

Vitoria Gasteiz, May 2017



The syntax of interaction

Towards a formal typology of discourse markers

Martina Wiltschko, UBC

Lecture V

<https://blogs.ubc.ca/syntaxofinteraction/>

Overview

	Topic
Day 1 Introduction	<i>From Speech acts to Interaction</i>
	<i>The syntacticization of speech acts</i>
Day 2 Introducing an idea	<i>The syntacticization of interaction</i>
	<i>Framework: The extended Universal spine</i>
	<i>Methodology: storyboards</i>
Day 3 Case study I	<i>Confirmational</i>
Day 4 Case study II	<i>Response markers</i>
Day 5 Conclusions	<i>Other discourse markers</i>
	<i>Towards a typology of discourse markers</i>

Today

Day 5	Response markers
9.00-9.30	Response markers
9.30-10.00	
10.00-10.30	Response markers in your language
10.30-11.00	Break
11.00-11.30	Conclusions
11.30-12.00	How to write a paper
12.00-12.30	Prepare an abstract/squib
12.30-1.00	Questions and discussions

- A: Presentation:
[[*You have a dog*]_{Utt} *eh*_{conf}]
- B: Acceptance:
[*yes*_{Resp} [*I do*]_{Utt}]

Response markers

Response particles



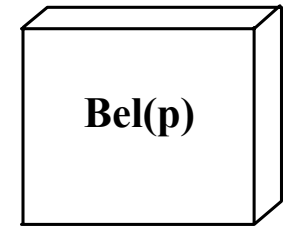
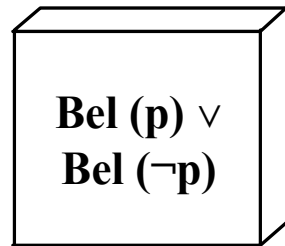
Q: *Did you like the movie?*

A: i) **Yes** (*I did*)

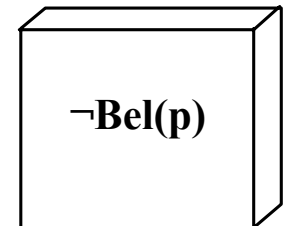
ii) **No** (*I didn't*)

p is (not) in my ground

Q: *Did you like the movie?* A: i) **Yes** (I did)



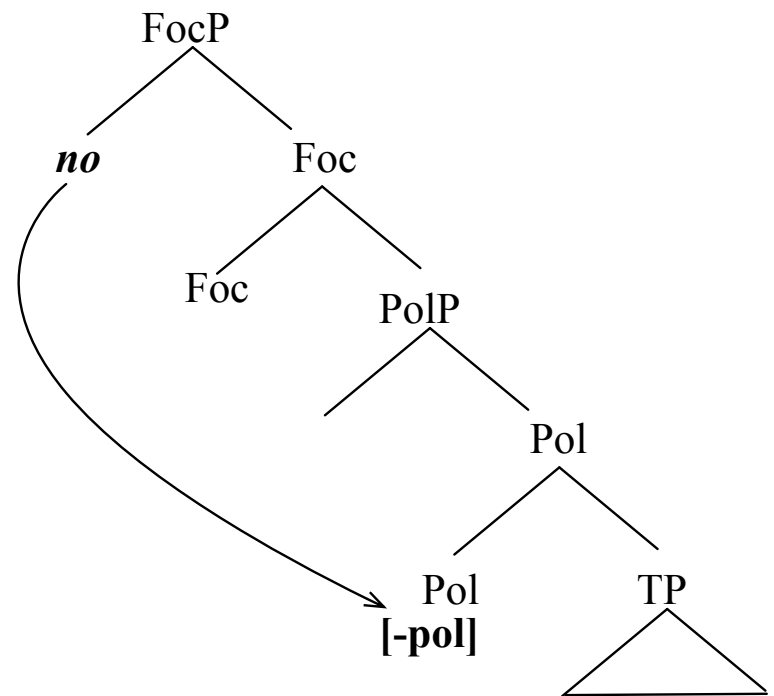
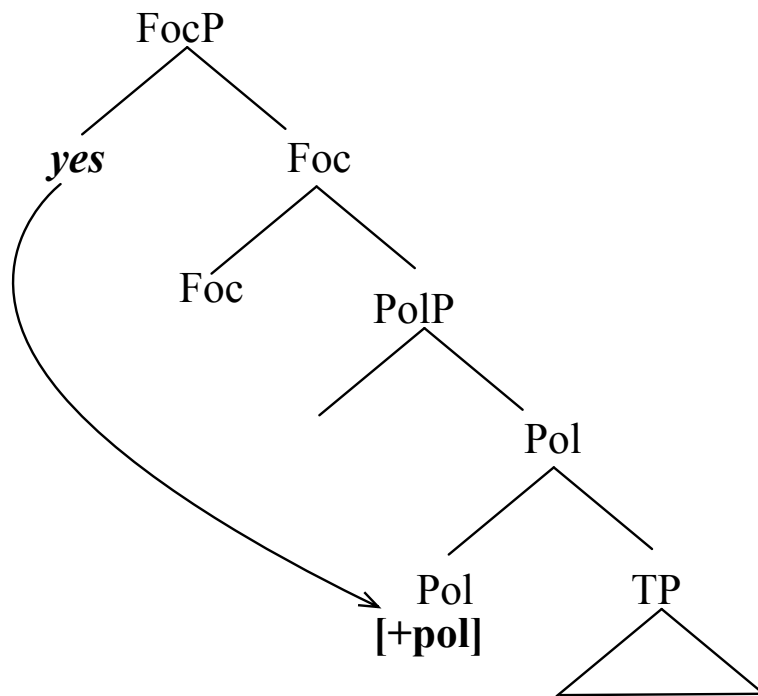
ii) **No** (I didn't)



The syntax of response particles

(Holmberg 2016)

Why a syntactic analysis?



Evidence for a syntactic treatment

- Q: *Tul-i-vat-ko lapset kotiin?* FINNISH
come-PST-3PL-Q children home
'Did the children come home?'
- A: *Tul-i-vat.*
come-PST-3PL
'Yes.'

Holmberg 2016 ex 5

Evidence for a syntactic treatment of response

Syntactic analysis of response particles gives us a heuristic for exploring cross-linguistic variation

- Q04_Polar question I
- Q05_Polar question I
- Q06_Polar question I
- Q07_Q-marker follow
- Q08_Affirmative ans
- Q09_Affirmative ans
- Q10_Affirmative ans
- Q11_Affirmative ans
- Q12_Affirmative answer by particle and verb
- Q13_Affirmative answer by predicative 'be'
- Q14_Verb answer to indefinite subject question
- Q15_Particle-and-verb answer to indefinite subject question
- Q16NEGA_Negative answer by special negative particle
- Q17NEGA_Negative answer by bare sentential negation
- Q18NEGA_Negative answer by sentential negation plus bare verb
- Q19ANegQ_Truth-based confirmation
- Q20ANegQ_Polarity-based confirmation
- Q21ANegQ_Polarity-reversing particle
- Q22ANegQ_Polarity-reversing answer by affirmative and special particle
- V2 01_Declarative Verb-Second
- V2 02_Interrogative Verb-Second
- w01a_Indef mass Ns in O position: can be bare
- w01b_Indef mass Ns in O position: must have an article
- w01c_Indef mass Ns in O position: can have an article
- w02a_Def mass Ns in O position: can be bare
- w02b_Def mass Ns in O position: must have an article
- w02c_Def mass Ns in O position: can have an article

SSWL

Syntactic Structures of the World's Languages

Search 🔍

Add ➕

Properties 📄

Languages 🗨️

SSWL is a searchable database that allows users to discover which properties (morphological, syntactic, and semantic) characterize a language, as well as how these properties relate across languages. This system is designed to be free to the public and open-ended. Anyone can use the database to perform queries.

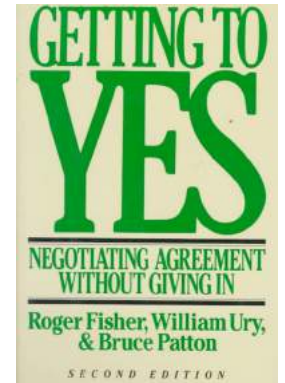
To learn more about the objectives of SSWL, please visit [the original workshop site](#) or watch our [tutorial video](#).

To read about early updates, please visit [our Google Group](#), (which is no longer actively used).

This site hosts the original prototype SSWL, launched June 1 2009. In the near future, the database will migrate to [Terraling](#), the next generation of the linguistic explorer project. (same database, different code, faster and more powerful search functions). A new user interface is in development.

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The core meaning of response particles



Q: *Did you like the movie?*

A: i) **Yes** (*I did*)

ii) **No** (*I didn't*)

Sie hat die Frage be-ja-ht.

Sie hat die Frage ver-nein-t.

She has the question yes.part

'She answered with yes.'

She has the question no.part

'She answered with no.'

The core meaning of response particles

The meaning
goes beyond
answering



Yes

'**positive** attitude towards X

*das Leben **bejahen**.*

'affirming life'

Upon receive e-mail with
good news

Yesssss!

No

'**negative** attitude towards X

*Ein Atheist **verneint** die Existenz Gottes.*

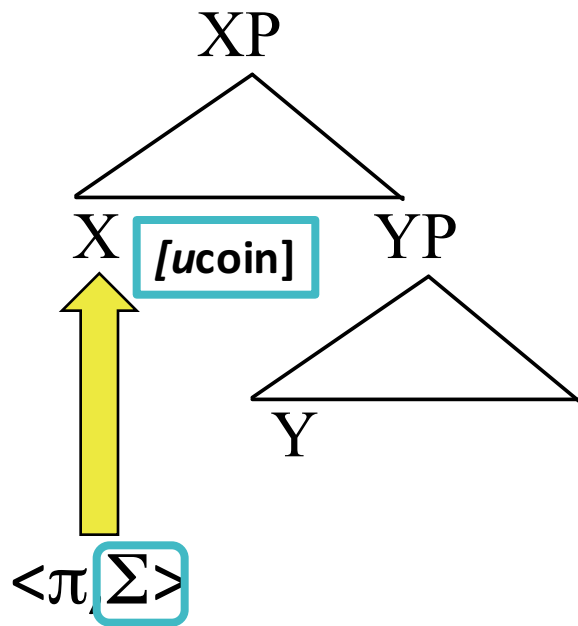
'An atheist denies god's existence.'

Upon receiving e-mail with bad
news

No!

Predictions

Meaning values \bar{F}

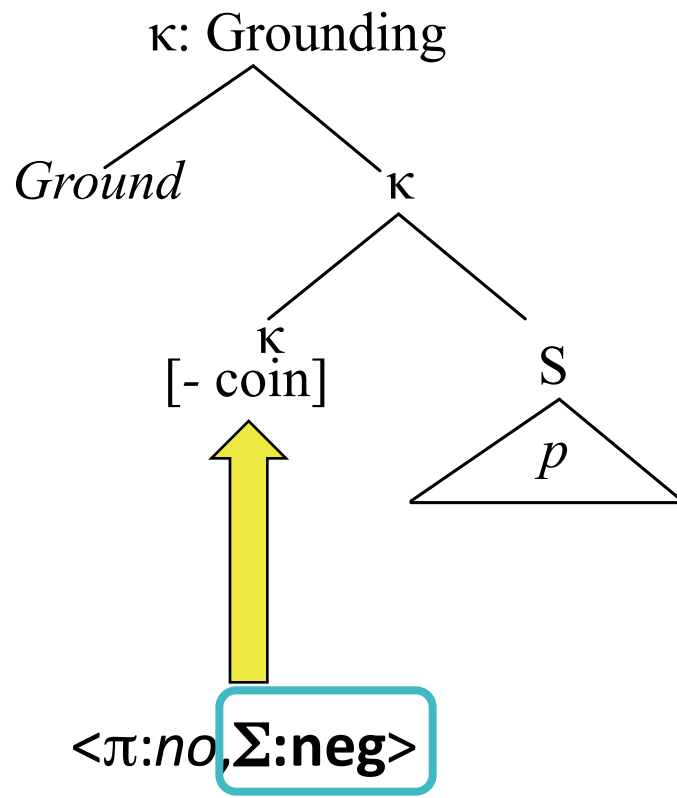
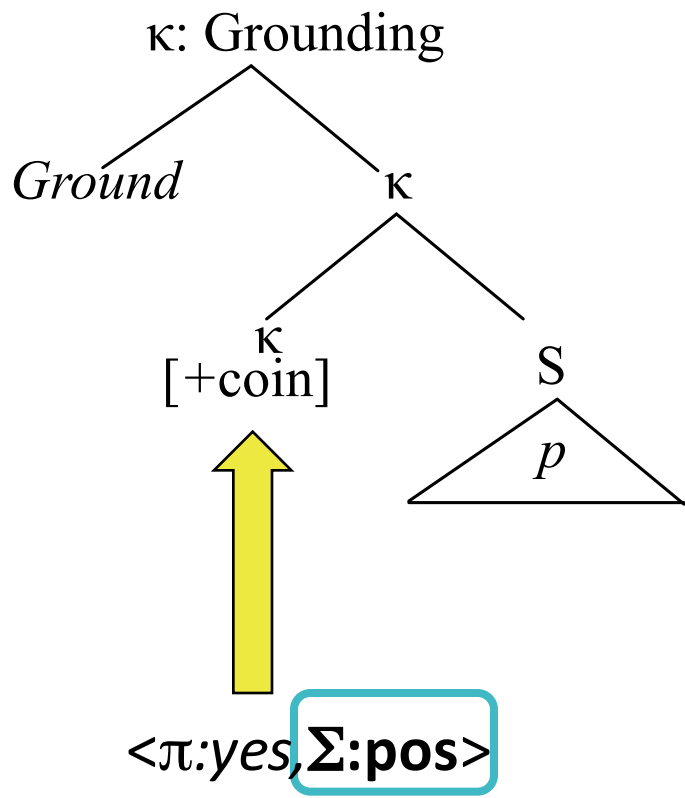


Predictions

- **multi-functionality** of $\langle \pi, \Sigma \rangle$
- Modification affects **form** and **interpretation**
- Sound can value [ucoin]

The proposal

$F = [\text{ucoin}]$ in the grounding layer



The multi-functionality of response particles

Beyond answering

Response to y/n Question



ANSWER

Q: *Did you like the movie?*

A: i) **Yes** (*I did*)

ii) **No** (*I didn't*)

Response to assertion

A: *John speaks French really well*

B: Yes . (= p)

No . (=¬p)



AGREEMENT

Response to wh-question

AGREEMENT
WITH
QUESTION

Katie: *Why would he do something like that?*

Brooke: *Yes, I know. That is the question.*

BB-2012-05-23

Avery: *How did that happen?*

Lauren: (Chuckles) *yes.*

Michael: *It happened because your amazing nephew convinced daisy to move out of the building.*

YR-2012-05-17

Response to command

COMPLIANCE

Alison: *So go back to the farmhouse and wait for us.*

Deacon: **Yes, Ma'am.** BB-2012-06-20

Steffy: *Treat me like one of your patients..*

Taylor: **Yes, I will.** BB-2012-06-29

Michael: *Breathe!*

Starr: **Yes.** GH-2012-03-29

Response to exclamation

AGREEMENT
WITH
EXCLAMATION

Steffy: *Whoo-hoo .*

Liam: ***Yes!*** (BB-2012-05-03)

A: *What a beautiful sunset.*

B: ***Yes, I know. Isn't it gorgeous.***

Response to Address

M: *Myriam?*

R: *Yes!*



RESPONSE

Response to a situation

RESPONSE

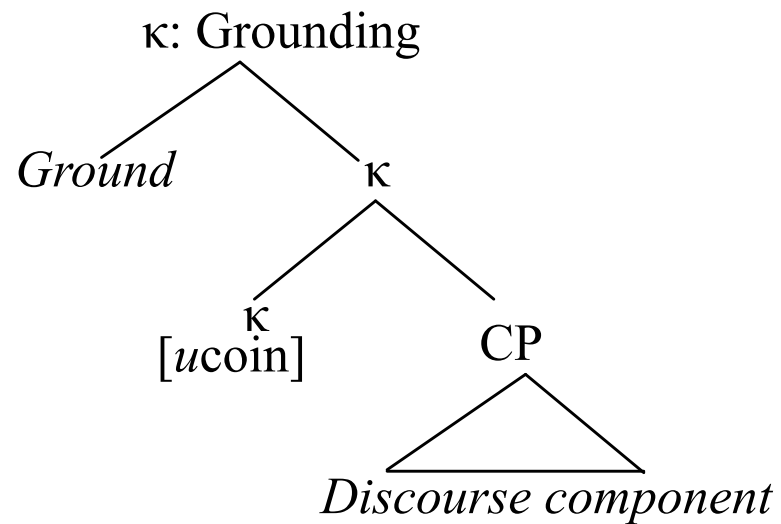
Mary has been impatiently waiting for the delivery of a book she has ordered. One day she opens her mailbox and there is indeed a package.

Mary: *Yessss!*

Response particles are multi-functional

Trigger:	Y/N Q	Wh-question	imperative	exclamative	vocative	Non-linguistic event
yes	✓	✓	✓	✓	✓	✓
no	✓	✓	✓	✓	✓	✓

Towards an analysis

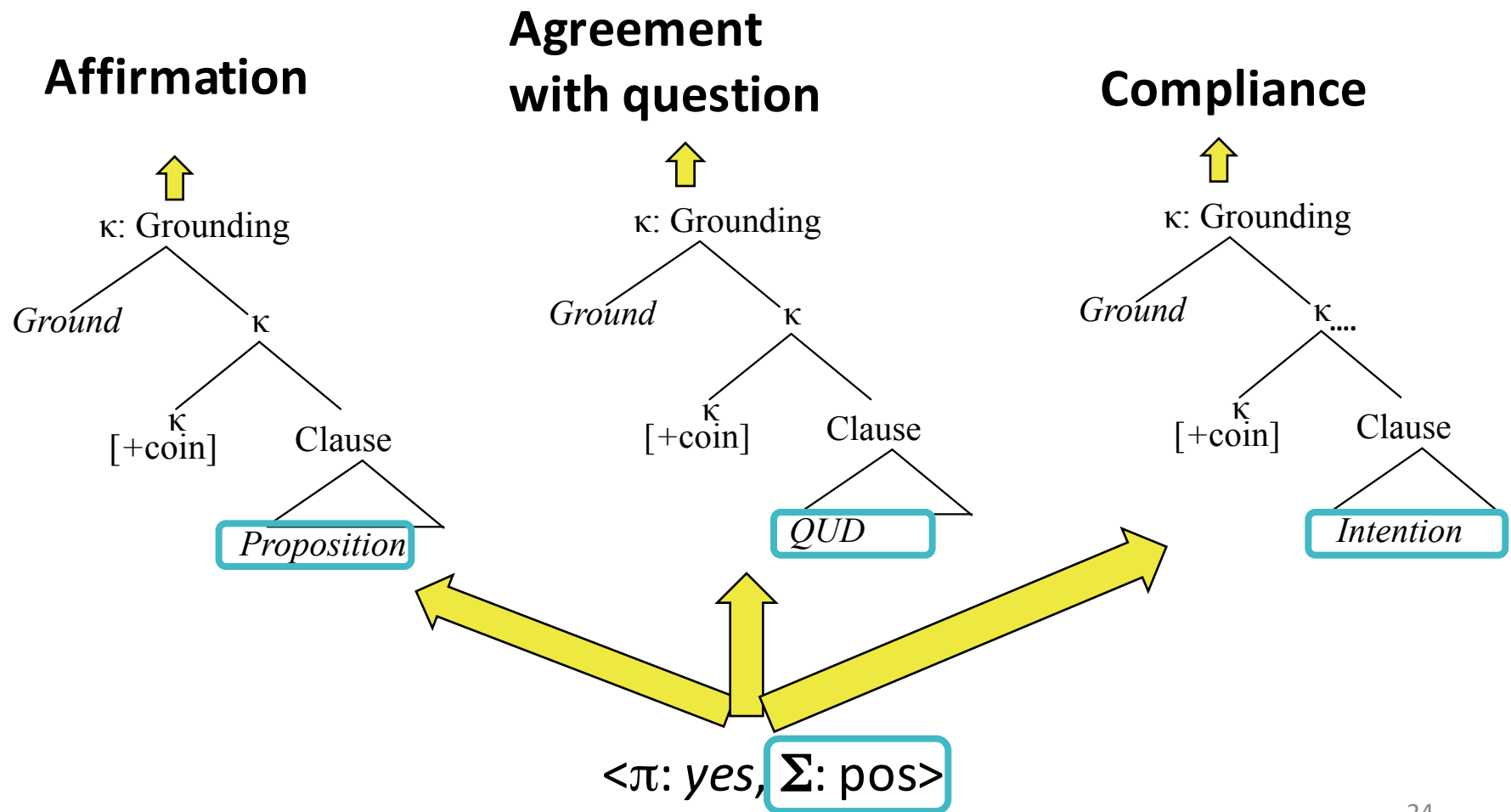


Decl: p
Interr: QUD
Imper: To-do-list

...

Multi-functionality

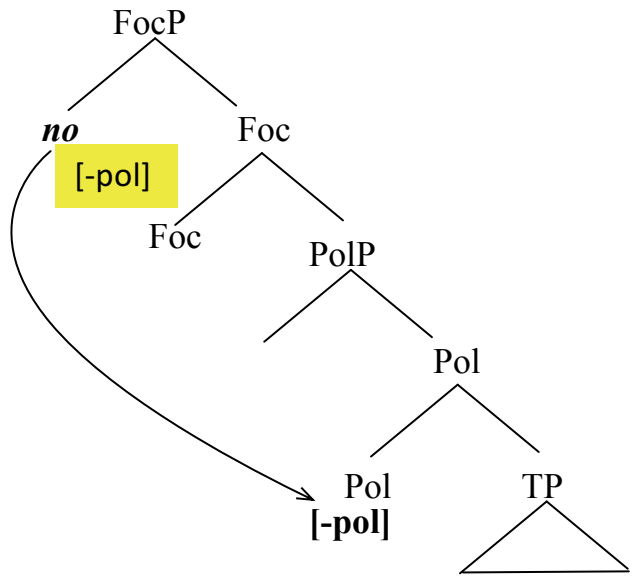
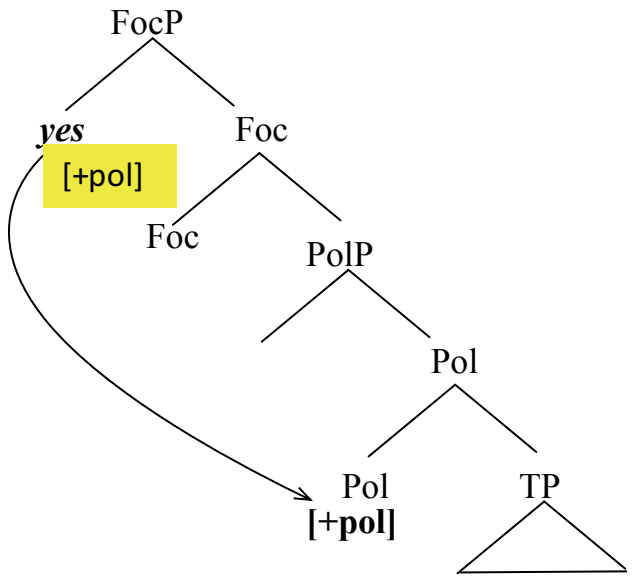
The complement affects the interpretation of the UoL



Formal feature [+/-pol]

This analysis doesn't capture the multi-functionality of response particles

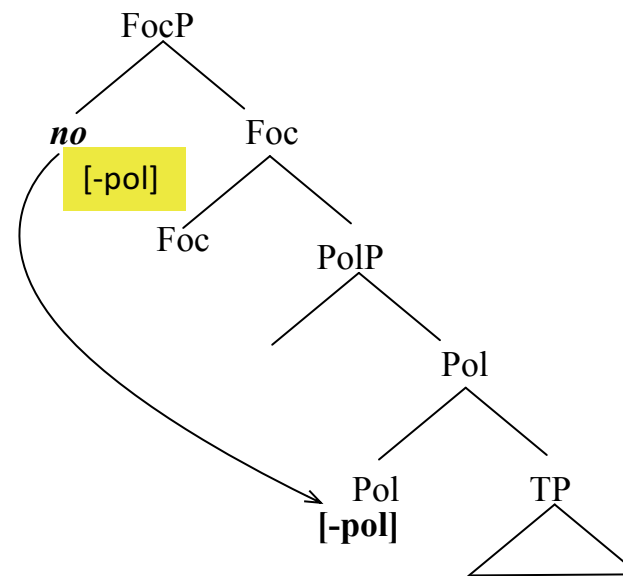
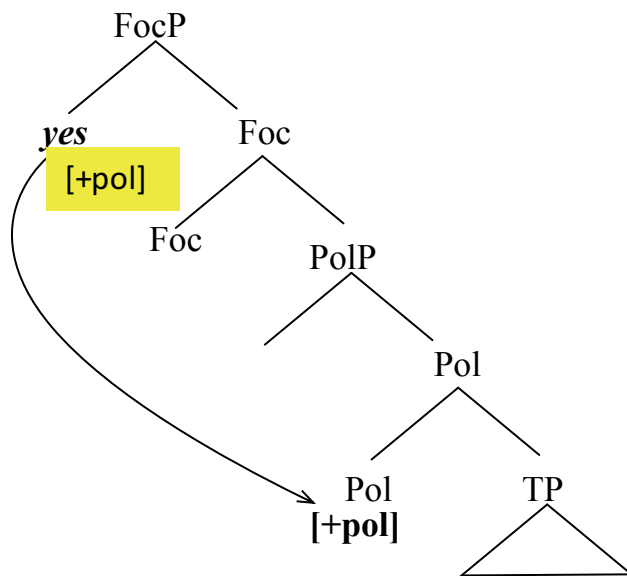
Trigger:	Y/N Q	Wh-question	imperative	exclamative	vocative	Non-linguistic event
yes	✓	✓	✓	✓	✓	✓
no	✓	✓	✓	✓	✓	✓



Formal feature [+/-pol]

"it's a different
"yes"
Anders Holmberg,
p.c.

Trigger:	Y/N Q	Wh-question	imperative	exclamative	vocative	Non-linguistic event
yes	✓	✓	✓	✓	✓	✓
no	✓	✓	✓	✓	✓	✓



More multi-functionality

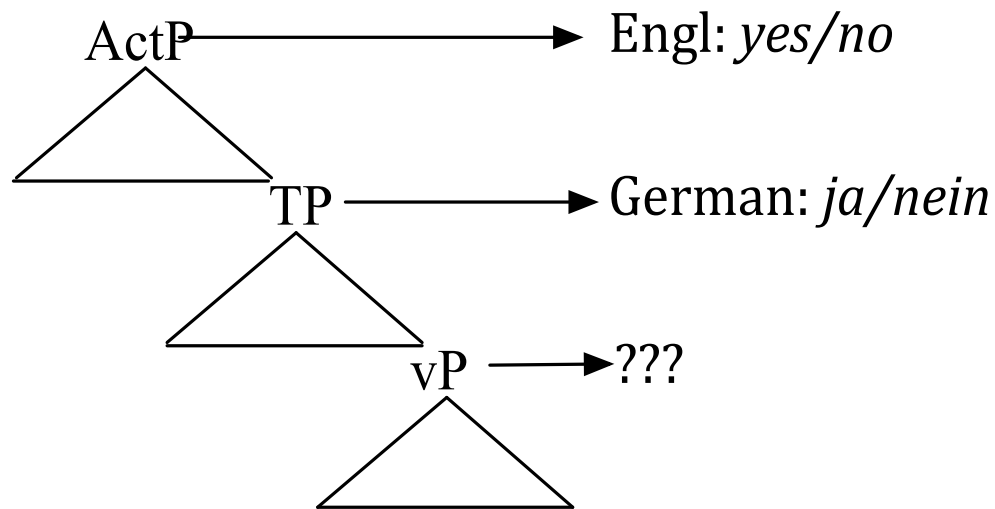
Dorothy: [We've got] to do this shopping Peter.

Peter: **Yeah, no** it's alright nanna, we've got 5 minutes.

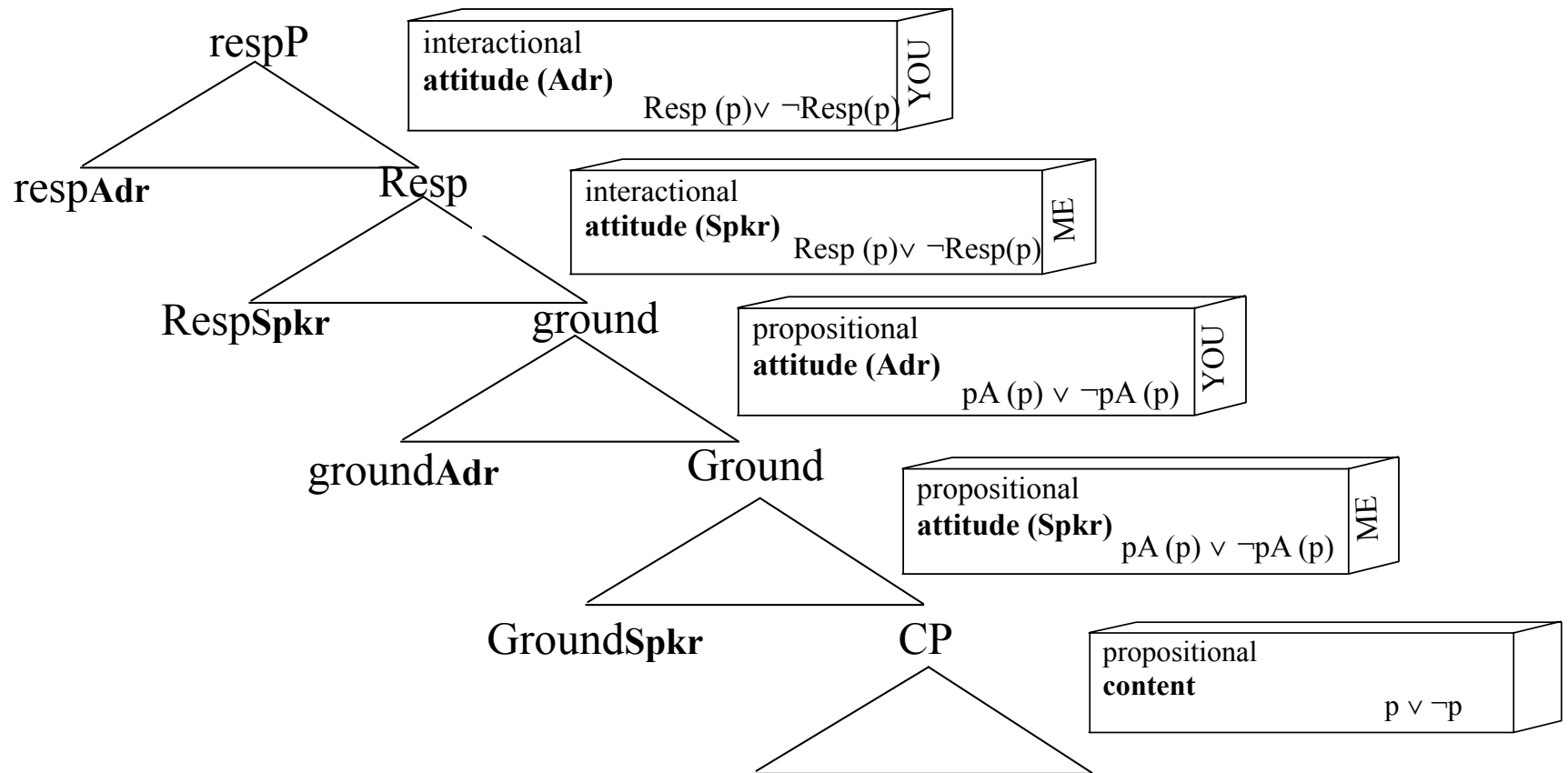
Burridge & Florey 2002: 164 (12)

More multi-functionality

Krifka's analysis

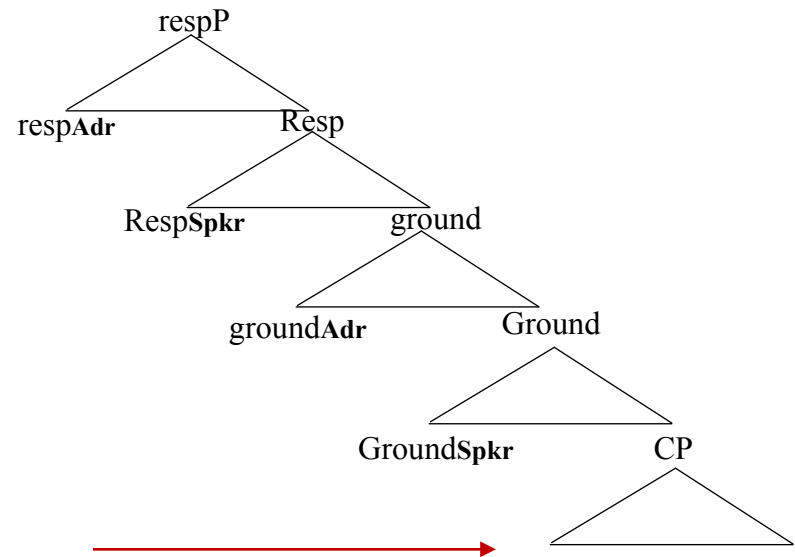


The structure of conversations



Answer to polar question

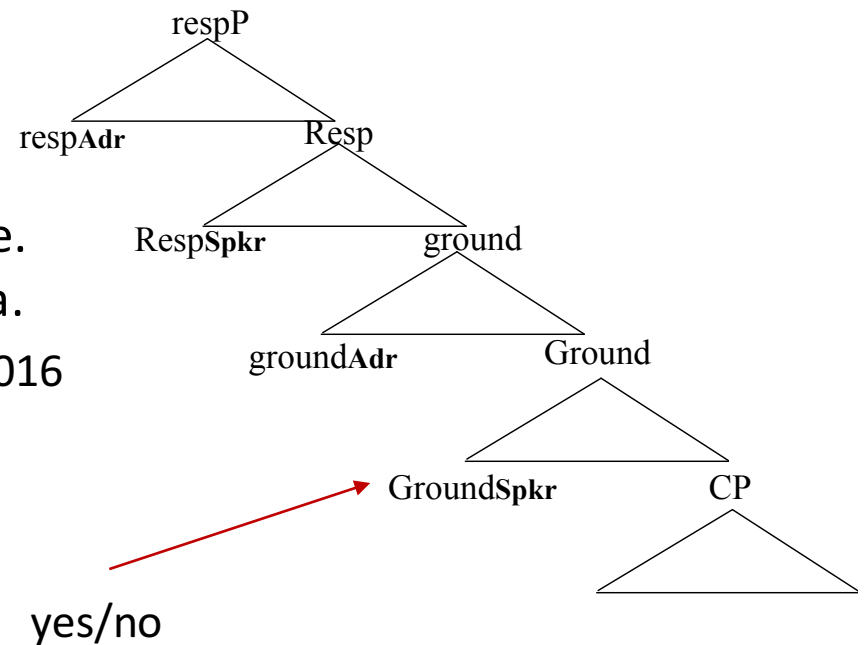
Do you have a dog?
yes/no



Response to Speaker belief

A: The Godfather is the best movie ever made.
B: Yeah, I think that honor goes to Casablanca.

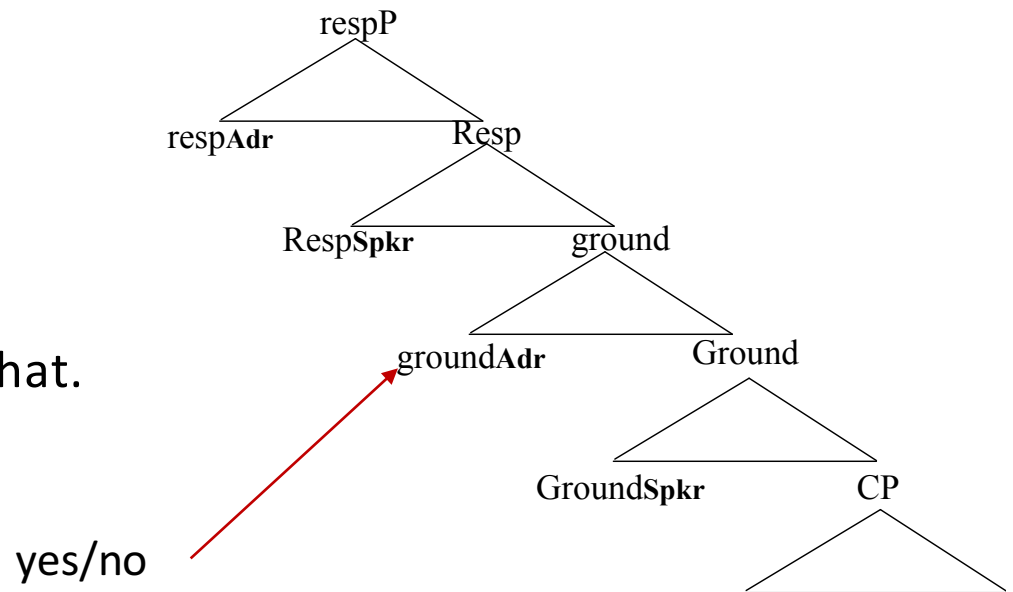
Guntly 2016



Response to Addressee belief

A: I have a new dog, eh?

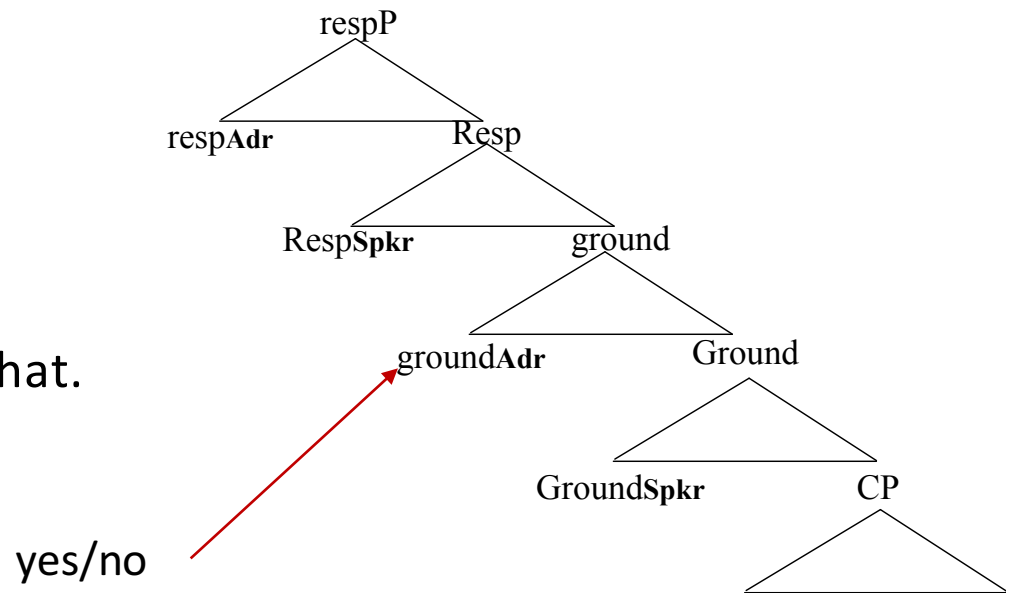
B: Yeah, no I actually didn't know that.



Response to Speaker response

A: I have a new dog, eh?

B: Yeah, no I actually didn't know that.



Evidence from Medumba

Based on Keupdjio & Wiltschko 2017

Medumba response markers

Q ú kí ↓mb^hú **áá**
2SG feed dog Prt
“Did you feed the dog?”

A1: ìjì!

A2: ìjìjì!

Difference #1:

Not all polar questions can be answered with both response markers:

(2) Q: ú kí ↓mb^hú **kí**
 2SG feed dog Prt
 “Did you feed the dog?”

A1 a. íj̀j̀ (mú kí ↓mb^hú)
A2 b. #íj̀j̀

Difference #2:

ńń but not *ńńń* can be followed by the positive propositional content introduced in Q.

(3) Q *ú* *kí* *↓mb^hú* *áá*
2SG feed dog Prt
“Did you feed the dog?”

A3: *ńń* (*mú* *kí* *↓mb^hú*)
Yes 1SG feed dog

A4: *ńńń!* *(*mú* *kí* *↓mb^hú*)

Difference #3:

ńńń but not *ńń* can be followed by the negative proposition,

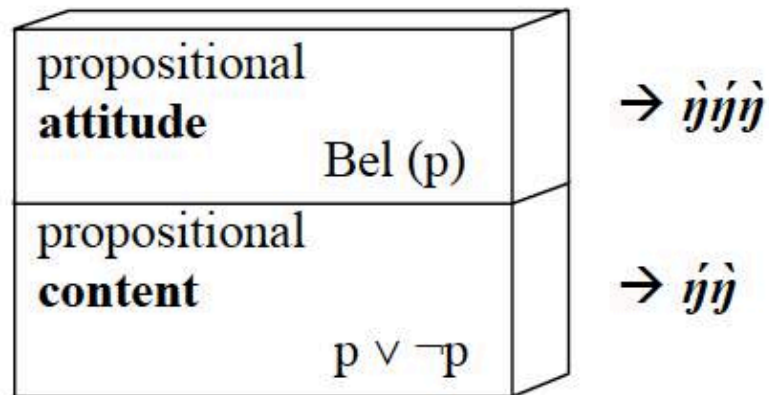
(4) Q *ú* *kí* *↓mb^hú* *áá*
 2SG feed dog Prt
 “Did you feed the dog?”

A5: **ńń* (*má* *kúù?* *kí* *↓mb^hú*)
 Yes! 1sg Neg feed dog

A6: *ńńń* (*má* *kúù?* *kí* *↓mb^hú*)
 Yes 1sg Neg feed dog
 Yes! I didn't feed the dog

	íṅ	ṅíṅ
Used with <i>áá</i> questions	✓	✓
Used with <i>ki</i> questions	✓	✗
Can be followed by positive p	✓	✗
Can be followed by negative p	✗	✓

- i) \dot{ij} targets the propositional content of the question
- ii) $\dot{ij}\dot{ij}$ targets the Bias underlying the question



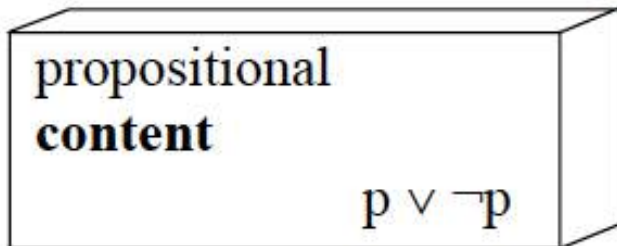
Answer to neutral questions

Context: A woman is doing a survey about how many dogs there are in her neighborhood. She walks on the street, meets a man and asks:

ú γὰὐά ↓mb^hú kí
2SG have dog Prt
“Do you have a dog?”

A1 ἦῖ
A2 #ἦἦἦ

In the absence of a Bias, only *ἦῖ* can be used



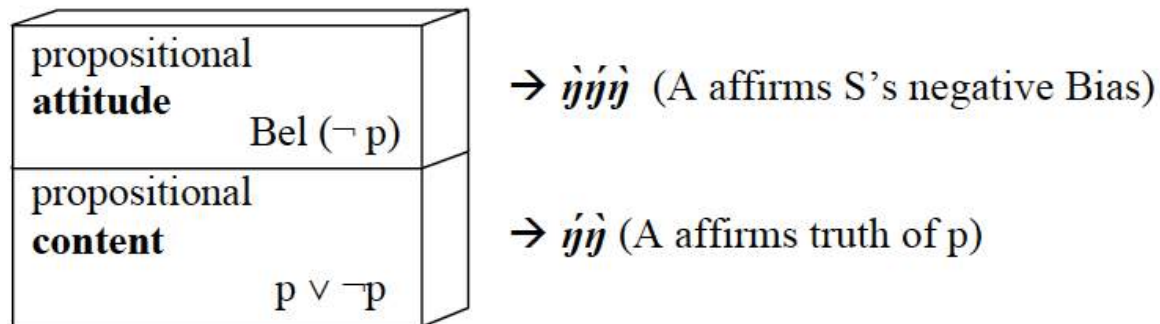
→ ἦῖ

Answer to biased questions

Context: It is public knowledge that John doesn't like dogs or anything related to them. One day, John went to his friend Greg and fed the dog while waiting for him. When Greg arrives, he rushes to feed the dog and John tells him that he already fed the dog. Surprised, he asks John:

Q \acute{u} $k\acute{i}$ $\downarrow mb^h \acute{u}$ $\acute{a}\acute{a}$
 2SG feed dog Prt
 “Did you feed the dog?”

A: a. $\acute{y}\acute{y}!$
 b. $\grave{y}\acute{y}\acute{y}!$ *[I know that you believe not p]*

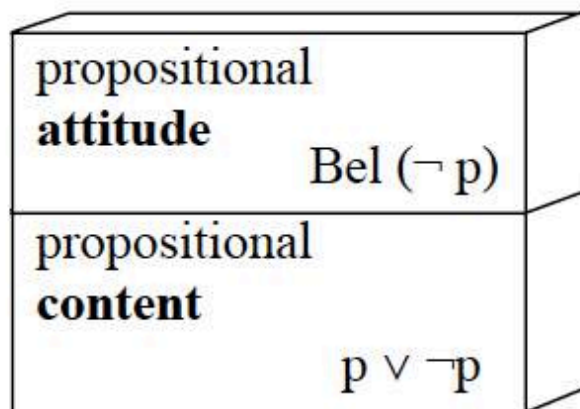


Positive follow up

Q \acute{u} $k\acute{i}$ $\downarrow mb^h \acute{u}$ $\acute{a}\acute{a}$
 2SG feed dog Prt
 “Did you feed the dog?”

A3: $\acute{y}\grave{y}$ ($m\acute{a}$ $k\acute{i}$ $\downarrow mb^h \acute{u}$)
 Yes 1SG feed dog

A4: $\grave{y}\acute{y}\grave{y}$! *($m\acute{a}$ $k\acute{i}$ $\downarrow mb^h \acute{u}$)



→ $\grave{y}\acute{y}\grave{y}$ (A affirms S's **negative** Bias hence is incompatible with p)

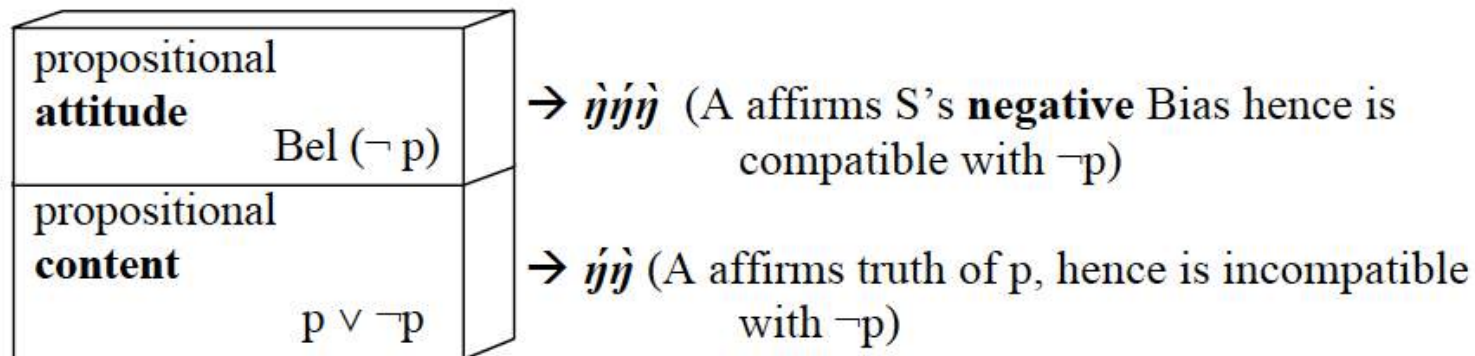
→ $\acute{y}\grave{y}$ (A affirms truth of p, hence is compatible with p)

Negative follow up

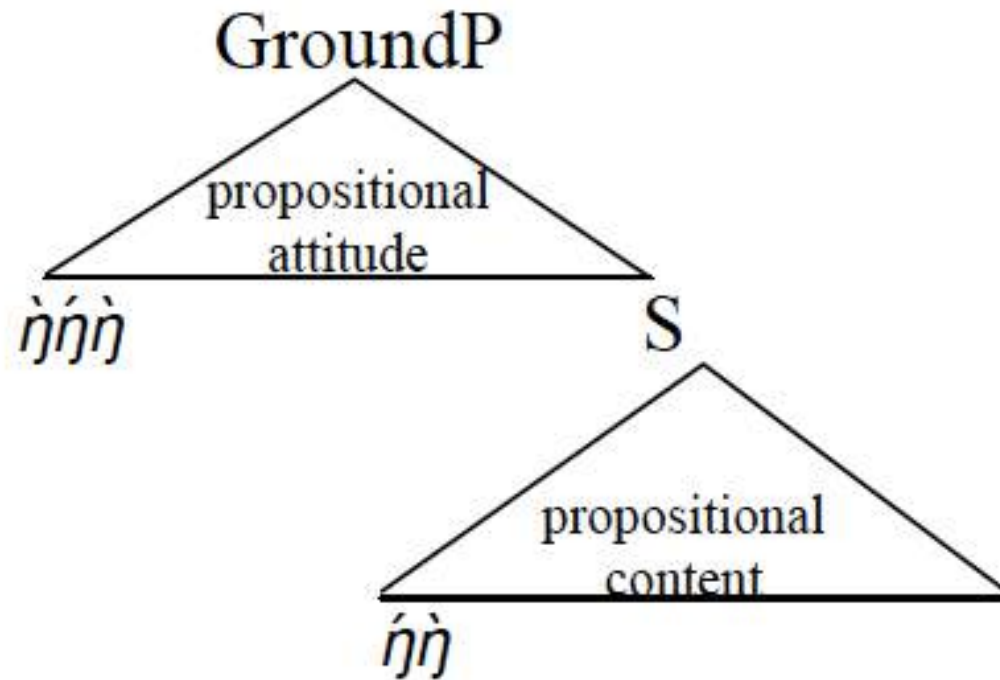
Q ú kí ↓mb^hú **áá**
 2SG feed dog Prt
 “Did you feed the dog?”

A5: *íj̃ (má kúù? kí ↓mb^hú)
 Yes! 1sg Neg feed dog

A6: ij̃j̃ (má kúù? kí ↓mb^hú)
 Yes 1sg Neg feed dog
 Yes! I didn't feed the dog



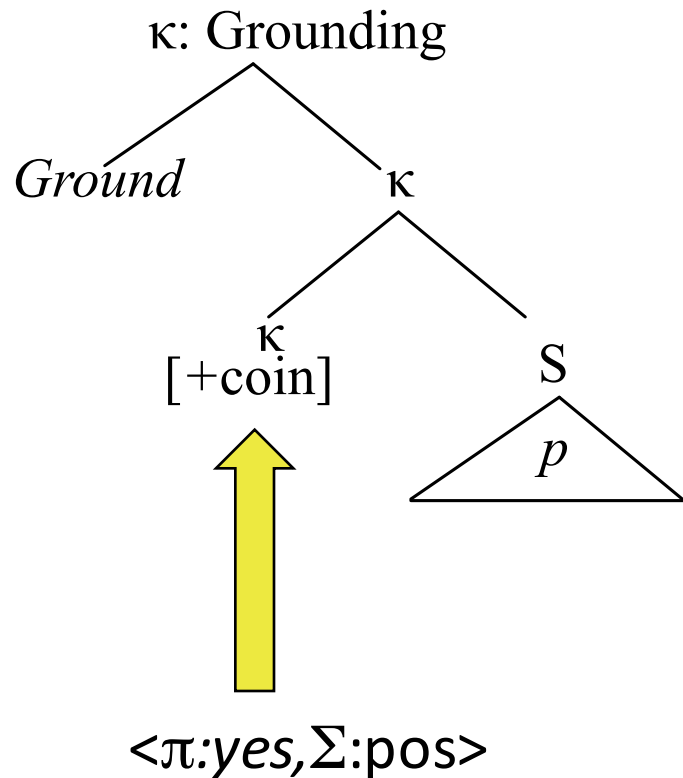
The syntax of response markers



Response particles can be modified

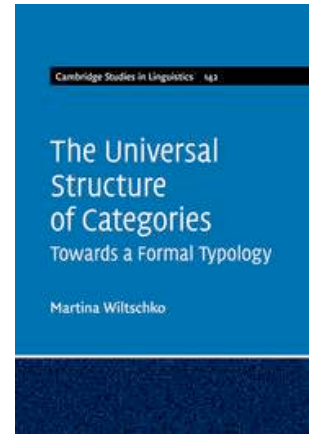
1. Prediction based on USH
2. This rules out an underspecification/late insertion approach

Predictions

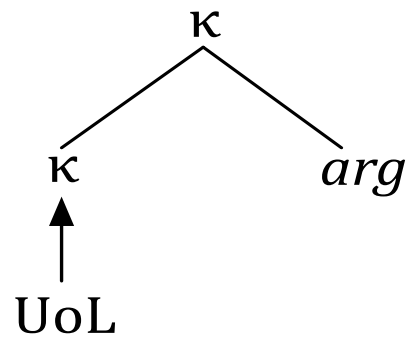


- Multi-functionality
- Modification affects **form** and **interpretation**
- Sound can value [*u*coin]
- Other UoLs in GroundP

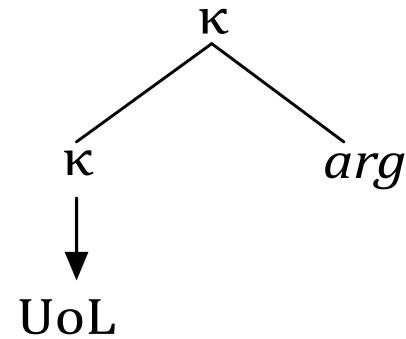
USH and the timing of association



Early association

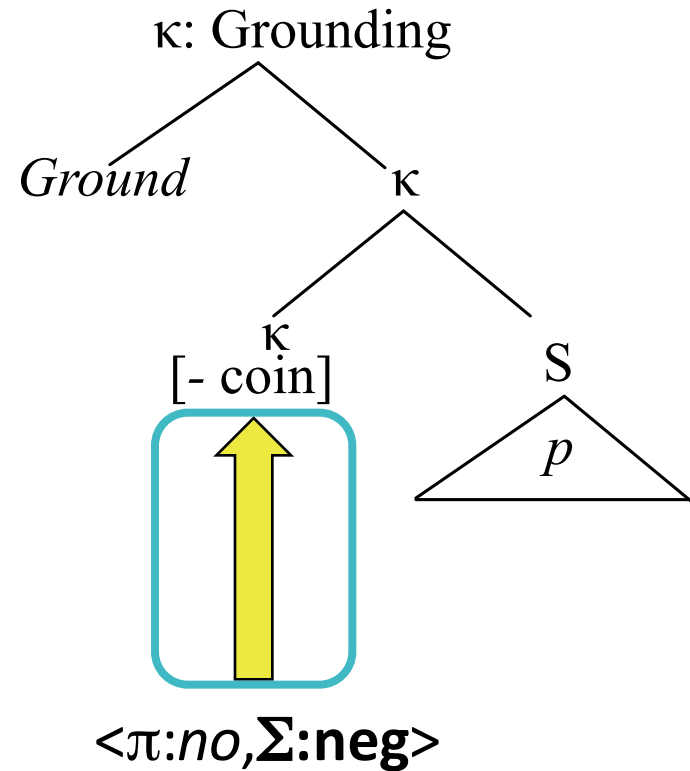
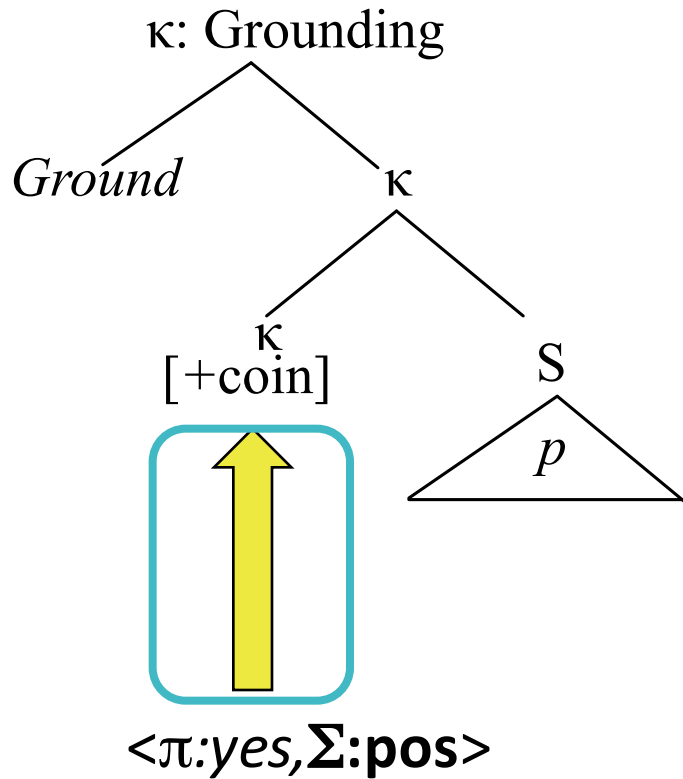


Late association



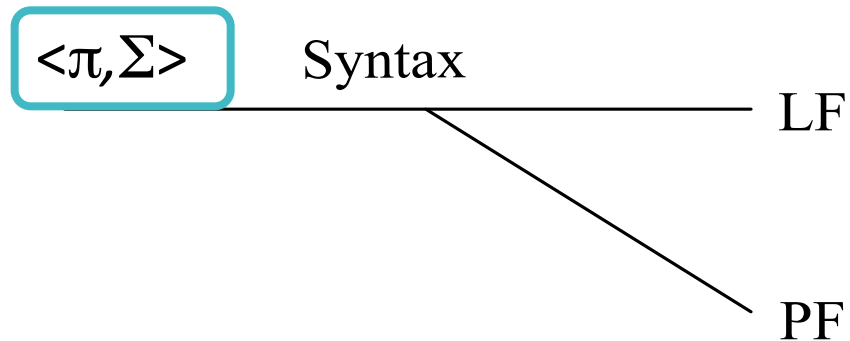
The proposal

This is an early insertion analysis



Early insertion UoLs

Particle
modification
will affect
sound and
meaning



Beyond *yes* and *no*

This is a
paradigm

Positive particle	Negative particle
<i>yes</i>	<i>no</i>
<i>yeah</i>	<i>nah</i>
<i>yup</i>	<i>nope</i>
<i>yessss</i>	<i>noooooooo</i>
<i>yeah yeah</i>	<i>no no</i>
<i>yeah yeah yeah yeah yeah</i>	<i>no no no no no</i>
<i>oh yes</i>	<i>oh no</i>
<i>uhuh</i>	<i>u'uh</i>
<i>mhm</i>	<i>m'm</i>

Beyond *yes* and *no*

π -Modification
affects meaning
of the particle

Positive particle	Negative particle	Modification of sound
<i>yes</i>	<i>no</i>	Base form
<i>yeah</i>	<i>nah</i>	Vowel weakening
<i>yup</i>	<i>nope</i>	Final shortening
<i>yessss</i>	<i>noooooo</i>	Final lengthening
<i>yeah yeah</i>	<i>no no</i>	reduplication
<i>yeah yeah yeah yeah yeah</i>	<i>no no no no no</i>	Requintuplication
<i>oh yes</i>	<i>oh no</i>	Oh-prefixation

Beyond *yes* and *no*

Q: *Did you like the movie?*



Positive particle	Negative particle	Modification of sound	Modification of meaning
<i>yes</i>	<i>no</i>	Base form	Basic
<i>yeah</i>	<i>nah</i>	Vowel weakening	Weakened
<i>yup</i>	<i>nope</i>	Final shortening	Determined
<i>yessss</i>	<i>noooooo</i>	Final lengthening	Emphatic
<i>*yeah yeah</i>	<i>*no no</i>	reduplication	--
<i>*yeah yeah yeah yeah yeah</i>	<i>*no no no no no</i>	Requintuplication	--
<i>oh yes</i>	<i>*oh no</i>	Oh-prefixation	Strong affirmation

Beyond answering

Mary has been impatiently waiting for the delivery of a book she has ordered. One day she opens her mailbox and there is indeed a package.

Positive particle	Modification of sound	Modification of meaning
<i>??yes</i>	Base form	Basic
<i>??yeah</i>	Vowel weakening	Weakened
<i>*yup</i>	Final shortening	Determined
<i>yessss</i>	Final lengthening	Emphatic answer
<i>*yeah yeah</i>	reduplication	--
<i>*yeah yeah yeah yeah yeah</i>	Requintuplication	--
<i>*oh yes</i>	Oh-prefixation	Strong affirmation

Beyond answering

Mary opens the package and realizes it's the wrong book.

Negative particle	Modification of sound	Modification of meaning
<i>??no</i>	Base form	Basic
<i>*nah</i>	Vowel weakening	Weakened
<i>*nope</i>	Final shortening	Determined
<i>noooooo</i>	Final lengthening	Emphatic
<i>*no no</i>	reduplication	--
<i>*no no no no no</i>	Requintuplication	--
<i>oh no</i>	Oh-prefixation	Strong affirmation

Modification of form affects interpretation

Trigger:	Y/N Q	Non-linguistic event	Trigger:	Y/N Q	Non-linguistic event
<i>yes</i>	✓	??	<i>no</i>	✓	✗
<i>yeah</i>	✓	??	<i>naaah</i>	✓	✗
<i>yeah yeah</i>	✗	✗	<i>no no</i>	??	✗
<i>yup</i>	✓	✗	<i>nope</i>	✓	✗
<i>yesss</i>	✓	✓	<i>nooooo</i>	✓	✓
<i>oh yes</i>	✓	??	<i>oh no</i>	??	✓
<i>uhuh</i>	✓	??	<i>u'uh</i>	✓	✗
<i>mhm</i>	✓	??	<i>m'm</i>	✓	✗

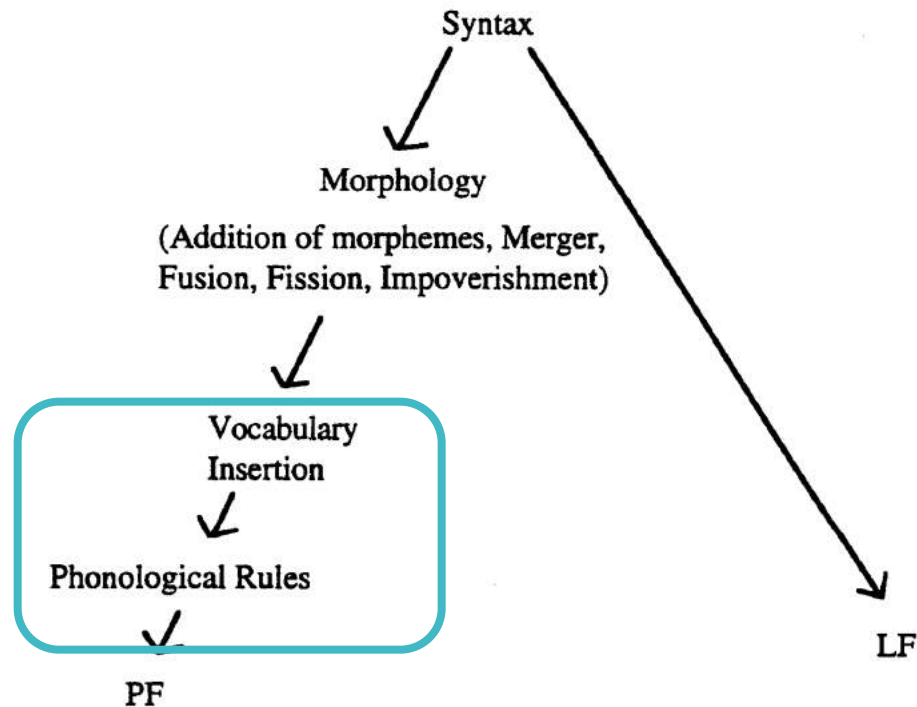
Beyond *yes* and *no*

This analysis doesn't capture the multi-formality of response particles

Trigger:	Y/N Q	Non-linguistic event
<i>yes</i>	✓	??
<i>yeah</i> yes	✓	??
<i>yeah</i> [+pol]	✗	✗
<i>yep</i>	✓	✗
<i>yes.s</i>	✓	✓
<i>oh yes</i>	✓	Pol
<i>ubuh</i>	✓	??
<i>mbm</i>	✓	??

Trigger:	Y/N Q	Non-linguistic event
<i>no</i>	✓	✗
<i>naaaah</i> no	✓	✗
<i>no no</i> [-pol]	??	✗
<i>nope</i>	✓	✗
<i>nooooo</i>	✓	✓
<i>oh no</i>	??	✓ Pol
<i>u'uh</i>	✓	✗
<i>m'm</i>	✓	✗

Underspecification/late insertion



Phonological rules have an effect on the interpretation of the particle

The logic behind the emotive paradigm

Based on Wiltschko 2017

The logic behind the paradigm

Modification of response markers

→ conveys **emotional stance towards what is said**

Primitives of emotions:

- i) Appraisal (assignment of positive or negative value)
- ii) Intensity (
- iii) (un)expectedness

Ortony et al. 1988, Corver 2013

	Vowel weakening Yeah/nah	P-epenthesis Yep/nope	Final lengthening Yessss/noooo	Oh-prefixation Oh yes/oh no
intensity	low	high	high	low
expectedness	high	high	low	low

Final lengthening

	Vowel weakening Yeah/nah	Final lengthening Yessss/noooo
intensity	low	high
expectedness	high	low

B has recently lost his job and is worried about paying the rent. He is hoping to win the lottery.

a. Context I: The winning numbers are announced while B is at work. His housemate A realizes that B won. So A calls B to let him know:

A: You won the lottery!

B: i) Yessss.
ii) #Yeah.⁴

b. Context II: The winning numbers are announced while A is at work. A wants to know whether B won so A calls B to find out.

A: Did you win the lottery?

B: i) Yessss.
ii) #Yeah.

Vowel weakening:

	Vowel weakening Yeah/nah	Final lengthening Yessss/noooo
intensity	low	high
expectedness	high	low

In the morning, A usually waits to get up till the newspaper gets delivered.

a. Context I: A hears the newspaper drop through the front hall. (B really doesn't care)

A: The newspaper got delivered.

B i) Yeah

ii) #Yessssss.

b. Context II: B is up before A and so A asks B.

A: Did the newspaper get delivered yet?

B i) Yeah

ii) #Yessssss.

Oh-prefixation:

	Vowel weakening Yeah/nah	Final lengthening Yessss/noooo	Oh-prefixation Oh yes/oh no
intensity	low	high	low
expectedness	high	low	low

Newspaper deliveries have been on hold for 2 months because of a strike. B has given up to think that the strike will be over soon. One morning A gets up and finds the newspaper so he informs B:

A: The newspaper got delivered.

- B:
- i) #Yeah.
 - ii) Oh yes?
 - iii) Yessssss.

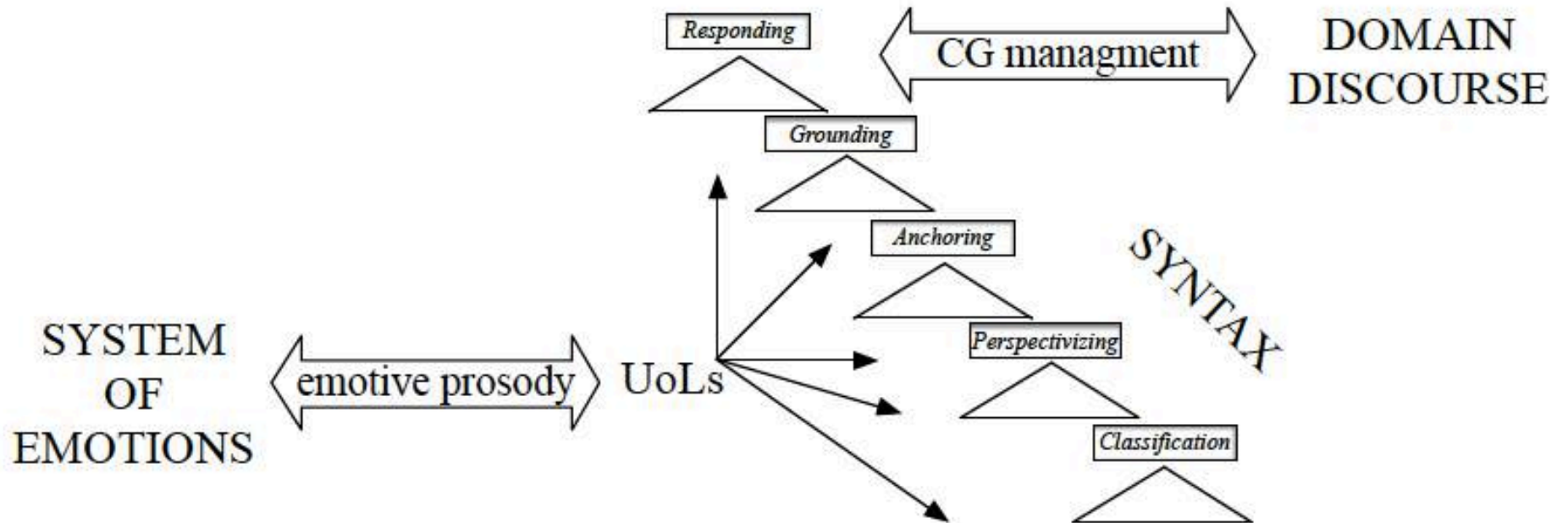
P-epenthesis

	Vowel weakening Yeah/nah	P-epenthesis Yep/nope	Final lengthening Yessss/noooo	Oh-prefixation Oh yes/oh no
intensity	low	high	high	low
expectedness	high	high	low	low

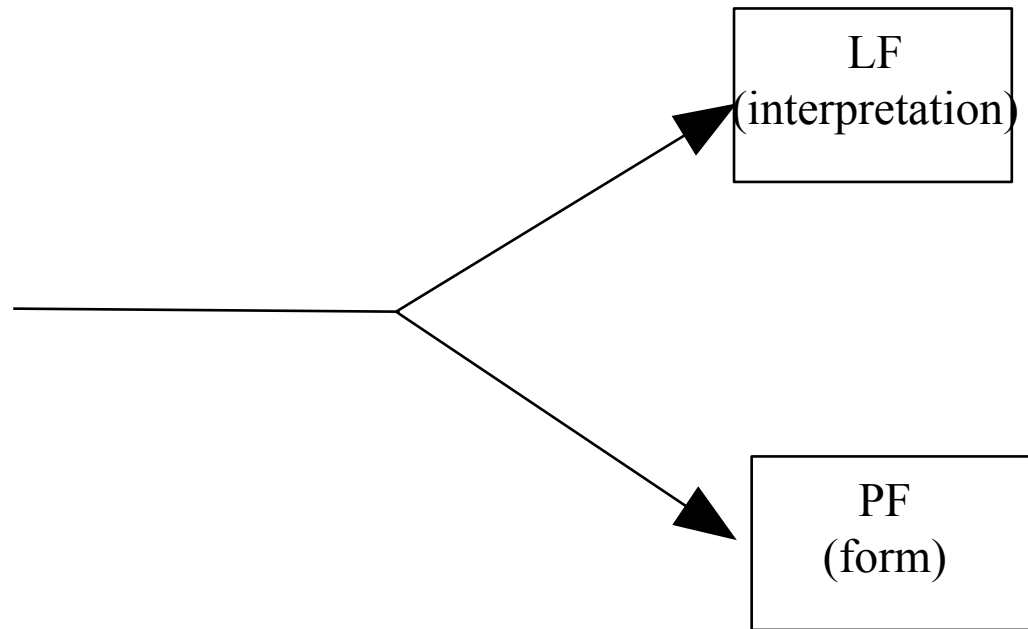
B has recently lost his job and is worried about paying the rent. He ends up winning the lottery. The winning numbers are announced while B is at work. His housemate A realizes that B won. So A calls B to let him know. But unbeknownst to A, B was able to listen to the winning numbers at work

- A: You won the lottery!
B: Yep.
A: Oh, you already heard?

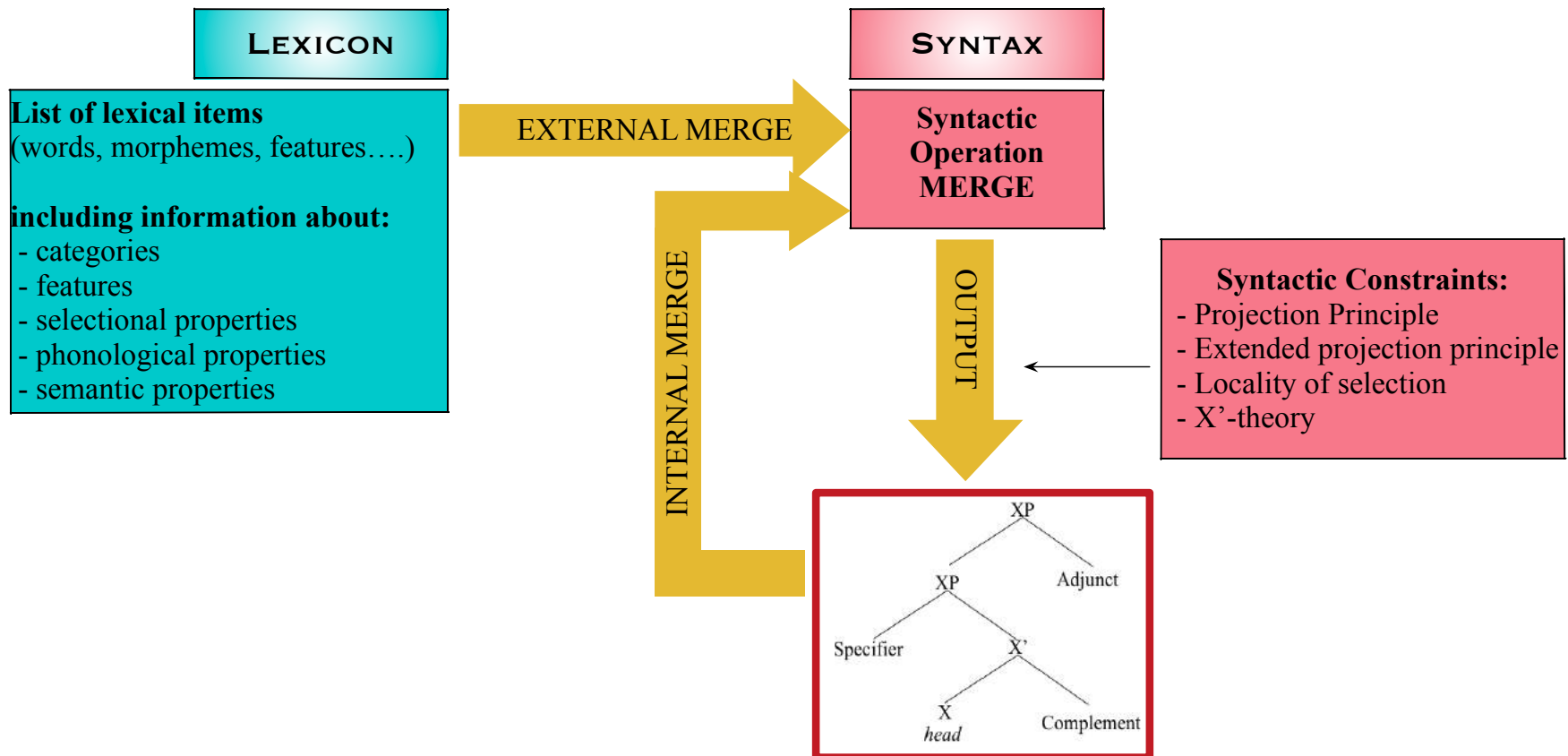
Sources of modularity



Traditional models



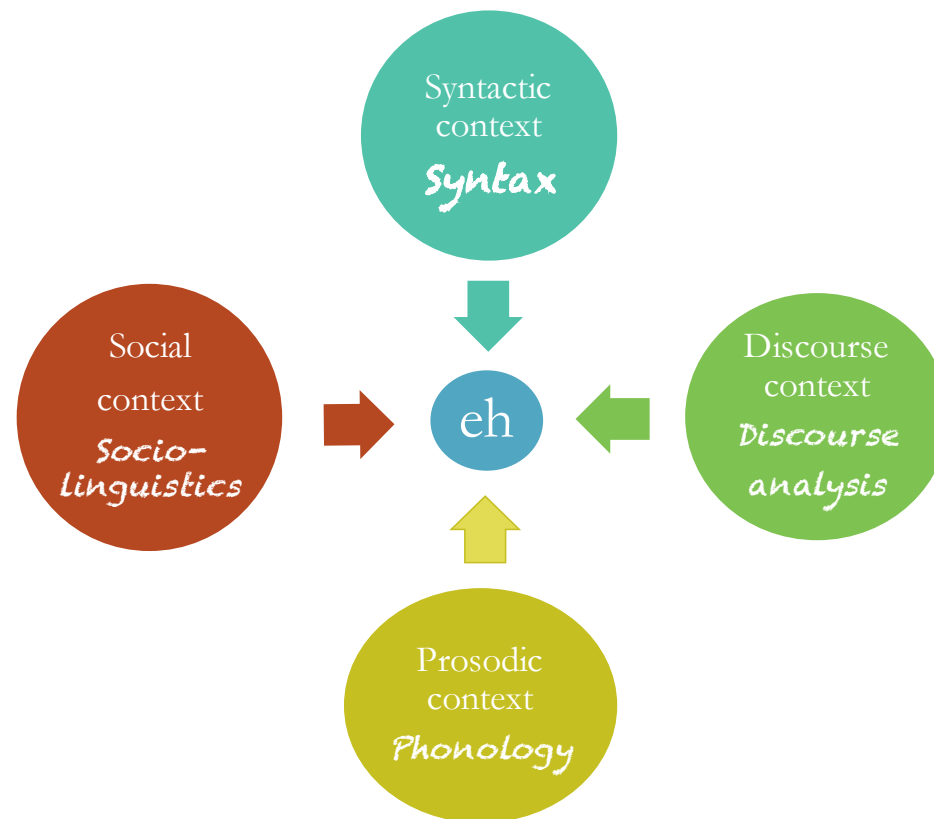
Traditional models

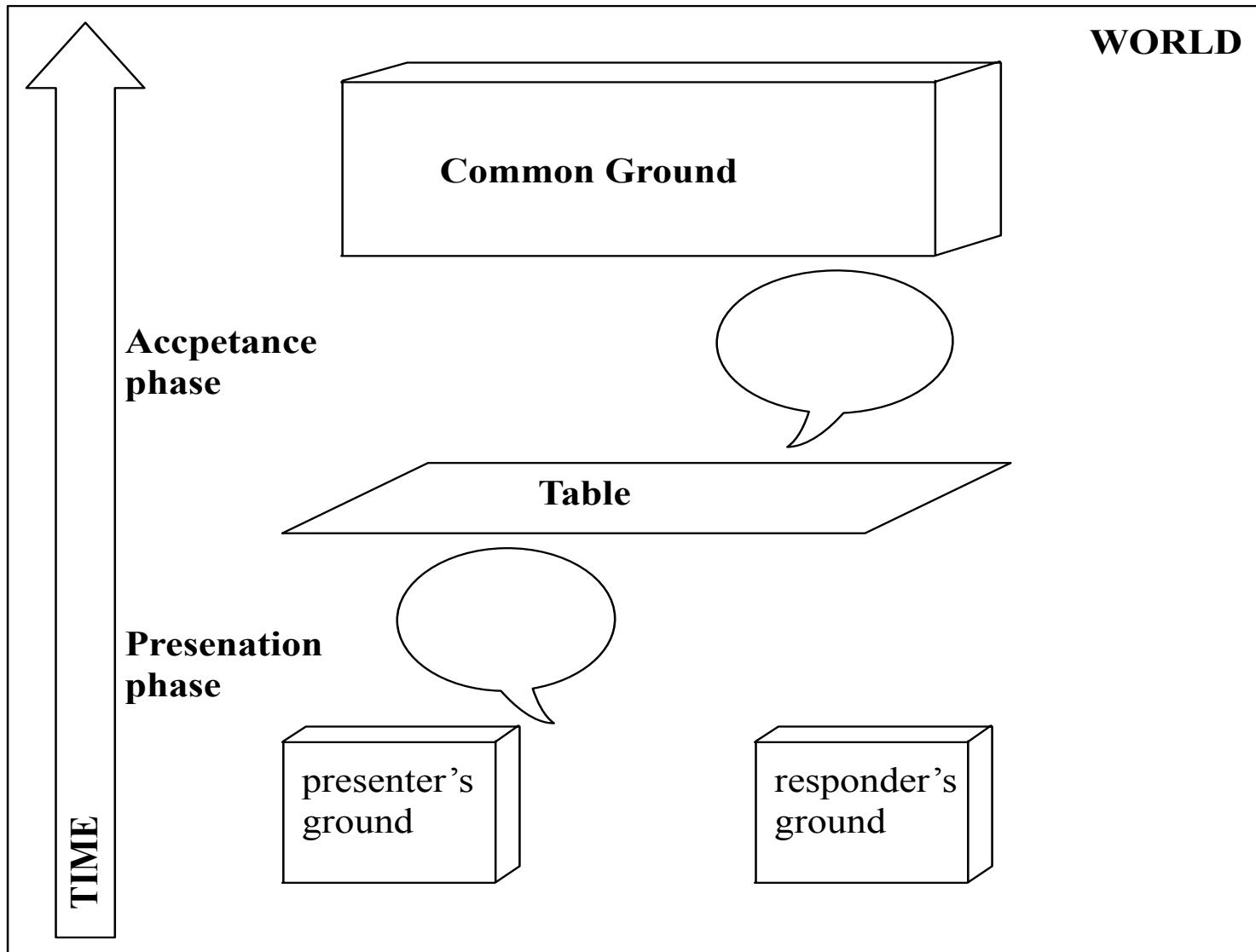


Defining linguistic domains

- Phonetics
- Phonology
- Morphology
- Syntax
- Semantics
- Pragmatics

A case for cross(sub)disciplinary collaborations





Your story does not have to be true.
But it should be interesting.

How to write a paper

<http://blogs.ubc.ca/syntaxofinteraction/files/2017/05/How-to-write-a-paper.pdf>

How to write a paper: a checklist

- Intro – the main insight:
 - What is this paper about
 - What is the main point of this paper in non-technical terms
 - Give an overview of the paper

- ❑ The problem:
 - Why was this paper written?
 - What is the specific problem addressed? (this can be a theoretical or an empirical problem)
 - Why is this problem a problem? (most likely includes a survey of the literature)

- ❑ The proposal:
 - What is the main proposal put forward in this paper?

- ❑ Solving the problem:
 - How does this proposal solve the problem?
 - This should be explained in detail so everybody understands it
 - (Don't think things are obvious and hence don't need to be spelled out)

- ❑ Motivating the proposal
 - Is there independent evidence for the proposal?
 - Does this proposal make further prediction?
 - What is the empirical domain for the proposal?
 - Is the proposal learnable?
 - ...

☐ Further consequences

Does the proposal change our view of the world? In what way?

Is this a welcome result?

Can the proposal be applied elsewhere?

☐ Comparison with other proposals

How does the proposal relate to previous proposals?

How does the proposal relate to the overall theory of grammar?

Why can't previous proposal solve the problem?

Why is the present proposal superior?

Be aware of the level of your contribution(s)

Empirical

What is your main empirical discovery?

Analytical

How do you analyse your data?

Chose a framework

Theoretical

Are there any modifications you have to make to the framework for the analysis to work?

Methodological

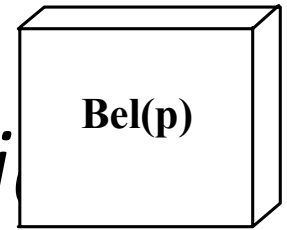
Do your findings suggest any modifications to the way one should gather data?

German discourse particles

1. S-oriented particles
2. A-oriented particles

Based on Thoma (PhD in prep.)

S-oriented discourse particles: *ja*



A family with twins is at a car rental place. They chose a compact car for rental. The clerk says:

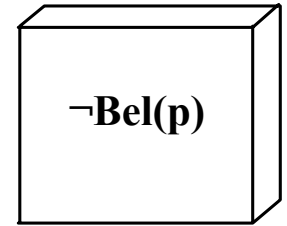
*Sie ham **ja** Zwilling, woin's do ned a gressa's Auto nehma?*

You have *ja* twins, want.you there neg det bigger car take.

“Since you have twins, don't you want to take a bigger car?”

[I know that] you have twins, don't you want to take to a bigger car?

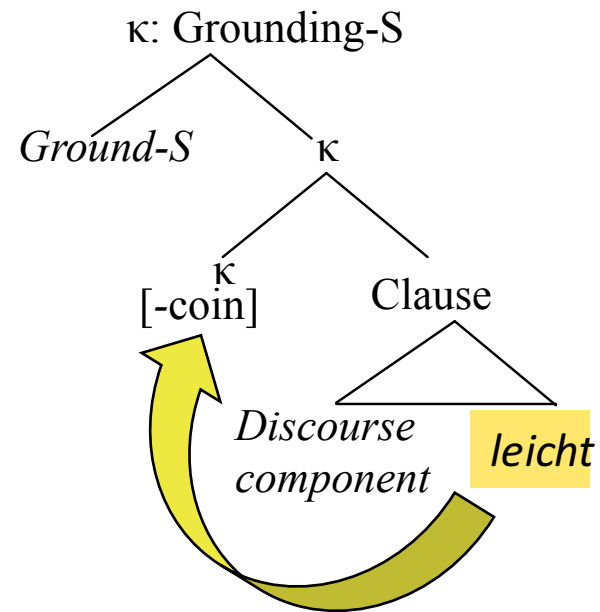
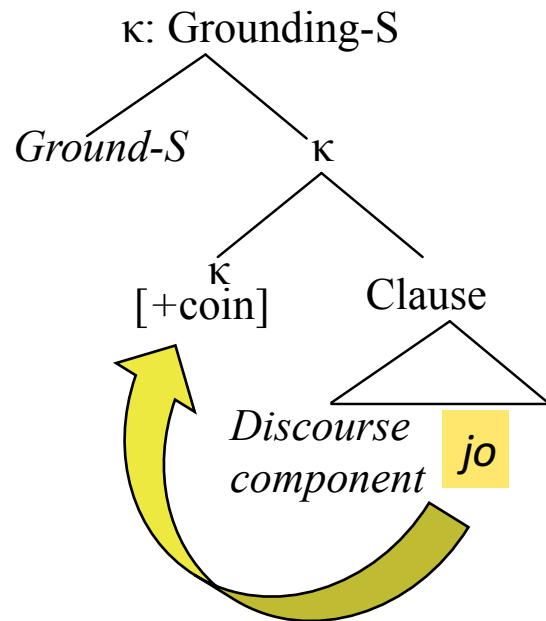
S-oriented discourse particle: *leicht*



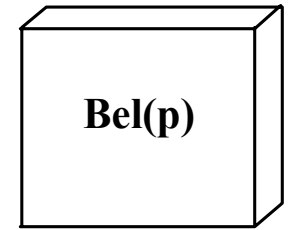
*Du host **leicht** an neichn Hund.*

You have an new dog. [I didn't know that].

S-oriented discourse particles

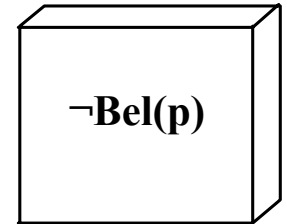


A-oriented discourse particles



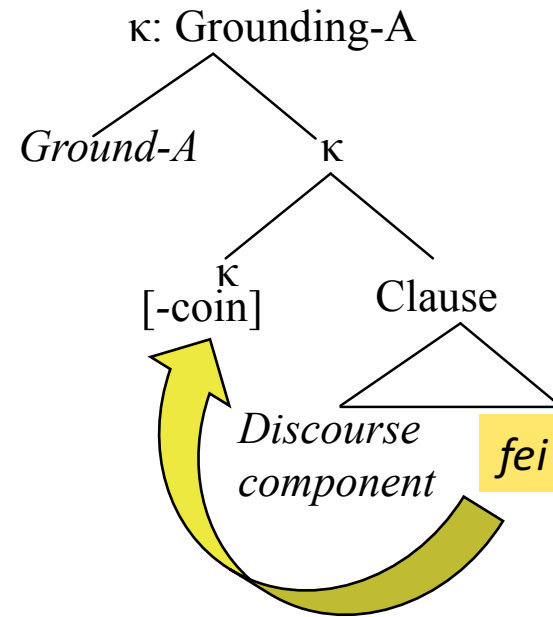
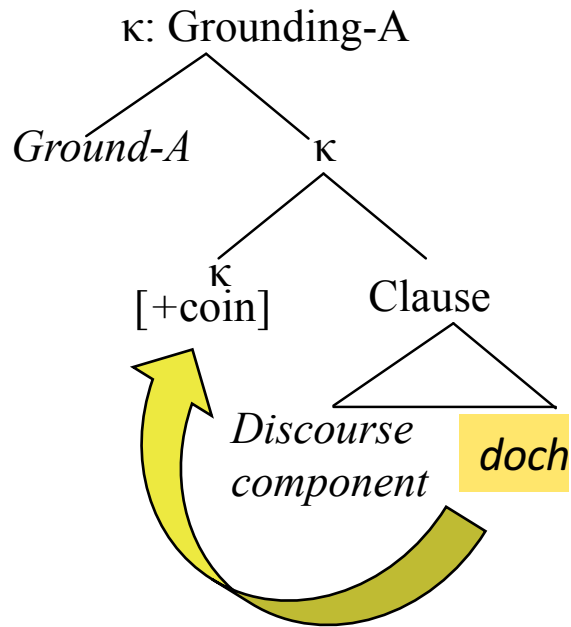
- (1) *I hob doch oan Hund.*
I have a dog [and you know this]

A-oriented discourse particles



- (1) *I hob fe oan Hund.*
I have a dog [you don't seem to know this=

A-oriented Discourse particles



The contribution of *ja*

Assertions

	Ground _S	Table	Ground _A
Presentation phase	Bel p →	p, Bel (S, p) →	Bel (S, p)
Acceptance phase	Bel (A, p) ←	Bel (A, p) ←	Bel (p)
Common Ground	↓ accept		
	p, Bel (S,p); Bel (A,p)		

Ja assertions

	Ground_S	Table	Ground_A
Presentation phase	Bel p →	p, Bel (S,p) →	Bel (S,p)
Acceptance phase	↓		
Common Ground	Bel (S,p)		

Shared knowledge

Cx¹: A family with two little twins is at the desk of a car rental place. They chose a compact car for rental. The clerk says:

Sie *ham* **ja** *Zwilling...*
you have **ja** twins

...woin's *do* *ned* *a* *gressa's* *Auto* *nehma?*
...want.you there NEG DET bigger car take

“Since you have twins, don’t you want to take a bigger car?”

‘[I firmly believe that] you have twins, don’t you want to take to a bigger car?’

Shared knowledge is not necessary

Cx: I tell my mom that I took out a 50,000 Euro student loan. She says:

<i>Du</i>	<i>host</i>	ja	<i>an</i>	<i>Schlog.</i>
you	have	ja	DET	hit

“You’re totally crazy!”

‘[I firmly believe that] you’re crazy!’

Surprise

Mother is looking out of the window

M: *Da ist ja ein Zeppelin!*
there is **ja** DET zeppelin

“There is a Zeppelin!”

Child comes running to the window: *Oh, ist der groß!*

“Wow, that is big!”

(Lindner 1991: ex 12. p171)

The role of context

$$f_{DPRT,ja} = ja + Cx$$

$$ja(p) = \mathbf{Bel(S,p)}(t_u) \text{ and } \forall t > t_u : \mathbf{Bel(S,p)}(t)$$

	$t < t_u$		t_u	
	S	A	S	A
shared knowledge	Bel p	Bel p	Bel p	Bel p
surprise			Bel p	
emphasis	Bel p and Bel(\neg Bel (A,p))		Bel p and Bel(\neg Bel (A,p))	
reason	Bel p_j and Bel p_i		Bel p_i	
assertion	Bel p		Bel p	