Head-finality in a head-initial language: linearization as a sign of derivation layering

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1. Head-finality: the empirical problem

(1)   *Dutch is clearly head-initial*
    a. DP   **<u>de</u> man**   'the man'
    b. CP   **<u>dat</u> hij komt**   'that he's coming'
    c. PP   **<u>met</u> de man**   'with the man'
    d. AP   **<u>dol</u> op fruit**   'crazy about fruit'
    e. NP   **<u>student</u> taalkunde**   'student of linguistics'
    f. DegP **<u>erg</u> leuk**   'very funny'
    g. VP   **<u>weten</u> dat hij komt** 'to know that he's coming'

(2)   *Head-finality in Dutch*
    a. nonadjacency: V—noun phrase object
                    dat hij <u>het boek</u> niet <u>kent</u>   'that he doesn't know the book'

                    P—object (locative morphology)
                    <u>daar</u> (niet) <u>mee</u>   [there not with]   'not with it'

                    A—object
                    <u>het Duits</u> (niet) <u>machtig</u>
                    [the German (language) not potent]   'not knowing German'

    b. adjacency: V—nonspecific indefinite object
                    een boek <u>lezen</u>   'to read a book'

                    V—secondary predicate
                    iets rood <u>verven</u>   'to paint something red'

                    V—particle
                    iets op-<u>voeren</u>   'to stage something'   [lit. up-lead]

                    V—stranded preposition
                    daar niet *mee* <u>praten</u>   'to not speak with him'

    c. 'lexical'   compounds
                    vind-plaats [find-place]   'locus'

(3)   *Head-initiality in strict head-final languages*

a.   head-final languages revert to head-initial coordination (Zwart 2009)

Kinnauri: **ǝṅ**   **rǝṅ**   doː   chaṅ   due   (Sharma 1988:91)
            1SG:GEN   with   3SG:GEN   son   be:3PAST
            'His son was with me.'

            gǝ   **rǝṅ**   **ki**   bi-tič   (Sharma 1988:182)
            1SG:DIR   and   you:HON   go-FUT:1DU.INCL.HON
            'I and you will go.'

b.   adverb scope relations as in head-initial languages (Wilson and Saygın 2001)

Turkish: Can   **genelde**   **zaten**   ora-da-dır
           Can   usually   already   there-LOC-3SG
           'Can is usually already there'   (*usually > already*)

c.   verb-serialization as in head-final languages (Carstens 2002)

Ịjọ: áràụ́   [zu ye ákị]   [buru   tèri-mí]   (head-final)
       3SG   basket take   yam   cover-PAST
       'She covered the yam with a basket.'

Sranan   no   [teki   baskita]   [tyari   watra   ]   (head-initial)
         NEG   take   basket   carry   water
         'Don't carry water with a basket.'

(4)   Linear correspondence axiom (LCA, Kayne 1994):
      linear order is a function of hierarchical structure (i.e. corresponds to meaning)

(5)   What is head-finality? Where does it arise?

> PROPOSAL
>
> ● head-finality in head-initial languages arises at the interface between derivation layers
>   ● it is a linguistic sign, indicating the derivational history of the phrase involved

(6) This talk:
A. Does it make sense, theoretically (i.e. in minimalism) ?
B. Does it make sense, empirically (i.e. in Dutch) ?

2. Head-finality in minimalism

2.1   A critique of movement

(7)   Adopting the LCA, head-finality can be derived via leftward movement

(8)   Reasonable for nonadjacency (2a), but not for adjacency (2b) and lexical (2c)

(9)   a. feature-based movement: leads to the postulation of features and landing sites
          (e.g. Zwart 1993, 1997: PredP)
       b. externalization-based movement: works with subject/object placement and A'-
          movement, but not with verb-adjacent material (2b) and with compounds (2c)

(10)   Compounds: a general head-initial/head-final alternation

(resp. rivers, lakes, seas,
mountains, gletschers,
houses, leprechauns)

(11)   Stress is always on
       the complement in
       the head-initial type,
       and on the first member
       in the compound type

composita zijn hoofdfinaal		
	finaal	*initieel*
rivieren	Hudson river Smurfrivier	de rivier de Rijn
meren	Victoriameer	meer van Genève
zeeën	Sargassozee	de zee van Azow
bergen	Atlasgebergte	de berg Horeb
gletschers	Vatnajökull-gletscher	?
huizen	Rembranthuis	huis Ten Bosch
kabouters	boskabouter	kabouter Plop

(12)   If stress in Germanic is always on the most deeply embedded complement (Cinque
       1993), i.e. is a function of structure, it looks like the two types share a single
       underlying structure (i.e. semantic and prosodic identity, just not linear order).

(13)   Generalization: the compound type is somehow more 'lexical' (i.e. is a *name*)
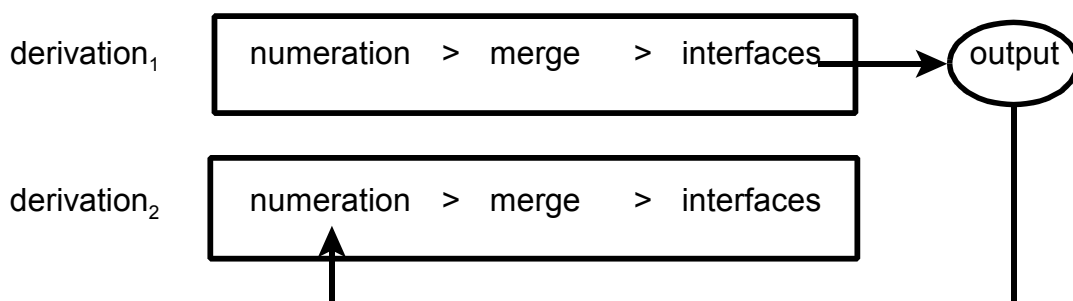

2.2   What does it mean to be 'lexical' in minimalism ?

(14)   There is a single structure building operation, which is Merge.

(15)   Lexical items can clearly be structured (compounds, but also transitive verbs in a
       Hale & Keyser 1993 approach).

(16)   Lexical items can be the output of a derivation (a sequence of operations Merge),
       and derivations are **layered**.

(17)   Model of grammar

derivation$_1$ ┌───┐   ╭────────╮
                  │ numeration > merge > interfaces ────┼──────▶ │ output │
                  └───┘   ╰────────╯

derivation$_2$ ┌───┐
                  │ numeration > merge > interfaces   │
                  └───┘

(18) *Relativized lexicality*
      An element is lexical if it is included in a numeration as a single item

(19) No inherent conflict between 'lexical' and 'phrasal'

(20) Signs of lexicality (in this sense): interface effects
      a. idiosyncratic sound-meaning properties (idiom, 'construction')
      b. morphological composition (conflation, derivational morphology)
      c. reanalysis (restructuring, recategorization)
      d. atomicity (lexical integrity)
      e. linearization (assigning a linear order, automatically or idiosyncratically)

(21) Applied to compounds
      a. idiomaticity (*hand-schoen* [hand-shoe] = glove)
      b. linking phonemes
      c. *wetback* is not a kind of *back*
      d. no extraction out of compounds (extraction = merge *of a subpart* in derivation$_2$)
      e. linearization: head-final ordering

2.3 *Structure-to-order conversion*

(22) *Simplest merge* (Zwart 2003, to appear a/b; Fortuny 2008)
      a. Top-down: split   b. Bottom-up: transfer

      N = { a, b, c }   N = { a, b, c }

          N   *N*   workspace
      > ⟨ a, { b, c } ⟩   > { a, b, c }   ∅
         ⟨ a, ⟨ b, { c } ⟩⟩   { b, c }   ⟨ a, ∅ ⟩
         ⟨ a, ⟨ b, ⟨ c, { } ⟩⟩⟩   { c }   ⟨ b, ⟨ a, ∅ ⟩⟩
                                                      { }   ⟨ c, ⟨ b, ⟨ a, ∅ ⟩⟩⟩
      > ⟨ a, b, c ⟩
                                                   > ⟨ c, b, a ⟩

(23) *Unary merge*
      a. each step creates an ordered pair
      b. derivation yields an ordered n-tuple

(24) *Linear Correspondence Axiom (redefined)*
      ⟨ a, b ⟩ = / a b /   (where slashes indicate a string)

(25) *Structure and order*
      a. Structure in any domain (syntax, morphology) is always a function of Merge
      b. Order is always established at the interfaces

(26) Barring movement, linear **can be** and **must be** determined at the interfaces.

2.4   Complex specifiers/adjuncts

(27)   Given simplest merge, these must be the output of a separate derivation

(28)   *(Complex) specifiers/adjuncts must stem from a separate derivation layer*

a.   N = { the, man, hit, the, ball }   >   ⟨ the, **{ man, hit, the, ball }** ⟩
                                                              *   *not a constituent*
b.   N = { [the man], hit, the, ball }   >   ⟨ [the man], hit, the, ball } ⟩

(29)   Complex complements need not stem from a separate derivation layer
       >   CP is not a local domain (phase) automatically

(30)   *Recursion*
       A derivation D, containing subderivations (D_i, D_k) with numerations (N_i, N_k), is recursive iff a member of N_i is the output of D_k.

3. Head-finality in Dutch

3.1   Verb-second as an interface effect

(30)   Chomsky (2001): verb-second has no semantic effect > est. at sound interface

(31)   Zwart (2005): it's not random > finiteness marked at PF on the subject's sister
       (i.e. V2 = V1 in the complement domain of the subject)

       ⟨   SUBJECT, ⟨   *REST OF THE CLAUSE* ⟩ ⟩

            Vfin

(32)   Sensitive to derivation layering: no V2 when the derivation layer is not concluded (as in complement clauses;).

(33)   If embedded clause = derivation layer then embedded V2 + opacity (atomization)

(34)   PF-processes 'break in' to lexical items (i.e. outputs of derivation layers)
       a) prosody   (pitch accent realized on a single syllable)
       b) case   ⟨[**Der** Mann],   ⟨ schiesst, ⟨ den,   ⟨ Ball ⟩ ⟩ ⟩
       c) agreement   (tense/phi-feature morphology realized inside a little v-V complex)

(35)   Subextraction via V2 can no longer be used as a test showing that a complex is not 'lexical': if V2 = PF-reordering, it can break up an element that is the output of a previous derivation (i.e. a lexical element).

3.2 Head-final construction in the Dutch VP

nonspecific indefinite objects

(36) *opacity: separation from the verb > you lose the nonspecific reading*

a. Hij wil altijd boeken lezen
   he wants always books read:INF   'He always wants to read books.'

b. Hij wil boeken altijd lezen
   he wants books always read:INF
   'What he always wants to do to books is read them.'

c. Boeken wil hij altijd lezen
   books wants he always read:INF   (= b)

d. Boeken worden altijd gelezen
   books PASS.AUX always GE-read-N
   'Books are such that they are always read.'   (*not* 'People always read books.')

e. Lezen wil hij altijd boeken
   read:INF wants he always books
   'What he always wants to read is books.'

(37) *semantic idiosyncrasy*
   A nonspecific indefinite object "is interpreted as part of the predicate. That is, the predicate is interpreted as a one-place predicate." (De Hoop 1992:132)

(38) *reanalysis*
   Hij is aan het boeken lezen   (VP > N?)
   he is on the books read:INF   'He is busy book-reading'

verbal particle

(39) *opacity*

a. * Bellen kun je hem niet op
     ring:INF can you him not up

b. Op-bellen kun je hem niet
   phone can you him not   'You can't phone him.'

c. ?? Op kun je hem niet bellen
      up can you him not ring:INF

(40) *NB: verb-second = linearization at the interface, irrelevant to syntactic opacity*
   Ik bel hem op
   I ring him up   'I phone him.'

(41) *semantic idiosyncrasy: verb-particle combination generally highly idiomatic*
   op-bellen uit-vinden in-dikken aan-vallen voor-stellen
   up-ring out-find in-thick on-fall fore-put
   'phone' 'find out' 'thicken' 'attack' 'propose/introduce'

(42) *reanalysis*
   Hij is ze aan het op-bellen
   he is them on the phone:INF   'He's busy phoning them.'

secondary predicates

(43) *constituency tests favor complex predicate analysis over small clause analysis (Neeleman 1994)*

a.
Rood verven moet je dat hek niet
red paint must you that fence not 'You should not paint that fence red.'

b. * Dat hek rood moet je niet verven
that fence red must you not paint

(44) *opacity: conflicting results*

a. * Verven moet je dat hek niet rood
paint must you that fence not red

b. ? Rood moet je dat hek niet verven 'Red is not the color you should
red must you that fence not paint paint that fence.'

(45) *linearization: no PP-extraposition*

a. ... dat ik de kat (in de tuin) zag (in de tuin)
that I the cat in the garden saw in the garden
'... that I saw the cat in the garden.'

b. ... dat ik de kat (de tuin in) schopte (*de tuin in)
that I the cat the garden into kicked the garden into
'... that I kicked the cat into the garden.'

(46) *semantic idiosyncrasy*

iemand zwart maken iemand beet/in de maling nemen
sb. black make:INF sb. bite/in the mill take:INF
'speak bad of someone' 'fool someone'

(47) *reanalysis*

a. zich rot schrikken > hij is/*heeft zich rot geschrokken
REFL rotten startle he is/has REFL rotten startle:PART
'be very startled'
(*be*-selection: unaccusativity, but unaccusatives not compatible with resultatives, cf. Levin & Rapparort-Hovav 1995)

b. Hij is het hek aan het rood verven
he is the fence on the red paint:INF
'He's busy painting the fence red.'

verb clusters

(48) *verb clusters interact with indefinites/particles/secondary predicates*

a. ... dat hij **boeken** *wil* **lezen**
that he books wants read:INF '... that he wants to read books.'

b. ... dat hij ze **op** *wil* **bellen**
that he them up wants ring:INF '... that he wants to phone them.'

c. ... dat hij het hek **rood** *wil* **verven**
that he the fence red wants paint:INF '... that he wants to paint the fence red.'

(49) *so clusters must also be the output of a separate derivation*
a. *opacity*   »   with the IPP effect (infinitive replacing past participle):
               (i)   Ik   heb   hem   horen   lachen
                     I   have   him   hear:INF   laugh:INF 'I heard him laugh.'
               (ii) * Lachen   heb   ik   hem   niet   horen
                     laugh:INF have   I   him   not   hear:INF

         »   but not across the board
               (iii)   Gelezen   kan   hij het   niet   hebben
                     read:PART can   he it   not   have:INF
                     'He cannot have read it.'

b. *semantic idiosyncrasy*   »   idiom formation
               (i)   iemand   zien   zitten   'appreciate someone'
                     sb.   see:INF   sit:INF
               (ii)   iets   laten   zitten   'stop pursuing something'
                     sth.   let:INF   sit:INF

c. *grammaticalization*   »   'perfect'
               (i)   heeft   ge-lez-en
                     have   GE-read-N   possessive > aspectual > temporal

d. *morphology*   »   IPP-effect (cf. (49a(i)))

all-in-all
(50)   Head-final constructions in Dutch typically show evidence of interface effects which may be a function of derivation layering.

      (unexpected: A'-movements in (39c), (44b), (49aiii))

3.3   Conclusion

(51)   There is reason to believe that head-finality in the Dutch VP (i.e. that is not clearly brought about by movement) is restricted to constructions created in separate derivation layers.

(52)   If so, this residual class of head-final structures may be grouped with more obvious lexical construction types showing head-finality, such as compounds.

4. Some further observations

(53)   Caballero et al. (2008)
      a) Incorporated nouns are generally preverbal (ca. 70/30, 50/50 in head-initial lgs.)
      b) but more so (i.e. uniformly) in unproductive noun incorporation (8/0)
      > [this] "cannot be explained by syntactic derivation, whose effects should be clearest in productive incorporation" (p. 397)

(54) Haegeman (1998)
a. ... da Valère ... [(ee) [willen dienen boek lezen] (eet)]
    C Valery   have:3SG want:INF that   book read:INF have:3SG
'... that Valery wanted to read that book.'

b. mee Valère te [(*een) [willen dienen boek lezen] (een)]
with Valery to   have:INF want:INF that   book read:INF have:INF
'Valery having wanted to read that book'

> follows if **B** in the construction **[with A B]** must be a separate derivation output

(55) specifier/complement asymmetry
a.   een   man   **(trots)** op zijn   auto   **(*trots)**
    a   man   proud of his   car   proud

b. *   een   [**trots**(-e) op zijn auto(-e)   ]   man
c.   een   [op zijn auto   **trots**-e   ]   man

> prenominal AP must be the output of a separate derivation
> facts follow if head-final order arises at the interface between derivation layers

(56) The Final-Over-Final Constraint (FOFC, Holmberg 2000)
A final head has no head-initial complement

> if head-finality is 'lexical', it appears low in the structure
> if head-initiality is 'syntactic', the top of a structure will always be head-initial

a. **op** de   muur   b. de   muur **op**   c. [tegen   de muur] **op**
on the   wall   the   wall on   against the wall on
(locative/directional)   (directional)   (directional)
SYNTACTIC   LEXICAL   LEXICAL, FOFC-VIOLATING

5. Conclusion

(57) Head-finality in head-initial languages is restricted to a domain that I would like to identify as the output of a separate derivation layer.

(58) We don't find, conversely, head-initiality in head-final languages that has the same 'lexical' character.

> clear evidence of head-initiality in head-final languages involves coordination, a productive syntactic process

(59) We cannot **predict** that the output of a separate derivation will be head-final.
We can predict that head-final phrases will not occur productively.

References

Caballero, Gabriela, Michael J. Houser, Nicole Marcus, Teresa McFarland, Anne Pycha, Maziar Toosarvandani, and Johanna Nichols. 2008. 'Nonsyntactic ordering effects in noun incorporation.' *Linguistic Typology* 12, 383-421.

Carstens, Vicky. 2002. Antisymmetry and word order in serial constructions. *Language* 78, 3-50.

Chomsky, Noam. Derivation by phase. In Michael Kenstowicz, ed., *Ken Hale: a life in language*, pp. 1-52. Cambridge: MIT Press.

Cinque, Guglielmo. 1993. A null theory of phrase and compound stress. *Linguistic Inquiry* 24, 239-267.

Fortuny, Jordi. 2008. *The emergence of order in syntax*. Amsterdam: John Benjamins.

Haegeman, Liliane. 1998. Verb movement in embedded clauses in West Flemish. *Linguistic Inquiry* 29, 631-656.

Hale, Kenneth and Samuel J. Keyser. 1993. On argument structure and the lexical expression of syntactic relations. In Kenneth Hale and Samuel J. Keyser, eds., *The view from Building 20: essays in linguistics in honor of Sylvain Bromberger*. Cambridge: MIT Press.

Holmberg, Anders. 2000. Deriving OV order in Finnish. In: Peter Svenonius (ed.), *The Derivation of VO and OV*, pp. 123-152. Amsterdam: Benjamins.

de Hoop, Helen. 1992. *Case configuration and noun phrase interpretation.* University of Groningen dissertation.

Kayne, Richard S. 1994. *The antisymmetry of syntax*. Cambridge: MIT Press.

Levin, Beth and Malka Rappaport Hovav. 1995. *Unaccusativity at the syntax-lexical semantics interface*. Cambridge: MIT Press.

Neeleman, Ad. 1994. *Complex predicates*. University of Utrecht dissertation.

Sharma, D.D. 1988. *A descriptive grammar of Kinnauri*. Delhi: Mittal Publishers.

Wilson, Stephen and Ayşe Pınar Saygın. 2001. Adverbs and functional heads in Turkish: linear order and scope. *Proceedings of WECOL 2001*.

Zwart, Jan-Wouter. 1993. *Dutch syntax: a minimalist approach*. University of Groningen dissertation.

--. 1997. *Morphosyntax of verb movement: a minimalist approach to the syntax of Dutch*. Dordrecht: Kluwer.

--. 2003. What's in a name? Syntactic and asyntactic accentuation in Dutch. In Lars-Olof Delsing et al., eds., *Grammar in focus: Festschrift for Christer Platzack*, Vol. 2, pp. 395-401. Lund: Department of Scandinavian Languages.

--. 2005. Verb second as a function of merge. In Marcel den Dikken and Christina M. Tortora, eds., *The function of function words and functional categories*, pp. 11-40. Amsterdam: John Benjamins.

--. 2009. Relevance of typology to minimalist inquiry. *Lingua* 119, 1589-1606.

--. To appear a. Prospects for top-down derivation. *Catalan Journal of Linguistics*.

--. To appear b. Structure and order: asymmetric merge. In C. Boeckx, ed., *The Oxford Handbook of linguistic minimalism*. Oxford: Oxford University Press.

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