

# WHAT IS A SYNTACTICON?

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## I. INTRODUCTION: HUNDREDS OF PARAMETERS?

This precis presents some of the ideas developed and defended mainly in Chapters 1, 3 and 4 of my book *Lexicon and Grammar: the English Syntacticon*. Chapter and section numbers standing alone below refer to that work.

The idea of a Syntacticon naturally extends a line of research initiated by Borer (1984) and Manzini and Wexler (1987) and fruitfully pursued in Ouhalla (1991).

...Borer's approach to parametric variation...*associates parameters with individual lexical items, as part of the information included in their lexical entries*, rather than with the principles of UG [Universal Grammar]. ...the nature of the lexical information which determines parametric variation [is] nothing other than *the usual type of information relating to selection and grammatical features*,... it is not information which is available over and above the familiar type of lexical properties; rather, these properties themselves determine parametric variation.

One can hypothesise...that possibly functional categories and substantives belong to two separate modules of the mind/ brain. ...there should in principle be a distinction between two notions of the lexicon, *a grammatical lexicon which contains functional categories and which belongs to the domain of UG*, in the sense that its categories are determined by UG, and *a mental lexicon which contains substantives and which exists independently of UG, that is an autonomous module of the mind/brain* (the conceptual system). (Ouhalla, 1991, 7-10)

**(4.3) Language-particular syntax resides entirely in lexical specifications, namely inherent and contextual feature combinations associated with *closed class items*.** [\[1\]](#)

**Observation.** In thirty years of syntactic research on English and French, certainly close syntactic relatives (head-initial, no pro-drop, subjects not freely post-verbal, similar WH-movement, overt articles, subject agreement, etc.), I find no grammatical morphemes which are exact translations, i.e. English and French

differ by perhaps 300 independent parameters.

We can thus answer Lasnik's (1991) “troubling new question,” “why do children acquire languages so slowly?” Because, like linguists who model language formally, children must explicitly *learn* formal specifications for *hundreds of grammatical items for each language*.

Children learn their grammatical lexicon in say 3 years. But generative grammar has not developed anywhere near satisfying analyses of more than a few grammatical items even for much studied English, nor a contentful restricted theory of a formal lexicon. So we might turn the question around, “why do generative grammarians analyze lexical items so rarely?”

This pervasive linguistic fact of children learning *hundreds of language-particular closed class items* seems not to have attracted the interest—hardly even the notice—of generativists. This study tries to specify exactly what children learn when they acquire language-particular syntax.

## II. PURELY SEMANTIC VS. COGNITIVE SYNTACTIC FEATURES

(1) **Purely semantic features.** Let  $L$  = the four lexical categories N, V, A and P. *Only these categories* contain items differentiated by **purely semantic features  $f$** , defined as those features with no role in derivational computation.

There are *many* of these  $f$ . Hence only these grammatical categories are called **open classes**.

I call this store of (only) four classes of items the **Dictionary**. This is Ouhalla's mental lexicon. This study does not address issues of formalizing and acquiring the Dictionary.

(1.5) a. **Canonical position of syntactic features.** UG associates *a very few cognitive syntactic features  $F$*  with each syntactic category B. These B are the



languages, but the subcategories (features)  $F_i$  in each language's Syntacticon can.

Canonical matching of categories with features is often but not always unique:

- (2) Certain features may cross-classify the major syntactic categories. Presumably, a [+N] nominal feature subsumes N, D and A, while [-N] (-nominal) subsumes V, I and P.
- (3) The feature  $\pm$ WH occurs on high functional categories in projections of the [+N] categories D and A: *which book, what day, how often*. Probably WH occurs on N and A as well: *You bought a big what? He seems very what to you?*
- (4) The deictic feature  $\pm$ PROXIMATE is similar to  $\pm$ WH: *{ this / that } + { bread / tall }*.
- (5) COMPARATIVE features occur in modifiers of several categories: *more interesting, more into Zen, more of a man* (Bresnan, 1973).

Although many features  $F$  have *unique* canonical positions, (3)-(5) show that Universal Grammar provides some  $F$  with more than one possible host. Thus, the English Syntacticon matches a feature POTENTIAL with I and A (*can, able*), but the French one with V (*pouv-*).

The possibility of semantic features  $f$  in addition to syntactic  $F$  makes lexical categories “open.” The question arises as to whether every member of N, V, A and P *must* have  $f$  distinct from  $F$ . In fact, nothing prevents leaving (2) as a one-way implication: N, V, A and P need not have  $f$ . Indeed, certain subclasses of N, V, A and P behave empirically like non-lexical classes, exhibiting post-structure insertion contexts and unique syntactic behavior (cf. Emonds, 1985, Ch. 4, and 1987). *The lexical categories are thus like other categories: each has a subset of say up to twenty or so elements fully characterized by cognitive syntactic features  $F$  and lacking purely semantic features  $f$ .*

Cognitive syntactic features and purely semantic ones share some properties, namely (a)-(c) in the table below. But once we find a **defining difference** (4.75d) for the two types, many other clear-cut differences emerge. For justifications of (f)

through (k), see Ch. 3.

What follows here sketches the syntactically important differences (l) and (m). Cf. also Chs. 4-7.

(4.75)	DICTIONARY	
SYNTACTICON		
a. Items with both cognitive and purely syntactic features F:	yes	
yes		
b. Cognitive features F canonically realized on UG hosts:		yes
yes		
c. Insertion possible at the beginning of a derivation:	yes	
yes		
<b>d. Items with purely semantic features f:</b>	<b>YES</b>	<b>NO</b>
<b>e. Grammatical categories in the inventory:</b>	<b>N, V, A, P</b>	
<b>ALL</b>		
f. Open classes; coining and neologisms for adult speakers:	YES	
NO		
g. Bound morphemes have inherent stress and head compounds:		YES
NO		
h. Interface with non-linguistic memory and culture:	YES	
NO		
i. Full suppletion inside paradigms (Emonds, 1985, Ch. 4):	NO	
YES		
j. Certain phonetically zero morphemes (4.11):	NO	
YES		
k. Items conform phonologically to core vocabulary (Hannahs, 1995):	NO	
YES		
<b>l. Items with alternatively realized features:</b>	<b>NO</b>	
<b>YES</b>		
<b>m. Insertion also possible during syntax and at PF:</b>	<b>NO</b>	
<b>YES</b>		

My reading on aphasia has been limited, but it seems to me to point to a very

restrictive claim:

(6) **Broca's area** relates to processing only indirectly; it **mainly houses the Syntacticon**.

### III. SYNTACTICON MEMBERS OF CLOSED CLASSES OF N, V, A AND P (4.75e)

The conception of the Syntacticon takes issue with the standard a priori division of "functional" vs. "lexical" categories, perfunctorily inherited from structuralist and distributionalist grammars.

Put bluntly, the most central Syntacticon or "functional" categories are in fact N, V, A and P. Members of the closed subsets of open categories  $L^0$  can be called "grammatical"  $L^0$ .

These grammatical  $L^0$  differ from each other by cognitive syntactic features and syntactic subcategorization frames (Emonds, 2000, Ch. 2), but they have no purely semantic features  $f$ .

English **grammatical verbs** include *be, have, do, get, go, come, let, make, say*, and probably further elements like *put, bring, take* and *want*.

Its **grammatical nouns** include *one, self, thing, stuff, people, other(s), place, time, way, reason*.

The vague distinction between grammatical and lexical or "contentful" prepositions now becomes a predicted sub-case of a more general lexical category theory. While **grammatical P** have no  $f$ , some lexical P (curiously akin to compounds) are specified with purely semantic  $f$ : *downstairs, nearby, overhead, outside, aboard, ashore, aside, askance, sideways*, etc. <sup>[3]</sup>

Though I haven't investigated this area, **grammatical A** doubtless include *many, few, good, bad, well, very, such, so* (*he seems/ remains/ sounds* [<sub>A</sub> *so* ]) and low numerals, which are declined as As in Czech and Russian (Veselovská, 2001).

All (and only) grammatical verbs, nouns, adjectives and prepositions have unique syntactic behavior—none acts syntactically like any other. This follows from being in the Syntacticon. <sup>[4]</sup>

Examples of grammatical English L<sup>0</sup> with syntactic features F but no purely semantic features *f*:

- (7) (i) the activity verb [<sub>V</sub> *do* ]
- (ii) the stative verb [<sub>V</sub> *be* ]
- (iii) the basic PATH preposition [<sub>P</sub> *to* ]
- (iv) the basic non-locational preposition [<sub>P</sub> *of* ]
- (v) a derivational suffix [<sub>N</sub> *-ing* ] in derived nominals formed from V stems (cf. Ch. 4)
- (vi) a derivational suffix [<sub>A</sub> *-ed* ] in passive adjectives formed from V stems (cf. Ch. 5)

#### IV. INSERTING A SYNTACTICON ITEM AT 3 LEVELS (4.75m)

(2.18) **Extended Classical Subcategorization.** A lexical frame @, X , +\_\_\_Y is satisfied if and only if Y is a cognitive syntactic feature of a lexical head of a complement in XP. <sup>[5]</sup>

(4.15) **Syntacticon entry for *do/ do so*:** *do*, V, { +\_\_\_ [<sub>DP</sub> N, *-f* ]/ +\_\_\_ *so* } ( +\_\_\_ [<sub>PP</sub> *to*^ANIM] )

- (8) Mary did { something mean, nothing else, this, more than expected, all that was needed, some more stuff, the thing you criticized her for } (to

Bill).

Now clean this apartment, and Bill will do so again next month.

This productive use of *do* is unavailable if the head of *do*'s object is an open class noun:

(9) \*Mary did { a mean insult, inattention, unexpected behavior, her great affection, some cleaning, a bad arrangement, another home video } (to Bill).

\*do more courage, \*do a high pulse, \*do a gallon of turpentine, \*do the heat, \*do a look

Exactly when in a derivation is a typical Syntacticon item like (4.15) inserted? This is not fully worked out in *Lexicon and Grammar*. But some analyses since that time (Emonds, 2001; Veselovská 2001; Whong-Barr, 2002) seem to converge on the following specification:

(10) **Syntactic Lexicalization.** LF-interpreted lexical items of category B (lacking semantic *f*) are inserted at the end of processing the *smallest* phase (or cyclic domain)  $\beta$  that contains B.

Even so, (10) *precedes* selection of  $\beta$ --or extraction from  $\beta$ --in the next highest phase (domain).

In addition to (10), the open class Dictionary co-opts Syntacticon items for idioms and other meanings using purely semantic *f*: *get going*, *let (something) be*, *have at (it)*, *have (one's) way*, *get it* (= understand), *come* (= have an orgasm), *a must do*, *the have nots*, *a would be star*, etc.

Not surprisingly then, the verb *do* appears in several combinations which include purely semantic *f*. These are listed in the open class Dictionary, akin to idioms. A diagnostic for a Dictionary use of *do* is that the optional *to*-phrase in the Syntacticon entry (4.15) is excluded:

- (11) (i) do = clean:  
Now please do this apartment thoroughly (\*to Mary).
- (ii) do = visit as a tourist:  
We haven't done Nara yet. But we will do it (\*to them) next week.
- (iii) do = cover as a media story:  
That TV channel did the earthquake again (\*to the local residents).
- (iv) do in (someone)  
The head teacher may do that student in (\*to his parents).

Open class items are inserted at the outset of classically conceived derivations. In fact, only such deep insertion allows transformational grammar to capture relations such as active-passive.

(4.7) **Deep Lexicalization.** Items which have non-syntactic, purely semantic features  $f$  must satisfy lexical insertion conditions (just) before syntactic processing of the smallest cyclic domains (phases) containing them. Recall, such  $f$  occur only on N, V, A and P.

A third use of English *do* is as an “auxiliary.” As analyzed in Chomsky (1957), *do* also appears outside of VP (under today’s category I) to “support” the inherently suffixal English Tense morphemes. Thus, the Syntacticon entry for *do* (4.15) must be supplemented:

- (12) **Do-support:** do, V, + \_\_\_\_ [ I, -MODAL ]<sup>[6]</sup>

What makes *do*-support work empirically in *Syntactic Structures* is that it *follows* other transformations (Chomsky, 1995, Ch. 4, note 22). What forces this delay of *do*-support?

For the answer, we need to ask a related question: what leads to the ACTIVITY (non-stative) sense of *do* in its canonical use (4.15), and why is this lacking with *do*-support? Since most verbs have this sense, ACTIVITY is presumably just the unmarked LF interpretation of the category V.

(13) **Canonical interpretation in LF.** Each value of  $X^0$  has a *canonical interpretation* in LF, which for V is ACTIVITY. For P it is LOCATION in space or time, etc.

Now the "meaningless" auxiliary *do* must not be subject to (13), given well-known facts that it imposes no +ACTIVITY sense on a main V (*resemble* remains stative) or ellipped VP:

(14) Mary does not resemble her mother.  
John didn't know the answer, but Mary did [<sub>VP</sub>  $\emptyset$ ].  
Sam *does* resemble his father, doesn't he?

In contrast, the VP *do so*, in which *do* is under VP, is always +ACTIVITY:

(15) Mary does not resemble her mother, but she will (\*do so soon).  
John didn't know the answer, but Mary {did/ \*did so}.  
Sam resembles his father, and Jim {does / \*does so} too.

The semantic vacuity of *do*-support correctly follows from Canonical Realization (1.5b): the head category V can contribute to LF only in its canonical position as head of VP. [\[7\]](#)

(4.21) **Phonological Lexicalization.** Items specified in terms of uninterpreted (contextual and alternatively realized) features enter a derivation *subsequent to operations contributing to LF*.

We turn in the next section to alternatively realized features. Since auxiliary *do* has only an uninterpreted V category and a contextual frame, it is inserted in PF ("late") by virtue of (4.21).

*Do*-support makes us ask: how far away from its canonical position can a category be realized?

## V. ALTERNATIVE REALIZATION BY CLOSED CLASS ITEMS (4.75I)

Many paradigms empirically justify **head movements** such as French finite V to I, I to C inversion, Dutch V movement in sequences of final Vs, and Semitic N to D movement.

However, head movement as widely used is a non-constrained device. It should apply only when general, and be excluded as an option for only “some” members of a category. In particular, English has *no* V to I movement for *do*, *be*, or *have* (Emonds, 1994).

More generally, syntactic features F (not semantic *f*) may be realized essentially “one lexical head away” (higher or lower) than their canonical position, and no further.

We first define lexical head. By virtue of Syntactic and Phonological Lexicalization, the highest structural heads and the highest lexical heads don't necessarily coincide early in a derivation:

(4.27) **Lexical Head/Projection.** Let  $Y^0$  be the highest lexically filled head in  $Z_j$ . Then  $Y^0$  is the **lexical head** of  $Z_j$ , and  $Z_j$  is a **lexical projection** of  $Y^0$ .

Heads are also required in English to be rightmost in  $Z^0$  and leftmost in  $ZP$ .

(4.20) **Alternative Realization (AR).** A syntactic feature F canonically matched in UG with category B can be alternatively realized in a closed class grammatical morpheme under  $X^0$ , provided  *$X^0$  and B are both lexical heads of sister constituents.* (Slightly generalized from Ch. 4)

F can in fact be V itself. Auxiliary *do* alternatively realizes V (=B) under an  $I^0$  (=  $X^0$ ) that is a sister of VP (=B $_j$ ); I take  $X^0$  to be the head of itself. The nodes in the AR relation are in bold.

(16)

IP

DP

I'

VP

John

[I, -PAST] =

X<sup>0</sup>

V'

V

[I, -PAST]

NEG

V = F =

B DP

do

es

not

know

Mary

AR can purge syntax of all “lowering” rules and hidden vestiges of these reworked as untestable and invisible “LF raising” rules. It moreover eliminates non-

explanatory proposals that fully inflected stems are somehow generated by a separate mechanism prior to a derivation.

To see this, consider finite verbal inflections such as English *-ed*. As is typical of inflections, it appears in syntactic positions associated with its host V. The best way to express this is to say that a verbal inflection *is* a V. No special principle of “inflectional morphology” is needed.

The canonical position of Past is on I, and its position on V thus another example of Alternative Realization, this time “lower” (AR nodes are again in bold). F = PAST and B = I.

(4.25) **Past Tense:** ed, V, +PAST, +V\_\_\_

(4.26)

IP

DP

I'

Ann

**[I, PAST] = [B, F]**

**VP = XP**

$\emptyset$	$V = X^0$	DP
V	[V, PAST]	papers
burn	ed	

We note the features of *-ed* are either (i) alternatively realized, i.e. PAST, or (ii) contextual (+V\_\_\_). It follows from Phonological Lexicalization (4.21) that *-ed* is inserted in PF. [\[8\]](#)

Morphology specialists usually object to extending Lieber's (1980) right hand head rule to inflection, claiming that the head of a VP as in (4.26) must be the V *burn*. That is, *burn* rather than *-ed* selects complements, assigns accusative case, is the semantic head of VP at LF, etc.

But according to (4.27), *burn* is the head of VP in syntax and LF in (4.26), since *-ed* is absent.

The following principles account for why I is empty if its features are undergo AR:

(4.35) **Invisible Category Principle (ICP).** If all marked canonical features F on B are alternatively realized by AR (4.20), except perhaps B itself, then B can be empty.

The ICP doesn't itself require that B must be empty. The obligatory zeroing of e.g. I in (4.26) is performed by a separate principle that has effects outside AR:

(4.36) **Economy of Derivation.** Two deep structures that differ only by

empty categories not interpretable at LF count as equivalent. Of equivalent deep structures, prefer the derivation with the fewest insertions of free morphemes.

AR defines the distance at which (only) closed class items can realize non-canonical features.

## VI. ABSENCE OF CONTENT FEATURES

It is natural to include apparent English “*be*-raising” in a discussion of *do*-support and affix movement. Emonds (1994) gives several arguments that English has no V to I raising for *be* or any other V. More generally, head movement applies to entire classes of  $X^0$  or not at all.

I claimed in (13) that ACTIVITY is simply the name given to the canonical LF interpretation of the category V. This means that only its opposite STATIVE must be marked on individual V. Emonds (2002) proposes a lexical notation for this: the null symbol  $\emptyset$  among a lexical category’s syntactic features means, not null in syntax, but rather **absence of content at LF**.

(17) **Absence of Content.** The syntactic feature  $\emptyset$  is canonically matched with  $L = N, A, V, P$  and means that  $L^0$  does not receive a canonical interpretation at LF ( $V = \text{ACTIVITY}$ , etc.).

This notation “ $L^0, \emptyset$ ” gets rid of superfluous names such as ACTIVITY, LOCATION, etc.

Thus, a P canonically indicates spatial or temporal LOCATION in LF. But the English P *of* does not. So while the lexical category for *at* is just P, that of the marked item *of* is P, SOURCE,  $\emptyset$ .

Consequently, the Syntacticon entry for *be* must be (16):

(18) **Verbal copula:** be, V,  $\emptyset$ , contextual frame(s)<sup>[9]</sup>

Now let's consider  $\emptyset$  to be a syntactic feature F like any other. Hence it can be alternatively realized on I; (17) provides one of five English examples of this (*am, are, is, was, were*).

(19) **Inflected copula:** were, I, PAST, -MODAL, PLURAL,  $\emptyset$

The above principles (4.35)-(4.36) now explain why (19) allows the highest V in VP to be empty rather than spelled out as *be* when its only marked canonical feature is  $\emptyset$ , i.e. STATIVE in traditional terms. This empty category V with inflected copulas gives the effect of “*be*-raising.”

For why a *not* between I and V doesn't “block” the appearance of inflected copulas, see note 8. PLURAL in (19) is of course an alternatively realized feature of the subject DP.

The present system treats *do* as an **unmarked** V and *be/have* as the **least marked** V.

There is a question of *why inflected copulas don't occur with other stative verbs*, wrongly “doubling” them (*They { did/ \*were } not seem nice*). Ch. 4 allows *unmarked* AR only to permit a “saving” in Economy or rescuing a derivation, but treats this issue of doubling too briefly.

I would say the AR system needs investigation and clarification in this important area.

## VII. REVIEW OF TRI-LEVEL INSERTION (4.75m)

I have distinguished **three main types of features** that interact differently with respect to lexical insertion, syntactic derivation and LF. The English grammatical verb *do* undergoes all three types. This section gives the English P *to* as another

item with multi-level insertion.

(i) **Items with purely semantic features  $f$** , present *only* on the categories  $L = N, V, A, P$ . They are used in LF but not in syntax and are *not present* on the closed classes of grammatical  $L$ .

(20) Examples: *do = clean, do = visit, do = make a media event, do in = finish someone off*

These transitive *do* are used in Dictionary entries, and all reject indirect objects; cf. (11).

(21) **Deep *to* with idioms:** *to*, P, PATH, +\_\_\_ DP; used in idioms with semantic  $f$

(22) Mary couldn't hold a candle to Sue.  
Sam put the question to the jury.  
Mary made passionate love to Bill.  
Bill came to slowly.

Consonant with (21), dative movement depends on P being empty in the syntax (Emonds, 1993):

(23) \*Mary couldn't hold Sue a candle.  
\*Sam put the jury the question.  
\*Mary made Bill passionate love.

(ii) **Items with no  $f$  but with cognitive syntactic features  $F$  in canonical positions**, which can occur with *all* syntactic categories. They play a central role in both syntax and at LF.

(24) Examples: *do so* as a pro-VP for an ACTIVITY VP; *do* whose object  $N$  lacks semantic  $f$ , possible with a *to*-phrase (*do something unexpected to Bill*). See (4.15) just before (8) above.

(25) **Syntactic *to* interpreted as PATH:** *to*, P, PATH, +\_\_ DP

(26) They should move more city offices { to our neighborhood/ next to the park }.

John pulled the toy { to his mother/ up the stairs }.

Mary turned the papers over to her lawyer.

Dative movement is also excluded when P indicates a continuous PATH rather than simply introducing (and case-marking) a Goal DP (Larson, 1988, section 5). This interpretation of P is expressed by *to* being inserted in the PP “phase” prior to dative movement in the VP phase.

(27) \*They should move our neighborhood more city offices.

\*John pulled his mother the toy.

\*Mary turned her lawyer over the papers.

(iii) **Items with only purely syntactic features F'**, also possible with all syntactic categories. Such F' can be contextual features, features alternatively realized in non-canonical positions, and an “absence of content” combination [ $X^0$ ,  $\emptyset$ ]. None play any role in LF.

(28) Examples: *do* under I with TENSE as generated by *do*-support (12). Purely syntactic features also fully characterize the items *be* in (18) and past tense *-ed* in (4.25).

(29) ***To* inserted as PF case-marker:** *to*, P, PATH,  $\emptyset$ , +\_\_ DP

Verbs with frames \_\_DP^DP are forced to have PP complements so P can provide the second DP with case. Heads of these Ps need to assign oblique case but should be invisible in LF, which is what (29) achieves. Precisely these PPs give rise to English dative movement (Emonds, 1993).

(30) a. They should send more city officials to our neighborhood.

John handed the toy to his mother.

Mary sent the papers over to her lawyer.

b. They should send our neighborhood more city officials.

John handed his mother the toy.

Mary sent her lawyer over the papers.

(31) **Unified entry for *to*:** *to*, P, PATH, ( Ø ), +\_\_ DP

As discussed more in Emonds (2002), the feature Ø on some L exempts that L from being selected by some higher frame \_\_L. For example, English *of* is [P, Ø] and V that select PPs (*put, dash, glance, head*) don't select *of*-phrases; verbs such as *try, persuade*, etc. select infinitival VPs but not stative verbs; expletives are [D, Ø] and don't satisfy +\_\_DP.

The Vs allowing dative movement as in (31) then select their indirect objects as DPs not PPs.

(4.8) **Tri-Level Lexical Insertion.** Lexical items from the Syntacticon, in accord with their feature content, can be inserted at different stages of a derivation of a sentence  $S_i$ , via the Dictionary (“deep structure”), during the syntactic derivation, and during phonology. [\[10\]](#)

**Dictionary** of entries with features *f*; categories

**Syntacticon** of closed class

interface with non-linguistic conceptual

including N, V, A,

P; elements limited structures; **only N, V, A, P**; coining and

to

cognitive syntactic **features F**

compounding to build vocabulary

syntactic  
derivation

phonological  
derivation

Lexical choices ( $S_i$ ) è è è è è è “Spell Out” è è è è è è

Phonological  
from open classes  
 $PF(S_i)$

Form,

binding and co-

indexing conditions

Logical Form,  $LF(S_i)$

The accessibility of the Syntacticon at different levels of the derivation agrees with a major characteristic of Borer’s (1991) “Parallel Morphology.” Indeed our ideas have developed along many of the same lines for over a decade using similar argumentation. Our differences are to a great extent (by no means entirely) terminological. I do not see why the word “parallel” should be used in either of our models, if no second derivation besides the syntactic one is implied. And as indicated here throughout, the Syntacticon is not limited to bound morphemes or “morphology.”

(4.12) Types of insertion from the Syntacticon:

INSERTION LEVEL  
MORPHEMES

FREE MORPHEMES

BOUND

Prior to syntactic

closed class X with

**non-**

**productive derivational**

computation on a with specialized domain (“phase”) idioms	specialized meanings, and parts of lexical meanings	<b>morphology</b>
<b>Derivational</b> computation, prior cf. sections to Spell Out and Ch. 5	closed class grammatical words with LF syntactic features; cf. Ch. 6	<b>productive</b>  <b>morphology;</b>  4.6, 4.7.2, 4.7.3
<b>During PF</b> <b>morphology;</b> computation, after 4.7.1 and Spell Out	closed class grammatical words required by the EPP, case-marking, etc. cf. Ch. 7	<b>inflectional</b>  sections 4.4,  Ch. 5

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[1] Numbering of examples and principles using decimals is from Emonds (2000). The chapter number precedes the decimal point. I sometimes slightly reword to hopefully improve the expression of the (same) content.

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[2] This entails a strong empirical claim. For any pair of lexical items @ and @' characterized with only syntactic features F, defined as those which play a role in syntactic rules and principles (Chomsky, 1965, Ch. 2), @ will differ from @' by some feature F'. Hence @ and @' will not share whatever syntactic behavior depends on the value of F'. Therefore, we expect every item in the Syntacticon to exhibit "Unique Syntactic Behavior" (Emonds, 1985, Ch. 4). As examples, it is easy to show that every Determiner and every Modal in English differs in syntactic behavior from every other. Two items in a language can have the same syntactic behavior only if effects of any rule(s) using F' are accidentally unobservable in that language.

[3] Dividing cognitive syntactic F from purely semantic *f* is frequently questioned on the basis that I give no a priori criterion for the division other than finding well motivated uses for F (and not *f*) in revealing syntactic analyses. Along the same lines, early generative phonology was criticized by "empiricists" (phoneticists, structuralists) who claimed that without first establishing a definitive list of distinctive phonological features, generative analysis should not be undertaken. The generative retort was, one *undertakes* science to find the justified category systems for a range of phenomena; they cannot be stipulated in advance of analysis. Similarly, one undertook modern

chemistry studies prior to exactly establishing the periodic table, not vice-versa; nuclear physics proceeded without definitive preliminary lists of elementary particles, etc.

[4] Similarly, each element in the chemical periodic table has unique chemical behavior, because each element differs from each other by at least one difference in electron orbit membership. Linguists almost invariably misinterpret Unique Syntactic Behavior as “irregularities” of closed class items.

[5] Ch. 3 eliminates the blank notation for left to right order in *phrasal* subcategorization as redundant. Formally then, +\_\_\_[<sub>DP</sub> N ] is replaced by the simpler +<N>. The blank notation +\_\_\_Y<sup>0</sup> and +Y<sup>0</sup>\_\_\_ is retained for Lieber’s (1980) morphological subcategorization within X<sup>0</sup>.

[6] Cf. note 6. Also, as in Chomsky’s original analysis, unstressed *do* under an I which is adjacent to a VP (*\*John does drink beer*) “loses out” to a more economical version with Tense on V: *John drinks beer*. Ch. 4 accounts for this by a version of Economy, formulated as minimizing the count of free morpheme insertions.

[7] Canonical interpretation (13) also applies to an L in compound structures, where the maximum X<sup>0</sup> over L itself heads an XP: e.g., ACTIVITY is present in *such* [<sub>N</sub> *doings*], [<sub>A</sub> *doable*], *a* [<sub>N</sub> *do nothing*], *to* [<sub>V</sub> *make do*], etc.

[8] We need to know why English negation *not* and inverted subjects block “downward” AR as in (4.26) but not “upward” AR as in (16). A widespread current assumption is that these are in SPEC(NegP) and SPEC(IP) respectively, while Neg itself is empty in a language such as English. V then remains the lexical head of NegP, according to (4.27). The asymmetry then seems to be that phonological material outside the XP in (4.20) blocks AR, but that such material outside BP in (4.20) does not. (BP dominates the canonical position, while XP dominates the alternatively realized position.) Further research is needed for a proper asymmetric formulation of AR.

[9] In this notation, all stative verbs are lexically specified as V, Ø, ...; non-locational prepositions are P, Ø, ...; adjectives which lack any property sense such as the participial suffix of in the verbal passive are A, Ø, .... The combination N, Ø should possibly be reserved for non-count nouns.

[10] I arrived at this general formulation with Andrew Caink, who suggested that a “two-level approach” to lexical insertion in my earlier work on the lexicon was insufficient.