

# On procedure and discovery procedures in glossematics

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# 1. Rebooting glossematics

- Glossematics?
  - Hjelmslev's (unfinished) glossematics?
  - Uldall's very dense version?
  - common general principles
- Rebooting?
  - extrapolating inspiring ideas and operations?
  - implementing/applying the theory as such?
  - going beyond it?

## 2. Some well-known issues and the big problem

- strong formalism
  - cryptic terminology
  - distance from linguistic tradition
  - limited accessibility / diffusion
  - few applications
- 
- procedural stance: “endless chain of operations”

## 2. Some well-known issues and the big problem

Before I bid farewell to glossematics, I should record that Hjelmslev was an extraordinarily erudite and charming gentleman, as well as a genial guest and host, with whom I loved to visit, especially at his home in Charlottenlund. On the other hand, **I found it unworkable to dispute the subject [the theory] with him, since its very formalization presupposed a limitless chain of antecedents and implicated and endless concatenation of consequents.** So our social exchanges, *chez nous* or *chez lui* turned into little more than elegant academic gossip sessions, which, I believe, we both thoroughly enjoyed

(Thomas Sebeok, *I think I am a verb*, p. 70-71, my emphasis)

## 2. Some well-known issues and the big problem

teorien (incl. proceduren). Hvad de citeres af fore-  
lesningerne, kan jeg ganske godt lide, - saa vel som  
desuden om, at det "danaidiske arbejde", der heri  
er involveret, aldeles ikke vedrører desuiddi-  
kret over intonation; det er, som de siger, uden nogen-  
betydning for analysen af den konkrete tekst. H. - o. f. - 1 f.

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"Danaidean labour"

## 2. Some well-known issues and the big problem

- procedure is a stance that both Hjelmslev and Uldall maintained from the very beginning of glossematics (1935)



## 2. Some well-known issues and the big problem

- Hjelmslev was formulating a theory of language roughly divided into three strata (grammar/phonematics/semantics x system/use: 1934, *Sprogsystem og sprogforandring*)
- Uldall had just come back from America, with a deep sense of frustration due to the fact that the language he was studying, Maidu, was consistently defying him



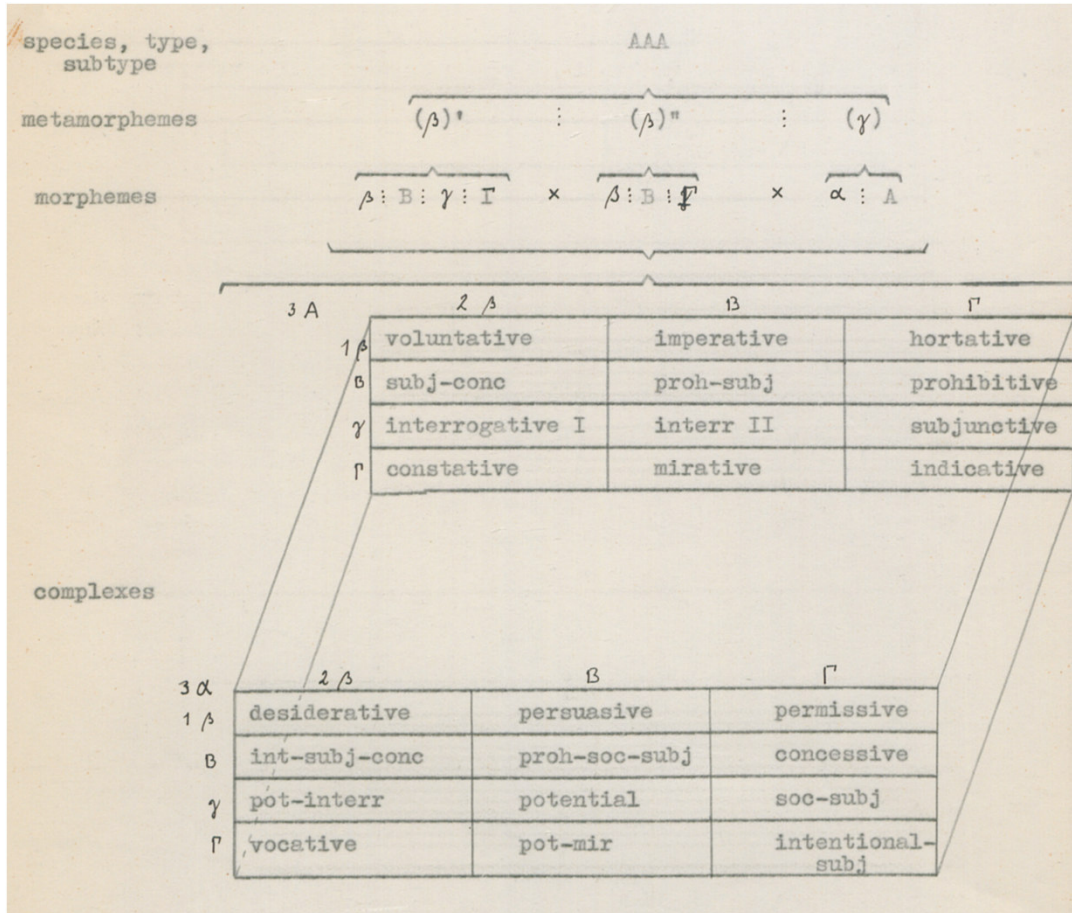
## 2. Some well-known issues and the big problem

I came home from America in 1933, my head whirling with a newly acquired smattering of anthropology, with the linguistics of Boas and Sapir superimposed on the phonetics of Daniel Jones, and with the stubborn refusal of the language of the Maidus to conform to any grammatical pattern known to me. In Copenhagen I met a number of linguists struggling with similar problems, foremost among them Louis Hjelmslev, who had already published his Principes de grammaire generale, and who was just then in eruption against the psychologism of the Prague School Phonology. I immediately became initiated, and Hjelmslev, Lier, and I started erupting in unison as the Comite phonematique of the Cercle linguistique de Copenhague. We founded yet another phonetic science called phonematics, which Hjelmslev and I presented at the London Congress in 1935 in a state of green unripeness. It caused a slight fluttering of the phonetic dovecote, principally because of its rich and rare terminology. The idea was to analyse and classify speech-sounds entirely on the basis of their functions, with no regard to accompanying platonic ideas on the one hand or physical manifestations on the other.

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## 2. Some well-known issues and the big problem



the system of fundamental mode of Maidu (acc-1992\_0005\_099\_Maidu\_0200)

## 2. Some well-known issues and the big problem

- their common goal was to ensure a proper ground for linguistic comparison, by finding a balance between two extremes:
  - A) languages are to be described according to their own system
  - B) every language is built upon a common, invariant structure
- in their absolute form, both claims are right and both are wrong

## 2. Some well-known issues and the big problem

- The answer they came up with was: procedure
  1. to find a neutral ground for description – a tapestry, as it were, that could allow to sew languages into and account for their specificities (*PGG*)
  2. to frame linguistics within a broader theory of sign, linking the upper linguistic boundary (sentence and periods) to textual analysis and so forth; and the lower linguistic boundary (basic features) to substance-based investigations
  3. to make the whole description as explicit as possible, by laying bare the logical operations that are carried out (implicitly or explicitly) by linguists while doing their job (Saussure) = to work out the logical consequences of basic principles (pure mathematics)

### 3. The procedure and its main features

We deal with endless chain of embeddings

- stipulatively
  - Uldall: "world"
  - Hjelmslev: "semiotic"
- by adopting a neutral, common framework: dependences (mereology)
- by carrying out a step-by-step analysis: a language is a complex object assumed to be a totality consisting of different parts connected by different dependences, so an exhaustive description must describe the object on the basis of every (thinkable) dependence = each dependence is taken in turn as a basis for analysis, much like a set of different lenses or polarized filters for a microscope



## 4. Main features

1. Each division is carried out by assuming a specific dependence as “basis of analysis”. Multiple procedures are possible, according to which combination of dependences is assumed as framework

the *linguistic* procedure is embedded within a wider set of possible analyses = linguistic procedure is just a case of semiotic procedure

- 1 division (interdependence)
- 1 division (constellation)
- 1 division (determination)
- 2 divisions (interdependence > constellation)
- 2 divisions (interdependence > determination)
- 2 divisions (determination > interdependence)
- 2 divisions (determination > constellation)
- 2 divisions (constellation > determination)
- 2 divisions (constellation > interdependence)
- 3 divisions (interdependence > determination > constellation) ...



## 4. Main features

2. How do we know which combination of analyses is the good one? We don't: the procedure is run through tentatively

cf. Hockett, *Problems of Morphemic Analysis* (Joos, 1957: 241): "in actually working with a particular language one has to skip back and forth, operating by trial and error"

## 4. Main features

d. Tilføjet 1, at katene i en given Op er „bestemt ved et kendetegn, der... først kan registreres i en given Op“. Det drejer sig om at 1° en blind procedure efterfølges af en åben, 2° en „form“ procedure efterfølges af en „substans“ procedure, 3° givne eller gænsker kan først lægges p gød a en videre anal. Et her sig sagt ustandelig. Nede procedurerne maa endtes kontakth; naar man er i Valby, ved man ikke om man er gaaet rigtigt i byen for end man ser om toget naar Gedser eller Korsør; altsaa maa man, om formidlet, køre flere gange. Altsaa, jeg er aldrig

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This implies 1) that a blind procedure is followed by an open one, 2) that a "form" procedure is followed by a "substance" procedure, 3) that the boundaries of given elements can only be established on the basis of a further analysis. I have said that incessantly. The whole procedure must be carried out tentatively; when you're in Valby, you don't know if you've gone in the right direction until you look around and see the train to Gedser or Korsør; in other words, if necessary, you have to drive several times

## 4. Main features

- while the steps are pre-established, the internal configuration of each step is determined by a set of categories (“functival categories”) that represent the logical possibilities in which each chosen dependence may occur

/position within the syllable/

- {:β} occurring in initial position
- {:B} occurring in final position
- {:γ} occurring in both positions
- {:Γ} occurring in neither

/government/

- {:β} within a same nexus
- {:B} between different nexus
- {:γ} both
- {:Γ} alternatively

cf. *Essai d’une théorie de morphemes* (1936, 1938)

the main engine behind glossematics consists of checking which elements<sub>7</sub> in a given language can be registered in which dependence-categories and are thus realized. These are analyzed further until glossemes

## 4. Main features

4. the same series of operations is run through in parallel, for both E and C, and actually the division into *lines* (E-text and C-text) is the first operation that holds for any language (any semiotic object)  
= isomorphism

## 4. Main features

5. This framework can be filled in different ways: some steps (and some categories within each step) may be void or give no yield

no 1:1 correspondence is assumed to be between the analysis of C and the analysis of E (non conformity)

each language is organized differently

= each step is the formal equivalent of a linguistic "layer" within a hierarchy, and yet these steps are not to be interpreted straight away as proprieties of the object

cf. Halliday (1961) *Categories of the Theory of Grammar*

cf. Coseriu (1989) *Principes de grammaire fonctionnelle*

## 4. Main features

cf. Coseriu (1989, my translation)

§ 5.2.2. The number of grammatical layers may vary from language to language. Only two layers are rationally necessary and thus forcibly universal: the layer of monemes and of sentence [...]. It is in this sense that we can interpret the assertion that, strictly speaking, Latin had no words. Obviously, Latin had many material words [...] and, like any language, it naturally had words from the lexical point of view [...]. But very often the word did not constitute in Latin an autonomous grammatical layer, since the grammatical functions expressed by its material words did not correspond to this layer but depended on oppositions established at a higher layer.



## 4. Main features

§ 5.2.3. The first task of functional syntax in analysing and describing the functional system of a given language is then of identifying the layers of grammatical structuring that are actually at work in that language in addition to those rationally necessary of moneme and sentence.

§ 5.2.4. Moreover, even more than the presence or absence of this or that grammatical layer, languages are distinguished by the extent to which such layers of structuring are represented in their grammatical system.

## 4. Main features

This means that technically these layers are not intended as parts of the object under analysis, but as nodes in a structure: some nodes are “filled” (realized), and others are not (virtual)

In the first run, the procedure only produces entities that are identified only by their position within the procedure (“derivates of n degree”) and that a second run is necessary to gather those entities that are actually realized, to recognize them as features of the object under analysis

first run = analysis

second run = synthesis

Rg 111 “Within each of its Op-series, \*G permits the designation of the registered relates only as units of a given degree [...] but not the definition of these units by their establishing relations or by their derivates (not, for example, the designation of some as nexus, accents, morphemes, consonants, or the like); this can take place only when the analysis is exhausted, i.e., in \*g” (*TLR*)

## 5. Questions, pros and cons

This is where the distinction between *procedure as method* vs. *procedure as application* comes in place – something Hjelmslev himself must have taken some time to realize

It is therefore necessary to ensure the applicability of the theory, and any application necessarily presupposes the theory. But it is of the greatest importance not to confuse the theory with its applications or with the practical method (procedure) of application. The theory will lead to a procedure, but no (practical) “discovery procedure” will be set forth in the present book, which does not, strictly speaking, even offer the theory in systematic form, but only its prolegomena.

*Prolegomena*, 1961, p. 17, missing in *OSG* 1993 [1943]

Does this mean that a discovery procedure is presented elsewhere (= in the *TLR*), or that the theory is not a discovery procedure at all?

## 5. Questions, pros and cons

possibilities:

- 1) vs. Uldall's approach and algebra, which were fleshed out as a corpus-oriented analysis (field work) of languages without previous knowledge of them (Nisenan, Maidu)
- 2) vs. "discovery procedures" developed by American linguistics: Bloomfield, Hockett, Harris, Well but actually mostly by Pike (debatable cf. Miller 1973)
  - not a univocal notion, but generically a set of "handling operation" (Bloomfield 1933) that allow the linguist to extrapolate a model from a corpus of data = "any rigorous method by the application of which a grammar might be constructed from a corpus of utterances in a language"

## 5. Questions, pros and cons

If with “discovery procedure” is meant

- a set of rules describing how phonemes are built into morphemes and these into syntactic units ✘
- an inductive extrapolation of data (Swadesh 1934, Gleason 1955) ✘
- an algorithm made of explicit steps ✓

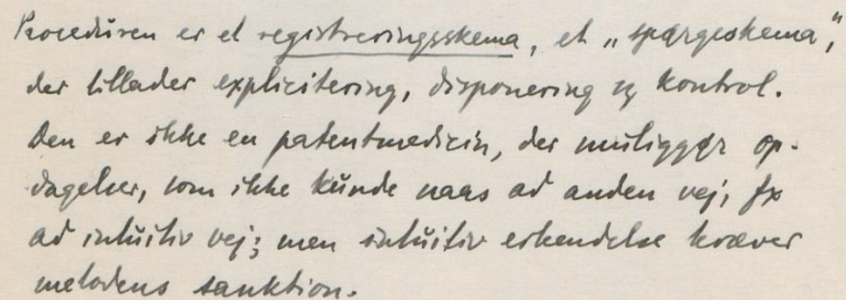
(but less so in American linguistics, cf. Harris 1951: “These procedures also do not constitute a necessary laboratory schedule [...]. In practice, linguists take unnumbered shortcuts and intuitive or heuristic guesses, and keep many problems about a particular language before them at the same time [...] they will usually know exactly where the boundaries of many morphemes are before they finally determine the phonemes”)

## 5. Questions, pros and cons

procedure is neither purely heuristic nor purely descriptive

- it has an inbuilt heuristic moment
- it has a constitutive moment (= no simple registration)
- it has a systematizing moment

= not phenomena-centred but operation-centred



Proceduren er et registreringsskema, et "spørgeskema",  
der tillader explicitering, disponering og kontrol.  
Den er ikke en patentmetode, der muliggør op-  
dagelser, som ikke kunne være på anden vej, fx  
på intuitiv vej; men intuitiv erkendelse kræver  
metodens sanktion.

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The procedure is a schema for registration, a "questionnaire", that allows explicitation, disposition and control. It is not a panacea that allows you to discover something that couldn't be found in other ways, for instance, by intuition. Yet intuitive knowledge requires to be sanctioned by the method



## 5A. Inbuilt heuristic moment

cf. *CdC*, case-system of Küri (Samuric group, Central Caucasian languages, cf. Dumézil, Sommerfelt)

	+ α	A	β	B	Γ
÷ α	El	Er			
A	Il	N			
β	Dl	G	Ab	Ab Pst	Ab Sb
B	Spl	D	Al	Psl	Sl
γ	Prs Sp	Ad	Prs Ads	Prs Pst	Prs Sb

## 5B. Vocalic harmony

aka "le finnois n'a pas de voyelles" (Hjelmslev, Oslo, 1957)

- assimilation: the presence of a given vowel in a given part of the word (stem) imposes a certain vowel in a different segments (ending)
- vowels are defined as (central) constituents
- constituents are not dependent on the co-occurrence of any other element in the chain ("free" elements)
- in vocalic harmony, a vowel selects another, so in languages with vocalic harmony those units are not constituents but exponents (= "bound elements" that can be selecting and selected)
- these expression-elements are then accents

# 5B. Vocalic harmony

vocalic harmony

Karakterer ::

- :β ekstense = fonidatte i en nævns (af. -, >, uenitær)  
(verbale bøjningsformer; modifikationer)
- :B intense (nominale bøjningsformer; akcenter)
- :γ numerus o. lgn.
- :Γ  ~~eneste karakter~~ i (en blot mistyghed)

Temater ::

- :β centralformer = fonidatte i et lillesyndagme  
(radikaler; vokaler)
- :B randformer (derivativer; konsonanter)
- :γ fx, halv vokaler som da f = i; p, s, t, l, t̃
- :Γ hvis sproget ikke har :β og :B; taleses ved vokalkharmoni<sup>c</sup>

Sprog af tilvandt struktur har

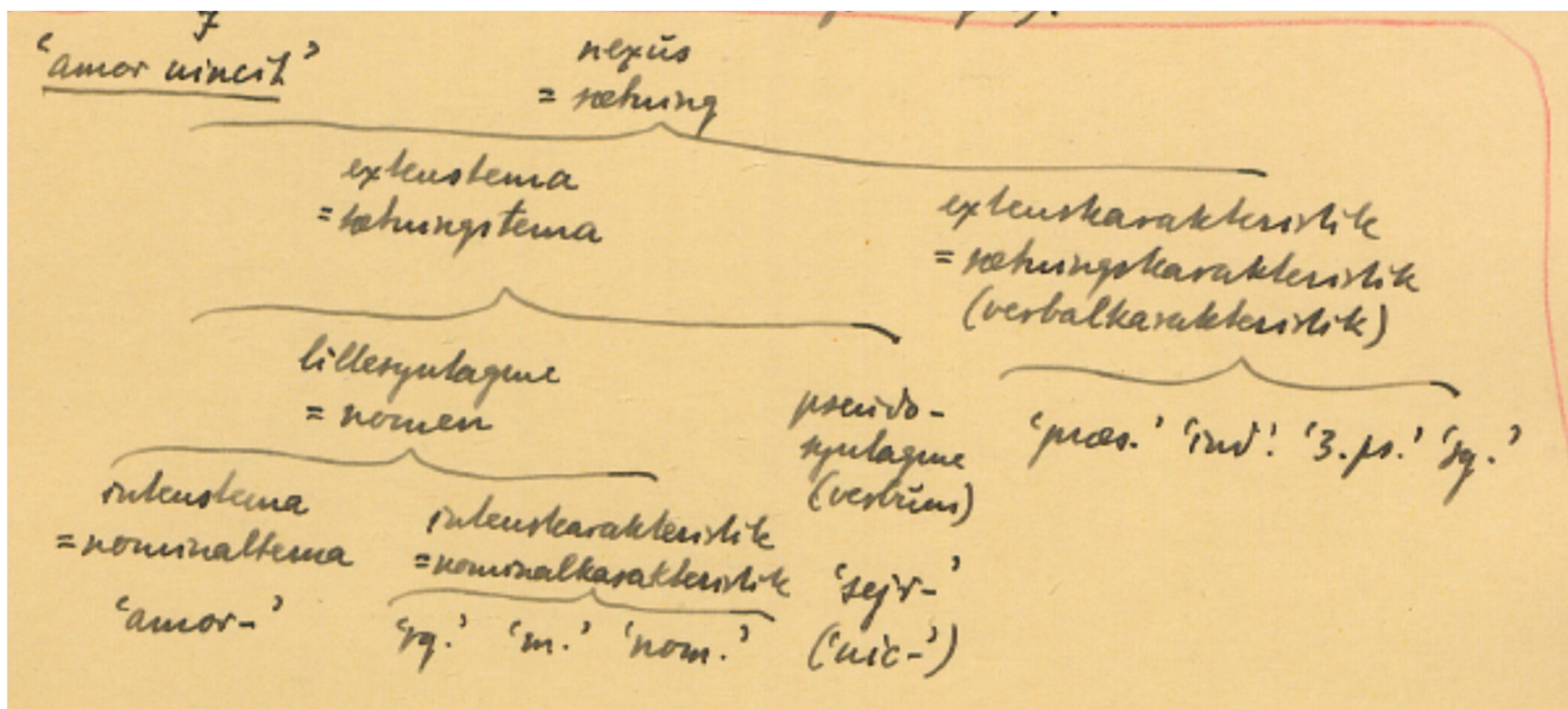
akcent V, tryk<sup>c</sup>  
vokaler V klanglyst  
konsonanter V støjlyst

Sprog med, vokalkharmoni<sup>c</sup> har

akcent V klanglyst  
temater (:Γ) V støjlyst.

## 5B. Vocalic harmony

treatment of syntax

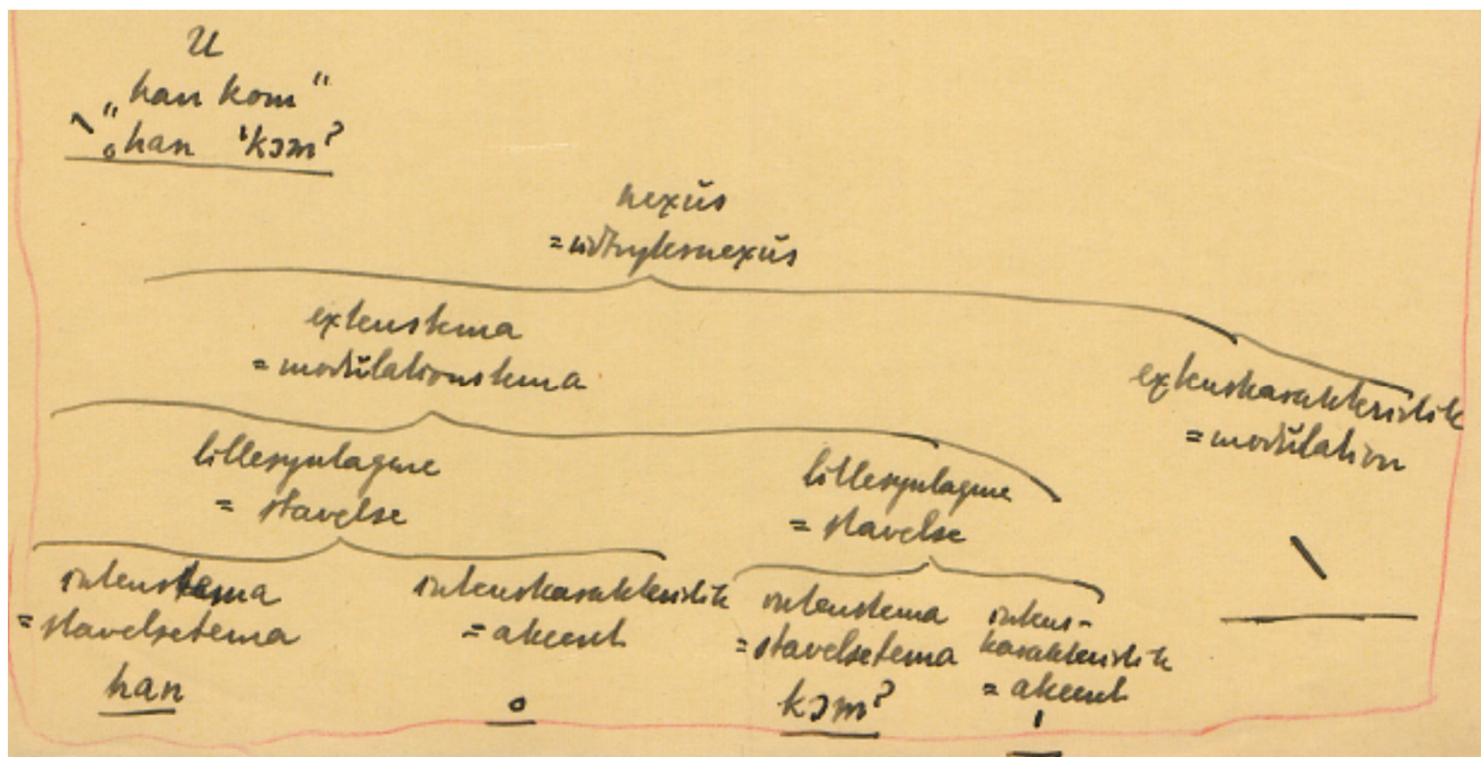


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# 5C. Treatment of syntax

treatment of syntax



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## 5C. Treatment of syntax

treatment of syntax

- framework forces you to distinguish between an Expression-sentence and a Content-sentence
- to analyse it according to the same steps (with different yield)
- to go through an analysis (= identification of taxemes) and then regroup the derivatives into "synthetic entities" (= combination of taxemes)
- =  $\exists$  not one, but two hierarchies of definitions (cf. Mortensen 1969) ← probably one of the trickiest and counterintuitive features of the procedure

## 5D. Oppositions, binarism and singletons

- structural claim = elements within a system contract (and thus must be described in term of) *oppositions*

$$p = \frac{n(n-1)}{2}$$

“Between 16 terms – the number of simple Greek prepositions reported by Bortone (2010) – there are 120 possible oppositions, and between 181 terms – the total count given for Swedish above – there are a whopping 16.290 possible oppositions” (Widoff 2023)

- escamotage: dimensions = oppositions can be scalar and host different values (6 possible values on each dimension >  $6^3 = 216$ ;  $7^3 = 343$ )

## 5D. Oppositions, binarism and singletons

- an opposition is only contracted between two terms = minimal inventories consist of 2 terms, inventories consisting of less than 2 terms cannot exist (cf. "Le système le plus simple que l'on puisse concevoir est le système à deux termes", *CdC*: 113)

cf. Arkadiev (2021) *Are single-term case systems possible?*

cf. *Résumé* (1975: 31)

<i>simplex classes:</i>		$\dot{\Gamma}_2$	
<i>duplex:</i>	$\dot{\alpha}$	$\dot{A}$	
<i>triplex:</i>	$1^\circ$	$\dot{\alpha}$	$\dot{A}$
	$2^\circ$	$\dot{\beta}$	$\dot{B}$
	$3^\circ$	$\dot{\beta}$	$\dot{B}$



## 6. Further (final) thoughts

stress on metacognitive dimension: logical operations and choices carried out by the linguist (linguist  $\cong$  speaker)

- (a) not purely logical (neutralism)
- (b) metalinguistic feeling: instinctive usage of concepts and analytical tools
- (c) points where the linguist's subjectivity enters into the procedure = on which nodes is he called to make a choice
- (d) sometimes it is necessary to refine the metalinguistic tools further to address the complexity of linguistic facts (to augment the complexity of the apparatus = to augment the simplicity of description)