

The Derivation/Inflection Distinction and Post-Syntactic Merge

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1 Background

- Derivational vs. Inflectional morphology (Wasow 1977, Anderson 1982, Perlmutter 1988, Stump 1998, among others)
 - derivational morphemes modify syntactic class, involve idiosyncratic meaning, do not interact with syntactic rules.
 - inflectional morphemes are organized in paradigms, do not affect syntactic class, no special meaning, may interact with syntactic rules.
 - derivational morphemes appear closer to the root than inflectional morphemes

(1) a. *Derivational:*

fool → foolish
empty → emptiness
advertise → advertisement
transmit → transmission

b. *Inflectional:*

jump → jumped
book → books

- Traditional approaches:
 - morphemes are pre-classified as derivational vs. inflectional → properties are pre-determined
 - two separate domains of formation: lexicon (derivational) and syntax (inflectional)

- Syntactic approaches to word formation: (Halle and Marantz 1993, Marantz 1997, Embick 1998, Travis 1999, among others)
 - a single domain of word-formation where both derivational and inflectional morphology apply
 - properties of morphemes are derived from the structural configuration and relative position

Phenomenon

- relation between stress assignment and morphology in Persian.
- strict correspondence between morpheme type and word-level stress does not hold with the verbal agreement morpheme.

Proposal

- Recast the morpheme distinction in terms of structural position: *inner* vs. *outer* morphemes (cf. Distributed Morphology)
- Single module of word-formation
- Morpheme properties are not pre-determined; they are obtained from the final configuration
- Post-syntactic operations interact with stress

2 Stress on Nouns and Adjectives

- Word Stress Rule:* The final syllable in the word takes primary stress in Persian. (e.g. Kahnemuyipour (forthcoming))

- stress on last syllable

(2) *ketáb* (book) *bozórg* (big)
tæsadóf (accident) *divuné* (crazy)
buqæləmún (turkey) *motefavét* (different)

- Inner morphemes: these affixes receive main stress

(3) a. *ketab-í* book + Adj (bookish)
b. *tæsadof-í* accident + Adj (accidental)
c. *bozorg-í* big + Nom (grandeur)
d. *divune-gí* mad + Nom (madness)

- (4) a. *ketab-há* book + Pl (books)
 b. *særbaz-án* soldier + Pl (soldiers)
 c. *mosafer-ín* traveler + Pl (travelers)
 d. *kuchek-táer* small + Comp (smaller)
 e. *kuchek-tærin* small + Sup (smallest)

(For further evidence of the “derivational” properties of these morphemes in Persian, see Kahnemuyipour 2000).

- Outer Morphemes: these affixes don't receive main stress

- (5) a. *ketáb-i* book + Indef (a book)
 b. *ketáb-i* book + Relative Particle (a/the book (that...))
 c. *ketáb-o* book + Object Marker (the book)
 d. *ketáb-e* book + Ezafe (the book (of...))
 e. *ketáb-eman* book + Poss.1pl (my book)

- Inner morphemes appear closer to the root than Outer morphemes

- (6) a. *ketab-há-yi* book-Pl-Indef (books, some books)
 b. *divune-gí-æsh* mad-Nom-Poss.3sg (his/her madness)

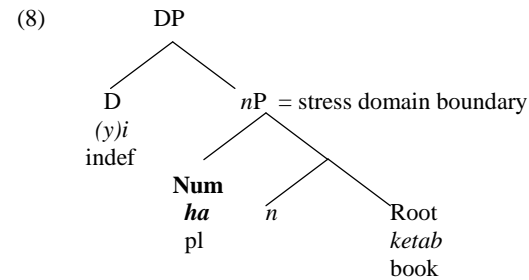
Generalization:

- inner morphemes are inside the word-level stress domain
- outer morphemes are outside the word-level stress domain

- (7) [[*ketab ha nP*] (*y*)i]
 book Pl Indef

Assumption: Decomposed nominal structure for DP (Ritter 1992, Travis 1992, Bhattacharya 1999, Megerdoomian 2002)

Proposal: Stress is assigned to the highest structural position in domain *nP*.



3 Stress on Verbal Agreement

- Agreement morphology on “past” stem:

- agreement morphology on “past” stem does not receive stress → outer morpheme

- (9) a. *ráef-t-æm* go-Aff-Agr.1sg (I went)
 b. *xær-íd-i* buy-Aff-Agr.2sg (you bought)
 c. *tærash-íd-im* sharpen-Aff-Agr.1pl (we sharpened)
 d. *forúx-t-ø* sell-Aff-Agr.3sg (he/she sold)

- Agreement morphology on “present” stem:

- in contemporary Persian: indicative marker *mi-* used with “present” stem
 - *mi-* receives main stress

- (10) a. *mí-guy-æm* Ind + say + Agr.1sg (I say, I am saying)
 b. *mí-ræv-im* Ind + go + Agr.1pl (we go, we are going)
 c. *mí-xær-ænd* Ind + buy + Agr.3pl (they buy, they are buying)

- but bare “present” stem available as auxiliary forms in contemporary Persian
 - agreement morpheme on “present” stem receives main stress → inner morpheme

- (11) a. *in name-ro xah-áem nevesh-t*
 this letter-OM want-Agr.1sg write-Aff
 ‘I will write this letter.’
 b. *ma dar-ím mí-ræv-im mædrese*
 we have-Agr.1pl Ind-go-Agr.1pl school
 ‘We are (in the process of) going to school.’

- bare “present” stem available in Classical Persian and native speakers today have clear intuition for stress patterns on the present stem.

- (12) a. *bu-ye ju-ye muliyan ay-áed hæmi*
 scent-Ez stream-Ez Mulian come-Agr.3pl Prog
 ‘I feel the scent of the streams of Mulian.’ [Rudaki]
- b. *cho dæst bæz sær-e zolf-æsh zæn-áem be-tab ræv-áed*
 when hand on – Ez hair-Poss.3sg strike-Agr.1sg to-curl go-Agr.3sg
 ‘When I touch her hair, it curls’ [Hafiz]
- c. *guy-áend hæmi cho zad mader*
 say-Agr.3pl Prog. as gave-birth mother
 ‘They say that as my mother gave birth...’ [contemporary poem]
- d. *xah-áem to sháev-i mæhbub-e del-æm*
 want-Agr.1sg you become-Agr.2sg beloved-Ez heart-Poss.1sg
 ‘I want you to be the love of my heart.’ [contemporary pop song]

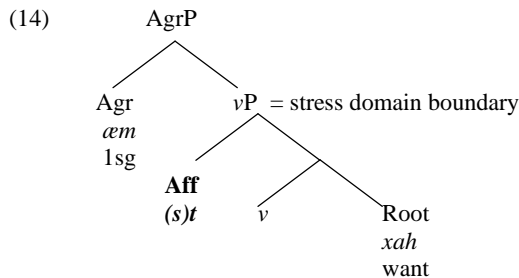
Generalization:

With respect to word-level stress assignment, agreement morphology behaves like an inner morpheme in certain contexts (on “present” stem) and as an outer morpheme in other contexts (on “past” stem).

- (13) a. ‘past’ stem: *xás-t-æm*
 want-Aff-Agr.1sg
- b. ‘present’ stem: *xah-áem*
 want-Agr.1sg

Proposal

- Parallel nominal and verbal structures
 - Stress is assigned to the highest structural position in domain vP.



Problem

Agr receives main stress in present stem, although it is outside of the stress domain.

4 Nature of Morpheme Aff

- Traditionally, the morpheme *Aff* has been treated as a past tense marker in the Persian literature

- (15) a. *mi-dæv-æm*
 Ind-run-Agr.1sg
 ‘I run / I am running’
- b. *dæv-id-æm*
 run-Aff-Agr.1sg
 ‘I ran’

Question: it is surprising to find a tense marker so low in the structure

→ We propose that *Aff* is not a tense marker, but rather an Aspect marker. It indicates some meaning of result or completion of the event.

- Aspect has been argued to be more ‘derivational’ than Tense (cf. Dressler 1989, Booij 1994)

- *Aff* is used in the formation of the infinitive

- (16) *dæv-id-æn*
 run-Aff-Inf
 ‘to run’

- *Aff* is used in the formation of nominals: generally, only Asp or v heads appear under a nominalizer (van Hout and Roeper 1998, Fu et al 2001)

- (17) a. *ræf-t-ar*
 go-Aff-Nom
 ‘behavior’
- b. *gof-t-ar*
 say-Aff-Nom
 ‘saying, speech’
- c. *kosh-t-ar*
 kill-Aff-Nom
 ‘killing, slaughter’
- d. *did-ar*
 see-Aff-Nom
 ‘meeting, seeing’
- e. *ænbash-t-e-gi*
 accumulate-Aff-ppart-Nom
 ‘accumulation’
- f. *del=shææ-st-e-gi*
 heart=break-Aff-ppart-Nom
 ‘heartbreak, disappointment’

- used in future and near future tense

- (18) a. *xah-áem* *xær-id*
 want-Agr.1sg buy-Aff
 ‘I will buy’
 b. *dásht-im* *mi-ræf-t-im*
 have.Aff-Agr.1pl Ind-go-Aff-Agr.1pl
 ‘We were going’ / ‘We were just gonna go.’
 c. *mæn ræf-t-æm*
 I go-Aff-Agr.1sg
 ‘I am going’

- used in conditional future context

- (19) a. *æge / væqti* *færda* *ræf-t-i* ...
 if / when tomorrow go-Aff-Agr.2sg
 ‘If / when you go tomorrow...’
 b. *æge / *væqti* *færda* *be-r-i* ...
 if / when tomorrow Subj-go-Agr.2sg
 ‘If / *when you go tomorrow ...’

5 Local Dislocation

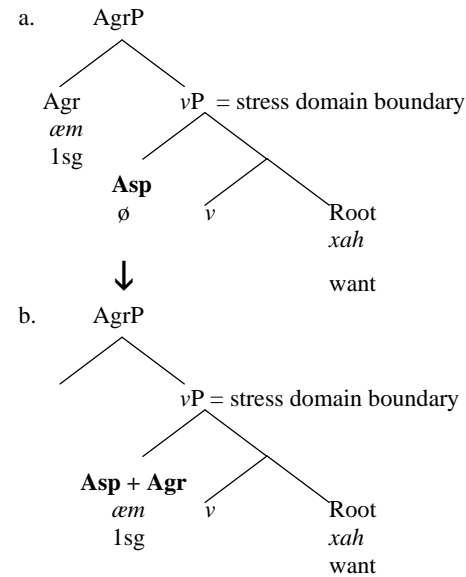
Proposal

- stress is assigned to the highest position within the stress domain *vP*
- stress assignment requires that the position be filled by an overtly realized phonological element (i.e., a non-null exponent)
- if a null exponent occupies the position of stress assignment, local dislocation applies

(20) Local Dislocation:

A Merger operation that takes place after Vocabulary Insertion / Linearization and converts $[X * [Z * Y]]$ to an adjunction relation in $[[Z^{\circ} Z+X] * Y]$.

(21) “present” stem: *xah + æm* → *xah.áem*



6 Extending the Analysis

Definite Marker

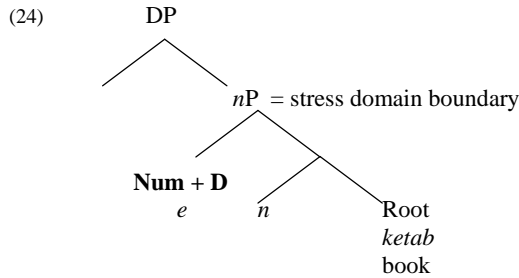
- In colloquial Persian, there is a definite marker *-e*

- (22) a. *ketab-é* ‘the book’
 b. *mærd-é* ‘the man’
 c. *shærab-é* ‘the wine’

- The definite marker appears only on the singular form

- (23) a. **ketab-ha-e*
 book-Pl-Def
 b. *ketab-há*
 book-Pl
 ‘the books’

→ the plural morpheme *ha* and the definite marker *-e* occupy the same syntactic position



▪ Third Person Agreement

- 3sg agreement marker is null in past but realized as *-e* in the present in colloquial Persian.

- (25) a. *dash-t-∅*
 have-Asp-Agr.3sg
 ‘he/she had’
 b. *dar-é*
 have-[Agr+Asp]
 ‘he/she has’

7 Conclusion

We have argued that the dual behavior of verbal agreement with respect to stress in Persian can be captured by post-syntactic operations triggered by stress.

- direct correlation between inner vs. outer morphemes and their position in the structure
- word-level stress corresponds directly to syntactic structure
- post-syntactic merge operation (Local Dislocation) operating on adjacent strings

→ derive word-level stress properties of nominal and verbal morphology in Persian within a single word-formation module

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