ON FUNCTIONAL VOCABULARY ITEMS IN ROOT POSITIONS

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MAIN GOAL OF THIS TALK:
to derive four axioms about roots in a principled way from the theory of Merge, thus reducing them to theorems

THE FOUR AXIOMS:
  i)   Roots have no grammatical features
  ii) Roots have no syntactic category
  iii) Roots are defined structurally, not lexically
  iv) Roots are merged lower than functional material

THE THEORY OF MERGE:
the very first instance of Merge (Primary Merge) combines a feature (set) from the Numeration with the null derivation, i.e. with the empty set

THE GIST OF THE ANALYSIS:
roots are inserted post-syntactically into the empty slots created by Primary Merge

THEORETICAL CONSEQUENCES
▪ unified vocabulary insertion for functional and lexical vocabulary items
▪ roots are a specific kind of terminal node, not a specific kind of vocabulary item
▪ roots are featureless nodes and as a result, cannot move or project
▪ generalized, revised late insertion (*pace* Harley to appear).

1   The explananda: four axioms about roots

1.1   Roots have no grammatical features (Borer 2005)

functional vocabulary items (FVIs, e.g. plural –*s*, numeral *three*,…): **fixed meaning**

  (1)   a. **three** stone**s**   (obligatorily count NP)
        b. They stone**d** her.   (obligatorily verb)

→ the meaning of FVIs is fixed because they spell out grammatical features (Number, Tense, etc.)

lexical vocabulary items (LVIs, e.g. *book*, *nice*, *stone*, etc.): **flexible meaning**

  (2)   a. I've got a **stone** in my hand.   (count noun)
        b. There's too much **stone** and metal in this room.   (mass noun)
        c. They want to **stone** this man.   (transitive verb)
        d. Billy-Bob should lay off the weed; he's always **stoned**. (obligatorily passive verb)

→ the meaning of LVIs is malleable → this suggests that they do not bear any grammatical features

1.2   Roots have no syntactic category (Borer 2005)

note: if LVIs have no grammatical features, they have no categorial features either

example: an LVI such as *slick* bears no inherent categorial specification → it can be used as a noun, verb or adjective depending on the functional context in which it is inserted:

  (3)   a. Are those **slicks** under your Dodge A-100?
        b. While not every man likes to **slick** his hair up every morning, it is wise to have a gel, wax or mousse around just in case.
        c. Oh, you're such a **slick** little girl.

advantage: doing away with the categorial specification of LVIs/roots eliminates categorial redundancy from the extended projection:

(4)

```
        D
       / \
      D   N
      |
     cat_N
```
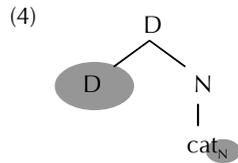
→   traditional view: (4) is marked for nominality twice

1.3   Roots are defined structurally, not lexically

1.3.1 Introduction

question: how are roots defined/identified as roots?

**two options:**   -   roots have a special status in the lexicon → lexical definition
                   -   roots correspond to a particular structural position → structural definition

1.3.2 Roots that are inserted early are defined lexically

if   vocabulary items are inserted early, i.e. at the beginning of the syntactic derivation

then   the featurelessness of LVIs/roots can only be guaranteed if the lexicon contains featureless members, i.e. the lexicon contains two subsets (Borer 2005a):

(5)   **LVIs:**   **FVIs:**
      no grammatical or categorial features   grammatical and categorial features

$$\text{stone, light, cat, kiss } \dots$$

$$\text{those}_{[D,def,distal,pl]}, \text{ -ed}_{[T,past]}, \text{ -s}_{[Num,pl]} \dots$$

structure building:

(6)

```
        T'
       /  \
  -ed_[T,past]  √stone
```
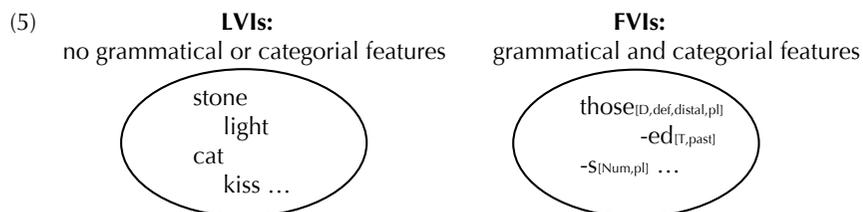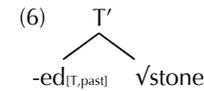
lexical definition of roots: roots are the result of the merger of a featureless vocabulary item; the lexicon contains roots and non-roots

1.3.3 Roots that are inserted late are defined structurally

if   vocabulary items are inserted late, i.e. in a post-syntactic module

then   the featurelessness of LVIs/roots can only be guaranteed if the structural representation contains a position that lacks grammatical features, i.e. apart from *bona fide* grammatical features, the lexicon contains a 'placeholder' [Root]-feature (Halle & Marantz 1993):

(7)

$$[past] \quad [plural] \quad [def] \quad [1st] \quad [\textbf{Root}] \quad [distal]$$

structure building:

(8)

```
        T
       / \
   [past] [Root]
```
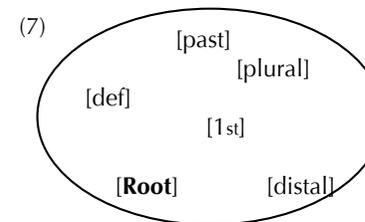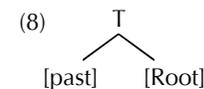
after (late) vocabulary insertion:

(9)

```
        T
       / \
     -ed  stone
```

structural definition of roots: root are the spell-out of an empty node in the structural representation

1.3.4 Supporting evidence for the structural account

test to distinguish between the two accounts: can functional vocabulary items occur in root position?

lexical definition of roots: **no** → roots are defined by the merger of featureless vocabulary items and functional vocabulary items have (grammatical and categorial) features ⇒ no functional vocabulary items in root position

(10)   D

the[D,def]   those[D,def,distal,pl]   → this structure contains no roots
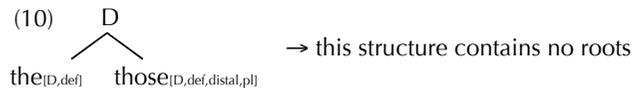
structural definition of roots: **yes** → roots are whatever gets inserted into the structural positions designated by the placeholder [Root]-feature ⇒ there is no *a priori* ban on inserting a functional vocabulary item there

(11)   D

[D,def]   [Root] → can (in principle) be spelled out as either LVI or FVI
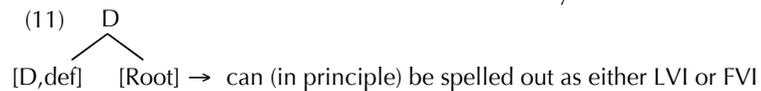
the relevant data:

(12) Ik heb   het **waarom** van de   zaak nooit begrepen. (Dutch)
      I have   the why   of the case never understood
      'I have never understood the motivation behind the case.'

(13) In een krantenartikel   komt het **wat/hoe/wie/waar**
      in a   newspaper.article   comes the what/how/who/where
      altijd voor   het **waarom**.
      always before the why
      'In a newspaper the what/how/who/where always precedes the why.'

(14) De studenten **jij**-en   onderling.
      the students   you-3PL amongst.one.another
      'The students are on a first-name basis with each other.'

(15) Martha is mijn tweede **ik**.
      Martha is my   second I
      'Martha is my soulmate.'

(16) Niets   te   **maar**-en!
      nothing to   but-INFINITIVE
      'Don't object!'

(17) Paard   is een **het**-woord.
      horse   is a   theNEUTER.DEF-word
      '*Paard* takes a neuter article.'

note #1: these data are cross-linguistically robust:

(18) Fomento   seguirá   **ningun-eando** a   Cornellà   (Spanish)
      MPWC   will.continue nobody-ing   DOM Cornellà
      en   sus   paneles viarios.
      in   their   signs   roadside
      'The Ministry of Public Works and Constructions will continue to use roadside signs that ignore Cornellà.'

(19) % **vos**-ear
      you.2PL-INFINITIVE
      'to address someone politely.'

(20) Studenţii   îl   **tu**tuiesc   pe profesor   (Romanian)
      student.PL.DEF him.CL youINFORMAL.3PL on professor
      'The students are on a first name basis with the professor.'

(21) Ucenci   **vikajo**   ucitelja.   (Slovenian)
      student.NOM.PL youFORMAL.3PL   teacher.ACC
      Ucitelj   **tika**   ucence.
      teacher.NOM.SG youINFORMAL.3SG student.ACC.PL
      'The students addres the teacher politely. The teacher is on a first name basis with the students.'

(22) **ty-**kat'   (Russian)
youᵢɴꜰᴏʀᴍᴀʟ-INFINITIVE
'to be on a first name basis'

(23) pod-**da-**kiva-t'
ITERATIVE-yes-ITERATIVE-INFINITIVE
'to say yes/to echo whatever is being said'

(24) ot-**ne-**kiva-t'-sya
PREFIX-NEGATION-REPETITIVE-INFINITIVE-REFLEXIVE
'to deny/to make excuses'

(25) **oj-**kat'
oy-INFINITIVE
'to express dismay'

(26) lemt-uh   am   ballash   y-**bass-**biss-l-i   (Lebanese Arabic)
blame.PVF.1SG-him so   start.PFV.3MS but.IPFV.3MS-to-me
'I blamed him so he started saying "but" to me in a defensive way.'

note #2: these data are not exceptional/irregular/unproductive:

(27) a. het   getik   van de   klok
the   GE-tick of   the   clock
'the ticking of the clock.'

b. het   gefluit   van de   vogeltjes
the   GE-whistle of   the   birds
'the whistling of the birds.'

→   *ge*-prefixation is a productive derivational word-formation process to form
nouns which refer to a pluractional event → this process also productively
applies to functional vocabulary items:

(28) a. Ik hoef al dat   ge-**maar** niet.
I   need all that   GE-but not
'I don't like those constant objections.'

b. Ik hoef al dat   ge-**alhoewel** niet.
I   need all that   GE-although not
'I don't like those constant considerations.'

c. Ik hoef al dat   ge-**of** niet.
I   need all that   ge-or not
'I don't like those constant alternatives.'

d. Ik hoef al dat   ge-**hé** niet.
I   need all that   GE-PRT not
'I don't like the constant need for confirmation.'

e. Ik hoef al dat   ge-**waarom**   niet
I   need all that   GE-why   not
'I don't like the constant need for justification.'

f. Ik hoef al dat   ge-**nooit**   niet
I   need all that   GE-never   not
'I don't like the constant unwillingness.'

g. Ik hoef al dat   ge-**ik** niet
I   need all that   GE-I not
'I don't like all this egocentricity.'

1.3.5 Dispelling an alternative account: self-reference

self-reference: take any string of sounds and (re)list it in the lexicon as a root:

(29) a. *Jardin* is the French word for 'garden'.
b. The 'the' you have written on the board is a little too big.
c. L-**ennou** yalli b-ha-l-masal   ma-na daruuriyyeh. (Leb. Arabic)
the-**that** that   in-this-the-example not-it   necessary
'The **that** that is in this example is not necessary.'

= supposition materialis (Mill 1843), hypostasis (Sørensen 1961), pure quotation
(Geurts and Maier 2005)

claim: the use of functional vocabulary items in root terminal nodes is *not* an
instance of self-reference (*pace* Borer 2013:387):

Argument #1: *form vs. meaning*

→ self-reference: the actual phonetic form is at stake

(30) [context: you are proofreading a Dutch text in which the first occurrence of
the definite article (spelled *de*) on p.23 is in the wrong font]
　　a. # The first 'the' on p.23 is in the wrong font.
　　b. ✓ The first 'de' on p.23 is in the wrong font.

→ FVIs in RTNS: the meaning of the FVI is at stake

(31) [context: you are describing (in Dutch) the communication style of a group of
French-speaking students]
　　a. ✓ De　　　studenten **jij**-en　　　onderling.
　　　　the　　　students　youDUTCH-3.pl　amongst.one.another
　　　　'The students are on a first-name basis with each other.'
　　b. * De　　　studenten **tu**-en　　　onderling.
　　　　the　　　students　youFRENCH-3.pl　amongst.one.another

(32) [context: you are describing a text that contains not a single instance of the
Dutch article *de* 'the':]
In deze　　tekst wordt　　*paard*　als een　de-woord　　　　gebruikt.
in this　　text becomes　horse　as a　theNON-NEUTER.DEF-word　used
　'In this text *paard* is used as a non-neuter noun.'

Argument #2: *gender*

→ self-reference: default non-neuter gender

(33) De　　　　{waarom / ik / gemaar} op de　　eerste　regel
　　theNON-NEUTER why　　　　I　　ge-but on the　first　line
　　staat　　in een verkeerd　lettertype.
　　stands　in a　wrong　　font
　　'The word *waarom/ik/gemaar* on the first line is in the wrong font.'

→ FVIs in RTNs: gender varies

(34) Ik　heb het　　**waarom** van de　　zaak nooit begrepen.
　　I　have theNEUTER why　　　of　the　case never understood
　　'I have never understood the motivation behind the case.'

(35) Zij　is de　　　　**ik** die　ik zoek.
　　she　is theNON-NEUTER I　rel　I look.for
　　'She's the soulmate I'm looking for.'

(36) Ik hoef al het　　　ge-**maar** niet.
　　I　need all theNEUTER ge-but　not
　　'I don't like the constant objections.'

Argument #3: *syntactic category*

→ self-reference: restricted to nominal contexts (Sørensen 1961)

(37) The 'the' you have written on the board is a little too big.

→ FVIs in RTNs: can function both nominally and verbally

(38) Zij　is de　　　　**ik** die　ik zoek.
　　she　is theNON-NEUTER I　rel　I look.for
　　'She's the soulmate I'm looking for.'

(39) a. De　studenten **jij**-en　　onderling.
　　　　the　students　you-3.PL amongst.one.another
　　　　'The students are on a first-name basis with each other.'
　　b. Niets　te　**maar**-en!
　　　　nothing to　but-INFINITIVE
　　　　'Don't object!'

Argument #4: *proper names vs. common nouns*

→ self-reference: self-referring nouns behave like proper names

    (40) (*The) 'why' is an adverb.
    (41) *(The) 'why' you have written on the board is a little too big.

    compare:
    (42) (*The) Paris is a great city.
    (43) *(The) Paris that I used to know is a great city.

→ FVIs in RTNs: behave like commoun nouns

    (44) *(Het) **waarom** (van de   zaak)
          the$_{\text{NEUTER}}$ why   of   the   case
          wordt   in de   eerste   alinea   beschreven.
          becomes   in the first   paragraph described
          'The motivation behind the case is discussed in the first paragraph.'

Argument #5: *paraphrases with* sound/word/phrase

→ self-reference: can be paraphrased as *the sound/word/phrase/...* (Sørensen 1961)

    (45) (Het woord) 'waarom' is een   bijwoord.
          the   word   why   is an   adverb
          '(The word) 'why' is an adverb.'

→ FVIs in RTNS: cannot be paraphrased as such

    (46) Het (*woord) **waarom** van de   zaak   wordt   eerst beschreven.
          the   word   why   of   the   case   becomes first described
          'The motivation behind the case is discussed first.'

Summary

|	self-reference	FVIs in RTNs
form vs. meaning	form	meaning
gender	default neuter	varies
syntactic category	nominal	nominal or verbal
proper name vs. common noun	proper name	common noun
can be paraphrased as *the sound/word/phrase/...*	yes	no

conclusion: the use of functional vocabulary items in root terminal nodes is *not* an instance of self-reference

1.3.6 Conclusion

→ the fact that functional vocabulary items can occur in root positions shows that roots should be defined structurally: they correspond to whatever is inserted (LVI or FVI) in structural positions that are featureless and hence remain inert throughout the syntactic derivation

1.4   Roots are merged lower than functional material

→ lexical categories are dominated by functional material rather than the other way around:

    (47)   a.   T   b.   * T

                 T   v   √   T

                           v   √   T   v
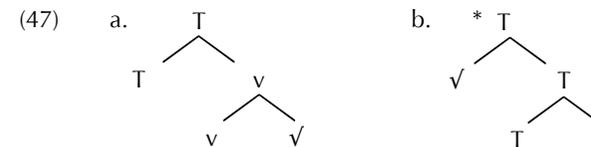
1.5 Summary: desiderata for a theory of roots

i)   Roots have no grammatical features
ii) Roots have no syntactic category
iii) Roots are defined structurally, not lexically
iv) Roots are merged lower than functional material

note: all current theories of roots have to state (i)-(iv) as axioms; as it stands, they do not follow from any independent properties of roots

2 PREREQUISITE FOR THE ANALYSIS: ASYMMETRIC PRIMARY MERGE & THE NULL DERIVATION

2.1 Asymmetric Merge

Chomsky (1995, 2008, 2013):   Merge = Set Merge

(48)   Merge $(\alpha,\beta) = \{\alpha,\beta\}$

→   this operation is completely symmetric; neither hierarchically nor linearly organized: Merge (α,β) = Merge (β,α)

however: there are reasons to think Merge is *a*symmetric:

(i)   labeling

Chomsky (1995):   in Merge (α,β), either α or β projects

(49)   Merge $(\alpha,\beta) = \{\alpha\{\alpha,\beta\}\}$

→   Langendoen (2003:3): $\{\alpha\{\alpha,\beta\}\}= <\alpha,\beta>$, i.e. labeling leads to (asymmetric) Pair Merge rather than (symmetric) Set Merge

### (ii)   Derivational Asymmetry

Jaspers (1998):   for every Merge operation one element is derivationally prior to the other, i.e. derivation creates asymmetry (cf. also Epstein 1999:337)

(iii)   conceptual simplicity

Zwart (2009b):   Merge applying to two elements is a divergence from the simplest possible—and hence preferable—scenario: why not one?

alternative: Unary Merge

(50)   **Unary Merge** (adapted from Zwart 2009a, 2010)
Merge selects a single subset from a resource (e.g. $\{\alpha\}$), includes it in the derivation under construction (δ), and yields an ordered pair (e.g. $<\{\alpha\}, \delta>$, assuming $\{\alpha\}$ projects).

(51)
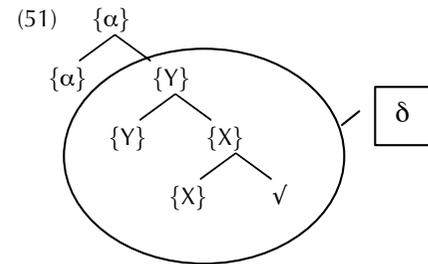
2.2 Primary Merge

question: how does the very first Merge operation take place, when there isn't yet a "derivation under construction", i.e. when $\delta = \varnothing$?

**traditional (often implicit) answers:**

option #1: Select can exceptionally take two elements from the resource

(52)   Select (α,β)
Merge $(\alpha,\beta) = \{\alpha,\beta\}$

problems:

- if 2, why not 3 or 4 or …?

    (53)　Select (α,β,γ,…,ω)
           Merge (α,β,γ,…,ω) = {α,β,γ,…,ω}

    {α}　　{β}　　　{γ}　{δ}　　{ε}　{ζ}　{η}　　{θ}　　　{ω}
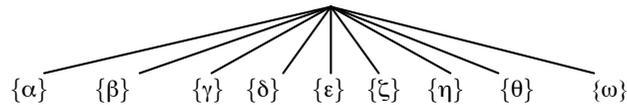
- how to restrict this to Primary Merge?

    (54)　　{γ}
      {δ}　{γ}　{β}
           {β}　　{α}
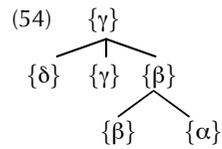
option #2: Select need not (directly) feed Merge

    (55)　Select α
           Select β
           Merge (α,β) = {α,β}

problems:

- same overgeneration issues as solution (i)
- involves lookahead

alternative:　Unary Merge α with the empty workspace (see also Zwart 2009b, 2010, Fortuny 2008, Guimarães 2004)

    (56)　δ = ∅
    (57)　Merge (α,∅) = <α,∅>

    (58)　　{α}
      {α}　　∅
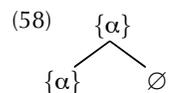
interesting side-effect: labeling the output of Primary Merge (i.e. {H,H}-structures) now becomes trivial:

Chomsky (2013:47):　"Another long-standing problem has to do with head-head constructions, the first step in a derivation. If the Marantz-Borer conception is adopted, these will be of the form f-root, where f is one of the functional elements determining category. ***Suppose that root, like conjunction, does not qualify as a label***. In that case these constructions will be labeled f, as intended, because no other element is visible to LA [the labeling algorithm, mdb & jvc]." (emphasis added)

our proposal: structures created by Primary Merge are always of the form {H,∅} → given that ∅ by definition cannot project, Merge (α,∅) will always/automatically be labeled α

3　QUICK RECAP

section 1:　four properties of roots:
        i)　Roots have no grammatical features
        ii)　Roots have no syntactic category
        iii) Roots are defined structurally, not lexically
        iv) Roots are merged lower than functional material

section 2:　　asymmetric Primary Merge

    (59)　{α}
     {α}　　∅
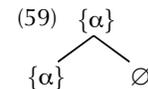
next section:　derive (i)-(iv) from (59)

4   THE ANALYSIS: DERIVING THE PROPERTIES OF ROOTS

gist of the analysis: the empty position created as a side-effect of asymmetric Primary Merge serves as the insertion site for roots

4.1   A (simplified) sample derivation

(60)   the books

(i)   Numeration/Resource:

(61)   R = {[+def], [+pl]}

recall: Late Insertion implies that R contains no actual vocabulary items, only grammatical features (and no placeholder feature for roots)

(ii)   syntactic derivation:

step one: (Primary) Merge of [+pl]

(62)   {[+pl]}
          /\
    {[+pl]} Ø
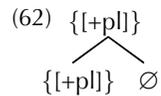
(63)   R = {[+def]}

step two: Merge of [+def]

(64)   {[+def]}
         /\
  {[+def]} {[+pl]}
              /\
        {[+pl]}   Ø
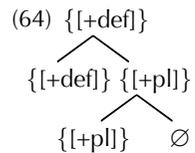
(65)   R = { }

(iii)   (late) Vocabulary Insertion:

(66)   /ðə/   ↔   [+def]
         /s/   ↔   [+pl]
         /buk/   ↔   Ø

(67)   {[+def]}
         /\
    the   {[+pl]}
              /\
           -s   book
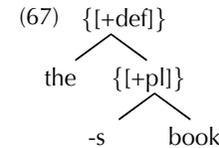
4.2   Deriving the four root axioms

i)   Roots have no grammatical features
    →   Ø is radically empty ⇒ the root position does not play any active role in the syntactic derivation and root meaning is malleable

ii)   Roots have no syntactic category
    →   Ø is radically empty ⇒ it does not contain any categorial features

iii)   Roots are defined structurally, not lexically
    →   the empty position is a mechanical by-product of the operation Merge; it is completely dissociated from whatever vocabulary item gets inserted into that position at a post-syntactic stage

iv)   Roots are merged lower than functional material
    →   only in the case of the very first Merge operation (Primary Merge) is the derivation null ⇒ only at the very foot of the structure does Ø show up

5   THEORETICAL CONSEQUENCES OF THE ANALYSIS

5.1   Dealing with multiple roots: layered derivations

previous section: the root position (i.e. Ø) is the mechanical by-product of the very first Merge operation only

consequence: structures containing multiple roots must be the result of multiple derivations, each with its own instantiation of Primary Merge

(68)   **One derivation one root**
For every derivation there is exactly one root, and for every root there is exactly one derivation

implementation: **layered derivations**: derivations are layered when "the output of a previous derivation [appears] as an atom in the numeration for the next derivation" (Zwart 2009b:161)

supporting evidence (Ackema & Neeleman 2004:122-129, Harley 2009)
(69)   a.   a sit-on-the-guidelines Euro policy
        b.   animal-to-human transplant experiments
        c.   go-anywhere-at-any-time-access
        d.   I feel particularly sit-around-and-do-nothing-ish today.

a sample derivation

(70)   The boy eats the cookie.   → three roots ⇒ three derivations

(i)   Numeration/Resource (abstracting away from Tense):

(71)   R = {[+def], [+def], v}

(ii)   syntactic derivation:

step one: Primary Merge of [+def]

(72)
```
    {[+def]}
     /\
{[+def]}  Ø
```
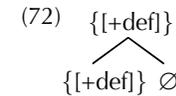
(73)   R = {[+def], v}

step two: readmittance of (72) to R

(74)   R = {[+def], v, <{[+def]},Ø>}

step three: Primary Merge of v

(75)
```
      v
     /\
   v    Ø
```
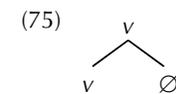
(76)   R = {[+def], <{[+def]},Ø>}

step four: Merge of <{[+def]},Ø>

(77)
```
        v
       /\
      v    <[{+def]},Ø>
     /\
   v    Ø
```
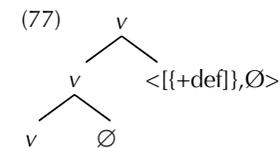
(78)   R = {[+def]}

step five: readmittance of (77) to R

(79)   R = {[+def], <<v,Ø>,<{[+def]},Ø>>}

step six: Primary Merge of [+def]

(80) {[+def]}
     ╱ ╲
  {[+def]} Ø

(81) R = {<<*v*,Ø>,<{[+def]},Ø>>}
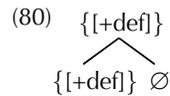
step seven: Merge of <<*v*,Ø>,<{[+def]},Ø>>

(82) <<*v*,Ø>,<{[+def]},Ø>>
      ╱   ╲
  {[+def]}   <<*v*,Ø>,<{[+def]},Ø>>
   ╱ ╲
{[+def]} Ø
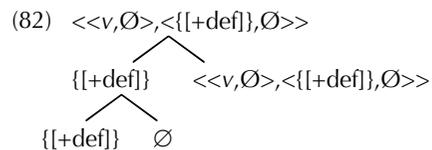
(83) R = { }

(iii) (late) Vocabulary Insertion:

(84) /ðə/   ↔   [+def]
     /bɔj/   ↔   Ø
     /kuki/ ↔   Ø
     /it/   ↔   Ø

(85) The boy eats the cookie.

note: if readmittance to R entails spell-out and concomitant opacity (Uriagereka 1999, Zwart 2009b), the derivation in (72)-(84) wrongly predicts objects are islands and subjects are not

proposal: derivations proceed left-to-right across subderivations (i.e. subject-verbal complex-object), but bottom-up within each subderivation (cf. Uriagereka 1999, Drury 2005)

5.2 A unified vocabulary insertion mechanism

5.2.1 Introduction

Chomsky (1995:226): Vocabulary Insertion (VocIns) = Select: take an element from the numeration and introduce it into the derivation

Halle & Marantz (1993): VocIns = Late insertion: syntax merges innate features which are matched post-syntactically with vocabulary items (VIs)

(86)   [+D, +def]
              ╱   ╲
        [+D, +def]   √
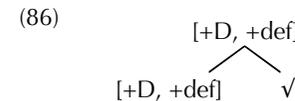
(87) a.   [+D,+def] ↔   /ðə/
      b.   √   ↔   /buk/

note: there is a three-level dichotomy in the DM-approach to VocIns:

(i) two types of **terminal nodes** in syntax:
  ▪ Root terminal nodes (RTNs), √
  ▪ Functional terminal nodes (FTNs), e.g. [+D,+def]

(ii) two types of **vocabulary items** at VocIns:
  ▪ Lexical vocabulary items (LVIs), e.g. √ ↔ /buk/
  ▪ Functional vocabulary items (FVIs), e.g. [+D,+def] ↔ /ðə/

(iii) two **mechanisms for vocabulary insertion**:
  ▪ FTNs: insertion based on competition
  ▪ RTNs: insertion based on free choice

→ by linking these three dichotomies, DM arrives at a strict division of labor between the functional and the lexical domain:

    (i)   functional vocabulary items spell out functional terminal nodes and are inserted based on competition

    (ii)   lexical vocabulary items spell out root terminal nodes and are inserted based on free choice

however: in principle, there are four ways of combining vocabulary items with terminal nodes:
    (a)   functional vocabulary items realizing functional terminal nodes
    (b)   lexical vocabulary items realizing root terminal nodes
    (c)   functional vocabulary items realizing root terminal nodes
    (d)   lexical vocabulary items realizing functional terminal nodes

recall: FVIs can spell out root terminal nodes (i.e. option (c) is realized):

    (88)   Ik heb   het   **waarom** van de   zaak nooit begrepen.
            I   have   the why   of   the   case never understood
            'I have never understood the motivation behind the case.'

---

in this section
- we present a new insertion mechanism that covers options (a), (b), and (c)
- we argue that option (d) (LVIs in FTNs) is not attested

5.2.2 Revisiting Vocabulary Insertion

5.2.2.1 Vocabulary insertion in DM

recall: two mechanisms for vocabulary insertion

(1)   **functional terminal nodes:** insertion based on competition

    (89)   **The Subset Principle**
           The phonological exponent of a Vocabulary item is inserted into a morpheme in the terminal string if the item matches all or a subset of the grammatical features specified in the terminal morpheme. Insertion does not take place if the Vocabulary item contains features not present in the morpheme. Where several Vocabulary items meet the conditions for insertion, the item matching the greatest number of features specified in the terminal morpheme must be chosen (Halle 1997:428).

→ ensures that the VI whose feature specification matches that of the terminal node most closely will be the winner, via the Elsewhere Principle

(2)   **root terminal nodes:** insertion based on free choice

→ all LVIs bear some marking (a [Root]-feature (Halle and Marantz 1993), a phonological index (Harley to appear a.o.)) that is replicated on root terminal nodes → this matching ensures that only and all LVIs can be inserted in RTNs

5.2.2.2 [Root]-problems

→ adopting a [Root]-feature (or comparable lexical diacritic) to distinguish roots from non-roots is problematic for three reasons:

(i)   theoretically, such a feature is the odd one out in the pre-syntactic (feature) lexicon: it is not syntactic in that it does not play any rol in the syntactic derivation, and it is not morphological in that there is no morphological property that distinguishes roots from non-roots

(ii)   FVIs can be inserted in RTNs → FVIs should be endowed with a [Root]-feature as well ⇒ the feature no longer distinguishes roots from non-roots

(90)   Ik heb   het **waarom** van de   zaak nooit begrepen.
         I   have   the   why   of   the   case never understood
         'I have never understood the motivation behind the case.'

(iii)   FVIs can be inserted in RTNs → competition-based insertion in FTNs requires that FTNs are endowed with a [Root]-feature as well ⇒ the feature no longer distinguishes root terminal nodes from non-root terminal nodes

conclusion: adopting a [Root]-feature (or other similar diacritic) to regulate the insertion in root terminal nodes raises more problems than it solves

5.2.2.3 Vocabulary insertion without root markers

recall: in our proposal, root terminal nodes are radically featureless, i.e. there is no [Root]-feature or any other comparable diacritic

consequences for Vocabulary Insertion:

(1)   *in functional terminal nodes:* nothing changes; insertion is regulated by Subset Principle-based competition, like in standard DM

(2)   *in root terminal nodes:* in DM, free choice was restricted to those VIs that bear a particular marking (e.g. a [Root]-feature) → we have done away with these markings ⇒ free choice is now truly unlimited: every and any vocabulary item can be inserted in root terminal nodes

conclusion: a natural consequence of doing away with the [Root]-feature is that Vocabulary Insertion in root terminal nodes now allows any vocabulary item to be inserted there → this is indeed what we find

5.2.3 There are no lexical vocabulary items in functional terminal nodes

question: under what circumstances could an LVI spell out an FTN?

answer: if it wins competition-based Vocabulary Insertion, i.e. if its feature specification matches that of the terminal node most closely → given that its feature specification is the empty set, this only occurs if there is no more specific (functional) VI available in the language to spell out (the features in) that FTN

however: under such a hypothetical scenario *every* LVI should be an equally suitable candidate for spelling out the FTN, i.e. if this scenario occurs, it should be extremely productive

semi-lexical items: seem like the best candidates for LVIs spelling out FTNs (see Emonds 1985,15 Van Riemsdijk 1998 and Corver & Van Riemsdijk 2001)

example: *paar* in Dutch (Van Riemsdijk 2005:8, see also Vos 1999)

- can realize an RTN:

(91)   **Het**   gelukkige **paar**   wandelde   langs de Seine.
         theNEUTER happy   couple   walked   along the Seine
         'The happy couple walked along the Seine.'

- can realize an FTN (i.e. a quantifier)

(92)   **de   paar vrienden**   die   hij nog   heeft
         theCOMMON pair friends   that he still has
         'the **few** friends he has left'

(93)   de   vrienden
         theCOMMON friends
         'the friends'

(94)   *   de   paar
             theCOMMON pair

note: the semi-lexicality of *paar* is not productive:

(95) het   {koppel /   stel   /   duo}
        the   couple / twosome / duo
        'the couple/twosome/duo'

(96) * de   koppel/stel/duo   vrienden   die   hij nog heeft
          the   couple/twosome/duo friends   that he still   has

→ if *paar* in (92) were an LVI merged in an FTN, replacing it with other LIVs such as *koppel/stel/duo* should be perfectly felicitous → the fact that it isn't suggests that *paar* (and by extension: semi-lexical items more generally) are functional vocabulary items, not lexical ones:

(97) [Q] ↔   paar

in other words: (92) is not an example of an LVI realizing an FTN, (91) is a case of an FVI spelling out an RTN

6   CONCLUSIONS

(a)   the following four properties of roots can be derived as theorems from the theory of Merge:
      i)   Roots have no grammatical features
      ii) Roots have no syntactic category
      iii) Roots are defined structurally, not lexically
      iv) Roots are merged lower than functional material

(b)   Merge is unary and asymmetric, and the first Merge operation in each derivation appends an element from the Numeration to the null derivation

(c)   the empty position thus created serves as the post-syntactic insertion site for roots

(d)   expressions containing multiple roots are the output of multiple (layered) derivations

(e)   functional vocabulary items can realize root terminal nodes

(f)   lexical vocabulary items cannot realize functional terminal nodes

(e)   semi-lexical items are functional vocabulary items, not lexical ones

THEORETICAL CONSEQUENCES
- unified vocabulary insertion for functional and lexical vocabulary items
- roots are a specific kind of terminal node, not a specific kind of vocabulary item
- roots are featureless nodes and as a result, cannot move or project
- generalized, revised late insertion (*pace* Harley to appear)

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