

Issues in wh-syntax and semantics

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Lecture 1

Introduction

1.1 Background assumptions

- **Minimalism** Syntax is simply merge, the recursive procedure creating complex structured expressions out of atomic non-structured ones.
- **Syntactic categories/features/fseq** The elements that syntax operates on. The only “substantive” residue in syntax.
- **Extra-syntactic factors** The way grammar is designed dwells only partly on syntax; a lot of grammatical properties are to be attributed to extra-syntactic factors, such as interface conditions (semantic and phonological), and even extra-linguistic factors (so called “third” factors; cf. Chomsky 2005).
- **Features as descriptive devices** Features in syntax ([EPP], [\pm wh], [\pm strong] etc.) are just descriptive devices, or convenient shortcuts for “deeper”, perhaps yet undiscovered properties of grammar. Cf. Richards’ (2010) recent attempt to eliminate feature strength in the wh-domain and to account for the wh-movement/in-situ parameter by interface conditions.

1.2 Structure and goals of the class

- Words and syntax-free words; some examples: *only*, stress, wh, Q-particles
- Background on the syntax and semantics of wh
- The wh/CP conjecture and an argument against it from modal existential wh-constructions
- Wh-words, fseq, and wh-construction-selecting operators
- Modal existential wh-constructions, the existence state, covert modality

1.3 On lexical items (“words”)

1.3.1 Background

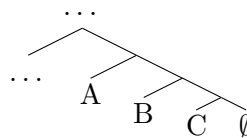
- Lexicon is not an independent linguistic module (Starke). It is just a dumb repository.
 - Lexicon is a set of ordered tuples—lexical items (or simply “words”).

- There are no “lexical operations” (e.g. morphology).
- Standard picture: a word is an ordered **triple**
 - (1) ⟨concept/meaning, phonological matrix, syntactic features⟩
- Also permissible are two types of ordered **pairs**—words with no phonology (e.g. PRO) or no meaning (e.g. expletives):
 - (2) a. ⟨concept/meaning, syntactic features⟩, e.g. PRO, or empty operators
 - b. ⟨syntactic features, phonological matrix⟩, e.g. *there* or *it*
- But how about the fourth logical possibility, namely words with no syntax in them?

1.3.2 Controversy

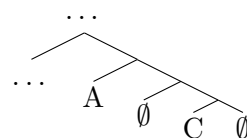
- Do words have to be specified for syntactic information?
 - **No:** most prominently the distributed morphology bunch (for an explicit discussion see Marantz 1995; Borer 2005b; van Craenenbroeck and De Belder 2011)
 - Roots have no syntactic properties at all. Effectively, roots are ordered pairs:
 - (3) ⟨concept/meaning, phonological matrix⟩
 - **Yes:** classical minimalism (Chomsky), nanosyntax (see Ramchand 2008 for discussion)
 - Roots do have syntactic properties—they are associated with syntactic skeletons encoding event and argument structure.
- Implicit assumption of most of those who answer negatively
 - (4) The only “words” that have no syntax are roots
- van Craenenbroeck and De Belder (2011) provide a rationale for this apparent stipulation—roots are inserted initial derivational nodes (the empty set; cf. Zwart 2009, 2011); all other nodes have some syntactic category

(5)



- But what prevents trees like the following?

(6)



- The hypothesis space: Must words be specified for syntactic information?

1. syntax is omnipresent (minimalism, nanosyntax)
2. syntax is omnipresent, except for roots/initial nodes (DM; van Craenenbroeck and De Belder 2011)
3. there is no ban on syntax-free words

1.4 Functional syntax-free words

How do we detect the lack of syntax in words?

- The lack of what are standardly treated as grammatical properties, e.g. grammatical voice, argument structure, count vs. mass, etc.
- (7) Examples from van Craenenbroeck and De Belder (2011) (but see mainly Borer 2005a for a detailed discussion)
- a. I've got a stone in my hand.
 - b. There's too much stone and metal in this room.
 - c. They went to stone this man.
 - d. Billy-Bob should lay off the weed; he's always stoned.¹

Any precedents to expect functional categories or operations to be syntax-free?

- Parallelisms between categories—V, A, N possibly all share functional structure. This structure appears in the left periphery (Thomas Leu, Abney 1987, Szabolcsi 1994).
- Syntactic movements for the sake of lexicalization: also an interface-motivated approach (Caha 2009; Starke 2011).

Some cases:

1. Contrastive stress in English (and other European languages)
2. *Only* in English
3. Q-particles and wh-morphemes

1.4.1 Contrastive stress (in English)

- **Hypothesis:** CONTRAST is a function “word” with a conventional pairing of phonological and semantic properties and yet, it appears to have no syntactic properties.
- Contrastive stress has **no selectional properties**, whether c-selectional or s-selectional; it can associate with NPs/predicates (8a), Ds/determiners, (8b), Vs/two-place predicates, (8c), DPs/proper names, (8d). Moreover, (8a) is compatible with a reading where it selects the whole DP/definite description (*that tomato*), the whole VP/one-place predicate/event predicate (*ate that tomato*), or even the whole TP/CP/proposition (*Mary ate that tomato*).

- (8) a. Mary ate that TOMATO.

¹van Craenenbroeck and De Belder (2011) must be silently assuming that general cognitive concept of ‘stone’ is somehow present in the state of being stoned, presumably by metaphoric means.

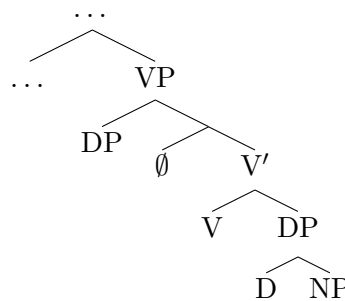
- b. Mary ate THAT tomato.
- c. Mary ATE that tomato.
- d. MARY ate that tomato.

- So, suppose CONTRAST has the following ⟨phonology, semantics⟩ specification

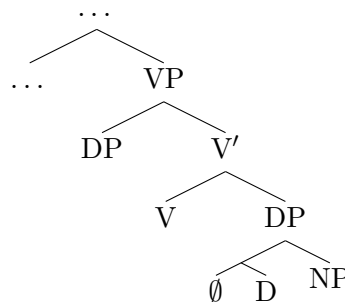
(9) CONTRAST = ⟨stress the complement, $\lambda x_\sigma.x^i$ ⟩,
 where σ is any type and the i -superscript is a distinguished variable in the sense of Kratzer (1991)

- A syntactic treatment: A syntax-free word is merged anywhere during the syntactic derivation;
 cf. the following two examples:

(10) a.



b.



- At lexical insertion, CONTRAST is inserted to \emptyset ; this gives us the following phonology and semantics for (10a) and (10b), respectively.²

(11) a. *phonology*
 Mary ate that TOMATO.
 b. *semantics*
 $\text{ate}(f_C(T), m) \bullet \{p : p = P(m) \mid P \in D_{\langle e,t \rangle}\}$
 $= \{\text{read}(\text{a.book}, m), \text{sleep}(m), \dots\}$

(12) a. *phonology*
 Mary ate THAT tomato.
 b. *semantics*
 $\text{ate}(f_C(T), m) \bullet \{p : p = \text{ate}(f(T), m) \mid f \in D_{\langle et,e \rangle}\}$
 $= \{\text{ate}(\text{that}_1.\text{tomato}, m), \text{ate}(\text{that}_2.\text{tomato}, m), \dots\}$

²For simplicity and empirical accuracy, I treat the determiner *that* as a contextually salient choice function f_C ; see e.g. von Stechow (2000) for a generalized choice-function approach to determiners and Sauerland (1998b) for some criticism. The bullet (•) divides ordinary meaning from focus-semantic meaning (Rooth 1985).

- **Subword contrast** also exists (see mainly Artstein 2002), though it is typically metalinguistic—it does not directly manipulate denotations, but other aspects of linguistic expressions (Krifka 2007).

(13) I gave her a **comPLI**ment [not **comPLE**ment].

- Yet, to the extent that subword contrast shares the (phonological and semantic) properties of constituent contrast, it also provides a strong support for a syntax-free treatment of CONTRAST.

1.4.2 *Only* (in English)

- Consider the behavior of English *only*; see also Herburger (2000: Chapter 4)

(14) a. Laura is the **only** [_{NP} linguist] in town.
 b. Laura reads **only** [_{DP} books about linguistics].
 c. Laura speaks **only** [_{PP} with linguists].
 d. Laura **only** [_{VP} speaks with linguists].
 e. Laura is **only** [_{AdvP} partly] satisfied.
 f. People are pretty much alike. It's **only** [_{CP} that our differences are more susceptible to definition than our similarities].

- In all these cases, *only* has a fairly unified semantics (uncontroversial for (14b-d), perhaps less so for (14a) and (14e)), namely the *exclusion of relevant alternatives*. Needless to say, it also has a unified phonological matrix: /əʊnli/.
- So, possibly, *only* has the following ⟨phonology, semantics⟩ specification.

(15) *only* = ⟨/əʊnli/, exclusion of alternatives⟩

- Yet, it is also possible that *only* only marks the presence of alternatives (similarly to CONTRAST) plus the dependency on a covert propositional exclusive operator.
- **C-command** It's often been suggested that *only* must c-command the constituent that it associates with.³

(16) Laura has only studied LINGUISTICS.
 → Laura hasn't studied anything else than linguistics.

(17) LAURA has only studied linguistics.
 ?
 → Nobody else than Laura has studied linguistics.

- There's little doubt that this c-command condition applies at LF (essentially, it's a binding relation). But then, why is the first inference in (18) ruled out? Notice that *himself* must reconstruct at LF for independent reasons—anaphor binding by *John*. Once it is there, it is in the scope of *only*, so why cannot it associate with it?⁴

³See e.g. Aoun and Li (1993) and especially Beaver and Clark (2008) for a recent summary of the arguments and relevant references.

⁴Association with extracted material is apparently possible in German; see Jacobs (1983); Buring and Hartmann (2001).

- (18) [Whose portrait of HIMSELF_{*i*}]₁ did John_{*i*} only like *t*₁.
 ↗ Which *x*, *x* a painter, is such that John only liked *x*'s portrait of HIMSELF (and not of anybody else).
 → Which *x*, *x* a painter, is such that John only LIKED (and not e.g. loved) *x*'s portrait of himself.

- The question is whether this is due to the behavior of *only* or due to CONTRAST, e.g. CONTRAST cannot reconstruct. Some PF relation between the two must apparently be involved.

1.4.3 Wh-morphemes and Q-particles

The categorial freedom of wh-stems

- The wh-morpheme is likewise a hot candidate on a word with no syntax; the following examples illustrate its morphosyntactic promiscuity:

- (19) a. **wh** [_{D/N} o]
 b. **wh** [_{D/N} at]⁵
 c. **h** [_{Adv} ow]
 d. **wh** [_{Adv} en]
 e. **wh** [_{Adj} ich]
 f. **wh** [_{CP/TP} y]⁶
 g. **wh** [_{Conj(P)} ether]

- (19a) through (19d) seem intuitively clear.
- (19a) and (19b): There's been some discussion concerning whether *(wh)o/(wh)at* are noun-like or determiner-like (or in the determiner *what* (as in *what kind of*) even adjectival like; cf. Leu 2008b; 2008a), with the latter position being much more popular.
- (19c): Some languages have more *(h)ows*, possibly corresponding to various types of adverbs (state-modifier, result-modifier, process-modifier, etc.); in some languages, *(h)ow* appears to have a rich internal structure; see e.g. Tsai (1999); Vangsnes (2006, 2008) for a very interesting discussion.
- (19e) is likely, given cross-linguistic comparison, which tells us that *-ich* is (historically) related to *-like*—cf. German *welch-* which basically is [w+lich], where *-lich* is a morpheme of Adj-category in German (*Unterschied* 'difference' – *unterschiedlich* 'different'), just like the English *-like* (*elephant-like*); See Leu (2008a), who cites Pfeifer (2003).
- (19f) becomes clear when one realizes that *why* has a propositional semantics (at least on one of its readings—the causal one).

⁵To the extent that *what* is the elsewhere form in interrogatives (VP: *What did you do?* CP: *What did he say?*), *-at* might also correspond to CP or TP. Krifka (2011) reports that Kiribati (Austronesian) has specialized wh-proforms for VPs: 'do what', 'do where', 'do how'. See also fn. 6.

⁶In most languages known to me, *why* is derived from *what* and *what* arguably functions as an elsewhere interrogative wh. See also fn. 5.

- (19g), the morphological relation between *-ether* and *either* seems clear and justified also by syntax and semantics (see Guerzoni 2003 and Han and Romero 2004, among others, and Beck and Kim 2006 for some criticism).

The selectional freedom of Q-particles

- Placement of Q-particles seems to be governed by interpretability.
- Hagstrom (1998); Kishimoto (2005); Cable (2007): Japanese, Sinhala, Tlingit
- Q-particles form chains with “wh-words” (generic stems) in questions, (free) relatives, and indefinites. They must c-command wh-words and wh-words must be c-commanded by them.
- They are similarly free as wh-words with respect to the category they attach to (data from Cable 2007, Tlingit):

- (20)
- Daa** **sá** aawaxáa i éesh?
what Q he.ate.it your father
‘What did your father eat?’
 - [**Daat** tlein] **sáwé** tsú wéix yaa nagút.
what big Q.foc-part too there.at it.is.walking
‘There was something large walking along over there.’
 - [**Aadóo** jeet] **sá** wé sakwnéin aawatee?
who hand.to Q that bread he.brought.it
‘Who did he give the bread to?’
 - [_{CP} **Goodéi** woogootx] **sá** has uwajée i shagóonich?
where.to he.went Q they.think your parents.erg
‘Where do your parents think that he went?’
 - [_{NP} [_{CP} **Wáa** yateeyí] sháx’sáani] **sá** ash kudlénxaa?
how they.are.REL girls Q they.are.tempting.him
 - *[_{NP} [_{CP} **Wáa** **sá** yateeyí] sháx’sáani] ash kudlénxaa?
how Q they.are.REL girls they.are.tempting.him
‘What kind of girls are tempting him?’

The categorial freedom of wh-movement

- Wh-phrases are typically assumed to bear the syntactic [+wh] feature (Chomsky 1995 among many many others). This feature is syntactic in that it requires checking with a designated functional head, typically just C^0 , but some go as far as WH^0 , or FOC^0 .
- I’ll present evidence from modal existential wh-constructions (cf. Šimík 2011) that will call for a much less specific (syntactic) approach.
- That is, in some sense, wh-movement is completely unselective with respect to the category that it targets—it is a case of adjunction. Its characteristics come from different sources—phases on the one hand and operators that select the resulting wh-clauses on the other.

1.4.4 A note on adjuncts and bound morphemes

- The above cases could be seen as cases of true adjunction—blind to any selectional properties.

- Much of what is typically treated as adjuncts display strict selectional/syntactic restrictions.

- (21)
- State/process/accomplishment modifiers
 - Aspectual modifiers
 - etc.

1.4.5 A generalization?

- What do all the above “words”, i.e. CONTRAST, *only*, *wh*, and Q-particles have in common?
- They all introduce alternatives and possibly mark a dependency on some higher operators. This dependency can be more or less specific; maybe completely missing with CONTRAST, being fairly underspecified with *wh* and Q-particles, and being quite specific (association with EXH) in case of *only*.

1.5 Wh: Existing theories

1.5.1 Syntax of *wh*

- A widely-held assumption about the syntax of *wh*-words and *wh*-movement

- (22) *Wh*-words have a formal [*wh*] (and/or [*focus*]) feature which needs “checking” in a designated position in the fseq (among many others Chomsky 1995; Rizzi 2006)

- My assumption

- (23) *Wh*-words relate to no particular syntactic position in the fseq; they move where they are needed given the interface conditions (particularly semantic interpretability).

1.5.2 Semantics of *wh*

- Theories about the semantics, pragmatics (and phonology) of *wh*-movement

- (24)
- Wh*-words are quantifiers, hence *wh*-movement is quantifier raising.⁷
 - Wh*-words are focused (e.g. exhaustively) expressions, hence *wh*-movement is focus movement⁸
 - Wh*-words are topics, hence *wh*-movement is topic-movement.⁹
 - Wh*-movement has no particular semantic effect, except for “variable-raising”.¹⁰
 - Wh*-movement is for reasons of clause-typing.¹¹
 - Wh*-movement is to bring the relevant variable into the phonological domain of the question operator.¹²
 - Wh*-movement corresponds to lambda-operator placement.¹³

⁷Baker (1970); Chomsky (1973); May (1977); Chomsky (1977); Karttunen (1977); Hintikka (1983); Engdahl (1986); É. Kiss (1993); Dayal (1996); Higginbotham (1996); Gutiérrez-Rexach (1997); Cole and Hermon (1998); among others.

⁸See e.g. Horváth (1986); É. Kiss (1991); Brody (1995); Rizzi (1997); Bošković (1998); Sabel (1998, 2000, 2001, 2003); ?; Haida (2007, 2008); among others.

⁹See e.g. Grohmann (2000, 2006); Jaeger (2003, 2004); among others.

¹⁰Nishigauchi (1990); Berman (1991); Hagstrom (1998); Beck (2006); among others.

¹¹Cheng (1991, 1997); among others.

¹²Richards (2010).

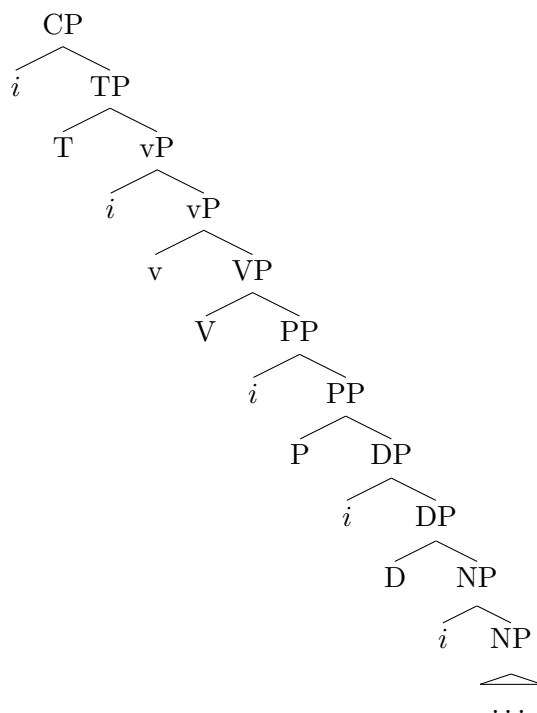
¹³von Stechow (1982); Groenendijk and Stokhof (1984); Heim and Kratzer (1998).

- Theories about the denotation of wh-words in their SS/LF-fronted form or in theories with no semantically relevant fronting

- (25)
- Wh-words map to generalized quantifiers (existential and/or universal; static or dynamic; over individuals, Skolem functions, or choice-functions)¹⁴
 - Wh-words map to variables (ordinary or distinguished; individual, Skolemized, or choice-functional).¹⁵
 - Wh-words map to sets of individuals.¹⁶
 - Wh-words map to a definite description dominating a variable.¹⁷
 - Wh-words map to domain-restrictors.¹⁸
 - Wh-words map to logical lambdas (syncategorematic expressions).¹⁹

- My assumptions

- (26) The wh-morpheme lexicalizes a link in a (recursive) operator-variable chain:



- (27) The goal of wh-morpheme movement is to reach its “criterial position”—à la Rizzi (2006)—which is, however, semantically defined. There can be a number of intermediate steps due to locality (successive cyclicity).

- Criterial position within the DP: determiners (often wh-based)
- Criterial position at the CP-level: questions and (free) relatives
- Criterial position at the vP/event-level: modal existential wh-constructions

¹⁴See fn. 7.

¹⁵Nishigauchi (1990); Berman (1991); Reinhart (1998); Beck (2006).

¹⁶Hamblin (1973); Ramchand (1996, 1997); Hagstrom (1998); Kratzer and Shimoyama (2002); Cable (2007, 2010).

¹⁷Sauerland (1998a); Rullmann and Beck (1998); Fox (1999); Novel and Romero (2010); Johnson (in press).

¹⁸Caponigro (2003, 2004).

¹⁹von Stechow (1982); Groenendijk and Stokhof (1984); Heim and Kratzer (1998).

- (28) Parametrization: Languages differ in terms of (i) which link in the chain they choose to lexicalize (Tsai 1994), (ii) the size of structure which is carried along (pied piped) with the index.

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