# Lexical borrowing targets spans

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# Lexical Borrowing Targets Spans

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**Abstract:** In this study, I revisit the claim that nominals denoting complex events must derive from discernible verbal stems and must be headed by an overt nominalizer. I show that Turkish has a set of nominals, crucially of foreign origin, which provides counter-evidence to both claims. From the perspective of Turkish grammar, they are morphologically noncompositional, manifesting neither a detectable verbal basis nor an overt nominalizer although they are categorically complex event nominals. Since (zero-)derived nominals of Turkic origin do not allow argument structure, the puzzling makeup of underived complex event nominals in question boils down to their loan word nature. I show that their behavior is different from both derived nominals as well as gerundive nominals in important ways. I claim that they are defective nominalizations lacking an *n*P representation. After reviewing previous accounts of these nominals, I consider three syntactic approaches to word derivation, which differ in their theoretical assumptions only in granularity, and conclude that the Spanning approach of Bye and Svenonius provides us with a conceptually superior account.

**Keywords:** nominalization; events; loanword morphology; spans



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## 1. Introduction

It has long been observed that nominals denoting complex events derive from verbal stems (see Zucchi 1989; Grimshaw 1990; Alexiadou 2001; Borer 2003; Harley 2009; among others). Accordingly, in order for a nominal to have an argument structure, it must inherit such structure from a verbal source. After all, verbs contrast with nouns primarily in the presence of an argument structure as they are "quintessential predicates" (Baker 2003, p. 23). Several researchers have either noted (Smith 1972; Grimshaw 1990; Alexiadou and Grimshaw 2008) or claimed (Borer 2009a, 2009b, 2012) that the morphological marking of the nominalization in complex event nominals is always overt while others have shown that it is not necessarily so (Alexiadou 2008; Fábregas 2014; Harley 2009; Newmeyer 2009; Lieber 2016). In this study, I present data from Turkish that supports the latter view. In this language, there is a set of underived nominals, too large to be dismissed as accidental, which patterns with complex event nominals in their eventive semantics as well as syntactic structure despite their simple morphological makeup. Strikingly, these nominals are unambiguously of foreign origin. Zero-derived nominals of Turkic origin as well as nominals deriving directly from Turkic verbal roots, to the contrary, do not denote complex events or host arguments. I conclude that the obligatory presence of morphological marking in nominalizations with argument structure is therefore not a universal, and languages can well lexicalize structures in a variety of ways, including the ways in which morphologically simple units of meaning lexicalize a span of syntactic structure. Because the nominalizations in question in this study are all words of foreign origin, the proposal has implications for loan word syntax such that targets of borrowing are not necessarily $X^0$s, and can well be spans of structure.

The scope of this study is limited to borrowed eventive nominals in Turkish, which originate in Arabic. Borrowing words of Arabic origin began in the 11th century at the time when speakers of Middle Turkic (11th–15th century Oghuz Turkic) underwent Islamization.

Initially, those words of Arabic came to Turkish through Persian, not only because they were from the Koran or theology but also because they were already part of Persian, which became the lingua franca and the official language of the Seljuks, pre-Ottoman Turkic people of Anatolia (Lewis 1999). The influence continued during the Ottoman era, resulting in what has been known as the Ottoman language, a high register used by the Ottoman elite, which significantly differed from Turkish spoken by Turkic people of Anatolia at the time. However, a great number of these now Ottoman words and uses made it to modern Turkish, which is why the the early years of the Republic of Turkey saw a number of attempts to 'purify' the Turkish language as part of the movement to build a new nation-state. For example, the Turkish Language Institute founded in 1932 initiated a massive project to rid Turkish of Arabic words either by revitalizing Turkic words then out of use or by simply making up new ones using Turkic stems (see (Lewis 1999) for an extensive review). Despite these efforts, a substantial number of words of Arabic origin remained in everyday use. This study focuses on a subset of these words, which denote complex events. Despite their complex syntactic structure, they are morphologically bare from the perspective of Turkish grammar. For example, neither the Arabic root √d'w nor the verbal stem da'aa 'invite' is relevant to the grammar of the Turkish speaker who uses the verbal noun *davet* 'invitation, inviting' on a daily basis.

Morphologically simple but structurally complex nominals are not unique to Turkish. For instance, (Harley 2009) discusses several bare nominals in English, such as *murder* as in the following example, which denotes an event and has an internal argument.

(1) The frequent murder of the judicial officials

Harley notes that such simple-looking event nominals always have verbal counterparts in English (e.g., *murder* (n.) vs. *murder* (v.); *repair* (n.) vs. *repair* (v.), etc.). She concludes that they must be headed by a phonologically null nominalizer. According to an observation, originally found in Zucchi (1989), all complex event nominals derive from verbs, and therefore, the directionality of the derivation, for instance in *murder*, must be from verb→noun and not the other way around. Zero lexicalizations are allowed in some frameworks such as Distributed Morphology (Halle and Marantz 1993, 1994; Harley and Noyer 1999). Perhaps uncoincidentally, English zero-derived nominals that have an argument structure also have origins in another language, Latin or French (see Smith 1972), cited in (Alexiadou 2008; Harley 2009).

As mentioned above with respect to the nominal *davet* 'inviting' Turkish underived nominals in question derive from verbs in their respective source language, Arabic, but such derivations have no formal status in Turkish. And despite this fact, they have argument structure properties, analogous to *murder* (n.) and *repair* (n.) in English. Below are two examples with nominals that originate in Arabic, highlighted in bold, which can equally be translated as 'invitation' or 'inviting', and 'occupation' or 'occupying,' respectively.

(2) müdür-ün veli-ler-i tören-e **davet**-i
principal-GEN parent-PL-ACC ceremony-DAT invitation-3.POSS
'the principal's invitation of / inviting the parents to the ceremony'

(3) birlik-ler-in bölge-yi **işgal**-i
troop-PL-GEN territory-ACC occupation-3.POSS
'the troops' occupation of / occupying the territory '

In (2) and (3), the internal arguments are overtly accusative-marked (assuming they are referring to a specific group of parents and a specific territory, respectively) while the external arguments are genitive-marked. Both the accusative and the genitive have been shown to be structural cases in Turkish (Kornfilt 2003). The nominals in question, *davet* and *işgal*, are therefore ideal candidates for being categorized as "complex event nominals," as coined by Grimshaw (1990).

Not all underived complex event nominals with foreign origin have Turkic equivalents in modern Turkish, but some of them do. Such Turkic equivalents, nevertheless, cannot

derive complex event nominals as their borrowed counterparts do. For example, replacing *davet* with its closest Turkic synonym *çağrı* 'invitation, call' renders the example in (4) ungrammatical. Although this nominal with a Turkic origin derives from a verbal stem *çağır-* 'invite, call (v.),' it does not allow arguments. Nominalizations with native origins are only acceptable when headed by a gerundive, such as *-mA*, as shown in (5)[1].

(4) *müdür-ün veli-ler-i tören-e çağrı-sı
principal-GEN parent-PL-ACC ceremony-DAT call-3.POSS
Intended: 'the principal's invitation of/inviting the parents to the ceremony'

(5) müdür-ün veli-ler-i tören-e çağır-ma-sı
principal-GEN parent-PL-ACC ceremony-DAT call-NOM-3.POSS
'the principal's inviting the parents to the ceremony'

The generalization above also holds for zero-derivation (of verb-noun alternations) in Turkish. Although there are only a handful of such nominals, they deserve a mention here. As (6) shows, zero-derived nominals with Turkic origins cannot have an argument structure, supporting (Borer 2009a, 2009b, 2012). This is also in parallel with the observations made in Alexiadou and Grimshaw (2008), who claim that the zero affix attaches directly to roots, and nominals derived in this way do not therefore have any verbal layers. The example in (6) is improved only when the nominal is again headed by the gerundive *-mA*, as shown in (7). This shows that underived complex event nominals of foreign origin are the only set of nominals in Turkish with no identifiable verbal source despite the presence of an argument structure as Alexiadou (2008) and Harley (2009) observed for English.

(6) *müdür-ün duvar-lar-ı boya-sı
principal-GEN wall-PL-ACC paint-3.POSS
Intended: 'the principal's painting the walls'

(7) müdür-ün duvar-lar-ı boya-ma-sı
principal-GEN wall-PL-ACC paint-NOM-3.POSS
'the principal's painting the walls'

To summarize the key points, (i) there are a number of underived complex event nominals of foreign origin in Turkish that have an argument structure, such as *davet* 'inviting, invitation.' I will call these UCENs (underived complex event nominals) in the rest of this paper. (ii) Zero-derived nominals, such as *boya* 'paint (n/v)' cannot host arguments. (iii) Derived nominals, such as *çağrı*, 'call' cannot host arguments, either. (iv) In order for stems of a Turkic origin to host arguments, they must be headed by a gerundive, such as *-mA*. I will call these 'gerundive nominals' following Chomsky (1970), and assume that they are typical complex event nominals with an identifiable verbal source and an overt nominalizer (although they are likely to be nominalizations targeting larger structures than English *-ing* nominals, following Kornfilt and Whitman (2011)), which I come back to in Section 2.

Note that an Arabic verbal noun (*masdar*) may denote both an event and a resulting state. For instance, *binaa'* can mean either the act of 'building,' or the end result, 'a building' (Ryding 2005). Turkish borrowings of Arabic verbal nouns may or may not have both of these denotations. In this study, the focus is only on those nominals that have eventive denotations.

While much of this study is devoted to the event properties of a set of nominals in Turkish, the main goal is to show that portmanteau realization is not an exceptional, unlikely property of languages. On the contrary, it appears that a given monomorphemic word can well lexicalize a complex syntactic structure. The focus in this study is such portmanteau realization, where the complex structure is borrowed together with its lexicalization, which is complex in the donor language but is now reanalyzed as simple in the recipient language.

This paper is structured as follows: In Section 2, I compare UCENs against other types of nominalizations: I show that they differ from (zero-)derived nominals in allowing adverbs, aspectual modification and event control as well as having structural case properties, suggesting that they are true complex event nominals despite bearing neither identifiable verbal sources nor overt nominalizers. I also show that they differ from gerundive nominals at least in two ways: (i) whether they can be complements of quotative and attitude verbs, and (ii) whether they can form synthetic compounds. I conclude that UCENs are defective nominalizations following Iordăchioaia (2020). In Section 3, I review three previous studies that attempt to explain the accusative assigning property of UCENs, two of which fail to address the very robust characteristic of such nominals (Keskin 2009; Sezer 1991): that they are of foreign origin and are in fact complex event nominals in their respective source languages. The third study (Solak 2022) equates UCENs to infinitives. I show that it cannot be the case since they are categorially different and are thus subject to different selectional restrictions. In Section 4, I propose that UCENs in Turkish are portmanteau lexicalizations targeting a span of extended projection. In doing so, I consider three potential realizational accounts: (i) a syntactic account where UCENs are formed through head movement, (ii) a Fusion approach following Siddiqi (2009) where multiple terminal nodes combine into a single X°, and (iii) a *Spanning* approach following (Bye and Svenonius 2012; Svenonius 2012, 2016, 2018), where portmanteau lexicalization is rather the norm than an exception. Although these three accounts share a number of assumptions, such as cyclic Spell-Out and post-syntactic realization of syntactic output, (iii) provides us with the simplest explanation, neither resorting to unmotivated movement operations nor stipulating contiguous null exponents. I take this to mean that *Spanning* provides us with a conceptually superior explanation. In Section 5, I summarize my conclusions.

## 2. Underived Complex Event Nominals in Turkish

If a nominal can assign structural case, then it must denote a complex event or a process as opposed to the outcome or result of such an event (Grimshaw 1990). In this respect, UCENs in Turkish appear to be true complex event nominals. As mentioned in the previous section, they are categorically elements of foreign origin. Their derivational histories in the source language have no formal status in synchronic Turkish: Unless the native speaker has knowledge of the source language, the verbal projection in that language is irrelevant to them. This is especially true for UCENs that are of Arabic origin. The root-and-pattern system in this language makes the verbal stem less salient-as opposed to, for instance, UCENs of French origin - to the Turkish speaker who has no knowledge of Arabic. For example, the markers for nominalization in UCENs of French origin, such as *montaj, sabotaj, kamuflaj* and *organizasyon, restorasyon, koordinasyon* are more salient. I come back to UCENs of French origins in Section 3.1, and show that the proposed analysis can also account for them.

One might argue that the Turkish speaker has unconscious knowledge of some of the Arabic patterns since their morphosyntactic properties as formalized in the source language are regular and preserved as such in Turkish. For instance, nominals like *tahsil* 'collecting, collection' with the $taC_1C_2iC_3$ form, which are derived from transitive verbs in Arabic, always assign accusative in Turkish when used as complex event nominals. However, UCENs of Arabic origin in Turkish are not limited to such forms; consider the following examples:

(8) banka-nın para-yı **iade**-si
bank-GEN money-ACC return-3.POSS
"the bank's compensation of/compensating the money"

(9) uzaylı-lar-ın dünya-yı **istila**-sı
alien-PL-GEN earth-ACC invasion-3.POSS
"aliens' invasion of/invading the earth"

(10) Mehmet'in İstanbul'u **feth**-i
Mehmet-GEN Istanbul-ACC conquest-3.POSS
"Mehmet's conquest of/conquering Istanbul"

(11) insan-oğlu-nun doğa-yı **katl**-i
human-son-GEN nature-ACC murder-3.POSS
"humanity's murder of/killing the nature"

The examples in (8)–(11) show that UCENs of Arabic origin in Turkish come in a variety of templatic forms and the accusative-assigning properties of these nominals with transitive sources are thus unlikely to result from any lexically-specified rule. Note that there are also a number of nominals from Arabic in Turkish that assign dative or ablative case. This study is only concerned with those that have accusative case properties[2].

In Section 2.1, I summarize aspects of UCENs that make them differ from (zero-)derived nominals, which can all be attributed to the presence of argument structure in the former and the lack of it in the latter. In Section 2.2, I discuss two properties of UCENs that make them differ from gerundive nominals also, supporting Iordăchioaia (2020) in that nominals come in a variety of sizes.

### *2.1. UCENs Differ from Derived Nominals*

In the previous section, we have seen that UCENs differ from event-denoting (zero-)derived nominals. In this section, I provide further evidence from (i) adverbial modification, (ii) binomial *each*, (iii) aspectual modification, and (iv) event control that all show that this is indeed the case.

If UCENs do indeed have verbal bases, one would then expect them to allow adverbial modifiers rather than adjectival ones. This is borne out in (12)–(13), where the UCENs allow adverbs as modifiers and not adjectives, and are thus similar to gerundive nominals as in (14).

(12) düşman-ın şehr-i hunhar-*(ca) **istila**-sı
enemy-GEN city-ACC cruel(ly) invasion-3.POSS
"the enemy's cruelly invading the city"

(13) doktor-un hasta-yı *dikkatli/dikkatle **muayene**-si
doctor-GEN patient-ACC careful/carefully examination-3.POSS
"the doctor's carefully examining the patient"
(adapted from Sezer 1991: 43-54)

(14) doktor-un hasta-yı *dikkatli/dikkatle gözlemle-me-si
doctor-GEN patient-ACC careful/carefully observe-NOM-3.POSS
"the doctor's carefully observing the patient"

Derived nominals, on the other hand, show the opposite pattern: they allow adjectives and reject adverbs.

(15) Avrupa Parlamentosun-dan gönülsüz /*gönülsüzce çağrı
European Parliament-DAT halfhearted /halfheartedly call
"a halfhearted call from the European Parliament"

(16) insan-lar-dan cömert /*cömertçe bağış-lar
people-DAT generous /generously donation-PL
"generous donations from people"

(17) uzman-lar-ın önem-li/*önem-le uyarı-sı
expert-PL-GEN important/importantly warning-3.POSS
"experts' important warning/the important warning of the experts"

We have so far seen that UCENs bear properties of complex event nominals: they allow a complex argument structure with a genitive-marked subject and an accusative-marked object, as well as adverbial modification despite their simple morphological makeup. One might ask, are the case-marked arguments really subjects and objects? Since both the genitive and the accusative in Turkish are structural, one would expect so. Further support comes from the compatibility of binomial *each* with UCENs. Binomial *each* (Safir and Stowell 1987) is only possible if a subject relates to an object within a verbal projection as shown by (Bruening 2013), who looks at this phenomenon in the context of various types of nominalizations. In (18), we can see that the complex predicate formed by *istila* 'invading' allows binomial *each*, where the subject *üç uzaylı* 'three aliens' is related to *gezegen* 'planet' such that for each alien there were two planets that they invaded. In the nominalized version in (19), we have the same type of relation showing that such nominalizations are indeed underlyingly verbal.

(18) Üç uzaylı iki-şer gezegen-i **istila** et-ti.
three space two-each planet-ACC invasion do-PST
"Three aliens each invaded two planets."

(19) Üç uzaylı-nın iki-şer gezegen-i **istila**-sı
three space-GEN two-each planet-ACC invasion-3.POSS
"Three aliens' each invading two planets"

It appears that UCENs allow binomial *each* in a quite predictable way. The observation in (19) can be generalized to other UCENs as the examples in (20) and (21) show.

(20) çalışan-lar-ın iki-şer şey-i taleb-i /tarif-i /tercüme-si
employer-PL-GEN two-each thing-ACC request /description /translation
/tasvir-i /tasvib-i
/portrayal /approval-3.POSS
"the employees' requiring/describing/translating/portraying/approving two things each"

(21) devlet-ler-in bir-er bölge-yi işgal-i /istila-sı /ihlak-ı
country-PL-GEN one-each territory-ACC occupation /invasion /acquisition
/feth-i /iade-si
/conquest /return-3.POSS
"the countries' occupying/invading/acquiring/conquering/returning one territory each"

Replacing UCENs with derived nominals in (19–21) would render these constructions ungrammatical; however, derived nominals do not have accusative case marking properties in the first place, and we cannot thus determine whether the presence of binomial *each* contributes to this ungrammaticality or not. Let us consider derived nominals that assign dative case. The examples in (22) show that some of them allow binomial *each* while others do not. On the other hand, (23) shows that the gerundive equivalents allow it across the board.

(22) öğrenci-ler-in iki-şer şey-e $^{?/*}$sevgi-si /$^{?/*}$çözüm-ü
student-PL-GEN two-each thing-DAT love-3.POSS solution-3.POSS
/eleştiri-si /etki-si
criticism-3.POSS influence-3.POSS
"The students' love towards /solution for /criticism of /influence on two things each"

(23) öğrenci-ler-in iki-şer şey-i sev-me-si /çöz-me-si
student-PL-GEN two-each thing-ACC love-NOM-3.POSS solve-NOM-3.POSS
/eleştir-me-si /etkile-me-si
criticize-NOM-3.POSS influence-NOM-3.POSS
"The students' loving /solving /criticizing /influencing two things each"

The behavior of derived nominals under binomial *each* is quite unpredictable. Perhaps, derived nominals come in a variety of underlying representations, some of which are more 'eventive' than others. But, the comparison between (19)–(21) on the one hand, and (22)–(23) on the other reveals that UCENs pattern with gerundive nominals in that they always allow binomial *each* while derived nominals may or may not allow it.

Another piece of evidence that shows that UCENs pattern with gerundives and not derived nominals comes from aspectual modification. And this is even true for derived nominals that are simple events in Grimshaw's categorization (Grimshaw 1990), which denote events, happen in time, but lack an argument structure. They therefore allow predicates such as "lasted for x amount of time" as shown in (24) but do not allow aspectual modifiers such as "in/for two hours" as in (26). UCENs are acceptable in both cases as shown in (25) and (27).

(24) Aktivist-ler-in halk-a çağrı-sı iki ay sür-dü.
activist-PL-GEN people-DAT call-3.POSS two month last-PST
"The activists' call to the people lasted two months."

(25) Düşman-ın bölge-yi işgal-i on yıl sür-dü.
enemy-GEN territory-ACC occupation-3.POSS ten year last-PST
"The enemy's occupation of the territory lasted ten years."

(26) *activist-ler-in halk-a iki ay-dır çağrı-sı
activist-PL-GEN people-DAT two month-ADV call-3.POSS
Intended: "The activists' call to the people for two months."

(27) düşman-ın on yıl-dır bölge-yi işgal-i
enemy-GEN ten year-ADV territory occupation-3.POSS
"the enemy's occupation of the territory for ten years"

We have seen that UCENs host not only internal arguments, but external ones as well. If UCENs do indeed project positions for external arguments, then we would expect them to allow event control, where the genitive-marked subject controls the PRO in the rationale clause. This is borne out in (28), where the only available interpretation is such that the annoyer and the invader are the same: the generals.

(28) general-ler-in Batı-yı kızdır-mak için bölge-yi **işgal**-i
general-PL-GEN West-ACC annoy-INF for territory-ACC occupation-3.POSS
"the generals' occupation of the territory in order to annoy the West"

Event control is not available for derived nominals, but as expected, they are available for gerundive nominals as shown in (29) and (30) respectively.

(29) *gazeteci-nin bakan-ı kızdır-mak için hükûmet-e eleştiri-si
journalist-GEN minister-ACC annoy-INF for government-DAT criticism-3.POSS
Intended: "the journalist's criticism of the government in order to annoy the minister'

(30) gazeteci-nin bakan-ı kızdır-mak için hükûmet-i
journalist-GEN minister-ACC annoy-inf for government-ACC
eleştir-me-si
criticize-NOM-3.POSS
"the journalist's criticizing the government in order to annoy the minister'

If the genitive-marked DP is indeed the subject of the UCEN, then one would expect it to allow agent-oriented modifiers also. (31) shows that this is indeed the case, providing further support for the claim that subjects must be a part of UCEN representation.

(31) birlik-ler-in bölge-yi *hevesli/hevesle **işgal**-i
troop-PL-GEN territory-ACC enthusiastic/enthusiastically occupation-3.POSS
"the troops' occupying the territory enthusiastically"

We have thus seen that UCENs pattern with gerundive nominals and differ from derived nominals in a number of ways. UCENs and gerundive nominals are always complex events. We know this because they both have an argument structure, allow adverbial modification (including agent-oriented modification), binomial *each* and event control, unlike derived nominals, which are at best simple events. In the next subsection, I will show that UCENs differ from gerundive nominals in at least two ways also, suggesting that not all complex events have the same underlying structure.

### *2.2. UCENs Differ from Gerundive Nominals*

UCENs and gerundive nominalizations differ in at least two ways in Turkish: (i) UCENs are not TP nominalizations but gerundive nominalizations are. (ii) Synthetic compounds are available for gerundive nominalizations but not for UCENs. In what follows, I will summarize these two observations.

#### 2.2.1. UCENs Are Not TP Nominalizations

Consider the examples in (32)–(35). In (32), we see a typical UCEN with a subject and an object. In (33)–(35), we see nominalizations headed by Turkic markers, *-mA, -dIK* and *-AcAk*, respectively.

(32) birlik-ler-in bölge-yi **işgal**-i
troop-PL-GEN territory-ACC occupation-3.POSS
"the troops' occupation of the territory"

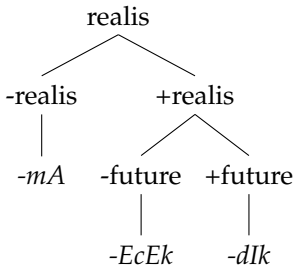
(33) birlik-ler-in bölge-yi al-ma-sı
troop-PL-GEN territory-ACC take-NOM-3.POSS
"the troops' seizing the territory"

(34) birlik-ler-in bölge-yi al-dığ-ı
troop-PL-GEN territory-ACC seize-NOM-3.POSS
"that the troops seize/have seized the territory"

(35) birlik-ler-in bölge-yi al-acağ-ı
troop-PL-GEN territory-ACC seize-NOM-3.POSS
"that the troops will/would seize the territory"

(Kornfilt and Whitman 2011) show that nominalizations like the ones in (33)–(35) fill a typological gap, namely TP nominalization (as opposed to vP nominalization and CP nominalization), which applies to a level higher than a *v*P but lower than a CP. The T head in such constructions in Turkish bear +/−future and +/−realis, resulting in the distribution in (36):

(36)




The TP nominalizations headed by the three nominalizers in (36) can be complements of quotative and attitude verbs. When those nominalizations headed by +realis elements are selected by the verb *söyle-* 'say,' the resulting construction is an indicative. When those headed by the -realis head are selected by such verbs, we have a subjunctive. Below are two examples adapted from (Kornfilt and Whitman 2011, p. 130) that illustrate this difference:

(37) Hasan [uşağ-ın oda-yı temizle-diğ-in]-i söyle-di.
Hasan servant-GEN room-ACC clean-NOM-3.POSS-ACC tell-PST
"Hasan said that the servant cleaned the room."

(38) Hasan [uşağ-ın oda-yı temizle-me-sin]-i söyle-di.
Hasan servant-GEN room-ACC clean-NOM-3.POSS-ACC tell-PST
"Hasan said that the servant should clean the room."

Neither quotative verbs, such as *söyle-* 'say,' nor attitude verbs, such as *dile* 'wish' can select UCENs, suggesting that these complex event nominals do not bear any tense features[3]:

(39) *General birlik-ler-in bölge-yi **işgal**-in-i söyle-di
general troop-PL-GEN territory-ACC occupation-3.POSS-ACC say-PST
/belirt-ti /iddia et-ti /ifade etti
/state-PST /claim do-PST /indication do-PST
Intended: "The general said/stated/claimed/indicated that the troops (should) occupy the territory."

(40) *General birlik-ler-in bölge-yi **işgal**-in-i iste-di
general troop-PL-GEN territory-ACC occupation-3.POSS-ACC want-PST
/san-dı /dile-di /um-du
/think-PST /wish-PST /hope-PST
Intended: "The general wanted/thought/wished/hoped that the troops (should) occupy the territory."

The examples in (39–40) show that UCENs do not bear any tense features, unlike gerundives overtly headed by *-mA*, which according to (Kornfilt and Whitman 2011) must be nominalizations targeting TPs. Although we have seen that regular complex event nominals with an overt nominalizer (gerundives) and UCENs pattern in a number of ways, the distinction as manifested by the above-mentioned contrast indicates that the former is a larger representation involving a TP with −/+realis features while UCENs are not. Since they have verbal properties as we have seen throughout this paper, I will assume in the rest of the current study that they are vP nominalizations. It goes without saying that the syntactic buildup of these nominalizations, nevertheless, lack any detectable morphological boundaries.

#### 2.2.2. UCENs Cannot form Synthetic Compounds

One of the key questions the literature on morphological derivations has dealt with is whether a compound headed by a deverbal noun has the underlying structure in (41) or the one in (42). The former is known as a "primary compound" while the latter type is known as a "synthetic compound" (see Scalise and Bisetto 2009).

(41) [truck [driver]]

(42) [[truck drive]r]

In Turkish, the difference between the two types of nominal compounds is not subtle. Primary compound structures are overtly marked with *-(s)I(n)*, a marker that has been analyzed in various ways, for instance as a possessive marker because it is identical to 3rd person possessive marker (e.g., Dede 1978; Kornfilt 1984; Lewis 1967; Tat 2013; Yükseker 1987), or as a compound linker (e.g., Göksel 2009; Göksel and Haznedar 2007; Kharytonava 2011; Kunduraci 2013; Van Schaaik 2002). Synthetic compounds, on the other hand, lack any compound marking and only allow true internal arguments in the first position (Tat 2013). Consider the following examples:

(43) kamyon sür-ücü(-sü)
truck drive-er-3.POSS
"truck driver"

(44) akşam / uzun mesafe sür-ücü-*(sü)
evening / long distance drive-er-3.POSS
"evening / long distance driver"

(43) shows that when the first noun is potentially an internal argument, the compound marker is not required. This is because it merges with the verb before the agentive nominal head is introduced. Possibly, the compound is also acceptable with a compound marker. This is because our world knowledge can also relate the first noun as a logical object to the second noun. In contrast, the compound in (44) is not acceptable without the compound marker ruling out synthetic compound structures for compounds where the first noun is potentially an argument. (See (Tat 2013) for a DM analysis of primary vs synthetic compounds in Turkish). Now let us consider the following synthetic compounds each headed by a gerundive nominal.

(45) ruh çağır-ma
spirit call-NOM
"evocation"

(46) görüntü onar-ma
image repair-NOM
"image restoration"

(47) fidye iste-me
ransom want-NOM
"ransom demand"

The following examples demonstrate that only the primary compound structure is available in the presence of a head noun which is an UCEN. This is evident from the obligatory compound marking.

(48) ruh davet-*(i)
spirit invite-3.POSS
intended: "evocation"

(49) görüntü tamir-*(i)
image repair-3.POSS
Intended: "image restoration"

(50) fidye taleb-*(i)
ransom demand-3.POSS
Intended: "ransom demand"

Why is it the case that UCENs cannot derive synthetic compounds if they are indeed underlyingly verbal? I will make two assumptions here, one following Borer (2012), and the other following Iordăchioaia (2020).

Borer (2012) compares A(rgument)S(tructure)- nominals (complex event nominals in her terminology) to synthetic compounds. She claims that the following pair of nominals have fundamentally different underlying structure despite having an identical lexicalization, *lifting*.

(51) the lifting of the package

(52) package lifting

Borer (2012) makes three important observations: (i) Only AS-nominals like (51) are obligatorily compositional, and are (ii) grammatical events; (iii) only synthetic compounds like (52) are obligatorily transitive. She claims that these differences are due to structural representation: AS-nominals are much larger structures containing functional layers for argument complex while synthetic compounds lack any such layers. In the former, the

nominal head scopes over an argument structure while in the latter it scopes over the verb only. In other words, the non-head is not a true argument in synthetic compounds. Given this, the synthetic compounds headed by -mA in (45)–(47) and the complex event nominals head by -mA as we have seen in several examples thus far must be structurally different as well. If that is the case, the comparison between (45)–(47) on the one hand, and (48)–(50) on the other, is rather superfluous. -mA headed complex event nominals may be homophonous with certain -mA headed synthetic compounds. Whereas, a UCEN, such as *davet* 'invitation, inviting' does not have a corresponding homophone in the first place.

Another fine-grained distinction between various types of nominalizations is found in Iordăchioaia (2020), who proposes the following two structures for what she calls "full nominalizations" as opposed to "defective nominalizations."

(53) $[_{DP}\ [_{nExtP}\ [_{nP}\ (\ [_{vExtP}\ )\ [_{vP}\ [\sqrt{ROOT}]]]]]]$ FULL NOMINALS

(54) $[_{DP}\ \ \ [_{vExtP}\ \ [_{vP}\ [\sqrt{ROOT}]]]]$ DEFECTIVE NOMINALS

As can be seen in (53) and (54), all nominalizations have a a *v*P and a DP representation. The *v*P layer may or may not have a verbal extended projection in the case of full nominals but it is obligatory in the case of defective nominalizations. This extended projection minimally contains argument structure and possibly other projections (Iordăchioaia 2020, p. 53). We have seen in the previous section that UCENs have argument structure and they also project Aspect.

Full nominals always have an *n*P layer and a nominal extended projection. The latter involves projections for number as well as class/gender, and is subject to much cross-linguistic variation. Iordăchioaia (2020) claims that D must always agree with *n* to value its number and gender features. In the absence of an *n*P, D receives default values. For example, in the case of Spanish default nominals, these would be singular and masculine features. Because full nominals have an *n*P layer, they also give rise to adjectival modification. We have seen that UCENs do not allow adjectives. Thus, we have enough reason to believe that they are defective nominals in the sense of Iordăchioaia (2020). If they lack an *n*P layer, this explains their inability to form compound structure in the first place. Perhaps, this is why UCENs do not have homophonous counterparts that can head synthetic compound structure assuming that compounds are *n*Ps.

### *2.3. Summary*

In this section, I have shown that UCENs come in a variety of templatic forms from Arabic but are monomorphemic from the perspective of Turkish grammar. I have compared them to derived nominals in Section 2.1, and demonstrated that they differ from derived nominals in that they allow adverbial modification, binomial *each*, aspectual markers and event control, which are all properties of complex event nominals. In Section 2.2, I have compared UCENs to gerundive nominals, which are also complex event nominals. The two differ in at least two ways: (i) gerundive nominals are TP nominalizations, whereas UCENs nominalize structures smaller than TPs, and (ii) UCENs do not allow synthetic compound structures while gerundive nominals do. I take the latter difference to be a consequence of the presence or absence of an *n*P layer. I assume that synthetic compounding requires an *n*P in its derivation, and UCENs simply fail to derive synthetic compounds because they lack an *n*P. I will therefore assume in the rest of this study that (i) UCENs involve a *v*P in its representation despite the absence of any detectable verbal stem in their lexicalizations, (ii) UCENs are defective nominals that are derived directly by a D.

In the next section, I summarize previous studies on UCENs before I propose a post-syntcatic analysis of them in Section 4.

## 3. Previous Accounts

The curious nature of UCENs in this paper has been addressed at least in four studies before, (Sezer 1991; Keskin 2009; Solak 2022). This section presents a summary of each.

### *3.1. Sezer (1991)*

(Sezer 1991) discusses the accusative-assigning property of certain UCENs in Turkish and considers the possibility that these nouns (lexically) derive from light verb constructions (compound verbs in his terminology) and thus retain their accusative assigning property. It is not surprising that he considers this possibility because UCENs can derive complex predicates serving as a pre-verbal element selected by the semantically most bleached light verb *et-* 'do.' The bound verbalizer *-lA* is available for stems of both Turkic and foreign origin, but it cannot select UCENs, which can only be verbalized by a light verb[4]. Turkic equivalents of UCENs are typically verbalized by *-lA*. (See Nakipoğlu and Üntak (2008) for a complete list of verbalizers and a lexicon of verbs in Turkish). Table 1 lists some examples:

**Table 1.** Foreign and Turkic deverbal stems in verb formation.

| Foreign Stem w/light verb | Foreign Stem w/-la | Turkic Stem w/light verb | Turkic Stem w/-la | English |
|---|---|---|---|---|
| tasvip et- | *tasviple | *onay et- | onay-la | 'approve' |
| tasvir et- | *tasvirle | *betim et- | betim-le | 'describe |
| tanzim et- | *tanzimle | *düzen et- | düzen-le | 'arrange, organize' |
| tarif et- | *tarifle | *tanım et- | tanım-la | 'define' |
| tahlil et- | *tahlille- | *çözüm et- | çözümle- | 'analyze' |
| hayal et- | *hayalle | *düş et- | düşle- | 'dream, imagine' |
| ifade et- | *ifadele | *açık et- | açıkla | 'state, express' |

Because UCENs reject adjectives and allow adverbs as in (12)–(13) copied here in (55)–(56), Sezer (1991) claims that UCENs cannot be derived nominals, and proposes the derivation in (57).

(55) düşman-ın şehr-i hunhar-*(ca) **istila**-sı
enemy-GEN city-DAT cruel(ly) invasion-3.POSS
"the enemy's cruelly invading the city"

(56) doktor-un hasta-yı *dikkatli/dikkatle **muayene**-si
doctor-GEN patient-DAT careful/carefully examination-3.POSS
"the doctor's carefully examining the patient"
(adapted from (Sezer 1991, pp. 43–54))

(57) $[[\text{istila}]_N \text{ et}]_V + \text{Acc} \rightarrow [[\text{istila}]_N \text{ Ø}]_V + \text{Acc}$
(adapted from (Sezer 1991, p. 54))

According to Sezer, (57) correctly captures the observed facts: Since the category is not changed from V to N, these truncated forms of light verb constructions (LVCs) can assign accusative case and allow adverbial modification. Sezer's analysis captures the verb-like behavior of what is called UCEN in this paper. However, the truncation rule in (57) clearly overgenerates since it cannot apply to all transitive light verb constructions with a pre-verbal element that is categorially a noun. An example in place comes from (Sezer 1991, p. 52, (60)) himself:

(58) Sekreter yazı-yı daktilo et-ti
secretary text-ACC type-writer do-PST
"The secretary typed the text."

(59) *sekreter-in yazı-yı daktilo-su
secretary-GEN text-ACC type-writer-3.POSS
Intended: "the secretary's typing of the text"

For Sezer examples like (55)–(56) are "extremely rare" (1991, p. 52). This implies the presence of accusative-assigning simple nouns in Turkish is accidental. I disagree with

this view simply because UCENs are in fact abundant in Turkish. Nevertheless, the main issue with his proposal in (57) is that it overgenerates: the complex nature of the event as denoted by the pre-verbal elements within the LVCs is not accounted for. Crucially, *istila* is a complex event and *daktilo* is not.

There are at least four other reasons to believe that UCENs do not derive from LVCs. First of all, the fact that UCENs can participate in transitive LVC formation alone is not sufficient to claim that they are underlyingly LVCs. There are a number of LVCs with a pre-verbal element of Arabic origin, which do not have UCEN properties as demonstrated in (60) and (61):

(60) Ali Osman'ı kal-ma-ya razı et-ti
Ali Osman-ACC stay-NOM-DAT content do-PST
"Ali convinced Osman to stay."

(61) *Ali'nin Osman'ı kalma-ya razı-sı
Ali-GEN Osman-ACC stay-NOM-DAT content-3.POSS
Intended: "Ali's convincing Osman to stay"

The second argument against Sezer (1991) comes exactly from the observation that the category of the pre-verbal element in an LVC is relevant. UCENs and their equivalents in LVCs are categorially different: UCENs allow determiners while pre-verbal elements in LVCs do not. Consider the following examples:

(62) (Bu) fare-ler-in köy-ümüz-ü (bu) durmadan (bu)
this mouse-PL-GEN village-1PL.POSS-ACC this constantly this
istila-sı
invasion-3.POSS
"This constant invasion of our village by mice."

(63) (*Bu) fare-ler köy-ümüz-ü (*bu) durmadan (*bu) istila et-ti
this mouse-PL village-1PL.POSS-ACC this constantly this invasion do-PST

Because the UCEN in (62) allows a determiner, it must be a DP-nominalization. I have already claimed that UCENs are DP-nominalizations in Section 2.1. The pre-verbal element in the LVC in (63), on the other hand, does not allow determiners. Therefore, in order for the deletion operation in (57) to work, it must also account for the fact that the remaining structure after the deletion operation is a DP (however reformulated).

If UCENs are indeed DP-nominalizations, then we run into the third problem: implementation of the deletion of the light verb. Radical impoverishment of entire terminals (Halle and Marantz 1993) or obliteration (Arregi and Nevins 2012) is possible in syntactic theories of word formation, but only prior to Vocabulary Insertion and if certain morphotactic filters are at work. For example, Arregi and Nevins (2012) show that some varieties of Basque exhibit the obliteration of the entire ergative agreement in the presence of two adjacent [+participant] features. It is not clear what would trigger the deletion of the verb in our case. What's more, assuming that syntax builds structure cyclically and DPs are cycles, then by the time the verbal head is merged, the DP cycle should no longer be available for any further derivation. So, any feature of this DP that could potentially trigger the deletion of the verb in the next phase would no longer be accessible in the first place.

The fourth and final argument against Sezer (1991) comes from a crosslinguistic observation: It has been observed that verbalization is limited compared to nominalization across languages (Alexiadou 2017; Baker 2000, 2003). For our purposes, consider the constraint in (64), which rules out, for instance, cases like (65):

(64) *[vP [DP. . . ]

(65) *[this material]-ize

Since UCENs are DPs, they cannot further get verbalized if the rule in (64) is to be extended to Turkish verbalization. We have seen in Table 1 that they can only get verbalized by a light verb. Perhaps, the DP status of UCENs explains the reason why they reject standard verbalization headed by one of the many potential verbalizing morphemes in the first place. However, in order for the derivation to continue and another phase gets derived cyclically, the light verb *et-* 'do' is inserted, analogous to English *do*-insertion so that there is a morphological host for the TAM markers.

I conclude that the preverbal elements in LVCs and UCENs I focus on in this manuscript must have distinct grammatical categories. While our focus here has been UCENs of Arabic origin, this conclusion is relevant for UCENs of French origin as well. Consider the contrast in (66)–(67) adapted from Akkuş (2015) and the one in (68)–(69):

(66) Tamirci dolab-ı duvar-a monte / *montaj etti
repairman cupboard-ACC wall-DAT install / installation do-PST
"The repairman installed the cupboard on the wall."

(67) tamirci-nin dolab-ı duvar-a *monte-si / montaj-ı
repairman-GEN cupboard-ACC wall-DAT install-3.POSS / installation-3.POSS
"The repairman installed the cupboard on the wall."

(68) Belediye kilise-yi restore / *restorasyon et-ti
municipality church-ACC restore do-PST
"The municipality restored the church."

(69) belediye-nin kilise-yi *restore-si / restorasyon-u
municipality-GEN church-ACC restore-3.POSS / restoration3.POSS
"the municipality's restoration of the church"

(66) and (68) show that elements of French origin ending with *-e* (most likely the reanalyzed form of the French infinitives) and elements ending with *-aj* and *-asyon* in (67) and (69), respectively, are in complementary distribution. Only the former can participate in LVCs. And only the latter can have an argument structure. The above-mentioned categorial distinction between UCENs and pre-verbal elements in LVCs can straightforwardly account for this observed distribution[5]. In other words, *-aj* and *-asyon* lexicalize defective DP nominalizations while *-e* lexicalizes something else, possibly an *n*P or a *v*P, but crucially, not a DP[6].

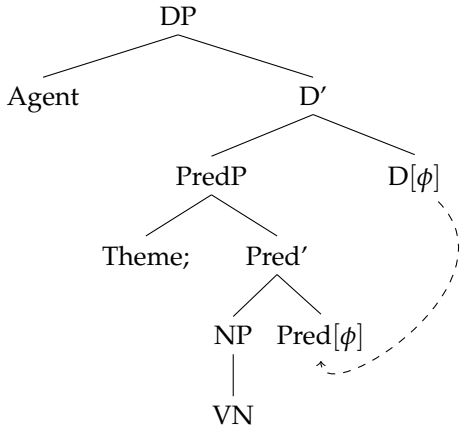
To conclude, the verbal behavior of UCENs in this study is not likely to come from a covert verbal representation on top of the UCEN representation. I will therefore assume in Section 4 that the verbal properties of a given UCEN are inherently part of the UCEN representation although no detectable verbal stem is present in their lexicalizations.

### *3.2. Keskin (2009)*

(Keskin 2009, p. 147) rejects Sezer's truncation analysis or any other possible analysis that would involve the derivation of UCENs from underlyingly complex predicate structures, which he names "the abstract light verb hypothesis". He (2009, pp. 84–85) discusses the productivity of what I call UCENs in this paper and claims that they are unproductive because of examples like (59) where the pre-verbal element *daktilo* fails to host arguments. Deriving from (Chomsky 1970's) distinction between 'derived nominals' and 'gerundive nominals' such that the former is formed lexically and the latter syntactically, Keskin (2009) claims that UCENs belong to the former category due to their unproductive nature[7].

Following Chomsky's feature inheritance model (Chomsky 2008; Keskin 2009) proposes that the accusative assigning property of UCENs is due to a feature inheritance from D to Pred as represented in (70). He also extends what Chomsky (2001) calls the "George-Kornfilt hypothesis" (George and Kornfilt 1981) to UCENs, and proposes that the agreement features of the DP inherited by the PredP "jump-start" accusative case since structural case is a reflection of agreement[8].

(70) Keskin's Jump-starting hypothesis (2009):




For Keskin (2009), a series of conditions must be met in order for Jump-start to work, some of which are syntactic. For instance, in order for D's features to be inherited by Pred, D must c-command Pred, and there cannot be any intervening functional head with unvalued features. There is also a semantic, or featural condition, the "Activity Condition," where, "'active' is understood as a noun phrase that is eligible for Agree, i.e., requires case" (Keskin 2009, p. 150). The logic of this proposal is circular; it presupposes the presence of an inherently built feature +Activity that it also aims explain: *There are some nouns that assign structural case in Turkish → This is because these nouns are "active," "eligible for case."*

Keskin's proposal crucially fails to distinguish between a variety of nominals that could potentially be 'active' due to their eventive nature, such as derived/simple event nominals and zero-derived nominals discussed in Section 2. Accordingly, we cannot simply insert any verbal noun in the NP slot in the representation in (70). Our model should be able to distinguish between different types of nominals.

Keskin (2009) proposal, nevertheless, shares some commonalities with the analysis in the current study. First, it proposes a DP structure for what I call UCENs. As we have seen in the previous sub-section, UCENs must be defective nominals nominalized directly by a D. Second, a verbal extended projection is necessary. In his proposal, this requirement is met by a PredP while it is an extended projection involving argument structure (which I will assume is realized by *v*P and VoiceP) as well as an AspP in the current study.

### *3.3. Solak (2022)*

Unlike (Sezer 1991; Keskin 2009; Solak 2022) provides an analysis where the loanword status of UCENs is accounted for. He proposes that they are comparable to infinitives in Turkish, such that while standard infinitives are headed by *-mAk*, UCENs, which are actually verbs, are headed by a null infinitive. The examples are adapted from Solak (2022), where the standard infinite in (71) and the UCEN in (72) are both translated as *-ing* verbal gerunds in the original examples.

(71) iş-i tamamla-mak
work-ACC complete-INF
"to complete the work"

(72) iş-i ikmal
work-ACC completing
"to complete the work"

Solak claims that the UCEN in (72) realizes both the verbal stem and its nominal head (the infinitive). While I agree with him that an UCEN must lexicalize multiple syntactic terminals at once, I disagree with him that an infinite is one of them. Evidence comes from subject control, which is not available for UCENs. Control constructions embed clauses where PRO licenses subject case. In Turkish control constructions, the non-finite head of

the embedded clause is realized by *-mEk*. Consider the following examples that involve subject control, where the subject of the main clause controls PRO in the embedded clause.

(73) Hasan$_i$ PRO$_i$ öğrenci-ler-i parti-ye çağır-mak iste-di
Hasan PRO student-PL-ACC party-DAT call-INF want-PST
"Hasan wanted to invite the students to the party."

(74) Hasan$_i$ PRO$_i$ öğrenci-ler-i parti-ye çağır-mağ-a çalış-tı /karar
Hasan PRO student-PL-ACC party-DAT call-INF-DAT try-PST /decision
ver-di /söz ver-di
give-PST /word give-PST
"Hasan tried/decided/promised to invite the students to the party."

Control sentences such as the ones above are not acceptable with UCENs:

(75) *Hasan öğrenci-ler-i parti-ye davet iste-di
Hasan student-PL-ACC party-DAT call-INF want-PST
Intended: "Hasan wanted to invite the students to the party."

(76) *Hasan öğrenci-ler-i parti-ye davet-e çalış-tı /karar ver-di
Hasan student-PL-ACC party-DAT invitation-DAT try-PST /decision give-PST
/söz ver-di
/word give-PST
Intended: "Hasan tried/decided/promised to invite the students to the party."

The contrast between (73)–(74) and (75)–(76) show that UCENs cannot license PRO, and thus, cannot head clauses that are complements to control verbs.

### *3.4. Summary*

We have seen that UCENs have verbal properties although they lack any traceable verbal stems in their lexicalizations. Their verbal behavior can be accounted for by a deletion process as in Sezer (1991), such that UCENs first lexically incorporate to the light verb *et-*, which gets deleted in nominal constructions but leaves its theta grid specifications on the UCEN part of the complex predicate. I have argued that there are reasons to believe a deletion account would not work if we were to assume post-syntactic realization of syntactic terminals and a cyclic Spell-Out where DPs are phases. I have also argued that not all eventive nominals behave like UCENs, and therefore, Keskin (2009)'s proposal can be said to be too powerful. Finally, I have shown, contra Solak (2022), that UCENs cannot be infinitives simply because they do not license PRO. In the next section, I consider three different syntactic accounts of word derivation that all assume post-syntactic realization of syntactic heads (=lexicalization) as well as a cyclic Spell-Out to account for UCENs' verbal properties.

## 4. Proposal

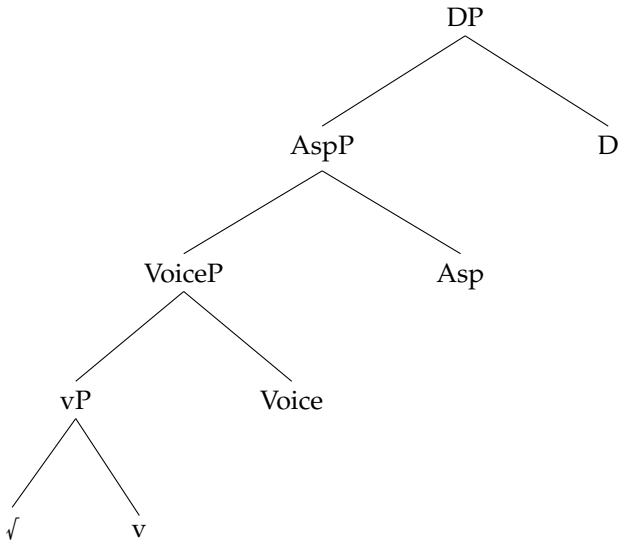
In this section, I aim to provide a syntactic account of UCEN derivation with the assumption that syntax is responsible for building both words and phrases, and a separate domain, an active lexicon where the former are built, is unnecessary. In doing so, I consider three theoretically related accounts in the literature that would make different assumptions about UCEN lexicalization, which realizes a number of syntactic terminals: (i) syntactic merger (i.e., head-movement) resulting in a complex head, (ii) Fusion of multiple morphemes into a single locus for exponence, and (iii) lexicalization of contiguous heads within an extended projection by a single exponence.

A non-lexicalist account is already provided in the literature for a set of Spanish underived nominals that differ from derived nominals in that only the former has argument structure properties by Fábregas (2014). He compares two sets of nominals that look similar at first glance, and both are related to verbs. He shows that one of these sets involves nouns that have a nominal structure which derive directly from the roots and bear no verbal projections (e.g., *baja* 'sick leave,' *conserva* 'preserve,' *monda* 'peel,' *obra* 'construction work,'

etc.) while the other set involves nouns that do bear some verbal functional representation despite their simple morphological make-up (e.g., *ayuda* 'help,' *charla* 'chat,' *entrega* 'delivery,' *firma* 'signature' etc.). In a way, this latter group of nominals are similar to Turkish UCENs. The main difference between the Spanish underived nominals and the Turkish ones is that the former do not have any traceable etymological difference from derived nominals, at least not obvious from the discussion found in Fábregas (2014)[9], while the latter is distinguishably of foreign origin. Fábregas (2014) provides an explanation of the Spanish underived nouns with argument structure (AS-nominals in Borer's terminology, (Borer 1999 and her subsequent work)) using "portmanteau exponents" such that a single exponence realizes a series of projections and a nominalizer.

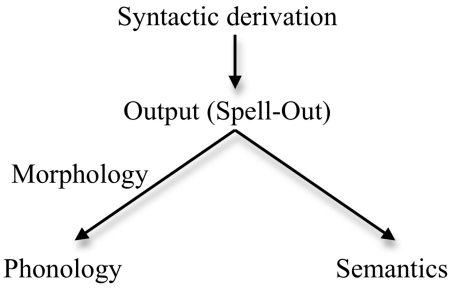
In a similar vein, the Turkish UCEN are exponents of multiple heads: minimally a lexical content or Root, an internal-argument introducer, an external-argument introducer, an aspect layer, and a nominalizer. Let us assume that all of this functional structure consists of a *v*P, VoiceP and AspP, respectively, stacked on an acategorial root or some kind of lexical content depending on one's assumptions. The structure is nominalized by D and lacks an *n*P layer since we have already established that UCENs are defective nominalizations. So, any syntactic derivation of UCENs must minimally account for the structure in (77):

(77)




Let us consider the standard architecture of grammar commonly assumed in DM (Bobaljik 2017; Harley and Noyer 1999) shown in (78). Morphology here operates after syntactic derivation and before phonological realization. It serves as a repair mechanism to operate on any possible mismatches between syntactic output and language specific morphotactics. For example, the compound marker *-(s)I(n)*, introduced in Section 2.2.2, cannot co-occur with possessive markers. Tat and Kornfilt (2018) claim that this is due to a post-syntactic, but a pre-phonological haplological ban on adjacent morphemes of the same type in Turkish, supporting the presence of morphological operations as commonly accepted in the DM literature.

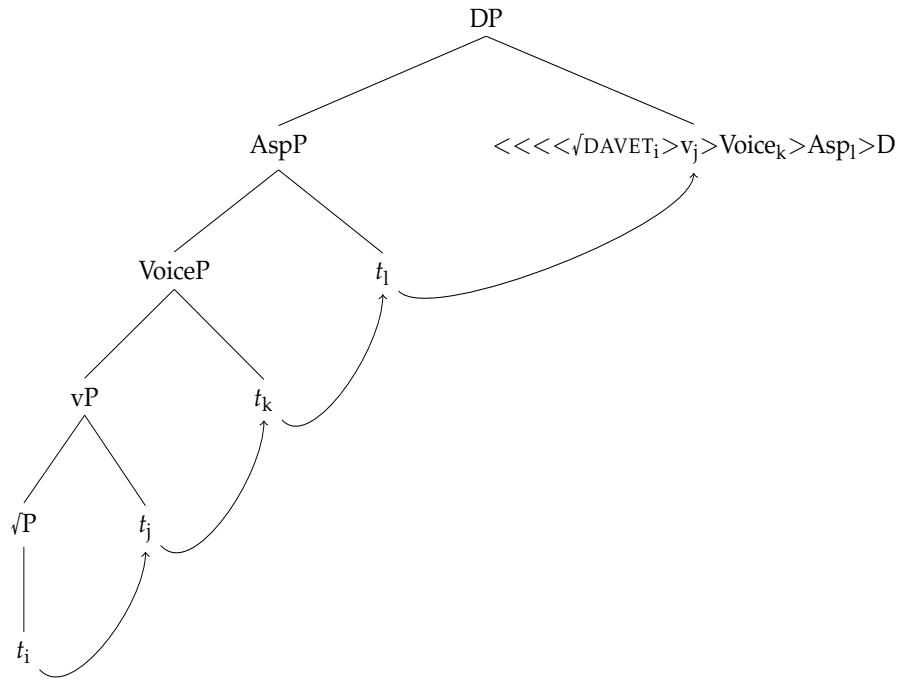
(78) Architecture of grammar in DM (Bobaljik 2017)



Given the model in (78), we can think of two potential grammatical components that are responsible for the derivation of UCENs: syntactic merger (head movement) that creates complex terminals, and Fusion that combines multiple heads into a single position of exponence. In what follows, I consider both of these possibilities, and argue that both run into conceptual problems. I then consider a third option in Section 4.3.

### *4.1. UCENs as Complex Heads*

How can we account for (77) such that a morphologically noncompositional lexical item can realize such a number of functional layers? Assuming that phonological realization applies post-syntactically and all arguments are introduced in specifier positions, one possible analysis involves a series of head movement operations before the structure in (77) is spelled out. In this approach, an acategorial root at the bottom of the tree moves cumulatively all the way up resulting in a complex head Root+v+Voice+Asp+D that is realized by a morphologically simple vocabulary item. That the functional heads are realized as  is considered trivial resulting in the structure and its lexicalizaiton in (79)–(80), resulting in a series of head movement operations and a sequence of heads to be realized as null.




(79)

(80) davet+Ø+Ø+Ø+Ø

While (79) is a possible analysis, it is not an ideal one: The constant appeal to unmotivated head movement and null heads results in a less than elegant scenario for deriving UCENs.

An alternative to syntactic merger is morphological merger, which rearranges terminal heads to repair mismatches between syntactic structure and morphological units. It is not possible to determine, given the simple makeup of UCENs, as to whether a syntactic or a morphological merger is responsible for their derivation. Nevertheless, morphological merger cannot alter the number of positions for exponence; it can only rearrange them, i.e., resulting in prefixation or suffixation. Therefore, the same kind of concerns about contiguous null head would apply to morphological merger as well.

Harizanov and Gribanova (2019) distinguish between two types of operations that have traditionally been analyzed as head movement: (i) syntactic head movement that obeys constraints on phrasal movement and has potential for interpretive effects, (ii) post-syntactic amalgamation that produces head-adjunction structures. Given what we know about UCENs, whether they are subject to syntactic or morphological merger is not testable:

We cannot determine whether the derivation involves head-adjunction when faced with multiple null lexicalizations in the presence of a single overt lexicalization, the root. A head-movement analysis or morphological merger of UCENs is therefore a theory-driven approximation at best that cannot be falsified.

### *4.2. UCENs as Fused Heads*

Another possibility that relies on the morphological component of grammar is an appeal to fusion. While morphological merger still results in multiple loci for exponence, fusion results in a single one for vocabulary insertion (Bobaljik 2017; Halle and Marantz 1993). Siddiqi (2009) proposes that Fusion applies much more commonly than it was previously assumed, resulting in portmanteau exponence across languages. He therefore claims that there is no need for Øheads. Fusion applies after syntactic operations and before Vocabulary Insertion; therefore, one would not have to stipulate null heads in the derivation of syntactically complex but morphologically simple units. While this analysis solves the elegance problem a merger analysis would face, it creates another one: One cannot account for as to how Fusion can look ahead considering that its presence or absence is sensitive to what would normally come only after morphological operations, including Fusion, take place (the *Timing Problem*, see Svenonius 2018).

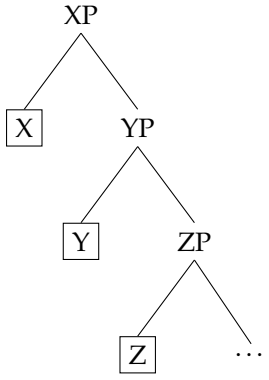
What is common to both a head movement/morphological merger analysis and a fusion analysis of UCENs is that they both assume $X^0$'s to be the locus for lexical insertion, one of the main premises of DM. Since the mapping between syntactic terminals and phonological words is almost never perfect across languages, several mechanisms, such as Local Dislocation, Fission as well as Fusion, have been proposed to explain such imperfection. But it appears that analyses of UCENs that rely on $X^0$ for wordhood either posit inelegant and unfalsifiable derivations or run into problems, such as the Timing problem.

In the next section, I consider an alternative approach where spans serve as targets for phonological realization following (Svenonius 2012, 2016, 2018). I analyze UCENs as portmanteau exponents realizing a span that contains the extended projection and the nominalizer. While this model shares some basic assumptions with DM, such as cyclic Spell-Out and post-syntactic realization of syntactic output, I show that favoring spans over $X^0$ -level targets for realization provides a simpler account.

### *4.3. UCENs as Spans*

Spans are a series of heads which are in complementation relation within an extended projection in the sense of Grimshaw (2005), which includes a phrase with a lexical head and its associated functional projections (Bye and Svenonius 2012; Svenonius 2012, 2016, 2018). For example, in the following tree diagram, if XP is an extended projection then the sequences: (i) X-Y, (ii) Y-Z, and (iii) X-Y-Z are spans. Crucially, X and Z do not make a span because Z is not a complement of XP. Each head is a "trivial" span (Svenonius 2012). Morphological words always target spans. In other words, the lexicalization (phonological realization) of an extended projection can potentially be any of the possible spans in a given language, trivial or non-trivial.

(81)

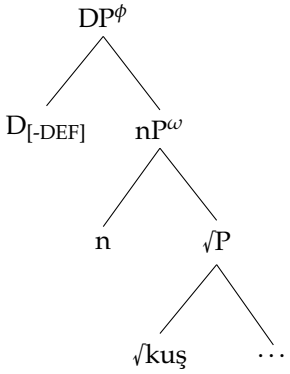


In this model, there is no need to stipulate head movement for deriving words since the head-complement relation is already assumed in the given span. One advantage of spans is that complex heads are not understood to be exceptional in that their derivation requires extra steps, such as, head movement, unlike simple heads. Simple or complex, all spans are equally targets for lexicalization.

Let us discuss some basic assumptions of this model by way of illustration. Consider (82), the lexicalization of a nominal extended projection. Syntax computes the structure in (83) through external merge. Heads are specified for relevant syntactic features. For example, D in this particular example is specified to be indefinite. $\phi$ marks the domains for phonological phrases while $\omega$ marks the domains for phonological words.

(82) /bi ku.şák/
a belt
"a belt"

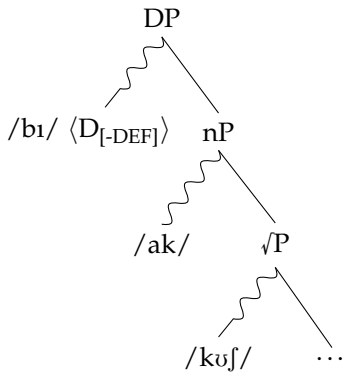
(83) Syntax



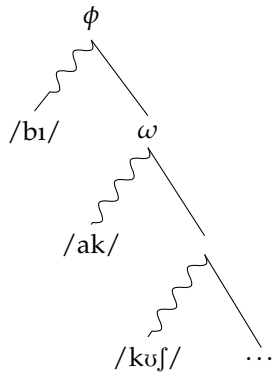

Spell-Out takes place in two steps. In the first step, the syntactic output is matched with exponents specified for associated features of the functional heads (L-Match) as represented in (84).

In the second step (Insert), the syntactic features are no longer relevant; only the phonological features $\phi$ (for phonological phrases) and $\omega$ (for phonological words) of the matched exponents are interpreted, as represented in (85). It is at this stage that the exponents are phonologically organized. For instance, the exponent representing *n* suffixates to the root and forms a phonological word; the root-final consonant syllabifies to the suffix, which obeys the backness quality of the root. Phonologically conditioned allomorphy is also determined at this stage.

(84) L-Match




(85) Insert

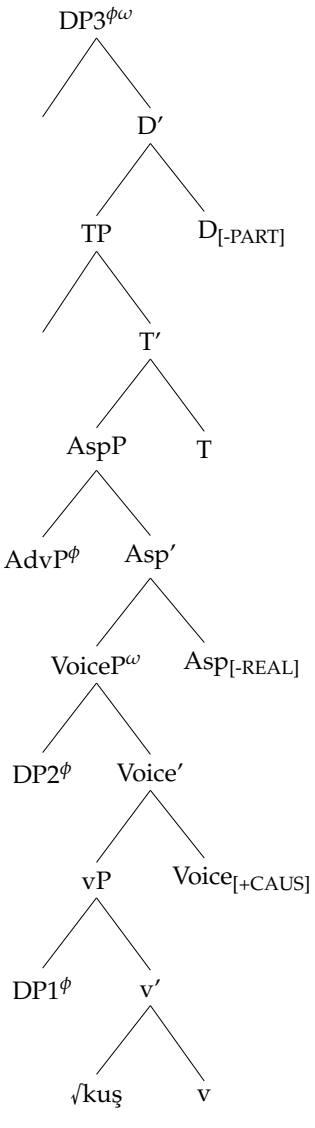



Svenonius (2012) differs from DM regarding the general assumption that the Elsewhere Principle applies at Vocabulary Insertion when competition arises. Instead, he claims that

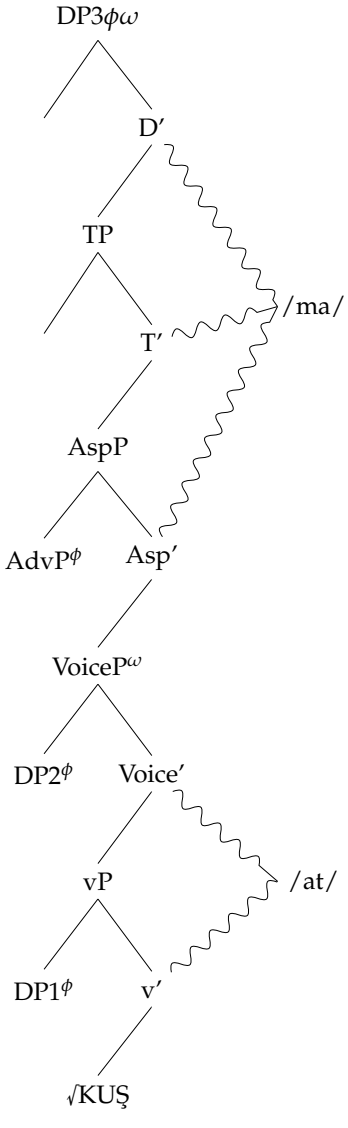
all possible lexicalizations that have a subset of the relevant features are available at L-Match. At the next stage of linearization, these candidates are ranked in a constraint-based fashion. For example, consider (84) where I assume a single exponent available to realize D. This exponent has historically derived from the numeral *bir* "one" which is categorially different (heading a numP or a ClP given one's theoretical assumptions). However, let us assume by way of illustration that both /bır/ and /bı/ realize the same head: one is specified for a subset of the features of the other (i.e., [-def] for /bı/ and [-def, -pl] for /bır/ given that the former can appear with some plural nouns, such as *bir şey-ler* "some things"). Then, they would have to be both available at L-Match. It would be at Insert where a set of phonological constraints apply, selecting the reduced form /bı/ when it is unstressed.

Let us now consider a complex event nominal, such as *kuşatma* "occupying" as (86). The nominal must minimally host a *v*P, a VoiceP, an AspP and an *n*P. The head-final representation in (85)–(87) not only better captures the head-final structure of Turkish in general but also conveniently allows us to stack complements on the right while specifiers remain on the left.

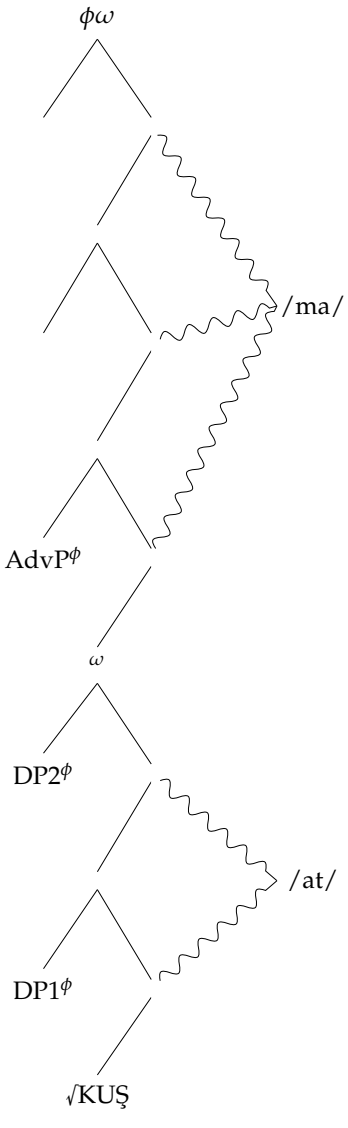
(86) Birlik-ler-in bölge-yi hunharca **kuşatma**-sı
troop-PL-GEN territory-ACC violently occupying-3.POSS
bekle-n-m-iyor-du
expect-PASS-NEG-PROG-PST
"The troops' occupying the territory violently was not expected."




(87)




(88)




(89)

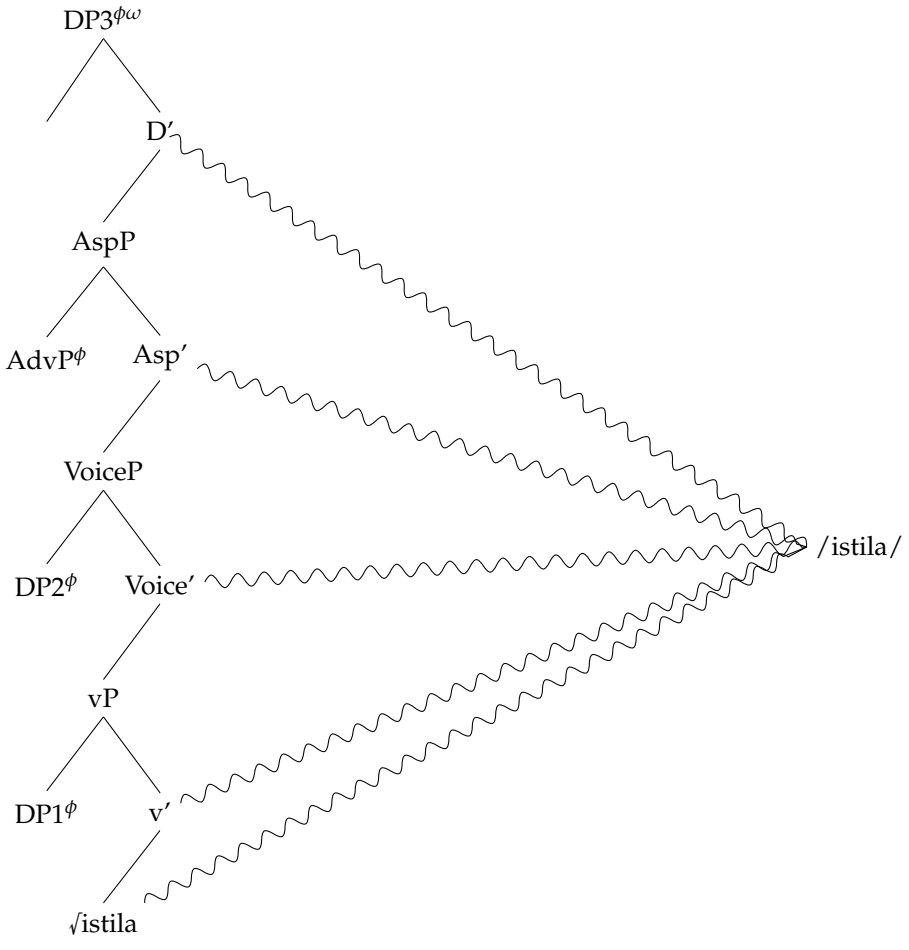
Syntax generates the structure in (87) where DP3, DP2, DP1 and AdvP are separate extended projections. The nominalizer *-mA* realizes multiple syntactic terminals within the extended projection of DP3: D, T and Asp. This nominalizer is matched at this stage because of the feature [-realis] on T. Similarly, *-At* realizes *v* and *Voice*, matching with the [active] feature of the latter. (A non-active Voice head would match with *-An* to derive *kuşan* 'dress, equip oneself')[10].

Insert successfully linearizes the output from L-Match. The entire phonological phrase, which is also a phonological word, receives word final stress according to the word stress assignment rule of Turkish (Kabak and Vogel 2001). The vowel qualities of the root (backness harmony) spread all the way up to $\omega$ in this particular example[11].

Let us now consider the example in (90), where this time the complex event is an UCEN, *istila* "occupation, invasion." Its representation at Spell-Out is given in (91). The UCEN in question minimally realizes a complex span [D, Asp, Voice, v, √] lacking an nP layer due to its defective structure.

(90) Birlik-ler-in bölge-yi **istila**-sı bekle-n-m-iyor-du
troop-PL-GEN territory-ACC occupying-3.POSS expect-PASS-NEG-PROG-PST
"The troops' occupying the territory was not expected."

(91)




DP3 is both a phonological phrase and a phonological word. A single lexical item realizes a series of contiguous terminals: D, Asp, Voice, v and the root. Such an analysis of UCENs has some advantages compared to accounts that assume $X^0$ as the locus for vocabulary insertion. First of all, it accounts for the observation that a single exponent can host a number of projections without stipulating contagious null heads that potentially form a complex head. Second, neither head-movement nor a post-syntactic Fusion operation is necessary to derive a structure which is realized by an exponent that cannot be decomposed

into discrete parts, thus providing us with a simpler account[12]. An UCEN of French origin (e.g., *montaj*, *restorasyon* would possibly have a similar derivation. It is also possible that the Turkish speaker has reanalyzed parts of such words into discrete roots (e.g., √MONT, √RESTOR) which are selected by nominalizers *-aj* and *-asyon*, respectively, which realize the terminals within the DP extended projection.

## 5. Conclusions

In this study, I have revisited the commonly accepted view that complex event nominals derive from detectable verbal sources and are typically headed by an overt nominalizer. I have shown that Turkish has a number of nominals, which I call UCENs, that clearly contradict this view. UCENs have neither any identifiable verbal stems nor any overt nominal heads, and nevertheless, have argument structure properties.

First, I have shown that UCENs are indeed complex event nominals, and are defective, lacking an nP layer. Second, I have shown that they should not be equated to either derived nominals or gerundive nominals since they behave in different ways from each of these types of nominals. I have reviewed the previous studies on what I call UCENs, and shown that they are either too powerful failing to distinguish between UCENs on one the hand and other types of nominalizations on the other, or make incorrect predictions about their behavior in certain contexts, such as subject control.

Instead, I have assumed a post-syntactic, realizational model of word derivation that derives morphological material in a cyclic way, and considered three potential analyses of UCENs. Although these three analyses differ from one another only in granularity in their assumptions, a Spanning approach where targets of lexicalization are contiguous terminals in an extended projection provides a conceptually superior account. Because lexical access points and linearization points are both syntactically encoded (Svenonius 2016), and spans are targets for lexicalization, mapping from syntactic structure to morphology does not have to make any extra stipulations, such as head movement, morphological merger or fusion.

Crucially, all UCENs in Turkish are of foreign origin; synonymous nominals of Turkic origin do not behave in the same way and complex event nominals with a verbal source of Turkic origin must derive from recognizable verbal stems and bear an overt nominalizer such as *-mA* in the first place. This arguably has implications for loan word syntax, showing that a complex word in its native context can maintain its complex underlying structure in a new host language although speakers of this language now reanalyze it as a simple, monomorphemic word. This raises the question as to how much structure a single exponence can maximally lexicalize in any given language. Given what we know about UCENs discussed in this study, I propose that a maximal word is the lexicalization of an extended projection, at least in the case of defective DPs as in our case.

Within a theory of word formation where portmanteau falls out naturally as in *Spanning*, UCENs can be straightforwardly explained. I believe the analysis here can be extended to other types of complex borrowed material, such as plural nouns, which behave as monomorphemic exponents in the recipient language.

Although this study focuses on a specific type of language contact, the type where speakers of a language are under the influence of another language due to non-linguistic reasons (e.g., economic, political, cultural), it has implications for other types of language contact, such as language mixing by an individual speaker who mixes two (or more) languages on a daily basis. If speakers of a single language have grammars that maintain syntactic structure from another language through lexical borrowing, it should not be too unrealistic to think of bilingual grammars where multiple grammars simultaneously operate on structure and form as has recently been argued by non-lexicalist accounts of code-mixing (e.g., Alexiadou and Lohndal 2018; López 2020).

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**Conflicts of Interest:** The author declares no conflict of interest.

## Abbreviations

The following abbreviations are used in this manuscript:

| | |
|---|---|
| 3 | third person |
| ACC | accusative |
| ADV | adverb |
| DAT | dative |
| DM | Distributed Morphology |
| GEN | genitive |
| INF | infinitive |
| LVC | light verb construction |
| NEG | negative |
| NOM | nominalizer |
| PASS | passive |
| PL | plural |
| POSS | possessive |
| PROG | progressive |
| PST | past |
| TAM | tense, aspect and modality |
| UCEN | underived complex event nominal |

## Notes

1 It is customary in Turkish linguistics to capitalize the vowel in morphemes that are subject to vowel harmony. For example, in this particular case, *mA* can be surface as *-me* or *-ma* depending on whether the vowel of the preceding syllable is back or front. Some other morphemes are also subject to roundness harmony and thus have four surface forms rather than two. For example, the accusative *-I* may surface as *-ü*, *-i*, *-u* or *-ı*, the latter being a back, high, unround vowel. Some linguists also capitalize consonants that assimilate in voicing. The causative *-DIr* thus has eight surface forms: *-dür*, *-dir*, *-dur*, *-dır*, *-tür*, *-tir*, *-tur*, *-tır*.

2 I would like to thank Greg Key for pointing out that there is also a small set of accusative-assigning borrowings of Arabic origin which are used in modern Turkish only in certain archaic forms, such as *müteakip* 'successive, following' and *haiz* 'possessing' as exemplified below. As he points out, these forms are also acceptable with dative-marked objects (G. Key, personal communication, 6 September 2021). These Arabic forms do not fall into the category of UCENs as defined in this paper, which categorically assign accusative case, and I will therefore not include them in the argumentation and discussion in the rest of this paper.

(i) cenaze tören-in-**i** / tören-in-**e** müteakip
funeral service-3.POSS-**ACC** / service-3.POSS-**DAT** following
"following the burial service"

3 An anonymous reviewer states that the sentence would be acceptable with the verb *emret-* 'to order.' I agree with the judgement but I do not know why it is the case. Perhaps *emret-* is not an attitude verb after all.

4 There is at least one exception, an UCEN, which is equally well-formed when selected by the light verb *et-* or the elsewhere verbalizer *-lA*: *ispat et-* ∼ *ispatla-* 'prove' both of which are transitive in Turkish.

5 Akkuş (2015) proposes a lexical blocking analysis of the French alternation presented here, where the presence of certain features, e.g. +predicative blocks the insertion of verbal elements, such as *restore*. Key and Tat (2014) propose that competition occurs only at the syntactic terminals during vocabulary insertion, e.g. *-e* and *-aj* compete for insertion in the presence of the root √MONT. If *montaj* and *monte* are categorially different, such that the former is a DP-nominalization and the latter is not, no competition has to take place between the two affixes.

6 Öztürk (2005) deserves a mention here, who observes that "[c]ertain light verb constructions in Turkish are formed with a non-Turkic noun root and the light verb *et-* 'do"' (p. 55) as we have seen in a number of examples in previous sections. She claims that these light verb constructions are true [NP V] complex predicates, whereby a predicative NP, such as *redd* "rejecting" (similar

to the above-mentioned examples such as *istila* "invading," *muayane* "examining" or *monte* "installing) is denominalized by the light verb *et-*. The fact that these NPs can have an argument structure even in the absence of a light verb is given as evidence that they are indeed predicative. While her observations are indisputable, they do not tell us anything as to why only NPs of non-Turkic origins form complex predicates or why they are predicative despite their simple makeup in the first place.

[7] Productivity is a questionable property here. While it is true that Turkish cannot coin new UCENs within its native lexical inventory, and it is no longer borrowing new words from Arabic as it did in the past, they can be considered productive since they are in their source language in the first place.

[8] Keskin (2009) relates his proposal to Burzio's Generalization (Burzio 1986), the Visibility Condition (Chomsky 1986) and the requirement of agreement for licensing subjects in Turkish (Kornfilt 2005), and claims that UCENs must have subjects. Consider (i), which is perfectly acceptable in Turkish. However, one can argue, these phrases have implied agents and must therefore have a PRO subject (see Borer 2020; Bruening 2013; Roeper 1987; Sichel 2009), which would support Keskin's claims.

(i) çek-ler-i tahsil bizim iş-imiz
cheque-pl-acc collecting our job-1pl.poss
"Collecting cheques is our job."

[9] The two different sets of nouns in Spanish seem to be lexically-determined by chance, not following any grammatical generalizations (A. Fábregas, personal communication, 1 September 2021).

[10] There are a number of markers that can lexicalize *v* and Voice heads (or a combination of two) in Turkish. How they all compete for exponence is beyond the scope of this study. However, it should be noted that lexically specified vocabulary items must compete at L-Match while phonologically conditioned allomorphy must be further subject to conditions that apply at Insert.

[11] However, see Kabak and Vogel (2001) who show that new harmony domains may begin within the same phonological word due to the presence of certain suffixes or clitics.

[12] A comparable model for the architecture of grammar is proposed by Fábregas and Putnam (2020). In their model, abstract syntactic structure is "packaged" by an interface level, Σ Structure, before transfer to PF and LF can take place. Unlike Spanning though, Σ Structure does not replace syntactic terminals. Instead, it provides restrictions as to what kind of syntactic categories are allowed in adjacent positions (=selectional restrictions) as well as phonological values.

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