimed realizes the [–Auth] feature. As such, it appears that the locality to the k-licensing TAM marker causes obliteration of a [–Auth] feature.

4. **Obliteration** of [–Auth] in the clitic when preceded by a k-paradigm licensing tense.

$$[-\text{Auth}] \rightarrow \emptyset / \text{T}_k \_\_\_$$

The other k-paradigm difference is the fact that 1PL is realized as /-(I)k/, rather than /-(I)z/. The previous rules of impoverishing the first [+PL] to [–PL] and then obliterating the [–PL] feature when there exists a [+Auth] feature and a [–PL] feature, still hold. However, instead of obliterating the [+Auth] feature, as was done in the z-paradigm for 1PL, I instead have a rule which fuses the [+Auth] and the [+PL] feature bundles. This is realized as /-(I)k/.

5. **Fusion** of [+Auth] and [+PL] in the Num-head when preceded by a k-paradigm licensing tense.

$$[+\text{Auth}]_{\text{Person}}, [+\text{PL}]_{\#} \rightarrow [+\text{Auth}, +\text{PL}]_{\text{Person}} / \text{T}_k \_\_\_$$

vi. **Vocabulary item:** [+Auth, +PL] ⟷ /-(I)k/

Finally, note that this fusion rule must apply *first*.[49]

---

[48] A reviewer brought up several cases where the morphological rules might interact with other parts of the inflectional paradigm. For example, the reviewer points out that there is an interesting pattern of allomorphy in the affirmative vs. negative aorist. However, the issue is complex enough that it deserves its own detailed study. As such, I set this aside for future research.

[49] Otherwise, as pointed out by an anonymous reviewer, this would yield a set of features that cannot match this fusion rule, both overgenerating and not generating 1PL in V_2.

Interestingly, note that in the case of the fusion rule (5), because this applies first (before any impoverishment) there are actually two [+PL] features for the [+Auth] to fuse with. I claim that it fuses with both, yielding the feature set [+Auth, +PL, +PL]. However, because this is a mathematical set, [+Auth, +PL, +PL] = [+Auth, +PL] (sets cannot contain repeated elements). This explains why 1PL in the k-paradigm does not contain two realizations of the number feature—they are both fused into a larger set, and then collapsed into one instantiation of +PL due to the fact that, with their identical valuations, they are identical elements of the set.

I demonstrate how this results in the correct vocabulary items in the following. Impoverishment is denoted with an additional line where the updated (post obliteration/impoverishment) features are listed prior to the final line giving the different distinct vocabulary items. For convenience, I have repeated the vocabulary items defined in (35). These in combination with the rules just defined are used to derive the stated patterns of the z- and k-paradigms.

(39) *Initial vocabulary items for [±Auth] and [±PL]*:

i. [+Auth] ⟷ [LABIAL, +voice]
ii. [–Auth] ⟷ /s-/
iii. (a) [–PL] ⟷ /-In/
(b) [–PL] ⟷ ∅ / _[–PL]$_{D°}$
iv. [+PL] ⟷ /-lEr/
v. [+PL] ⟷ /-Iz/ / [±Auth]_

(40) *Morphology of 1/2 z-paradigm morphemes:*

Person	**Morpheme**		**Person**		**Number (D)**		**Number (Num°)**
1SG:	[+Auth,–PL]	=	[+Auth]	+	[–PL]$_{D}$	+	[–PL]$_{Num°}$
		=	[LABIAL, +voice]	+	∅	+	/-In/
		=	/-Im/				
2SG:	[–Auth,–PL]	=	[–Auth]	+	[–PL]$_{D}$	+	[–PL]$_{Num°}$
		=	/-s/	+	∅	+	/-In/
		=	/-sIn/				
1PL:	[+Auth, +PL]	=	[+Auth]	+	[+PL]$_{D}$	+	[+PL]$_{Num°}$
		=	∅	+	∅	+	/-Iz/
		=	/-Iz/				
2PL:	[–Auth, +PL]	=	[–Auth]	+	[+PL]$_{D}$	+	[+PL]$_{Num°}$
		=	[–Auth]	+	[–PL]$_{D}$	+	[+PL]$_{Num°}$
		=	/s-/	+	/-In/	+	/-Iz/
		=	/-sInIz/				

(41) *Morphology of 1/2 k-paradigm morphemes:*

Person	**Morpheme**		**Person**		**Number (D)**		**Number (Num°)**
1SG:	[+Auth,-PL]	=	[+Auth]	+	$[-\text{PL}]_{\text{D}}$	+	$[-\text{PL}]_{\text{Num°}}$
		=	[LABIAL, +voice]	+	∅	+	/-In/
		=	/-Im/				
2SG:	[–Auth,–PL]	=	[–Auth]	+	$[-\text{PL}]_{\text{D}}$	+	$[-\text{PL}]_{\text{Num°}}$
		=	∅	+	∅	+	/-In/
		=	/-In/				
1PL:	[+Auth, +PL]	=	[+Auth]	+	$[+\text{PL}]_{\text{D}}$	+	$[+\text{PL}]_{\text{Num°}}$
		=	[+Auth, +PL]				
		=	/-Ik/				
2PL:	[–Auth, +PL]	=	[–Auth]	+	$[+\text{PL}]_{\text{D}}$	+	$[+\text{PL}]_{\text{Num°}}$
		=	∅	+	$[-\text{PL}]_{\text{D}}$	+	$[+\text{PL}]_{\text{Num°}}$
		=	∅	+	/-In/	+	/-Iz/
		=	/-InIz/				

Next, I give the derivation of the morphemes for the two possession paradigms.

5.3 Possession paradigm modifications

At this point, I consider the two possession paradigms, P_1 and P_2. This is occurring isolated from the syntactic machinery, as that which has been developed this far has been for verbal constructions. In the case of P_2, there is reason to think there is a second instance of the number morphology, as will be demonstrated. These two instances are labeled with Num1 and Num2.

5.3.1 P_2

I first account for the P_2 section of the morphological table:

(42)

Person	Pronoun	P_2
1SG	Ben	-(I)m
2SG	Sen	-(I)n
3SG	O	-(s)I
1PL	Biz	-(I)mIz
2PL	Siz	-(I)nIz
3PL	Onlar	-(s)I

This paradigm is used for inflecting nouns which are being possessed by the subject of the verb. The form of this inflection matches the type of subject which is possessing—for example, see (2), where a 2PL possessor would invoke the 2PL morpheme above on the possessed noun.

Kunduracı (2013) developed a proposal, as discussed previously in the paper, which posits that 1/2 exhibit both possession and person features while 3 only has a possession feature but no person feature. In light of this, I posit the following feature and vocabulary item for possession in the case of third person ([DP]):

vi. [+POSS] ⟷ /-(s)I/ / [DP] ___

I retain all other vocabulary items for 1/2, and suggest that those now have an incorporated [+POSSD] ("possessed") feature as well that is not realized any differently than the vocabulary items for author and participant not containing that feature. However, following Kunduracı (2013), in the case of a lack of 1/2 person, the above possession suffix is used.

In fact, there are almost no changes that need to be made to the already-established rules. I preserve all of the same vocabulary items as posited for the k-paradigm, and only in the context of 1PL do the fusion rule of the features of the clitic and the obliteration of the [–PL] feature result in these features being realized as before. We repeat the original vocabulary items from (35) and the fusion and obliteration rules that are relevant.

(43) *Initial vocabulary items for [±Auth] and [±PL]*:

i. [+Auth] ⟷ [LABIAL, +voice]

ii. [–Auth] ⟷ /s-/

iii. (a) [–PL] ⟷ /-In/

(b) [–PL] ⟷ ∅ / _[–PL]$_{D°}$

v. [+PL] ⟷ /-lEr/

vi. [+PL] ⟷ /-Iz/ / [±Auth]_

1. **Place assimilation**:
   [+Auth] + [–PL] = [LABIAL] + /-In/ → /-Im/
2. **Impoverishment** of number for 2PL:
   $[+PL]_{\#} \rightarrow [-PL]_{\#} / [Num\ [\#\ Person\ \_\_\_\ ]\ Num_{[+PL]}]$
3. **Obliteration**
   (b) of the clitic's number feature when the subject is singular:
   $[-PL]_{\#} \rightarrow \emptyset / [Num\ [\#\ Person\ \_\_\_\ ]\ Num_{[-PL]}]$
4. **Obliteration** of [–Auth] in the clitic in the context of the [+POSSD] feature:[50]
   [–Auth] → ∅/[+POSSD]___

[50] Before, this rule was applied in the context of a k-paradigm licensing tense. Here, the same rule is applied, but because this is in the context of possession, it is applied when there is the relevant possession feature.

They accurately reflect the surface morphemes, as demonstrated here:[51]

(44) *Morphology of 1/2 P_2 morphemes:*

Person	**Morpheme**		**Person**		**Number (Num1)**		**Number (Num2)**
1SG:	[+Auth,–PL]	=	[+Auth]	+	$[\text{—PL}]_{\text{Num1}}$	+	$[\text{–PL}]_{\text{Num2}}$
		=	[LABIAL, +voice]	+	∅	+	/-In/
		=	/-Im/				
2SG:	[–Auth,–PL]	=	[–Auth]	+	$[\text{–PL}]_{\text{Num1}}$	+	$[\text{–PL}]_{\text{Num2}}$
		=	∅	+	∅	+	/-In/
		=	/-In/				
1PL:	[+Auth, +PL]	=	[+Auth]	+	$[\text{+PL}]_{\text{Num1}}$	+	$[\text{+PL}]_{\text{Num2}}$
		=	[+Auth]	+	$[\text{–PL}]_{\text{Num1}}$	+	$[\text{+PL}]_{\text{Num2}}$
		=	[LABIAL, +voice]	+	/-In/	+	/-Iz/
		=	/-ImIz/				
2PL:	[–Auth, +PL]	=	[–Auth]	+	$[\text{+PL}]_{\text{Num1}}$	+	$[\text{+PL}]_{\text{Num2}}$
		=	[–Auth]	+	$[\text{–PL}]_{\text{Num1}}$	+	$[\text{+PL}]_{\text{Num2}}$
		=	∅	+	/-In/	+	/-Iz/
		=	/-InIz/				

5.3.2 P_1

Finally, I address P_1, the morphology that goes on the possessor in a possession construction:

(45)

Person	Pronoun	V_1
1SG	Ben	-(I)m
2SG	Sen	-(I)n
3SG	O	-(n)In
1PL	Biz	-(I)m
2PL	Siz	-(I)n
3PL	Onlar	-(n)In

Interestingly, the third-person morphemes seem to resemble those for second person, the [–PL] morpheme /-(I)n/, but with a phonologically-inserted (n) in the case that the preceding word

[51] I do not include the third-person morphological decompositions, because the vocabulary item /-(s)I/ directly accounts for the entirety of its form.

ends in a vowel. However, the distinction between this and the fact that the 1/2 morphemes drop the initial (I) when the preceding word ends in a vowel, not insert an (n), suggests that these are distinct morphemes. I posit this in the following vocabulary item rule, where POSSR, "possessor", is distinct from POSSD, "possessed", of the previous P_2 paradigm:

vii. [DP, +POSSR] ⟷ /-(n)In

The other fascinating thing about this paradigm is the fact that it appears there is only one number morpheme. Syntactically, then, there is exactly one [±PL] feature in one of Num1 or Num2 being overtly expressed, which is consistently realized as the underspecified [–PL] form.

Because the distinguishing factor is whether the number feature is realized as its underspecified form in either Num1 or Num2, I simply include one entry, Num_i, which will realize the underspecified number [–PL] = /-In/. It is assumed that the other Num_j (where $i,j \in \{1,2\}$, and $i \neq j$) has the obliterated number feature or a null realization of its number feature. This rule in combination with the rules in (43) repeated on the previous page derive the stated patterns as follows.

(46) *Morphology of 1/2 P_2 morphemes:*

Person	**Morpheme**		**Person**		**Number (Num_i)**
1SG:	[+Auth,–PL]	=	[+Auth]	+	$[\text{–PL}]_{\text{Num}_i}$
		=	[LABIAL, +voice]	+	/-In/
		=	/-Im/		
2SG:	[–Auth,–PL]	=	[+Auth]	+	$[\text{–PL}]_{\text{Num}_i}$
		=	∅	+	/-In/
		=	/-In/		
1PL:	[+Auth, +PL]	=	[+Auth]	+	$[\text{+PL}]_{\text{Num}_i}$
		=	[LABIAL, +voice]	+	/-In/
		=	/-Im/		
2PL:	[–Auth, +PL]	=	[-Auth]	+	$[\text{+PL}]_{\text{Num}_i}$
		=	∅	+	/-In/
		=	/-In/		

5.4 Discussion

While there are many ways to approach the vocabulary items, insertion rules, and decompositions, this section demonstrates that it is possible to account for the cross-category syncretisms with

one morphological system. The implementation develops a more general analysis which can be applied to all four paradigms, despite the fact that they may appear to have syntactic differences.

One other observation I make is the connection between the P_1 morphemes, which only have one number morpheme, and the fact that they only appear on pronouns in the case of 1/2. As given in the previous pronominal decompositions, the pronouns already have one number feature being realized as a morpheme within them. Then it makes sense that the P_1 morphemes which attach to those only have one number morpheme as well: if there are two defaults, one to have two number features/morphemes in the endings and the other to only have one number feature realized (except in the case of 2PL), then some rule existing to obliterate one of the number features is consistent with the obliteration rules I have already proposed for other paradigms. It also makes sense that the P_1 endings have this impoverishment/obliteration, as opposed to the pronoun, since the pronouns have already been established to contain their number morpheme, and so the affix from P_1 must do the heavy lifting to compensate by impoverishing/obliterating to remain within the required amount of number morphemes. This is yet another indication that the syncretisms across the four inflectional categories are similar enough to motivate one morphological system that governs all of them.

6 Conclusion

In this paper, I explored the dichotomy between 1/2 vs. 3 in Turkish, which is reflected both syntactically and morphologically. I proposed a clitic-doubling explanation for 1/2 motivated by syncretisms across the pronominal and verbal agreement morphology that accounts for the distributional puzzles observed. I also proposed an analysis for the 3PL verbal morphology, rooted in the idea that the 3PL morphology on the verb comes directly from the plural morpheme on the subject, which is always pronounced, when the subject itself is covert.

The clitic-doubling proposal was specific to the two verbal paradigms—given the claim in the literature that the k-paradigm is thought to have originated from the possession paradigm, it is interesting that such a simple modification in the syntactic spine (lack of copula) coupled with a couple of morphological rules, were able to capture both verbal paradigms. The morphological data, which was in part syncretisms across nominal and verbal agreement paradigms (in the case of 1/2), indicates that there is a deeper thread connecting all four of these paradigms. As such, I gave vocabulary items and insertion rules for not only the z- and k-paradigm clitics, but also showed how to extend these with few rule modifications to get the k-paradigm and two possession paradigm morphemes.

Appendix A: Distribution of /y/ and /I/

As mentioned in section 3.1.3, claiming that the four inflectional categories are syncretic requires an account of the distribution of /y/ in the z-paradigm first person inflection and /I/ deletion in the other three paradigms' first person inflection. In the context of, for instance, the k-paradigm, the initial /I/ of the first person V_2 person affixes is deleted, as can be seen with the grammaticality of this deletion in (47a) but ungrammaticality when the deletion does not occur in (47b). Attempting to insert a /y/ to resolve this hiatus, as in (47c), also does not suffice:

(47) a. Git-se-m…
go-COND-1SG
'If I go…'
b. *Git-se-im…
go-COND-1SG
Intended: 'If I go…'
c. *Git-se-y-im…
go-COND-y-1SG
Intended: 'If I go…'

On the other hand, the V_1 paradigm suffixes which begin with a vowel and affix to TAMs ending with a vowel resolve the sequential two vowels, VV, with insertion of /y/, as can be seen by grammaticality of this insertion in (48) and lack thereof without this insertion in (48b), or by attempting to drop the vowel in (48c), as in (47a) above:

(48) a. Git-meli-y-im.
go-NEC-y-1SG
'I should go.'
b. *Git-meli-im.
go-NEC-1SG
Intended: 'I should go'
c. *Git-meli-m.
go-NEC-1SG
Intended: 'I should go.'

I conceptualize these two issues, the vowel deletion in the context of the k-paradigm, and the /y/ insertion in the context of the z-paradigm, as separate issues. In this subsection, I will lay out a potential solution to this puzzle. Even if the account of the /y/ insertion vs. /I/ deletion is not correct, this does not invalidate the larger analysis of the paper.[52] First, I address the deletion of /I/ in the case of the k-paradigm. I propose that this is the *phonological* resolution to a VV

[52] Note that this solution is independent of the assumptions I have made previously in the paper—in particular, the copula obliteration rule I propose is not instantiated in, for instance, the examples of section 4.2.

sequence, where the second V is the first /I/ in the k-paradigm, that deletes the second vowel in a vowel hiatus. I assume this applies in the domain of person phonology.[53]

In fact, one does not need to propose anything more specific than person affixes, because this vowel disappears in three out of the four person inflectional categories—P_1, P_2, and V_2, the two possession paradigms and the k-paradigm. And, these are exactly the three paradigms which do not follow the copula. This is no coincidence, and I use this clear divide—copula only existing in the z-paradigm, which is the only paradigm where the /y/ appears preceding person morphology—as the explanation for the source of the /y/.

In order to propose the rule accounting for the distribution of /y/, we examine data regarding its phonological distribution, which can be summarized as the following: there is an overt /y/ preceding person affixes when they follow a vowel, as in (49) and (50), *except* when the person affix is second person, as in (51). Because of the location of the /y/ and ∅ as coinciding exactly where the copula is expected to be, and I claim that it is the copula, I gloss it as such.

(49) **V_V:**

a. Okul-da-**y**-ım,…
School-LOC-**COP**-1SG
'I am at school.'

b. Git-meli-**y**-iz.
go-NEC-**COP**-1PL
'We should go.'

(50) **V_C non-[–Auth]:**

a. Git-se-**y**-di-m,…
go-COND-**COP**-PST-1SG
'If I had gone,…'

b. Go-meli-**y**-miş.
go-NEC-COP-REP
'3SG must have gone.'

(51) **V_C [–Auth]:**

a. Git-meli-∅-siniz.
go-NEC-**COP**-2PL
'You pl. should go.'

b. Okul-da-∅-sın,…
School-LOC-**COP**-2SG
'You are at school.'

[53] There are other ways of resolving vowel hiatuses in Turkish more broadly. I do not make any claims about when vowel hiatuses occur in Turkish phonology more generally, or whether this is a morpheme-specific phonological rule (Pater 2009; Sande et al. 2020).

(52) **C_C:**

a. Git-miş-Ø-ti-m.
go-REP-**COP**-PST-1SG
'I had gone'

b. Gid-iyor-Ø-sun.
go-PRS-**COP**-2SG
'You are going.'

(53) **C_V:**

a. Gid-iyor-Ø-um.
go-PRS-**COP**-1SG
'I am going.'

b. Gid-iyor-Ø-uz.
go-PRS-**COP**-1PL
'We are going.'

In (51), there is no /y/ because of the second person affix. In (52) and (53), there is no /y/ because the previous morpheme ends in a consonant, not a vowel.

Hence, I claim that the /y/ is the copula, and is not a part of the z-paradigm exponents. More specifically, I propose two rules: a vocabulary insertion rule for the copula realizing it as /y/ when it follows a vowel, and, explaining why it does not surface when the person affix is second person, an obliteration rule for the copula when it is in the context of second person ([–Auth]).

(54) a. *Copula obliteration rule:* Obliterate Cop-head when followed by [–Auth].

$$[\text{COP}] \rightarrow \emptyset \ / \ \_\_\_[\text{–Auth}]$$

b. *Copula vocabulary insertion rule:* When the copula follows a vowel, it is realized as /y/:

$$[\text{COP}] \longleftrightarrow /\text{y}/ \ / \ \text{V}\_\_\_$$

In other words, I propose the rule realizing /y/ in the z-paradigm is realizing, as previously claimed, the overt copula. This also explains why the vowel hiatus deletion does not apply in the z-paradigm–the copula directly intervenes between the two morphemes/two sequential vowels, meaning that the criteria to instantiate the vowel hiatus resolution via deletion rule cannot be met.

To summarize, this section proposes an account of the distribution of /y/ insertion and /I/ deletion as they pertain to the person morphology. The purpose of this analysis is to make clear the conditions for these rules to apply. I have explained the presence of /y/ preceding z-paradigm prefixes, and the absence of /y/ and deletion of /I/ of the person affix, as two separate phenomena distinct from the person affixes themselves. The cross-paradigmatic syncretisms analyzed in this paper stand independently from these two phenomena. By analyzing these as separate from the

syncretic morphemes, a vast amount of accidental homophony, where there would be many person affixes differing only in the existence of a /y/ or absence of a vowel, is avoided.

The analysis I provided here accounts for all of the data as far as I am aware. Perhaps there are other analyses which would also explain this distribution as the separate phenomenon from the person affixes—for example, a stem-extender or interfix[54], or perhaps, as suggested by an anonymous reviewer, /y/ is introduced by a morphological readjustment rule. Because my analysis does not hinge on which of these may be the most appropriate explanation, for now I stick to my descriptively accurate analysis. The larger argument is that the distribution of /y/ and /I/ deletion should not interfere with an analysis which explains such a high level of synchrony.

Abbreviations

ACC = accusative, CAUS = causative, COND = conditional, COP = copula, DAT = dative case, EVI = evidential, FUT = future, LOC = locative, NEC = necessitative, PST = past, INF = infinitive, PASS = passive, PL = plural, POSSESSOR = possessor, POSSESSEE = possessee, PRS = present, Q = question particle, REP = reportive, SG = singular

Acknowledgements

I would like to thank Jim Wood for his enthusiastic guidance, constructive feedback, and insightful contributions to this ongoing project, as both an instructor and an advisor. I am particularly grateful to Güliz Güneş for thoughtful comments and insights. I also thank Raffaella Zanuttini, Natalie Weber, and attendees of presentations of this work at Yale and at Morphologie à Montréal 2025 for useful discussion and suggestions.

Competing interests

The author has no competing interests to declare.

References

Anagnostopoulou, Elena. 2017. Clitic Doubling. In *The Wiley Blackwell Companion to Syntax, Second Edition*, 1–56. DOI: https://doi.org/10.1002/9781118358733.wbsyncom071

Arregi, Karlos & Nevins, Andrew. 2012. *Morphotactics: Basque auxiliaries and the structure of spellout*. Springer Dordrecht. DOI: https://doi.org/10.1007/978-94-007-3889-8

Atlamaz, Ümit. 2023. A bidimensional semantics for questions. *Zemin* 6. 82–127.

[54] e.g. *-ic-* in *solidif-**ic**-ation* or *-it-* in *compet-**it**-tive/compet-**it**-or*, see Keine & Müller (2025); Bauer (2018); Punske (2025) and Harley (2017: 120).

Baker, Mark & Kramer, Ruth. 2018. Doubled clitics are pronouns: Amharic objects (and beyond). *Natural Language & Linguistic Theory* 36. 1035–1088. Publisher: Springer. DOI: https://doi.org/10.1007/s11049-018-9401-8

Bauer, Laurie. 2018. Morphological entities: Overview and general issues. *Oxford Research Encyclopedia of Linguistics*. DOI: https://doi.org/10.1093/acrefore/9780199384655.013.540

Calabrese, Andrea. 1995. Syncretism phenomena in the clitic systems of Italian and Sardinian dialects and the notion of morphological change. In *North East Linguistics Society*, vol. 25. 13. Issue: 2.

Calabrese, Andrea. 2011. Investigations on markedness, syncretism and zero exponence in morphology. *Morphology* 21(2). 283–325. DOI: https://doi.org/10.1007/s11525-010-9169-y

Cardinaletti, Anna & Shlonsky, Ur. 2004. Clitic positions and restructuring in Italian. *Linguistic Inquiry* 35(4). 519–557. http://www.jstor.org/stable/4179295. DOI: https://doi.org/10.1162/0024389042350523

Cardinaletti, Anna & Starke, Michal. 1999. The typology of structural deficiency: A case study of the three classes of pronouns. In van Riemsdijk, Henk (ed.), *Volume 5/Part 1: Clitics in the languages of Europe*, 145–234. Berlin, New York: De Gruyter Mouton. DOI: https://doi.org/10.1515/9783110804010.145

Chung, Inkie. 2007a. Ecology of PF: A study of Korean phonology and morphology in a derivational approach.

Chung, Inkie. 2007b. Suppletive negation in Korean and distributed morphology. *Lingua* 117(1). 95–148. Publisher: Elsevier. DOI: https://doi.org/10.1016/j.lingua.2005.10.002

Clark, Eve V. 1998. Morphology in language acquisition. *The handbook of morphology*, 374–389. Publisher: Wiley Online Library. DOI: https://doi.org/10.1002/9781405166348.ch19

Culbertson, Jennifer. 2010. Convergent evidence for categorial change in French: From subject clitic to agreement marker. *Language*, 85–132. DOI: https://doi.org/10.1353/lan.0.0183

Déchaine, Rose-Marie & Wiltschko, Martina. 2002. Decomposing Pronouns. *Linguistic Inquiry* 33(3). 409–442. DOI: https://doi.org/10.1162/002438902760168554

Embick, David. 2003. Locality, listedness, and morphological identity. *Studia linguistica* 57(3). 143–169. Publisher: Wiley Online Library.

Embick, David. 2015. *The morpheme: A theoretical introduction*, vol. 31. Walter de Gruyter GmbH & Co KG. DOI: https://doi.org/10.1515/9781501502569

Erdal, Marcel. 2000. Clitics in Turkish. In Göksel, Asli & Kerslake, Celia (eds.), *Studies on Turkish and Turkic languages: Proceedings of the Ninth International Conference on Turkish Linguistics*, 41–48.

Erdal, Marcel. 2004. *A grammar of Old Turkic*. Brill. DOI: https://doi.org/10.1163/9789047403968

Fenger, Paula. 2020. *Words within words: The internal syntax of verbs*: University of Connecticut PhD Thesis.

Forchheimer, Paul. 1953. *The category of person in language*. Berlin, Boston: De Gruyter. DOI: https://doi.org/10.1515/9783111562704

Good, Jeff & Yu, Alan. 1999a. Affix-placement variation in Turkish. *Proceedings of the Annual Meeting of the Berkeley Linguistics Society: Special Session on Caucasian, Dravidian, and Turkic Linguistics* 25. 63–74. DOI: https://doi.org/10.3765/bls.v25i2.1209

Good, Jeff & Yu, Alan. 1999b. Suffix ordering variability in Turkish. Handout for the paper presented at the *25th Annual BLS Meeting, Special session on Causasian*. Dravidian and Turkic Linguistics. DOI: https://doi.org/10.3765/bls.v25i2.1209

Good, Jeff & Yu, Alan. 2000. Morphosyntax of two Turkish subject pronominal paradigms. In *Proceedings of the North East Linguistic Society*, vol. 30. 1–15. DOI: https://doi.org/10.1075/la.74.13goo

Göksel, Aslı. 2001. The verb in Turkish. In Erguvanlı Taylan, Eser (ed.), *The auxiliary verb ol at the morphology–syntax interface*, vol. 44 (Linguistik Aktuell (Linguistics Today)), 151–181. John Benjamins. DOI: https://doi.org/10.1075/la.44.07gok

Göksel, Aslı. 2010. Focus in words with truth values. *IBERIA: An International Journal of Theoretical Linguistics* 2(1). 89–112. https://revistascientificas.us.es/index.php/iberia/article/view/87.

Güneş, Güliz. 2020. Variability in the realization of agreement in Turkish: A morphotactic account. *Morphological Complexity within and across Boundaries: Essays in honour of Aslı Göksel,* 236–61. Amsterdam: John Benjamins. DOI: https://doi.org/10.1075/slcs.215.09gun

Güneş, Güliz. 2021. Morphosyntax and phonology of agreement in Turkish. *Syntax* 24(2). 143–190. DOI: https://doi.org/10.1111/synt.12210

Halle, Morris & Marantz, Alec. 1993. Distributed morphology and the pieces of inflection. In Hale, Kenneth & Keyser, Samuel Jay (eds.), *The view from building 20*, 111–176. Cambridge, MA: The MIT Press.

Halle, Morris & Marantz, Alec. 1994. Some key features of distributed morphology. In Carnie, Andrew & Harley, Heidi & Bures, Tony (eds.), *MITWPL 21*, 275–288.

Harbour, Daniel. 2007. Against PersonP. *Syntax* 10(3). 223–242. DOI: https://doi.org/10.1111/j.1467-9612.2007.00107.x

Harizanov, Boris. 2014. Clitic doubling at the syntax-morphophonology interface. *Natural Language & Linguistic Theory* 32(4). 1033–1088. DOI: https://doi.org/10.1007/s11049-014-9249-5

Harizanov, Boris & Gribanova, Vera. 2019. Whither head movement? *Natural Language & Linguistic Theory* 37. 461–522. DOI: https://doi.org/10.1007/s11049-018-9420-5

Harley, Heidi. 2017. *English words: A linguistic introduction*. John Wiley & Sons.

Harley, Heidi E. & Ritter, Elizabeth. 2002. Person and number in pronouns: A feature-geometric analysis. *Language* 78. 482–526. https://api.semanticscholar.org/CorpusID:76658853. DOI: https://doi.org/10.1353/lan.2002.0158

Hayasi, Tooru. 1996. The dual status of possessive compounds in Modern Turkish. *Symbolae Turcologicae* 6. 119–129.

Hewett, Matthew. 2023. Allomorphy in Semitic discontinuous agreement: Evidence for a modular approach to postsyntax. *Natural Language & Linguistic Theory* 41(3). 1091–1145. Publisher: Springer. DOI: https://doi.org/10.1007/s11049-022-09559-w

Johanson, Lars. 1976. Zum Präsens der nordwestlichen und mittelasiatischen Türksprachen [On the present tense in Northwestern and Central Asiatic Turkic languages]. *Acta Orientalia* 37. 57–74. DOI: https://doi.org/10.5617/ao.5153

Kamali, Beste. 2011. The question particle in Turkish: Consequences for the interfaces. *Online complement to Proceedings of WCCFL* 28.

Kamali, Beste. 2015. Information structure in Turkish yes/no questions. *Ankara papers in Turkish and Turkic linguistics*, 27–39. Publisher: Harrassowitz Verlag Wiesbaden. DOI: https://doi.org/10.2307/j.ctvc770nr.8

Kamali, Beste & Krifka, Manfred. 2020. Focus and contrastive topic in questions and answers, with particular reference to Turkish. *Theoretical Linguistics* 46(1–2). 1–71. Publisher: De Gruyter. DOI: https://doi.org/10.1515/tl-2020-0001

Keine, Stefan & Müller, Gereon. 2025. Impoverishment. In Alexiadou, Artemis & Kramer, Ruth & Marantz, Alec & Oltra-Massuet, Isabel (eds.), *The Cambridge Handbook of Distributed Morphology*. Cambridge: CU.

Kelepir, Meltem. 2001. *Topics in Turkish Syntax: Clausal Structure and Scope*. Massachussets Institute of Technology dissertation.

Keskin, Esra. 2017. *Türkçede birleşik ekler [combined affixes in Turkish]*. Denizli, Turkey: Pamukkale Üniversitesi dissertation.

Kharytonava, Olga Volha. 2011. *Noms composés en Turc et morphème-(s) I*. The University of Western Ontario (Canada) PhD Thesis.

Kornfilt, Jaklin. 1996. On copular clitic forms in Turkish. *ZAS Papers in Linguistics* 6. 96–114. DOI: https://doi.org/10.21248/zaspil.6.1996.762

Kramer, Ruth. 2014. Clitic doubling or object agreement: the view from Amharic. *Natural Language & Linguistic Theory* 32(2). 593–634. http://www.jstor.org/stable/43697732. DOI: https://doi.org/10.1007/s11049-014-9233-0

Kunduracı, Aysun. 2013. Pseudo-3rd person marker and possessive constructions in Turkish. In *Proceedings of the Annual Meeting of the Canadian Linguistic Association*, 1–14.

Myler, Neil. 2017. Cliticization feeds agreement: A view from Quechua. *Natural Language & Linguistic Theory* 35. 751–800. Publisher: Springer. DOI: https://doi.org/10.1007/s11049-016-9351-y

Nakipoğlu, Mine & Yumrutaş, Neslihan. 2009. Acquisition of clitics. In *Essays on Turkish Linguistics: Proceedings of the 14th International conference on Turkish Linguistics*, 331–340. Wiesbaden: Harrassowitz Verlag.

Nevins, Andrew. 2011. Multiple agree with clitics: person complementarity vs. omnivorous number. *Natural Language & Linguistic Theory* 29(4). 939–971. DOI: https://doi.org/10.1007/s11049-011-9150-4

Öztürk, Balkız. 2006. Null Arguments in Turkish. *Minimalist Essays Linguistik Aktuell.* Amsterdam: John Benjamins.

Öztürk, Balkız & Taylan, Eser Erguvanlı. 2016. Possessive constructions in Turkish. *Lingua* 182. 88–108. Publisher: Elsevier. DOI: https://doi.org/10.1016/j.lingua.2015.08.008

Paparounas, Lefteris & Salzmann, Martin. 2024. First conjunct clitic doubling in Modern Greek: Evidence for Agree-based approaches to clitic doubling. *Natural Language & Linguistic Theory* 42(1). 323–382. ISBN: 0167-806X Publisher: Springer. DOI: https://doi.org/10.1007/s11049-023-09585-2

Pater, Joe. 2009. *Morpheme-specific phonology: Constraint indexation and inconsistency resolution*. Equinox Publishing Ltd.

Poletto, Cecilia. 2000. *The higher functional field: Evidence from Northern Italian Dialects*. New York: Oxford University Press. DOI: https://doi.org/10.1093/oso/9780195133561.001.0001

Preminger, Omer. 2009. Breaking agreements: Distinguishing agreement and clitic doubling by their failures. *Linguistic Inquiry* 40(4). 619–666. DOI: https://doi.org/10.1162/ling.2009.40.4.619

Punske, Jeffrey. 2025. Compounding. In Alexiadou, Artemis & Kramer, Ruth & Marantz, Alec & Oltra-Massuet, Isabel (eds.), *The Cambridge Handbook of Distributed Morphology*. Cambridge University Press.

Rizzi, Luigi. 1982. *Issues in Italian Syntax*. Berlin, Boston: De Gruyter Mouton. DOI: https://doi.org/10.1515/9783110883718

Roberts, Ian. 2010. *Agreement and head movement: Clitics, incorporation, and defective goals*. MIT press. DOI: https://doi.org/10.7551/mitpress/9780262014304.001.0001

Rohrbacher, Bernhard Wolfgang. 1999. Morphology-driven syntax Publisher: John Benjamins Publishing Company. DOI: https://doi.org/10.1075/la.15

Sande, Hannah & Jenks, Peter & Inkelas, Sharon. 2020. Cophonologies by ph(r)ase. *Natural language & linguistic theory* 38. 1211–1261. Publisher: Springer. DOI: https://doi.org/10.1007/s11049-020-09467-x

Senturia, Isabella. In prep. Turkish inflectional markers re-examined: clitic vs. affix.

Shlonsky, Ur. 1989. *The hierarchical organization of subject verb agreement*. University of Haifa dissertation. Ms.

Sigurðsson, Halldor Armann & Holmberg, Anders. 2008. Icelandic Dative Intervention: Person and Number are separate probes. *Agreement Restrictions*, 251–279. DOI: https://doi.org/10.1515/9783110207835.251

Sportiche, Dominique. 1996. Clitic constructions. In Rooryck, Johan & Zaring, Laurie (eds.), *Phrase structure and the lexicon*, 213–276. Dordrecht: Springer Netherlands. DOI: https://doi.org/10.1007/978-94-015-8617-7_9

Tat, Deniz. 2013. *Word syntax of nominal compounds: Internal and aphasiological evidence from Turkish*. The University of Arizona.

Tyler, Matthew. 2019. Absolutive Promotion and the Condition on Clitic Hosts in Choctaw. *Natural Language & Linguistic Theory* 37(3). 1145–1203. DOI: https://doi.org/10.1007/s11049-018-9426-z

Uriagereka, Juan. 1995. Aspects of the syntax of clitic placement in Western Romance. *Linguistic Inquiry* 26(1). 79–123.

Yuan, Michelle. 2021. Diagnosing Object Agreement vs. Clitic Doubling: An Inuit Case Study. *Linguistic Inquiry* 52(1). 153–179. DOI: https://doi.org/10.1162/ling_a_00366

Yükseker, Hitay. 1998. Possessive constructions in Turkish. In Johanson, Lars & Csató, Éva Ágnes & Locke, Vanessa & Menz, Astrid & Winterling, Dorothea (eds.), *The Mainz meeting: Proceedings of the 7th international conference of Turkish linguistics*, 458–477.

Zwicky, Arnold M. & Pullum, Geoffrey K. 1983. Cliticization vs. inflection: English n't cliticization. *Language* 59. 502. DOI: https://doi.org/10.2307/413900