Lowering from complex heads comes in two types and prosody knows this

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BCGL 14:
Where syntax and phonology meet
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Domain of prominence in Turkish

- In Turkish words, the default stress position is the final syllable.
- This is also the case in the Turkish verbal domain (TVD) when focused:

(1) A: Kim girmiş?
'Who has entered?'

B: | ZiyaretÇİ |.
visitor
'The visitor.'

B': | Ziyaretçi-LER |.
visitor-PL
'The visitors.'

(2) A: Biz ne yaptık?
'What did we do?

B: |Gir-di-NiZ. |
enter-PAST-2PL
'(You) entered.'

- Domain of prominence equals a prosodic word (ω) in Turkish

(Kabak & Vogel 2001, Göksel 2010, Kahnemuyipour & Kornfilt 2010, Güneş 2015, Shwayder 2015, a. o.)

- It seems from (2) that a TVD matches with a ω

Domain of prominence in Turkish

- However, not all TVDs match to a single ω

(3) A: Biz ne yapmıştık?
'What did we do?'

B: * | Gir-miş -i-di-NiZ. |
enter-PERF-COP-PAST-2PL
'(You) had entered.'

B': | Gir-MİŞ | -i-di-niz. |
enter-PERF -COP-PAST-2PL
'(You) had entered.'

- In certain (often complex) TVDs, prominence is medial (non-final)
- Such TVDs are thus parsed into two ωs.
  - Leftmost ω is the domain of prominence, rightmost ω is a post-nuclear ω.

(For more on prominence related discussion in TVDs, see Sebüktekin 1984, van der Hulst & van de Weijer 1991, Kornfilt 1996, Kabak & Vogel 2001, Inkelas & Orgun 2003, Göksel 2010, Güneş 2020b, 2020c, among many others)

Recap: The core issue

Q: Why are some TVDs parsed as single ωs, while others are split into two ωs?

(2) A: Biz ne yaptık?
'What did we do?

B: |Gir-di-NiZ. |
enter-PAST-2PL
'(You) entered.'

VS.

(3) A: Biz ne yapmıştık?
'What had we done?'

B: | Gir-MİŞ | -i-di-niz. |
enter-PERF -COP-PAST-2PL
'(You) had entered.'

Extant accounts

- The extant accounts share common assumptions
  - TDVs are formed via roll-up head raising
  - Head-raising into the copula is disallowed

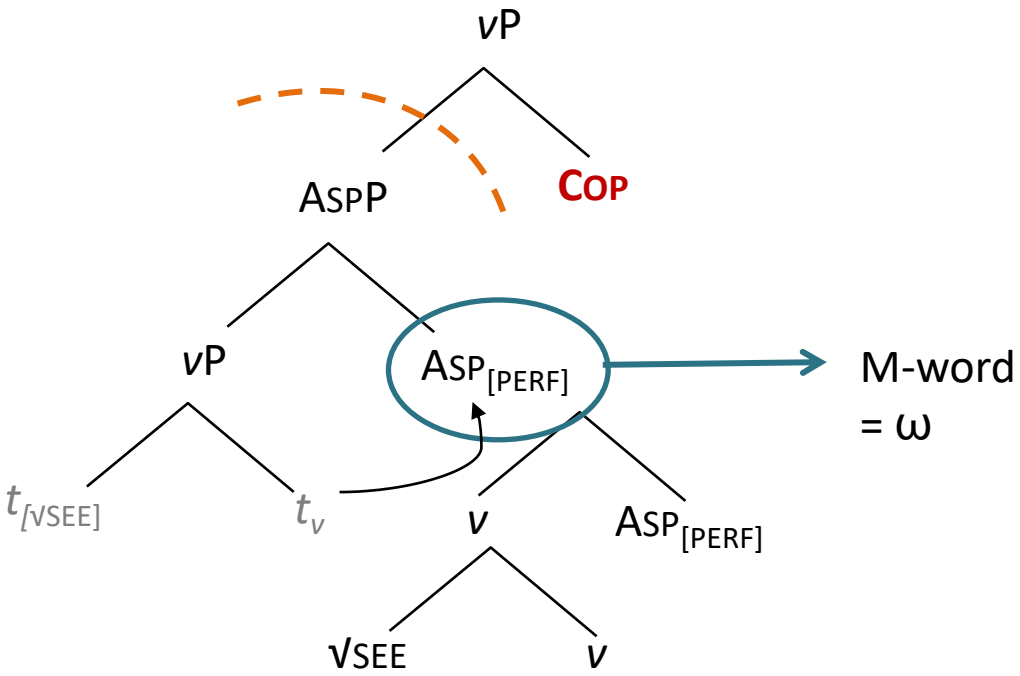
    (e.g., Kelepir 2001, Kornfilt 1996, Newell 2008, Zanon 2014, Shwayder 2015; but see Göksel 1993)

- They differ in their assumptions about syntax-prosody mapping
  - Domain of prominence is a phasal Spell-out domain (Newell 2005)
  - Domain of prominence is an M-word (Schwayder 2015)

Extant accounts

(4) | Gör-MÜŞ | -i-di. |
see-PERF -COP-PAST
'(She) has seen.'

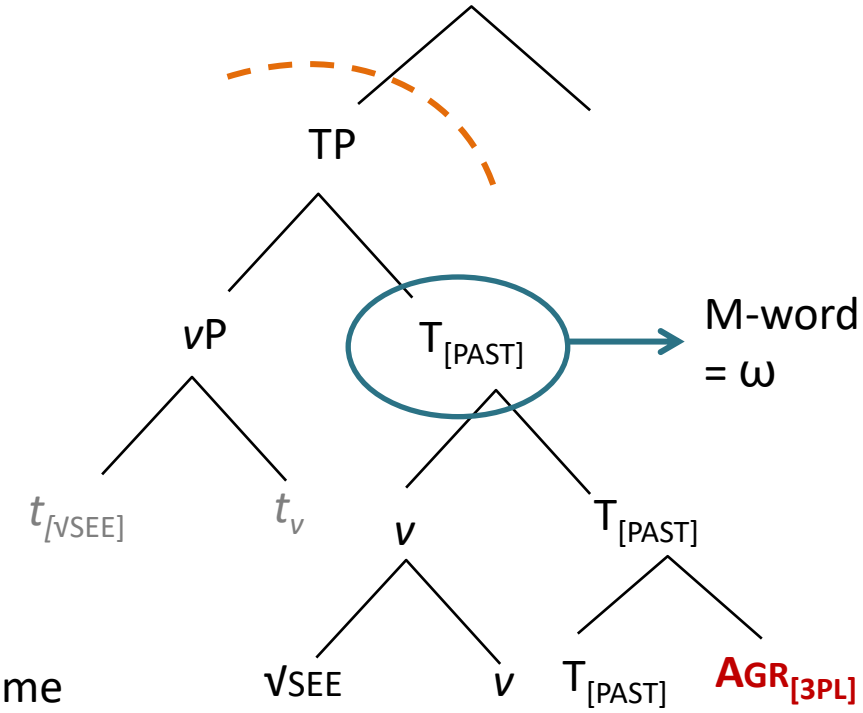
- AspP is a spell-out domain
- Asp is an M-word



Extant accounts

(5) | Gör-dü-LER. |
see-PAST-3PL
'(They) saw.'

- TP is a spell-out domain
- T is an M-word



NB: AGR attaches to T
as a dissociated morpheme

(Embick 2015:65 and references therein)

Novel data

Optional variable ω-formation in the TVD

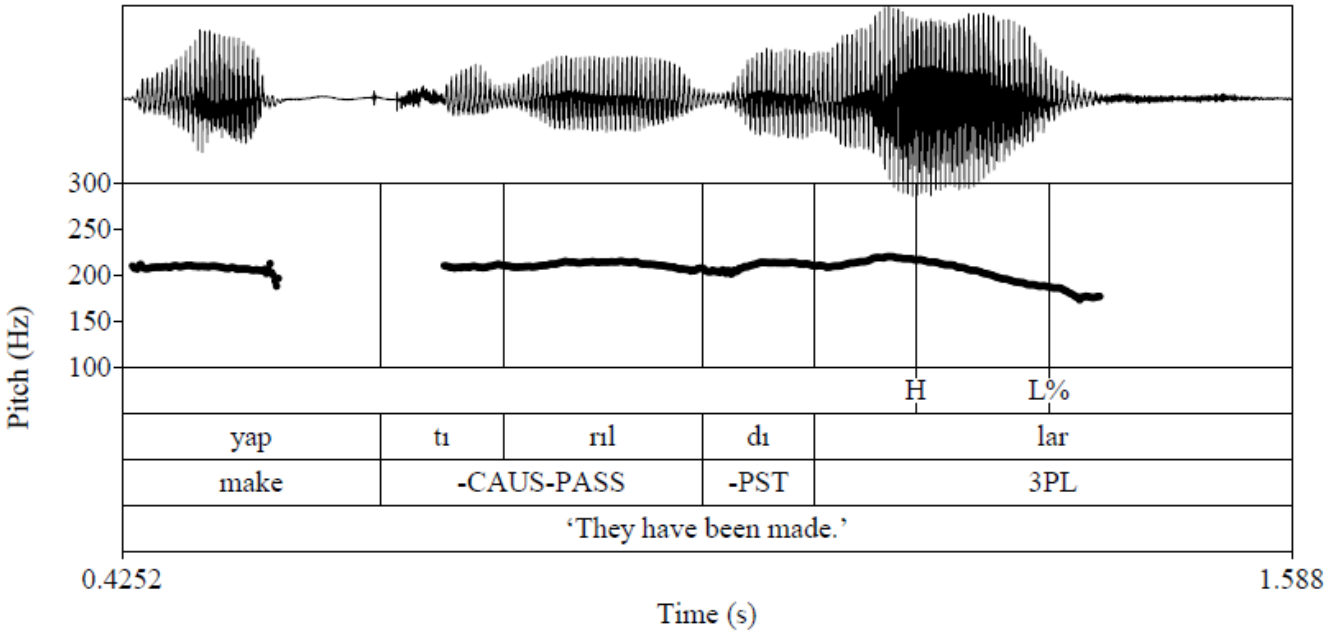
Optional variable ω formation in TVDs: Final-AGR

- The size of the ωs in TVDs is also **variable**
- Prominence domain may exclude or include the subject agreement (AGR)
- No semantic, pragmatic, or information structural import (Sebüktekin 1984, Göksel 2010, Güneş 2021a)

(6) [((Yap-tır-ıl-dı-lar)$_{\omega}$)$_{\phi}$]$_{\iota}$ (Güneş 2020b)

make-CAUS-PASS-PAST-3PL

'They have been made.'



Novel data

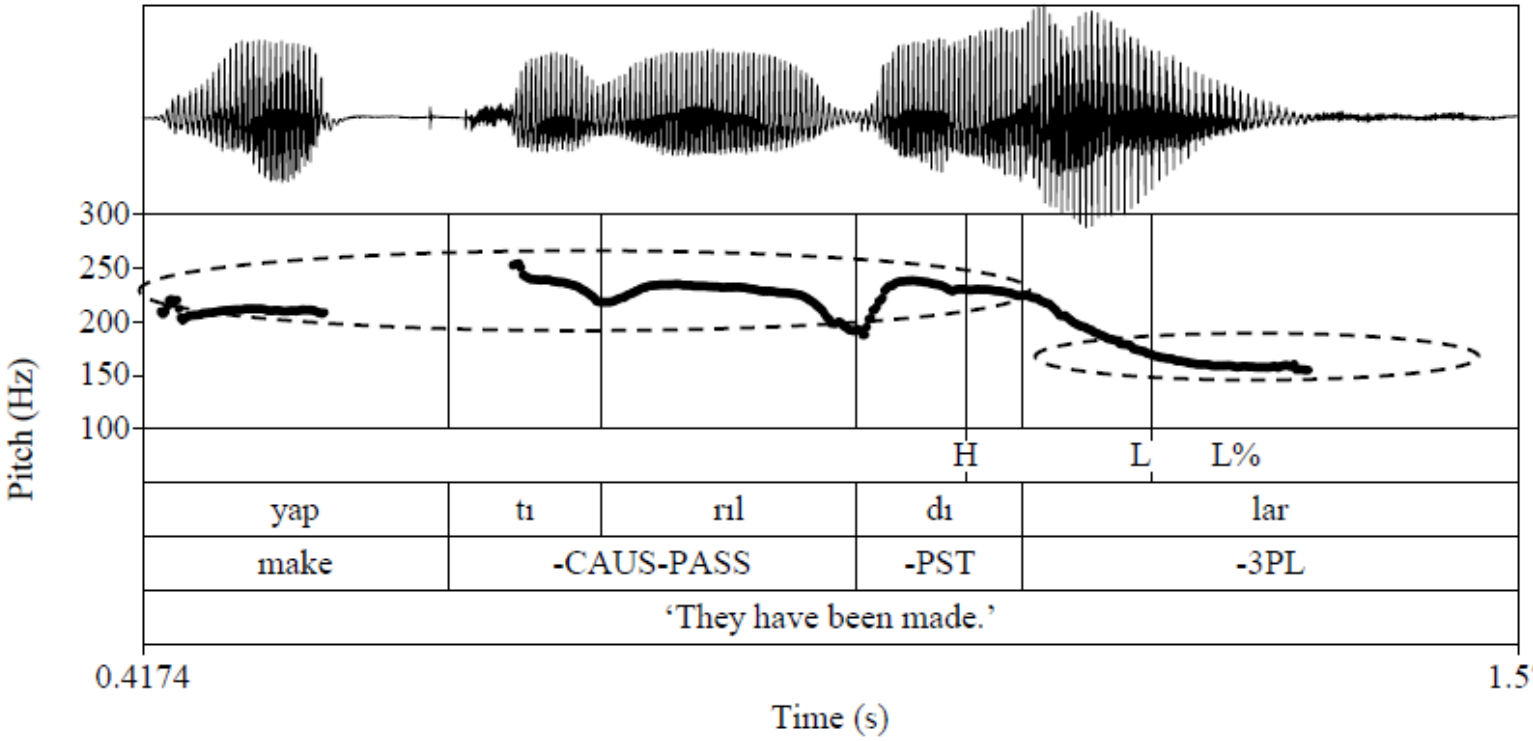
Optional variable ω formation in TVDs: Final-AGR

- TVDs with a single-ω may optionally be split into two ωs

(7) [((Yap-tır-ıl-dı)$_{\omega}$ (-lar)$_{\omega}$)$_{\phi}$]$_{\iota}$ (Güneş 2020b)

make-CAUS-PASS-PAST -3PL

'They have been made.'



Novel data

Optional variable ω formation in TVDs: Medial-AGR

- The same optional variable sizing also applies in medial AGR contexts.

(8) A: Ziyaretçiler ne yapmışlardı?
'What did the visitors do?'

B: | Gir-MİŞ | -ler-di.|
enter-PERF-3PL-PAST
'(They) had entered.'

B': | Gir-miş-LER|-di.|
enter-PERF-3PL-PAST
'(They) had entered.'

But not the entire string!

B'': * | Gir-miş-ler-Dİ. |
enter-PERF-3PL-PAST
'(They) had entered.'

Optional variable ω formation in TVDs: Medial-AGR

- (Split) ω-formation possibilities with **medial**-AGR(Güneş 2020b)

		Singular	Plural	Gloss
AGR$_F$ in the 1st ω	**1st**	(gör-dü-**m**)$_ω$ (-se)$_ω$	(gör-dü-**k**)$_ω$ (-se)$_ω$	see-PST-AGR-COND
	2nd	(gör-dü-**n**)$_ω$ (-se)$_ω$	(gör-dü-**nüz**)$_ω$ (-se)$_ω$	
	3rd	N/A	(gör-dü-**ler**)$_ω$ (-se)$_ω$	
AGR$_F$ in the 2nd ω	**1st**	*$^{[P]}$(gör-dü)$_ω$ (-**m**-se)$_ω$	*$^{[P]}$(gör-dü)$_ω$ (-**k**-se)$_ω$	see-PST-AGR-COND
	2nd	*$^{[P]}$(gör-dü)$_ω$ (-**n**-se)$_ω$	(gör-dü)$_ω$ (-**nüz**-se)$_ω$	
	3rd	N/A	(gör-dü)$_ω$ (-**ler**-se)$_ω$	

Optional variable ω formation in TVDs: Final-AGR

- (Split) ω-formation possibilities with final-AGR (Güneş 2020b)

		Singular	Plural	Gloss
AGR$_F$ without split ω-formation	1st	(gel-di-**m**)$_\omega$	(gel-di-**k**)$_\omega$	come-PST$_K$-AGR
	2nd	(gel-di-**n**)$_\omega$	(gel-di-**niz**)$_\omega$	
	3rd	--	(gel-di-**ler**)$_\omega$	
	1st	(gel-ce-**m**)$_\omega$	(gel-ce-**z**)$_\omega$	come-FUT$_{RZ}$-AGR
	2nd	(gel-ce-**n**)$_\omega$	(gel-ce-**niz**)$_\omega$	
	3rd	--	(gel-cek-**ler**)$_\omega$	
	3rd	--	(gel-ecek-**ler**)$_\omega$	come-FUT$_Z$-AGR
AGR$_F$ with split ω-formation	1st	*[P] (gel-di)$_\omega$ (-**m**)$_\omega$	*[P] (gel-di)$_\omega$ (-**k**)$_\omega$	come-PST$_K$-AGR
	2nd	*[P] (gel-di)$_\omega$ (-**n**)$_\omega$	(gel-di)$_\omega$ (-**niz**)$_\omega$	
	3rd	--	(gel-di)$_\omega$ (-**ler**)$_\omega$	
	1st	*[P] (gel-ce)$_\omega$ (-**m**)$_\omega$	*[P] (gel-ce)$_\omega$ (-**z**)$_\omega$	come-FUT$_{RZ}$-AGR
	2nd	*[P] (gel-ce)$_\omega$ (-**n**)$_\omega$	(gel-ce)$_\omega$ (-**niz**)$_\omega$	
	3rd	--	(gel-cek)$_\omega$ (-**ler**)$_\omega$	
	3rd	--	(gel-ecek)$_\omega$ (-**ler**)$_\omega$	come-FUT$_Z$-AGR
AGR$_C$ without split ω-formation	1st	* (gel-eceğ-**im**)$_\omega$	* (gel-eceğ-**iz**)$_\omega$	come-FUT$_Z$-AGR
	2nd	* (gel-ecek-**sin**)$_\omega$	* (gel-ecek-**siniz**)$_\omega$	
AGR$_C$ with split ω-formation	1st	(gel-ece)$_\omega$ (ğ-**im**)$_\omega$	(gel-ece)$_\omega$ (ğ-**iz**)$_\omega$	come-FUT$_Z$-AGR
	2nd	(gel-ecek)$_\omega$ (-**sin**)$_\omega$	(gel-ecek)$_\omega$ (-**siniz**)$_\omega$	

Optional variable ω formation in TVDs: Final-AGR

- Variable ω-formation **not** possible in some TVDs (Güneş 2020b)

		Singular	Plural	Gloss
AGR$_F$ without split ω-formation	1st	(gel-di-**m**)$_\omega$	(gel-di-**k**)$_\omega$	come-PST$_K$-AGR
	2nd	(gel-di-**n**)$_\omega$	(gel-di-**niz**)$_\omega$	
	3rd	--	(gel-di-**ler**)$_\omega$	
	1st	(gel-ce-**m**)$_\omega$	(gel-ce-**z**)$_\omega$	come-FUT$_{RZ}$-AGR
	2nd	(gel-ce-**n**)$_\omega$	(gel-ce-**niz**)$_\omega$	
	3rd	--	(gel-cek-**ler**)$_\omega$	
	3rd	--	(gel-ecek-**ler**)$_\omega$	come-FUT$_Z$-AGR
th split ation	1st	*[P] (gel-di)$_\omega$ (-m)$_\omega$	*[P] (gel-di)$_\omega$ (-k)$_\omega$	come-PST$_K$-AGR
	2nd	*[P] (gel-di)$_\omega$ (-n)$_\omega$	(gel-di)$_\omega$ (-**niz**)$_\omega$	
	3rd	--	(gel-di)$_\omega$ (-**ler**)$_\omega$	
	1st	*[P] (gel-ce)$_\omega$ (-m)$_\omega$	*[P] (gel-ce)$_\omega$ (-z)$_\omega$	come-FUT$_{RZ}$-AGR
	2nd	*[P] (gel-ce)$_\omega$ (-n)$_\omega$	(gel-ce)$_\omega$ (-niz)$_\omega$	
	3rd	--	(gel-cek)$_\omega$ (-**ler**)$_\omega$	
	3rd	--	(gel-ecek)$_\omega$ (-**ler**)$_\omega$	come-FUT$_Z$-AGR
AGR$_C$ without split ω-formation	1st	* (gel-eceğ-**im**)$_\omega$	* (gel-eceğ-**iz**)$_\omega$	come-FUT$_Z$-AGR
	2nd	* (gel-ecek-**sin**)$_\omega$	* (gel-ecek-**siniz**)$_\omega$	
AGR$_C$ with split ω-formation	1st	(gel-ece)$_\omega$ (ğ-**im**)$_\omega$	(gel-ece)$_\omega$ (ğ-**iz**)$_\omega$	come-FUT$_Z$-AGR
	2nd	(gel-ecek)$_\omega$ (-**sin**)$_\omega$	(gel-ecek)$_\omega$ (-**siniz**)$_\omega$	

See Güneş (2020b)

Novel data

Can extant analyses account for the novel data?

Roll-up head raising accounts = not extendible

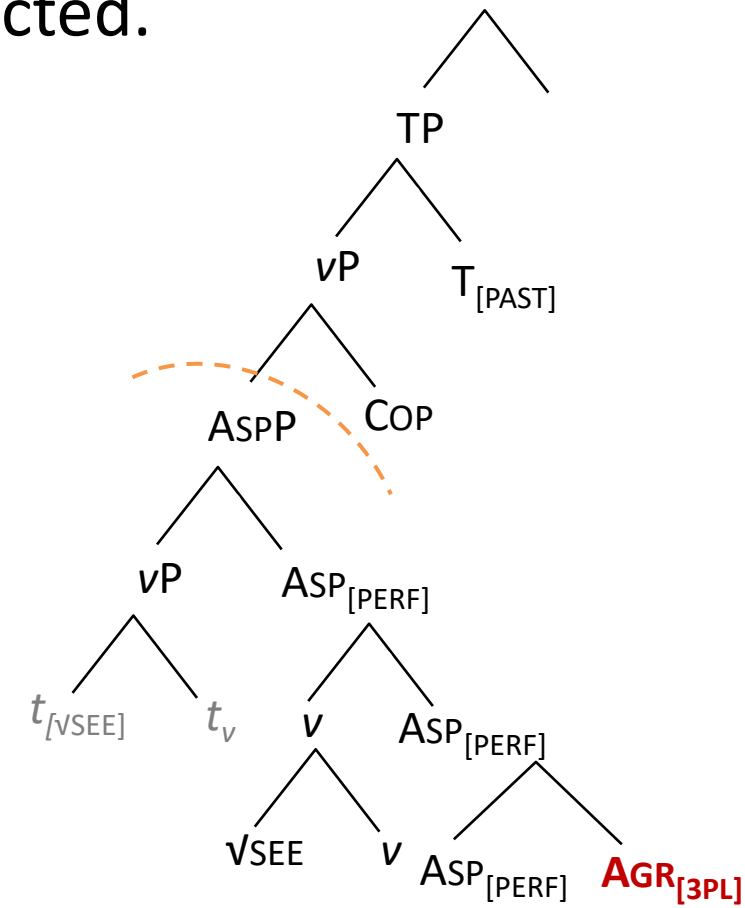
Variable parsing of AGR is not predicted.

(9) a. | Gir-miş-LER | -di. |
enter-PERF-3PL-PAST
'(They) have entered.'

Spell-out domain/M-word
=
prominence domain

b. | Gir-MİŞ | -ler -di. |
enter-PERF-3PL-PAST
'(They) have entered.'

Spell-out domain /M-word
≠
Prominence domain



- Because AGR is realized within the Spell-out domain, it is predicted to always be contained in the prominence domain.

My proposal:
Lowering of Asp and T

My proposal: Lowering

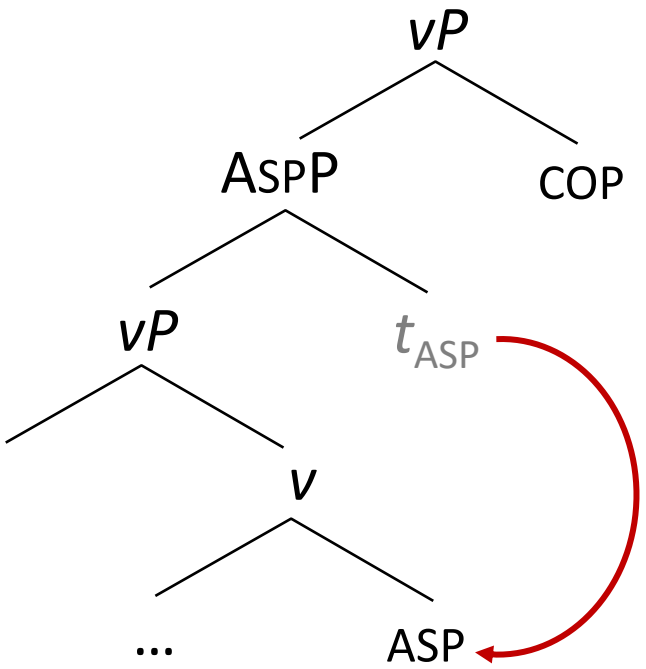
A hybrid account

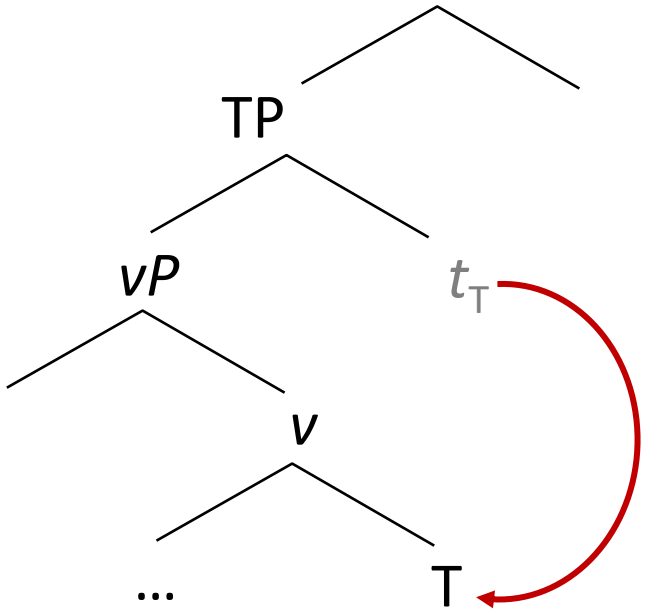
- The deepest M-word matches with a prosodic word
- M-words may be derived via head raising PLUS lowering

Q: What lowers?

- I claim that ASP and T undergo lowering

(whenever there is a *v* – i.e., a cyclic complement; cf. Skinner 2009)



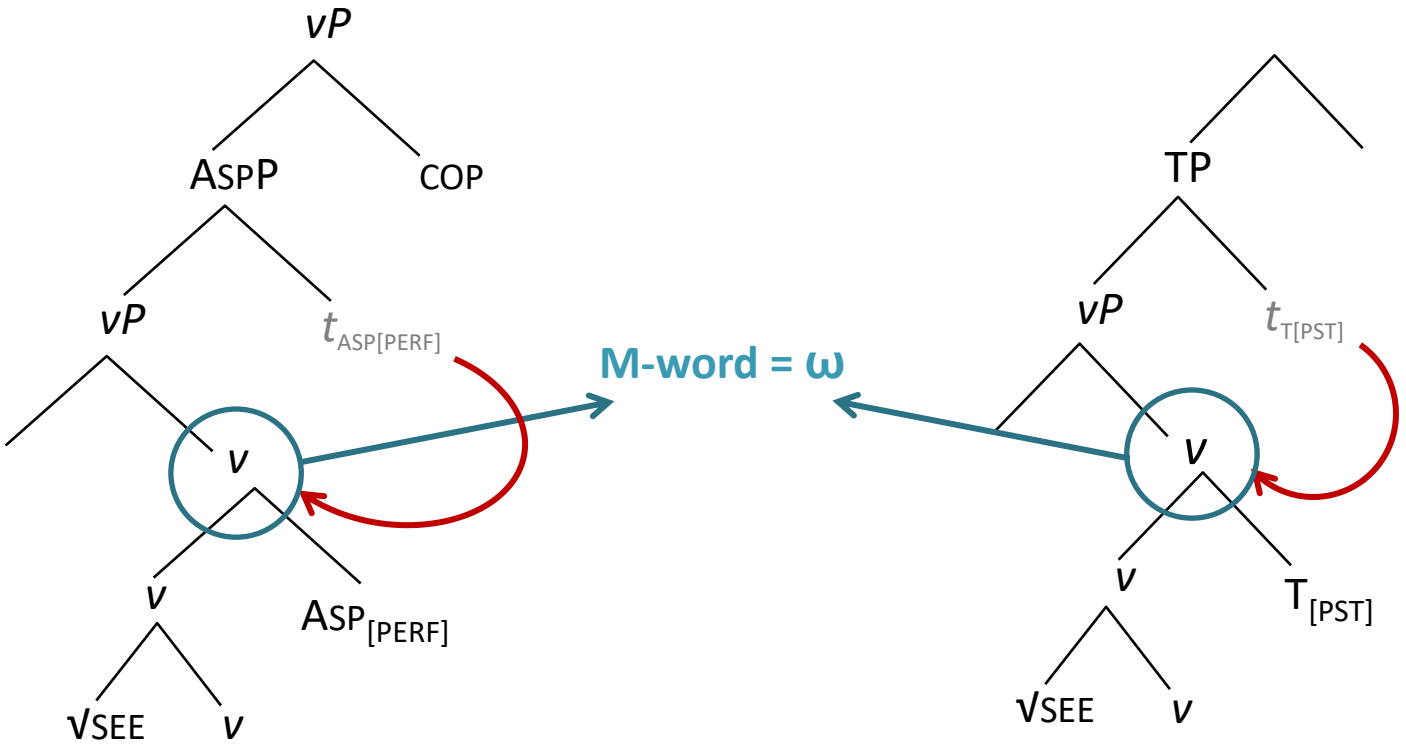


My proposal: Lower then map into prosody

- The M-word that is generated after lowering = ω

(10) | Gör-MÜŞ | -i-di. |
see-PERF-COP-PAST
'(She) has seen.'

(11) | Gör-DÜ. |
see-PAST
'(She) saw.'



My proposal: (Partial) Lowering

- The semantically vacuous variable parsing of AGR arises through optional **partial** lowering

  – A complex head can lower

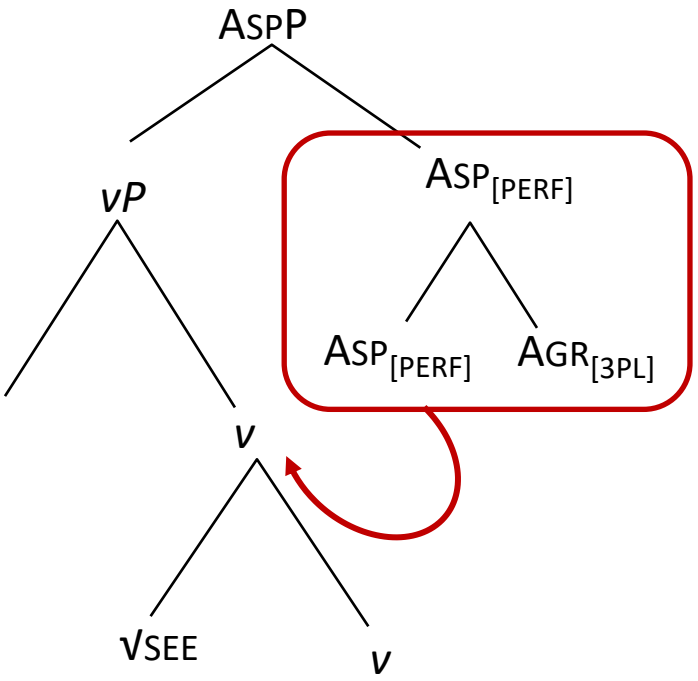
    (i) fully (lower the maximal head).

    (ii) or partially (lower the terminal head).

My proposal: (Partial) Lowering

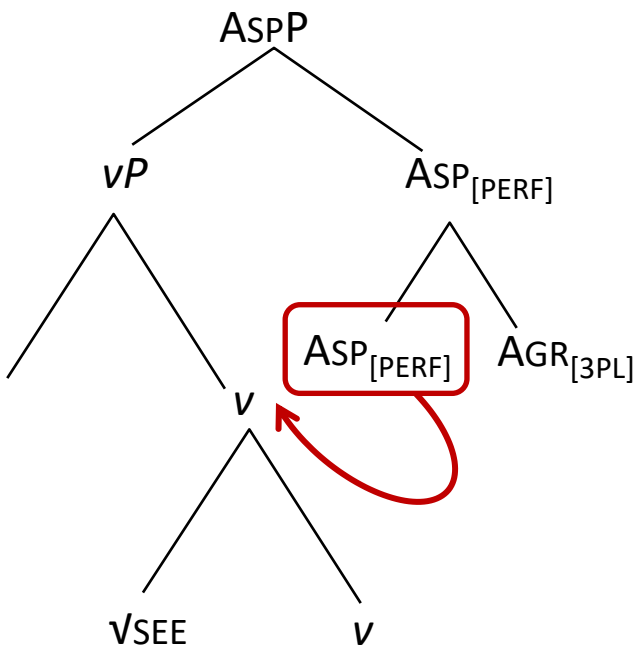
Full lowering

(12) | Gör-müş-LER | -i-di. |
see-PERF-3PL-COP-PAST
'(They) have seen.'



Partial lowering

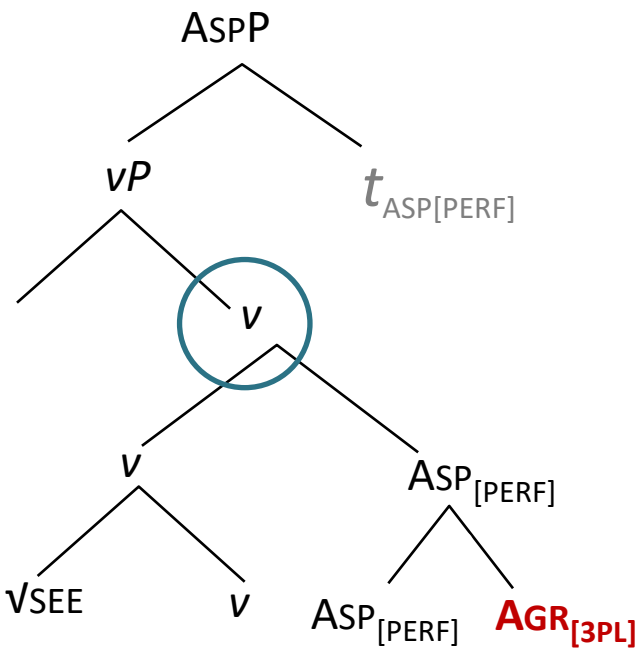
(13) | Gör-MÜŞ | -ler-i-di. |
see-PERF-3PL-COP-PAST
'(They) have seen.'



My proposal: (Partial) Lowering

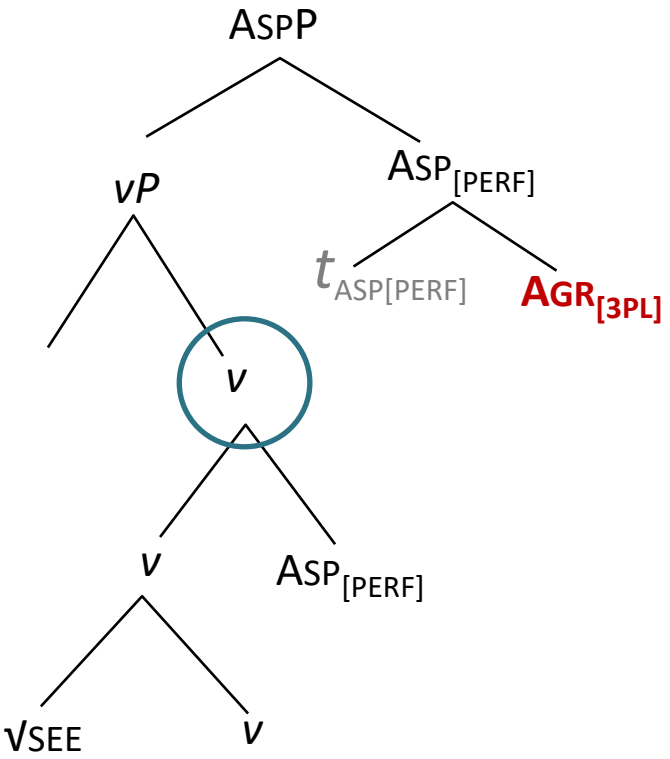
Full lowering

(12) | Gör-müş-LER | -i-di. |
see-PERF-3PL-COP-PST
'(They) have seen.'



Partial lowering

(13) | Gör-MÜŞ | -ler-i-di. |
see-PERF-3PL-COP-PST
'(They) have seen.'

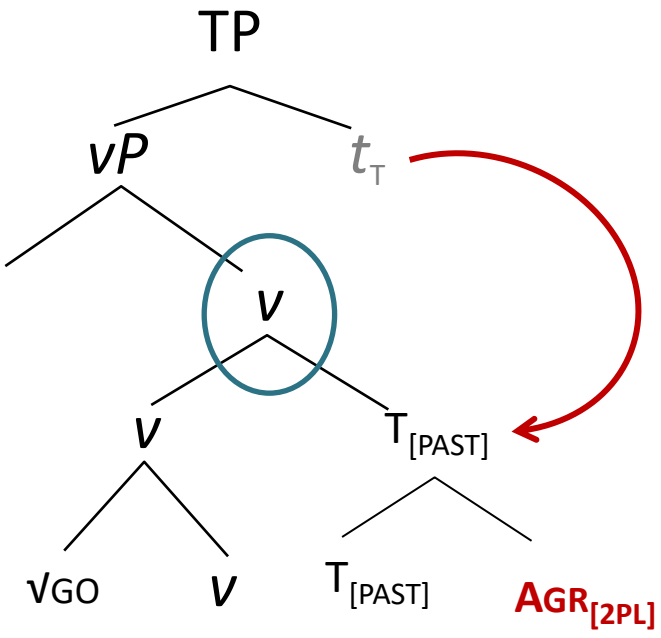


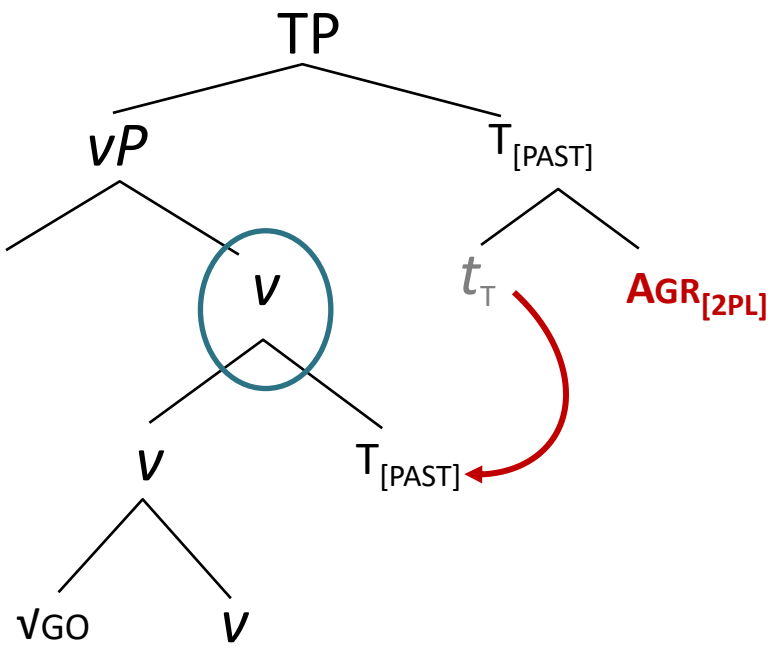
My proposal: Correct further predictions

- Variable parsing is observed in the absence of copula

(14) a. | Git-ti-NİZ. |
go-PAST-2PL
'(You all) went.'

b. | Git-Tİ | -niz. |
go-PAST-2PL
'(You all) went.'





Bonus: Syntax-prosody mismatches in TVDs

- TVDs with three TAM morphemes are analyzed as having a tripartite structure on all extant analyses, including mine
- But prosodically, TVDs can maximally contain two ωs

(15) [Gel-ecek] [-i-di] [-y-se-ler] morphosyntax

(Gel-eCEK)ω (-i-di -y-se-ler)ω prosody

come-FUT -COP-PST -COP-COND-3PL

'if it were the case that they would come.'

Bonus: Syntax-prosody mismatches in TVDs

- [BinMax, ϕ]:
  - A prosodic grammar constraint that favours phonological phrases (ϕs) containing 1 or 2 ωs over ϕs containing 3 or more ωs

    (see Itô & Mester 1992; Mester 1994; Hewitt 1994; Selkirk 2000; among others)

- [BinMax, ϕ] outranks the Match constraints in Turkish (Güneş 2015)
- The complex TVD case in (15) is a syntax-prosody mismatch generated through an interplay of prosodic grammar constraints
- If correct, this analysis supports the view that some syntax-prosody mismatches arise via the mediating influence of the prosodic grammar

Conclusion

- In a complex head, lowering may target a maximal head (full lowering), or a terminal head (partial lowering)
- Lowering of or from complex heads results in prosodic variability in languages in which M-word=ω
- ASP and T lower in Turkish
- Some cases of syntax-prosody mismatches in the TVD may be accounted for by prosodic well-formedness constraints (i.e. BinMax).

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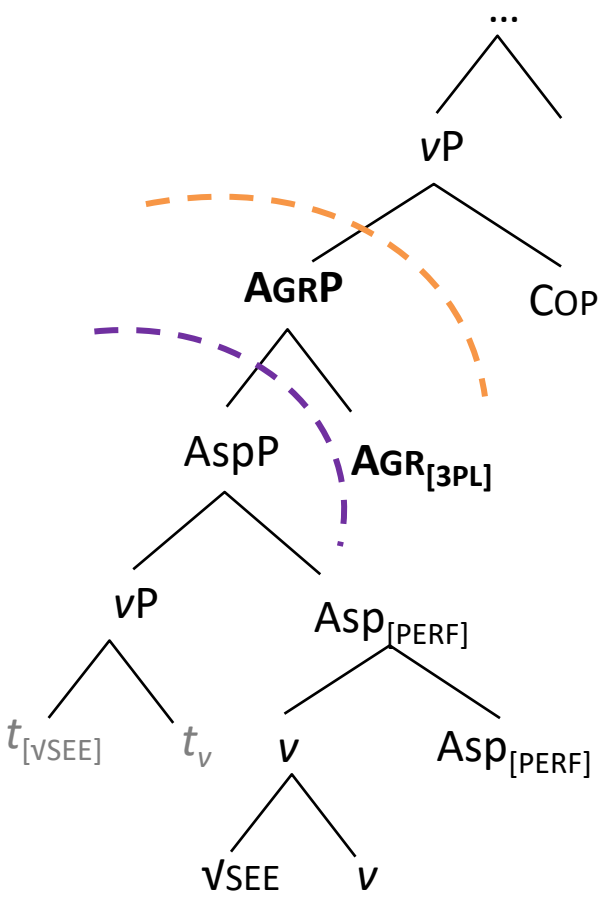
Appendix

Phase **or** phase complement as the spell-out domain?

- If AGR realizes a phase head X, then one might postulate that either XP or the complement of XP is spelled-out



(16) a. Gir-miş-LER -di. → Phase = ω
enter-PERF-3PL-PST
'(They) have entered.'

b. Gir-MİŞ -ler-di. → Spell-out domain = ω
enter-PERF-3PL-PST
'(They) have entered.'

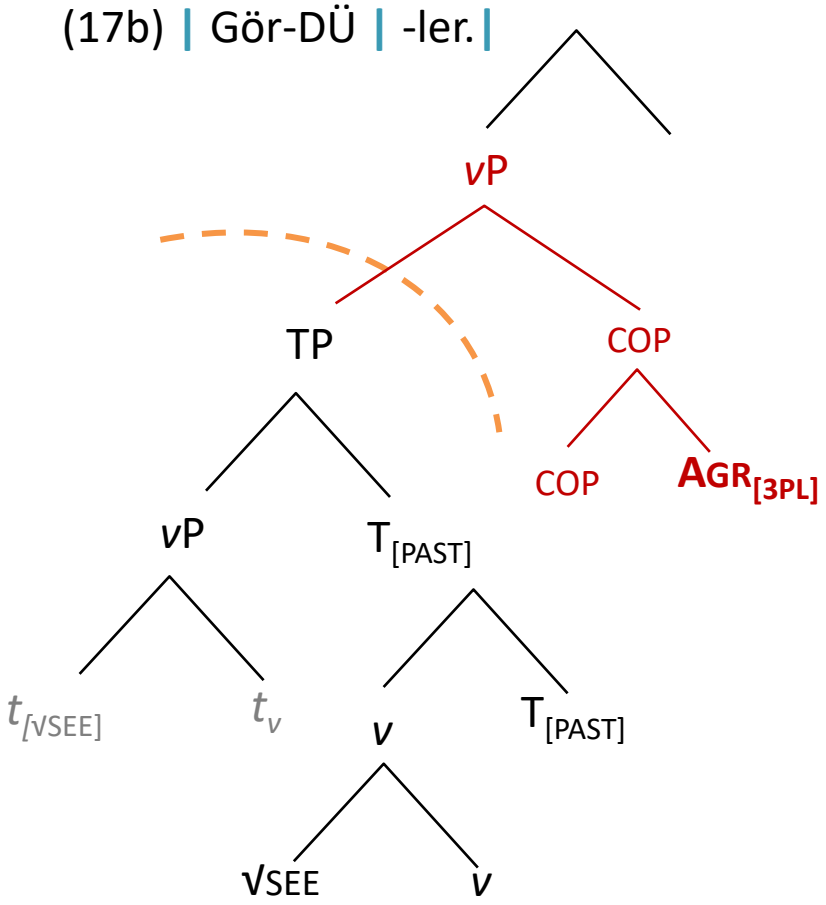
Shortcomings

- AGR as phase head is not motivated
- Lose possibility of connecting M-words to ωs (unless one allows roll-up into phase heads)

Optional null copula as a blocking head?

- One might entertain the existence of optional null copulas to derive some split-ω configurations

(17) a. | Gör-dü –LER. |
b. | Gör-DÜ | -ler. |
see-PAST -3PL
'(They) saw.'



Shortcomings

- Alleged additional copula cannot be pronounced
(*gör-dü-**i**-ler)
- No conceptual motivation for additional copula

Bonus: Syntax-prosody mismatches in TVDs

- The restriction to two ωs per φ is observed elsewhere in Turkish, e.g., in complex nominal expressions (Güneş 2015, 2020a)

(18) *Subject NP, broad focus context* (Güneş 2020)

[[$_{NP}$ [$_{AP}$ uzun] [$_{N}$ pelerinli]] [$_{N}$ kadın]]

long caped woman

a. ((UZUN)$_{\omega}$ (pelerinli kadın)$_{\omega}$)$_{\phi}$

b. ((UZUN PELERiNLi)$_{\omega}$ (kadın)$_{\omega}$)$_{\phi}$

c. ((UZUN PELERiNLi KADIN)$_{\omega}$)$_{\phi}$

d. * ((UZUN)$_{\omega}$ (PELERiNLi)$_{\omega}$ (KADIN)$_{\omega}$)$_{\phi}$

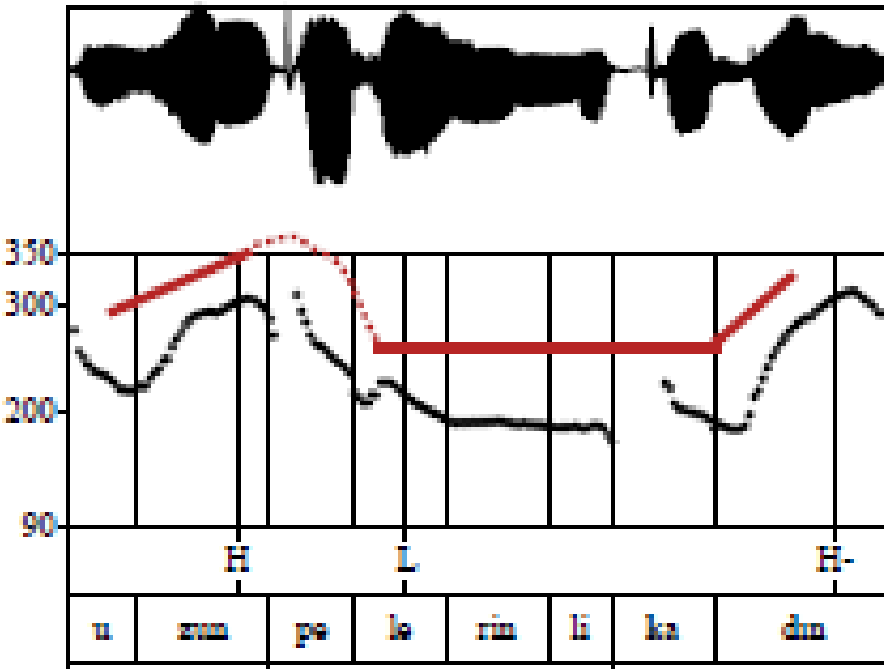
Bonus: Syntax-prosody mismatches in TVDs

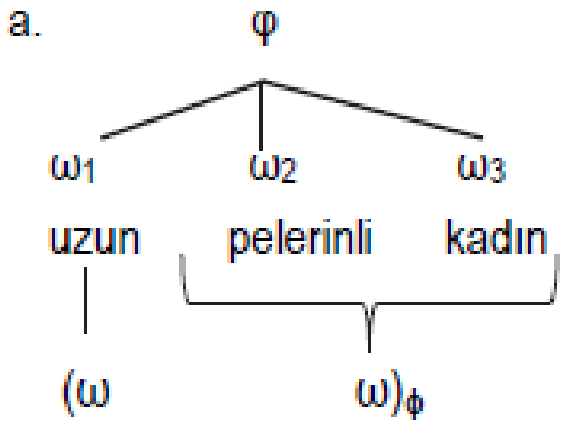
(18) *Subject NP, broad focus context* (Güneş 2020a)

[[$_{NP}$ [$_{AP}$ uzun] [$_{N}$ pelerinli]] [$_{N}$ kadın]]

long caped woman

a. ((UZUN)$_{\omega}$ (pelerinli kadın)$_{\omega}$)$_{\phi}$





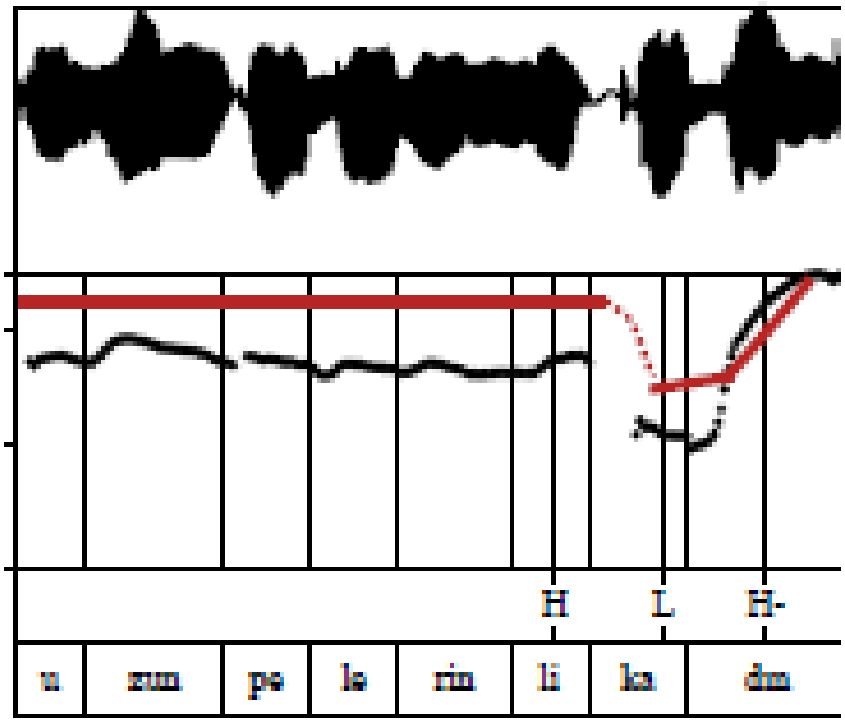
Bonus: Syntax-prosody mismatches in TVDs

(18) *Subject NP, broad focus context* (Güneş 2020a)

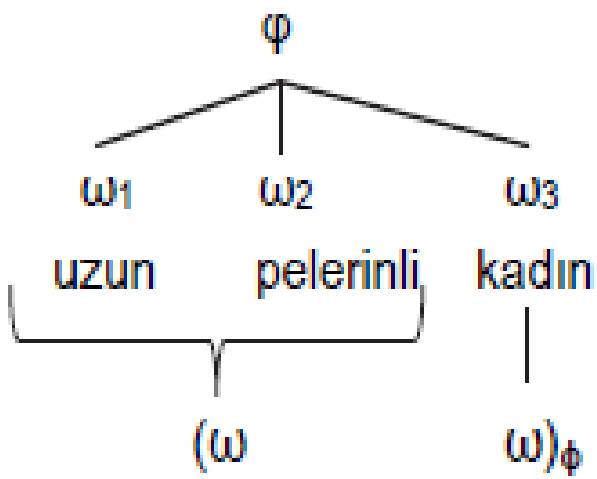
[[$_{NP}$ [$_{AP}$ uzun] [$_{N}$ pelerinli]] [$_{N}$ kadın]]

long caped woman

b. ((UZUN PELERINLi)$_{\omega}$ (kadın)$_{\omega}$)$_{\phi}$



b.



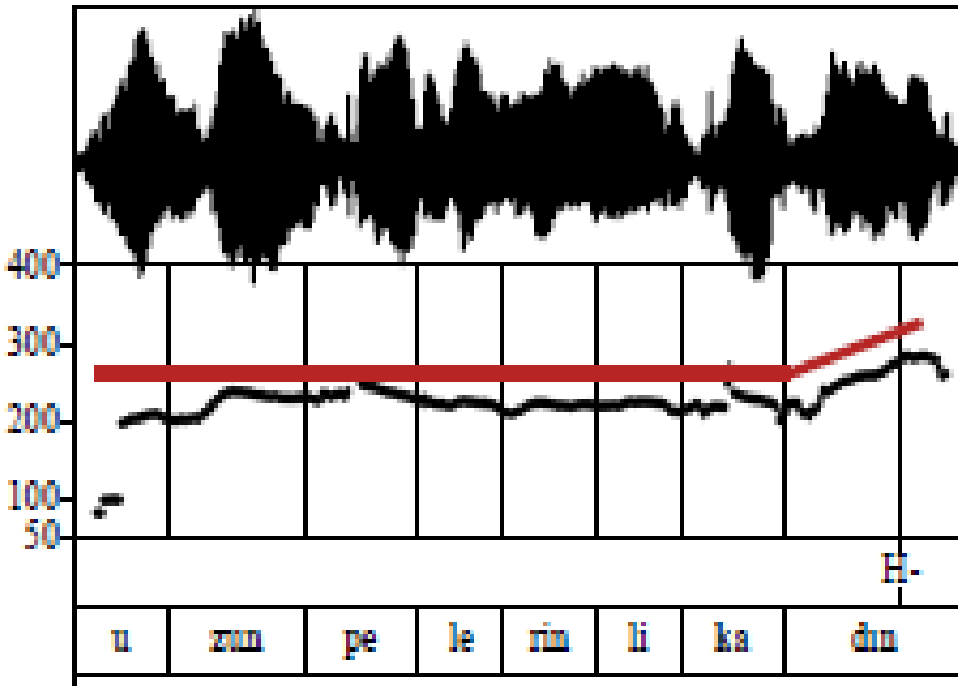
Bonus: Syntax-prosody mismatches in TVDs

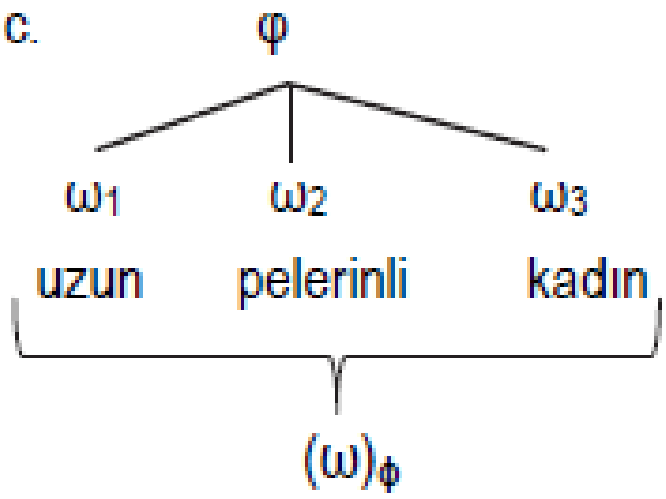
(18) *Subject NP, broad focus context* (Güneş 2020a)

[[$_{NP}$ [$_{AP}$ uzun] [$_{N}$ pelerinli]] [$_{N}$ kadın]]

long caped woman

c. ((UZUN PELERINLi KADIN)ω)ϕ





Bonus: Syntax-prosody mismatches in TVDs

- Why not (19a or b)?

(19) [Gel-ecek] [-i-di] [-y-se-ler] morphosyntax

a. *(Gel-ecek-i-Dİ)ω (-y-se-ler)ω prosody

b. *(Gel-ecek-i-di -y-se-LER)ω

come-FUT -COP-PST -COP-COND-3PL

'if it were the case that they would come.'

Göksel (2010) lexical specification account: copula refuses to bear nuclear stress.

BUT: (20) A: Öğrenci misiniz?

'Are you a student.'

B: (i-Dİ-M.)ω

COP-PAST-1SG

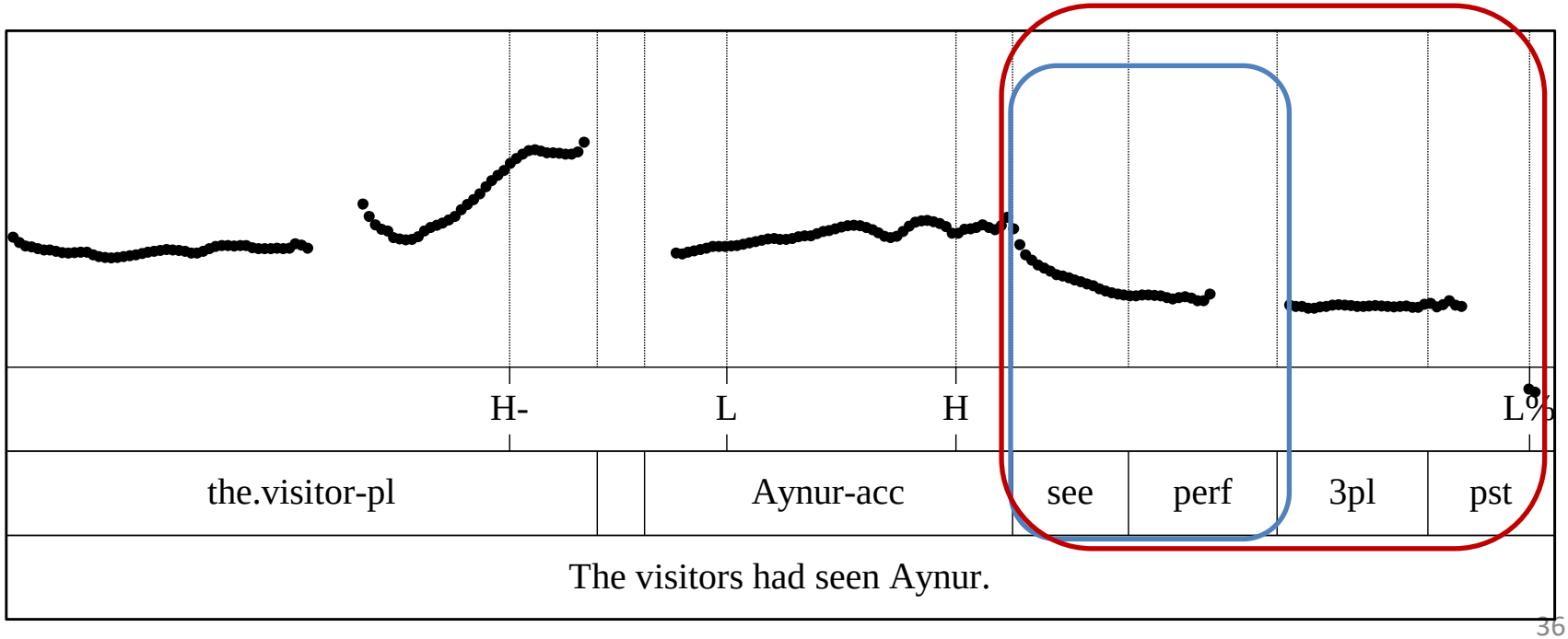
'I was.'

Nuclear Prominence on the deepest constituent:

The nuclear-ω corresponds to the syntactically deepest M-word in TVDs, which conforms to Cinque's (1993) nuclear stress assignment rule, Stress Deepest.

M-word ≠ prosodic word

The participle form in the verbal complex does not correspond to a prosodic word/head when unfocused.



Head movement versus lowering

- The timing of the agreement
- The parser applies either before or after the agreement shows up

- Case and agreement on the nominal spine do **not** show the same optional parsing that we observe on verbs.

(20) (Okul-u) vs. * (Okul)u
school-ACC school-ACC
'the school' 'the school'

(21) (Sev-en-ler-imiz) vs. * (Sev-en-ler)imiz
love-REL-PL-1POSS love-REL-PL-1POSS
'those who love us' 'those who love us'

TVD and its morphological make-up

"Medial" prominence placement on TVDs is a well-studied phenomenon of Turkish.

(Sebüktekin 1984, van der Hulst & van de Weijer 1991, Kornfilt 1996, Kabak & Vogel 2001, Inkelas & Orgun 2003, Göksel 2010, among many others).

Medial prominence (hence split ω-formation) is observed in TVDs with particular morphemes (*'prestressing morphemes'* Göksel & Kerslake 2005).

e.g.:
- -Epistemic copula (-DIr),
- -Copula (-y, i, Ø)
- -Conditional marker (-(y)sA)
- -Polar question particle (-mI)
- …

Splitting the TVD in prosody

(23) A: Had the visitors seen Bill?

B: $[((\text{gör-müş})_{\omega\text{-NP}}\ (\text{-ler-Ø-di})_{\omega})_{\varphi}]_{\iota\text{-F}}$

see-PERF -3PL-COP-PAST

Lit: 'Had seen.'

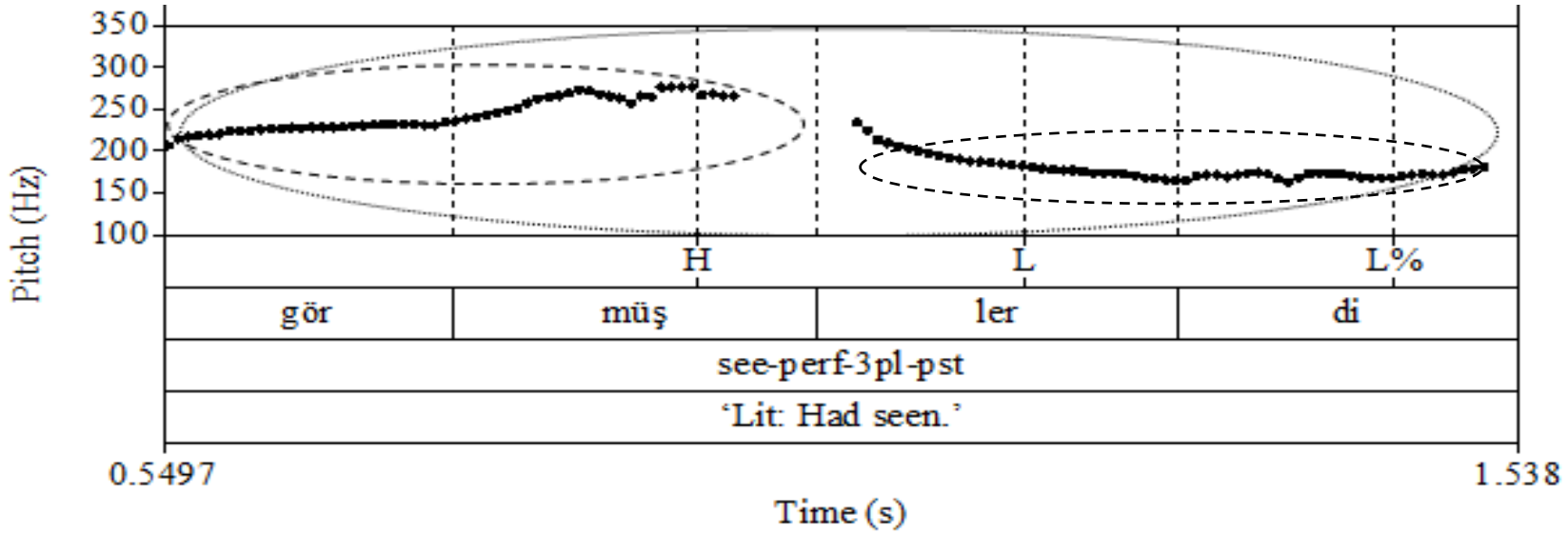


Figure 2. F0 of an elliptical declarative clause in verb-new context (SOV_{F})