Asaf Bachrach & Roni Katzir
{asaf,trifilij}@mit.edu

CUNY
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Identity and Precedence*

1 Linearization

1.1 Strong linearization and its problems

1.1.1 Trees

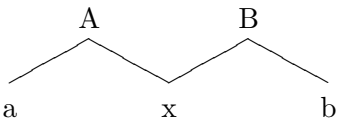
- The standard linearization condition:

(1) Strict Linearization (Kayne, 1994; Chomsky, 2004).
If A is linearized before B then $\forall a \in A. \forall b \in B. a < b$

1.1.2 Multiple Dominance

- **The multidominance problem:** If a terminal is contained within both A and B, a linearization contradiction arises

(2)



- The problem: $A < B \Rightarrow x < x$
- Proposal: weaken the linearization condition
- Plan:
  - Develop a linearization framework that can handle multiple dominance
  - Present two case studies: Right-Node Raising (RNR), and reduplication

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1.2 Reflexive linearization

1.2.1 D-lists

- We assume that linearization is determined at each node
- Each node X will be associated with a list of nodes that will be called the *D-list* of X
- D-lists are subject to two kinds of well-formedness conditions:

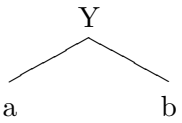
(3) Linearization Well-Formedness Condition
   a. The D-list for a node X has all the terminals dominated by X as members, and only them
   b. If y is completely dominated by X, y appears exactly once on the D-list of X

(4) Linearization Mapping Condition
In ordering $A =< a_1, \ldots, a_m >$ to the left of $B =< b_1, \ldots, b_n >$, written $A \bullet B$, the following must hold:
   a. Edge Alignment: $a_1 \leq b_1$ and $a_m \leq b_n$.
   b. Conservativity: $a_1 \leq a_2 \leq \ldots \leq a_m$ and $b_1 \leq b_2 \leq \ldots \leq b_n$

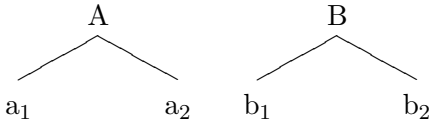
- Notice that (4) is weaker than (1):
  - Elements are now compared using the reflexive $\leq$ rather than the irreflexive $<$ of (1)
  - Edge Alignment (4b) replaces the universal quantification of (1) with two existential quantifiers

1.2.2 Consequences of reflexive linearization

(5) Linearizing atomic objects: $< a > \bullet < b > \Rightarrow < a, b >$

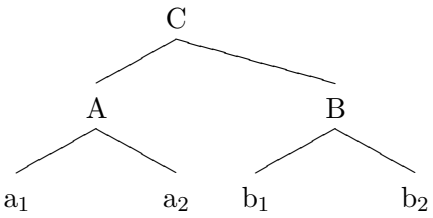


(6) Linearizing complex objects:

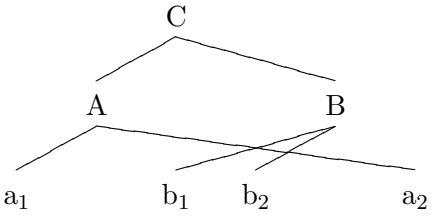


Possible orderings: $< a_1, a_2 >$ • $< b_1, b_2 > \Rightarrow$?

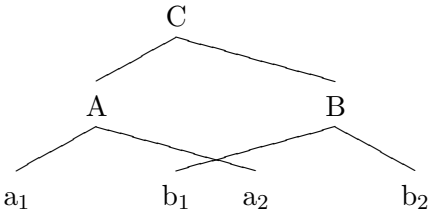
a. $\surd$ Concatenation: $< a_1, a_2, b_1, b_2 >$



b. * Wrapping: $< a_1, b_1, b_2, a_2 >$



c. $\surd$ Interleaving: $< a_1, b_1, a_2, b_2 >$



1.2.3 A concern: interleaving

- The current proposal makes interleaving freely available
- So why don't we find it everywhere?
- Answer: by the time most complex objects are linearized with respect to each other, their elements have already been frozen by *spellout*

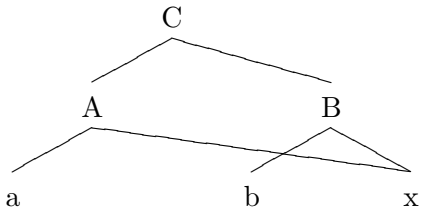
(7) **Spellout:** A syntactic structure transferred to PF is mapped onto a phonological object that cannot be modified by further operations

(8) **Spellout domain:** The spellout domain of a node X is the set of nodes that are *completely dominated* by X

1.2.4 Linearizing multiple-dominance structures

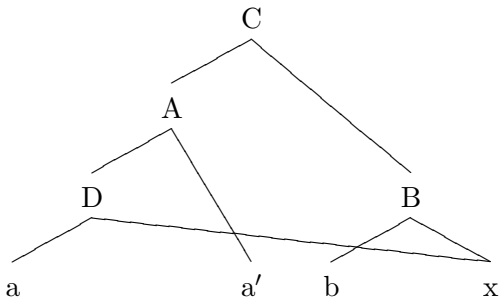
- Linearizable multiple-dominance structure:

(9) $< a, x > \bullet < b, x > \Rightarrow < a, b, x >$



- Non-linearizable multiple-dominance structure:

(10)



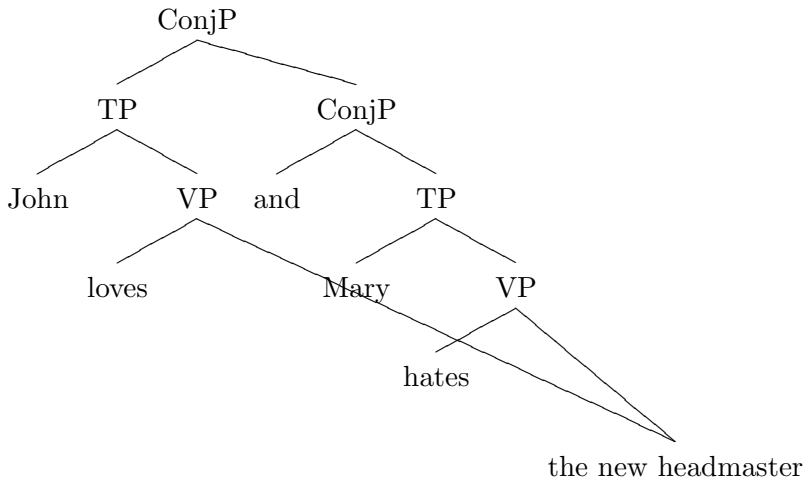
a. $^{*} < a, x, a' > \bullet < b, x > \not\Rightarrow < a, a', b, x >$

b. $^{*} < a, x, a' > \bullet < b, x > \not\Rightarrow < a, x, a', b >$

2 Right-Node Raising

(11) a. [John loves _] and [Mary hates _] **the new headmaster**

b. Structure (modeled after McCawley, 1982; Wilder, 1999):



2.1 Predictions

2.2 Linear order

- Prediction:
  - (11) reflects the only possible linear order for RNR
  - Forms that correspond to the impossible linearizations in (10) will be ungrammatical

(12) a. * [A man who loves _ sang a song], and [a woman who hates _ read a book] **the new headmaster**.

b. * [A man who loves _ sang a song], and [a woman who hates **the new headmaster** read a book].

2.3 Island insensitivity

- Prediction:
  - Since the shared material is not completely dominated in either conjunct, it is not spelled out until conjunction is formed
  - Consequently, the interleaving needed for linearizing RNR is always possible, regardless of any occurrences of spellout within the conjuncts

(13) [John knows a man who kissed _], and [Mary knows a woman who hugged _] **the new headmaster**

- Note: the delay in spelling out the shared material in RNR has consequences also for *wh*-movement and QR (see Bachrach and Katzir, 2006)

3 Reduplication as reflexive edge alignment

3.1 Current approaches to reduplication

- Affixation+ phonological copying:Marantz (1982); McCarthy and Prince (1995)

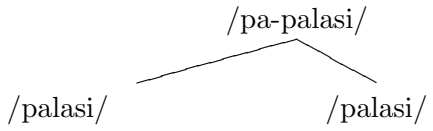
(14) $CV(RED) + /pala/ \rightarrow /pa - pala/$

- Morpho-phonological looping (Raimy, 2000)

(15) $p \rightarrow$ a $\rightarrow la \Longrightarrow /papala/$

- Morphological doubling: Inkelas and Zoll (2005)

(16)



3.2 Reduplication as sharing

- Reflexive edge alignment makes possible an alternative view of reduplication
- Certain cases of reduplication are the spell-out of multidominance configurations in the syntax (similar in spirit to the Morphological Doubling approach)
- Mutidominance blocks spell-out of the shared object before all instances are merged into the same structure
- Partial reduplication is the result of interleaving coupled with phonological overlap due to identity (cf. RNR)
- We assume that lexical objects ('words', 'morphemes'..) contain linearization lists identical to the ones we have proposed for syntactic nodes:

(17) L(dolphin)= $[d \leq o \leq l \leq f \leq i \leq n]$

- In our current framework, partial reduplication in the linearization list of the mother can have two sources:
  1. The daughters share a sub constituent (as in RNR): non shared material is pronounced 'twice', shared material is pronounced once
  2. The daughters are identical: Any element can either appear twice in the linearization list of the mother, or only once, as long as reflexive edge alignment is not violated
- Note: In order to allow for repetition of a shared element, (3b) will need to be modified

3.3 Partial syntactic sharing: Preverb reduplication in Hungarian

3.3.1 The preverb in Hungarian

- A preverb can combine compositionally with the verb and provide aspectul telicity (18a), adverbial modification (18b) or directionality (18c)
- In other cases, the preverb+verb combination results in a non-compositional meaning (18d)

(18) olvas 'read'
  a. el-olvas 'read up'
  b. fel-olvas 'read aloud'
  c. át-olvas 'read through'
  d. meg-olvas 'count (money)'

- The preverb can be separated from the verb either by 'preverb climbing' (19,Farkas and Sadock 1989), by inversion (20), or by PV topicalization (21):

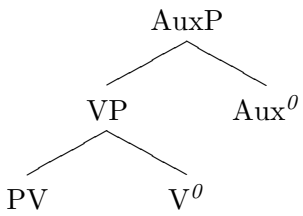
(19) János fel akarja olvasni a verseit
J. PV wants read-inf his poem
'John wants to read his poem'

(20) Péter nem olvasta öket fel
P. not read them PV
'Peter did not read them out'

(21) Fel csak János olvasta a verseit
PV only J. read his poems
'out load, only John read his poems'

- Ackema (2004) proposes an O V (Aux V) deep structure for the Hungarian VP which explains a number of word order facts regarding the PV:

(22)



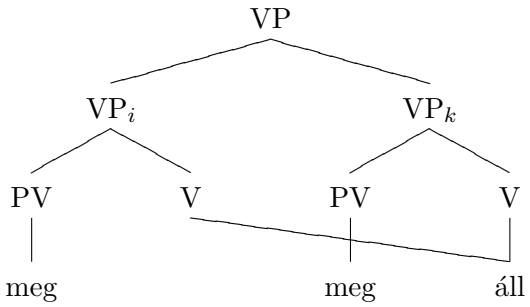
- Aux PV V order is the result of VP extraposition
- Preverb climbing is the result of rightward movement of the verb, adjoining to the embedding verb
- Inversion is the result of verb movement to the left periphery

3.3.2 Preverb reduplication

(23) meg-meg-áll 'stop'

- We propose to analyze PV reduplication as a spell out of VP doubling:

(24)



- The analysis of preverb reduplication as full VP doubling receives support from a number of properties of this construction
- Semantic scope:
- Reduplication of the preverb adds an 'irregular iterative' meaning to the interpretation of the entire PV+verb:

(25) meg hökken
PV ?
'Be surprised'

(26) meg meg hökken
PV PV ?
'be surprised occasionally'

- Reduplicative iteration takes scope over non-specific objects (27b):

(27) a. Péter el- énekelt egy dalt
P. PV sang some song
'Peter sang up some song'

b. Péter el- el- énekelt egy dalt
P. PV PV sang some song
'Peter sang some song up occasionally (different songs)'

- Scope over inflection

(28) bele szeret
PV love
'fall in love with'

a. belé-m szeret
PV-1SG love
'fall in love with me'

b. belé-m belé-m szeret
PV-1SG PV-1SG love
'fall in love with me from time to time'

- Interaction with derivational morphology:
  - PV+V based nominalization is blocked by PV reduplication (29d)
  - VP based participle formation is not blocked by PV reduplication (30)

(29) a. át megy
PV go
'go through'

b. át men-és
PV go-nom
'the going through'

c. át át megy
PV PV go
'go through intermittently'

d. * át át men-és
PV PV go-nom

(30) fel fel dobott kő
PV PV throw stone
' throw up a stone occasionally'

- Reduplication blocks inversion

(31) a. Péter nem ment át a szomszédhoz
P. not go-past PV the neighbor
'Peter did not go to the neighbor'

b. * Péter nem ment át át a szomszédhoz
P. not go-past PV PV the neighbor

- Reduplication blocks PV topicalization

(32) a. szét szét szedtem a rádiókat
apart apart took-1SG the radio-pl
'I took apart the radios repeatedly'

b. * szét szét csak a rádiókat szedtem
apart apart only the radio-pl took-1SG

- Reduplication does not block PV climbing but entails high scope of the iterative operator

(33) meg meg akartam ölni
PV PV wanted kill-inf
'wanted repeatedly to kill'

(34) a. el szeretem dvasni a könyvet
PV like-1SG read the book
' I like to read the book up'

b. szeretem el el dvasni a könyvet
like-1SG PV PV read the book
'I like to read the book up repeatedly'

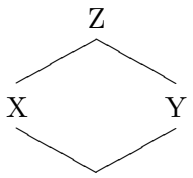
c. * el el szeretem dvasni a könyvet

3.4 Full syntactic sharing: Amele discontinuous reduplication

3.4.1 identity in the linearization list

- Certain cases of reduplication might involve syntactic identity of two daughters, in which case the linearization pattern is determined by a number of constraints on the mother node linearization list:

(35) a. palasi

b.


[p,a,l,a,s,i]

c. L-list(X)= L-list(Y)= [(p,a,l,a,s,i)]

d. L-list(Z) has a number of options:
   1. Total reduplication:[p,a,l,a,s,i,p,a,l,a,s,i]
   2. Left edge reduplication, e.g.: [p,a,p,a,l,a,s,i]
   3. Right edge reduplication, e.g.:[p,a,l,a,s,i,s,i]
   4. Internal reduplication, e.g. [p,a,l,a,l,a,si,si]

e. L-list(Z) cannot violate reflexive edge alignment
   1. Left edge violation, e.g.:*[s,i,p,a,l,a,s,i], *[l,a,p,a,l,a,s,i]
   2. Right edge violation, e.g.: *[p,a,l,a,s,i,p,a], *[p,a,l,a,s,i,l,a]
   3. Conservativity violation, e.g.*[a,p,p,a,l,a,s,i]

- The linearization algorithm itself does not determine the extent of phonological overlap in the linearization list of the mother

- The extent of phonological overlap will be determined by independent factors, mostly not addressed here, such as morphological structure and the phonotactics of the language (as in Prosodic Morphology,McCarthy and Prince 1995)

- Our framework permits total overlap, so we are required to stipulate a recoverability constraint (but note that equivalent stipulation is made in other frameworks as well)

3.4.2 Sharing vs. truncation: The 'Edge-in constraint' (Marantz, 1982; Nelson, 2003)

- under either the phonological copying or morphological doubling perspectives, the position of the truncated material in partial reduplication is not constrained (this does not apply to phonological loop analyses such as Raimy's)

- As was shown abstractly above, our framework derives Marantz's 'Edge-in' association:

(36) In general, a prefixed reduplicant copies the base left to right:
  a. du-duleh *leh-duleh 'very rough' (from duleh) (Amele, Roberts 1991, p. 124)

(37) In general, a suffuxed reduplicant copies the base left to right:
  a. erasi-rasi *erasi-era 'he sick' (from erasi) (Siriono, cited in Nelson 2003, p.3)

(38) In Internal reduplication, the repeated material is adjacent:
  a. a-me-meg *ame-m-g 'the eyes of everyone' (from ameg) (Amele, Roberts 1991,p. 119)

- The pattern above is not incompatible with phonological copying or morphological doubling, but requires additional constraints

- In our system, exceptions to this pattern (cf.Riggle 2004) can only be cases of 'true' phonological deletion and are expected to present different characteristics (Steriade, 1988; Nelson, 2003)

3.4.3 Discontinuous reduplication

- Amele (Roberts, 1991) presents a case of discontinuous reduplication which is not expressible in other frameworks, but which is allowed in by reflexive edge alignment:

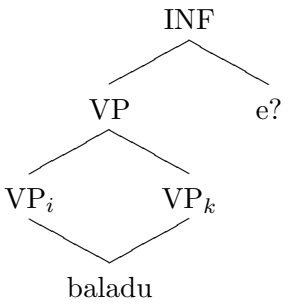
(39) a. bala do e?
  tear 3SG INF
  'to tear it'

b. bala (bala) du du e?
tear (tear) 3SG 3SG INF
'to tear it repeatedly' (p. 131)

c. li-li hu-hu ena 'he goes and comes back'

- Under the proposal here, the examples above can be analyzed as a single application of reduplication with interleaving:

(40) a.



b. L-list(INF)=[bala,bala,du,du,e?] or [bala,du,du,e?]

- For other cases of 'discontinuous reduplication' cf. Inkelas and Zoll (2005); Riggle and Munro (2004)

A More on spellout domains

(41) **Complete Dominance:** A node X completely dominates a node Y iff (a) X is the only mother of Y, or (b) X completely dominates every mother of Y. The set of nodes completely dominated by X will be called the *Complete Dominance Domain* of X, written $CDD(X)$.

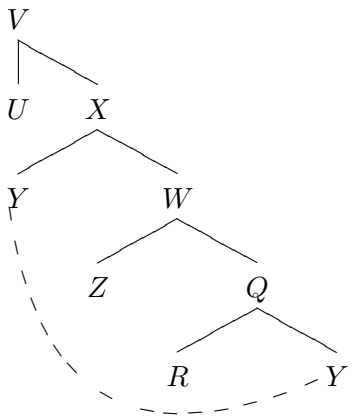
(42) **Spellout Domain (Revised):** The spellout domain of a node X is $CDD(X)$.

(43) **Spellout Node (replaces Phase Head):** A designated syntactic object that triggers spellout of its spellout domain.

- Since dominance is not reflexive, a re-merged specifier, like Y in (44), will not be completely dominated by any of its mothers: $[_X(Y)\ Z\ R\ (Y)]$.

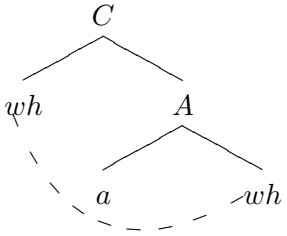
- Notice that as soon as we merge a new object as a sister of X in (44), Y becomes completely dominated by the new root:

(44)



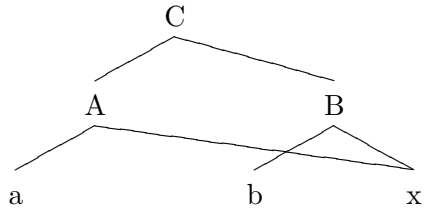
- If linearization involves CONSERVATIVITY, how is wh-movement possible?
- Recall: at the re-merge of a wh-element it is no longer completely dominated.

(45) $< wh > \bullet < a, wh > \Rightarrow < (wh), a, (wh) >$



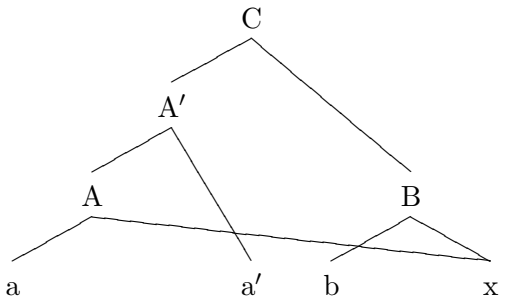
- In RNR, merging the two conjuncts makes the shared material completely dominated.

(46) $< a, (x) > \bullet < b, (x) > \Rightarrow < a, b, x >$



- Result: the shared material in RNR, unlike the wh-element in wh-movement, must be mapped onto a single position, respecting CONSERVATIVITY.

(47) $< a, (x), a' > \bullet < b, (x) > \nRightarrow < a, a', b, x >$



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