

The Syntax and Semantics of Inner Aspect

Class 4 : The syntactic instantiation of telicity 2, the syntax of inner aspect in Hungarian

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Éva Kardos

University of Debrecen

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Introduction

- A central idea in syntactic approaches to inner aspect is that there is a functional projection, often called AspP, that is directly responsible for the calculation of telic interpretations.
- Analyses differ regarding the location of AspP in the structure of the sentence.
- Today we will see two analyses which both argue for the presence of AspP within the verb phrase, sandwiched between vP and VP.

Introduction

- As for the first analysis, Travis (1991, 1999, 2010), we will focus on a morphological argument for AspP.
- Then, we discuss MacDonald (2008), where an important argument for the syntactic nature of AspP is that it creates a domain of aspectual interpretation.
- We will also pay special attention to how variation (both within and across languages) is captured on these analyses.
- In the final third of today's class, we will also talk about the syntax of inner aspect in Hungarian in the context of important assumptions from the previous analyses.

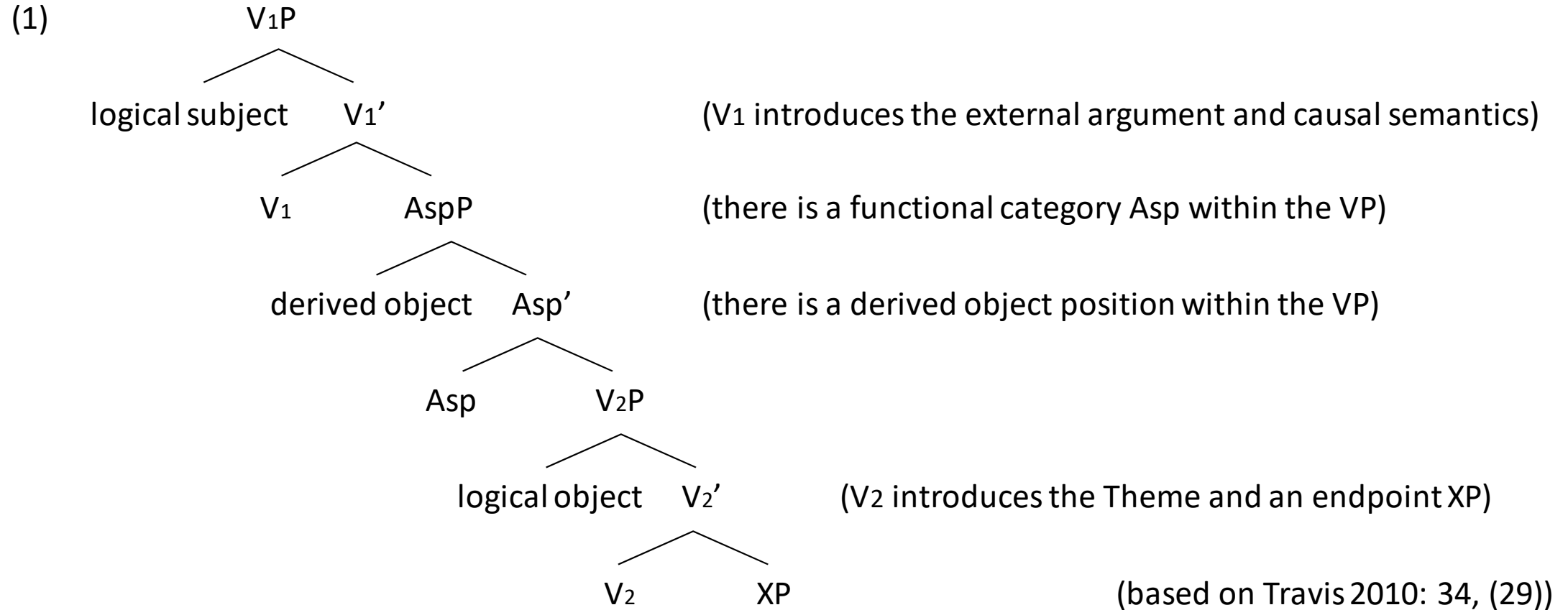
Travis's (2010) syntax: the structure of the event domain

Travis (2010) argues for the tree in (1) representing the structure of the event domain. Some key ideas regarding this structure:

- The verb phrase has a layered structure (Larson 1988).
- V_1 introduces the external argument and it contributes causal semantics.
- V_2 introduces the Theme argument and the endpoint of the event in a complement position.
- There is a derived object position within the VP, below the position of the external argument.
- There is a functional category (Aspect) within the layered verb phrase.

We focus on the last two claims and discuss two arguments for them (one for each) provided by Travis.

Travis's (2010) syntax: the structure of the event domain



Travis's (2010) syntax: an argument for derived objects within the VP

Here is a syntactic argument for derived objects within the VP from Swedish:

- Vinka (1999) discusses the following examples illustrating how the object can appear before or after a particle or the word *sönder* 'broken':

(2) Jag stängde (den) av (den)

I switched it off it

'I switched it off.'

(3) Kalle sparkade (den) sönder (den)

Kalle kicked it broken it

'Kalle broke it, by kicking it.'

Travis's (2010) syntax: an argument for derived objects within the VP

- Assuming object movement, one can argue that the object stays in the VP or moves out of it. Here are some data that we can consider evidence for the former hypothesis:

(4) Jag har inte **stängt** den av
I have not switched it off

(5) Kalle tror att jag inte **stängde** den av
Kalle thinks that I not switched it off

'Kalle thinks that I didn't switch it off.'

(Travis 2010: 39)

Travis's (2010) syntax: an argument for derived objects within the VP

- As is clear from (4) and (5), the verb is blocked from moving into the inflectional domain. Note that it appears to the right of the auxiliary verb and negation in (4) and to the right of negation in an embedded clause in (5).
- In both (4) and (5) the object is to the left of the particle and after the verb.
- So, it seems plausible that the object moves from after the particle, but stays in the VP along with the verb.

Travis's (2010) syntax: a morphological argument for AspP within the verb phrase

Here is the simplified version of a morphological argument for Asp within the VP:

- Travis uses the position of reduplication (RED) in Tagalog as evidence for an aspectual category between her V₁P and V₂P.
- An important part of this argument is the assumption that morpheme order reflects phrase structure. This is formulated in Baker's (1985) Mirror Principle as follows:

(6) **Mirror Principle:** Morphological derivations must directly reflect syntactic derivations (and vice versa).

(Baker 1985: 375)

Travis's (2010) syntax: a morphological argument for AspP within the verb phrase

- Consider the morphological analysis of the verb *nagtutumba* 'to be knocking down' in (7), Travis's central data, derived from (8).

(7) a. **n-ag-tu-tumba** 'to be knocking somebody down'

(transitive-causative form + 2 aspects)

b. **n** (Aspect 1) + **m** (topic marker) + **pag** (associated with causation) + **RED** (Aspect 2) + **tumba** (verbal root)

(8) **m-ag-tumba** 'knock somebody down'

(transitive-causative form associated with *mag-*, which has been argued to be a combination of *m-* and *pag-* (Maclachan (1989)).

Travis's (2010) syntax: a morphological argument for AspP within the verb phrase

- Finally, consider (9), which is the intransitive version of (8) without *pag-*.

(9) *t-um-umba* 'fall down'

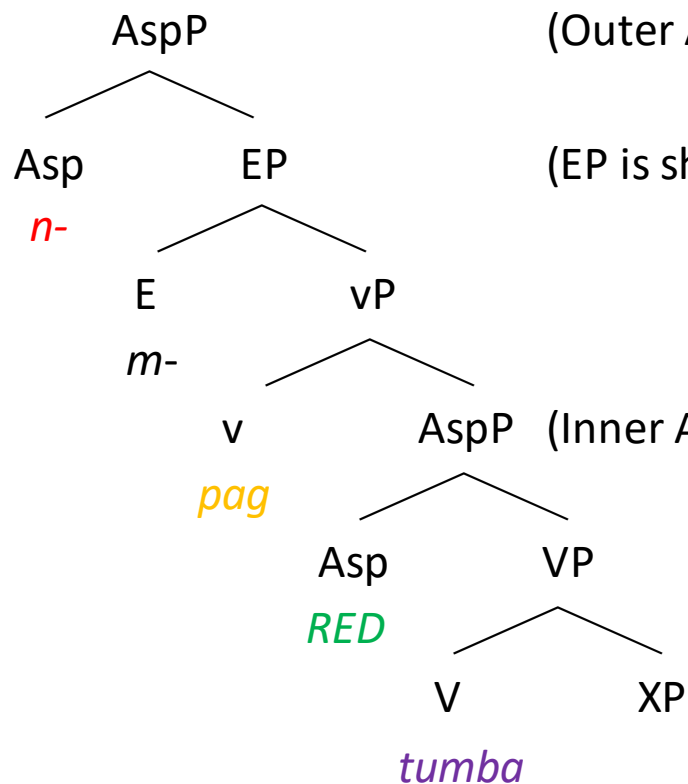
(the infix *um* and the prefix *m* in transitive *magtumba* are allomorphs and sit in a functional head above vP/V₁P)

- In light of all this, we can now examine Travis's phrase structure for (7) in (10).

Travis's (2010) syntax: a morphological argument for AspP within the verb phrase

(10) a. n-ag-tu-tumba

b.



(Outer AspP whose head is associated with the feature [+start])

(EP is short for Event Phrase, this is the edge of the event domain)

(Travis's (2010) V₁P)

(Inner AspP whose head is associated with the feature [+incomplete])

(Travis's (2010) V₂P)

(Travis 1999: 317)

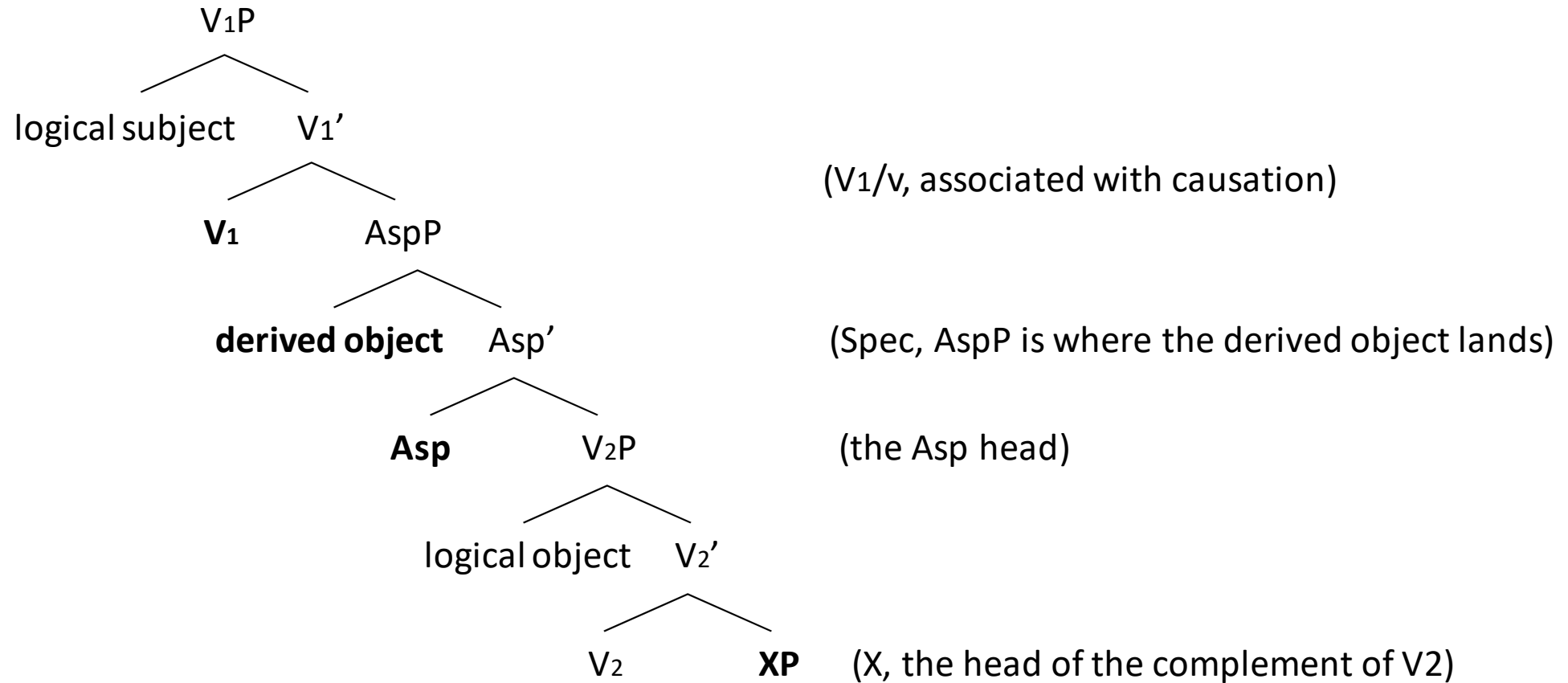
Travis's (2010) syntax: language variation

What about languages other than Tagalog when it comes to the structure of the event domain? How do we capture differences across languages?

- Travis (2010: 242, 244) argues for the positions in boldface in (11), where event boundedness/telicity can be marked across languages.

Travis's (2010) syntax: language variation

(11)



Capturing language variation in a Travis-style syntax

- The XP at the bottom of the tree is often an AP or a PP. See the examples below from English and Finnish.

(12) a. John hammered the metal flat. (*flat* is an AP)

b. Mari hakkasi metallin litteäksi. (*litteäksi* is a PP)

Mari hammered metal.ACC flat.TRANSL

'Mari hammered the metal flat.'

(Levinson 2010: 144)

Capturing language variation in a Travis-style syntax

- The Asp head has been argued to be expressed by various morphemes in Malagasy and Mandarin and the derived object position in [Spec, AspP] is occupied by bounded incremental themes such as those in (13b) and (14b).

(13) a. Tim drank water for/*in 10 mins.

b. Tim drank a bottle of water in/?for 10 mins.

(14) a. Josh ate apples for/*in 10 mins.

b. Josh ate 2 apples in/?? for 10 mins.

Capturing language variation in a Travis-style syntax

- The upper V_1 head has been argued by Slabakova (1997) to be occupied by Bulgarian aspectual prefixes, also associated with causation.
- Slavic perfective prefixes have been argued to be similar to their Hungarian counterparts (see Kardos 2024), though there are important differences as well. For example, Hungarian particles like *meg*, illustrated shortly, arguably occupy a phrasal position within the VP (see also É. Kiss 2008).

MacDonald (2008): central claims

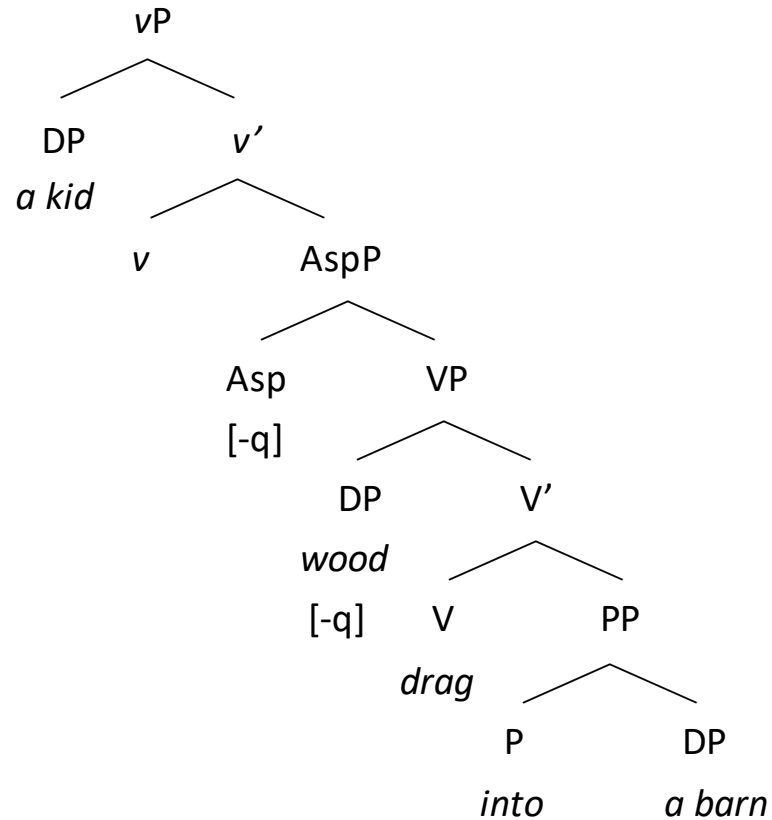
MacDonald (2008) is similar to Travis's syntax in several ways. Here are some central claims from the former:

- Inner aspect is fundamentally tied to an aspectual projection, AspP, between vP and VP.
- Agree with Asp is the syntactic instantiation of the object-to-event (OTE) mapping (i.e. the ability of the internal object argument to affect aspectual readings).
- The presence of AspP ensures that there is a syntactic space within the verbal domain where elements contribute to aspectual interpretations.
- Telicity contributed by internal objects and telicity ensured, for example, by goal PPs, where subevent structure is created, are independent from each other.
- (Sub)event structure comes about in the presence of interpretable event features on certain heads. These features give rise to meanings where events have a beginning and/or an end.

MacDonald's (2008) syntax of the event domain

(15) a. A kid dragged wood into a barn.

b.



(q is short for quantity in an intuitive sense)

(MacDonald 2008: 43)

MacDonald (2008): evidence for the syntactic instantiation of the OTE mapping

- Given the Agree relation, only the closest nominal expression can Agree with Asp.
- Internal arguments can thus value Asp.
- Not all internal arguments are thematic arguments and yet they can participate in the OTE mapping, as shown in (16).

(16) a. John walked the letter *(to the post office) for an hour.

b. *John walked the letter.

c. John walked mail *(to the post office) for an hour.

MacDonald (2008): evidence for the syntactic instantiation of the OTE mapping

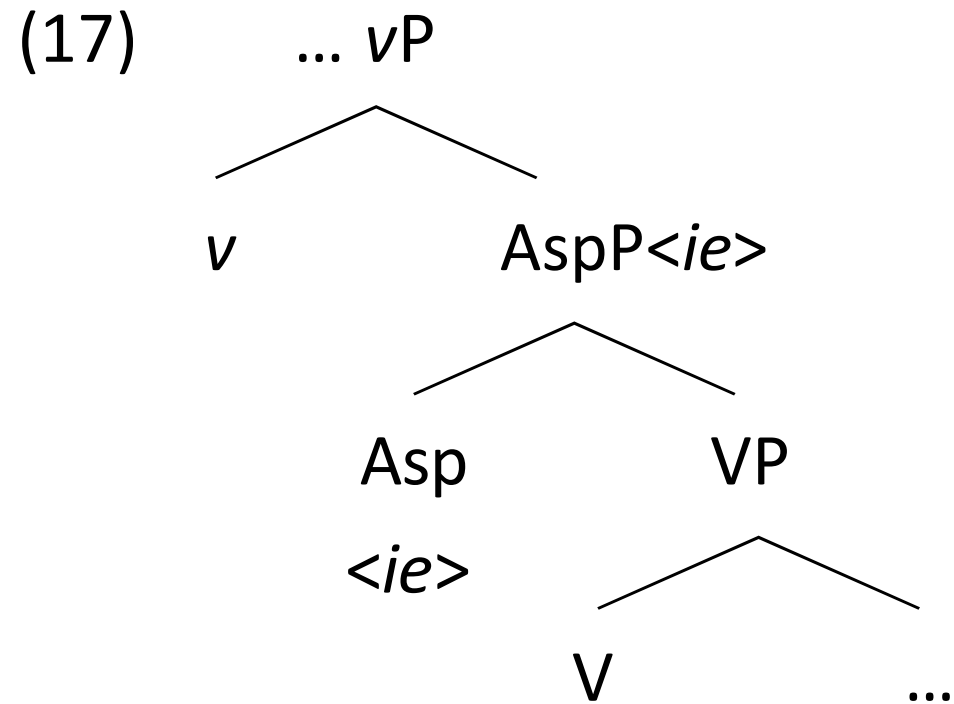
- (16a) is telic, which is evidenced by the fact that the verbal predicate has a sequence of identical events interpretation in the presence of the durative adverbial *for an hour*.
- By contrast, (16c) is atelic in the presence of a [-q]NP *mail*. Here there is only a single event interpretation.
- These examples also show that there is no thematic relation between the verb and *the letter/mail*.
- Agree captures the relation illustrated between the verb and the internal argument in (16a) and (16c) as it is closeness that matters for the valuing of Asp.

MacDonald (2008): event structure is grammaticalized

- MacDonald (2008: 62) argues that the beginning and the end of events are grammaticalized in the form of interpretable event features, *<ie>* and *<fe>*, which enter narrow syntax on heads such as Asp, V and P and project. *<ie>* and *<fe>* mean initial subevent and final subevent, respectively.
- The number of event features associated with a given verbal predicate and the relation between them determine what Vendlerian class the predicate belongs to.
- So, the Vendlerian classes are syntactically represented: activities have an *<ie>* feature, accomplishments and achievements have both *<ie>* and *<fe>*, and statives have no event features.

MacDonald (2008): event structure is grammaticalized

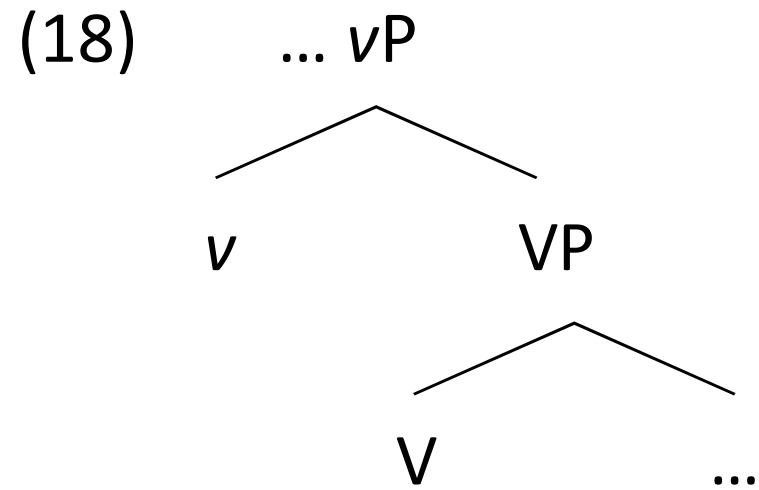
- Here is the syntactic structure for activities like *carry the ladder*:



(MacDonald 2008: 28)

MacDonald (2008): event structure is grammaticalized

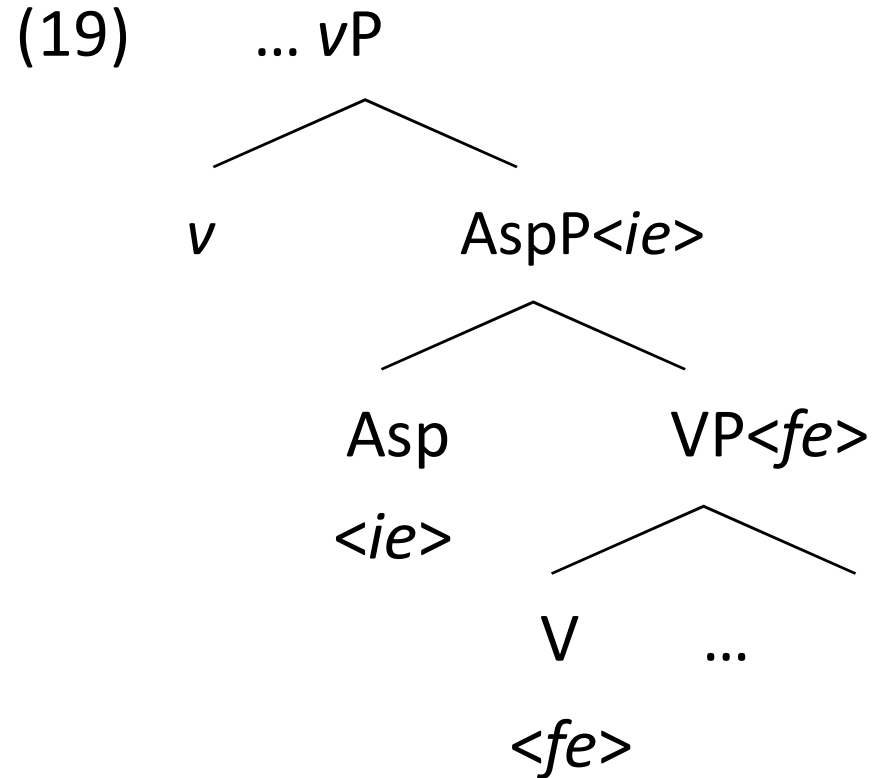
- Here is the syntactic structure for statives like *love the boy*:



(MacDonald 2008: 28)

MacDonald (2008): event structure is grammaticalized

- And here is the syntactic structure for accomplishments like *drink a beer*:



(MacDonald 2008: 28)

MacDonald (2008): accomplishments vs. achievements

- Achievements are different from accomplishments in that their *<ie>* and *<fe>* features are both associated with the Asp head.
- MacDonald derives the punctual nature of achievements from this given that no c-command relation holds between the event features.
- That accomplishments take time is derived from the fact that there is a c-command relation between *<ie>* and *<fe>*. Time is interpreted to elapse between the beginning and the end of the event.
- Since merge affects the relation between the event features (an earlier merged element is c-commanded by a later merged element), it also derives an important property of accomplishments (i.e. the property that they take time).

MacDonald (2008): modification by *almost* captured in syntax

- If adverbials like *almost* modify different portions of event structure (see also class 1) and *almost* is assumed to Agree with XPs associated with event features, we expect multiple readings with accomplishments in the presence of *almost*, whereas a single reading with achievements.
- If *almost* Agrees with an XP that has an <ie> feature, a counterfactual interpretation becomes available (i.e. the event did not begin), while in the case of *almost* Agreeing with an XP marked with a <fe> feature, an incompleted interpretation arises (i.e. the event did not end).

MacDonald (2008): the domain of aspectual interpretation

- Another important generalization in this theory is that AspP defines a syntactic space within which elements may contribute to aspectual interpretations. Elements outside of this space cannot do this.
- Evidence for this comes from (i) the grammar of external arguments and (ii) that of goal/location PPs.
- Agree with Asp determines the extent of the domain of aspectual interpretation.

MacDonald (2008): the domain of aspectual interpretation

- External arguments do not affect aspectual interpretations (see also Tenny 1994).

(20) a. The soup cooled for an hour/in an hour.

b. Neal cooled the soup for an hour/in an hour.

(MacDonald 2008: 54-55)

The presence of an external causer does not change the aspectual facts of the predicate.

(21) a. Livestock drank a tub of water in 10 minutes.

b. Wildlife ate a herb garden in 10 minutes.

(MacDonald 2008: 43)

Mass nouns as external arguments do not yield atelicity.

MacDonald (2008): the domain of aspectual interpretation

- Location PPs, merged structurally higher than AspP, do not affect aspectual interpretations, while goal PPs, which are lower, do.

(22) a. John drove the car (at the park) for an hour.

b. John drove the car to the park for an hour.

(MacDonald 2008: 57)

(22b) only has an iterative interpretation. Goal PPs like that in (22b) turn atelic predicates into telic ones. See also Borer (2005: 208), who argues for the direct range-assigning role of goal PPs like *to the store* in *run to the store*.

MacDonald (2008): the domain of aspectual interpretation

- A further assumption is that AspP is necessarily associated with a minimal domain, which is itself.
- The domain of aspectual interpretation is extended to everything dominated by AspP if Asp is valued by a [+q] nominal expression.

(23) a. John carried a goat into the barn #for ten minutes.

b. John carried livestock into the barn for ten minutes.

(MacDonald 2008: 80)

The presence of a goal PP does not ensure telicity in (23b). The internal argument has to be [+q].

MacDonald (2008): language variation

- The event features are considered universal across languages, whereas the OTE mapping, and thus AspP, is a variant property.
- This kind of variation is also found within a single language. See the structures earlier for statives versus all other predicate classes.
- One particular consequence of this variation is that Verkuyl's generalization does not hold in every language, as also discussed extensively in Borer (2005).
- Russian is such a language, as specifically discussed by this author, similarly to Hungarian, as we will see shortly (there are some caveats, though).

The syntax of inner aspect in Hungarian

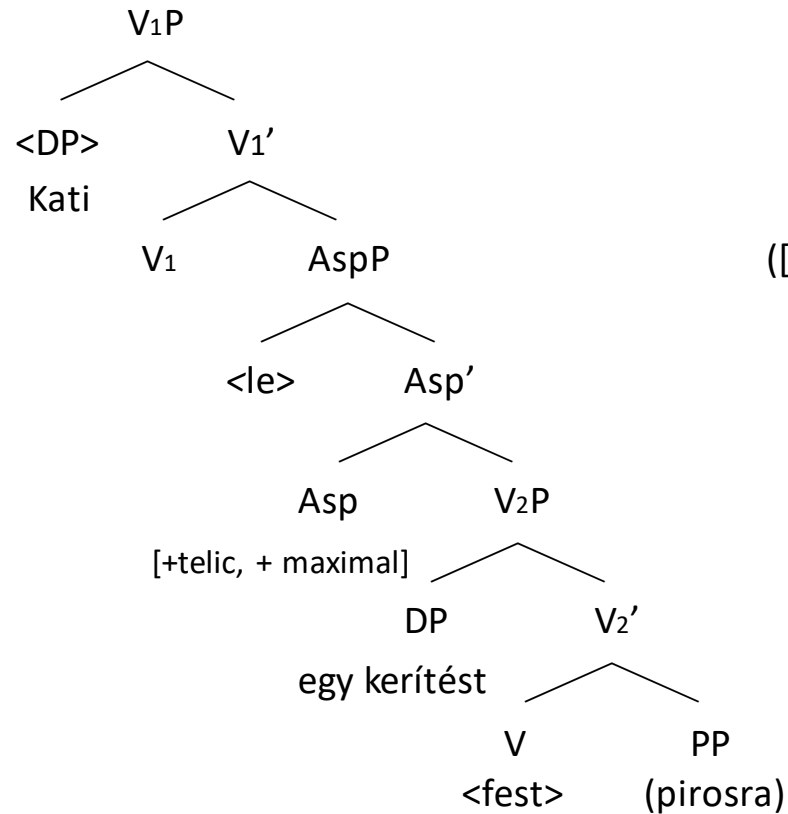
- In much prior literature on inner aspect in Hungarian (see, for example, Csirmaz 2008 and É. Kiss 2008), event boundedness is argued to be a purely compositional property of verbal predicates. It is not represented in the syntax of the Hungarian sentence, but only as a semantic property.
- In what follows, I present an alternative analysis based on Kardos and Farkas (2022), where the central claim is that telic interpretations are linked to a specific aspectual projection in the syntax (i.e. telic interpretations are read off of the structure of the Hungarian sentence).
- The tree in (24b) associated with the example in (24a) shows some key assumptions about the structure of the Hungarian event domain.

The syntax of inner aspect in Hungarian

- (24) a. János le-fest egy kerítést (piros-ra).
 J.NOM PRT-paint a fence.ACC red-SUBL
 'János paints a fence (red).'

The syntax of inner aspect in Hungarian

(24) b.



([Spec,AspP] is where telicity-marking verbal particles are merged)

(based on Kardos and Farkas 2022)

The syntax of inner aspect in Hungarian

- Hungarian verbal particles like *le* in *le-fest* 'PRT-paint' are argued to check the features [+telic] and [+maximal] associated with the Asp head.
- This has the consequence that Hungarian sentences with such marking elements have a strictly telic, maximal-event interpretation.
- With just the verb and a bounded object DP, we get atelicity.

(25) a. János egy nap alatt/*egy nap-ig le-festett egy kerítést (pirosra).

J.NOM a day under/*a day-for PRT-painted a fence.ACC (red.SUBL)

b. János egy nap-ig/*egy nap alatt festett egy kerítést.

J.NOM a day-for/*a day under painted a fence.ACC

The syntax of inner aspect in Hungarian

- Contrast (25b) with its English counterpart in (26).

(26) John painted a fence in/?for a day.

The predicate *paint a fence* is easily interpreted telically (both on a creation and non-creation reading).

Key insight here: A bounded incremental object does not yield telicity in (25b) on a non-creation reading, contra what is expected based on much prior literature arguing for the compositional/semantic nature of telicity.

The syntax of inner aspect in Hungarian

- Telicity-marking *le* and other similar particles such as *meg* contrast with another aspectual marking element, *egyet* 'one.ACC', which is argued to encode an aspectual operator that picks out a contextually specified non-maximal subpart of the events in the denotation of verbal predicates.

(27) Sára futott egyet.

Sára ran one.ACC

'Sára went for a run.'

The analysis we propose for *egyet* 'one.ACC' is that it is also merged in [Spec, AspP], but checks the features [+telic, -maximal], thereby giving rise to telic, non-maximal event descriptions.

The syntax of inner aspect in Hungarian

- Related to the non-maximal nature of the events denoted by verbal expressions including *egyed* 'one.ACC' is that structures like that in (27) are also not associated with a prominent result state or goal point. This is shown in (28) from Kardos and Farkas (2022: 832).

(28) A diák futott egyed anélkül,
 the student ran one.ACC without
 hogy elért volna valahova.
 that reached would somewhere

'The student went for a run without getting anywhere.'

The syntax of inner aspect in Hungarian

- Structures with *egyet* 'one.ACC' also illustrate examples associated with intermediate culminations (see also class 3), as shown by (29).

(29) Anna szárított egyet a haján,
Anna dried one.ACC the hair.POSS.SUP
de még lehet rajta szárítani.
but still possible it.SUP dry.INF

'Anna dried her hair a bit, but it could still use some drying.'

(Kardos and Farkas 2022: 831)

The syntax of inner aspect in Hungarian

Consider (30), where the presence of *teljesen* 'completely' gives rise to ungrammaticality.

(30) *Sára teljesen futott egyet.

Sára completely ran one.ACC

This contrasts with (31), a grammatical string, containing *teljesen* 'completely' and the particle *le*.

(31) Kati teljesen le-festett egy kerítést.

Kati completely PRT-painted a fence.ACC

'Kate painted a fence completely.'

The syntax of inner aspect in Hungarian

- We also predict that in a structure like (27) no aspectual particle is allowed, since [Spec,AspP] is occupied by *egyed* 'one.ACC'. This is borne out in (32).

(32) *Sára el-futott egyed.

Sára PRT-ran one.ACC (Kardos and Farkas 2022: 839)

- Another prediction is that *egyed* 'one.ACC' is incompatible with objects carrying accusative case, as shown in (33).

(33) a. *János evett egyed egy levest.
János ate one.ACC a soup.ACC

(Kardos and Farkas 2022: 841)

b. János evett egyed.
János ate one.ACC
'János ate a meal.'

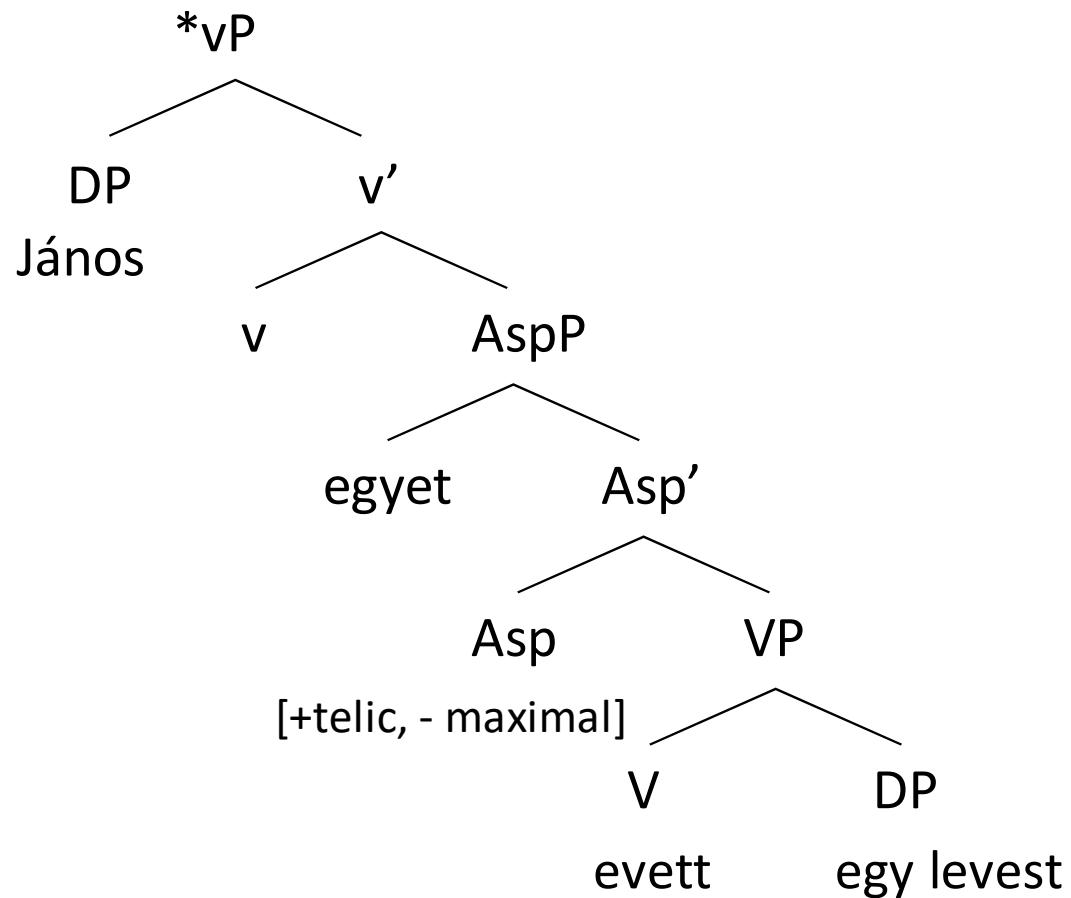
The syntax of inner aspect in Hungarian

- We predict the ungrammaticality of (33a) as follows:

If accusative case assignment is directly linked to *v*, and *egyet* 'one.ACC' intervenes between *v* and the theme DP, the theme can't get accusative case, as shown in (34).

The syntax of inner aspect in Hungarian

(34)



(Kardos and Farkas 2022: 841, (73))

The syntax of inner aspect in Hungarian

- The overall conclusion is that telicity is linked to a syntactic projection in Hungarian, as well.
- Particles like *meg* and *le* are argued to be overt instantiations of a maximality operator merged in [Spec, AspP].
- Non-maximality readings associated with *egyed* 'one.ACC' are also derived from the syntax of the event domain.
- For more on how *meg* compares to English *up* in *eat the sandwiches up* and Slavic perfective prefixes, see class 5.

Acknowledgements

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