MATRIX VERB TYPE AND THE AVAILABILITY OF ASPECTUAL STRUCTURE
Betul Erbasi, University of Southern California, Los Angeles, USA

Introduction: This study investigates the relation between the type of matrix verb (i.e. attitude and emotive verbs) and the availability of temporal adverbs in nominalized complements in Turkish. Using the availability of temporal adverbs as a test based on the assumption that they reside in the aspectual domain (Wurmbrand 2014), I argue that these nominalized complements can oscillate between a VP and an Asp(ect)P and that this oscillation depends on the verb type: attitude verbs require these complements to be a VP while emotive verbs can have them either as a VP or an AspP, depending on whether agreement can be established. I propose that *Remove,* as the mirror image operation of *Merge* (Müller 2015, 2017), achieves this oscillation effect. This provides evidence for the existence of *Remove* as a grammatical operation. By exploring the previously not-so-explored interaction between verb types and aspectual domains in complements, this study also contributes in a unique way to the growing literature on the effect of the main verb on complements (e.g. de Cuba 2007, Kastner 2015), which mostly focuses on factivity and presupposition. This exploration leads to the conclusion that aspectual domain is dynamic and may be influenced by non-aspectual factors such as the verb type.

Data: In (1) is an example with the nominalized complements formed with nominalizers *–mE* and *–(y)Iş* with an attitude verb *bil-* 'know' and temporal adverbs *dün/yarın* 'yesterday/tomorrow' (same pattern holds for aspectual adverbs like 'frequently'). Note that temporal adverbs are not allowed:

(1) Merve [Ali-nin   (*dün)/(*yarın)   yürü-**me**-sin]-i/yürü-**yüş-**ün]-ü   bil-iyor/bil-ir/bil-di
     M   A -3GEN yesterday/tomorrow walk-mE-3S-ACC/walk–(y)Iş-3S-ACC know-IMPF/know-AOR
     /know-PST
     'Merve knows/knew Ali's walking/how Ali walked (*yesterday)/(*tomorrow)'

With an emotive verb, on the other hand, the temporal adverb is not allowed in cases where it does not agree with the time of the matrix verb:

(2) Merve [Ali-nin   dün   yürü-**me**-sin]-e/yürü-**yüş-**ün]-e   *şaşır-acak/şaşır-dı
     M   A -3GEN yesterday walk-mE-3S-DAT/walk–(y)Iş-3S-DAT be.surprised-FUT/be.surprised-PST
     'Merve was surprised/*will be surprised at [Ali's walking yesterday]/[how Ali walked yesterday]'

If the temporal adverb in (2) is *yarın* 'tomorrow', then the verb pattern is reverse: *şaşır-acak/*şaşır-dı*. This reading with a future adverb and a past marker on the matrix verb would lead to a contradiction such that it would entail that the matrix event of being surprised happened before the embedded event of walking. But contexts can be construed where this contradiction can be overridden (e.g. a plan where *yarın* refers to a part of the plan rather than actual time point). The pattern still holds in that context.

If a temporal adverb such as *Pazartesi* 'on Monday', which can refer to both past and future, is used, both past and future marking in the matrix verb is good:

(3) Merve [Ali-nin   Pazartesi yürü-**me**-sin]-e/yürü-**yüş-**ün]-e   şaşır-acak/şaşır-dı
     M   A -3GEN Monday walk-mE-3S-DAT/walk–(y)Iş-3S-DAT be.surprised-FUT/be.surprised- PST
   'Merve was surprised/will be surprised at [Ali's walking yesterday]/[how Ali walked yesterday]'

Note that the verb *surprise* does not force absolute time interval overlap but overlap in time location (e.g. past or future), as sentences like *Yesterday Merve was surprised [at Ali's walking the day before],* where the matrix and embedded events are restricted by different time intervals in the past, is grammatical.

Lastly, temporal adverbs are allowed if the nominalizer itself has an overt tense-aspect marker (like *–DIK* in (4), which has the past marker *–DI* in it). Note that emotive verbs cannot take this nominalizer:

(4) Merve [Ali-nin   dün   yürü-**düğ**-ün]-ü   bil-iyor/bil-ir/bil-di
     M   A -3GEN yesterday walk-DIK-3S-ACC know-IMPF/know-AOR/know-PST
     'Merve knows/knew that Ali walked yesterday'

Proposal: I argue that the nominalizations can enter the derivation as either VP-under-DPs or AspP-under-DPs. Attitude verbs opt for the former only while emotive verbs take them as AspP and may reduce them to VP under special circumstances. This reduction process is achieved via the operation *Remove.* The proposed derivation is represented in (5) with steps in order from (5a) to (5c) (boxed nodes in (5a) are the nodes in the complement; the big box indicates the whole complement):
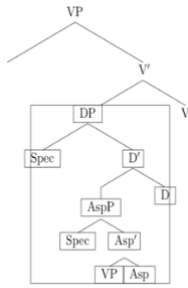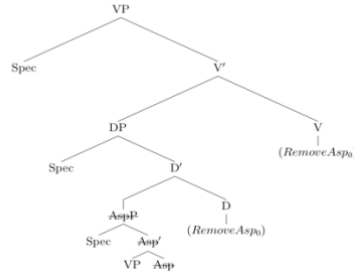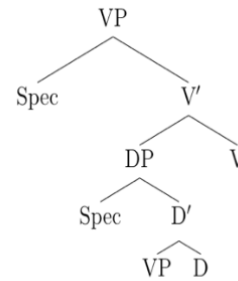
(5)   a.   b.   c.

(5a) is the result of *Merge*. If AspP is kept, as in the grammatical version in (2), the structure stays as in (5a). If AspP needs to be eliminated to prevent crash due to failure in agreement, as in the ungrammatical form of (2), *Remove* applies to the head of AspP (Remove-Asp_0) and removes the whole AspP from the structure as shown in (5b), making the VP the complement of the DP as in (5c). This operation is enabled by a tense-aspect feature. Since attitude verbs always take a VP-under-DP complement, their complement only has the form in (5c). The *Remove* operation is transmitted to the DP from the matrix VP via percolation. This transmission is possible because DPs do not behave like strong islands in Turkish (e.g. they allow extraction and binding).

Discussion: *Remove* has recently been proposed to account for cases of conflicting representations that cannot be explained via *Merge* and *Agree* (Müller 2015, 2017). It is possible that it is the operation leading to restructuring phenomena (Müller 2017) and exfoliation (Pesetsky 2017). *Remove* is taken to be the mirror image of *Merge*, hence having the same properties: (i) it is feature-driven, (ii) it can apply to head and phrases, (iii) it obeys Strict Cycle Condition (it does not apply exclusively in embedded contexts) and (iv) it can be external or internal. When it applies to heads, as in (5b), it removes the whole phrase it is associated with. Müller uses this function to account for multiple phenomena, including oscillation cases like the present data and German passives in which (external argument) DPs are accessible from below and inaccessible from above. He suggests that this conflicting pattern emerges because of the operations that apply: accessibility happens when DP has been merged and is present in the structure. Inaccessibility from above emerges because the DP has already been removed by the time the matrix clause has been merged. For the present case, note that temporal adverbs are generated, therefore, embedded AspP must also be generated in the syntax. However, these adverbs cannot be licensed by the embedded AspP at LF, as evidenced by the fact that they need to agree with matrix AspP to survive. This indicates that embedded AspP must have been removed, so there is no closer licenser for temporal adverbs than the matrix AspP. This is similar to the paradoxes Müller bases his arguments for *Remove* on. Thus, present data provide support for the existence of *Remove* as a grammatical operation.

For attitude verbs, there are at least two possible explanations: they either never take an AspP-under-DP complement, as is assumed here, or they always remove AspP, unless there is a closer licenser as in (4). The latter means that the AspP of the matrix attitude verbs can themselves not license the temporal adverbs. More research is needed to choose between these options.

Conclusion: Aspectual domain is very dynamic: it can merge, agree and be removed. The dynamicity is due to interaction with multiple elements: its generation depends on the type of the matrix verb; it undergoes agreement with other temporal-aspectual elements in the embedded (as in (4)) or matrix clause (as in (2)); if it cannot agree, then it needs to be removed. Note that this dynamic nature is affected not only by temporal-aspectual elements but also factors that seem unrelated to aspect (i.e. verb type). Future research should investigate what the exact relation between the verb type and aspect-marking is.

References: [1] De Cuba, C. F. (2007). *On (non) factivity, clausal complementation and the CP-field*. State University of New York at Stony Brook. **[2]** Müller, G. (2015). *Structure removal. A new approach to conflicting representations.* Lecture Notes, WiSe 2014/2015, Version of March 25, 2015. **[3]** Müller, G. (2017). Structure removal: An argument for feature-driven Merge. *Glossa: a journal of general linguistics*, 2(1), 28. DOI: http://doi.org/10.5334/gjgl.193. **[4]** Pesetsky, D. (2017). Exfoliation: towards a derivational theory of clause size, *Workshop on Quirks of Subject Extraction,* National University of Singapore. **[5]** Wurmbrand, S. (2014). Tense and aspect in English infinitives. *Linguistic Inquiry*, 45(3), 403-447.