

Are there aspectless tensed clauses in Turkish?

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Abstract: Turkish allows finite verb forms that carry tense marking but no overt aspect marking. Unlike those that contain both tense and aspect marking, aspectless forms also lack an auxiliary copula. This is a key difference that Kelepir (2001) takes as evidence that aspectless forms derive from clausal structures that lack an aspect projection. However, syntax-morphology mapping is not always isomorphic. Therefore, we also evaluate this proposal from a semantic point of view, raising both empirical and theoretical questions: (1) Is there any aspectual inference associated with morphologically aspectless verbs? (2) Are structures where tense directly combines with a VP compositionally interpretable? While Kelepir's proposal seems to face challenges in both directions, we argue that the semantic considerations are, in fact, consistent with the clausal structure Kelepir (2001) argues for, with broader implications for clause structure and compositional interpretation.

Keywords: aspect; tense; time; event composition; Turkish

1. Introduction

This study investigates two types of sentences, one featuring finite verb forms with overt aspect and tense marking, as in (1-a), and the other featuring finite verb forms with overt tense, but no aspect marking, as in (1-b):

- (1) a. Emre koş-uyor-Ø-du.
Emre run-IMPF-COP-PST
'Emre was running.'
- b. Emre koş-tu.
Emre run-PST
'Emre ran.'

While it would be viable to assume a phonologically null aspect marker in sentences like the one in (1-b), Kelepir (2001) argues that there is no covert aspect head below the Tense head, making the clause structure they are associated with genuinely aspectless. As evidence for this view, Kelepir provides diagnostics showing that there is in fact a null auxiliary copular verb between the aspect and the tense marker in forms like (1-a), building on Kornfilt (1996). This contrasts with the aspectless form in (1-b), where the tense marker directly combines with the lexical verb.

Even though morphological diagnostics seem to point to an aspectless structure, at first glance, Kelepir's account seems to face both empirical and theoretical challenges. On the empirical side, sentences with aspectless verbs have been argued to have truth conditions consistent with a *perfective* aspectual interpretation (Erguvanlı Taylan 2001: p.101; Göksel and Kerslake 2005: p.327; Jendraschek 2011: p.263). On the theoretical side, Kelepir's account is at odds with the standard way of combining the meanings of events with tense and aspect, which is dependent on the presence of an aspect head in sentences like (1-b) (Klein 1994; Kratzer 1998; Ogihara 1995; von Stechow 2009, a.o.).

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A closer investigation from a semantic point of view reveals that these challenges are only on the surface. Offering a formal and compositional account of aspectless clauses, we show that Kelepir's account is **viable from the semantic point of view**. We argue that sentences that lack an overt aspect marker lack an aspectual projection, as well.

In the standard accounts, Aspect is assumed to have the function of relating VP meanings to times. Our solution lies in severing this mediating function off of the Aspect head. Building on Coppock and Champollion (2022), we propose that the transition from events to times is established below the aspectual projection, **for which we provide independent evidence based on modification facts**. The role of Aspect is just to specify the relation between the event time and the time being talked about. Basically, Aspect acts like a modifier over predicates of times. We show that in an aspectless clause, the time interval being talked about and the time interval the event occupies come out identical, yielding the illusion of a perfective aspectual specification. **We also compare our proposal against the alternative analysis, which posits a null perfective aspect in the absence of an overt aspect marker**. We discuss cases that obscure the difference between the truth conditions derived from aspectless clauses and those that feature the perfective aspect. Nevertheless, we argue for the aspectless analysis considering the morphosyntactic facts that are compatible with it in Turkish.

The outline of this paper is as follows: In Section 2, we review Kelepir's account of morphologically aspectless verb forms. In Section 3, we discuss the empirical and theoretical questions raised by Kelepir's proposal. In Section 4, we present our analysis and provide **evidence for separating aspect from its traditional role of mapping VP meanings to event times**. In Section 5, we discuss our proposal in comparison to the alternative "null perfective" analysis. Section 6 is dedicated to concluding remarks.

2. Kelepir's Proposal

A verbal form in Turkish is morphologically rich, consisting of a verb root followed by various tense, aspect, modality, and subject agreement markers, as exemplified in (2).

- (2) a. Biz gel-iyor-du-k.
we come-IMPF-PST-1PL
'We were coming.'
- b. Siz gel-miş-ti-niz.
we come-ANT-PST-2PL
'You had come.'

It has been argued that these verbal forms have more to their structure than meets the eye. Kornfilt (1996) shows that they bear a null auxiliary copular verb, which resides between the aspect marker and the past tense marker in (2), as schematized below:

- (3) verb+ASP+COP+TENSE+AGR

Straightforward morphological evidence for the existence of a null copular verb is the fact that it has an overt variant that can also surface in these cases. The copula has a free form realized as *i-*, as shown in (4). The forms in (2), on the other hand, involve the cliticized version of the copula, which has no overt exponent when the stem ends in a consonant.

- (4) a. gel-iyor i-di-k
come-IMPF COP-PST-1PL
'We were coming.'
- b. gel-miş i-di-niz
come-ANT COP-PST-2PL
'You had come.'

As Kornfilt (1996) shows, the copula is realized as *-y-* when its attachment site ends in a vowel, as in (5). In contrast, the copula surfaces in its null form when it is cliticized on a stem that ends with a consonant, as shown in (6).¹

- (5) a. Biz evde-y-di-k.
we sick-COP-PST-1PL
'We were home.'
- b. Biz git-meli-y-di-k.
we go-NEC-COP-PST-1PL
'We needed to go.'
- (6) a. Biz yorgun-Ø-du-k.
we tired-COP-PST-1PL
'We were tired.'
- b. Biz gid-ecek-Ø-ti-k.
we go-PROSP-COP-PST-1PL
'We were going to go.'

The general consensus in the literature is that the piece preceding the copula is a participial form, a complex head that has some nominal characteristics (Bayırlı 2012; Enç 2004; Keleşir 2001; Kornfilt 1996; Sağ 2013ab, a.o.). Keleşir argues that participles cannot undergo movement to the T head, and consequently, T, activating a verbal feature on it, requires the insertion of a copula when it projects above the participle (cf. Kornfilt 1996 and Enç 2004).

The structure proposed in Keleşir (2001) is exemplified below for the sentence in (7-a).

- (7) a. Emre koş-uyor-Ø-du.
Emre run-IMPF-COP-PST
'Emre was running.'
- b.
- ```

graph TD
 TP --> AspP
 TP --> T
 AspP --> VP
 AspP --> Asp
 VP --- VP_text["Emre koş-"]
 Asp --- Asp_text["{+imperfective} -Iyor"]
 T --- T_text["{+verbal, +past} -Ø+-DI"]

```

In this analysis, the verb moves to the Asp head but the verb+Asp complex is blocked from moving up to the T head due to its participial nature. The T head requires a verbal stem to attach to, and in the absence of one, it hosts a [+verbal] feature with no semantic content, which Keleşir proposes to be realized as a copular verb.<sup>2</sup>

Keleşir argues that the inability of the participle to undergo movement to the T head is evidenced by the suspended affixation facts. As exemplified in (8), two participial forms can be coordinated with the copula and the morphology that follows it scoping over both conjuncts. What gets suspended attaches to the right conjunct. (Keleşir 2001, pg.37)

- (8) [Ben para-yı al-ıyor (ve) ona ver-iyor]-Ø-du-m.  
I money-ACC take-IMPF and 3SG.DAT give-IMPF-COP-PST-1SG  
'I was taking the money and giving (it) to him/her.'

<sup>1</sup> Note that in all of these verbal forms, the copula could also surface in its free form.

<sup>2</sup> It should be noted that the analysis that Keleşir proposes seems to have some technical problems. For example, the [+verbal] feature is assumed to be hosted by the T head but it is realized in a way that precedes the tense morpheme. In a theory of syntax-morphology mapping such as Distributed Morphology (Halle and Marantz 1993), each affix must realize a different syntactic terminal. Keleşir's implementation does not seem to be consistent with this requirement. Since this is orthogonal to our purposes, we do not discuss these issues further in this paper.

We infer the inability of the participle to move to the T head as follows: If the participle were moving to the T head, this would mean that it moves from the right conjunct to the T head in (8). This kind of movement would violate Coordinate Structure Constraint (Ross 1967), which bans movement out of coordinated phrases if the movement is not across-the-board. Since (8) is grammatical, we can deduce that this movement does not take place.<sup>3</sup>

In short, the attachment of the tense marker on a participial form inflected by an overt aspect marker necessitates the intervention of a copular verb.

Central to the discussion in this paper, Turkish also allows verb forms like (9) where the verb carries tense morphology but no overt aspect marker. Keleşir argues that the clausal structure for sentences like (9) lacks an aspectual projection and the morphological requirement of the T head is satisfied by the lexical verb.

- (9) Pelin ev-i temizle-di.  
Pelin house-ACC clean-PST  
'Pelin cleaned the house.'

The absence of the copula in structures like (9) is evidenced by the failure of an overt form of the copula to surface, as illustrated in (10-a) (see also Kornfilt 1996 and Enç 2004). The lack of an aspectual projection is evidenced by the impossibility of suspended affixation with verb forms that only involve a tense marker, as shown in (10-b). This demonstrates the non-participial nature of such forms. If the two conjuncts involved a null aspect marker, we would expect (10-b) to be grammatical, similar to verb forms that bear an overt aspect marker, exemplified in (8).

- (10) a. \*Temizle-y/i-di.  
clean-COP-PST  
Intended: '(S)he cleaned (it).'
- b. \*[Yeri sil ve süpür] -dü-m.  
floor.ACC wipe and vacuum -PST-1SG  
Intended: 'I wiped and vacuumed the floor.'

The structure proposed by Keleşir for verbal forms that lack an overt aspect marker is exemplified below for (11-a), in comparison with (7-a).

- (11) a. Emre koş-tu.  
Emre run-PST  
'Emre ran.'



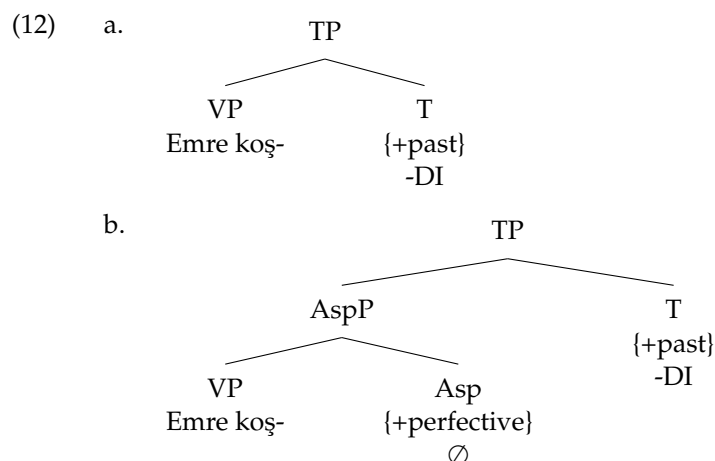
To summarize, when the Asp head is part of the structure, the movement of the participle to the T head is blocked. Therefore, a dummy copula is inserted under the T head to satisfy its requirement to attach to a verbal form. When the Asp head is absent, the copula is not needed because the tense marker directly attaches to the lexical verb.

### 3. Questions on Keleşir's Proposal

In the previous section, we reviewed the clausal structure, repeated below in (12-a), that Keleşir (2001) proposes for sentences like (11-a). While Keleşir's proposal is justified on the basis of morpho-syntactic facts, from a purely semantic point of view, there is also

<sup>3</sup> Strictly speaking, the *inability* of the V+Asp complex to move to the T head does not follow from this piece of data in that we can only deduce that it is *allowed* to not move. However, the obligatoriness of the copular verb in Asp+T combinations corroborates the argument at hand.

a conceivable alternative structure where an Asp head that hosts the perfective aspect feature sits between VP and TP, as shown in (12-b). The structure in (12-b) was proposed for English past tense verbs, e.g. by von Stechow and Beck (2015) (see also Kratzer 1998). Many authors have argued that the verb forms that have only past tense marking but no distinct aspect marker are associated with a perfective aspect interpretation in Turkish (Aygen-Tosun 1998; Erguvanlı Taylan 2001; Göksel and Kerslake 2005; Jendraschek 2011; Sağ 2013ab).<sup>4</sup>



In this section, we evaluate Kelepir's proposal from a semantic point of view, both empirically and theoretically, and compare it to the alternative structure in (12-b). In section 3.1, we attempt to seek an answer to our empirical question. In particular, we make use of aspectual tests to see if we can identify a morphologically unmarked aspectual feature present as in (12-b), on a par with overtly marked aspectual features like *+imperfective*. In section 3.2, we proceed with our theoretical question. We investigate if the structure in (12-a) is a suitable logical form for deriving the truth conditions of sentences like (11-a) (or any sentence for that matter). In section 3.3, we discuss the implications of the semantic considerations in the light of morpho-syntactic facts that Kelepir (2001) addresses.

### 3.1. Is there evidence for an unmarked aspect feature?

There is rich literature on the tense-aspect system of Turkish (Cinque 2001; Erguvanlı Taylan 2001; Göksel and Kerslake 2005; Göksel 2001; Jendraschek 2011; Kornfilt 1997; Lewis 1967; Underhill 1976; Yavaş 1980, a.o.). Many authors rely on morphological criteria to label overt tense-aspect suffixes as 'tense marker' or 'aspect marker'. While we do not take issue with the morphological evidence in favor of one classification over the other, it is also well-known that syntax-morphology mapping is often not isomorphic. Therefore, we believe that it is crucial to also look at the semantic evidence to be able to reason about syntactic structure (in particular, the features that syntax operates with).

Reichenbach (1947) introduced the notions of *event time*, *reference time*, and *speech time*. These notions are still essential in understanding the natural language notions *aspect* and *tense*. The well-established semantic role of *aspect* is to relate the event time (i.e., the *run-time* of an event or the temporal interval it occupies on the timeline) to the reference time (i.e., the time interval we are talking about). The well-established semantic role of *tense*, on the other hand, is to locate the reference time interval on the timeline, i.e., encode where it is located relative to the speech time. Following common practice, we will use the shorthand notations  $t_R$  for reference time interval and  $\tau(E)$  for the run-time of an event  $E$  (Krifka 1992).

<sup>4</sup> Not all these authors posit a distinct head that hosts the perfective aspect feature. For example, Jendraschek (2011) takes the *-DI* suffix to encode both past tense and perfective aspect, not invoking a separate affix/head for the perfective aspect feature. Aygen-Tosun (1998) argues for a similar position, proposing a hybrid head for tense/aspect in general.

Consider the sentence in (13), which contains a finite verbal form, inflected for both imperfective aspect and past tense. Furthermore, the sentence also contains the overt modifier *Serpil odaya girdiğinde* ‘when Serpil entered the room’, which overtly specifies  $t_R$ .<sup>5</sup> The past tense locates the  $t_R$  before the speech time. The imperfective aspect, on the other hand, is relating the run-time of the event of Emre dancing, i.e.,  $\tau(\text{dance}(e))$ , with respect to  $t_R$  (i.e., the tiny interval that corresponds to the run-time of Serpil entering the room).<sup>6</sup> In particular, the imperfective aspect encodes the information that  $\tau(\text{dance}(e))$  contains  $t_R$ . In other words, we understand from (13) that the duration of the event of Emre dancing overflows the tiny interval occupied by the event of Serpil entering the room.

- (13) Serpil oda-ya gir-diğ-in-de, Emre dans ed-iyor-Ø-du.  
Serpil room-DAT enter-NMLZ-POS.3SG-LOC Emre dance-IMPF-COP-PST  
‘When Serpil entered the room, Emre was dancing.’

In addition to the imperfective marker *-Iyor*, Turkish has the anterior aspect marker *-mİş* and the prospective aspect marker *-(y)AcAk*. In (14), we have the anterior aspect marker *-mİş* instead of the imperfective aspect marker *-Iyor*. Here, the aspect contributes anteriority, as witnessed by the inference that  $\tau(\text{dance}(e))$  precedes  $t_R$ . On the other hand, in (15), we have the prospective aspect marker *-(y)AcAk*, which locates  $\tau(\text{dance}(e))$  after  $t_R$ .

- (14) Serpil oda-ya gir-diğ-in-de, Emre dans et-miş-Ø-ti.  
Serpil room-DAT enter-NMLZ-POS.3SG-LOC Emre dance-ANT-COP-PST  
‘When Serpil entered the room, Emre had danced.’

- (15) Serpil oda-ya gir-diğ-in-de, Emre dans ed-ecek-Ø-ti.  
Serpil room-DAT enter-NMLZ-POS.3SG-LOC Emre dance-PROSP-COP-PST  
‘When Serpil entered the room, Emre was going to dance.’

In (16), we summarize the three overt aspect markers in Turkish, describing their semantic contribution.<sup>7</sup>

- (16) overt aspect markers in Turkish
- |    |                                                 |                          |
|----|-------------------------------------------------|--------------------------|
| a. | the imperfective aspect marker <i>-Iyor</i> :   | $\tau(E)$ contains $t_R$ |
| b. | the anterior aspect marker <i>-mİş</i> :        | $\tau(E)$ precedes $t_R$ |
| c. | the prospective aspect marker <i>-(y)AcAk</i> : | $\tau(E)$ follows $t_R$  |
- where  $\tau(E)$ : run-time of the event;  $t_R$ : reference time interval

Now our central question is what the aspectual interpretation in sentences with a morphologically aspectless verb is. Let us consider (17), where we have the sentence model from above with the difference that there is no aspect overt marker. What is the relationship between  $\tau(\text{dance}(e))$  and  $t_R$ ? Native speakers that we have consulted report varying degrees of oddness in this sentence. This seems to be due to an inference that Emre’s dance must have been short-lived, perhaps just a few seconds.

<sup>5</sup> We follow the literature in using when-clauses to set the reference time. Since these clauses give us a fixed moment on the timeline, they set a reference/topic time that allows us to observe more easily how aspect relates the run-time of the event to this reference/topic time.

<sup>6</sup> As a matter of fact,  $t_R$  that is picked out by the modifier (i.e., the *when*-clause) is not the run-time of Serpil entering the room but the end-point of this event. We infer this based on the oddness of examples where the *when*-clause contains an atelic event. For instance, we find the example in (i) odd unless the canonically atelic event of book-reading is coerced into a telic one adding an implicit end-point to it.

(i) ??Ayşe kitap oku-duğ-un-da, Emre dans et-ti.  
Ayşe book read-NMLZ-POS.3SG-LOC Emre dance-PST  
Lit: ‘When Ayşe read a book, Emre danced.’

<sup>7</sup> Needless to say, we build on the important insights in previous works to infer the semantic contributions of these suffixes. See in particular Göksel and Kerslake (2005); Jendraschek (2011); Kornfilt (1997); Yavaş (1980). However, the labels we use may be different. In particular, the suffix *-mİş*, which we label *anterior*, is often called *perfective* (Erguvanlı Taylan 2001, e.g.) in that it encodes completedness. We label it *anterior* aspect, after Jendraschek (2011), as completedness is a secondary outcome of the semantic relation *-mİş* primarily encodes, namely precedence. We reserve the term *perfective* for the case where  $\tau(E)$  is contained in  $t_R$  (Klein 1994).



- (17) ?Serpil oda-ya gir-diğ-in-de, Emre dans et-ti. 215  
 Serpil room-DAT enter-NMLZ-POS.3SG-LOC Emre dance-PST  
 ‘When Serpil entered the room, Emre danced.’ 216

Indeed, as illustrated in (18), the sentence becomes even more degraded when the event is replaced with one that is supposed to last longer than the duration of entering a room. 217

- (18) ??Serpil oda-ya gir-diğ-in-de, Emre 10. Yıl Marşın-ı oku-du. 219  
 Serpil room-DAT enter-NMLZ-POS.3SG-LOC Emre 10th year march-ACC recite-PST  
 ‘When Serpil entered the room, Emre recited the 10th Year March.’ 220

On the other hand, the oddness disappears when the event is replaced with one that can easily match the duration of entering a room such as *jumping*. This is illustrated in (19). 221

- (19) Serpil oda-ya gir-diğ-in-de, Emre zıpla-dı. 223  
 Serpil room-DAT enter-NMLZ-POS.3SG-LOC Emre jump-PST  
 ‘When Serpil entered the room, Emre jumped.’ 224

The interpretation of sentences with verbs that carry past tense marking but no overt aspect marking suggests that the duration of the event and the reference time interval need to match.<sup>8</sup> Importantly, unlike in sentences with the imperfective aspect marker, the duration of the event cannot overflow the reference time interval. If that were the case, we would feel no oddness in (18), just like we don’t feel any oddness in (20). 225

- (20) Serpil oda-ya gir-diğ-in-de, Emre 10. Yıl Marşın-ı 230  
 Serpil room-DAT enter-NMLZ-POS.3SG-LOC Emre 10th year march-ACC  
 oku-yor-Ø-du. 231  
 recite-IMPF-COP-PST  
 ‘When Serpil entered the room, Emre was reciting the 10th Year March.’ 232

There is a well-known aspect category that is consistent with the speaker intuitions on these sentences. This is the **perfective** aspect, which generates the inference that  $t_R$  contains  $\tau(E)$ , i.e., the reference time interval contains the run-time of the event (Klein 1994). Positing this aspectual feature in the interpretation of these sentences would indeed explain the varying degrees of oddness that speakers report. The shorter  $\tau(E)$  is (or could be), the better the sentence sounds.<sup>9</sup> Hence, based on interpretational evidence alone, positing a perfective aspect feature, which has no overt exponent in Turkish, seems to be a viable option. We will come back to the feasibility of this option in section 3.3 and compare it to the aspectless alternative we propose (and argue for) in sections 4 and 5. 233

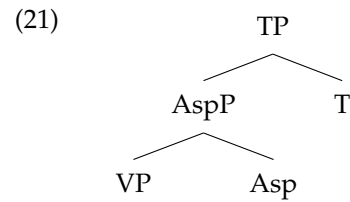
### 3.2. Can Tense combine with VP meanings? 242

As described in the previous subsection, aspect and tense have distinct semantic functions. Under a well-known compositional semantics that combines the meaning of an event with the meanings of aspect and tense features, aspect has the function of existentially binding the event and situating its run-time relative to a (reference) time interval. The result of this composition is then fed to tense, which situates the reference time interval relative to the speech time (von Stechow and Heim 2011; Hacquard 2009; Klein 1994; Kratzer 243

<sup>8</sup> There is a potential question about the status of this matching inference: Is it an implicature arising in competition with structures that have an overt aspect head? We thank an anonymous reviewer who proposes to rule out this possibility, pointing out that no competition should occur with alternative structures (i.e., structures with aspectual projection) that are more complex than the original structure (i.e., aspectless structures), as argued in Kratzer (2007). See, for instance, (12). 244

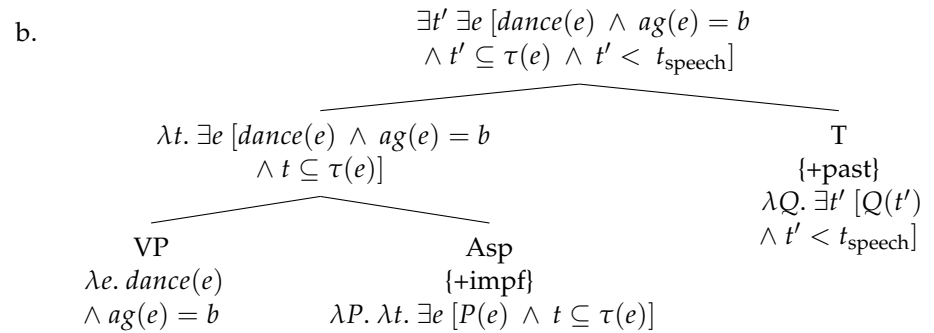
<sup>9</sup> Interestingly, some speakers do not find a sentence like (18) odd. Rather they infer that the main event *began at*  $t_R$ . Of course, this allows them to avoid the oddness because, unlike the perfective aspect, this interpretation does not require the entire run-time of the event to be part of  $t_R$  but only the initial boundary of the event. It requires further investigation to determine how commonly available this strategy is among Turkish speakers. We come back to this issue in section 6. 245

1998; Kusumotu 2008; Ogihara 1995; von Stechow 2009, a.o.).<sup>10</sup> Given this, aspect is crucial in the composition since it lets ‘events’ talk to ‘times.’ This is evident in the well-established syntactic functional sequence given in (21).



Notably, Kelepir proposes that in cases where there is no overt aspect marker, an AspP projection is also missing in the structure. Before we see what sort of compositional difficulty this raises, let us see an example where both Asp and T projections are present. As shown in (22-b), the aspect feature denotes a function that applies to the VP meaning (a predicate of events). This composition existentially closes the event and returns a predicate of times. The output of this composition is then fed into the function that the T head denotes, which in return closes off the time interval, situating it before the speech time. The final meaning derived from this logical form is given in words in (22-c).

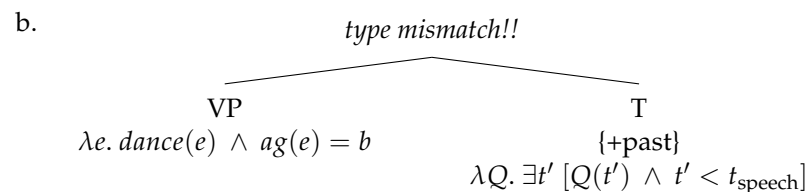
- (22) a. Buse dans ed-iyor-Ø-du.  
 Buse dance-IMPF-COP-PST  
 ‘Buse was dancing.’



- c. ‘There is a time interval  $t'$  before the speech time such that there is an event  $e$  of dancing whose agent is Buse and  $t'$  is contained in the run-time of  $e$ .’

Given this composition, it should be easy to see that we end up with a type mismatch when we remove the Asp projection from the logical form. T denotes a function that is looking for an input that denotes a predicate of times, while in (23-b), its complement is a VP, which denotes a predicate of events. Then, the absence of Asp, with its mediating role between events and times, leads to a type mismatch, preventing us from deriving any meaning.

- (23) a. Buse dans et-ti.  
 Buse dance-PST  
 ‘Buse danced.’



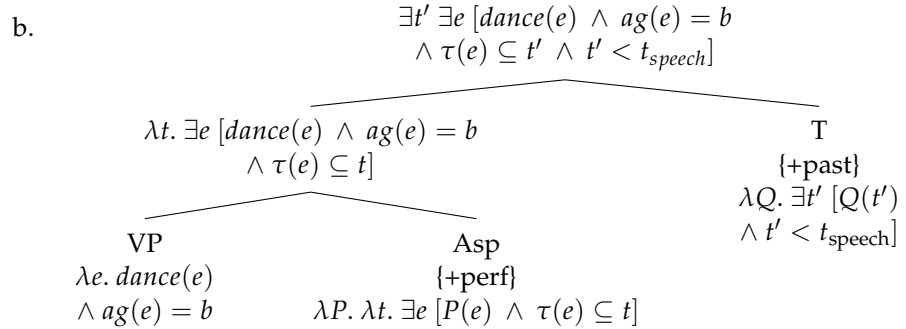
<sup>10</sup> The wording here is a simplification in that it sets aside embedded tense, which is orthogonal to our purposes in this paper.



## 3.3. Interim Discussion

Combining our findings in the last two subsections, the solution to the empirical and theoretical challenges [Kelepir's](#) proposal is facing may seem obvious: posit a perfective aspect feature that just happens to have no overt exponent. Recall that the interpretation of sentences with aspectless verbs seems consistent with positing such a feature. This will also fix the compositionality difficulty we faced in directly composing VP meanings with tense, as illustrated in (24) below.

- (24) a. Buse dans et-ti.  
Buse dance-PST  
'Buse danced.'



- c. 'There is a time interval  $t'$  before the speech time such that there is an event  $e$  of dancing whose agent is Buse and  $t'$  contains the run-time of  $e$ .'

While this makes sense from a semantic point of view, it surely jeopardizes the explanation of morpho-syntactic facts. [Kelepir's](#) initial motivation in letting the T head directly combine with a VP is to explain crucial morpho-syntactic facts such as the lack of the auxiliary copula and the impossibility of suspended affixation in sentences where the verb has a tense marker but no aspect marker, as discussed in Section 2. Once we posit an AspP which is syntactically present yet has no exponent, we make predictions that are not borne out, as illustrated by the following contrasts:

- (25) a. \*Temizle- $\emptyset$ <sub>perfective</sub> i-di-m.  
clean-PERF COP-PST-1SG  
Intended: 'I cleaned (it).'
- b. Temizle-miş i-di-m.  
clean-ANT COP-PST-1SG  
'I had cleaned (it).'

- (26) a. \*[Yeri sil- $\emptyset$ <sub>perfective</sub> ve süpür- $\emptyset$ <sub>perfective</sub>] -dü-m.  
floor.ACC wipe-PERF and vacuum-PERF -PST-1SG  
Intended: 'I wiped and vacuumed the floor.'
- b. [Yeri sil-miş ve süpür-müş] -tü-m.  
floor.ACC wipe-ANT and vacuum-ANT -PST-1SG  
'I had wiped and vacuumed the floor.'

To summarize, morpho-syntactic and semantic considerations point in different directions with regard to how we should syntactically represent morphologically aspectless verbs. In the next section, we argue that this dilemma can be resolved in favor of a clausal structure where T is allowed to directly combine with a VP, as [Kelepir](#) argues. We will show that our proposal, which allows us to retain [Kelepir's](#) explanation for morpho-syntactic facts, also makes correct predictions with respect to the way sentences with aspectless verbs are interpreted.

#### 4. The Analysis

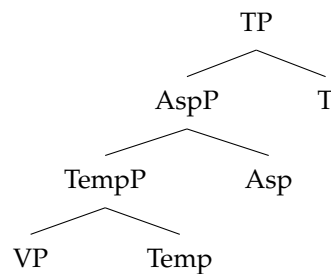
In the previous section, we have shown that Kelepir’s analysis faces some challenges regarding the composition of the sentences that lack an overt aspect marker. However, we have also seen that positing a null Asp head in such cases creates challenges on the morphological side. In this section, we will propose an account that reconciles Kelepir’s analysis showing that a compositional interpretation is still possible in the absence of the Asp projection.

We aim for formal and compositional implementation of two fundamental ideas adopted in the previous section: (i) Tense locates the reference time relative to the speech time, and (ii) aspect encodes a relation between the run-time of an event and the reference time. Keeping the view that T denotes an existential quantifier, we offer some twists with respect to the interpretation of Asp, building on Coppock and Champollion (2022). In this section, we achieve two goals: We first separate aspect from its traditional role of mapping events to their run-times. Then, we illustrate how aspectual contrasts are integrated into this system, which, we demonstrate, rules in aspectless logical forms. We turn to the empirical predictions of our proposal in Section 5.

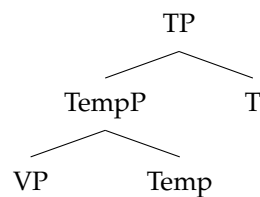
##### 4.1. Mapping events to their run-times

Our first and most crucial move is to divorce Asp from the existential closure of the predicate of events. For this, we posit an operator of type  $\langle\langle v, t \rangle, \langle i, t \rangle\rangle$  that takes a predicate of events, existentially closes it and returns a predicate of times. This operator, whose denotation is given in (27-c), essentially associates an event  $e$  to its run-time, i.e.,  $\tau(e)$  (Krifka 1992).<sup>11</sup> Although other implementations are possible, to offer a concrete proposal, we assign the meaning of this operator to a ‘Temporal’ head, abbreviated Temp. We further conjecture that the Temp head is right above the VP projection in the functional sequence, as required by its function to retrieve the time interval that an event occupies.<sup>12</sup> As we will see shortly, the Temp head in (27-a) is what makes the composition go through in an aspectless clause as in (27-b), as well.

(27) a.



b.



c.  $\llbracket \text{Temp} \rrbracket = \lambda P_{\langle v, t \rangle}. \lambda t. \exists e [\tau(e) = t \wedge P(e)]$

<sup>11</sup> As a matter of fact, this operator will need to be part of the structure when the predicate is non-verbal, too. Hence, the term ‘event’ should be understood as *eventuality*, including states such as *being at home* or *being a student*, which have measurable run-times just like events.

<sup>12</sup> Alternatively, verb meanings may be rich enough to do what we propose Temp does, as shown below. (See also Coppock and Champollion 2022 for an alternative.)

(i)  $\llbracket \text{dance} \rrbracket = \lambda e. \lambda t. [\text{dance}(e) \wedge \tau(e) = t]$ .

Positing a Temp head above the VP is a stylistic choice, and the question of whether such a head exists and, if so, whether there are languages where this head is overtly realized is left for future considerations.

Within this system, an Asp head no longer combines with predicates of events but with predicates of times. In syntactic terms, an Asp head selects for a TempP. Accordingly, with this, we depart from previous accounts where Asp is taken to denote a function from predicates of events to predicates of times, i.e., type  $\langle\langle v, t \rangle, \langle i, t \rangle\rangle$ . Rather, an Asp head denotes a function from predicates of times to predicates of times, i.e., type  $\langle\langle i, t \rangle, \langle i, t \rangle\rangle$ . We redefine the three overt aspect markers of Turkish, *-(I)yor*, *-miş*, and *-(y)AcAK* in the proposed system. Note that the run-time of the event corresponds to  $t'$  in these formulas because  $t'$  is the time that has the property  $P$  denoted by the VP. The reference time, on the other hand, is  $t$ .

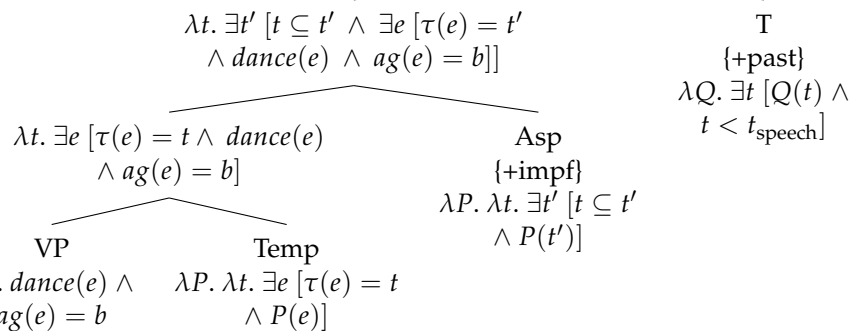
- (28) a.  $\llbracket \text{IMPF} \rrbracket = \lambda P_{\langle i, t \rangle}. \lambda t. \exists t' [t \subseteq t' \wedge P(t')]$   
 'Takes a predicate of times  $P$ , and returns a predicate of times that is true of a time  $t$  if  $t$  is contained in a time  $t'$  at which  $P$  is true.'  $\tau(E)$  contains  $t_R$
- b.  $\llbracket \text{ANT} \rrbracket = \lambda P_{\langle i, t \rangle}. \lambda t. \exists t' [t' < t \wedge P(t')]$   
 'Takes a predicate of times  $P$ , and returns a predicate of times that is true of a time  $t$  if  $t$  precedes a time  $t'$  at which  $P$  is true.'  $\tau(E)$  precedes  $t_R$
- c.  $\llbracket \text{PROS} \rrbracket = \lambda P_{\langle i, t \rangle}. \lambda t. \exists t' [t < t' \wedge P(t')]$   
 'Takes a predicate of times  $P$ , and returns a predicate of times that is true of a time  $t$  if  $t'$  is preceded by a time  $t$  at which  $P$  is true.'  $\tau(E)$  follows  $t_R$

With the imperfective aspect, the requirement is that the reference time is contained in the run-time of the event. With the anterior aspect, the requirement is that the run-time of the event precedes the reference time. And finally, with the prospective aspect, the requirement is that the reference time precedes the run-time of the event.

To give an example, we provide a derivation with the imperfective aspect in (29-b).

- (29) a. Buse dans ed-iyor-Ø-du.  
 Buse dance-IMPF-COP-PST  
 'Buse was dancing.'

b. 
$$\begin{aligned} & \exists t \exists t' [t \subseteq t' \wedge \exists e [\tau(e) = t' \\ & \wedge \text{dance}(e) \wedge \text{ag}(e) = b] \\ & \wedge t < t_{\text{speech}}] \end{aligned}$$



- c. 'There is a time interval  $t$  before the speech time that is contained in the run-time  $t'$  of an event  $e$  of dancing whose agent is Buse.'

#### 4.2. The evidence for TempP

The view that the mapping of events to their run-times (and hence the existential closure of the event variable) occurs below the aspectual projection is supported by modification facts. We identify post-positional phrases (henceforth PP) that can or have to modify the run-time of the event. Consider the following sentences:

- (30) a. Serpil saat 10 ile 11 arasında koş-muş-tu.  
 Serpil hour 10 and 11 between run-ANT-PST  
 'Serpil had run between 10:00 and 11:00.'

- b. Serpil *saat 10'dan 11'e kadar* koş-muş-tu.  
 Serpil hour 10-ABL 11-DAT till run-ANT-PST  
 'Serpil had run from 10:00 to 11:00.'

The two PPs in (30-a) and (30-b) behave differently with respect to at what level of derivation they can operate. Take the sentence in (30-a), first, which is ambiguous because *between 10 and 11* can be understood as specifying either the run-time of the event or the reference time. When the PP modifies the run-time of the event, the running event happens between 10 and 11 and precedes the reference time, which is some time interval in the past, as shown below:

- (31) a.  $\exists t \exists t' [t' < t \wedge \exists e [\tau(e) = t' \wedge \text{run}(e) \wedge \text{ag}(e) = s \wedge$   
 $\boxed{t' \text{ is between 10 \& 11}}] \wedge t < t_{\text{speech}}]$  381  
 b. 'There is a time interval  $t$  before the speech time, and there is a time interval  $t'$  between 10 and 11 which is the run-time of a running event whose agent is Serpil, and  $t'$  precedes  $t$ .' 385

The PP can also be understood as the reference time in (30-a). In this interpretation, the dancing event precedes the reference time, which occupies the time interval between 10 and 11 before the speech time, as illustrated below:

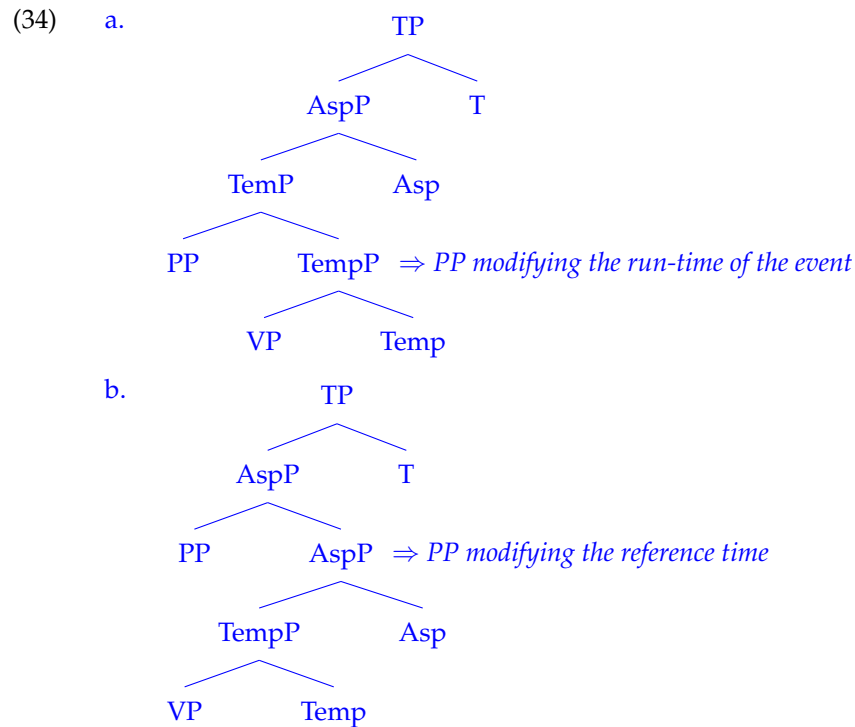
- (32) a.  $\exists t \exists t' [t' < t \wedge \exists e [\tau(e) = t' \wedge \text{run}(e) \wedge \text{ag}(e) = s] \wedge t < t_{\text{speech}} \wedge$   
 $\boxed{t \text{ is between 10 \& 11}}]$  389  
 b. 'There is a time interval  $t$  between 10 and 11 before the speech time, and there is a time interval  $t'$  which is the run-time of a running event whose agent is Serpil, and  $t'$  precedes  $t$ .' 393

On the other hand, the PP in (30-b) can only specify the run-time of the event. What the sentence is saying is that the running event that occupied the time interval from 10 to 11 precedes the reference time, which is some time interval in the past:<sup>13</sup>

- (33) a.  $\exists t \exists t' [t' < t \wedge \exists e [\tau(e) = t' \wedge \text{run}(e) \wedge \text{ag}(e) = s \wedge \boxed{t' \text{ is from 10 to 11}}]$   
 $\wedge t < t_{\text{speech}}]$  397  
 b. 'There is a time interval  $t$  before the speech time, and there is a time interval  $t'$  from 10 to 11 which is the run-time of a running event whose agent is Serpil, and  $t'$  precedes  $t$ .' 401

The fact that the PP in (30-a) can modify the run-time of the event and the one in (30-b) has to modify the run-time of the event indicates that there is a level of structure that denotes a set of run-times of the event denoted by the VP. This level is the projection of what we call the Temp head. When adjoined to the TempP, as illustrated in (34-a), a PP that denotes a set of times modifies the TempP, i.e., the set of run-times of the event. On the other hand, when adjoined to the higher AspP projection, as in (34-b), the PP modifies the AspP that denotes a set of reference times, which stands in relation to the run-time of the event.

<sup>13</sup> We take both PPs to pick out the maximal interval between 10 and 11. However, the PP *saat 10 ile 11 arasında* 'between 10 and 11' can be subject to further restriction, denoting a shorter interval within the maximal interval. We will talk about such cases in section 5.



If the run-time of the event were introduced as part of the denotation of the Aspect head, as in the previous accounts, the modification of the run-time of the event would not be possible. This is because the set of run-times of the event is not accessible in these accounts; the AspP denotes sets of reference times, and hence modification could only happen at this level, contrary to fact. 412-416

#### 4.3. Logical forms without Asp 417

We have seen how severing aspect from the role of mapping events to their run-times, i.e., the projection of TempP, is independently motivated to allow modification at the level of event times. In this section, we illustrate how this mechanism turns out to be useful for our purposes. Recall that our goal is to reconcile the morpho-syntactic facts with the requirements of semantic composition. The puzzle is how to compositionally derive verbal forms that lack an overt aspect marker. 418-423

Under our proposal, there is no need for an Asp projection in the absence of an overt aspect marker. More precisely, it turns out to be a reasonable option to assume that the derivation simply lacks an aspectual specification in verbal forms devoid of an aspect morpheme. The composition is not interrupted because no type-mismatch arises owing to Temp. That is, T can still survive without an aspectual specification. The output of Temp, being of type  $\langle i, t \rangle$  can saturate the argument slot of T that is of type  $\langle \langle i, t \rangle, t \rangle$ . In the previous accounts, aspectual projection is responsible for the existential closure of the predicate of events to return a predicate of times. In our account, this task belongs to Temp. 424-431

Thus, for an example like (35-a), we have the derivation in (35-b).<sup>14</sup> 432

- (35) a. Buse dans et-ti. 433  
 Buse dance-PST  
 'Buse danced.'

<sup>14</sup> Compare the derivation with overt perfective aspect in (24-b). 434

- b. 
$$\begin{array}{c} \exists t \exists e [\tau(e) = t \wedge dance(e) \\ \wedge ag(e) = b \wedge t < t_{speech}] \\ \hline \begin{array}{cc} \lambda t. \exists e [\tau(e) = t \wedge \\ dance(e) \wedge ag(e) = b] & T \\ \hline VP & \{+past\} \\ \lambda e. dance(e) & \lambda Q. \exists t [Q(t) \wedge \\ \wedge ag(e) = b & t < t_{speech}] \\ \hline & Temp \\ \lambda P. \lambda t. \exists e [\tau(e) = t & \\ \wedge P(e)] & \end{array} \end{array}$$
- c. 'There is a time interval  $t$  before the speech time such that it is the run-time of an event  $e$  of dancing whose agent is Buse.'

As shown in (35-b), semantic types work out and the derivation is semantically convergent. Thus, we derive some coherent truth conditions. Now the question is if these are the right truth conditions for sentences like (35-a). In section, 3.2, based on aspectual tests, we discussed the possibility of a perfective aspect interpretation for these sentences.

Before we re-evaluate and extend our empirical investigation, let us compare what the presence of the perfective aspect feature would predict, in comparison to the truth conditions we derived without the presence of an Asp head in (35-b). To make the comparison easier, we write the formula in (36-a) which is equivalent to the formula derived in (35-b).<sup>15</sup> Notice that in the absence of an Asp head, we still have a reference time (i.e. the time that we are talking about and that tense locates relative to the speech time). In aspectless derivations, the reference time just happens to be the event time itself.

- (36) a. truth conditions derived without Asp:  

$$\exists t \exists t' \exists e [t < t_{speech} \wedge \tau(e) = t' \wedge t' = t] \wedge dance(e) \wedge ag(e) = b]$$
there is a time interval  $t$  before the speech time and  
there is a time interval  $t'$  which is the run-time of an event of Buse dancing:  
 $t$  and  $t'$  are the same interval.
- b. truth conditions that would be derived with perfective Asp:<sup>16</sup>  

$$\exists t \exists t' \exists e [t < t_{speech} \wedge \tau(e) = t' \wedge t' \subseteq t] \wedge dance(e) \wedge ag(e) = b]$$
there is a time interval  $t$  before the speech time and  
there is a time interval  $t'$  which is the run-time of an event of Buse dancing:  
 $t'$  is part of  $t$ .

As shown in (36), the contrast between the formulas is obvious. While the aspectless derivation predicts that the run-time of the event *is* the past time interval we are talking about (identity relation), the derivation with the perfective aspect predicts that the run-time of the event *is contained in* the past time interval we are talking about (part-of relation). Notably, there will be situations where both truth conditions will be satisfied. Namely, when the run-time of the event and the reference time are identical, both part-of and identity conditions are met (since perfective does not bring in a *proper* part-of relation). Recall that in a sentence like (37) that provides a modifier indicating the reference time interval (we are talking about), this was exactly the situation. The reference time interval, as well as the event's run-time, are so small that both identity and part-of relations are met. For example, in (37), we can easily assume that Serpil's entering the room and Emre's jumping co-occupied the same time interval.

<sup>15</sup> For any constant term  $c$  part of a well-formed formula  $\phi$ ,  $\phi$  is equivalent to the formula  $\exists x [x = c \wedge \phi[c \rightarrow x]]$  where  $\phi[c \rightarrow x]$  is a shorthand for the formula in which all occurrences of  $c$  in  $\phi$  is replaced by  $x$ . For example,  $Loves(mary, john) = \exists x [x = john \wedge Loves(mary, x)]$ . Hence, the formulas in (36-a) and (35-b) are equivalent.

<sup>16</sup> See the past imperfective derivation in (29-b) for reference.



- (37) Serpil oda-ya gir-diğ-in-de, Emre zıpla-dı. 471  
 Serpil room-DAT enter-NMLZ-POS.3SG-LOC Emre jump-PST 472  
 ‘When Serpil entered the room, Emre jumped.’ 472

Similarly, sentences like (38) that sounded odd have an overt modifier that gives a very short reference time interval, but the event in question is naturally expected to last longer than the reference time interval. In this case, neither identity nor part-of relations are true. Since the reference time interval is shorter than the event’s run-time, the identity relation between the two intervals cannot hold. Likewise, it cannot be that the event’s run-time is part of the reference time interval. Hence, these odd sentences with short reference time intervals do not help us tease apart the two truth conditions.

- (38) ??Serpil oda-ya gir-diğ-in-de, Emre 10. Yıl Marşın-ı oku-du. 480  
 Serpil room-DAT enter-NMLZ-POS.3SG-LOC Emre 10th year march-ACC recite-PST 481  
 ‘When Serpil entered the room, Emre recited the 10th Year March.’ 481

What would help us tease apart the identity and part-of relations (predicted under no aspect vs. perfective aspect, respectively) are sentences which provide a long reference time interval and an event that is expected to last shorter than the reference time. In such situations, the identity relation cannot be true whereas the part-of relation can be. Hence, whether the truth conditions we derived without an Asp head are correct should ideally be tested using sentences like (39). Under the aspectless derivation we have proposed after Keleşir (2001), the sentence in (39) is predicted to sound odd if we really mean the reference time we are talking about to be a one-hour interval. This is because the run-time of a cat running away from her home cannot be a one-hour-long interval. However, no oddness is expected in (39) if speakers are able to interpret the sentence by positing a perfective aspect (i.e. use a part-of relation) since the part-of relation can easily be verified in this context. Then, the crucial empirical question is whether sentences like (39) are odd. In the next section, we discuss the facts and their implications for the competing analyses at hand.

- (39) Bu sabah saat 10 ile 11 arasında, Ezo ev-den kaç-tı. 495  
 this morning hour 10 and 11 between, Ezo home-ABL run.away-PST 496  
 ‘Ezo ran away from home between 10:00 and 11:00 this morning.’ 496

### 5. An empirical re-evaluation: perfective or no-aspect? 497

A sentence like (39) is an empirical test that can potentially help us adjudicate between the two logical forms (aspect-less vs. with perfective aspect). However, it turns out to be less helpful than we could hope for. The fact is a sentence like (39) is not all that odd. All things being equal, the proposed aspectless logical form would predict a level of oddness that the sentence in (40) has, which (39) lacks. Recall from section 4.2 that a modifier like *10’dan 11’e kadar* specifies the duration of an event. Hence, the oddness in (40) is predicted. Therefore, the fact that (39) is not as odd may suggest that speakers are indeed able to access the part-of interpretation where the run-time of Ezo running away from home is part of the one-hour time interval.

- (40) #Bu sabah saat 10’dan 11’e kadar, Ezo ev-den kaç-tı. 507  
 this morning hour 10-ABL 11-DAT till, Ezo home-ABL run.away-PST 508  
 ‘Ezo ran away from home from 10:00 to 11:00 this morning.’ 508

The availability of the part-of interpretation in (39) can be understood in two ways. The first possibility is that speakers may be assigning the sentence to a logical form with the perfective aspect. This would immediately account for the part-of interpretation that the semantics of the perfective aspect requires. The second possibility is that the speakers make use of the aspectless logical form (i.e., no perfective aspect) but are employing further implicit restriction on the modifier, giving us a shorter reference time. There is evidence that the second possibility is independently needed. Note that the further restriction on the reference time interval can be overt as in (41), making the identity-relation viable.

Importantly, this restriction must also be available when it is implicit.<sup>17</sup> One piece of evidence for this is that a continuation like *Tahmin et ne zaman!* ‘Guess when!’ can be a follow-up to (39) just like it can be a follow-up to (41).<sup>18</sup>

- (41) Bu sabah saat 10 ile 11 arasında **bi ara**, Ezo ev-den kaç-tı.  
 this morning hour 10 and 11 between some time, Ezo home-ABL run.away-PST  
 ‘Ezo ran away from home **some time** between 10:00 and 11:00 this morning.’

As a matter of fact, as [Ogihara \(1995\)](#) argues, implicit restriction under the existential semantics for (past) tense should be generally possible.<sup>19</sup> Critical evidence in favor of the availability of implicit restriction is discussed in the context of [Partee’s \(1973\)](#) famous example in (42). Under an unrestricted existential semantics for past tense, the truth conditions for (42) come out too strong if negation outscopes past tense as in (42-a). Most naturally, the person who utters (42) does not intend to say they have never turned off the stove at any time before the speech time. Similarly, the truth conditions for (42) come out too weak (trivially satisfiable) if past tense outscopes negation as in (42-b). Most naturally, the person who utters (42) does not intend to say there is some past time in which they did not turn off the stove.<sup>20</sup> As a fix to this problem, [Ogihara \(1995\)](#) proposes to provide implicit restriction to the existential quantifier that the past tense denotes so that it quantifies over a contextually relevant time interval. For example, in (42), it could be along the lines of ‘the time interval right before the speaker left their house that morning.’ Then, negation outscoping the restricted existential quantifier derives the right truth conditions for the sentence at hand.

- (42) I didn’t turn off the stove.  
 a.  $\neq$  There is no time  $t$  before  $t_{\text{speech}}$  such that I turned off the stove at  $t$ .  
 b.  $\neq$  There is a time  $t$  before  $t_{\text{speech}}$  such that I did not turn off the stove at  $t$ .

Given this possibility, even when an expression that is supposed to determine  $t_R$  is present in our examples, we have to grant that due to the availability of further implicit restriction,  $t_R$  could be a duration shorter than what the expression denotes. Therefore, examples that provide a  $t_R$  that is big enough to properly contain a short event do not provide unambiguous evidence in favor of the availability of the perfective aspect or aspectless structures.

Finally, let us consider sentences where  $t_R$  provides a long interval and the event can be understood to fill up the non-trivial interval that  $t_R$  picks out. For example, in (43), the activity verb denotes an event that can easily fill up the one-hour interval. This is fully predicted under both the part-of semantics that the perfective aspect analysis derives and the identity semantics that the aspectless derivation predicts.

- (43) Bu sabah saat 10 ile 11 arasında, Ezo evin içinde koştur-du.  
 this morning hour 10 and 11 between, Ezo house-GEN inside run.around-PST  
 ‘Ezo ran around inside the house between 10:00 and 11:00 this morning.’

<sup>17</sup> There is also a question about the possibility of further restriction for the PP in (40). We observe that this is not possible. Intuitively, this finds a natural explanation in that while further restriction on the reference time does not result in information loss, a further implicit restriction on a modifier that directly measures the duration of an event would be under-informative. Compatible with this is the fact that adding *bi ara* ‘some time’ to the PP in (40) results in ungrammaticality.

<sup>18</sup> We are grateful to an anonymous reviewer for bringing this example to our attention.

<sup>19</sup> For expository reasons, we do not illustrate how the implicit restriction is integrated into the semantics of past tense in our logical forms. One option to implement this is found in [von Stechow and Beck \(2015\)](#) where the past tense also syntactically combines with a covert restrictor of type  $\langle i, t \rangle$  as shown below.

(i)  $\llbracket \text{PST} \rrbracket = \lambda C. \lambda Q. \exists t [Q(t) \wedge C(t) \wedge t < t_{\text{speech}}]$

<sup>20</sup> That is, even a one-second-long time interval in which the speaker did not turn off the stove would make the sentence true.

On the other hand, as shown in (44), which most naturally describes a one-hour long (iterative) jumping event, constitutes suggestive evidence that a semelfactive event is coerced into an iterative construal to satisfy the identity relation. Notably, no such coercion would be directly predicted if the perfective aspect feature could be invoked in interpreting (44).

- (44) Bu sabah saat 10 ile 11 arasında, Emre zıpla-dı.  
 this morning hour 10 and 11 between Emre jump-PST  
 ‘Emre jumped between 10:00 and 11:00 this morning.’

To summarize, while we are not able to find conclusive evidence in favor of the aspectless logical form we proposed, native speaker intuitions on the data we report are consistent with the truth conditions derived from it. Moreover, there is no unambiguous evidence that the perfective aspect is used. When these findings are considered together with the morphosyntactic facts, which suggest there is no perfective aspect, we argue that the proposed aspectless logical form comes out as an attractive option.

## 6. Concluding Remarks

In this contribution, we have investigated aspectless verbal forms in Turkish from a semantic point of view. While morphosyntactic considerations suggest aspectless clausal structures for sentences containing aspectless finite verbs as argued in Keleşir (2001), we have identified both empirical and theoretical semantic challenges against this idea. In addressing these challenges, we have proposed an interpretable logical form that implements the main insight in Keleşir (2001).

The key ingredient in our proposal comes from Coppock and Champollion (2022), which divorces Asp from its role of mediating VP meanings with times. We have shown that the logical form we propose derives truth conditions that are consistent with native speaker intuitions. In essence, the aspectless derivation we proposed predicts an identity relation between the run-time of the event and the time interval that the sentence is talking about. As we have shown, the clearest indication of this prediction that derives from aspectless logical forms is the oddness that native speakers report for sentences like (45). In particular, the oddness is predicted in that the duration of Emre reciting the 10th Year March cannot be identical to the duration of Serpil entering the room.

- (45) ??Serpil oda-ya gir-diğ-in-de, Emre 10. Yıl Marşın-ı oku-du.  
 Serpil room-DAT enter-NMLZ-POS.3SG-LOC Emre 10th year march-ACC recite-PST  
 ‘When Serpil entered the room, Emre recited the 10th Year March.’

However, there are also some remaining questions, two of which we mention here. First, as we have mentioned in footnote 9, there are some speakers who do not find sentences like (45) odd. The paraphrases these speakers provide for this sentence reveal that they understand the main event as having started at  $t_R$  (which the modifier picks out in this case). While the further investigation of these *inceptive* interpretations is surely needed, we hypothesize that this could either be some pragmatic coercion mechanism or derives from a distinct logical form. For example, the latter possibility could be implemented by positing a head *InitBound*, whose denotation is provided in (46). This head would syntactically compete with the *Temp* head that we posited, occupying the same position in the functional sequence.<sup>21</sup> Notably, when the *InitBound* head is in the structure instead of the *Temp* head, the sentence would be making a claim about the initial boundary of the main event (i.e., the time at which it started). For example, using the denotation in (46), we would derive the truth conditions in (47) for (45).

- (46)  $[[\text{INITBOUND}]] = \lambda P. \lambda t. \exists e. P(e) \wedge \text{InitBound}(e) = t$

<sup>21</sup> There is a potential overgeneration problem with this additional head, which can be prevented by stipulating that the *Asp* head can only syntactically combine with *TempP*. It seems to us that the *InitBound* head being freely available under the *Asp* head makes bad empirical predictions.

- (47) There is a time  $t$  before the speech time such that 598  
 $t$  = the run-time of the event of Serpil entering the room & 599  
 $t$  = the *initial boundary* of the event of Emre reciting the 10th Year March. 600

The second point of interest that we have not discussed in this paper is the status of other aspectless verbal forms as in (48). Although a detailed investigation of sentences containing other aspectless verbal forms is needed, we conjecture that the aspectless derivation we proposed makes correct predictions about the interpretation of such sentences, establishing an identity relation between the reference time interval and the run-time of the event. 601  
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- (48) a. Aylin bu sabah saat 10 ile 11 arasında koş-muş. 607  
 Aylin this morning hour 10 and 11 between run-EVID  
 '(I have realized/heard) that Aylin ran between 10:00 and 11:00 this morning.' 608  
 b. Aylin bu sabah saat 10 ile 11 arasında koş-sa, sana söyle-r-di. 609  
 Aylin this morning hour 10 and 11 between run-COND you.DAT tell-AOR-PST  
 'If Aylin ran between 10:00 and 11:00 this morning, she would have let you know.' 610  
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As a final remark, whether our proposal for Turkish can be a general account of the so-called 'unmarked perfective aspect' across languages awaits further cross-linguistic investigation. 612  
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**Sample Availability:** Samples of the compounds ... are available from the authors.

## Abbreviations

The following abbreviations are used in this manuscript:

|       |                      |
|-------|----------------------|
| ABL   | ablative             |
| ACC   | accusative           |
| ANT   | anterior             |
| COP   | copula               |
| DAT   | dative               |
| IMPF  | imperfective         |
| LOC   | locative             |
| NMLZ  | nominalization       |
| PERF  | perfective           |
| PL    | plural               |
| POS   | possessive agreement |
| PROSP | prospective aspect   |
| PST   | past tense           |
| SG    | singular             |

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