Categories, Constructions and Grammatical Relations:

Building Blocks, Artefacts, and the Spine
Categories

- Categories are labels for the purpose of linguistic distinction (which are most likely semantic in nature---cf. Husserl’s earlier notion of ‘semantical categories’)

  Clearly we may say that if presentations, expressible thoughts of any sort whatever, are to have their faithful reflections in the sphere of meaning-intentions, then there must be a semantic form which corresponds to each presentational form. [...] And if the verbal resources of language are to be a faithful mirror of all meanings possible a priori, then language must have grammatical forms at its disposal which give distinct expression, i.e. sensibly distinct symbolisation, to all distinguishable meaning-forms. (E. Husserl, *Logical Investigations*, 1890)

- Some people believe that Husserl is the forerunner of Chomsky due to his insistence on “pure grammar” and his concerns for logical structure of linguistic theory.
There are different kinds of categories in different places:

Formal categories (eg. \( X, Y, XP \)). In UG?

Substantive categories (eg. \( N \) for noun, \( S \) for sentence). In the lexicon?

Functional categories (a Chomskyan distinction, e.g. Tense, Complementiser, Agreement). Labels that serve a derivational role in the interpretation (e.g. for movement etc.)

Another dimension of classification:

Basic categories (simplex)

Derived categories (complex)

\( S, N, NP \)

\( S/NP \) : a grammatical category in GPSG, a complex category in CG.

GPSG: A tree dominated by \( S \) with a "missing NP" (or non-terminal \( S/NP \))

CG: A 1-argument function from \( NP \) to \( S \)
Some categories are relational in nature (but not everybody accepts them as categories):

Subject

Object

If they are not treated as categories, then they are usually accounted for by other means (trees, mapping of types)

In Lexical-functional Grammar, subject is a category (called SUBJ).

In Transformational grammar it is not (described by tree configurations such as the one below--e.g. subject is sister of VP immediately dominated by IP)

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   IP
  /   \
 NP   VP
   /     \
  V   NP
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Categories as feature bundles: features are primitives, categories are their grouping.

noun: [+N,-V]
verb: [-N, +V]
adjective: [+N, +V]
adposition: [-N, -V] (prepositions in English, postpositions in T)

Adverb?

Most theories assume categories of this sort; It gives possibility of predicating certain properties over features:

[-N] categories can assign case (i.e. verbs and adpositions)

What about languages in which adjectives carry case? not the assigner of case.
Grammatical roles are not necessarily categories:

- $S$: single argument of the intransitive verb
- $A$: more agent-like argument of the basic transitive
- $P$ (or $O$): more patient-like argument of the basic transitive

- $S$ NP, $A$ NP, $P$ NP are NPs of certain syntactic type
Earlier attempts were to capture constructions by rules.

Nowadays the goal is to explain constructions as consequences of having certain principles, categories and constraints (i.e. as artefacts).

The task is to capture the dependencies in constructions whether the depender/dependee is ‘in place’, ‘displaced’, or ‘changed shape’ (i.e. right structure argument once again---guided by what? syntactic/lexical types?)

wh-items and quantifiers:

I asked Miriam who$_i$ John saw $t_i$. Every cardinal$_i$ said he$_i$ had voted.

*I asked $t_i$ who John saw Miriam. *He$_i$ said every cardinal$_i$ voted.

They follow from the general principle that a dependent item must be c-commanded by the item it depends on.

C-command where? Well, that depends on your theory du jour.

*Some examples are from Steedman & Heycock
Bounded dependencies

- Just about every theory can account for these (but some with more theoretical baggage, some with less---and lesser the better)

- **Passives**:

  John admires sincerity.

  Sincerity is admired by John (cf. Chomsky 1957’s optional transformation in 34)

  John admires the fact that I claimed that the public reads your book.

  *Your book is admired the fact that I claimed that the public reads.

- **Control** (the controller of the infinitival complement is supplied by the control verb---can’t dig in indefinitely):

  Mary persuaded John [to read a book].

  Mary promised John [to read a book].
John persuaded the older brother of the man whom I met [to read the book].

John persuaded Mary [to claim that I think that you wanted [to read the book]].

- **Raising**: Not the same as control relation; the missing argument is *not* a semantic argument of the matrix predicate and the embedded predicate

  Terry proved Dana [to be wrong about the regulations].

  Pat believes Chris [to be a spy].

- Is Dana a **syntactic** argument of prove?

  Terry proved her [to be wrong about the regulations].

- **Purposive clauses**: They are different from control/raising in another way; they are not lexical:

  I swim [to win the championship].

  Kier recited a poem to Fiona [to impress her].
Unbounded dependencies

- Herein lies the big differences and theoretical competition.

- **Relative Clauses** (extraction):
  
  The book that the man read. The man that read the book.
  
  Which book do you think John recommended that I read?

- **Topicalisation** (and **backgrounding**)
  
  This book I will read. This book I think Mary insisted I read.
  
  Mehmet çocuğun adamın okuduğunu gördüğünü sanmış kitabı.

- Nested dependencies & curious restrictions: Can’t relativise out of a complex NP (Ross’s Complex NP Constraint)
  
  I met [a man that ate a cake]. ?a cake that I met a man who ate t_j.
  
  I bought [a cake that the man ate]. *a man who(m) I bought a cake that t_i ate_j.
- Nested dependencies & Violin and Sonata Sentences

  a violin$_i$ which the Moonlight sonata$_j$ is easy to play $t_j$ on $t_i$.

  *a sonata$_i$ which this Stradivarius violin$_j$ is easy to play $t_i$ on $t_j$

- Subject/object asymmetry in extraction:

  The book that I think that the man read.

  *The man that I think that read the book.

- **Coordination**: Ross’s Coordinate Structure Constraint (coord. structure is an **island**)

  This man loves animals and he dislikes children.

  Animals this man loves and children dislike him.

  Animals love this man and he dislikes children.

  *a man who(m) loves animals and he dislikes children.

  *a man who(m) animals love and children dislike him.
• Across-the-board exception (ATB) to CSC: extraction is ok if the NP is missing from all conjuncts:

A man who(m) animals love and children dislike.
A man who loves animals and dislikes children.

• Exceptions to ATB exception: the extracted argument must bear the same grammatical relation in all conjuncts:

*a man who dislikes children and animals love.
*a man who(m) animals love and dislikes children.

• **Gapping**: identical verb deletion under coordination (direction of deletion depends on word order and---it seems---nothing else)

• Ken-ga Naomi-o, Erika-ga Sara-o tazuneta
  K-NOM N-ACC E-NOM S-ACC visit-PAST.CONCL
  ‘Ken visited Naomi, and Erika, Sara.’ Japanese

• *Ken-ga Naomi-o tazunete, Erika-ga, Sara-o.
- Chonaic Eoghan Siobhán agus Eoghnaí Ciarán.
  saw Eoghan Siobhán and Eoghnaí Ciarán
  ‘Eoghan saw Siobhán, and Eoghnaí, Ciarán.’ Irish

  *Eoghan Siobhán agus chonaic Eoghnaí Ciarán.

- John likes whisky, and Stuart wine.

  *John whisky, and Stuart likes wine.

- These contraints ought to be explained, not stipulated.

- One (strong) hypothesis is that the automaton itself (your wetware for language?) only allows these kinds of dependencies.

- Especially in case of multiple unbounded dependencies, nesting seems to be the key, rather than crossing.
Grammatical Relations

- There is robust empirical evidence that languages operate in different kinds of alignment of primary roles $S$, $A$, and $P$.

- That is evident in **systematic** differences in surface grammar.

- Morphological accusativity: morphology aligns $S$ and $A$ (indicated as $S=A$ by Palmer 1994).

- Morphological ergativity: morphology aligns $S$ and $P$ ($S=P$).

  - $S$: single argument of the intransitive verb
  - $A$: more agent-like argument of the basic transitive
  - $P$ (or $O$): more patient-like argument of the basic transitive

  Another classification further distinguishes $S$ as $S_A$ (unergative) and $S_P$ (unaccusative)
Morphological accusativity-ergativity

Adam uyu-du
man.NOM sleep-PAST
'S
'The man slept.' Turkish

Adam kadın-ı görüdü
man.NOM woman-ACC see-PAST
A P
'The man saw the woman.'

Arnaq yurar-tuq
woman-ABS dance-IND.3SG
'S
'The woman dances.' Yup'ik

Angutem tangrr-aa arnaq
man-ERG see-IND.3SG.3SG woman-ABS
A P
'The man sees the woman.'
Syntactic ergativity

- The operation of morphological alignment in syntax

[bayi burrbula baNgul gubi-Ngu bara-n] [__ baji-gu]
I.ABS.TH B.ABS I.ERG.TH doctor-ERG punch-NFUT fall.down-PURP

\[ P \quad A \quad S \]

‘The doctor punched Burrbula\textsubscript{i} and \textsubscript{__i} fell down.’ Dyirbal

- In Dyirbal the missing argument of 2nd clause can only be Burrbula (i.e. S co-refers to P: S=P)

- In an accusative language, this can only mean the doctor is falling down (S=A).
More evidence for pervasiveness of the alignment: control may work along that alignment as well.

Bayi yara walNgarra [Naba-ygu]
I.ABS.TH man.ABS want-NFUT bathe-PURP
‘The man wanted [to bathe].’ Dyirbal

Naja bayi yara giga-n [gubi-Ngu mawa-li]
I.NOM I.ABS.TH man.ABS tell-NFUT doctor-ERG examine-PURP
‘I told the man to be examined by the doctor.’
lit. ‘I told the man [doctor examine].’

.. or it might not:

Nik [kafea egin] nahi dut
I-ERG coffee-ABS do.INF want have.1SG.3SG
‘I want [to make coffee].’ Basque

*Aitak [semeak ikusi] nahi dut
Father-ERG Son-ERG see.INF want have.3SG.3SG
* for ‘The father wants the son to see him (father).’
Accusative languages can exhibit the same mixed behaviour (contra Manning’s (1996) claim—cf. Bozsahin & Steedman 2004)

\[
\begin{align*}
\text{er} & \quad \text{gefällt mir.} \\
\text{he.NOM} & \quad \text{pleases I.DAT} \\
\text{‘he pleases me.’} & \quad \text{= ‘I like him’} \quad \text{German}
\end{align*}
\]

\[
\begin{align*}
*\text{Ich} & \quad \text{i} \quad \text{hoffe } [\quad _i \quad \text{er} \quad \text{zu gefallen}] \\
\text{I} & \quad \text{hope } \emptyset \text{.DAT he.NOM to please} \\
\text{‘I hope to like him.’}
\end{align*}
\]

\[
\begin{align*}
\text{er} & \quad \text{i} \quad \text{hofft } [\quad _i \quad \text{mir} \quad \text{zu gefallen}] \\
\text{he} & \quad \text{hopes } \emptyset \text{.NOM I.DAT to please} \\
\text{‘he hopes to please me.’}
\end{align*}
\]

The dative NP above is commonly considered as the “deep subject,” i.e. agent (A).

Maybe languages do not care about such “deep” interpretations.

Again, we need to explain why some differences in languages are so systematic, and why there is limited variability when it comes to organisation of grammar.