Layered derivations

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1. Lexical integrity

(1) a. I'm looking for book shops
b. *It's BOOK that I'm looking for — shops

(2) *Lexical integrity*
No rule of syntax can target a subpart of a word

(3) (only) rule of syntax = merge (combine two elements in a constituent)

(4) [?] Merge cannot target a subpart of a word

(5) book shop: NUMERATION = / book, shop /
DERIVATION = merge *book* and *shop* = { book, shop }

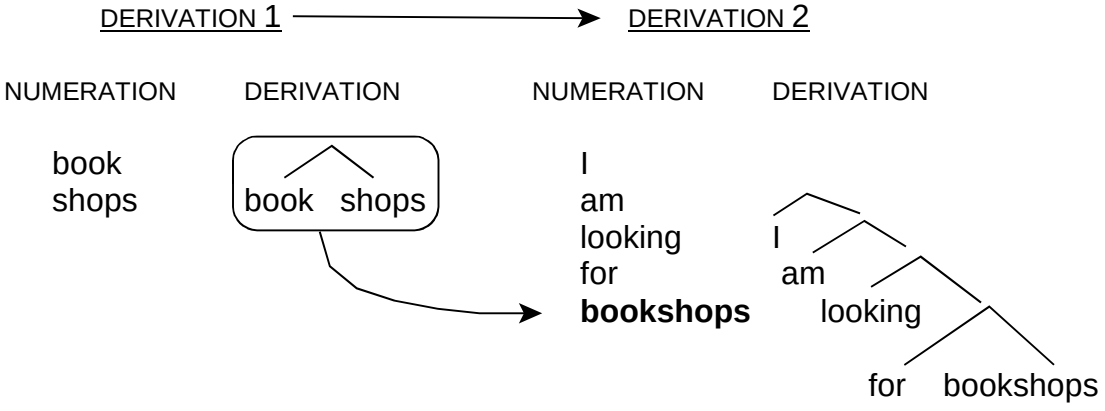
(6) *synthetic compounds*
a. drie-wiel-er (Dutch)
three-wheel-er
'tricycle'

b. the thing (*er*) of which the wheels (*wiel*) are three (*drie*)

c. NUMERATION = / er, wiel, drie /

DERIVATION = merge *wiel* and *drie* = {wiel, drie}
merge *drie* and *{wiel, drie}* = { drie, {wiel, <drie>}}
merge *er* and *{drie, {wiel, <drie>}}* = { er, {drie, {wiel, <drie>}}}
merge *{drie, {wiel, <drie>}}* and *{ er, {drie, {wiel, <drie>}}}* =
{{drie, {wiel, <drie>}},{ er, <{drie, {wiel, <drie>}}>}} =
{drie, wiel, er}

(7)



(8) *Generalized Integrity Principle*
A subpart of a derivation D is invisible outside D

(9) The output of a derivation is an atom

(10) A word is a phase (without an edge)

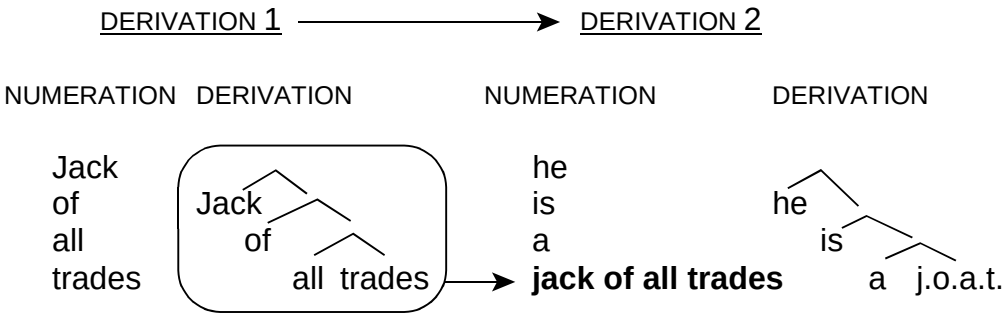
2. Phrasal integrity: idioms

(11) a. He is a jack of all trades
b. *All trades he's a jack of —
c. *Of all trades he's a jack —

(12) a. NUMERATION = / he, is, a, jack, of, all, trades /
b. NUMERATION = / he, is, a, [jack of all trades] /

(13) Opaque idioms (like words) are conventional sound-meaning pairs, even if they have the internal structure suggesting derivation.

(14)



(15) Opacity follows from the Generalized Integrity Principle (11).

(16) 'normal' derivations may also feed into idiomatic derivations:
The more [I see you] the more [I want you]

NUMERATION 1 yields *I see you*
NUMERATION 2 yields *I want you*
NUMERATION 3 = / [the more], [the more], [I see you], [I want you] /

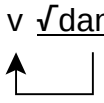
(17) NB 'schematic' (open position) idioms may be transparent, i.e. no layered derivations (Svenonius 2005: created in the syntax and interpreted as an idiom)

a. pull X's leg — Whose leg is he pulling now?

b.

X niet zien zitten —	Echt	zien zitten	doe	ik	hem	niet	(Dutch)
X not see sit [dislike]	really	see sit	do	I	him	not	
	'I do not really like him.'						

(18) it would follow that a semantically complex word is also an idiom (Hale & Keyser 1993, Marantz 1997), i.e. formed in a separate derivation, and then listed as an atom in the numeration for the next derivation



3. Phrasal integrity: noncomplements

(19) *Standard Condition on Extraction Domain (CED) facts:*
a. It was the CAR of which they arrested the driver —
b. *It was the CAR of which the driver — caused a scandal
c. *It was the CAR of which we left because of the driver —

(20) *Hypothesis*
Noncomplements are inserted as atoms in the derivation (i.e. as the output of a previous derivation)

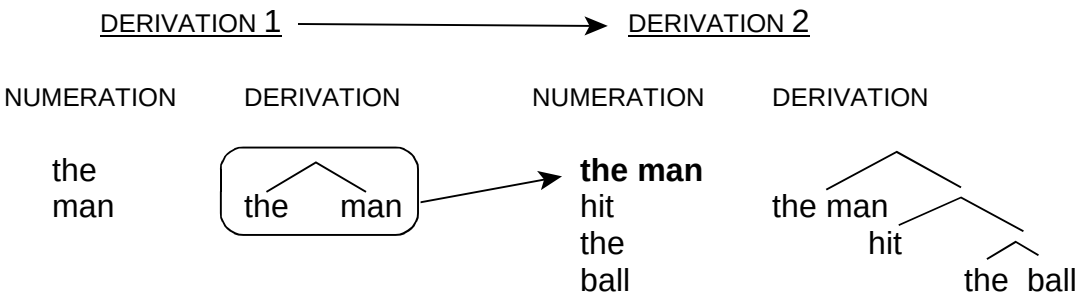
(21) The man hit the ball

Candidate numerations:
a. / the, man, hit, the, ball /
b. / the, man, hit, [the ball] /
c. / [the man], hit, the, ball /
d. / [the man], hit, [the ball] /
e. / [the man], [hit the ball] / etc.

(22) (21a) and (21b) give us the wrong constituency (assuming bottom-up merge):

(21a) ball
(21a,b) the ball
hit [the ball]
man [hit the ball]
☹ the [man hit the ball]

(23)



(24) It was the CAR of which the driver — was arrested (Chomsky 2005)

(25) *General explanation of opacity*
Given a derivation consisting of layers D_1 and D_2, where D_2 is part of D_1 (and *x* is part of *y* if the output of *x* is a member of the numeration of *y*), no member *n* of (the numeration of) D_2 is a member of (the numeration of) D_1 (= GIP (8))

(26) Do (8)/(25) follow from anything?

4. Simplest merge

(27) Any derivation involves:
a. a resource (the numeration)
b. an object under construction (the domain)

(28) Simplest derivation:
a. the members of the resource are all atomic
b. there is just a single domain

(29) ***Merge***
Assign an element from the resource to the domain

(30) NB merge does not select two elements that it combines in a set (begging the question of why not three)

(31) numeration = / a, b, c, d, e / domain = empty

first merge: assign *a* to the domain = [a]
second merge: assign *b* to the domain = [b [a]]
etc. until domain = [e [d [c [b [a]]]]]

(32) the output of merge is asymmetric, since in [b [a]], there is a thing that *a* is part of, and *b* is not (i.e. the output of the previous operation merge) (cf. Jaspers 1998:109)

(33) *Linear Correspondence Axiom*
[a [b]] = / a b /

(34) NB within a derivation, the domain is not atomic but complex, but each element assigned to it is atomic, potentially an important asymmetry

(35) *Dependency marking principle*
Given [a [b]], *b* may be marked for dependency of *a*, but not the other way around (Zwart 2006a,b)

(36) [John$_{3SG}$ ⟶ [love**s** [Mary]]$_{3SG}$]

NB inflectional morphology is part of the transfer to the SM (PF) interface

(37) *Kayne's problem* [a b] is symmetric, hence vacuous structure needed to distinguish *b* from *a* (violating Bare Phrase Structure)

but now [a [b]], asymmetry is a function of merge

(38) *Epstein's problem*
In [a b], *a* c-commands the members of *b*, but not the other way around. How is this derived if c-command is a function of Merge?

(39) This follows since *a* is an atom by (28)

5. Some consequences

5.1 Coordinate structures

(40) a. *Who did John see [Mary and —]
b. *I wonder who [[John likes —] and [Bill hates Mary]]

(41) *Logic now*
A coordinate structure is the output of an auxiliary derivation
(no difference between complement and noncomplement coordinate structures)

(42) *Hypothesis*
Coordination invariably involves a two-member numeration

(43) *Multiple coordination*
a. not: [A + [B + [C + [D]]]] *etc*
b. but: [[[A + B] + C] + D] *etc*

(44) Coordination is binary juxtaposition, possibly edge-marked by a conjunction

(45) ingenia [fecunda] [totius-**que** naturae capacia] (Latin)
minds fertile all:GEN-CONJ nature:GEN grasping
'minds that are fertile and able to grasp the entire universe'

(46) I saw JOHN the other day and BILL

(47) [I saw John the other day] [and Bill]

(48) *3 numerations*
a. NUMERATION 1: / I, saw, John, [the other day] /
b. NUMERATION 2: / and, Bill /
c. NUMERATION 3: / [I saw John the other day], [and Bill] /

(49) Numeration 2 is created on the basis of Numeration 1, by listing the alternatives to the focused members of Numeration 1.

5.2 Gapping

(50) JOHN kissed MARY and BILL SUE

(51) Traditional approach in generative grammar: deletion/ellipsis of the missing verb (phrase)

(52) *Evidence against ellipsis: no gap-remnant relations* (cf. Ross 1970:250)
a. I want Bob to shave himself, and Mary *(wants Bob) to wash himself
b. John heard noone object, and Bill *(heard noone) say anything$_{NPI}$
c. John kicked the ball, and Bill #(kicked) the bucket

(53) Comparison with (47) suggests similar procedure as in (49) underlying (47)

(54) *3 numerations*

a. NUMERATION 1: / John, kissed, Mary /
b. NUMERATION 2: / and, Bill, Sue /
c. NUMERATION 3: / [John kissed Mary], [and Bill Sue] /

(55) *Gapping anomaly (Neijt 1979:30)*

Gapping is the only operation of core grammar that relates members of a coordinate structure

(56) *Now*

Gapping does not relate members of a coordinate structure, but two derivations along the lines of (49) — i.e. the focus structure of D_1 determines the numeration of D_2 — and the outputs of D_1 and D_2 are related via normal coordination (= merge)

(57) *Locality conditions on gapping (Neijt 1979:23f)*

a. **Coordinate Structure Constraint**
Alfonse cooked the rice and the beans and Harry *(cooked the rice and) the potatoes

b. **Sentential Subject Constraint**
*That Alfonse ate the rice is fantastic and ~~that~~ Harry ~~ate~~ the beans ~~is fantastic~~

c. **Complex NP Constraint**
*Alfonse discussed the question of which rice we would eat and Harry ~~discussed the question~~ (of) which beans ~~we would eat~~

(58) a. CSC: *the rice and the beans* is an atom in D_1, therefore *the potatoes* cannot be listed in the numeration of D_2 as an alternative to *the beans*
b. SSC: *that Alfonse ate the rice* is a noncomplement hence also an atom, and *Harry* and *the beans* cannot be listed in the next derivation as alternatives to *Alfonse* and *the rice*
c. CNPC: arguable, a complex NP is also an atom (i.e. an island), hence *which beans* cannot be listed in the next derivation as an alternative to *which rice*.

(59) *John loves Mary and I think that Bill Sue

(60) Explanation: the numeration of the second conjunct contains elements that are not alternatives to the focused material in the first

(61) ¡John loves Mary and I think Bill Sue

(62) Account: *I think* is not a matrix clause embedding *Bill (loves) Sue*, but a hedge element (see 5.3)

5.3 Grafting

(63) John left for I think Budapest

(64) [What's the capital of Hungary?] I think Budapest

(65) [I think Budapest] = [MODAL Budapest] ≈ possibly Budapest = NP (not TP)

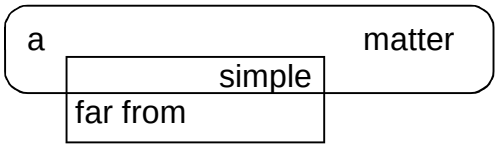
(66) a. NUMERATION 1 / I, think, Budapest / yielding [I think Budapest]
b. NUMERATION 2 / John, left, for, [I think Budapest] /

(67) The output of Derivation 1 is a clause, listed in Numeration 2 as a noun phrase, made possible by the semantic interpretation in (65)

(68) Alternative to Kajita's (1977) proposal of reanalysis for *a far from simple matter*

(69) $[_{PP}$ far [from [simple]]] > $[_{AP}$ [far from] simple]

(70) Van Riemsdijk (2001, 2004): grafting



(71) Violates atomicity and single domain hypotheses (28)
a. parallel derivations of *a simple matter* and *far from simple*
b. part of one derivation is merged with another (the joint element is the 'callus')

(72) Cf. Chomsky (2006:6):
'Without further complication, Merge cannot create objects in which some object W is shared by the merged elements X, Y.'
(*overlap constraint*)

(73) *Analysis: Derivation yields a PP which is listed as an AP in Numeration 2*
a. NUMERATION 1: / far, from, simple / yielding [far from simple]
b. NUMERATION 2: / a, [far from simple], matter /

(74) a. een verre van *eenvoudig*-**e** oplossing (Dutch)
a far from simple-NNTR solution$_{NNTR}$

b. een [zo *goed* mogelijk]-**e** oplossing
a as good possible-NNTR solution$_{NNTR}$
'an optimal solution'

(75) *Evidence for the layered derivation approach to grafting: opacity*
a. *Wat is die oplossing verre van — ? (Dutch)
what is that solution far from
(cf. Daar hield hij zich verre van — [there kept he himself far from])

b. *It's Budapest that he left for I think —
(cf. It's Budapest that he left for —, I think)

c. *Waar is hij naar ik meen — vertrokken ? (Dutch)
where is he to I think left

(76) a. He left for uh, Budapest
b. *What did he leave for uh — ?

(77) *Hypothesis*
Hedges (restarts, repairs) introduce the output of another derivation layer

(78) cf. Levelt (1983): hedges mark constituent boundaries

(79) He left for {I think / *I like} Budapest

I like Budapest cannot stand for *Budapest* (*I like* is not a modal marker)

(80) He left for { I think it was / *I think he lives in} Budapest
He left for Budapest { I think it was / *is the capital of Hungary }

(90) Generalization: 'grafting' only allowed if the 'graft' expresses modal modification (this follows on my analysis, since modal modification is what allows you to list the output of a previous derivation *as a different category* in a new numeration)

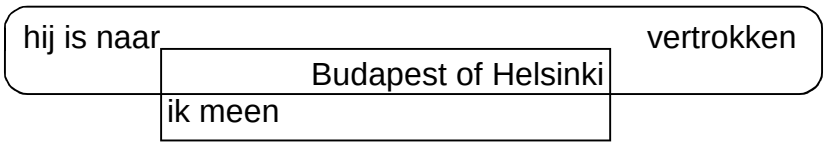
(91) He left for he said (it was) Budapest or Helsinki
a. he left for X, and X = B. or H., based on what he said (modal reading)
b. he left for X, and he said that X was B. or H. (de dicto reading)

(92) He said it was Budapest or Helsinki (only *de dicto*)

(93) Hij is naar ik meen Budapest vertrokken of Helsinki (Dutch)
he is to I think Budapest left or Helsinki
'He left for I think Budapest or Helsinki.'

(94) a. **narrow scope:**
He left for one of two cities, the first being *possibly* Budapest, and the second *definitely* Helsinki
b. **wide scope:**
He left for some city, *possibly* Budapest or Helsinki

(95) *Graft analysis of wide scope reading*



gives wrong linearization Hij is naar ik meen Budapest of Helsinki vertrokken

(96) My analysis: *ik meen Budapest* is in focus, feeding a next numeration of just *of Helsinki* (cf. (46))

NUMERATION 1: / ik, meen, Budapest /
NUMERATION 2: / hij, is, naar, [ik meen Budapest], vertrokken /
NUMERATION 3: / of, Helsinki /
NUMERATION 4: / [hij is naar ik meen Budapest vertrokken], [of Helsinki] /

(97) Hij heeft *zelfs* Chomsky ontmoet en Kayne (narrow/wide scope)
he has even Chomsky met and Kayne

6. Conclusion

(98)
1. Simplest merge gives asymmetric structure (deriving linear order, dependency marking, asymmetric c-command)
2. Members of the numeration are atomic, i.e. possibly the output of a previous derivation
3. Opacity is explained by the Generalized Integrity Principle (i.e. follows from 2)
4. Overlap constraint (when X and Y merge, there is no W which is part of both X and Y) holds
5. Layered derivations provide an account for various coordination related phenomena, including the coordinate structure constraint, gapping, and phenomena analyzed elsewhere via suspect operations like grafting.

(99) Further research:

a. find out how much of opacity follows from layered derivations (i.e. GIP)

b. on a plausible interpretation, layered derivations take the place of phases, and the GIP that of the PIC, leading to the question whether we can do without phase edges in the analysis of locality phenomena

c. many idioms seem to be interwoven with elements of fully productive derivations (including 'word idioms' consisting of a root and little v), which is not expected or accounted for at this point

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