Hybridity and change in Turkish inflectional morphology

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Abstract

A common controversy in linguistics concerns the contrast between synchronic and diachronic explanations. A systematic pattern in the data can often either be given a grammatical analysis or be regarded as the result of historical development. The present paper explores the tensions and trade-offs between these two approaches through a detailed study of inflectional morphology in Turkish. Previous work has argued that verbs with agreement morphemes from different paradigms differ in their underlying syntactic structure (Kornfilt, 1996). Drawing on new data from an understudied agreement paradigm, I propose that this syntactic distinction is in the process of being leveled. Concretely, speakers are abandoning a highly abstract hypothesis for which they have only indirect evidence, and instead increasingly rely on more specific, lower-level generalizations which are encoded simultaneously. More broadly, the analysis thus provides support for theoretical frameworks that allow for redundant representations at multiple levels of abstraction.

1 Introduction

Synchronic and diachronic explanations are two fundamentally different approaches to language data. A systematic pattern in the data can either be attributed to the structure of the speakers' mental grammar or be analyzed as the result of historical development. The two approaches are by no means mutually exclusive. A synchronic analysis cannot deny that the relevant pattern must have evolved historically in some way, and a diachronic analysis still faces the question of how it is encoded in the grammar of contemporary speakers. Hence, synchronic and diachronic approaches might be considered independent endeavours which can safely be pursued in isolation from each other: one describes the current state of the grammar, the other explains how it came about.

In practice, synchronic and diachronic analyses constantly encroach on each other's turf. The ultimate goal of a synchronic analysis is the reduction of complexity, that is, generating a wide range of data points from only a small set of grammatical operations, principles or constraints. In a very specific sense, such an analysis thus provides an answer to the question of 'why' the data display certain patterns, by reducing them to underlying generalizations. If, however, the 'why' question – in a somewhat different sense – can also be answered historically, this has implications for what the synchronic analysis has to achieve. That is, the current state of the grammar might very well be arbitrary and perfectly non-explanatory, as long as the historical path leading to it is not.

The present paper examines this interaction between synchronic and diachronic analyses against the background of a case study in Turkish morphosyntax. In particular, I will discuss certain properties of the verbal domain which were given a synchronic analysis in Kornfilt (1996), and I will propose that this analysis needs to be given a diachronic turn. The syntactic configuration posited by Kornfilt is a historical fact which explains the current state of the language but is now in the process of disappearing. The grammar of contemporary speakers, I argue, encodes the relevant facts differently, and in a much more idiosyncratic, arbitrary and contingent fashion.

Zooming in on the empirical details of this study, we will be concerned with some fine-grained properties of TAM (tense/aspect/mood) and agreement affixes in the Turkish verbal domain. Subject-verb agreement in Turkish is traditionally reported to surface in two different paradigms, known as the k- and the z-paradigm.

Each of the two paradigms is licensed after a distinct set of TAM morphemes. By way of example, the past tense morpheme -*DI* is followed by the *k*-paradigm (1a) whereas the progressive morpheme -*Iyor* requires the *z*-paradigm (1b):

(1)   a.   gel-**di-k**   b.   gel-**iyor-uz**
             come-**PAST-1PL**   come-**PROG-1PL**
             'we came'   'we are coming'

In an influential paper, Kornfilt (1996) has proposed that these two classes of verbs differ from each other in their underlying syntax. According to this analysis, verbs with agreement morphemes from the *z*-paradigm as in (1b) contain a silent copula between the TAM and the agreement morpheme whereas verbs with the *k*-paradigm as in (1a) do not. This is because, Kornfilt argues, the TAM morphemes which precede the *z*-paradigm, such as the progressive morpheme -*Iyor* in (1b), are participial tenses which require a copula in order to be used as a finite verb, in contrast to simple tenses like the past morpheme -*DI* in (1a). This analysis correctly predicts a range of diverging properties of the two sets of verbs.

In addition to the *k*- and *z*-paradigms, Erdem-Akşehirli (2018), Göksel (2010), and Güneş (2020, 2021) have recently documented a third agreement paradigm, referred to as the reduced *z*-paradigm, following yet another set of TAM markers. An example is given in (2):

(2)   gel-**ece-z**
          come-**FUT-1PL**
          'we will come'

The reduced *z*-paradigm is colloquial and largely limited to spoken language. While it has only been documented in the 21st century, this does thus not preclude that it dates further back. I nevertheless assume in the following that it has developed more recently than the *k*- and the *z*-paradigm, which are already attested for Ottoman Turkish (Redhouse, 1884) and whose origins have been traced back to Old Turkic (e.g., Good and Yu, 2005).

This paper first develops an allomorphy analysis of these three agreement paradigms based on novel evidence on their possible distributions. In doing so, I highlight that the reduced *z*-paradigm has the status of a hybrid by virtue of sharing properties with both the *k*- and the *z*-paradigm, in terms of its morphophonological shape and in terms of its distribution. According to the allomorphy analysis, agreement morphemes from different paradigms thus differ morphophonologically but not syntactically. This contrasts with earlier approaches such as Bobaljik (2000), Good and Yu (2005), and Güneş (2020, 2021) and, most influentially, Kornfilt (1996), all of which have posited a distinct syntax for different paradigms.

I then engage in detail with Kornfilt's (1996) work and propose that the reduced *z*-paradigm provides evidence that the distinction between simple and participial tenses is being levelled in diachronic development. I apply the diagnostics which Kornfilt uses to distinguish between simple and participial tenses to verbs containing the reduced *z*-paradigm and show that the latter have mixed properties, patterning partly with the *k*-, partly with the *z*-paradigm. This hybrid profile cannot be accounted for if those diagnostics are wholly determined by the presence or absence of a copula. Instead, I argue that they are sensitive to the more concrete features of the TAM and agreement morphemes involved. In a nutshell, the account given by Kornfilt (1996) is a historical explanation for why different verb forms have the properties they do, but it cannot be an analysis of how these properties are encoded in the grammar of contemporary Turkish speakers.

However, the view put forward in the following is not that the distinction between simple and participial tenses has straightforwardly vanished. Rather, the goal of this paper is to understand the dynamics of its gradual dissolution and what role the novel paradigm plays in this development. Assuming that language learners form generalizations at different levels of abstraction, I argue that Turkish speakers are losing confidence in the higher-level distinction between simple and participial tenses and instead rely more and more on lower-level observations about the concrete distribution of TAM and agreement morphemes. What makes the reduced *z*-paradigm crucial evidence is that it is incompatible with the higher-level, simple-vs.-participial hypothesis. Its emergence thus signals that speakers can ignore the latter in favour of lower-level knowledge.

On a methodological note, the new data reported in this paper are based on systematic consultation of a wide range of native speakers. Part of the evidence was collected in in-depth interviews with 21 informants

that I conducted over the course of two months with the help of a Turkish-speaking research assistant. The informants were selected so as to cover a wide variety of ages, socioeconomic backgrounds and regional dialects. A few other data points were collected later and equally confirmed and reconfirmed by several speakers, and yet others come from examples sourced from videos and forums online. At some points, judgments show inter-speaker variation, which I report wherever applicable.

I will proceed as follows. Section 2 introduces the three agreement paradigm and their distribution, partly drawing on new empirical findings. Section 3 develops an allomorphy analysis of the three paradigms and argues that the reduced z-paradigm should be considered a hybrid of the other two sets of forms. In Section 4, I then engage with the claim made by Kornfilt (1996) that verbs with agreement morphemes from the k- and from the z-paradigm differ in their syntactic properties, showing that this proposal is undermined by the mixed behavior of the reduced z-paradigm. Section 5 concludes. Some additional complications are relegated to appendices: Appendix A deals with data from suspended affixation, Appendix B discusses confounds surrounding the future tense marker -EcE and Appendix C reviews a previous analysis by Güneş (2021).

2 The distribution of the three agreement paradigms

The three agreement paradigms in the Turkish verbal domain and their previously reported distribution are summarized in (3)–(8) (Güneş, 2020, 2021). Each paradigm has been claimed to follow a different set of TAM markers.[1] The paradigms are named based on the consonant that ends the first person plural form.

(3) k-paradigm agreement morphemes

	Singular	Plural
First	-m	-k
Second	-n	-nIz
Third	$\emptyset$	-lEr

(4) TAM morphemes preceding the k-paradigm
-DI – past (PAST)
-sE – conditional (COND)

(5) z-paradigm agreement morphemes[2]

	Singular	Plural
First	-$(y)Im$	-$(y)Iz$
Second	-sIn	-$sInIz$
Third	$\emptyset$	-lEr

(6) TAM morphemes preceding the z-paradigm
-$Iyor$ – progressive (PROG)
-$(y)EcEk$ – future (FUT)
-Er – aorist (AOR)
-$mIş$ – evidential (EVID)

(7) Reduced z-paradigm agreement morphemes

	Singular	Plural
First	-m	-z
Second	-n	-nIz
Third	$\emptyset$	-lEr

(8) TAM morphemes preceding the reduced z-paradigm
-Iyo – progressive (PROG)
-$(E)cE$ – future (FUT)

By way of example, (9a)–(9c) demonstrate how the choice of agreement morpheme – here, 1PL – is sensitive to the preceding TAM morpheme:

(9) a. gel-**di-k**
   come-**PAST-1PL**
   root-**TAM$_k$-Agr$_k$**
   'we came'

b. gel-**iyor-uz**
   come-**PROG-1PL**
   root-**TAM$_z$-Agr$_z$**
   'we are coming'

c. gel-**ece-z**
   come-**FUT-1PL**
   root-**TAM$_{rz}$-Agr$_{rz}$**
   'we will come'

Taking a closer look at the three paradigms, we see that the reduced z-paradigm (7) is syncretic with the k-paradigm (3) in all person/number combinations other than 1PL, but also identical to the full z-paradigm

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[1]The denotation of TAM morphemes is more complex than the glossing used here suggests, in that their denotation can depend on their position on the verb (Sezer, 2001). Since this issue is orthogonal to the concerns of this paper, I leave it aside.

[2]The glide at the onset of the first person agreement morphemes of the z-paradigms surfaces only after a vowel; see, e.g., footnote 5.

(5) except for being one or two segments short (e.g., 1PL *-(y)Iz/-z*). Analogously, the TAM markers selected by the reduced z-paradigm (8) bear the same morphosyntactic features as a subset of those selected by the full z-paradigm (6) but are missing the final coda (PROG *Iyor/-Iyo*, FUT *-EcEk/-EcE*). I will refer to the three classes of agreement and TAM morphemes as Agr_k (3), Agr_z (5) and Agr_{rz} (7), and TAM_k (4), TAM_z (6) and TAM_{rz} (8), respectively. The terms for the three agreement paradigms should be understood to exclude the null 3SG morpheme as well as the 3PL morpheme *-lEr*, which is syncretic across all paradigms. Since their distribution is trivial, we will not be concerned with them in the remainder of this paper.

The new data I collected confirmed the above picture partially. Table (10) gives an overview of the findings. Each cell indicates the acceptability of a certain class of TAM morphemes, listed on the y-axis, followed by a certain class of agreement suffixes, listed on the x-axis. For instance, cell A indicates the acceptability of a TAM_k marker followed by an Agr_k suffix.

(10)   Combinations of TAM and Agr

	Agr_K	Agr_Z	Agr_{RZ}
TAM_K	A: ✓	B: *	C: *
TAM_Z	D: *	E: ✓	F: *
TAM_{RZ}	G: %	H: ✓	I: ✓

The diagonal cells A, E and I correspond to morpheme combinations reported to be grammatical by Güneş (2020, 2021), as summarized above in (3)–(8). This was, unsurprisingly, confirmed by my informants: TAM_k can be followed by Agr_k (cell A), TAM_z by Agr_z (cell E) and TAM_{rz} by Agr_{rz} (cell I), in line with examples (9a)–(9c). Equally expectedly, sequences of TAM_k-Agr_z (cell B) (11) and TAM_k-Agr_{rz} (cell C) (12) were rejected:

(11)   a.   *gel-di-siniz
              come-PAST-2PL
              root-**TAM_k**-**Agr_z**
              'you (pl.) came'
        b.   *at-ar-sa-yım
              throw-AOR-COND-1SG
              root-TAM_z-**TAM_k**-**Agr_z**
              'if I throw'

(12)   a.   *gel-di-z
              come-PAST-1PL
              root-**TAM_k**-**Agr_{rz}**
              'we came'
        b.   *bırak-tı-ysa-z
              leave-PAST-COND-1PL
              root-TAM_k-**TAM_k**-**Agr_{rz}**
              'if we left'

While for both morpheme combinations, a few speakers hypothesized that some such examples might be licensed in other dialects, those were isolated instances marked by a low degree of confidence. Nobody reported these forms to be grammatical as part of their own variety. The remaining cells G, H, D and F require a slightly longer discussion, and I now address each of them in turn.

First, combinations of TAM_{rz} and Agr_k (cell G) can only be tested using 1PL items since Agr_k and Agr_{rz} are syncretic in other person/number combinations. The 1PL Agr_k morpheme *-k* is clearly accepted by many speakers after TAM_{rz} *-Iyo* (13a); these forms are consistently reported to be dialectal and associated with the Black Sea region. Agr_k is rejected, however, after TAM_{rz} *-EcE* (13b). This might be due to the fact that the resulting form is homophonous with the third person singular (13c), in which the final velar is parsed as part of the full TAM_z morpheme *-EcEk*, while Agr is null.

(13)   a.   %bul-uyo-k
              find-PROG-1PL
              root-**TAM_{rz}**-**Agr_k**
              'we are finding'
        b.   *at-**aca-k**
              throw-FUT-1PL
              root-**TAM_{rz}**-**Agr_k**
              'we will throw'
        c.   at-**acak**-∅
              throw-FUT-**3SG**
              root-**TAM_z**-Agr
              's/he will throw'

Next, TAM_{rz} followed by Agr_z (cell H) is possible – contrary to what has been reported by Güneş (2020, 2021) –, as seen in example (14) which was universally accepted by informants:

(14) oyn-uyo-sunuz
      play-PROG-2PL
      root-**TAM**$_{rz}$-**Agr**$_z$
      'you (pl.) are playing'

However, two independently motivated confounds apply. First, TAM$_{rz}$-Agr$_z$ forms such as (15a) are consistently rejected due to an interference effect from the similar form (15b) which contains the TAM$_z$ morpheme -*Iyor* as opposed to TAM$_{rz}$ -*Iyo*:

(15) a. *bul-uyo-**y**um   b. bul-uyo**r**-um
          find-PROG-1SG   find-PROG-1SG
          root-**TAM**$_{rz}$-Agr$_z$ root-**TAM**$_z$-Agr$_z$
          'I am finding'   'I am finding'

The first person Agr$_z$ markers -*(y)Im* and -*(y)Iz* start with a palatal glide when surfacing after vowels to avoid a hiatus. In (15a), this glide between -*Iyo* and -*Im* is located in the same position as the final tap in -*Iyor* in (15b); the relevant segments are boldfaced in (15). Realizing an alveolar tap as a glide is a common speech error among Turkish-speaking children. As a result, forms like (15a) are heard as a mispronunciation of (15b) and rejected on these grounds.

The second confound concerns the TAM$_{rz}$ marker -*EcE*. Some verbs containing -*EcE* followed by Agr$_z$ are only accepted if the second vowel of the TAM morpheme is long and rejected otherwise (16):

(16) a. gid-ecē-sin
          go-FUT-2SG
          root-**TAM**$_{rz}$-**Agr**$_z$
          'you (sg.) will go'
      b. %gid-ecĕ-sin

I discuss these restrictions on vowel length more in detail in Appendix B. For now, it suffices to note that the variation, which depends both on speaker and item and does not display any discernible categorical patterns, is not limited to TAM$_{rz}$-Agr$_z$ contexts but equally affects TAM$_{rz}$-Agr$_{rz}$ verbs. Example (17) is accepted by some speakers only with a long vowel:

(17) a. at-acā-z
          throw-FUT-1PL
          root-**TAM**$_{rz}$-**Agr**$_{rz}$
          'we will throw'
      b. %at-acă-z

In short, to the extent that forms such as (16b) are rejected due to the length of the vowel, this is an independent confound orthogonal to the paradigm of the agreement morpheme. Overall, TAM$_{rz}$-Agr$_z$ verbs are thus licensed as long as interfering factors are controlled for.

Finally, the two remaining cells correspond to TAM$_z$ followed by Agr$_k$ (cell D) or Agr$_{rz}$ (cell F). Both morpheme combinations are not licensed. The relevant examples are partly ruled out phonotactically; however, this alone does not account for the data. To begin with, note that Agr$_k$ and Agr$_{rz}$ morphemes in all person/number combinations except 2PL -*nIz* are not syllabic but consist of a single obstruent (18)–(19):

(18) Agr$_k$

	Singular	Plural
First	-*m*	-*k*
Second	-*n*	-*nIz*

(19) Agr$_{rz}$

	Singular	Plural
First	-*m*	-*z*
Second	-*n*	-*nIz*

All TAM$_z$ morphemes, however, end on a consonant (20):

(20) TAM$_z$
      -*Iyo**r*** – progressive (PROG)

-*(y)EcEk* – future (FUT)
-*Er* – aorist (AOR)
-*mIş* – evidential (EVID)

As a result, appending non-2PL Agr$_k$ and Agr$_{rz}$ markers to a TAM$_z$ morpheme results in codas that might simply be phonotactically illicit in Turkish. Some examples are given in (21):

(21) a. *gel-ece**k-z**
           come-FUT-1PL
           root-TAM$_z$-Agr$_{rz}$
           'we (sg.) will come
      b. *gid-iyo**r-m**
           go-PROG-1SG
           root-TAM$_z$-Agr$_{k/rz}$
           'I am going'
      c. *bul-uyor-mu**ş-k**
           find-PROG-EVID-1SG
           root-TAM$_z$-Agr$_k$
           'we are apparently finding'

However, the 2PL Agr$_k$/Agr$_{rz}$ morpheme -*nIz* can be appended to TAM$_z$ without giving rise to any phonotactically ill-formed strings. Nevertheless, the resulting forms are not licensed (22):

(22) a. */??gel-ecek-**niz**
           come-FUT-2PL
           root-TAM$_z$-Agr$_{k/rz}$
           'you (pl.) will come
      b. */??gid-iyor-**nuz**
           go-PROG-2PL
           root-TAM$_z$-Agr$_{k/rz}$
           'you (pl.) are going'
      c. */??bul-uyor-muş-**nuz**
           find-PROG-EVID-2PL
           root-TAM$_z$-Agr$_{k/rz}$
           'you (pl.) are apparently finding'

No informant accepted examples such as (22) without reservation. A small subset found them very marginal, reporting that they could perhaps surface in slurred speech. Most speakers in fact had difficulties perceiving these forms correctly, mishearing the Agr$_{k/rz}$ affix -*nIz* either as Agr$_z$ -*sInIz* or as an intermediate, partially reduced form, -*InIz*. The latter suffix was accepted relatively robustly after TAM$_z$ -*mIş* (23a) but only marginally and only by some speakers following other TAM$_z$ morphemes (23b). In both contexts, -*InIz* was still judged more acceptable than the fully reduced form, Agr$_{rz}$ -*nIz*.

(23) a. %bul-uyor-muş-**unuz**   b. */??bul-uyor-**unuz**
           find-PROG-EVID-2PL   find-PROG-2PL
           root-TAM$_z$-**Agr**   rot-TAM$_z$-**Agr**
           'you (pl.) are apparently finding' 'you (pl.) are finding'

After -*mIş*, informants also reported the partially reduced 2SG form -*In* (cf. Agr$_z$ -*sIn*, Agr$_{k/rz}$ -*n*) (24a), again perceived as strongly degraded following other TAM$_z$ morphemes (24b):

(24) a. %bul-uyor-muş-**un**   b. *ok-ur-**un**
           find-PROG-EVID-2SG   read-AOR-2S
           'you (sg.) are apparently finding' 'you (sg.) read'

In sum, sequences of TAM_z and $\text{Agr}_k/\text{Agr}_{rz}$ morphemes are never considered clearly well-formed, even if not ruled out on phonotactic grounds. I argue that what speakers do accept reluctantly is an acoustic reduction of TAM_z-Agr_z, which is perceived only with difficulty, judged only marginally acceptable and attributed to fast and careless speech. This reduction is gradient, giving rise to the intermediate forms *-In/-InIz*, and also appears to be sensitive to phonological factors, in that the sibilant at the beginning of the second person agreement morphemes *-sIn/-sInIz* is more likely to be reduced after the sibilant at the end of the TAM morpheme *-mIş*. Morphotactically, combinations of TAM_z and $\text{Agr}_k/\text{Agr}_{rz}$ are not allowed.

In sum, the new findings on the distribution of the three agreement paradigms differ from what has previously been reported by Güneş (2020, 2021) in two ways. First, Agr_k morphemes can follow the progressive TAM_{rz} morpheme *-Iyo* in some dialects. Secondly, Agr_z can follow TAM_{rz} while the opposite – Agr_{rz} following TAM_z – is not licensed. Capturing this asymmetry will be a crucial desideratum for the analysis, to which we turn now.

3 Allomorphy and hybridity

For convenience, the three Turkish agreement paradigms are again summarized below in (25)–(27):

(25) Agr_k

	Singular	**Plural**
First	*-m*	*-k*
Second	*-n*	*-nIz*
Third	$\emptyset$	*-lEr*

(26) Agr_z

	Singular	**Plural**
First	*-(y)Im*	*-(y)Iz*
Second	*-sIn*	*-sInIz*
Third	$\emptyset$	*-lEr*

(27) Agr_{rz}

	Singular	**Plural**
First	*-m*	*-z*
Second	*-n*	*-nIz*
Third	$\emptyset$	*-lEr*

The TAM morphemes with their morphosyntactic features and their morphophonological realization are again listed in (28):

(28) a. PAST: *-DI*   d. FUT: *-EcEk/-EcE*
     b. COND: *-sE*   e. AOR: *-Er*
     c. PROG: *-Iyor/-Iyo*   f. EVID: *-mIş*

I analyze the three agreement paradigms as contextual allomorphs, and the morphophonological variants of the progressive (28c) and the future (28d) morphemes as allomorphs in free variation. Before diving into details, I will briefly motivate the claim that these forms indeed constitute independent lexical items, in line with what has previously been posited by Güneş (2020, 2021). Recall that Agr_{rz} and TAM_{rz} affixes are identical to Agr_z and TAM_z except for being one or two segments short. This might suggest that the former morphemes can simply be regarded as phonological or phonetic variants of the latter, an intuition often found among native speakers. There are of course no regular phonological rules of Turkish which could systematically derive one set of morphemes from the other:[3] for instance, no rule deletes the string *-sI* to derive the 2PL Agr_{rz} morpheme *-nIz* from 2PL Agr_z *-sInIz*. Nevertheless, Agr_{rz} and TAM_{rz} morphemes could still be regarded as mere acoustic reductions generated at the level of phonetics.

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[3]For one potential exception involving the future TAM_{rz} marker *-EcE*, see Appendix B.

However, acoustic reduction is too unconstrained a process to derive the restricted distribution of Agr_{rz} morphemes. In particular, I have shown in the previous section that the latter cannot follow TAM_z morphemes even if the output is phonotactically licit. If Agr_{rz} morphemes are indeed the result of acoustic reduction applying to Agr_z, this does not explain why they are only licensed if reduction also applies to the preceding TAM_z morpheme. This would be all the more puzzling since the opposite – TAM_{rz} followed by Agr_z – is possible. Note also that as described in the previous section, some speakers do accept TAM_z-Agr_{rz} sequences hesitantly by articulating the intuition that they might surface in slurred speech, and I argue that these are true instances of acoustic reduction. However, this is not how speakers respond to Agr_{rz} and TAM_{rz} morphemes in their licit environments, which are perceived as perfectly natural. Moreover, acoustic reduction could derive a wide range of strings, but speakers consistently both produce and accept precisely those forms which are syncretic with Agr_k in three out of four forms, which would remain an odd coincidence. Finally, we will see later in Section 4.3 that TAM_z-Agr_z and TAM_{rz}-Agr_{rz} verbs differ with respect to the placement of the question marker -*mI*. This is again incompatible with the idea that one set of forms is derived from the other via a late-stage phonetic process of acoustic reduction. I thus conclude that the different agreement paradigms and TAM markers are independently stored lexical items and not merely phonological or phonetic variants.[4]

More concretely, I argue that the three agreement paradigms are contextual allomorphs of an agreement morpheme bearing person and number features. Which paradigm surfaces is determined as in (29):

(29)   a. Agr_k is inserted after a morpheme with PAST, COND or (in some dialects) PROG features and which ends on a vowel;

       b. Agr_z is inserted after a morpheme with PROG, FUT, AOR or EVID features;

       c. Agr_{rz} is inserted after a morpheme with PROG, FUT, AOR or EVID features and which ends on a vowel.

In the framework of Distributed Morphology (DM; Halle and Marantz, 1993, 1994), these conditions on insertion can be formalized using spell-out rules, as demonstrated in (30) for the 1PL morpheme:[5]

(30)   a.   1PL $\rightarrow$ -k/{PAST, COND, (PROG)} and V_

       b.   1PL $\rightarrow$ -Iz/{PROG, FUT, AOR, EVID}

       c.   1PL $\rightarrow$ -z/{PROG, FUT, AOR, EVID} and V_

Note that although the spell-out rule (30c) is more specific than (30b), the former does not overrule the latter. In contexts which meet the conditions specified by both rules, either Agr_z or Agr_{rz} can surface (31):

(31)   a.   oyn-**uyo-nuz**   b.   oyn-**uyo-sunuz**
            play-PROG-2PL   play-PROG-2PL
            root-**TAM_{rz}-Agr_{rz}**   root-**TAM_{rz}-Agr_z**
            'you (pl.) are playing'   'you (pl.) are playing'

Thus, (30b) and (30c) are not in competition but in free variation.

A key aspect of the conditions on insertion summarized in (29) is that all three paradigms impose morphosyntactic restrictions on the TAM morpheme which can precede them, but only Agr_k and Agr_{rz} also

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[4]Similar questions are widely discussed in the literature on clitics, with, e.g., Zwicky (1977) arguing that some clitics – 'simple clitics' – are the result of phonological/phonetic reduction but others – 'special clitics' – independent allomorphs. Spencer (1991) suggests that special clitics can evolve via a reanalysis of simple clitics; such a process might also have applied in Turkish.

[5]Additionally, Agr_z also surfaces on verb-less nominal (ia) and adjectival (ib) predicates:

(i)   a.   öğretmen-im   b.   hasta-yım
            teacher-1SG   sick-1SG
            root-**Agr_z**   root-**Agr_z**
            'I am a teacher'   'I am sick'

Verb-less predicates in Turkish are commonly taken to contain a silent copular v between root and Agr (e.g., Kornfilt, 1996). Hence, v could simply be added to the list of morphosyntactic features licensing the insertion of Agr_z. Alternatively, if one posits an equally silent $\mathrm{T}_{[\mathrm{PRES}]}$ head between v and Agr, Agr_z could be licensed after a PRES feature. Since our focus here is on the verbal domain, I leave these matters aside.

impose morphophonological restrictions by requiring the preceding morpheme to end on a vowel. Agr_k can surface after PAST *-DI*, COND *-sE* and in some varieties after PROG *-Iyo* but, crucially, not after PROG *-Iyor*. Since *-Iyo* and *-Iyor* are identical morphosyntactically, the licit environment for Agr_k must be specified morphophonologically, with the latter obligatorily following a morpheme ending on a vowel. Equally, Agr_{rz} can follow the progressive and future TAM morphemes only if the latter end on a vowel (*-Iyo* but not *-Iyor*, *-EcE* but not *-EcEk*). Agr_z, on the other hand, can surface after any progressive, future, aorist or evidential morpheme regardless of the morphophonological shape of the latter. This derives the asymmetry observed in Section 2: Agr_z can surface after TAM_{rz} (32a) since it is indifferent to the morphophonological form of the preceding affix; in contrast, Agr_{rz} cannot surface after TAM_z (32b) since it can only follow a morpheme ending on a vowel.

(32) a. oyn-uyo-sunuz
          play-PROG-2PL
          root-**TAM$_{rz}$-Agr$_z$**
          'you (pl.) are playing'

      b. */??gel-ecek-niz
          come-FUT-2PL
          root-**TAM$_z$-Agr$_{rz}$**
          'you (pl.) will come'

A question which the reader might raise at this point is why (29c) lists AOR and EVID among the features which can precede Agr_{rz} although Agr_{rz} can only follow progressive *-Iyo* and future *-EcE*. Since Agr_{rz} must follow a vowel, and AOR and EVID have no realization ending on a vowel, including the latter in (29c) is vacuous and does not change the empirical predictions made. What it does achieve is highlight the symmetry between Agr_{rz} and Agr_z, with both paradigms selecting for the same set of morphosyntactic features.

Overall, Agr_{rz} can thus be understood as a hybrid of the two other paradigms. In terms of its distribution, it is licensed after the same set of morphosyntactic features as Agr_z, namely, PROG and FUT (and, vacuously, AOR and EVID). At the same time, like Agr_k, it must follow an open syllable. Table (33) summarizes the morphosyntactic (MS) and morphophonological (MP) selectional requirements of the three agreement paradigms; the circled cells signal shared properties.

(33) Morphosyntactic (MS) and morphophonological (MP) selectional requirements of the three paradigms

	Agr_z	Agr_{rz}	Agr_k
MS	PROG, FUT, AOR, EVID	PROG, FUT, AOR, EVID	PAST, COND (PROG)
MP	/	open syllable	open syllable

Additionally, as highlighted previously, Agr_{rz} is also similar to both other paradigms in terms of its morphophonological shape, summarized in (34). Identical cells are circled in solid, similar cells in dashed lines.

(34) Morphophonological shape of the agreement paradigms

	Agr_z	Agr_{rz}	Agr_k
1SG	*-(y)Im*	*-m*	*-m*
2SG	*-sIn*	*-n*	*-n*
1PL	*-(y)Iz*	*-z*	*-k*
2PL	*-sInIz*	*-nIz*	*-nIz*

Agr_{rz} is near-identical to Agr_z in all person/number combinations except for lacking one or two segments. At the same time, it is also syncretic with Agr_k except in the 1PL. Note also that Agr_k and Agr_{rz} always have the same syllabic shape, being either monosyllabic (2PL) or consisting of a single consonant (1SG, 2SG, 1PL). This contrasts with Agr_z, which is either mono- or bisyllabic.

The claim that Agr_{rz} morphemes are hybrids of Agr_k and Agr_z morphemes is supported by an additional piece of evidence. In Cypriot Turkish, 1PL agreement can be realized with yet another affix, *-Ik*, following TAM_z morphemes (35):[6]

(35) a. Yap-ar-**ık**   yahnili.
          make-AOR-1PL stew
          'We make it with the stew.'

      b. Yak-acağ-**ık**   sobayı.
          light-FUT-1PL stove
          'We will light the stove.'

While Agr_{rz} ends on the same consonants as Agr_z but has the same syllabic shape as Agr_k, the reverse situation holds for Cypriot *-Ik*: the latter ends on the same consonants as Agr_k but has the same syllabic shape as Agr_z, as summarized in (36).

(36)   Realization of 1PL agreement in different paradigms

	Non-syllabic	Syllabic
Ends on *-k*	Agr_k: *-k*	Cypriot: *-Ik*
Ends on *-z*	Agr_{rz}: *-z*	Agr_z: *-Iz*

Cypriot *-Ik* is thus yet another hybrid of Agr_k and Agr_z, providing further evidence for the view that speakers have started to mix and match the properties of the two older agreement paradigms, which results in crossover variants.

To recapitulate, all three paradigms are sensitive to the morphosyntactic features of the preceding TAM morpheme, but Agr_k and Agr_{rz} are additionally sensitive to its morphophonological shape. The Agr_{rz} paradigm, I have argued, can be understood as a hybrid of Agr_z and Agr_k, resembling each of the latter both in terms of its selectional requirements and in terms of its morphophonological shape. By the same token, the TAM_{rz} morphemes, progressive *-Iyo* and future *-EcE*, are a hybrid of TAM_k and TAM_z: they realize the same morphosyntactic features as (a subset of) the latter – PROG and FUT – but have the same phonological shape as TAM_k in that they end on an open syllable. While this analysis fits the data seen so far, the next section will introduce some additional diagnostics that are yet to be accounted for.

4   Simple, participial and hybrid tenses

Against the background of the allomorphy analysis developed above, this section revisits Kornfilt's (1996) work on Turkish TAM and agreement morphology. In a nutshell, Kornfilt proposes that TAM_k-Agr_k and TAM_z-Agr_z verbs fundamentally differ in their syntactic nature and supports this claim with a variety of diagnostics. I apply the latter to TAM_{rz}-Agr_{rz} verbs – not documented by Kornfilt – and argue that the results force us to reconsider Kornfilt's analysis. In particular, I propose that in order to account for TAM_{rz} and Agr_{rz} morphemes, the syntactic distinction she posits needs to be regarded as a diachronic rather than as a synchronic fact.

4.1   The split between simple and participial tenses

The key proposal made by Kornfilt (1996) is that TAM_z morphemes – progressive *-Iyor*, future *-EcEk*, aorist *-Er* and evidential *-mIş* – are participial tenses which must be followed by a silent copula in order to appear in finite contexts. Agr_z morphemes inflect this copula, cliticizing onto the TAM_z morpheme (37a).[7] In

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[7]For the claim that Agr_z morphemes are clitics see also Bobaljik (2000), Good and Yu (1999, 2005), and Kabak (2007). As discussed further below, the paradigms indeed differ in their prosodic properties, but it has been widely argued that neither clitic- nor affix-hood, prosodically understood, signal a distinct, unified syntax (Akkuş et al., Submitted; Bermúdez-Otero and Payne, 2011; Embick and Noyer, 1999; Halpern, 1998) and that the distinction between the two is gradual, serving as a useful descriptive heuristic rather than as an analytical tool (Aikhenvald, 2002; Haspelmath, 2011). Hence, debating the clitic or affix status of the agreement paradigms is, for our purposes, a moot point.

contrast, TAM_k morphemes – past $\textit{-DI}$ and conditional $\textit{-sE}$ – are simple tenses which are directly inflected by Agr_k (37b). TAM_{rz} and Agr_{rz} morphemes are not addressed by Kornfilt.

(37) a. gel-**ecek** Ø-siniz
          come-**FUT** **COP**-2PL
          root-**TAM$_z$** **COP**-Agr$_z$
          'you (pl.) are coming'

     b. gel-**di**-niz
          come-**PAST**-2PL
          root-**TAM$_k$**-Agr$_k$
          'you (pl.) came'

As an implementation of Kornfilt's analysis, Kelepir (2001) has argued that simple tenses correspond to T(ense) whereas participial tenses realize a lower Asp(ect) head. To build a complete verbal domain, the latter must be supplemented by a copula in T. Under this view, there are thus genuine syntactic differences between TAM_k-Agr_k and TAM_z-Agr_z verbs, in that the latter are underlyingly more complex by virtue of containing a hidden copula between TAM and Agr. This view contrasts with the present approach, which assumes that both forms are straightforward sequences of TAM and agreement morphemes.

Kornfilt adduces several pieces of evidence to corroborate the difference between TAM_k and TAM_z tenses as well as the participial character of the latter.[8] I will demonstrate all these diagnostics using the future TAM_z $\textit{-EcEk}$ and the past TAM_k $\textit{-DI}$ morphemes, but unless otherwise noted, the results carry over to the other TAM morphemes of the respective class as well. First, TAM_z morphemes can be used as participial modifiers in the nominal domain (38a). This contrasts with the simple tenses, which do not license such a participial use (38b).

(38) a. kitab-ı oku-**yacak** kız
          book-ACC read-**FUT** girl
          'a girl who will read the book'

     b. *oku-**du** kişi
          read-**PAST** person
          'the person who has read'
                 (Kornfilt, 1996:112)

An exception to this generalization is the progressive TAM_z morpheme $\textit{-Iyor}$ which cannot be used as a participial modifier (39):

(39) *oku-**yor** kişi
       read-**PROG** person
       'the person who is reading'

Secondly, participial but not simple tenses can combine with the negation marker $\textit{değil}$ (40) and the epistemological copula $\textit{-DIr}$ (41), both of which, Kornfilt claims, require a non-verbal, i.e., participial complement:

(40) a. gid-**ecek değil**-im
          go-**FUT** **NEG**-1SG
          'I will not go'
     b. *git-**ti** **değil**-im
          go-**PAST** **NEG**-1SG
          'I did not go'   (Kornfilt, 1996:105)

(41) a. gid-**ecek-tir**
          go-**FUT**-**EPIST**
          'she will definitely leave'
     b. *git-**ti**-**dir**
          go-**PAST**-**EPIST**
          'she definitely left'   (Kornfilt, 1996:108)

Next, the polar question marker $\textit{-mI}$ surfaces between TAM_z and Agr_z (42) but after TAM_k-Agr_k (43). Kornfilt analyzes $\textit{-mI}$ as a clitic and argues that it can intervene between another clitic and its host, as in (42), but not between two affixes or an affix and a root, as in (43).

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[8]An additional diagnostic that Kornfilt draws on which is not discussed in the following concerns suspended affixation. Since these data present a number of complications, I deal with them separately in Appendix A.

(42) a. gel-ecek-**mi**-siniz
come-FUT-**Q**-2PL
'Will you (pl.) go?'

b. ??/*gel-ecek-siniz-**mi**
come-FUT-2PL-**Q**
'Will you (pl.) go?'

(43) a. git-ti-niz-**mi**
go-PAST-2PL-**Q**
'Did you (pl.) go?'

b. *git-ti-**mi**-niz
go-PAST-**Q**-2PL
'Did you (pl.) go?' (Kornfilt, 1996:106)

Note that the judgment given in (42b) is Kornfilt's. According to my informants, some such forms are perfectly acceptable while others are degraded but nevertheless contrast with the fully ungrammatical ordering in (43b).

Finally, TAM_k-Agr_k and TAM_z-Agr_z forms differ prosodically. Stress in Turkish is by default word-final but certain morphemes, known as prestressing, force stress to be realized on the syllable preceding them. Agr_z morphemes are obligatorily prestressing (44). On the other hand, Agr_k morphemes can be prestressing if they are syllabic – that is, in the 2PL – but do not have to be (45):

(44) a. gel-**ecék**-siniz
come-FUT-2PL
'you (pl.) will come'

b. *gel-ecek-**siníz**

(45) a. gel-**dí**-niz
come-PAST-2PL
'you (pl.) came'

b. gel-di-**níz**

Since the effect of prestressing morphemes is to enforce stress on a syllable they are not a part of, Agr_k unsurprisingly has no effect on stress in other person/number combinations in which it is not syllabic but realized as a mere coda (46):

(46) a. gel-**dí**-m
come-PAST-1SG
'I came'

b. gel-**dí**-n
come-PAST-2SG
'you (sg.) came'

c. gel-**dí**-k
come-PAST-1PL
'we came'

While Kornfilt (1996) herself touches only briefly on the prosody of Agr_z, a more detailed analysis building up on her work has been developed by Kabak and Vogel (2001). The latter demonstrate that the copula can independently be shown to be a prestressing morpheme in Turkish, regardless of whether or not it is realized overtly. If Agr_z morphemes are obligatorily preceded by a copula, it is not necessary for them to be listed as prestressing themselves; rather, the prosodic facts fall out from the presence of the copula alone. For instance, what enforces stress on -*EcÉk* in (44) would then not be the Agr_z morpheme -*sInIz* itself but the silent copula preceding it.

Overall, there are thus clear asymmetries between TAM_k-Agr_k and TAM_z-Agr_z verbs, summarized in (47):

(47)   Properties of TAM_k and TAM_z

	TAM_k	TAM_z
Can be followed by *değil*	no	yes
Can be followed by -*DIr*	no	yes
Can be used as a participial modifier	no	yes
Can be immediately followed by -*mI*	no	yes
Must bear stress when followed by Agr	no	yes

All these asymmetries are systematically accounted for by Kornfilt's proposal. Under the present approach, on the other hand, they do not fall out naturally and would have to be regarded as lexical idiosyncrasies, *prima facie* an undesirable choice. However, we will see problems for the neat distinction between simple and participial tenses arise in the next section.

4.2 Mixed behavior of TAM$_{rz}$-Agr$_{rz}$ verbs

As noted, an empirical gap in Kornfilt's analysis are TAM$_{rz}$ and Agr$_{rz}$ morphemes, which were only documented more recently. If the diagnostics Kornfilt relies on indeed distinguish between simple and participial tenses, we must ask how they play out for TAM$_{rz}$-Agr$_{rz}$ verbs and whether or not the latter contain a silent copula. The results are, crucially, mixed: TAM$_{rz}$ markers pattern with TAM$_k$ in some respects and with TAM$_z$ in others. I will now walk through Kornfilt's diagnostics one after the other and apply them to TAM$_{rz}$ and Agr$_{rz}$, drawing partly on new findings, partly on results reported in Güneş (2021).

First, the speakers I consulted accepted progressive *-Iyo* but not future *-EcE* with the negation marker *değil* (48). Similarly, all informants accepted the epistemological copula *-DIr* after *-Iyo* but only some after *-EcE*; in the latter case, those forms were reported to be dialectal and substandard and to only be licensed if the second vowel of *-EcE* is long.

(48) a. gid-**iyo** **değil**-im
          go-**PROG** **NEG**-1SG
          'I am not going'
      b. *gid-**ece değil**-im
          go-**FUT** **NEG**-1SG
          'I will not go'

(49) a. gid-**iyo-dur**
          go-**PROG**-**EPIST**
          'she is definitely leaving'
      b. %gid-**ece**-**dir**
          go-**FUT**-**EPIST**
          'she will definitely leave'

Secondly, progressive *-Iyo* cannot be used as a participial modifier in the nominal domain (50a), but since this diagnostic fails for the corresponding TAM$_z$ morpheme *-Iyor* as well, this is as expected. Future *-EcE* was equally rejected in such contexts (50b):

(50) a. *oku-**yo** kişi
          read-**PROG** person
          'the person who is reading'
      b. *kitab-ı oku-**yaca** kız
          book-ACC read-**FUT** girl
          'the girl who will read the book'

Third, Güneş (2021) reports that the question marker *-mI* must follow Agr$_{rz}$ (51)–(52), analogously to Agr$_k$ forms:

(51) a. gel-iyo-nuz-**mu**
          come-PROG-2PL-**Q**
          'are you (pl.) coming?'
      b. *gel-iyo-**mu**-nuz

(52) a. gel-ece-niz-**mi**
          come-FUT-2PL-**Q**
          'will you (pl.) come?'
      b. *gel-ece-**mi**-niz

Finally, as for the prosodic properties of the reduced *z*-paradigm, Güneş (2021) reports that like Agr$_k$ and unlike Agr$_z$, Agr$_{rz}$ is only optionally prestressing (53):

(53) a. gel-**iyó**-nuz
          come-PROG-2PL
          'you (pl.) are coming'
      b. gel-iyo-**núz**

(54) a. gel-**ecé**-niz
          come-FUT-2PL
          'you (pl.) will come'
      b. gel-ece-**níz**

The results of these diagnostics are summarized in (55):

(55)   Properties of TAM$_k$, TAM$_z$ and TAM$_{rz}$ (-*Iyo* and -*EcE*)

	TAM$_k$	TAM$_{rz}$: -*EcE*	TAM$_{rz}$: -*Iyo*	TAM$_z$
Can be followed by *değil*	no	no	yes	yes
Can be followed by -*DIr*	no	%	yes	yes
Can be used as a participial modifier	no	no	N/A	yes
Can be immediately followed by -*mI*	no	no	no	yes
Must bear stress when followed by Agr	no	no	no	yes

In short, the picture we see is mixed: TAM$_{rz}$ markers cannot be clearly classified as either simple or participial.

4.3 A diachronic turn

We can now discuss how the findings on TAM$_{rz}$ and Agr$_{rz}$ morphemes fit into Kornfilt's analysis. A priori, the question whether the future and progressive TAM$_{rz}$ markers should be classified as a simple or participial tenses seems to have an obvious answer, in that we would expect them to pattern with future and progressive TAM$_z$ morphemes, respectively. For instance, it is hard to see why progressive -*Iyo* would occupy T while progressive -*Iyor* sits in Asp. However, the data from the previous section do not easily confirm this expectation, in that TAM$_{rz}$-Agr$_{rz}$ verbs pattern with TAM$_k$-Agr$_k$ verbs for some diagnostics and with TAM$_z$-Agr$_z$ verbs for others. Nonetheless, one might still want to posit that TAM$_{rz}$ morphemes are, like TAM$_z$, participial tenses requiring a silent copula which simply come with some idiosyncratic, lexically encoded properties. In this way, the explanatory power of Kornfilt's analysis would still be leveraged to account for at least some of the data in (55), which might seem preferable to abandoning it altogether.

However, this strategy does not hold up. If TAM$_{rz}$ morphemes were indeed participial tenses, they would, according to Kornfilt, need to be followed by a silent copula. The copula is obligatorily prestressing (Kabak and Vogel, 2001; Özçelik, 2014) and would enforce stress on the TAM marker, as in (56a). This is not in line with the fact that stress can also be word-final, as in (56b):

(56)   a.   gel-**iyó**   ∅-nuz
              root-PROG COP-2PL
              'you (pl.) are coming'
        b.   gel-iyo ∅-**núz**

One might argue that this could still be accounted for by assuming that the copula has become optionally prestressing. However, this wrongly predicts that TAM$_z$-Agr$_z$ verbs should equally be able to surface with variable stress, contrary to fact. More generally, in environments in which the copula surfaces overtly, it continues to be obligatorily prestressing. We would have to stipulate that TAM$_{rz}$-Agr$_{rz}$ verbs contain an allomorph of the copula which is indistinguishable from the mainstream variant other than with respect to its prosodic properties. This is hardly a desirable choice. In short, Kornfilt's analysis requires all diagnostics listed in (55) to be correlated; it cannot be used to account for only part of the properties of the different sets of TAM and agreement morphemes.

Overall, the mixed behavior of TAM$_{rz}$-Agr$_{rz}$ forms is thus unexpected under the view that verbs can be neatly classified as either simple or participial. In other words, the presence or absence of a silent copula does not explain why the novel forms behave the way they do with respect to Kornfilt's diagnostics. Moreover and more importantly, I claim that this finding undermines the distinction between simple and participial tenses as such. The gist of my argument – to which we will add some nuances later – is that the syntactic distinction between TAM$_k$-Agr$_k$ and TAM$_z$-Agr$_z$ verbs is diachronically real but has been levelled over time. In contemporary Turkish, the so-called participial tenses do not contain a silent copula anymore. Crucially, the reason why Kornfilt's analysis no longer applies is not because any of the properties of TAM$_k$-Agr$_k$ or TAM$_z$-Agr$_z$ verbs have changed; to the best of my knowledge, they have not. However, a grammar which

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also generates TAM_{rz}-Agr_{rz} verbs cannot be a grammar in which the properties of the older two sets of verbs can be explained by the contrast between simple and participial tenses. I develop this argument step by step in the remainder of Section 4.

To begin with, the contrasting properties of TAM_k-Agr_k and TAM_z-Agr_z verbs do call for an explanation, and Kornfilt is arguably perfectly correct in that at some point in the history of Turkish, TAM_k and TAM_z morphemes had a very different syntactic profile. However, I argue that this distinction has been lost in diachronic development, in a way that parallels the loss of a syntactic distinction between agreement morphemes. As reported by Good and Yu (2005), Agr_k and Agr_z morphemes have a different historical background in that the former started out as reanalyzed possessive suffixes, the other as cliticized pronouns. However, there is no reason to assume that in the grammar of contemporary speakers, they are represented as anything other than simple agreement morphemes. What I propose is that the syntactic distinction between TAM_k and TAM_z has equally been levelled in contemporary Turkish.

This diachronic process follows the general trends that have been observed in language change more broadly. First, the loss of the syntactic distinction between TAM_k and TAM_z as well as between Agr_k and Agr_z is a simple case of analogical levelling, long recognized as a major driver of historical change (e.g., **LahiriAnalogy**; Kiparsky, 2012). That is, a contrast between two sets of forms which serves no function for speakers is abandoned in favour of a uniform treatment. Moreover, it is a common fate of syntactically independent forms such as the inflected copula following TAM_z markers to become gradually integrated into other words, following the well-known trajectory from words to clitics to affixes (see Heine, 2017 for an overview). This process assimilates TAM_z-Agr_z sequences to TAM_k-Agr_k. Overall, the historical change posited here is thus well-motivated.

Once the distinction between $\text{Agr}_k/\text{TAM}_k$ and $\text{Agr}_z/\text{TAM}_z$ had become levelled for at least some speakers, Agr_{rz} and TAM_{rz} morphemes, I propose, evolved as hybrids of the other two sets of forms, as evidenced by their morphophonological form and their selection behavior, and thus inherit a subset of the properties of each of the other two paradigms. On the one hand side, while I have rejected the claim that Agr_{rz} and TAM_{rz} morphemes are derived from Agr_z and TAM_z morphemes via an on-line process of acoustic reduction and have defended their status as independent lexical items, I argue that the form these items take does historically stem from a shortening of the full z-forms, in line with the general tendency of highly frequent words and morphemes to become shorter over time (e.g., Haspelmath, 2021). On the other hand side, Agr_{rz} and TAM_{rz} are formed in analogy to Agr_k and TAM_k; in particular, Agr_{rz} recycles several forms already part of the Agr_k paradigm.

To recapitulate, I argue that the distinction between simple and participial tenses, and the presence of a silent copula in the latter, has to be reanalyzed as a historical fact. The upshot of this is that it becomes possible to make sense of the mixed behavior of TAM_{rz}-Agr_{rz} verbs. As reported above, TAM_{rz}-Agr_{rz} verbs pattern with TAM_k-Agr_k verbs with respect to some diagnostics and with TAM_z-Agr_z verbs with respect to others. If all of those diagnostics were indeed tied to the presence of a copula, they should not overlap, and it is not clear how TAM_{rz} markers could both require and not require a copula, and realize a T head in some respects and an Asp head in others. Thus, I conclude that the properties diagnosed by Kornfilt are no longer sensitive to the presence of a silent copula. Rather, the next section will establish that they are determined by the more concrete features of the TAM and agreement morphemes involved.

4.4 Accounting for the diagnostics

I argue that Kornfilt's diagnostics fall into two camps, in that some depend only on the TAM, others only on the agreement morpheme. To begin with, three of the five diagnostics – *değil*, -*DIr* and usage as participial modifiers – are sensitive to the morphosyntactic features of the TAM morpheme, in that they are only licensed in the presence of future, progressive (with the exception of participial modifiers), aorist or evidential markers. Which form the agreement morpheme takes, on the other hand, does not affect the diagnostics. In fact, no agreement morpheme has to be used in these contexts at all: non-finite participial modifiers never surface with agreement, and in the case of *değil* and -*DIr*, the diagnostics hold up for null 3sg agreement.

This analysis predicts that with respect to these diagnostics, future and progressive TAM_{rz} morphemes should pattern with future and progressive TAM_z morphemes, respectively, with which they are featurally identical. For the progressive TAM_{rz} morpheme -*Iyo*, this prediction is straightforwardly borne out. The

future TAM_{rz} morpheme -*EcE*, however, cannot be followed by *değil*, by -*DIr* only marginally for some speakers, and cannot be used as a participial modifier, in all these respects differing from the future TAM_z morpheme -*EcEk*. I argue that this mismatch is due to an independent confound. Note that -*EcE* cannot appear word-finally with null 3SG agreement, unlike both progressive TAM_{rz} -*Iyo* and future TAM_z -*EcEk* (57):[9]

(57) a. *gel-**ece**-∅   b. gel-**iyo**-∅   c. gel-**ecek**-∅
          come-**FUT**-3SG   come-**PROG**-3SG   come-**FUT**-3SG
          root-**TAM_{rz}**-Agr   root-**TAM_{rz}**-Agr   root-**TAM_z**-Agr
          's/he will come'   's/he is coming'   's/he will come'

Crucially, in the context of -*değil*, -*DIr* (a prestressing morpheme) and participial modifiers, -*EcE* would have to surface at the edge of a prosodic word, which (57a) demonstrates is blocked for reasons unrelated to the diagnostics themselves. I discuss the question of what might underlie the restricted distribution of -*EcE* in Appendix B. Whatever the nature of the relevant constraint, I argue that it is responsible for the fact that -*EcE* behaves differently from -*EcEk* with respect to *değil*, -*DIr* and participial modifiers. Once this is accounted for, the claim that these diagnostics are determined exclusively by the morphosyntactic features of the TAM morpheme holds up.

In contrast to Kornfilt, I do not assume that the TAM morphemes which are compatible with these diagnostics (progressive, future, aorist and evidential) differ from those that do not (past and conditional) in their syntactic position or category, for reasons defended above. It still remains perfectly possible to posit some featural diacritic which is present on the former but not the latter morphemes and licenses the four diagnostics, thereby encoding the distinction in a more principled and succinct way. However, it is not clear that such a grammar makes different empirical predictions from one which simply lists the individual TAM morphemes licensing the diagnostics, and not much is gained from the perspective of theoretical parsimony.

With respect to the remaining two diagnostics – stress assignment and placement of the question marker -*mI* –, TAM_{rz}-Agr_{rz} verbs neatly pattern with TAM_k-Agr_k verbs. I argue that these diagnostics are sensitive to the paradigm of the agreement morpheme, regardless of the preceding TAM morpheme: Agr_z morphemes are obligatorily prestressing and cannot be followed by -*mI*, whereas the opposite holds for the Agr_k and Agr_z paradigms. This is evidenced by the fact that verbs with Agr_z morphemes still pass as 'participial' for stress (58) and -*mI* placement (59) even if they contain a TAM_{rz} instead of a TAM_z morpheme:

(58) a. oyn-**uyó**-sunuz   (59) a. oyn-uyo-**mu**-sunuz
          play-PROG-2PL   play-PROG-Q-2PL
          root-TAM_{rz}-Agr_z root-TAM_{rz}-Q-Agr_z
          'you (pl.) are playing'   'are you (pl.) playing?'
      b. *oyn-uyo-**sunúz**   b. ??/*oyn-uyo-sunuz-**mu**

Thus, stress assignment and -*mI* placement are insensitive to whether the verb contains a TAM_z or TAM_{rz} morpheme but are determined entirely by the agreement paradigm. I will now briefly discuss how these diagnostics might be encoded concretely, with a more detailed analysis being beyond the scope of this paper.

To begin with the ordering properties of -*mI*, I assume that the latter is merged in the same position underlyingly in all verbs despite surfacing in different positions. Mismatches between syntactic structure and overt affix ordering are well-known in the literature (see, e.g., Manova and Aronoff, 2010; Rice, 2011 for an overview) and can be handled, among other approaches, by morphological templates (Stump, 2006) or bigram ordering constraints (Ryan, 2010). The templates or constraints used would need to make reference to overt morphophonological forms instead of abstract morphosyntactic features in order to be able to distinguish

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[9]What appears to be ruled out in word-final position is specifically -*EcE* as a future morpheme, not merely the string -*EcE* regardless of its morpheme composition. Example (i) is perfectly acceptable:

(i)   gül-m**e**-**ce**
      laugh-NMLZ-DER
      'laughing'

between the different agreement allomorphs, and they should thus treat morphophonologically identical forms uniformly. This correctly predicts that Agr_k and Agr_{rz} morphemes, which are syncretic in three out of four person/number combinations, behave identically for the purposes of affix ordering. In short, I assume that the different placement of $-mI$ with respect to agreement morphemes from different paradigms are encoded purely morphotactically as licit sequences of morphemes.

As for stress assignment, instead of attributing the prestressing property of Agr_z morphemes to a silent copula (Kabak and Vogel, 2001), I argue that the agreement morphemes themselves are lexically encoded as prestressing. In general, Turkish has a variety of exceptional stress patterns which diverge from regular word-final stress, including stressed roots, stressed affixes and, most relevant for our purposes, prestressing affixes. Prestressing affixes form a morphosyntactically and morphophonologically heterogeneous set with no clear common denominator. As a result, previous work has largely treated Turkish prestressing affixes as requiring some form of lexical prespecification (Inkelas, 1994; Inkelas and Orgun, 2003; Kabak and Vogel, 2001; Özçelik, 2014; Özyıldız, 2015).[10] Thus, adding Agr_z affixes to the list of stress-exceptional morphemes is hardly a radical claim, regardless of which concrete account of Turkish exceptional stress is assumed.

To counter a potential objection, the different prosodic properties of the different agreement paradigms do not straightforwardly fall out from their phonological form alone. For convenience, the three sets of affixes are summarized again in (60)–(62):

(60) Agr_k

	Singular	Plural
First	-m	-k
Second	-n	-nIz

(61) Agr_z

	Singular	Plural
First	-(y)Im	-(y)Iz
Second	-sIn	-sInIz

(62) Agr_{rz}

	Singular	Plural
First	-m	-z
Second	-n	-nIz

The fact that Agr_k and Agr_{rz} morphemes pattern together for the purposes of stress assignment, contrasting with Agr_z, is clearly not random. As highlighted earlier, Agr_k and Agr_{rz} morphemes have the same syllable shape in that they are either monosyllabic, as in 2PL -nIz, or mere codas, as in the other three person/number combinations. Agr_z morphemes, on the other hand, are mono- or bisyllabic. What is more, the Cypriot 1PL variant -Ik which was briefly introduced in Section 3 is equally obligatorily prestressing, like its fellow syllabic 1PL Agr_z morpheme -Iz and unlike the non-syllabic 1PL Agr_k morpheme -k and Agr_{rz} morpheme -z.[11] However, syllable shape is not directly predictive of prosodic behavior: while the 2PL $\text{Agr}_k/\text{Agr}_{rz}$ morpheme -nIz is optionally prestressing, the 2SG Agr_z morpheme -sIn is obligatorily prestressing, a contrast which

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[10]An exception to this overall approach is Newell (2008), who argues that seemingly exceptional stress in Turkish can be derived transparently from the underlying morphosyntax in a phase-based account. However, as discussed by Özçelik (2014), Newell only considers a small subset of prestressing affixes. Deriving all cases of exceptional stress assignment in Turkish in this fashion does not seem to be possible without a rampant and unconstrained proliferation of phase boundaries, lacking any motivation other than deriving the prosodic properties it is meant to explain.

[11]The morpheme -Ik equally patterns with Agr_z with respect to the placement of -mI (i); note that the form yrn in (ib) is internet slang for yarın, 'tomorrow.'

(i)   a.   balcan   kebabı-da yap-ar-**mı-yık**   kanka?
            eggplant kebab-also make-AOR-Q-1PL buddy
            'Will we make eggplant kebab too, buddy?'
        b.   yrn   fifa yap-ar-**mı-yık**   söz   küçük takım ol-ca-m.
            tomorrow Fifa make-AOR-Q-1PL promise small team be-FUT-1SG
            'Shall we play Fifa tomorrow? (I) promise I will be the small team.'

Examples (ia) and (ib) are sourced from internet forums available at https://www.kadinlarkulubu.com/konu/welcome-too-candyshop.765026/page-512 and https://forum.donanimhaber.com/izmir-de-gok-delindi-dolu-var-ssli–31768292-3

does not fall out from any phonological difference between the two forms. Hence, while the prosodic contrast between $\text{Agr}_k/\text{Agr}_{rz}$ and Agr_z is by no means fully random, it still requires lexical prespecification.

In sum, the diagnostics from *değil*, *-DIr* and participial modifiers are determined exclusively by the morphosyntactic features of the TAM morphemes, whereas stress assignment and placement of *-mI* are sensitive to the paradigm of the agreement morpheme. I have sketched out how these properties could be encoded in contemporary grammars, but this account has not been, in any genuine sense of the word, explanatory. I argue that it does not have to be. The current state of the grammar is motivated historically, and while it is certainly not maximally economical, it by no means overloads the language users' cognitive resources. Before concluding this paper, I will now add some additional complications to the analysis presented so far in the next section.

4.5 The transition from the copula grammar to the allomorphy grammar

To give an interim summary of this section so far, Kornfilt's distinction between simple and participial tenses is an insightful explanation of the differences between TAM_k-Agr_k and TAM_z-Agr_k verbs. However, I have argued that this syntactic distinction has been levelled in contemporary Turkish. The different properties of the two paradigms described by Kornfilt are diachronically motivated but encoded in the grammar of contemporary Turkish in a more low-level, brute-force fashion, being partly determined by the morphosyntactic features of the TAM morpheme and partly by the morphophonological shape of the agreement morpheme. The reason why, I have argued, we need to adopt this view are the novel, hybrid paradigms of TAM_{rz} and Agr_{rz} morphemes which resist being classified as simple or participial.

One could object that this does not warrant abandoning Kornfilt's analysis altogether. It might seem possible to have a grammar which distinguishes between simple TAM_k and participial TAM_z tenses but additionally comes with a more recent appendix listing the properties of hybrid TAM_{rz} tenses along the lines described above. The problem with this divide-and-conquer strategy is that the main grammar and the appendix cannot be kept separate. I have argued above that TAM_{rz} morphemes cannot be followed by a silent copula because the latter would induce obligatory prestressing which does not obtain if an Agr_{rz} morpheme follows. However, note that in example (63) which combines a TAM_{rz} with an Agr_z morpheme, stress cannot be final:

(63)   a.   gel-**iyó**-sunuz
               come-PROG-2PL
               root-**TAM$_{rz}$**-Agr$_z$
               'you (pl.) are coming'
        b.   *gel-iyo-**sunúz**

This falls out from my claim that Agr_z morphemes are lexically encoded as obligatorily prestressing, which would need to be part of the appendix under the divide-and-conquer analysis. However, this appendix can now also be used to correctly derive (64), which features a TAM_z and an Agr_z morpheme:

(64)   a.   gel-**iyór**-sunuz
               come-PROG-2PL
               root-**TAM$_z$**-Agr$_z$
               'you (pl.) are coming'
        b.   *gel-iyor-**sunúz**

That is, (63) demonstrates that the prestressing behavior of Agr_z still needs to be lexically encoded even if the distinction between simple and participial tenses is maintained. In consequence, some data points such as (64) can either be accounted for by the appendix or by the main grammar which postulates a silent copula in (64). The upshot of this is that the analysis of TAM_k-Agr_k and TAM_z-Agr_z verbs does not simply remain unaffected by the novel sets of forms but that rather, a grammar which accounts for the latter will spread to the former as well. Thus, it is not possible to straightforwardly maintain the copula grammar and tack on an appendix.

There is, however, a more complex sense in which the distinction between simple and participial tenses might still survive in contemporary Turkish. To begin with, the argument made so far in this paper relied

crucially on the novel Agr_{rz} and TAM_{rz} morphemes, which are incompatible with a copula grammar. However, some speakers of Turkish in fact lack TAM_{rz} and Agr_{rz} morphemes;[12] hence, nothing rules out that they still maintain a copula grammar. At the same time, nothing rules out either that copula grammars have gone extinct a long time ago since in the absence of TAM_{rz} and Agr_{rz} morphemes, the allomorphy grammar proposed here makes the same predictions. The question, in short, is how we could know which of the two grammars a speaker has if both are correct in terms of descriptive adequacy, and whether it is possible for speakers to have both of them at the same time. Furthermore, we would want to know how concretely speakers transition from the copula grammar to the allomorphy grammar, why this process is happening, and whether it is actually completed for at least some speakers of Turkish.

I argue that these questions are best approached in a framework which assumes that language learners form generalizations at different levels of abstraction simultaneously (e.g., Ambridge, 2020; Morgan and Levy, 2016; Pierrehumbert, 2016). A speaker might, on a higher level, acquire the knowledge that TAM_z morphemes realize an aspectual head followed by a silent copula. This does not preclude that the same speaker also memorizes on a lower level that progressive, future, evidential and aorist morphemes can be followed, for instance, by the negation marker *değil*, while past and conditional morphemes cannot. Both kinds of generalization can be encoded at the same time, resulting in a grammar in which more abstract and more specific hypotheses about the learning data coexist.

What underlies the change from the copula grammar to the allomorphy grammar, I argue, is that speakers increasingly lose confidence in the higher-level hypothesis and instead rely more heavily on lower-level generalizations. In contemporary Turkish, there is no direct evidence for a copula following TAM_z, which never surfaces overtly. On the other hand, lower-level knowledge about the concrete distributions of TAM and agreement morphemes and their behavior with respect to the different diagnostics is still reliable. Thus, the claim that the syntactic distinction between simple and participial tenses is levelled does not mean that it is dropped altogether from one day to another. Rather, speakers might still maintain an increasingly weak representation of this distinction but draw predominantly on more specific generalizations in their grammar. The emergence of hybrid TAM_{rz} and Agr_{rz} morphemes constitutes crucial evidence in that they can no longer be generated by the higher-level copula hypothesis, thus signaling that speakers can ignore the latter in favour of lower-level knowledge.

Consequently, a given speaker might very well have both a copula grammar and an allomorphy grammar. These two grammars do not merely differ in their degree of specificity but form incompatible representations. According to the former, TAM_z-Agr_z verbs contain a silent copula; according to the latter, they do not. This raises the question what determines which representation a double-grammar speaker will draw on in language production or processing. We might hypothesize that speakers randomly sample a grammar whenever needed, perhaps based on the probabilities the latter are assigned. Alternatively, speakers might comprehend or utter such verbs without fully committing to a single parse, with the competing representations being superposed and some degree of probability assigned to either.

Note that under this view, grammars do not obey the law of non-contradiction: the speaker must believe that certain forms both do and do not contain a copula. This does not have to be a problem as long as the grammar successfully parses input and generates output, humans being generally not immune to holding inconsistent beliefs. Nevertheless, it is arguably an unstable situation which is resolved over time, and in fact, it is hard to see how diachronic change could ever come about without grammatical contradiction, inconsistency or doubt.

To conclude, the claim that the copula grammar has been neatly replaced by the allomorphy grammar is almost certainly too simplistic. If this paper is on the right track, Turkish is rather in the process of transitioning from one to the other, with speakers finding themselves at different points on this trajectory and travelling at different speeds. The higher-level hypothesis which posits a syntactic distinction between simple and participial tenses can coexist, and has arguably always coexisted, with lower-level observations about the more concrete distribution of morphemes. What I have argued is that evidence for the higher-level distinction is diminishing and that lower-level information is taking over, leading to the formation of hybrid forms which are no longer compatible with the higher-level syntactic distinction between simple and participial tenses.

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[12]Greg Key (p.c.) reports that some heritage speakers of Turkish lack Agr_z forms in the verbal domain, using exclusively Agr_{rz} morphemes.

5 Conclusion

This paper has taken a close look at TAM and agreement morphology in the Turkish verbal domain and has investigated whether different sets of TAM and agreement morphemes indeed signal a difference in the underlying syntax, as proposed by Kornfilt (1996). I have shown that Agr_{rz} and TAM_{rz} forms, documented only recently, constitute hybrids of $\text{Agr}_k/\text{TAM}_k$ and $\text{Agr}_z/\text{TAM}_z$ morphemes with respect to their morphophonological shape, their distribution – which I have couched in an allomorphy analysis – and Kornfilt's diagnostics. I have argued that these findings indicate that the syntactic distinction between TAM_k-Agr_k and TAM_z-Agr_z verbs which Kornfilt posits has broken down or is in the process of breaking down. This diachronic process, I have suggested, can be understood as speakers losing confidence in a more abstract, higher-level hypothesis about the learning data and instead relying more heavily on lower-level generalizations about the concrete distribution of specific morphemes.

The broader issues raised by this paper revolve around what makes for a good grammatical theory, what it means to give an explanation of language data and what role theoretical parsimony plays in this. The analysis proposed here is less elegant than Kornfilt's by any measure of economy. Instead of generating a wide range of data points by positing a single high-level distinction, it requires a much more substantial amount of lexical storage, listedness and idiosyncrasy. There are two reasons why we would nevertheless want to adopt such an analysis. First, and more obviously, it actually fits the empirical facts, whereas the more elegant theory cannot deal with the messy reality of Agr_{rz} and TAM_{rz} morphemes. Secondly, synchronically random facts can be generated diachronically in a systematic fashion. The historical development posited in this paper – the analogical levelling of a distinction which has ceased to be meaningful for speakers, and the gradual integration of originally syntactically independent forms into another word – is perfectly well motivated, even if the output thus generated, viewed in synchronic isolation, is not. In short, how a certain pattern evolved and how it is currently represented in a speaker's grammar are distinct questions, but the answer to one of them should shape our response to the other as well.

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Appendices

Appendix A: Suspended affixation

An additional piece of evidence for the contrast between simple and participial tenses which is not addressed above in Sections 4.1 and 4.2 concerns the phenomenon of suspended affixation, in which a single affix scopes over multiple members of a conjunction. Kornfilt argues that TAM_z (65a) but not TAM_k (65b) morphemes allow for the following morpheme to be suspended since participles form independent words which can stand on their own as a bare first conjunct (see also Atmaca, 2021; Kabak, 2007). Note that judgments in (65a) are as originally reported by Kornfilt.

(65) a. oku-**yacak** ve anla-**yacak-sın**
          read-**FUT** and understand-**FUT-2SG**
          'you (sg.) will read and understand'

      b. *oku-**du** ve anla-**dı-n**
          read-**PAST** and understand-**PAST-2SG**
          'you (sg.) read and understood'

                                                        (Kornfilt, 1996:110)

Speakers' intuitions on suspended affixation are notoriously unstable, and the contrast reported by Kornfilt was only partially confirmed by my informants. Some rejected suspended affixation with TAM_k morphemes, others accepted it wholesale, while yet others found such examples felicitous only for 2PL Agr -*nIz*. The latter is notably the only Agr_k morpheme which is syllabic and can be prestressing, suggesting that prosodic factors might play a role in the licensing of suspended affixation. I did not find a single speaker who rejected suspended affixation with TAM_z morphemes, unless on prescriptive grounds.

   As for TAM_{rz} morphemes, my informants consistently accepted suspended affixation with -*Iyo* (66a). For -*EcE*, judgments were more mixed, with most speakers finding these forms degraded or at least heavily dialectal (66b):

(66) a. gid-**iyo** ve gör-**üyo**-z
 come-**PROG** and see-**PROG**-1PL
 'we are coming and seeing'

b. */?gel-**ece** ve gid-**ece**-niz
 come-**FUT** and leave-**FUT**-2PL
 'you (pl.) will come and leave'

The same results hold if the suspended string contains not only an agreement morpheme but other material as well (67) (see Kabak, 2007):

(67) a. koş-**uyo** ve oyn-**uyo**-muş-sun
 run-**PROG** and play-**PROG**-EVID-2SG
 'you (sg.) are apparently running and playing'

b. */?gel-**ece** ve gid-**ece**-se-m
 come-**FUT** and leave-**FUT**-COND-1SG
 'if I will come and leave'

Note also that TAM$_z$ and TAM$_{rz}$ morphemes can be mixed for the purposes of suspended affixation (68):

(68) a. gid-**iyo** ve gel-**iyor**-um
 go-**PROG** and come-**PROG**-1SG
 root-**TAM$_{rz}$** CONJ root-**TAM$_z$**-Agr$_z$
 'I am going and coming'

b. gid-**ecek** ve gel-**ece**-m
 go-**FUT** and come-**FUT**-1SG
 root-**TAM$_z$** CONJ root-**TAM$_{rz}$**-Agr$_{rz}$
 'I will go and come'

 Overall, to the extent that the contrast between TAM$_k$ and TAM$_z$ morphemes with respect to suspended affixation is real, the TAM$_{rz}$ morpheme *-Iyo* patterns with TAM$_z$, while the behavior of *-EcE* is arguably again obscured by the confounds discussed below in Appendix B. This indicates that suspended affixation is sensitive to the morphosyntactic features of the TAM morpheme, similar to the diagnostics involving *değil*, *-DIr* and participial modifiers. However, the factors licensing suspended affixation are more complex and variable; in particular, syllabicity of the suspended morpheme might play a role for some speakers. While the data are thus fully compatible with the present proposal, they present a number of additional complications which are beyond the scope of this paper.

Appendix B: The future TAM$_{rz}$ morpheme *-EcE*

I have noted two oddities surrounding the future TAM$_{rz}$ marker *-EcE* which are still to be accounted for. First, speakers often only accept verbs containing *-EcE* if its second vowel is realized as long or, more rarely, only if it is short. This variation shows no clear categorical pattern, judgments are often gradient, and it is not uncommon for speakers to differ from each other in their intuitions and also for a single speaker to accept either variant. Secondly, *-EcE* cannot surface word-finally with null 3SG agreement, which, I have argued, also makes it unable to appear before *değil*, *-DIr* and in participial modifiers.

 Both restrictions arguably relate to a phenomenon in Turkish phonology known as the k-to-zero alternation, which deletes or softens morpheme-final [k] under certain circumstances (e.g., Denwood, 2002; Ünal-Logacev et al., 2019; Zimmer and Orgun, 1999). The output of this alternation is commonly referred to as *soft 'g'* and transcribed orthographically as ğ. Prima facie, it might thus appear that *-EcE* is simply the output of the future TAM$_z$ morpheme *-EcEk* undergoing the regular k-to-zero alternation and not an independent morpheme. Since one of the ways in which soft 'g' is realized is by changing the length of the preceding vowel, this might account for the vowel length variation observed. Moreover, the fact that *-EcE* cannot surface word-finally could fall out from the alternation not applying in these contexts.

 While this view is compelling, it also faces issues, at least for theories which assume a strict ordering of morphology and phonology. Recall that *-EcE* but not *-EcEk* can be followed by Agr$_{rz}$ morphemes, which are not themselves the result of a regular phonological rule but must be regarded as independently stored lexical items, as argued at the beginning of Section 3. Under the view that allomorphy selection precedes phonological operations, this could not be accounted for. Similarly, we have seen that *-EcE* and *-EcEk* induce a different ordering of the question marker *-mI*. This would also be a puzzling result, assuming that affix ordering is determined before phonology. In a nutshell, if the choice between *-EcE* and *-EcEk* has undeniably morphological consequences – which it does –, and if morphology precedes phonology, then the choice between *-EcE* and *-EcEk* cannot be a matter of phonology even if it looks just like an attested phonological alternation.

In response, and in keeping with the overall gist of this paper, I propose that -*EcE* does have its roots in the k-to-zero alternation applying to -*EcEk* and that this still affects the environments in which it can appear and the length of its vowel, but that the output of this alternation has been morphologized in diachronic development and now constitutes an independent lexical item, formed in analogy to TAM$_k$ morphemes which equally end on a vowel. As a result, the choice between -*EcEk* and -*EcE* can affect allomorphy and affix ordering, but -*EcE* continues to be limited to certain contexts and to vary with respect to vowel length. If this account is on the right track, it clearly raises at least as many questions as it answers, and this paper is not the place to pursue them further. Investigating more in detail the distribution of -*EcE* and -*EcEk* in the verbal domain, including the factors conditioning vowel length, would be a worthwhile task for a phonologist to tackle. For our purposes, I do not see that the status of -*EcE*, regardless of how it is analyzed, could undermine the main claim of this paper that the distinction between simple and participial tenses is being levelled and that hybrid forms have emerged.

Appendix C: Güneş (2021)

Much of the data discussed in the present paper is taken from previous work by Güneş (2021), which has made a number of important empirical contributions. In the following, I outline why I have nevertheless not adopted her theoretical proposal and instead developed an alternative approach. Besides providing an analysis of Turkish TAM and agreement morphemes, Güneş also aims to give a principled account of two of Kornfilt's diagnostics, namely, stress assignment and the placement of the question marker -*mI*. In addition, her paper is also concerned with the variable ordering of affixes, an additional complexity of Turkish which this paper has steered away from. If the verb contains more than one TAM morpheme, it is possible for any of them to be followed by agreement (69a)–(69b) or, as first documented in Güneş's work, even for all of them simultaneously (69c), without any systematic semantic differences:

(69)   a.   gel-ece-di-**k**
          come-FUT-PAST-**1PL**
          'we will have come'
      b.   gel-ece-**z**-di
          come-FUT-**1PL**-PAST
      c.   gel-ece-**z**-di-**k**
          come-FUT-**1PL**-PAST-**1PL**

Note that the paradigm of the agreement morpheme is always determined by the preceding TAM morpheme, regardless of its position: past -*DI* is followed by the *k*-, future -*EcE* by the reduced *z*-paradigm. In the following, I sketch out Güneş's proposal and show that it does not seem to account for the full set of facts.

Güneş's work is couched in a standard DM architecture. Following Embick (1997), the agreement morpheme is treated as a dissociated morpheme which is inserted before spell-out but after syntax proper and thus has no semantic effects. Güneş proposes that in Turkish, this dissociated Agr morpheme can adjoin to every TAM head (70). If the verbal domain contains more than one TAM head, a copular *v* is inserted in between. This copula is realized as -*y* in certain contexts and will not concern us in the following.

(70)
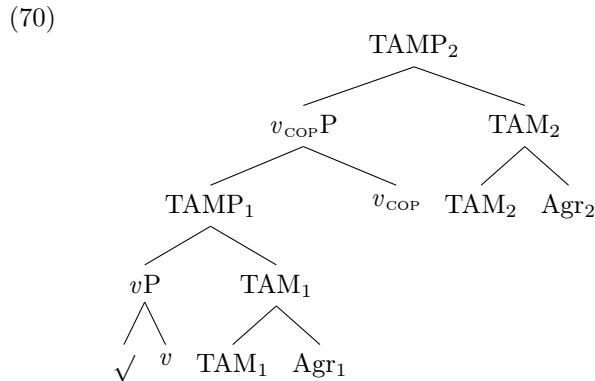
This structure will be linearized as root-TAM-Agr-TAM-Agr, ignoring potential spell-outs of v_{COP}. Note that (70) is merely the base-generated structure which, according to Güneş, then undergoes head movement. I will discuss this aspect of the proposal later.

The tree in (70) is mapped onto PF in accordance with Vocabulary Insertion rules. Agr_k and Agr_{rz} morphemes spell out person and number features on Agr in the context of certain TAM features. By way of example, (71) gives the Vocabulary Insertion rules for the 1PL Agr_k and Agr_{rz} morphemes -k and -z:

(71)   a. $[+\text{PL}, +1, -2] \leftrightarrow$ -k/$\{+\text{PAST}, +\text{COND}\}$_
         b. $[+\text{PL}, +1, -2] \leftrightarrow$ -z/$\{+\text{FUT}, +\text{PROG}\}$_   (Güneş (2021):165)

In a similar vein, the 3PL morpheme -lEr spells out 3PL features on Agr but is not limited to a specific morphosyntactic environment, thus surfacing regardless of the preceding TAM morpheme (72):

(72) $[+\text{PL}, -1, -2] \leftrightarrow$ -lEr (Güneş (2021):165)

This derives the fact that -lEr is syncretic between all three paradigms.

While Agr_k and Agr_{rz} as well as 3PL -lEr thus simply realize person/number features on the Agr head, Agr_z morphemes receive a different treatment. Güneş argues that the latter spell out a larger syntactic structure consisting of v_{COP}, $\text{T}_{[\text{PRES}]}$ and Agr, as seen in (73).

(73)
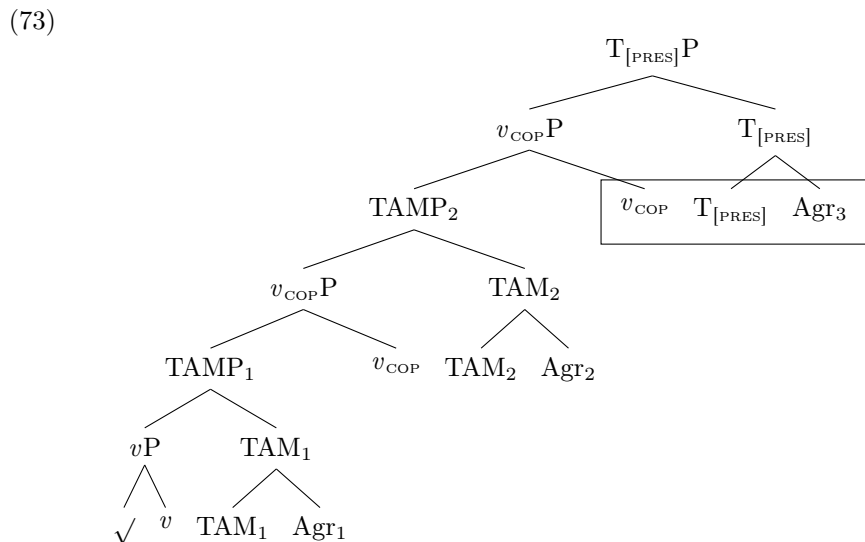
This structure contains only two overt and semantically active TAM heads, TAM_1 and TAM_2. The bracketed sequence of heads – $\text{T}_{[\text{PRES}]}$, v_{COP} and Agr_3 – is spelled out as an Agr_z morpheme. By way of example, the Vocabulary Insertion rule for the 1PL Agr_z morpheme -Iz is given in (74):

(74) $[v_{\text{COP}}, \text{T}_{[\text{PRES}]}, +\text{PL}, +1, -2] \leftrightarrow$ -Iz (Güneş (2021):165)

To summarize, Agr_k and Agr_{rz} correspond syntactically to a simple Agr head, whereas Agr_z morphemes are underlyingly more complex and realize a larger syntactic structure.

So far, the proposal would make two false predictions. First, in (73), it should be possible for both Agr_2 and the structure consisting of v_{COP}, $\text{T}_{[\text{PRES}]}$ and Agr_3 to be spelled out simultaneously. Thus, we would expect forms such as (76) to be licensed, in which the TAM morpheme -DI is followed by the Agr_k morpheme -nIz – realizing the Agr head directly adjoining to TAM -DI – and with an additional v_{COP}-$\text{T}_{[\text{PRES}]}$-Agr sequence built on top which is spelled out as Agr_z (75):

(75)
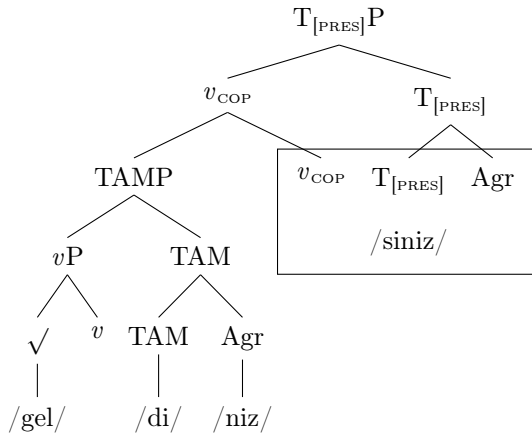
(76) *gel-di-**niz-siniz**
come-PAST-2PL-2PL
root-TAM$_k$-**Agr$_k$-Agr$_z$**
'you (pl.) came'

$$T_{[\text{PRES}]}P$$

v_{COP} $T_{[\text{PRES}]}$

TAMP v_{COP} $T_{[\text{PRES}]}$ Agr
                        /siniz/

vP   TAM

√ v TAM   Agr

/gel/   /di/   /niz/

This is contrary to fact: it is never possible for two agreement morphemes to surface adjacent to each other. Therefore, Güneş appeals to a constraint blocking the realization of two consecutive morphemes with the same featural content (see Kornfilt, 1986; Richards, 2001). Since spell-out is assumed to proceed bottom-up, only the inner agreement morpheme – -*nIz* in (76) – will be realized; Agr$_z$ cannot surface.

Secondly, the Vocabulary Insertion rules for Agr$_{rz}$ in (71b), repeated below as (77), make reference exclusively to morphosyntactic, not to (morpho-)phonological features:

(77) $[+\text{PL}, +1, -2] \leftrightarrow \text{-}z/\{+\text{FUT}, +\text{PROG}\}\_$

As a result, it is currently wrongly predicted that Agr$_{rz}$ should be able to follow the TAM$_z$ morphemes -*Iyor* (PROG) and -*EcEk* (FUT) (78):

(78)   a. *gel-**ecek-z**   b. *gel-**iyor-z**
           come-PROG-1PL   come-PROG-1PL
           root-**TAM$_z$-Agr$_{rz}$**   root-**TAM$_z$-Agr$_{rz}$**
           'we are coming'   'we will come'

To rule out (78), Güneş argues that person/number features other than 3PL are always realized as null when following a consonant, as exemplified in (79) for 1PL:

(79) $[+\text{PL}, +1, -2] \leftrightarrow \emptyset/\text{C}\_$ (Güneş (2021):165)

This blocks Agr$_{rz}$ from surfacing after the TAM$_z$ morphemes -*Iyor* and -*EcEk* as in (78). Instead, in these contexts, agreement will be realized as Agr$_z$.

Overall, the gist of Güneş's proposal is that Agr$_z$ does not itself have any conditions on insertion, as can be verified in (74). Rather, it is simply the default which kicks in when no other agreement morpheme can surface. After TAM$_k$ and TAM$_{rz}$, agreement can be realized as Agr$_k$ and Agr$_{rz}$, respectively. Agr$_z$ cannot be added on top due to the constraint against two adjacent morphemes with the same featural content. After TAM$_z$, on the other hand, neither Agr$_k$ nor Agr$_{rz}$ can surface, leading to agreement being instead realized as Agr$_z$.

It is precisely this default status of Agr$_z$ which leads to problems for the analysis. As established in Section 2, Agr$_z$ morphemes are able to follow TAM$_{rz}$ morphemes as in (80) as long as independent confounds are controlled for:

(80)   oyn-**uyo-sunuz**
        play-PROG-2PL
        root-**TAM$_{rz}$-Agr$_z$**
        'you (pl.) are playing'

Under Güneş's account, however, progressive -*Iyo* would need to be followed by Agr_{rz} -*nIz*, thereby blocking the Agr_z morpheme -*sInIz* from surfacing. To derive forms such as (80), one would have to loosen the restriction that if two agreement morpheme would surface adjacent to each other, only the lower one is spelled out. It would need to also be possible for only the higher agreement morpheme, -*sInIz* in (80), to be realized. However, once this is permitted, nothing prevents Agr_z from surfacing after TAM_k either, which thus predicts ungrammatical forms such as (81) to be licensed:

(81)   *gel-**di-siniz**
        come-PAST-2PL
        root-**TAM$_k$-Agr$_z$**
        'you (pl.) came'

In a nutshell, this problem stems from the fact that Güneş assumes Agr_z to be the default agreement morpheme insensitive to the preceding TAM morpheme. However, Agr_z can surface after progressive and future TAM_{rz} morphemes, but not after past and conditional TAM_k morphemes. It is not clear how this tension could be resolved.

What is more, the Agr_z-as-default analysis relies on the idea that every TAM head must be followed by an agreement morpheme such that if and only if Agr_k and Agr_{rz} are blocked, Agr_z is inserted. However, if the verb contains more than one TAM morpheme, agreement does not have to follow all of them (82):

(82)   a.   gel-ece-di-**k**
              come-FUT-PAST-**1PL**
              'we will have come'
        b.   gel-ece-**z**-di
              come-FUT-**1PL**-PAST
        c.   gel-ece-**z**-di-**k**
              come-FUT-**1PL**-PAST-**1PL**

In (82b), the final TAM_k morpheme -*DI* is not followed by an Agr_k morpheme, raising the question why Agr_z does not, and cannot, surface instead. Note that Güneş does not address the question of why some TAM morphemes are not followed by agreement, that is, what allows the agreement morpheme after -*EcE* in (82a) or after -*DI* in (82b) to be absent or silent. For our purposes, the problem here is not so much that this fails to actually generate the different orderings in (82). The problem rather concerns Güneş's analysis of Agr_z: if Agr_z was always licensed in the absence of any other agreement morpheme, it should be able to occur in every context since, as seen in (82), Agr_k and Agr_{rz} can always be missing as long as agreement is realized elsewhere on the verb.

To give an intermediate summary, the analysis of Turkish TAM and agreement morphemes proposed by Güneş does not fully account for the distribution of the three paradigms. For completeness' sake, I now additionally outline the three motivations behind positing this analysis in the first place, namely, explaining the ordering of Agr_z, its prosodic properties and the placement of the question marker -*mI*. All three accounts equally face either empirical or theoretical challenges.

The first motivation underlying the analysis is to account for Güneş's claim that unlike Agr_k and Agr_{rz}, Agr_z can only surface word-finally. This falls out from (73) if it is assumed that $\text{T}_{[\text{PRES}]}$ must always be the highest TAM head in the verbal domain. However, in extensive work with informants, I could not replicate this empirical claim. Verbs with medial and double agreement are subject to rampant inter-speaker variation, in that speakers typically find only a few such forms felicitous and different speakers accept different forms. The z-paradigm is not necessarily confined to final position; for instance, one of my informants accepted 5 out of 6 medial agreement forms with Agr_z which they were presented, another 6 out of 10, and yet another 7 out of 8. No necessary or sufficient conditions on the acceptability of medial and double agreement emerged, not even for individual informants, with the well-known exception that 3PL agreement is categorically grammatical in non-final position for all speakers. Overall, Turkish affix order appears to be subject to a wide range of gradient and variable factors which the present paper cannot investigate; it is not, however, determined in a categorical fashion by the paradigm of the agreement morpheme. This undermines the first motivation behind Güneş's proposal that Agr_z is more than a mere agreement morpheme but spells out a larger structure.

Secondly, Güneş's proposal aims to explain the different prosodic properties of the different paradigms. Recall that Agr_z morphemes are obligatorily prestressing (83), but Agr_k and Agr_{rz} morphemes – if syllabic – only optionally prestressing (84):

(83) a. gel-**iyór**-sunuz
          come-PROG-2PL
          root-TAM$_z$-Agr$_z$
          'you (pl.) are coming'
      b. *gel-iyor-**sunúz**

(84) a. gel-**iyó**-nuz
          come-PROG-2PL
          root-TAM$_{rz}$-Agr$_{rz}$
          'you (pl.) are coming'
      b. gel-iyo-**núz**

Güneş assumes that stress in Turkish must be located on the final syllable of a prosodic word. Furthermore, she adopts Selkirk's (2011) MATCH rule which requires each M(orphological)-word – that is, each (complex) head – to map onto a prosodic word ω (85):

(85) MATCH M-WORD TO ω
      Match each M-word in the morphosyntactic representation with a ω in the prosodic representation.

To derive the correct syntax-prosody mapping for Turkish, Güneş relies on postsyntactic lowering of TAM heads onto v or v_{COP} and argues that this movement can target constituents of different sizes, thereby deriving different possible stress patterns.
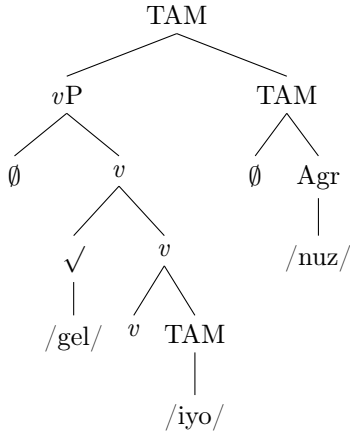
I now first demonstrate this analysis for examples such as *gel-iyo-nuz* (83), which are only optionally prestressing. The basic pre-movement structure is given in (86). To derive the non-prestressing form *gel-iyo-núz*, Güneş argues that the complex TAM head undergoes lowering to v, resulting in (87). In addition, the root equally head-moves and adjoins to v.

(86)

(87)
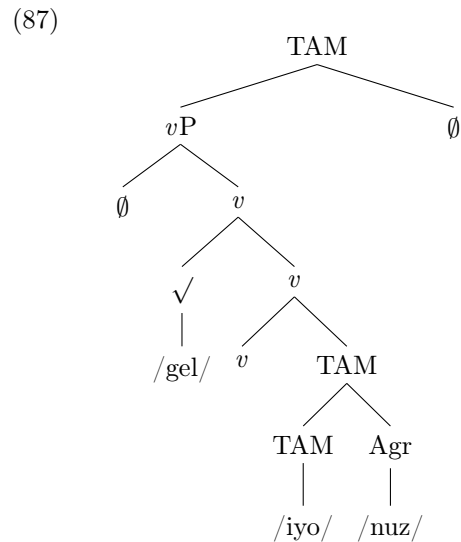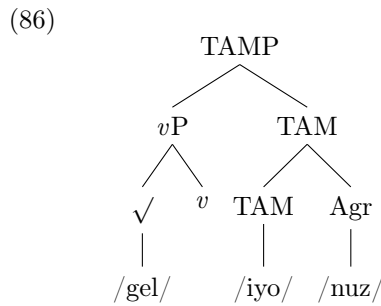
As the result of moving the TAM head containing Agr, all three morphemes – root *gel*, TAM *-iyo* and Agr *-nuz* – form part of a single complex head and thus are mapped onto a single prosodic word bearing final stress.

In contrast, the prestressed version, *gel-iyó-nuz*, is derived by applying head movement not to the complex TAM head as a whole but only to the lower TAM head, stranding the Agr head adjoined to it in the higher position (88):
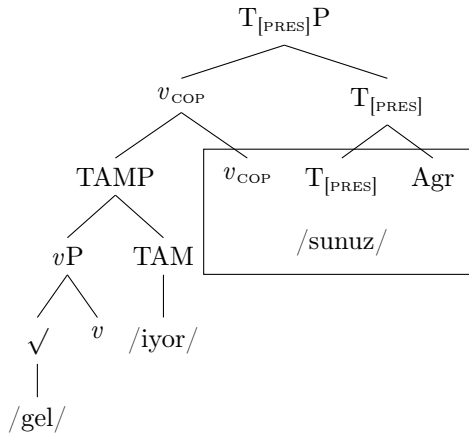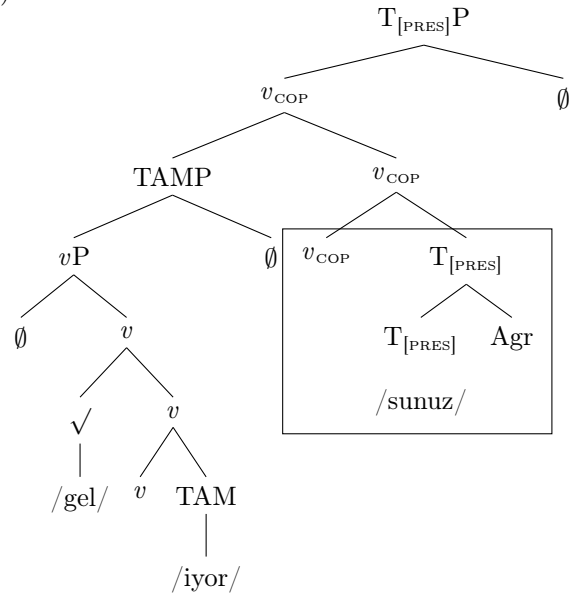
(88)

```
                    TAM
          ┌──────────┴──────────┐
         vP                    TAM
      ┌───┴───┐            ┌────┴────┐
      ∅       v           ∅        Agr
           ┌──┴──┐                  │
           √     v                /nuz/
           │  ┌──┴──┐
         /gel/ v   TAM
                    │
                  /iyo/
```

In this structure, Agr is not part of the complex head containing the root and TAM. Thus, *gel-iyo* and *-nuz* are mapped onto two distinct prosodic words. This enforces stress on the final syllable of the first prosodic word, giving rise to the prestressed form *gel-iyó-nuz*.[13] In sum, the two distinct stress patterns of *gel-iyo-nuz* correspond to two distinct underlying structures, with differently sized complex heads created by lowering.

We can now turn to obligatorily prestressing verbs such as *gel-iyor-sunuz* (83). The tree in (89) shows the basic structure of *gel-iyor-sunuz* before head movement; note again that the entire complex consisting of v_{COP}, $T_{[\text{PRES}]}$ and Agr is mapped onto the Agr_z morpheme *-sInIz*. In (90), the lower TAM head spelled out as *-Iyor* is then lowered onto v, and the higher $T_{[\text{PRES}]}$ head together with Agr onto v_{COP}. Again, the root also head-moves to v.

(89)

```
                       T_[PRES]P
              ┌────────────┴────────────┐
           v_COP                      T_[PRES]
        ┌────┴────┐            ┌──────────┴──────────┐
      TAMP        │          ┌─────────────────────────┐
    ┌───┴───┐     │          │ v_COP  T_[PRES]   Agr    │
   vP       TAM   │          │                          │
 ┌──┴──┐     │    │          │        /sunuz/           │
 √     v  /iyor/  │          └─────────────────────────┘
 │     │
/gel/
```

(90)

```
                          T_[PRES]P
                 ┌────────────┴────────────┐
              v_COP                         ∅
         ┌──────┴──────┐
       TAMP          v_COP
    ┌────┴────┐   ┌────┴──────────────────┐
   vP        ∅    │ v_COP      T_[PRES]    │
 ┌──┴──┐          │         ┌──────┴────┐  │
 ∅     v          │      T_[PRES]      Agr │
    ┌──┴──┐       │                        │
    √     v       │       /sunuz/          │
    │  ┌──┴──┐    └────────────────────────┘
  /gel/ v   TAM
             │
           /iyor/
```

The resulting structure is one in which *gel-iyor* and *-sunuz* form two distinct complex heads which must be mapped, according to the MATCH role, onto two distinct prosodic word. Therefore, stress is placed on the final syllable of the first prosodic word, *gel-iyór*. This derives the prestressing properties of Agr_z *-sInIz*. In a nutshell, lowering TAM and Agr heads onto v – but not further – simply implements Kabak and Vogel's

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[13]This leaves the question open why the second prosodic word, *-nIz*, does not also receive final stress. We might simply assume that an independent constraint prevents the verbal domain from bearing more than one primary stress.

(2001) claim that what makes Agr_z prestressing is that it must be preceded by a silent copula which induces a prosodic boundary.

Partial lowering, as seen above in (88), can also apply in forms containing Agr_z morphemes such as (89). However, due to the presence of v_{COP}, such verbs already necessarily contain two prosodic words, and the verbal domain can be mapped onto two prosodic words at most, which Güneş attributes to a BINARITY MAXIMAL constraint (see e.g., Itô and Mester, 1992; Mester, 1994; Selkirk, 2000). Hence, in the case of Agr_z, partial lowering applies vacuously.

This analysis is intriguing but raises some general architectural concerns. The novel contribution that Güneş makes here is to derive the prosodic variation with Agr_k and Agr_{rz} – e.g., between *gel-iyó-nuz* and *gel-iyo-núz* – from an underlying syntactic variation by using head movement. This makes it possible to maintain a strict mapping between syntax and prosody, but it comes at the price of allowing a partial lowering operation into the grammar. Partial lowering is the downwards equivalent of what is known as excorporation, that is, movement out of complex heads, which a long line of research in syntax has argued to be banned (e.g., Matushansky, 2006, among many others). Given how consistently excorporation is ruled out across languages, it is doubtful that partial lowering should be available.

The final goal of Güneş's analysis is to explain the placement of the question marker -*mI*. As outlined above, the morpheme -*mI* can precede Agr_z (91) but must follow Agr_k and Agr_{rz} (92):

(91)   a.   gel-ecek-**mi**-siniz
             come-FUT-**Q**-2pl
             root-TAM_z-Q-Agr_z
             'will you (pl.) come?'
   b.   %gel-ecek-siniz-**mi**

(92)   a.   gel-di-niz-**mi**
             come-PAST-1PL-**Q**
             root-TAM_k-Agr_k-Q
             'did we come?'
   b.   *gel-di-**mi**-niz

To rule out (91b), Güneş argues – in line with previous research (Kornfilt, 1996; Newell, 2008; Sezer, 2001) – that the Q morpheme can only adjoin to vP but not to v_{COP}P, or in other words, that it must adjoin to the lowest vP in a verbal domain. Under Güneş's analysis, this will result in -*mI* surfacing to the left of Agr_z, as can be verified in (90). Secondly, to derive the impossibility of (92b), Güneş argues that this would require Agr to adjoin to Q as in (93), but that Agr can in fact only adjoin to TAM. However, even if this is correct, it is not clear what prevents -*mI* from preceding Agr_k or Agr_{rz} morphemes if those are stranded under TAM due to partial lowering:

(93)

(94)
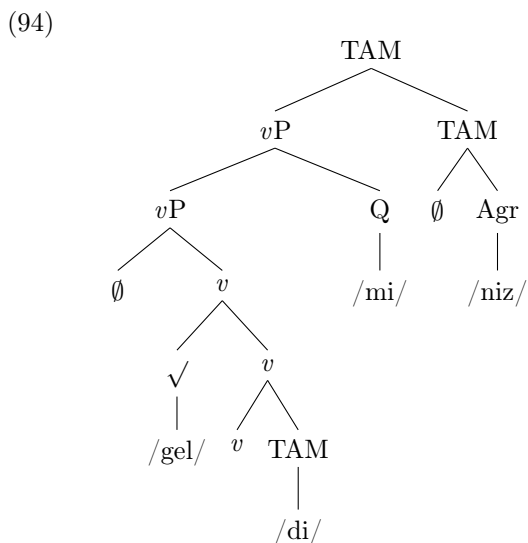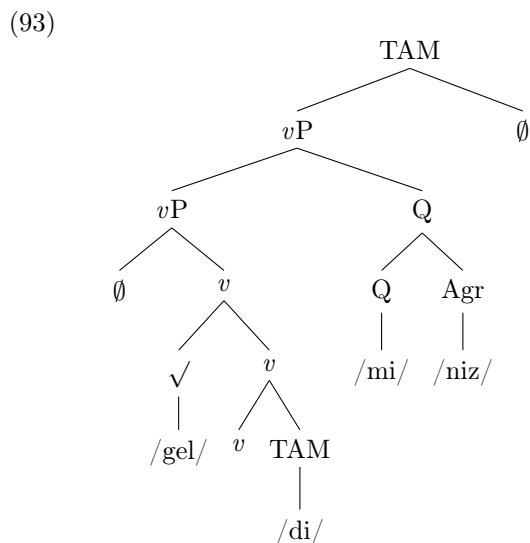
Thus, Güneş's account of the placement of -*mI* is not without problems either.

To summarize, Güneş's work makes important empirical contributions: it is the first to document the existence of double agreement forms in which several TAM morphemes are followed by agreement and also

provides a much more detailed account of TAM_{rz} and Agr_{rz} morphemes than previously available. The analysis developed, which aims to derive a broad range of observations about the three agreement paradigms from an underlying syntactic difference, is ambitious and interesting; however, I have argued that it faces several empirical and theoretical challenges.