

Beste Kamali & Bridget Samuels
Harvard University
{[@kamali_bdsamuel](mailto:kamali_bdsamuel)}@fas.harvard.edu

The Syntax of Turkish Pre-Stressing Suffixes

The 'pre-stressing' suffixes in Turkish have attracted considerable attention because these suffixes change the placement of the word stress in an otherwise fixed stress language.

- Kabak & Vogel (2001) and Kornfilt & Kahnemuyipour (2006) established:
 1. A need to treat some affixes as lexically stressed (lexical stress affixes),
 2. A need to reference to domains of application for stress assignment,
 3. And that most of these domains in the verbal paradigm are syntactically determined.

Our proposal

- Stress assignment takes place at each syntactic phase (spell-out domain).
- Stress shift in negation is due to the position of NegP. It is below vP, the first spell-out domain, therefore the object will never have been assigned stress in the first place.
- The Question particle attaches to the stress-bearing element and not to the verb (unless everything else is presupposed), after stress has already been assigned within the spell-out domain. Once an element has stress, it always will have stress.

Preliminaries: Suffix types in terms of stress properties

- Regular suffixes do not induce any stress change. Due to the final stress property of the language, the rightmost nucleus will be stressed.
 - Verím: 'productivity'
 - Verim-lí: 'productive'
 - Verim-li-léş: 'become productive'
 - Verim-li-leş-tí: 'It has become productive.'

Lexical stress suffixes

- Lexical stress suffixes require the word stress to be on themselves. If two of them stack, the leftmost retains primary stress, on the designated syllable.
 - Gid-ecék: 'He will go.' *Regular suffix only*
 - Gid-íver: 'Quickly go.' *Lexical stress suffix only*
 - Gid-íver-ecek: 'He will quickly go.' *Lexical>Regular*
 - Gid-íver-iyor: 'He is going.' *Lexical>Lexical*

 - *Gid-ivér, *Gid-iver-ecék, *Gid-iver-íyor

Prestressing suffixes

- Prestressing suffixes require that the nucleus that immediately precede them is stressed. When more than one stack, the leftmost wins.
 - Verim-li-léş-me-di: 'It hasn't become productive.'
Negation
 - Gid-ecék-mi: 'Will he go?' *Question*
 - Gid-ecék-sin: 'You will go.' *Copular clitic*
 - Gid-ecék-mi-sin: 'Will you go?' *Ques>Copula*
 - Gid-íyor-mu-sun: 'Are you going?' *Lexical>Ques>Copula*

Previous accounts

Kabak & Vogel (2001): Pre-stressing suffixes attach to a PW, where the PW retains expected, final stress.

- Verim-li-léş 'Become productive.'
- Verim-li-léş_{PW}]-me 'Don't become productive.'
- Gid-ecék 'He will go.'
- Gid-ecék_{PW}]-mi 'Will he go?'

Lexical stress is a lexical feature of the suffix.

This account naturally captures the phenomenon that is not easily captured in terms of rhythmic rules (cf Inkelas 1999).

They add: A PW, in turn, ends where a pre-stressing suffix attaches.

- But what determines the end of a PW?
- If it is the type of suffix that attaches as they argue, we still run into the same problem of treating pre-stressing suffixes as idiosyncratic/lexically specified.
- Plus, negation and question pre-stressing is a phenomenon beyond the word level.

Solution:

- Input to phonology = syntax

Kornfilt & Kahnemuyipour 2006: Clitics pre-stress because there is a silent copula in between (Kornfilt 1996), marking a new stress domain.³

- Gid-ecék-Ø-ti 'He was going to go.'
- Oyna-dí-Ø-lar 'They played.'

Question and Negation pre-stress because they head focus projections where the specifier is under focus.

- $[_T[_{FOCNeg}[_Vgít] -me]-yecek]$ 'He won't go.'
- $[_{FOCQues}[_T[_Vgíd]-ecék]-mi]$ 'Will he go?'

We follow this account in its treatment of clitics, but not in its treatment of Neg and Q particles. Because:

- There are crucial differences between Neg and Q that cannot be captured if both are focus projections.
- The unmarked attachment of Q on the sentential stress bearing element (Object) remains unexplained.
- This account does not have anything to say about the loss of accent on the sentential Object in negation.

Solution:

- Default accent assignment proceeding in phases.

Beyond word stress: sentential stress

Among the pre-stressing and lexical stress suffixes, at least three subtypes can be identified:

- Negation: puts Sentential Stress on the preceding syllable (Object loses accent).
- Question: attaches to whatever carries sentential stress (usu. Object) even in the absence of focus.
- Other clitics: put Word Stress on the preceding syllable, but sentential stress overrides it. Lexically stressed suffixes are also in this group.

Summary of sentential stress properties of Idiosyncratically stressed suffixes

Type: Sentential stress: Word stress:

	$S_{(Ali)}$	$O_{(Cards)}$	$V_{(play+tense\ etc)}$
■ Regular	Ali iskambíl oynayacak.		oynayacák
■ Lexical	Ali iskambíl oynuyor.		oynúyor
■ Copular clitic	Ali iskambíl oynayacaktı.		oynayacáktı
■ Negation	Ali iskambil oynámadı.		oynámadı
■ Question	Ali iskambíl mi oynadı?		N/A

Negation, question, others

- Lexically stressed suffixes and copular clitics presumably undergo a form of downstep and cannot override sentential stress to their left.
 - Negation overrides sentential stress.
 - Question follows sentential stress. The unmarked attachment site of the particle is curiously not the verb, which is the normal attachment site of markers that take sentential scope (tense, negation) but the Object.
- Clearly, Negation and Question are of different kinds compared to the others. But can the two be treated on a par, as argued by Kornfilt & Kahnemuyipour? We argue not, based on the discussion below.

Kamali & Samuels, TIE-3 Lisboa 2008

15

Negation is not a focus projection

First let us compare the pragmatically unmarked behavior of the two suffixes. Q is affixed after the Object in an unmarked question even with an idiomatic predicate, while Neg is always affixed to the verb.

- Ali sinék mi avlıyor?
Ali mosquito Q hunt-pres
 1. Literal Narrow: 'Is it mosquitoes that Ali hunts?'
 2. Literal Wide: 'Is it hunting mosquitoes that Ali does?'
 3. Idiomatic Wide: 'Is Ali's business not going well?'
 !No such thing as idiomatic narrow.

The categorical absence of a narrow focus reading in idioms allows us to conclude that the reading (3) is not related to focus, but that the unmarked Q attachment site is here.

Kamali & Samuels, TIE-3 Lisboa 2008

16

Question and Focus

Second, observe that Q is informationally active. It attaches to the element under focus/ the element that is not presupposed.

- Ali iskambıl mi oyna-dı?
 - Ali cards Q play-past
 - 1. Narrow: 'Is it cards that Ali played?'
 - 2. Default: 'Is it play cards that Ali did?'
- ALLI mi iskambil oynadı?
 - Only narrow: 'Is it Ali who played cards?'
- Ali iskambil OYNADI mı?
 - Only when VP is presupposed: 'Did Ali play cards as expected?'
 - Or verum focus: 'Did Ali indeed play cards?'

Whereas negation does not have such a property.

Kamali & Samuels, TIE-3 Lisboa 2008

17

Negation and Focus

Not only does negation not correlate with informational focus, it also does not mind if there is informational focus elsewhere in the sentence, which makes it unlikely that Neg itself is a focus projection.

- Ali iskambil oyná-ma-dı.
 - Ali cards play-neg-past
 - 'Ali didn't play cards.'
- Ali ISKAMBIL oynamadı.
 - 'It is cards that Ali didn't play.'
- ALLI iskambil oynamadı.
 - 'It is Ali that didn't play cards.'

Kamali & Samuels, TIE-3 Lisboa 2008

18

Suffix stacking with negation

Lastly, consider the special property of negation that none of the other pre-stressors share. Recall that when multiple lexical/prestressing suffixes stack, the leftmost retains/ determines primary stress, on the lexically specified syllable. Negation overrides even that.

- bak- *íyor-du* 'He was looking.' *lexical>copular*
- bak- *íyor-mu* 'Is he looking?' *lexical>question*
- bak-*ákal-iyor* 'He freezes staring.' *lexical>lexical*
- bak-*ákal-iyor-du* 'He used to freeze staring.' *lexical>lexical>copular*

- bak-*akál-m-iyor* 'He doesn't freeze staring.' *lexical>negation*

Stress not on lexically specified syllable but pre-stressed by negation.

Also note that if there was 'focusing' involved in negation, *bakakálmiyor* 'he doesn't freeze staring' would have focus on the aspectual –akal, not the verb. However, this does not have any such effect on the interpretation of the sentence.

Summary: negation is not focus

- Question is sensitive to default and informational stress, while negation is not sensitive to either.
- The question morpheme does indeed seem to head a Focus-related projection, showing up with different informationally prominent constituents.
- Negation differs starkly. It is strictly verbal, its 'focusing' effect is restricted to the verb. This is by no means informational. Other elements can be the informational focus, or an aspectual that attaches low can receive the stress associated with negation without being informationally prominent.

Kamali & Samuels, TIE-3 Lisboa 2008

21

Our view of phonology

- Syntax, PF, and LF are on a synchronized cycle: the phase. Phonology obeys the Phase Impenetrability Condition (Chomsky 2001 *et seq.*), yielding the familiar strict cyclicity effects.
- Samuels (2008, in progress): "phonological derivation by phase" (PDbP) combines Lexical Phonology, Distributed Morphology, & Derivation by Phase.
 - Clause-level phases (*v*, C, D, etc.) define domains of post-lexical rules such as assign phrasal stress. Words have internal phase structure, too.
 - Direct reference: no domain building or readjustment. Phonological constituency determined directly by the morphosyntax.

Kamali & Samuels, TIE-3 Lisboa 2008

22

Stress assignment in PdBP

- Phrasal stress is assigned on every cycle, within a single spell-out domain – i.e., the complement domain of a phase head (see various but comparable views by Kahnemuyipour 2004, Ishihara 2007, Kratzer & Selkirk 2007 *inter alia*).
- Stress is assigned to the highest element in the domain (following Kahnemuyipour 2004 *et seq.*).
 - This gives sentential stress to the Direct Object in spec, AspP (in Travis' 1992 terms; see Üntak-Tarhan 2006 for implementation in Turkish).

Analysis: Copular clitics

Based on these assumptions, the prestressing of copular clitics can be argued to result from a CP-spell-out domain surfacing with stress on the right edge of its complement, TP.

Copulas indeed seem to occupy C. First, there can be only one aspectual copula per sentence. Second, if we assume Kural's (1993) analysis that –K is the C head in embedded clauses, the non-co-occurrence of –k with copular aspectuals naturally follows:

- [Ali-nin gel-di-g-i]-ni duydu.
- Ali-gen come-past-K-3sg-acc heard-I
- 'I heard that Ali came.'
- *[Ali-nin gel-iyor-du-g-u]-nu duydu.

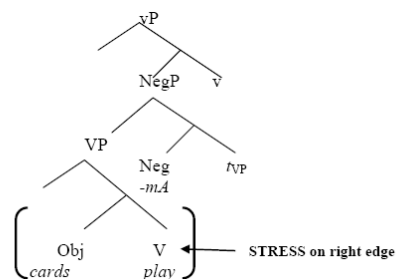
That the stress on Object overrides C pre-stressing, we suggest, indicates the accent assigned at the vP phase (more on this later), which may be overriding the C stress due to downstep.

Analysis: Negation

- Now we're in a position to describe the behavior of the negative morpheme without recourse to a Focus-related projection.
 - First, where does the stress on the verb come from if not a focus projection? We argue that a NegP with an EPP feature below vP is responsible. This is in line with Kahnemuyipour and Kornfilt's (2006) analysis.
 - The difference lies here: we derive the effect using the phonologization algorithm (Kahnemuyipour 2004 coupled with PdBP), not a problematic focus projection.

- The presence of a vP spell-out domain higher than NegP ensures that the highest in the domain gets sentential accent (Kahnemuyipour 2004, Samuels 2008). This is the right edge of spec, NegP. (right edge ~ PW-final stress)

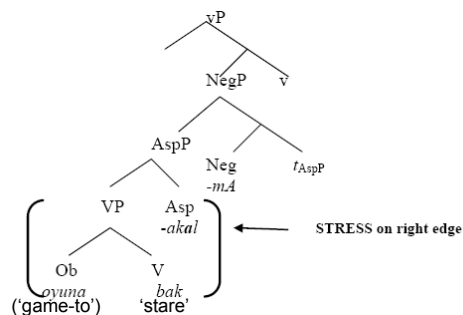
- ... iskambil oyná-ma...
'...not play cards'



- Our second problem was to delete the accent on the Object. Recall that PDbP predicts that previously assigned accents will be retained.
- The solution to this is already given in the diagram. The VP with its object and verb is not spelled out until vP. Therefore, at the time VP combines with NegP, there is no accent assigned to anything.

- This proposal works particularly well with the problematic pre-stressed lexical stress suffix. The suffix has not realized its accentual behavior before shipment to PF at vP, remaining subject to stress assignment by the NegP configuration only.

- bak-ákal-iyor.
'He freezes staring.'
- (Oyuna) bak-akál-m-iyor
'He doesn't freeze staring
(at the game).'



As an alternative analysis, consider the possibility of anaphoric deaccentuation. That objects in negation are not deaccented/given can be illustrated with a different form of negation.

Negative of existential constructions is rendered with the portmanteau morpheme *yok* 'not-exist'. Both affirmative and negative existential constructions have default stress on the subject, suggesting in turn that negation does not uniformly make the related arguments given.

- Dolapta *sú* var.
fridge-in water exists
'There's water in the fridge.'
- Dolapta *sú* yok.
'There's no water in the fridge.'
- Dolapta su *yók*.
'There's no water in the fridge.' *Presupposition: 'water' is given.*

Analysis: Question

- Recall that the insertion of the Q morpheme after the Object (and not the verb) when the Object is not informationally prominent was unaccounted for when Q is taken as a focus projection.
- The phase-based algorithm we've introduced straightforwardly accounts for the insertion of the Question morpheme after the Object in unmarked questions. Once the Object is assigned stress at the first spell-out domain, it becomes the target for question morpheme attachment.

Q attachment follows sentential stress

That Question marker attachment always follows stress can be illustrated with more examples. Recall that even an idiomatic predicate is chopped off by the Q morpheme.

- A: Alinin bankaya bir suru borcu varmiş.
'Ali has a lot of debt to the bank.'
- B: Hala sinék mi avlıyor?
still mosquitoes catch-pres
Idiomatic: 'Is Ali's business not going well?'

(Literal reading 'Is it catching mosquitoes that Ali does?' out due to context.)

Simplex adverbs

There is a class of adverbs that always receive sentential stress in Turkish. In examples with such an adverb, the unmarked attachment site of the morpheme is after the adverb.

- Ali hızlı yemek yapar.
Ali fast food cook-pres
Ali cooks fast.
- Ali hızlı mı yemek yapar?
- Ali hızlı yemek YAPÁR mı? *Presupposition: cooking fast. Proper question for a job interview where cooking fast is a requirement.*

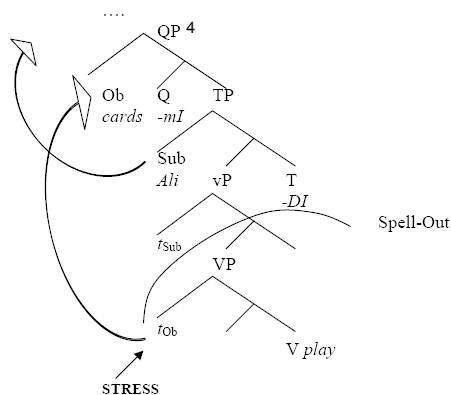
Unaccusative subjects

Subjects of unaccusatives that receive default stress in statements are also the unmarked attachment site for the Q particle.

- SÚ kaynıyor.
water boil-pres
'Some water's boiling.'
- SÚ mu kaynıyor?
Is there some water boiling?

- Our analysis again follows Kahnemuyipour (2004) in that sentential stress is assigned to the highest constituent of a spell-out domain.
- When Q merges, the constituent in this position is what it attracts to its specifier in the absence of emphatic focus (for reasons that go beyond the scope of this presentation).

- Ali iskambîl mi oynadı?
'Did Ali play cards?'



(Note that Q marker insertion might be more of a post-syntactic phenomenon than syntactic. It is still clear that it has to be sensitive to the location of the primary stress.)

Negation with Question

We have not yet discussed what happens when Q and Neg co-occur.

Contrary to our description so far, Q does not attach to the Object in (unmarked) negative questions. When it does, focus has to be involved.

- Ali iskambil oyná-m-iyor mu?
Ali cards play-neg-pres Q
'Doesn't Ali play cards?'
- Ali ISKAMBIL mi oynamiyor?
'Is it cards that Ali doesn't play?' (I know he plays pool...)
Not: 'Doesn't Ali play cards?'

Again, that focus has to be involved can be illustrated by the use of an idiom. If Q is attached after the DO of the idiomatic expression in a negative question, only the literal reading is available.

- Ali sinek avlâ-m-iyor mu?
Ali mosquito hunt-neg-pres-Q
1. Literal: 'Doesn't Ali hunt mosquitoes?'
2. Idiomatic: 'Isn't Ali's business going well?'
- Ali sinék mi avlamıyor?
Ali mosquito Q hunt-pres
Only Literal Narrow: 'Is it mosquitoes that Ali doesn't hunt?'
- Our analysis derives this effect naturally and without any modification. Objects in negative questions will not be the target of Question morpheme attachment because these objects have never been in an appropriate position. They are instead embedded in the VP in spec, Neg.

Kamali & Samuels, TIE-3 Lisboa 2008

37

Conclusions

- We proposed that the model of phonological mapping proposed by Samuels (2008, in progress) can best handle cases of pre-stressing in the verbal domain of Turkish that are left problematic by the existing analyses.
- Specifically, we have argued that NegP is below vP in Turkish which derives the sentential stress effects, and QP follows sentential stress because sentential stress is determined syntactically.

Kamali & Samuels, TIE-3 Lisboa 2008

38

Notes

- ¹Typing conventions: acute accent for default stress, all caps for informational focus, boldface to indicate the stressed nucleus in both cases, and italics/underlining only for highlight.
- ²For convenience, we use the term negation only to mean the verbal suffix –mA by the term ‘negation’. Nominal and existential negation forms are free morphemes and their syntax is presumably quite different.
- ³Kornfilt (1996) and Kahnemuyipour & Kornfilt (2006) base their argument on clitics on the presence of an underlying glide in clitic constructions, suspended affixation, and Q morpheme insertion within VP, besides stress shift.
- ⁴This diagram is for expository purposes concerning our conclusion over stress facts only and does not claim to address other issues such as where the subject moves or exactly where the QP is merged.

References

- Chomsky, N. (2001) Derivation by Phase. In M. Kenstowicz, ed., *Ken Hale: A life in language*. Cambridge: MIT Press, 1-52.
- Inkelas, S. (1999) The exceptional stress-attracting suffixes in Turkish: representations versus the grammar. In R. Kager, H. van der Hulst & W. Zonneveld (eds.) *The prosody-morphology interface*. Cambridge: Cambridge University Press. 134-187.
- Ishihara, S. (2007) Major Phrase, Focus Intonation, Multiple Spell-Out. *The Linguistic Review* 24: 137–167.
- Kabak, B. & Vogel, I. (2001) The phonological word & stress assignment in Turkish. *Phonology* 18: 315-360.
- Kahnemuyipour, A. (2004) *The Syntax of Sentential Stress*. PhD dissertation, University of Toronto.
- Kahnemuyipour, A. & Kornfilt, J. (2006) Turkish “pre-stressing” suffixes: a syntactic account. Ms., Syracuse University.
- Kornfilt, J. (1996) On some copular clitics in Turkish. In A. Alexiadou et al, eds., *ZAS Papers in Linguistics, vol. 6*. Berlin: ZAS. 96-114.
- Kratzer, A. & Selkirk, E. (2007) Phase theory and prosodic spellout: The case of verbs. *The Linguistic Review* 24: 93–135.
- Kural, M. (1993) V(-to-I)-to-C in Turkish. In F. Beghelli and M. Kural, eds., *UCLA Occasional Papers in Linguistics: Vol 11: Recent Papers in Syntax, Semantics, and Computational Linguistics*, 17-54.
- Samuels, B. (2008) Toppling the hierarchy in phonology. Paper presented at NAPhC 5.
- Samuels, B. (In progress) *The structure of phonological theory*. PhD dissertation, Harvard University.
- Travis, L. (1992) Inner aspect and the structure of vP. *Cahier Linguistique de UQAM* 1. 132-146.
- Üntak-Tarhan (2006) Topics in Syntax-Phonology Interface in Turkish: Sentential Stress and Phases. MA Thesis, Bogazici University.