

Towards a Theory of Syntactic Variation
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Syntactic variation in nominal root compounding

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0. Nominal root compounding: a syntactic phenomenon

I am assuming a syntactic approach to word formation and compounding in particular. Compounds are built in syntax by recursive application of the operation Merge.

- Merge is the only structure building operation in narrow syntax.
- Merge applies freely and forms binary unordered sets.
- Merge generates structures that are subject to the *Inclusiveness Condition*, the *No-Tampering Condition* and *Full Interpretation*

(1) Inclusiveness Condition (IC)

No new features are introduced in the course of the derivation.

(2) No-Tampering Condition (NTC)

No elements introduced by syntax are deleted or modified in the course of the linguistic derivation.

(3) Full Interpretation (FI)

Every constituent of SEM and PHON contributes to interpretation.

(adapted from Narita 2011: 38)

- Merge is an operation that builds bigger SO from smaller SOs

- (4) A linguistic representation α is a SO iff
- a. α is a L(exical) I(tem), or
 - b. α is a set $\{\beta, \gamma\}$ where β and γ are SOs

What then are the properties of an LI?

For my purposes here, I follow the definition in Narita (2011):

- (5)
- a. The E(dge) F(eature) is a property only of LIs
 - b. Non-LIs do not have EFs
- No *à priori* distinction between roots and categorizers. Both are characterized by EFs, although they may very likely be drawn from different resources.
 - Roots are stored in the lexicon w/o any grammatical/syntactic information - they enter the derivation as a sound-meaning pair, i.e. all and only information that is required for interface legibility (cf. Chomsky's (2000: 96) remarks on the SMT)
 - Categorizers are functional items that enter the derivation with relevant grammatical feature content (ϕ -features, possibly categorial features etc.) that is not necessarily legible at the interfaces and that needs to be checked in the course of the derivation.

1. Syntactic variation in nominal root compounding

Crosslinguistic variation: Romance - Germanic

- | | | | | |
|-----|----|---------------------------|----|-----------------------------|
| (6) | a. | hombre rana (Spanish) | d. | restaurant coffee cup |
| | | 'frogman' | e. | Kinderbett (German) |
| | b. | homme grenouille (French) | | 'children's bed' |
| | | 'frogman' | f. | moeder-kind relatie (Dutch) |
| | c. | uomo rana (Italian) | | 'mother-child relation' |
| | | 'frogman' | d. | barn bok club (Swedish) |
| | | | | 'children's book club' |

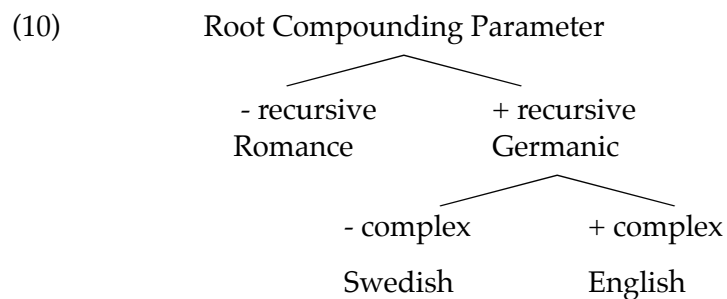
Parameterization (cf. : e.g. Roeper, Snyder Hiramatsu 2002, Roeper & Snyder 2005, Delfitto, Fábregas & Melloni 2008):

- | | |
|--|---|
| <p>(7) Romance languages</p> <ul style="list-style-type: none"> - unproductive - non-compositional - non-recursive | <p>Germanic languages</p> <ul style="list-style-type: none"> - productive - compositional - recursive |
|--|---|

Further language family internal variation Englisch/German - Swedish/Norwegian:

- (8) English
- a. restaurant [coffee cup]
 - b. [gourmet coffee] cup

- (9) Swedish
- a. barn [bok klub]
'children's book club'
 - b. [barn bok]s klub
child book LE club
'children's books' club'



Language internal variation I: Chinese

(11) dan xin (Chinese)
carry heart
'worry'

(12a) Ta hen dan xin zhe jian shi (Chinese)
he very carry heart this CL matter
'he is very worried about this matter'

(12b) *Xin, wo yi-dian dou bu dan zhe jian shi (Chinese)
heart, I one-bit all carry this CL matter
'I don't worry about this matter'

(13a) Ta dan xin (Chinese)
he carry heart
'He was worried'

(13b) Xin, wo yi-dian dou bu dan (Chinese)
heart, I one-bit all not carry
'I am not worried at all'

Language internal variation II: German

(14a) Kindbett (German)
'childbed'

(14b) Kinderbett (German)
'children's bed'

→ the form in (14b) contains a compound internal plural marker

(15) Kinderbett (German)
child.pl + bed

This is a reoccurring pattern that goes along with the frequently attested flexibility in interpretation:

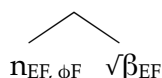
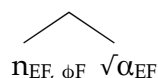
(16a) Bettlaken (German)	(16b) Landkarte (German)
bed + sheet	country + map
'bed sheet'	'map'
(16a') Bettenburg (German)	(16b') Länderspiel
bed.pl + castle	country.pl + game
'big ugly hotel', 'beds arranged to make a castle', etc.	'match (between two national teams)'
	'children's game that involves knowledge about certain countries', etc.
(16c) Wortwitz	(16d) Glasdach
word + wit	glass + roof
'pun'	'glassroof'
(16c') Wörterbuch	(16d') Gläser Tuch
word.pl + book	glass.pl + towel
'dictionary', 'books with words printed on its cover', etc.	'dish towel', 'towel with dishes imprint'

→ it is along this dividing line that the distinction between recursive and compositional vs. non-recursive and non-compositional compounds in German can be drawn (cf. Bauke 2009; 2012).

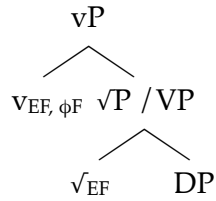
2. Towards an analysis

- Roots enter the derivation w/o ϕ -features → these are provided by categorizing x -heads (17)
- Roots (and categorizing x -heads) must bear EFs (18)

(17)

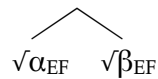


(18)



If EFs are the only prerequisite for Merge, Merger of two roots is possible:

(19)



Alternatively Merger of a root with a categorizing little x -head that introduces ϕ -features into the derivation is possible (cf. 17 again).

How does this go together with the differences in interpretation?

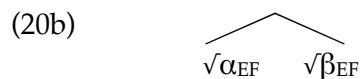
- Roots enter the derivation w/o ϕ -features¹ → roots are never independently interpreted
- categorizing x -heads are Phase-heads (cf. Marantz 2007) → they trigger Spell-Out and interpretation

3. Two derivational paths ensue:

Route A:

Merger of two roots does not involve a Phase:

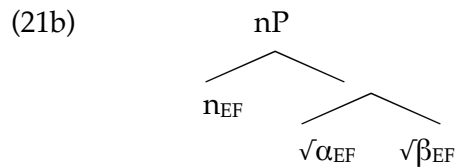
(20a) Merge $\{\alpha\}$ and $\{\beta\}$ → no Phase:



Merger of a complex root, such as (20b) with a categorizing x -head involves a Phase with Spell-Out triggered by the x -head:

¹ The relevant ϕ -features here are person and number. Contrary to assumptions made elsewhere in the literature (cf. e.g. Delfitto, Fábregas & Melloni 2008) gender is not relevant here. To see why see the discussion provided in the appendix.

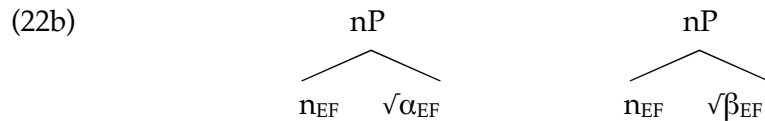
(21a) Merger of categorizing little x -head (n in this case) \rightarrow Spell-Out of complement of the Phase head \rightarrow no independent meaning realization of roots α and β : drifted reading



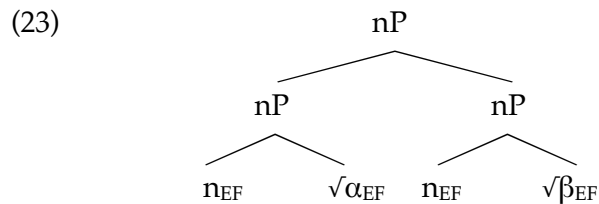
Route B:

Merger of root with categorizing x -head involves a Phase:

(22a) Merger of root α and β respectively with categorizing little x -head (n in this case) \rightarrow Spell-Out of complement of the Phase head \rightarrow independent meaning realization of root α and root β respectively: compositional reading

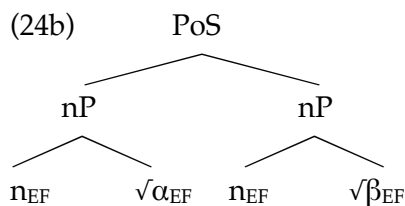
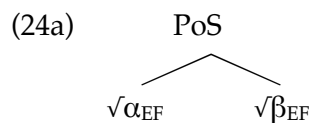


Subsequent Merger of the two categorized roots:



4. PoS (Points of Symmetry) Dissolution

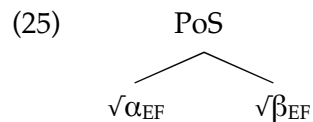
Both types of compounds generated under A and B above lead to a PoS:



According to standard LCA-considerations, this PoS has the potential of stalling the derivation when it remains unresolved.

Hypothesis: Both PoS are dissolved - yet differently!

A: dissolving the PoS for (24a):



- roots contain only EFs, both are unvalued and can act as probes, but no valuation and no labeling will ensue
- total conflation in terms of Roberts (2010)
- PF-movement for PoS dissolution (cf. Moro 2000): no change in meaning
- Merger of three roots excluded by binary branching - flat structure

B: Dissolving the PoS in (24b) (cf. Roberts 2010 purely syntactic account of head-movement):

- the categorizing x -heads do not only bear EFs but also ϕ -features (cf. 26).
- compound internal plural morphology is (not un)expected
- a variety of interpretations emerges

Clitic-incorporation in Roberts (2010):

1. clitic must be a minimal category
2. constraint on incorporation must hold
3. clitic must be a defective goal

(26) Minimal category:

A minimal category is an LI that bears an EF.

(27) Incorporation constraint

Incorporation can take place only where the label of the incorporee is non-distinct from that of the incorporation host.

(28) Defectiveness:

A Goal G is defective iff G 's formal features are a proper subset of those of G 's Probe P .

→ defectiveness is a relative notion here!

(29) Trigger for Agree

v^* [Pers: unvalued, Num: unvalued] clitic [Pers: α , Num: β]

After Agree

v^* [Pers: α , Num: β] clitic [Pers: α , Num: β]

- syntax does not operate on the specifics of the interpretable features on LIs - syntax just cares about whether a feature is valued or unvalued (cf. Gallego 2010, Chomsky 2001)
- a default value is sufficient to mark a feature as valued
- EFs are unvalued, but can pass Spell-Out w/o causing a crash (cf. Chomsky 2008; Narita 2011)
- Match does not operate on feature values, it only operates on feature attributes

(30) Trigger for Agree

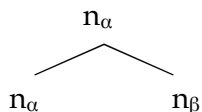
n [Pers: α , Num: β] [EF: unval.] n [Pers: γ , Num: δ] [EF: unval.]

After Match

n [Pers: α , Num: β] [EF: unval.] n [Pers: γ , Num: δ] [EF: unval.]

Incorporation ensues:

(31)



- incorporation is constrained by the values on the Number feature:
- n -heads lack Case-specification

- n -heads have default attribute on [Person] - i.e. [3], or more abstractly [default]
- at least one n -head must have a marked specification for [Number] - i.e. [PL]

(32) n_β [Pers: default, Num: plural/marked] [EF: unval.]

(33) n_α [Pers: default, Num: random but valued] [EF: unval.] [Case: unvalued]

- n_β is a proper subset of n_α - incorporation!
- plural marking on incorporated n -head is embedded in the incorporation host - absence of genuine plural interpretation falls out naturally

This is in line with considerations on microparametric variation:

- Merger of three roots is generally unavailable
- Merger of two n -heads is unavailable in Romance, where [Number] is not associated with n (cf. e.g. Alexiadou, Haegeman & Stavrou 2007)
- Number is the place for parametric variation in Roberts (2010)

5. Extending the system

- a categorizing head serves to categorize exactly one root
- this can be expressed by the following principle

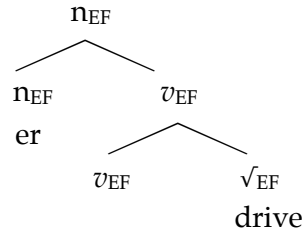
(34) a. **1 ν /x principle:** There can be no more than one root per categorizer.

b. Categorize *def.*: a categorizing head *categorizes* x by Merge with x

(34) provides the following possibility:

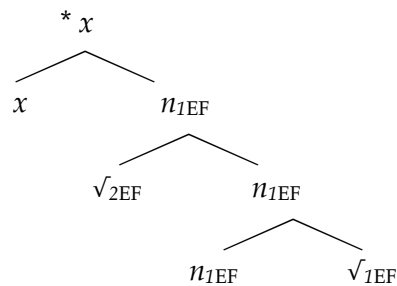
- Merger of a root with a categorizing head, e.g. v
- followed by Merger with another categorizing head

(35)



This is what derives a deverbal noun and the principle in (34) is adhered to; there is no more than one root per categorizer and category-shifting Merge is thus expected.

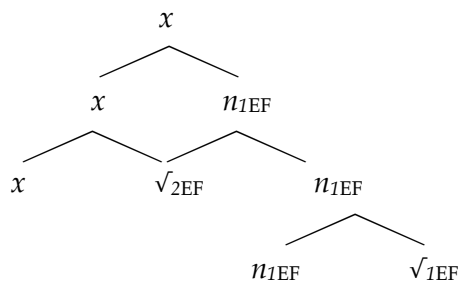
(36)



- v_2 is not merged with any potential categorizing head at the point of merger of x
- x is by hypothesis a phase head, v_2 will be transferred uncategorized, and thus is uninterpretable
- Why then couldn't the uncategorized root be categorized by categorizing head n_1 , with a projection of which it merges? This would mean that the categorizing head n_1 categorizes two roots, in violation of (34)

How can an additional root be merged then? Possibly under a multi-dominance structure:

(37)

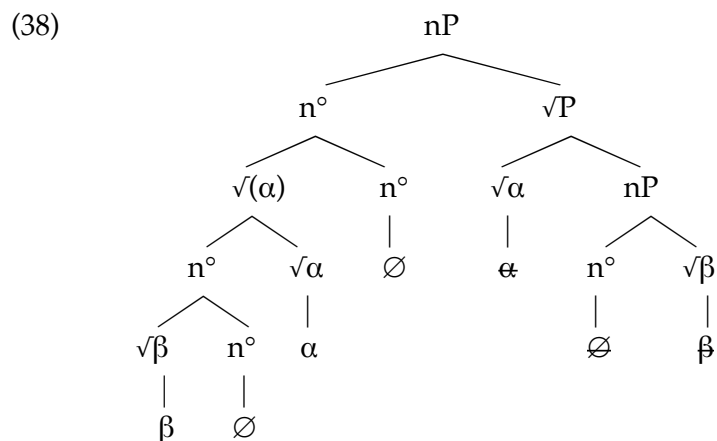


- merger of a root $\sqrt{1}$ with a categorizing head n_1 as before, and $\sqrt{2}$ is then merged with the result (also as before)
- $\sqrt{2}$ is interpretable via independent merge with a categorizer x to form a separate lexical item: is x that categorizes the root; this categorized root can now merge with the structure containing the uncategorized root
- Transfer of the n_1 projection is no longer a problem: the root $\sqrt{2}$ has been categorized by x
- such configurations, with $x = v$, yield the ‘quasi-phrasal’ structure of compounds in Romance languages such as French *ouvre-boite* ‘bottle opener’, Italian *cacciavite* ‘screwdriver’ etc.

Appendix I

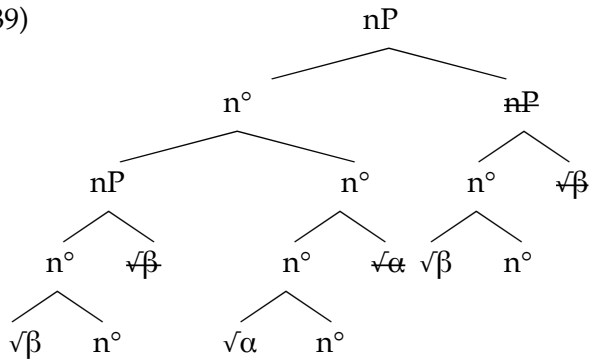
Comparison to primary compound incorporation in Harley (2004, 2009):

- modifying noun, i.e. incorporated noun is fully categorized and incorporates into a root that is categorized only in a second step
- incorporation is triggered by a Case-feature or a $[\pm \text{affix}]$ -feature
- pragmatics determines interpretation



- incorporation takes place only after both roots have been categorized
- incorporation is triggered by ϕ -feature configuration of LIs

(39)



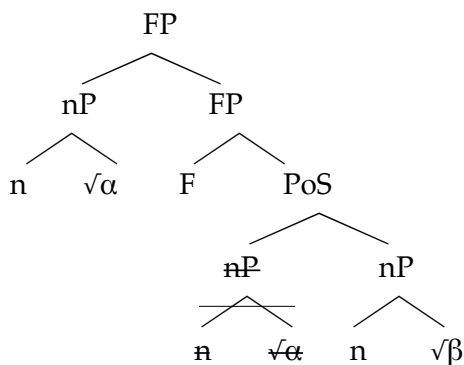
→ recursive structures are derivable

Appendix II

Why is [Gender] not the relevant feature?

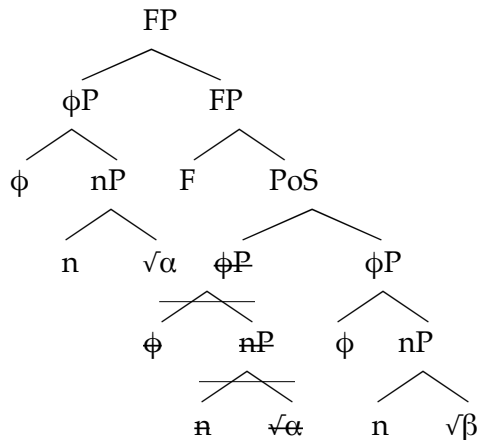
- Gender as the feature that resolves the PoS (cf. Delfitto, Fábregas, Meloni 2008)
- a functional head F, which is merged on top of the PoS, acts as a probe and dissolves the PoS
- PoS arises at different levels in Romance vs. Germanic languages

(40) Germanic:



- compound phase subject to earliness principle
- Gender feature that is derivable from noun's declension class is attracted by F
- unambiguous relation between Gender, declension class and linking element - as a realization of F (in Germanic)

(41) Romance:



- ϕ -phrases instead of *nP*s are targeted - no direct relation between Gender and declension class
- Quale-oriented feature is targeted instead - restriction in interpretation follows

Romance vs. Germanic

- projecting head is the non-moved constituent in Germanic and the moved element in Romance
- Gender feature in Germanic and Formal Quale feature in Romance

Open Questions:

- how does the derivation 'know' that Parallel Merge applies at *nP* level in Germanic and at ϕ P level in Romance -- look-ahead!
- how does the derivation keep track of the internal structural make-up of the Merge-partners? -- counting mechanisms are generally unavailable!
- how is it guaranteed that the PoS dissolving Phase-head has the required language-specific features? -- is it really the same head?
- why is the feature on the Phase-head valued? (cf. e.g. Richards 2012 for a possible solution where valuation triggers Transfer)
- how is it ensured that the correct LE is chosen on the basis of the correlation between Gender and declension class? -- (plus potential zero LEs!! Augapfel vs. Augenlicht)
- what about those Germanic languages that do not mark Gender explicitly?
- what about those Romance forms that display a clear correlation between Gender and

declension class in Romance? -- (cf. Alexiadou, Haegeman & Stavrou 2007)

→ how is recursivity factored in?

References

- Alexiadou, A.; Haegeman, L. & Stavrou, M. 2007. *Noun Phrase in the generative perspective*. Berlin: de Gruyter.
- Baker, M. 2008. The Macroparameter in a Microparametric World. In T. Biberauer (ed.). *The Limits of syntactic variation*. Amsterdam: John Benjamins, 351-373.
- Bauke, L. 2009. Nominal Root Compounds in German. Ms. UMass
- Bauke, L. 2012. Lexical and non-lexical symmetry breaking. PhD Thesis: University of Frankfurt.
- Boeckx, C. 2010. What Principles & Parameters got wrong. Paper on *LingBuzz*.
- Borer, H. 1984. *Parametric Syntax*. Dordrecht: Foris.
- Chomsky, Noam (1970): Remarks on Nominalization, in: Jacobs, Roderick & Rosenbaum, Peter (eds.), *Readings in transformational grammar*. Washington: Georgetown UP, 184 - 221.
- Chomsky, N. 1995. *The Minimalist Program*. Cambridge MA: MIT Press.
- Chomsky, N. 2001. Derivation by Phase. In M. Kenstowicz (ed.). *Ken Hale: a life in language*. Cambridge MA: MIT Press, 1-52.
- Chomsky, N. 2008. On Phases. In *Foundational Issues in Linguistic Theory*, ed. by: R. Freidin, C. Otero and M.-L. Zubizarreta, 133-166. Cambridge MA: MIT Press.
- Delfitto, D, Fábregas, A & Melloni, C. 2008. 'Compounding at the interfaces'. Ms. University of Verona. Paper presented at NELS
- Gallego, A. 2010. *Phase Theory*. Amsterdam: John Benjamins.
- Giegerich, H. 2007. Compounding and lexicalism. In R. Lieber & P. Štekauer (eds). *The Oxford Handbook on Compounding*. Oxford: Oxford University Press.
- Harley, H. 2009. Compounding in Distributed Morphology. In R. Lieber & P. Štekauer (eds). *The Oxford Handbook on Compounding*. Oxford: Oxford University Press. 129-144.
- Hornstein, N. 2009. *A Theory of syntax: minimal operations and universal grammar*. Cambridge: Cambridge University Press.
- Kayne, R. 1994. *The antisymmetry of syntax*. Cambridge MA: MIT Press.
- Kayne, R. 2000. *Parameters and Universals*. Oxford: Oxford University Press.
- Keyser, S. J. & Roeper, T. 1992. Re: the abstract clitic hypothesis. *LI* 23, 89-125.
- Marantz, A. 2001. Words. Ms MIT.
- Marantz, A. 2007. 'Words and Phases'. Ms. NYU.
- Moro, A. 2000. *Dynamic Antisymmetry*. Cambridge MA: MIT Press.
- Narita, H. 2011. Phasing in Full-interpretation. PhD Thesis: Harvard University.
- Roberts, I. 2010. *Agreement and head-movement*. Cambridge MA: MIT Press.
- Roeper, T.; Snyder, W. & Hirmatsu, K. 2002. Learnability in a minimalist framework: Root compounds, merger and the syntax-morphology interface. In I. Lasser (ed.). *The process of language acquisition*. Frankfurt: Peter Lang.
- Roeper, T. & Snyder, W. 2005. Language learnability and the forms of recursion. In A. M. DiSciullo (ed.). *UG and external systems*. Amsterdam: John Benjamins: 155-169.
- Starke, M. (2010). Towards an elegant solution to language variation: variation reduces the size of lexically stored trees. Ms. University of Toronto.
- Zhang, N. 2007. Root Merger in Chinese Compounds. *Studia Linguistica* 61, 2: 170-184.