A dual theory of roots: Evidence from gender-marking languages

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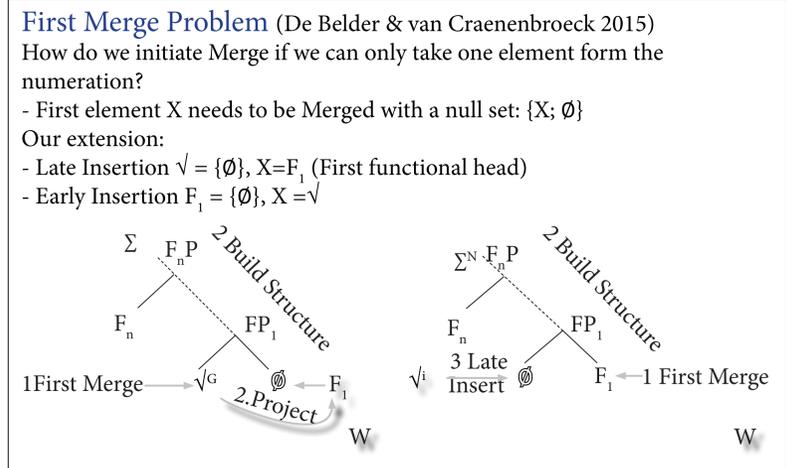ivona@alum.mit.edu   adam.s@post.harvard.edu

Theoretical Question:
- Do roots have syntactic features?
- If they do
    - what kind of object they are, and
    - how do they interact with the rest of the syntactic structure ?

Motivation: Inherent contradiction in the literature:

DM literature on roots:
- no syntactic features on roots (Marantz 2001, Arad 2003, a.o.)
vs. roots with syntactic features (taking syntactic complements: Harley 2014; but see Alexiadou 2014, Svenonius 2014, a.o.)

Theories of gender/number marking:
- gender/number: a feature stored with the nominal representation in the lexicon (Steriopolo and Wiltschko 2008, Kramer 2009, a.o.)
vs. a feature on a higher functional head (Ritter 1993, 1995, Kramer 2015, a.o.)
**Our take: the disagreement has an empirical underpinning**

Our proposal in a nutshell:

- roots may have syntactic features => this structural property interacts with derivational timing:
    - root without syntactic features => <u>Late Inserted</u>
    - roots with syntactic features => <u>Early Inserted</u>
- the rationale: features on roots must be available to syntactic computation

=> in the domain of gender:

- <u>Indexed Roots</u> ($\sqrt{i}$; Acquaviva 2008 a.o.):
    - Late Inserted
    - default functional architecture
idiosyncratic properties of the root irrelevant for the functional structure of the DP
- <u>Featured Roots</u> ($\sqrt{F}$):
    - Early Inserted
    - functional architecture dependent on the syntactic features of the root

First Merge Problem (De Belder & van Craenenbroeck 2015)
How do we initiate Merge if we can only take one element form the numeration?
- First element X needs to be Merged with a null set: {X; ∅}
Our extension:
- Late Insertion $\sqrt{} = \{\emptyset\}$, X=F_1 (First functional head)
- Early Insertion $F_1 = \{\emptyset\}$, X =$\sqrt{}$

Case study - Gender System in Polish:
- Polish common nouns:
    - a three-way gender system (masculine, feminine, neuter)
- exception: Polish Profession Attributive Nouns (PPANs)
    - a two-way system (masculine and feminine)

Three types of PPANs:
Type I: ✓masculine, ✓feminine (primarily *ka* endings) (1a)
Type II: ✓masculine, *feminine (1b)
Type III: * masculine, *feminine (1b)

1.a. Type I: kurier+ ∅ 'courier.m' vs kurier+ka 'courier.f'   ✓m, ✓f
   b. Type II: premier `PM.m' vs *premier+ka `PM.m'   ✓m, * f
   c. Type III: *guwernant 'governess.m' vs guwernant+ka 'governess.f'   * m, ✓f

Two agreement patterns in PPANs:
A. Homogeneous (type I & III): the same gender throughout
B. Mixed (type II):
    - male referent => masculine throughout (2a)
    - female referent => noun masculine, agreeing elements may be feminine (2b)

(2) a. Ten   nasz   Premier   b. Ta   nasza   Premier
       that.m our.m   PM.m   that.f our.f   PM.m

Indexed vs Featured Roots and Gender in PPAN's:

Root	Gender-Value specified	Agreement-Value specified	Insertion
Indices	$\sqrt{i}$ = vAGR (nonPPAN) (a)	$\sqrt{i}$ = uAGR (Type I) (b)	Late
Features	$\sqrt{G}$ = +AGR (Type III) (c)	$\sqrt{G}$ = −AGR (Type II) (d)	Early

Indexed roots $\sqrt{i}$:
- Assumption: agreement features as part of an index may be valued or not valued
- indexed root => no syntactic agreement carried out by functional heads of the extended nominal domain
=> Late Inserted

Case (a): common (non-PPAN) nouns:
- index gender feature: valued
- most Polish nouns, which have fixed gender values
- convergence enforced post-syntactically as a condition of Late Insertion

Case (b): Type I PPAN roots:
- index gender feature: not valued
- a valued gender feature: introduced by a functional head
=> reflects the contextual value of the referent (Kramer 2009, 2015, Steriopolo and Wiltschko 2009, Kučerová 2017 a.o.)
- roots 'adapt' to the feature specification of the functional heads
- unvalued index adapts as feminine => morphology realizes the root with a feminine-specific −*ka*
- unvalued index adapts as masculine => no overt gender affix realized on the root

Case (a) non PPAN   Case (b) TYPE I PPAN's
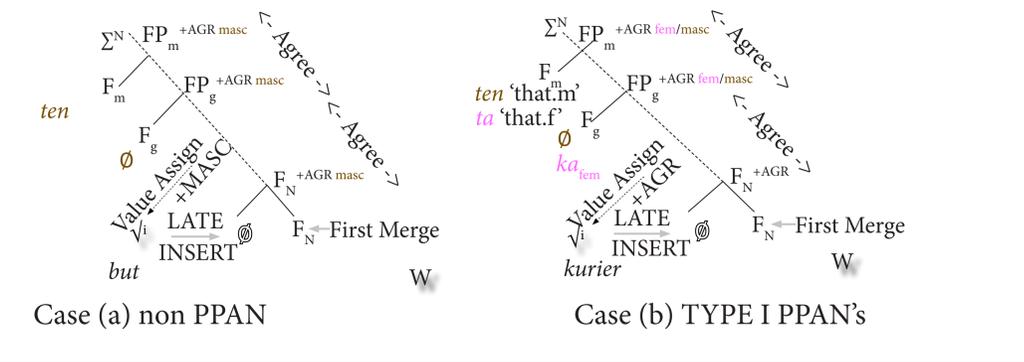
Gender Featured Root:
- roots with a syntactic feature, here gender ($\sqrt{G}$)
- $\sqrt{G}$: +/−AGR feature [~marked/unmarked value; not m/f/n as such]
- G[+/−AGR]: projects a functional structure
=> $\sqrt{G}$ has to be Early Inserted

Case (c): Type III PPANs:
- gender feature on roots marked: +AGR
- +AGR feature projects a functional head => gender on functional head marked
- impoverishment cannot take place
- morphology associates roots with the feminine affix-ka (feminine ~ the marked gender in Polish)

Case (c) Type III PPAN

Case (d): Type II PPANs:
- gender feature on roots unmarked: −AGR
- −AGR feature projects a functional head => gender on functional head unmarked
=> subject to impoverishment (Noyer 2000; Bonet 1991)
- morphologically affix-less roots

Case (d) Type II PPAN

Concord within DP:
A. Homogeneous (type I & III):
- all agreeing elements in the extended projection must agree in gender with the noun
B. Heterogeneous Type II PPANs (premier `PM.m' vs *premier+ka `PM.m')

2 a. Ten   nasz   Premier   b. Ta   nasza   Premier
     that.m our.m   PM.m   that.f our.f   PM.m

B. Mixed (type II):
- male referent => agreeing elements masculine (2a)
- female referent => agreeing elements may be feminine, the noun itself appears masculine (2b)
- the relation to ж of Pesetsky 2013?

- Type III *guwernant+∅ vs guwernant+ka   - Type II premier+∅ vs *premier+ka
'governess' m vs f'   'PM' m vs f'

Consequence and points:
- contributes to the growing body of literature that explores how lexical feature variation affects properties of narrow syntax derivation and its interfaces (Miyagawa 2009, Wiltschko 2012, a.o.)
- provides further support for distinguishing Agree and Concord (agreement within a DP) as fundamentally different operations. (Norris 2014, Bejar et al. to appear)