Exploring Case

2025
NOV.

Boğaziçi Linguistics

Ling 488

Cem Bozşahin

(references are in the Bozşahin (2025) book.)

- what is case?

. Basically, who does what to whom in a clause.

(i) - under "normal" conditions?
- The most neutral semantics

(ii) - under other conditions (topic, focus, etc.)?
- Usually constructions take care of that also heeding case.

- we are talking about what is sometimes called abstract case (Vergnaud 1977).

- we are not talking about morphological case.
- we would expect that to be a consequence of abstract case and theory of argument structure.

- Categorial grammar: All case is abstract anyway (Lambek 1958). Why?
  They are functions!

1) what "gets" case?

option (i) participants only (tend to be NPs)

option (ii) anything that contributes to who does what to whom.

2) who "gives" (or assigns) case?

(i) things that can take arguments (nouns, verbs)

(ii) things that lead to events (i.e. predicates)
- verbs and verb-like elements

Back to: what "gets" case

English

a. The man hit the ball.
hitter hittee

b. The prof expected pupils to study.
expecter expectee expectation

c. The ship sank the boat.
sinker sinkee

d. The boat sank.
? sinkee ?

a. The wind broke the window.
?? breaker?? breakee

b. The stone broke the window.
? breaker? breakee

c. The man broke the window with a stone.

d. ? The storm broke the window with a stone ?

a. It seems (that) the exam went well.

? — Expletive

seeming thing

b. The exam seems to have gone well.

? seemer ?

seeming thing but incomplete

c. The students seem to be ready for more material.

more like seemer (not expletive)

not a finite clause

- Summing up 'who gets case':
  - if we are worried ALSO about explaining the consequent sense of meaningfulness, then every argument no matter what type "gets" case.
  - This is in addition to categorial grammar's mathematical reasons for having case.

_ Back to who "gives" (or assigns) case:

1 verbs ✓

2 Adpositions ?

kitaba dair — Turkish
book-DAT about
'about the book'

*kitabı dair
book-ACC

3 Nouns ?

kitabın kaybolması bani üzdü.
book-3s loss-3s I-ACC sorry
lit. 'The book's loss saddened me.'

kitabın rengi — Is that case?
book-3s color-3s
'the color of the book'

± Adjectives?

German

a. mein guter wein
masc. masc. masc.
'my good wine'

b. mein gutes Brot
neut. neut. neut.
'my good bread'

d. * Mein guten wein ist angekommen.
good-ACC

for 'my good wine has arrived.'

e. * Meiner guter wein ist angekommen.
my-DAT/GEN good-NOM ✓

c. Meine gute Suppe
fem. fem. fem.
'my good soup'

- Adj. and head noun agree on case (d-e) gender (a-c) (w/ gaps)

(a-c): Mallinson & Blake 1981:203

Kinds of case in generative grammar:

1 – Structural case (not dependent on the verb but structure)

2 – Lexical case (dependent on the thematic role and the verb)
- idiosyncratic

3 – inherent case (dependent on a semantic role)
- not idiosyncratic but not syntactic either

Woolford (2006)

– Unfortunately, all these properties leak!

(1) a. Hann telur mig vanta peninga. Icelandic
he.NOM believes me.ACC to-lack money
'He believes that I lack money.'

structural?

Andrews (1982)

b. Hana virðist vanta peninga.
her.ACC seems to-lack money
'She seems to lack money.'

expletive? (therefore exceptional structurally?) → NOT REALLY

c. Mig langar í kaffi.
me.ACC want coffee
'I want coffee.'

Kinds of case in generative grammar:

1. Structural case (not dependent on the verb but structure)
2. Lexical case (dependent on the thematic role and the verb)
3. Inherent case (dependent on a semantic role)

Woolford (2006)

② Lexical case (idiosyncratic to the verb)
(tends not to change under syntactic constructions such as the passive)

a. Çocuk **topa** vurdu. — Turkish
child ball-DAT hit-PERF
'The child hit the ball.'

b. **Topa** çocuk tarafından vuruldu.
ball-DAT child by hit-PASS-PERF
'The ball was hit by the child.'

— why? Theta role claimed to be not affected

In Icelandic, if ACC is theme, then what is the following genitive?

c. Jón saknaði Maríu.
John missed Mary.GEN
'John missed Mary.'

missed :: $(S\backslash NP)/NP_{gen}$
: $\lambda x \lambda y.$ mis x y

- The theta role seems to be just like the ACC-taking verb: the theme. Why genitive then?
- (Many Russian verbs also subcategorize for genitive.)

Kinds of case in generative grammar:

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but structure

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3 – Inherent case (dependent on a semantic role)

Woolford (2006)

– not idiosyncratic but not syntactic either

③ inherent case

Icelandic

a. Mér er kalt.
me.DAT is cold
'I am cold.'

b. mér virðist [vera kalt]
me.DAT seem be cold
'I seem to be cold.'

↪ raising keeps DAT (very semantic)

↙ passive

c. Mér var hjálpað.
me.DAT was helped
'I was helped.'

⟹ It appears that that DAT can be a subject (not very inherent) quite syntactic

1 All generative case classifications leak.
- All case hierarchies of functionalists leak as well.

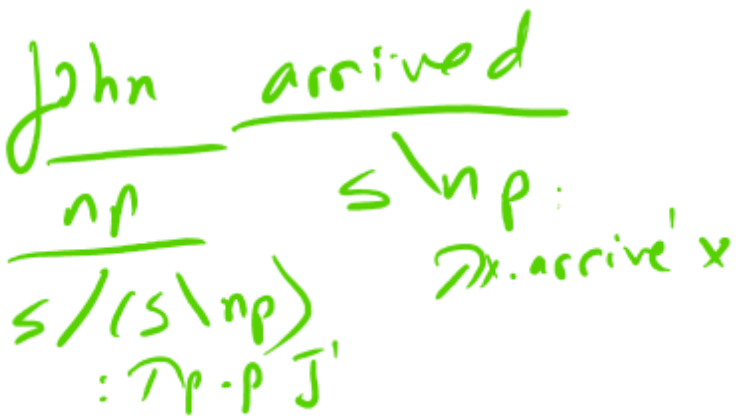
2 We do not know why some kinds of arguments are left out of Case.

3 There is some semantics involved in the classifications, but it is not the kind of semantics that serves the conseqvent sense of meaningfulness.

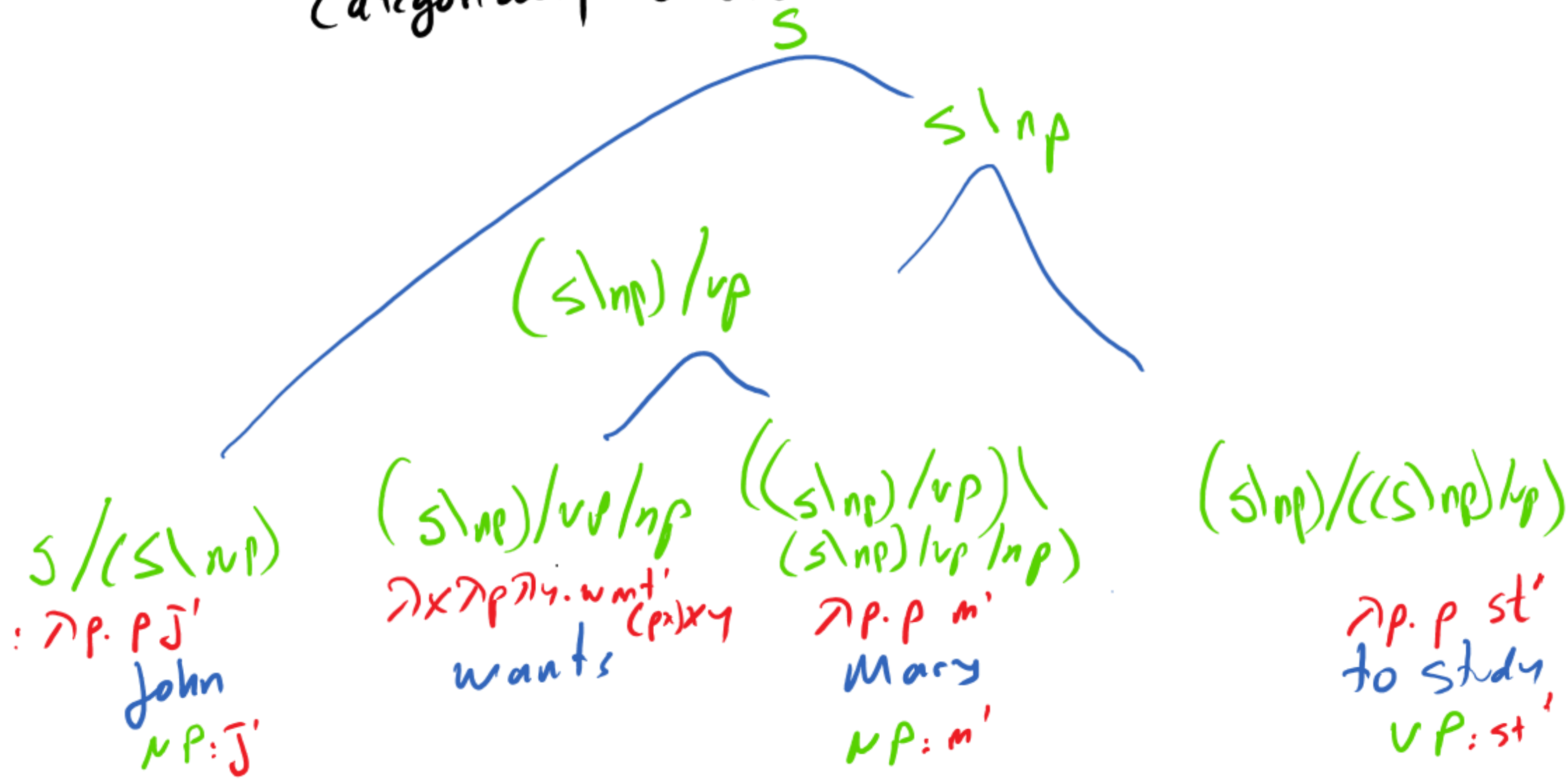
4 $\Longrightarrow$ READ: Difficult if not impossible to MODEL!

Categorial Case

- Lambek 1958: All arguments are syntactic functions.
- Montague 1973: All arguments are semantically functions.
- Steedman 2000, 2020:
  - All arguments are functions that look for functions that look for them.
  - Case has universal semantics
  - verbs subcat for basic cats.
  - Case can be confined to the lexicon (case inflection)



Three different kinds of arguments of a single clause, all categorially cased:



Monadic case (another categorial case) _ Bozşahin 2025

1 _ All case can be synthesized from verbs.

2 _ Case cannot be confined to the lexicon.

3 _ Different verb forms require different subcategorization because they require different kinds of arguments.

- John would study/*to study/*studies. Root
- John wants *study/to study/*studies. Stem
- John *study/*to study/studies. Finite form

4 _ what basic subcategorization? All case is thus second-order ⇒ STRUCTURAL

Can we confine case to the lexicon?

① Kwakw'ala is strictly VSO.

– Nominals get case and determiner on the preceding element, no matter what the element is.

phonological host

morphological target

Nanaqasil-ida i?gəl'wat-i alemwux-s-is mestuw-i la-xa migʷat-i
guides-ART expert-DEM hunter-CASE-ART harpoon-DEM P-ART seal-DEM
'An expert hunter guides the seal with his harpoon.'

Anderson (1992)

– We cannot lexicalize this.

Exploring Case using the Bench tool

- c-command
- load a grammar, identify the set of classes of elements that assign case, and run the c-command.
- All case functions will be derived for that grammar, with syntax AxD semantics.
- Appendix B of the Bozsahin (2025) book shows how.
- Then we can train these functions on data for testing.

Example:

Suppose we have two verbal functions:

1) arrives :: $s\backslash np : \lambda x.\ arrive'\ x$
2) hits :: $(s\backslash np)/np : \lambda x \lambda y.\ hit'\ x\ y$

From (1) we get $np : a' \longrightarrow s/(s\backslash np) : \lambda p.\ p\ a'$

From (2) we get $np : a' \longrightarrow (s\backslash np)\backslash((s\backslash np)/np) : \lambda p.\ p\ a'$

* Why don't we get BOTH from (2)?
  - There is no universal that says if tv subject is leftward, so is iv subject.

- Hvastec is VP in transitives and
  VS in intransitives

1. svo verb :: $(s\backslash np)\backslash np : \lambda x\, \lambda y.\, verb'\, y\, x$ VP
2. vs verb :: $s/np : \lambda x.\, verb'\, x$ VS

a - From (1) we get $np : a \longrightarrow (s/np)/((s/np)\backslash np)$
$: \lambda p.\, p\, a$

b - From (2) we get $np : a \longrightarrow s\backslash(s/np) : \lambda p.\, p\, a$

c - S of VP happens to match b because H has grammatical relations. It didn't have to. (VS = S)

A V P

U ɨch t2a-pax-i xutil.

DET woman 3S.ERG-wash-TV DET.clothes

'The woman is wearing the clothes.'

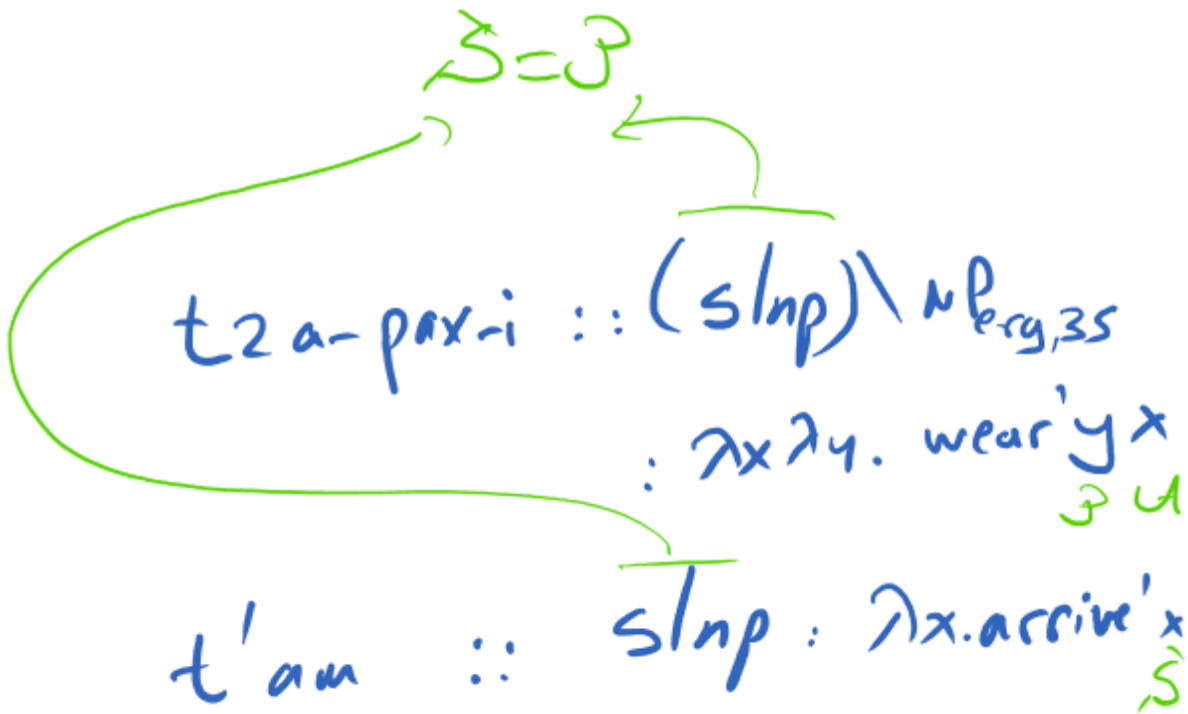
Huastec (Mayan)

V S

t'am winik

arrive DET.man

'the man arrived.'



Synthetic theory of case:

$$A : a' \Rightarrow T \backslash (T / A) : \lambda p . p\, a'$$

$$A : a' \Rightarrow T / (T \backslash A) : \lambda p . p\, a'$$

Assuming T/A and $T\backslash A$ are verbal functions (synthetic).

– That's what TheBench uses to infer ALL case functions from a grammar.

$A : a' \Rightarrow T\backslash(T/A) : \lambda p.\, p\, a'$

$A : a' \Rightarrow T/(T\backslash A) : \lambda p.\, p\, a'$

syntactic Cie. elementary property of a verb).

- This is basic.
- Because no verb subcategorizes for complex arguments.
- p of $\lambda p.\, p\, a'$ is a verbal function, not a higher-order function.

Case is always structural because case functions are always SECOND ORDER functions.

Is there anything else to be gained from treating all arguments as cased, that is, functional, mathematically speaking?

- Yes, we get unorthodox constituency, for a start:

English

$s/np : \lambda z.\ like'\ z\ j'$

compose

$s/(s\backslash np) : \lambda p.\ p\ j'$ $(s\backslash np)/np : \lambda x \lambda y.\ like'\ x\ y$ $s\backslash(s/np) : \lambda p.\ p\ cats'$

John likes and Mary hates cats.

Composition is function composition:

$$x/y : f \quad y/z : g \rightarrow x/z : \lambda z.\, f(gz)$$

Composing $\underbrace{\lambda p.\, p\, \bar{J}'}_{f}$ with $\underbrace{\lambda x.\lambda y.\, like'\, x\, y}_{g}$:

$$\lambda z.\, (\lambda p.\, p\, \bar{J}')\, ((\lambda x \lambda y.\, like'\, x\, y)\, z) = \lambda z.\, (\lambda p.\, p\, \bar{J}')\, (\lambda y.\, like'\, z\, y)$$

$$= \lambda z.\, ((\lambda y.\, like'\, z\, y)\, \bar{J}') = \lambda z.\, like'\, z\, \bar{J}'$$