Functions and Categories

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1   Introduction

A   Language variation is contingent on the properties of functors (Borer, 1984; sometimes called the Borer-Chomsky Conjecture)

  I   a. What are functors?
        b. What properties of functors?
                        i.   Formal Semantic properties?
                        ii. Syntactic properties?
                        iii. Distribution?
                        iv. Phonological properties?

  II   i.   THE vs. WILL; THIS vs. THAT; EVERY vs. SOME
             → but can this give rise to a meaningful language variation?
        ii. *of* is a case assignor; *for* is a complementizer *and* a case assignor; genitive is available in English but not, e.g. in Romance for pre-nominal non-pronominal DPs.
             → certainly we can derive some language variation from that, but how much? At least prima facie, we would require a lot of abstract syntactic functors.
        iii. Some languages have D, and D-related functors, others don't; some languages have T and T-related functors, others don't; some languages have EVID and EVID-related functors, others don't, etc.

        iii' All languages have D-related functors (e.g. DEF), but they may differ on the structural positioning of such nodes (e.g. DEF may be an adjective which licenses definiteness without the presence of D)

        iii'' Order of (projecting) functors on a spine may differ (e.g. D>NUM in grammar A; NUM>D in grammar B).
             → What are the semantic ramifications of deriving identical meaning (e.g. PST) with distinct functional structures? What are the syntactic ramifications? What are the ramifications for the syntax-semantics interface? What are the ramifications for learnability?
             → By extension, what are nodes such as D and T? What are values such as DEF or PST? What are morphological units such as *-ed, will* or *the*?
             → And have we made progress in the attempt to derive the universal hierarchy (and occurrence) from uniform semantic principles? Is that even achievable, assuming non-hierarchical semantics?

        iv. ????

  III Ultimate purpose of this talk: to explore how much variation (both inter- and intra-linguistically) can be reduced to the mode in which what are otherwise empty heads are valued, or <u>assigned range</u>. By assumption, all range assignors are functors.

  IV Intermediate purpose: to propose functional architecture which distinguishes between distinct functors, where, by assumption, only functors project.
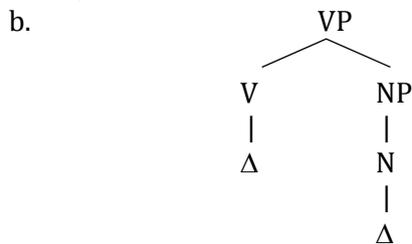
1.

$$\overline{\text{VAL}} \quad \rightarrow \ll e \gg_{\text{Dval}}$$
±PF

B   ***Outline of Talk***

2   Empty heads?

2.1 Not so exotic, theoretically

C   (1) may seem exotic, but if we transfer it to the domain of Content words, as in (2), what we get is quite reminiscent of the rule of lexical insertion as postulated in Chomsky (1965), and assumed, virtually as such, until very recently.

2.   a.   WALK, $\ll e \gg_V$ KISS, $\ll e \gg_V$
       V, intransitive   *V, transitive*   etc.

      b.

```
                VP
              /    \
            V       NP
            |        |
            Δ        N
                     |
                     Δ
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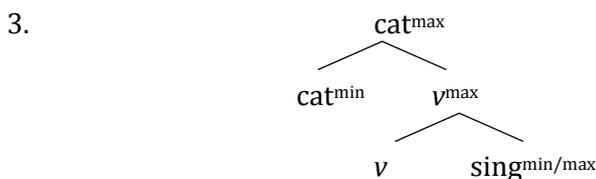
D   In Aspects, (2a), or formally, (2b) embeds the claim that phrase structure emerges independently of the properties of terminals, with syntactic nodes effectively dominating empty heads (Δ). A separate transformation rule then substitutes Δ with terminals which have matching grammatical properties (e.g. a particular insertion frame that is compatible with the independently generated syntax). Thus the algorithm, effectively, creates a pair, consisting of a categorized head, [$_C$Δ], and a lexical term which assigns range, or 'values' it, to use contemporary terminology.

E   Chomsky (1995) and subsequent:
     Properties of phrases project directly from terminals (including features), obviating the need for the lexical insertion transformation.

     Consequence: no (real) empty heads.

F   Direct projection from terminals is not a formal simplification of the grammar, because it remains the case that some phrase structure component *must* exist, effectively to check that the result of direct projection conforms to the grammar at large. To wit, without such checking mechanism, there is no way to block the emergence of the phrase in (3), presumably ruled out by *something*, in English (even if you call it 'interface' or 'third factor'), and that *something* would look an awful lot like a phrase structure condition which says, effectively, that v^{max} cannot be dominated by N^{max}, without any reference to what the terminal is under either:

3.

```
                cat^max
              /        \
        cat^min        v^max
                      /      \
                    v      sing^min/max
```

G   The universal functional hierarchy, in fact, entails that structure emerges independently of the properties of terminals, insofar as some checking mechanism must be in place that would rule in [$_D$ [$_\#$ [$_N$]]] but not *[$_\#$ [$_D$ [$_N$]]] or *[$_\#$ [$_T$ [$_N$]]], and that structure would refer exclusively to the <u>categorial</u>

label of the emerging structure, and not to any other properties of the terminals that would populate the structure. The universal hierarchy, then, entails reference to what in the Aspect system would be $[_D \Delta]$, $[_T \Delta]$ etc.

This holds not just for most standard minimalist approaches, but for all systems short of those which strictly equate terminals with projections (e.g. Nano Syntax). For these systems, the converse problem applies – it is not obvious, specifically, what T or D are, and whether there are any meaningful distributional generalizations that guide the distribution of some features (and see, on this, Svenonius, 9/10/17)

H   In DM, the categorial duality for substantive items is handled by separating the categorial function from listed items, by assumption Roots, as in (4), where v takes on the function of $[_V \Delta]$, and as such is a pure marker of a major category, and 'lexical insertion' is not a substitution operation, but rather an instance of Merge.

4.

$$v$$

$$v \qquad \sqrt{sing}$$
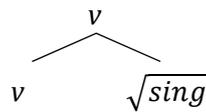
I   Whether or not $\sqrt{sing}$ has any grammatical properties once stripped of a categorial label is a disputed matter in DM, with Harley (2014) proposing that it may take a complement and project (thereby creating a RootP), and with Marantz (2013) contending that it has no grammatically relevant properties, and fundamentally functions as a modifier.

For the functional spine, DM does not propose the equivalents of (4). Instead, functional terminals project directly as abstract featural morphemes, and are subject to subsequent VI (but see Adger, 2013 for functional 'roots').

J   a.   (4) masks the grammatically-relevant distinction between mono-morphemic forms (*sing*), and multi-morphemic forms (*liquidate, verbalize*).
     b.   The categorial node v is fully predictable, structurally, from the functional context, and is hence redundant (Borer 2013, 2014)

K   But within the functional domain, this architecture may have considerable advantages:

Functors spell out (logically) transitive functions (which means they must have a logical argument) with a *rigid designation*, by which we mean that their function, whether syntactic and semantic, holds constant in all possible worlds (see Gajewski 2010 for the semantic angle).

5.   a.   D   b.   T

         THE, THIS, ANY   ≪e≫/Δ   <PST>, WILL, <PRES>   ≪e≫/Δ
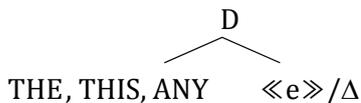
Note that in English some of these are free standing (THE, WILL, ANY) and others are abstract (<PST>, <PRES>). I will return to this toward the end, time permitting.

L   The universal functional hierarchy presupposes a categorial spine with a fixed set of properties.

These properties (by assumption to be derived from some semantics) are not actually categorial, as such, but represent *generalizations over semantically similar items*, in the context of a particular major categorial core (N, V, A, possibly P and ADV)

E.g. D is a generalization over the semantic properties of items such as *the, these, those, a, every* etc. crucially in some <u>nominal</u> context; T is a generalization over the semantic properties of items such as PST, PRES, FUT, etc., crucially in some <u>verbal</u> context. All attempts at cross-categorial functional typology crucially appeal to the claim that e.g. TENSE is *reference* as interpretable in the <u>verbal</u>

domain, while D is *reference* as interpretable in the <u>nominal</u> domain. As well *quantity* is NUM or #
in the nominal domain, but PERFECTIVE ASP in the verbal domain etc...

D, then, is definable
    (a) relative to some N-core, and
    (b) relative to aspects of its semantics, which define its position in the nominal spine (the
    latter to follow, one hopes, from some semantic considerations.
What occupies D across instantiations, then, is a set of elements which have shared semantic
properties and which all select the same categorial core.
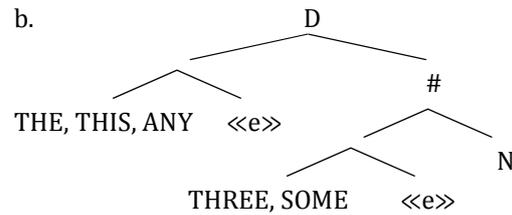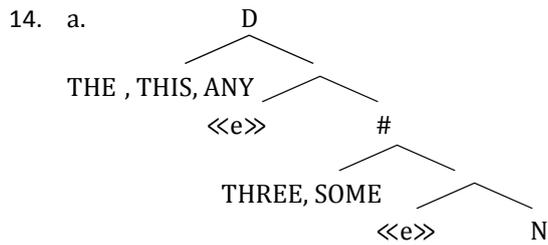
This highlights the difference between (4) and (5). In (5), T emerges as a generalization over
semantic types, including <PST>, WILL and others, and it is this generalization which is part of the
universal functional hierarchy. On the other hand, the semantics of roots has no impact on the
emerging structure, and at least according to Borer (2013) and Harley (2014), doesn't exist outside
its syntactic context.

2.2 Not so exotic, analytically

6.   a. $[_{DP} [_D$ *the*$]$ $[$ ....
     b. $[_{TP} [_T$ PST$] [_{NEGP} [_{NEG}$ *not* $[$ ....

7.   a. $[_{THE}{}^{max}$ THE$]$ $[$ ....
     b. $[_{PST}{}^{max}$ PST$] [_{NOT}{}^{max}$ NOT $[$ ....

8.   a.   During the summer, water in the pond mostly evaporates.
          (Salient: most water evaporates)
     b.   Water in the pond is mostly lost through evaporation.
          (*Salient: most events of loss are by evaporation; most water not necessarily lost*)

9.   a.   Most birds in Norway mostly fly low
     b.   Some birds in the Norway mostly fly low (≠ *most of some*)

10. a. $[_\#$ ≪e≫$_\#$ ... $[$ ....
    b.   MOST(ly) $[_\#$ ≪e^{MOST}≫$_\#$ $[$ ....
    c.   MOST(ly) $[_\#$ SOME ≪e^{SOME}≫$_\#$ $[$ ....

    $[_\#$≪e≫$]$ is assigned range by MOST(ly), an adverb, but only if it is not already assigned range by
        SOME (see Borer 2005a for discussion)

11. Null D existentially or generically bound (in essence following Longobardi 1994, as interpreted e.g.
    in Borer 2005a):

    a.   Cats are on the roof   ∃...$[_D$ ≪e∃≫ $[_{CL}$ −s $[_N$ cat$]$
    b.   Cats are mammals   GEN$[_D$ ≪e^{GEN}≫ $[_\#$ ≪e^{GEN}≫ $[_{CL}$ −s $[_N$ cat$]$

12. Null T assigned range through aspectual implicature, so-called factitivity effects, adverbs, etc.) (see
    Dechaine 1993, Stowell, 1991 and references cited in Copley 9/10/17) (Headlinese examples
    modified from Stowell, op. cit.)

    a. UK votes to leave EU   c. DENG SECRETLY {LOVES/IN LOVE WITH} MAO'S WIFE
    b. CONGRESS SLASHES TAX REIEF   d. AUSTRALIA FACES DEBT WOES

13. Possessor/Possessum Definiteness Agreement
    DP-2 in [Spec,DP1], itself DEF through the range assignment to its head, assigns range the
    otherwise null head of D_1

    a.   the dog's ear
    b. $[_{D-1}[_{D-2}$ THE^D ≪e^{DEF}≫$_D$ $[$ (dog's) $]]$ ≪e^{DEF}≫$_D$ $[$ (ear) $]]$

14. a.
```
              D
         /        \
THE , THIS, ANY
              /     \
           ≪e≫        #
                    /    \
            THREE, SOME
                       /    \
                     ≪e≫      N
```

b.
```
                    D
               /         \
          /       \        #
THE, THIS, ANY  ≪e≫      /    \
                     /     \    N
              THREE, SOME  ≪e≫
```

M   All 'functional' heads merge as ≪e≫ and are assigned range by semantic functors (S-functors).
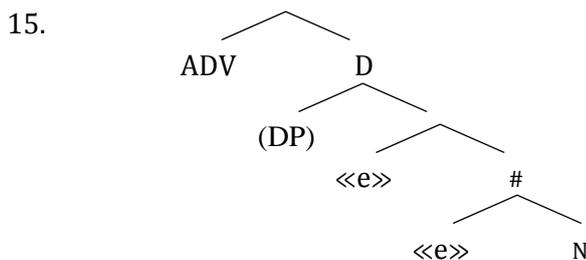
S-functors can come in a number of forms:

I   Non-projecting modifiers of ≪e≫, which merge directly with ≪e≫ to form a head-pair (alternatively, merge in an internal specifier). I will refer to these as *direct range assignors*. Note that insofar as these modifiers continue to assign range to ≪e≫, they are transitive, in the relevant sense

   a. Direct range assignors with an independent phonological form (or index), e.g. THE, WILL in English
   b. Abstract features which are realized phonologically in the context of a supporting head, e.g. <PST>, <PL> in English.

Whether or not a particular modifying S-functor has a phonological index or not is clearly a language specific factor, and at times, may vary within the language itself.

II   Indirect range assignors: ≪e≫ may be assigned range, as noted, by adverbs of quantification (MOSTly), by the properties of phrases in its specifier (DEF range assignment for the possessor), both, presumably, through some application of Agree, and yielding the (more conservative) structure in (15). Within this category, I would also include pragmatic and discourse range assignment, although the precise mechanism of executing such range assignment without a proliferation of e.g. silent adverbs is not obvious at this point.

15.
```
          /    \
       ADV      D
             /     \
         (DP)    /     \
              ≪e≫        #
                      /    \
                   ≪e≫      N
```

3   Consequences, Queries

3.1 Consequences

N   I   There is no extra linguistic cost for postulating null heads, or for allowing them to be assigned range through interaction with discourse, adverbials, pragmatic implicatures, and so on. This opens the door for assuming a constant functional spine across grammars.

Variation, in turn, would not be contingent on the presence vs. absence of particular projections, but rather, on the specific inventory available both inter- and intra-linguistically for assigning range to such empty heads.

II   Discourse Oriented vs. Sentence Oriented languages (see also Hot Languages vs. Cool Languages, Tsao, 1977, Ross, 1982; Huang, 1984).

III There need not be grammars without a T node – rather T would exist across the board, always dominating an empty head across the board. In so-called Tenseless grammars, such an empty head, would be assigned range from outside the immediate domain of T (e.g. by adverbs, by aspectual implicatures, etc.); evidentials, similarly, no longer need to be sentence external in e.g. English but sentence internal in e.g. Korean, and may represent, across the board, an empty, projecting head assigned range either locally and through realized morphophonology, or by an adverb (and note at least prima facie supporting evidence from Papafragau 9/10/2017).

IV Adverbial negation, e.g. in Dutch and German, would be a range assignor to the relevant NEG ≪e≫ head.

O   It cannot be the case that structure only projects from listed terminals, or features.

3.2 Queries

P   I   a. What are functors, and do all of them assign range to null heads?
        b. By extension, and as neither roots nor S-functors project, does anything *except* empty sets ever project? (see, most recently, Kayne 2013, 2016)

    II   a. What is D? What is #?
         b. What are the properties of clusters of functors, e.g. Extended Projections?

    III Are there any well-formedness conditions on empty sets and their projections?

4   Categorial Functors (C-functors)

Q   C-functor: a syntactic function that divides the categorial space – it projects one major categorial label (V,N,A), and defines its complement domain as another major categorial label. E.g. N[V] is a C-functor which projects N and defines its complement domain as V, and which, in English, can be realized as *-ation, -ment, -ance/ence, -al, -er, -or*, and possibly others; A[N] is a C-functor which projects A and defines its complement domain as N, and which in English can be realized as *–al; -ous, -ist, -ic,* and possibly others; etc.

R   I   S-functor-valued instances of ≪e≫ enter (non-trivial) Extended Projections, C-functors do not.

    II   (Informally) S-functor-≪e≫ pairs select categories (potentially instantiated by a C-functor); C-functors do not select S-functor-≪e≫ pairs
             S-functors>C-functors (within a single Extended Projection)
             *C-functors>S-functors (within the same Extended Projection)

    III Major categorial values are never satisfied non-locally (e.g. by non-local Agree, including Spec-head, through pragmatic implicatures or by adverbs)

    IV The output of S-functor-valued+≪e≫ Merge is (Content) compositional; the output of C-functors' Merge need not be (a classical inflection vs. derivation diagnosis, note)

    V   a. C-functors: Function doesn't predict Form; Form *does* (largely) predict Function:

            [V]N-affix may be realized as *-ation, -ment, -ance/ence, -al* and possibly others, but e.g. *-ation* <u>always</u> has an N instantiation (although not necessarily exclusively); V-affix may be realized as *-ize, -ate, -ify, -en*, but *–ize* always has a V instantiation etc.
   b. S-functor-≪e≫ pairs: Function doesn't predict Form; Form *does not* predict Function:

            PL may be *–s, -en, -i* (*foci*) as well as multiple root allomorphs; *-s* may be plural, third person singular, genitive marker. *–ed* is PST, PTC and A (including N-based ones, e.g. *winged*, *four-legged* etc.)

            Differently put, syncretism, fusion, impoverishment etc. are essentially unattested in derivational morphology

→ **S-functor-valued-≪e≫**: fundamentally a syntactic realization of a semantic function: syntactically and semantically stable (including Content); phonologically erratic

→ **C-functors**: fundamentally syntactic functions with a phonological realization: syntactically and phonologically stable; Content-wise erratic (formal semantic status variable.)

16. a. $N[V]$

      $N[V]^{min}$ $[_{=V}$]
      -ation
      -ment
      -ance/ence
      -al
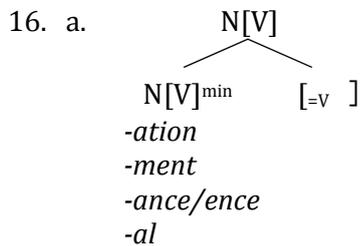
   b. the transmission/transmittance/transmittal of the documents

17. $N[V]$

         $N[V]$ $[_{=V}]$
               .
     $N[V]^{min}$ ≪e≫
     -ation
     -ment
     -ance/ence
     -al
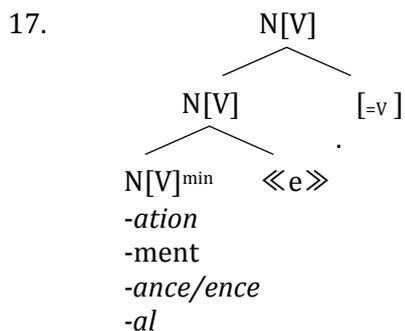
Seems senseless – the specific affix does not meaningfully assign assign range ≪e≫, as N[V] itself only carries categorial information, which by definition is the ≪e≫/Δ is all about anyway.

-ation etc. here, are no more than phonological realizations of the same categorial function, selected by the root in its local context.

18. An open issue: C-functors which contribute meaning beyond their categorial function, such as *–er, -able* or *–ist*. For these, the structure in (19) might (or might not) make more sense:

19. $N[V]$ $A[V]$ $N[N]$

     ER   ≪e≫   ABLE   ≪e≫   IST   ≪e≫
     -er, -or   *-able, -ible*   *-ist*
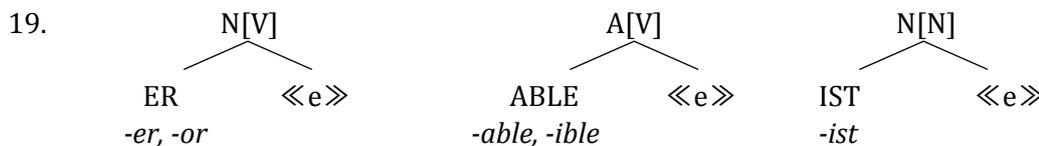
20. *-ist*: $C_{N[N]}$ IST
    a.   cellist, artist   *CELLO*+IST= *CELLIST*; *ART*+IST=*ARTIST*
    b.   animist; atavist   *anim*-IST; *atav*-IST
    c.   communist   *COMMUNE*+IST≠COMMUNIST

21. *-able*: $C_{A[V]}$ ABLE
    a.   drinkable; deliverable   *DRINK*+ABLE=*DRINKABLE;* DELIVER+*ABLE*=*DELIVERABLE*
    b.   arable, capable, impeccable   *arab*-ABLE; *cap*-ABLE
    c.   palatable; suggestible   *PALAT*+ABLE≠*PALATABLE*; *SUGGEST*+IBLE≠*SUGGESTIBLE*

22. *And compare with:*
   liquidize; liquefy; liquidate $C_{V[N]}$: */-ize, -ify, -ate/*
   transmission; transmittal; transmittance $C_{N[V]}$: */-(a)tion; -al, -ance*

5   Extended Projections

(Informally; C=major categorical label) -
a. Sf1+Sf2+Sf3+Sf4+Sf5+C1(+C2+C3)   ← A possible Extended Projection
   vs.
b. C1+(C2+C3+)+ Sf1+Sf2+Sf3 ….   (something else)

$C_{N[V]}$: Projects N and defines complement space as V; realization: *-ation, -ment, -er, -ing* etc.

For the S-function domain, what defines the complement space is both the set of ExP-segments as a whole, and each ExP-segment on its own.

An Extended Projection of W ({Ex[W]}) is the set of all nodes which (may) define some C^{max} as W.

S   *Extended Projection$_{Def}$*:
   a. For all α, $\alpha \in$ {Ex[W]}, α defines a maximal C-core as W-equivalent within its local domain.
   b. The hierarchy of ExP-segment labeling within any Extended Projection (type) is universally specified.
   c. Subject to (Ib), every ExP segment is optional, but its presence/absence has interpretational consequences, including, but not necessarily entailing, underspecification, uninterpretability and possibly a non-converging derivation (see Borer, 2005a,b).
   d. Important: note that within e.g. the nominal ExP, N^{max} itself, whether co-extensive with the root, or a C-functor, is *not* a member of {Ex[N]}, as it does not dominate N^{max}.

II   *C-core$_{def}$*:
   a. α is a C-core iff α is C-equivalent and there is β such that β is contained in α and β is intransitive, and for all x, α dominates x and x dominates β, x is C-equivalent
   b. α is maximal iff there is no γ such that γ is C^{max} and γ immediately dominates α.

> Where C stands for major categorial labels, and where, by assumption, all functors are transitive and hence β=root. Note that all instances of C are trivially C-equivalent

III β, a maximal C-core, is in the local domain of α iff α c-commands β, and there is no γ, γ=C, such that α c-commands γ and γ dominates β.

IV   Functional Labels:
   a. D is the generalization over the range that can be assigned by a well-defined class of S-functors, themselves semantic and (potentially) devoid of category, to include (according to some) DEF, DEM, EVERY, EACH, MOST and possibly others.
   b. T is the generalization over the range that can be assigned by a well-defined class of S-functors, themselves semantic and (potentially) devoid of category, to include (according to some) PST, FUT, and possibly others.

23. ***Head-Pair: Division of Labour***

		≪e≫	*S-functor*
a.	project	yes	no
b.	has a category	(derived)	no
c.	has inherent semantics	no	yes
d.	selection	yes (C)	yes, semantic

24.

25.

T^{max}

$\ll e \gg_T$ ASP^{max} {Ex[V]}

PST $\ll e \gg_T$ DP

$\ll e \gg_{ASP}$ C=V
$\sqrt{form}$ maximal C-core
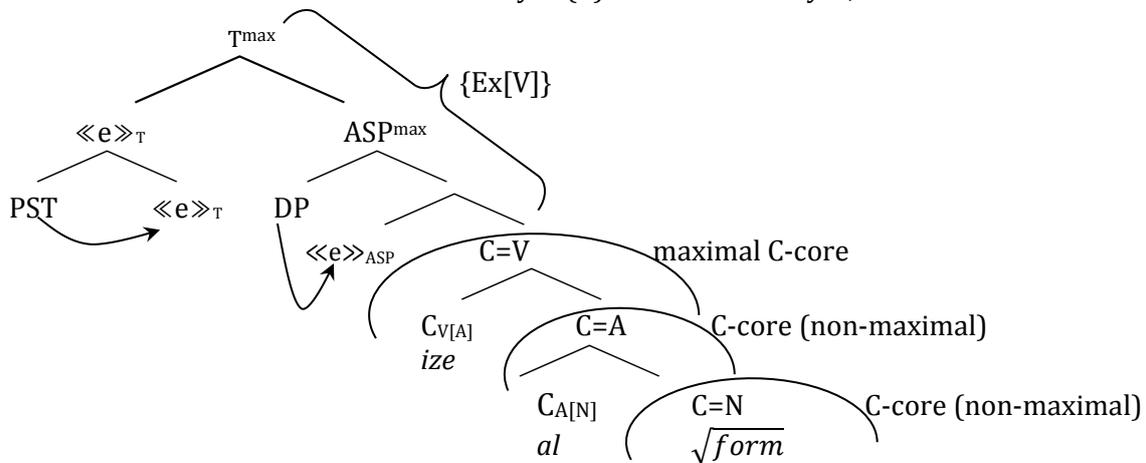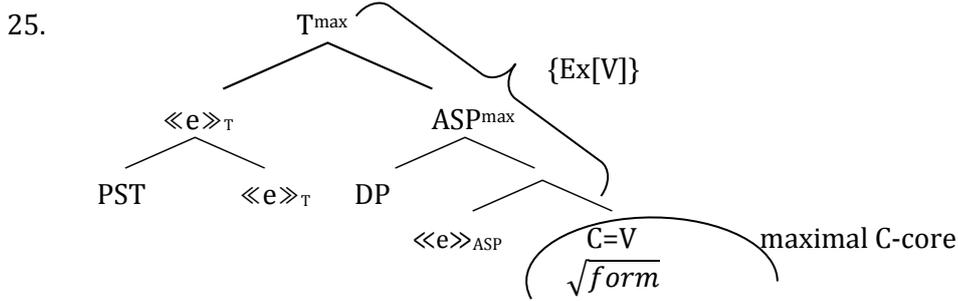
6   At the Functorial Seamline – the Domain of Content

26.		Content		Derived Content	Underived Content
	slith	no	*slithy*	N/A	no
	swarth	no	*swarthy*	N/A	yes
	blood	yes	*bloody*	yes	yes
	dirt	yes	*dirty*	yes	no

27. a.   *the slith/slithy; three slithies; every swarth* etc.
    b.   *edit-or-y-al-ize*; *natur-al-ize*; *civil-ize-ation*; *except-ion-al (*and compare with *special)…..*

T   ExP-segment boundaries are absolute barriers to Content compositionality

28. a.   *rapids; glasses; briefs* (PLURAL)
       brief*(s) design; glass*(s) frame; rapid*(s) boat[1]
    b.   *eten* → *eten+tje*   Dutch
       food   food+diminutive → 'dinner'   COUNT
    c.   *czytała* →   *od-czytała*   'present'   PERFECTIVE
                   roz-czytała   'decode'   PERFECTIVE
                   w-czytała   'upload'   PERFECTIVE   (Polish, Lazorczyk, 2010)

29. a. $[_D \ll e \gg [_\# \quad \ll e \gg [_{CL}$ 'PL' $\ll e \gg$ $[_{C=N}$ *glass*   ]]]]
    b. $[_D \ll e \gg [_\# \quad \ll e \gg [_{CL}$ 'DIM' $\ll e \gg$ $[_{C=N}$ *eten*   ]]]]
    b. $[_T \ll e \gg [_{G\text{-}ASP} \quad \ll e \gg [_{PERF}$ PERF $\ll e \gg$ $[_{C=N}$ *czytała*   ]]]]
                       od,roz,w

U   The grammatical and semantic function of OD, ROZ and W is always perfective, and enters the semantic computation as such. Their phonological realization differs, however, and it is this realization which impacts the Content that emerges.
    → The phonological realization of functors impacts Content

30. a.   the selective *transmission* of historical documents
    b.   scanning and *transmittal* of documents or parts of documents
    c.   a camera system for processing documents for measurement of reflectance and/or *transmittance* of documents

31. a.   Several groups … monitor the sale and *transportation* of seed
    b.   The *transportal* of seeds in the wool or fur of quadrupeds.

32. a.   the slight *transference* of red pigments from the skins
    b.   *transferal* of bread "sponge" from dough mixer to trough prior to fermentation

33. a.   the car's <u>*transmission*</u> → *GEARBOX*
                transmittal
                transmittance

---

[1] And compare with *trouser leg* or *scissor edge,* where the plural is lost, and which suggest that neither *trousers nor scissors* are truly *pluralia tantum*, but rather, are plural forms for a nominal that lacks a singular (and note in that context the verbal use of both, but never for *glasses,* or *rapids*)

b.	public	_transportation_	_SHARED PASSENGER SERVICE_	(North American English only)
	public	_transport_	_SHARED PASSENGER SERVICE_	(British English only)
		transportal		
c.	mass	_transit_	"	(North American English only)
		transition		
d.	"Understanding _transference_ and counter _transference_"		_TRANSFERENCE_	
	*Understanding transferral and counter transferral			

V *Why only the lowest ExP-segment, architectural reasoning*:
$[\sqrt{brief}]$ → is a root and as such has no categorial label unless it merges with some Y, Y either C-functor or S-functor which defines it as C-equivalent.

→ if the domain of Content requires reference to category labels, reference to the lowest ExP-segment must be allowed (notice that a domain thus defined looks an awful lot like the domain of head-government)

34. *Why only the lowest ExP-segment, inherent reasoning:*
It is inherently true for the lowest segment of any {Ex[C]}, that it alone does not select another ExP-segment. That might put it at a twilight zone between the S-functor and the C-functor domains.

7   Functors and Realization

35. a.   Mary did not write the poem
    b.   Mary wrote the poem
    c.   Mary evidently wrote the poem
    d.   Mary often wrote poems

W The direct relationship (movement, Agree) between *write* and <PST> is blocked by NEG, in (35a) but not in (35b-d), although by assumption in English verbs do not move to T, and according to many accounts there may be intervening functional heads between *write* and T. All the more so, if we view adverbs as range assignors to empty heads.

36. $[_{TP}$ Mary   PST $[_v$ <write> $[_{ASP\text{-}Q}$ the poem$_Q$ $\ll e^Q \gg$ $[_v$ <write>]]]]

    a.   Embick (2010): phonological, rather than syntactic locality
    b.   Borer (2013): the head-pair structure allows for remerge, where e.g. *write* can merge as the (otherwise null) head of some FP, but only if it does not have a head-pair relationship with an S-functor bearing a phonological index (on remerge see Ackema, Neeleman and Weerman, 1993; Georgi and Müller, 2010 i.a.).

37. $[_{TP}$ Mary   PST $[_v$ <write> $[_{ASP\text{-}Q}$ the poem$_Q$ $\ll$<write>$^Q \gg$ $[_v$ <write>]]]]

X S-functor, $\ll e \gg$:
   I Indirect range assignment
      a. Spec-Head (cf. 13)
      b. Adverbs and similar (cf. 8-10)
      → no local S-functor or head-pair, re-merge and re-project possible (but clearly not mandated). Where occurring (and if subject to variation), otherwise conditioned

   II Direct range assignment
      a. S-functors with a phonological index: e.g. THE, WILL, MAY EVERY etc. (F-morphs)
         →re-merge/re-project blocked
      b. S-functors without a phonological index: e.g. PST, PL etc.
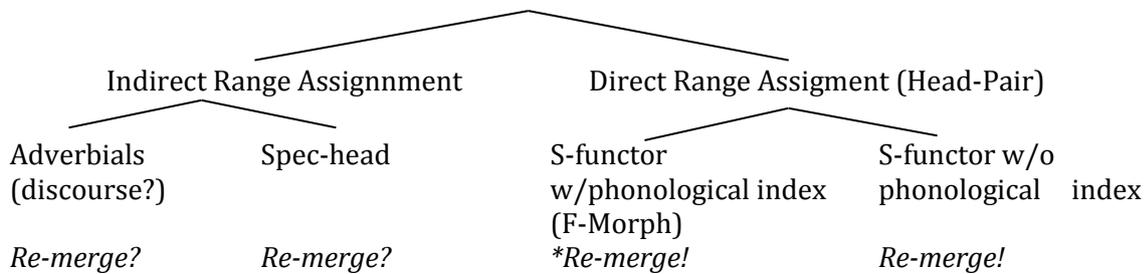   →re-merge/re-project possible

Y a. Non-projecting terminals ($X^{min/max}$) must be phonologically visible.
   b. One phonological representation per Head-Pair
      → re-merge/re-project is obligatory for abstract range assignors

→ 'inflection' is truly amorphous (cf. Anderson, 1992, and contra, i.a. Halle and Marantz, 1993)
→ but 'derivation' is fully morphous (again in line with Anderson, 1992)

Functors are syntactic constituents -
but 'inflectional morphemes' may be no more than a generalization over a particular realization mode, which, it so happens, is only available in the context of range assignment to empty heads, and hence, only in the context of ExP segments.

8   Range Assignment and Grammatical Variation – Consequences

38.

	Indirect Range Assignnment		Direct Range Assigment (Head-Pair)	
Adverbials (discourse?)	Spec-head	S-functor w/phonological index (F-Morph)	S-functor w/o phonological index
Re-merge?	*Re-merge?*	**Re-merge!*	*Re-merge!*

As typological footnote, we note the correlation between the loss of inflection (e.g. in Creole languages) and the emergence of extensive indirect range assignment, an extensive inventory of F-morphs, and to the loss of 'head' movement. Similarly, we note the typological correlation between syncretism and movement.

Z   I   All morphology is 'syntactic'

 II   However, syntactic terminals correlate with different types of phonological realization.
 a.   'Derivational morphemes' (so-called): units with discreet phonological realization and a syntactic function.
  i.   C-functors (project a category and define a categorial complement space)
  ii.   Non-categorial, *min/max* prefixes.

  While not all grammars may allow 'complex' words in the relevant sense, the prediction is that those that do will have the same inventory and the same architecture regardless of realization (cf. Semitic).

 b.   'Inflection' is a grammatical misnomer, as such. Fundamentally, it is a *generalization over a type of phonological realization for ExP-segments*. Crucially, it has neither syntactic nor semantic properties which single it out as a coherent class.

  Here, we expect massive variation both inter- and intra-grammars contingent on the specific arbitrary phonological properties of S-functors, as well as on whether they are direct or indirect range assignors.

 III   Collateral Damage (?) Participial ING and EN are not S-functors. Therefore, they cannot be aspectual markers, *as such,* nor can –*en* be the realization of the function licensing passive *as such*. What they *are* remains unclear, however, as they fall rather short of the full diagnostics of either categorizers or *min/max* affixes.

AA   We can, and should, pursue the hypothesis that functional hierarchies are universal. While the nature of range assignment in any particular configuration may not be evident, and while it is certainly a possibility (in this system) that not all ExP-segments are attested in every derivation, the *absence* of phonological realization for a functional head is an extremely poor predictor of its actual syntactic reality.

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