

# Speech reconstruction on NAP/AAA corpora

Silvie Cinková (CU)

Companions Semantic Representation  
and Dialog Interfacing Workshop

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# Annotation process

- annotation tool
- English tokenization
- instructions written and tested
- 1 file (350 sentences) processed
- 3 annotators starting
  - Czech – trained on Czech, U.S. high school
  - 2 native speakers, different annotation before

# Principles

- alterations easy to track for the machine all the way up from the audio
- meaning preserved
- minimum alterations of the input (ASR)
- output meets written text standards
  - no discourse-irrelevant non-speech events
  - spelling, punctuation
  - morphology, word order, syntax

# Manual transcription (NAP)

M1  
● [LOUD\_BREATH] was this a particularly-

F1  
● [NOISE]

M1  
● [MM-HESITATION] -enjoyable time, this [EE-HESITATION] on the beach?

F1  
● [MM-HESITATION] not particularly, because it was too hot for me.  
● it was very hot.

M1  
● [UH-HUH]

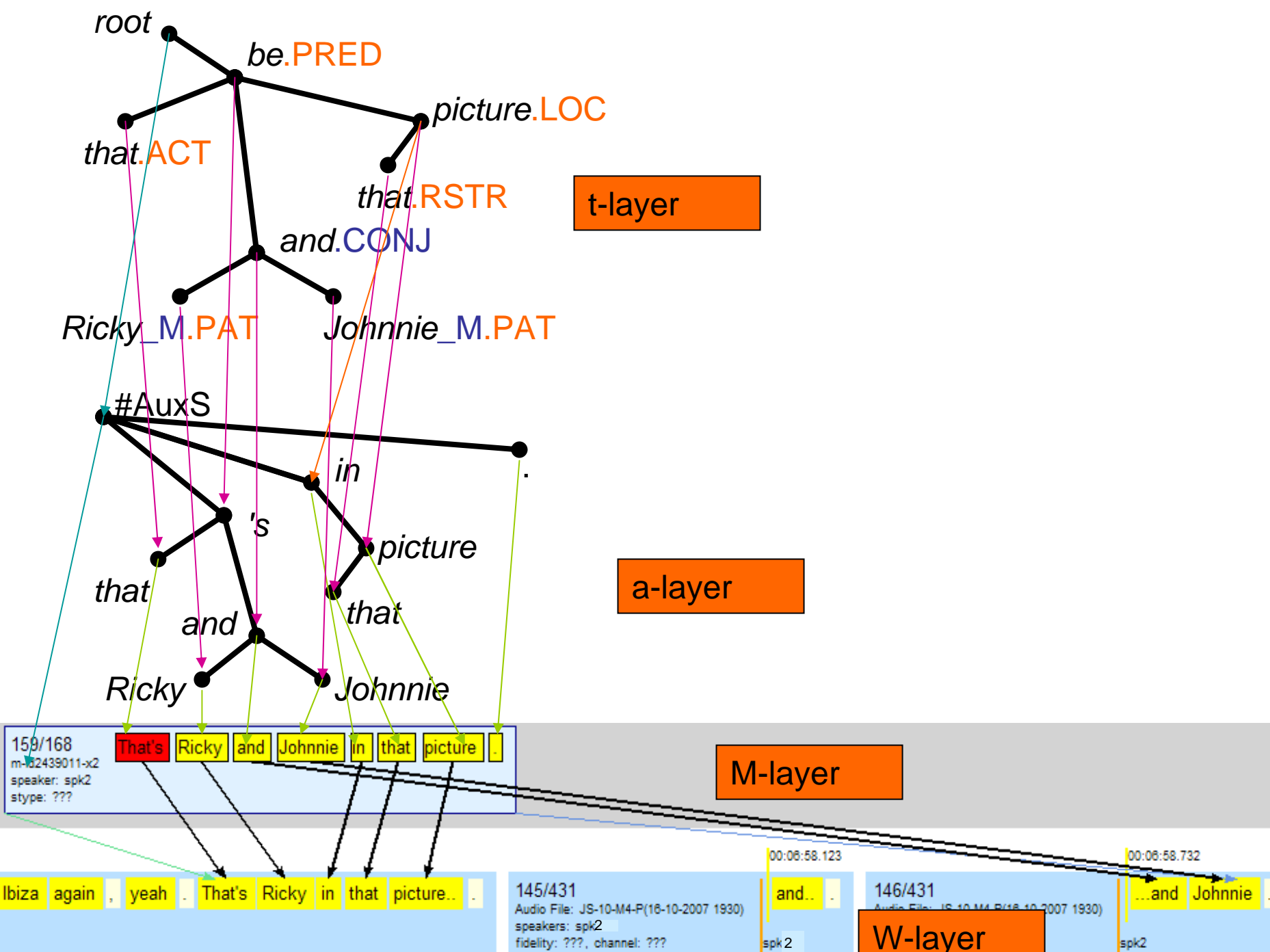
F1  
● and I don't like it too hot.

M1

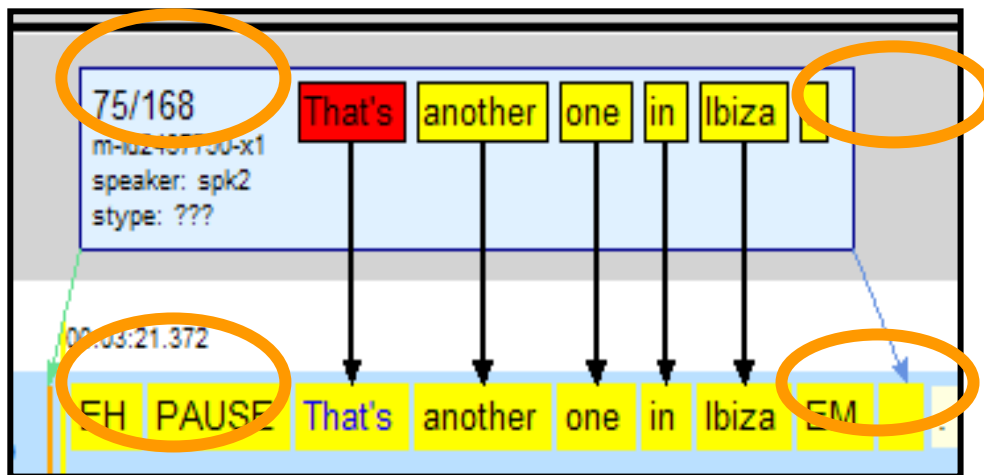
JS-7-F2-D(15-10-2007 1801)

40	45	50	55	1:00	1:05	
have a paddle.	i don't like going... ...sandy underfoot.	[EE-HESITATION] so that's... ... edge at Aracife-	-deciding that I'm not... ... go for a paddle.	[LOUD... ...larly-	[MM-HESITATIO... ... beach?	[MM-HESITATION] ... ... was too hot for me

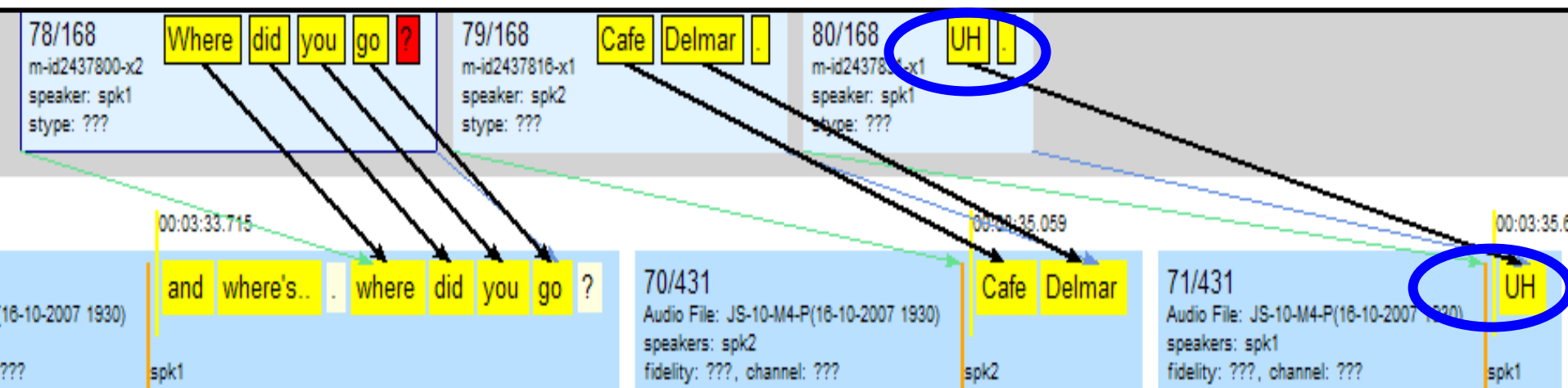
Cursor : 01:01.498



# Deletion of non-speech events



Non-speech events without meaning for the discourse are deleted.



Non-speech events with meaning for the discourse are preserved.

# Deletion of fillers

spk2: *Did you enjoy patting the horse?*

95/348

m-1803

speaker: spk1

stype: ???

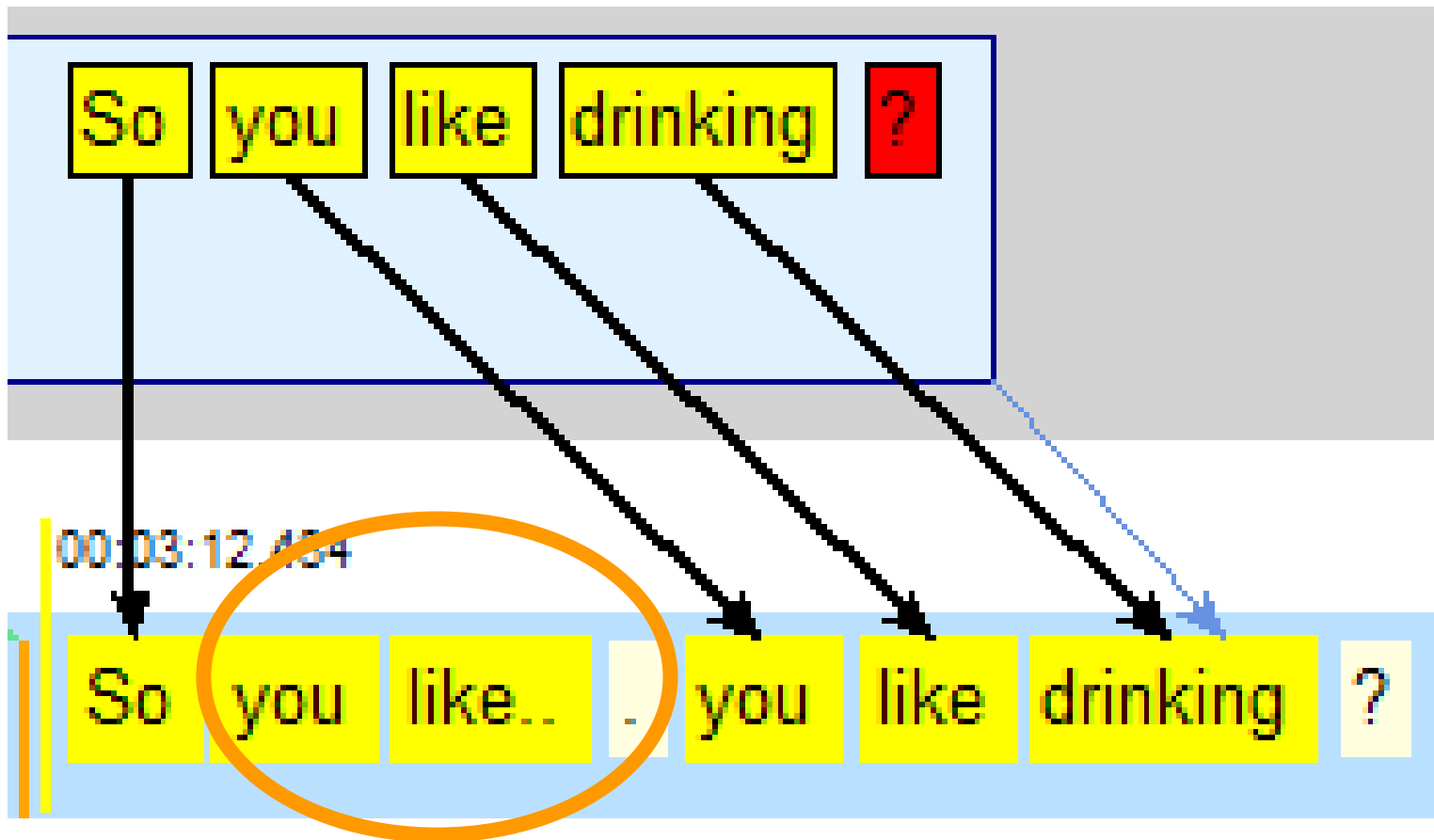
it was my first contact with a horse .

00:07:48.730

EE-HESITATION

it was like my first contact with a horse .

# Deletion of reparandum and interregnum markers

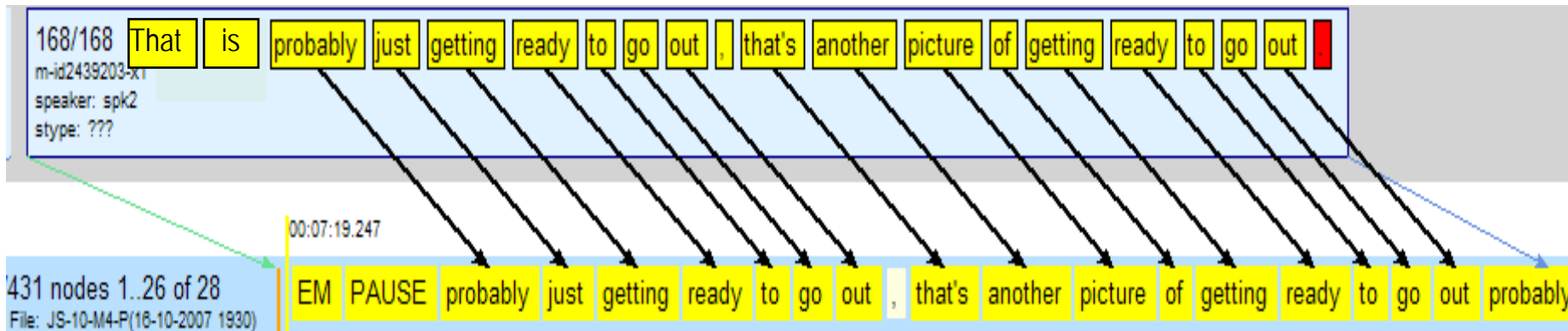




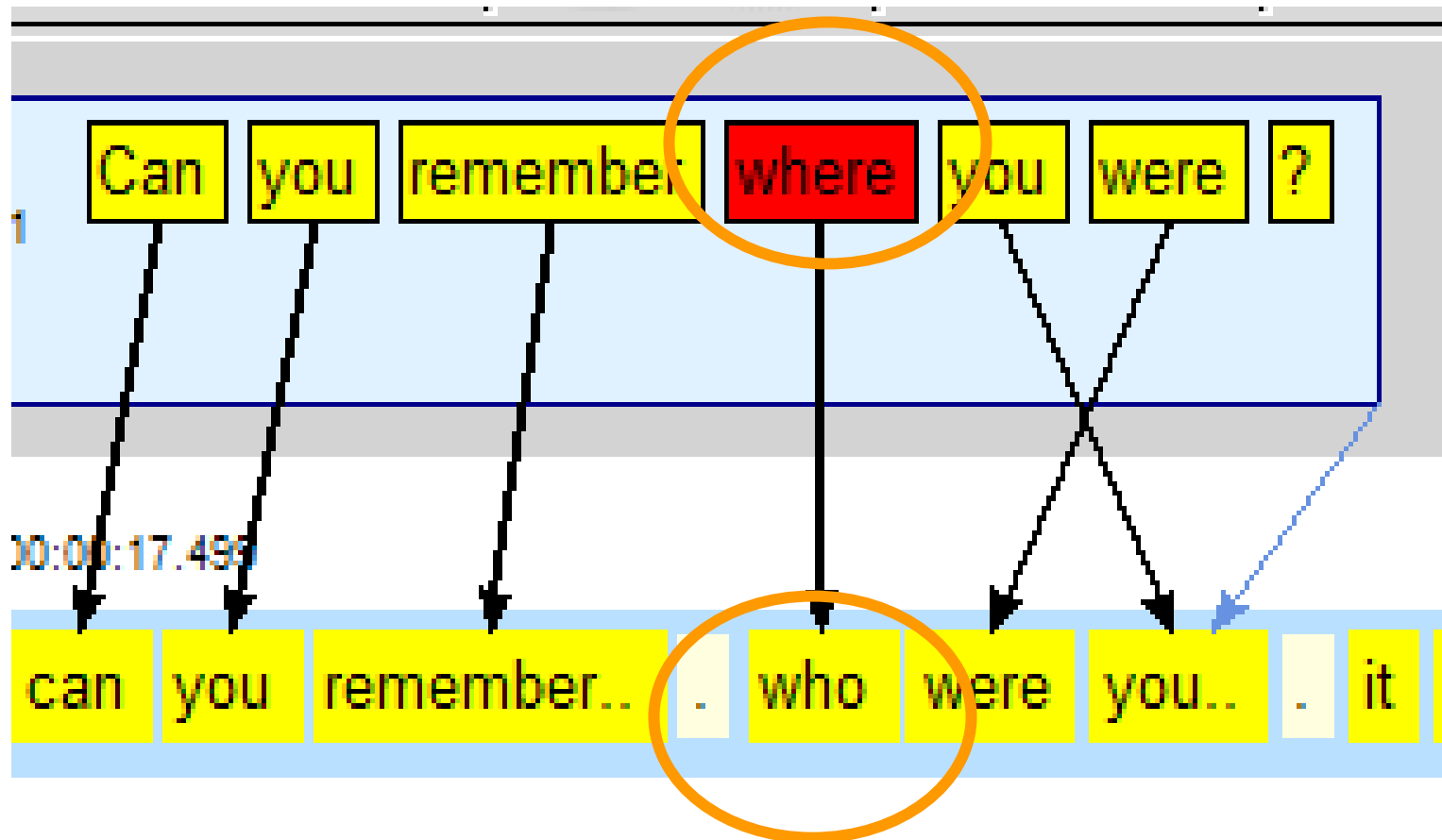
# Insertion of missing function words and autosemantic words

- *Do you get any particular feeling or memories when you see pictures like that?*

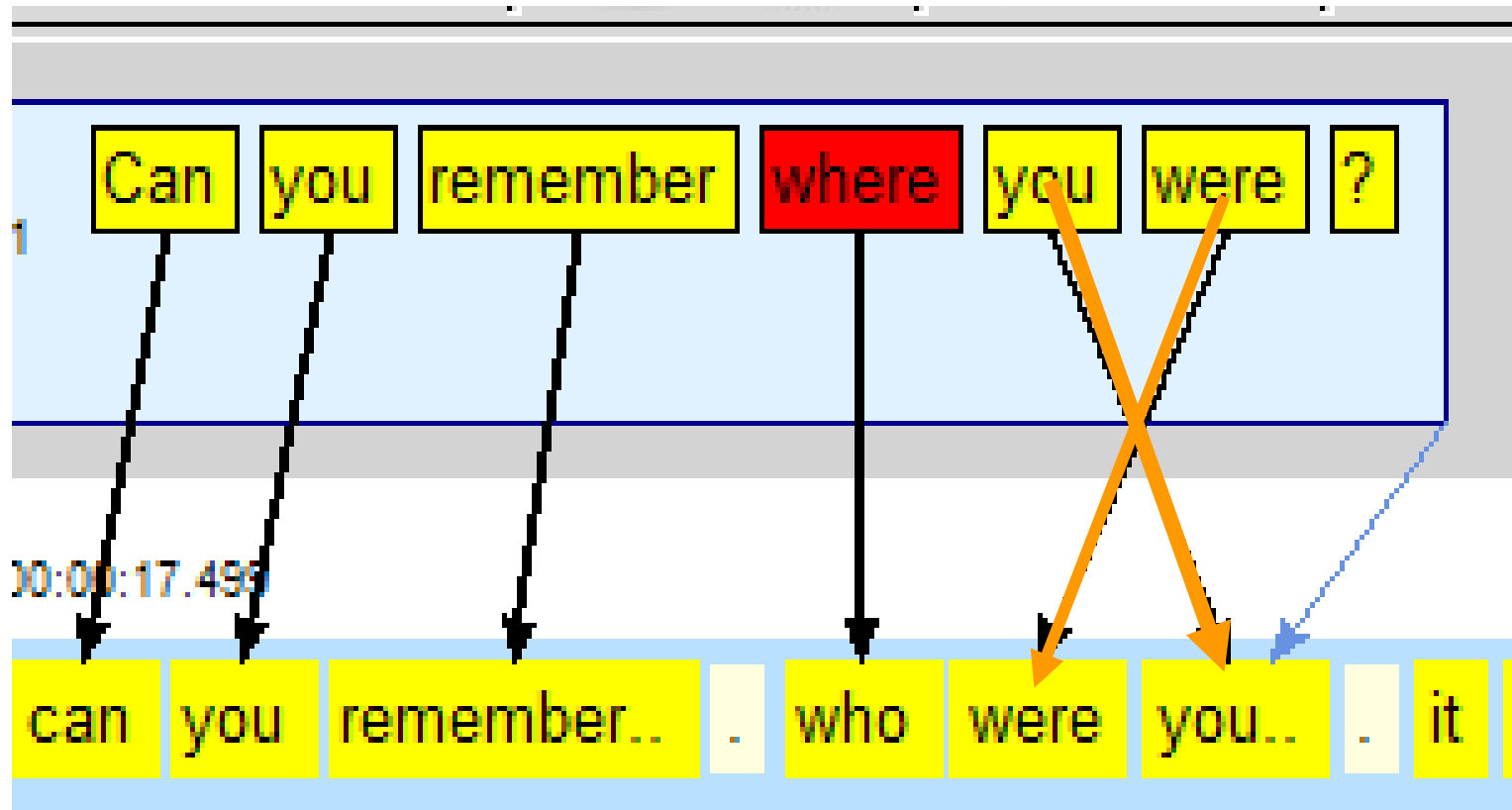
- *That is probably just getting ready to go out, that's another picture of getting ready to go out.*



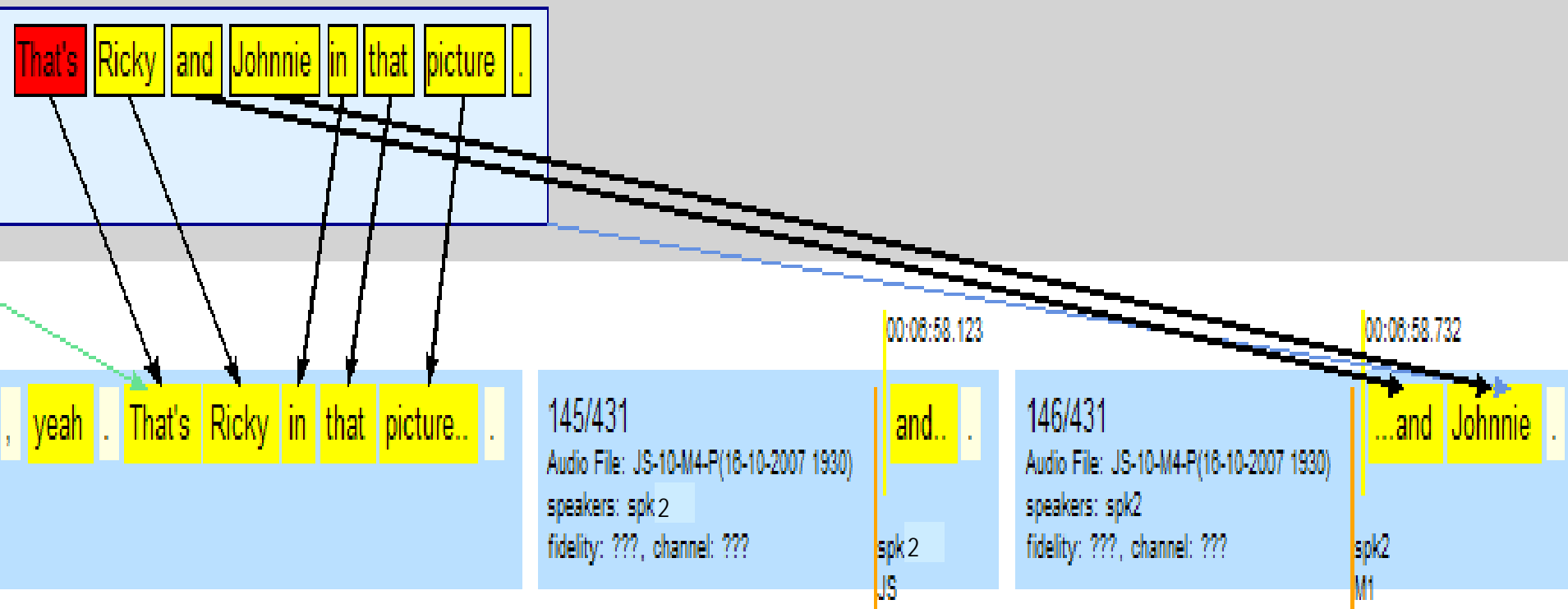
# Word substitution



# Word order smoothing



# Sentence chunking: merging w-layer segments



# Other regulations

- spelling corrections
- punctuation
- contracted forms (*'ll*, *'d* vs. *'em*, *d'you* etc.)
- spelling of numbers, non-alphanumerical characters, foreign words, proper names, abbreviations, spelled words
- corrections of NAP transcription errors vs. slips of the tongue
- unknown and ad-hoc words
- overlapping speech

# Grammatical concord

*There's no people around ⇨*

*There are/There're no people around.*

*There are a lot of people there ⇨*

*There is a lot of people there.*

# Word order in questions

- indirect questions

*I don't know who is he. ⇨*

*I don't know who he is.*

- declarative questions

*You want some? ⇨ You want some?*

*Want some? ⇨ Do you want some?*

# Word order in declarative clauses

- Fronting allowed:

*That's Jane. Jane I met and lived with in  
Edinburgh.*



# "Verb subject reconstruction"

- Both speakers are viewing the photos simultaneously.
  - They are both familiar with the content of the pictures.
  - Their conversation sounds quite natural.
- ⇒ Language data alone are not explicit enough about what/who is addressed/referred to.

# Ambiguous *you* - disambiguated

- **"communication management":**

- Will **you** tell me anything more?

- This is my grandmother. {"I am telling you..."}

- **by the responding speaker:**

- This is my holiday with Mary in Italy 5 years ago.

- Have you been there ever since?

- No, **we** haven't./I have.

# Unambiguous *you* – disambiguated by the context

- ***by inheriting the subject from antecedent***

- ***You all*** look like having a good time.


- *All having a good time again.*

- *We all are having a good time again.*

- ***by a contextual clue in the response***

- *What is happening in this photo?*

- *Washing **my** hair.* → *I am washing my hair.*



# Ambiguous *you* disambiguated by the picture

- *Uh. Then what are you doing?*
- *Playing cards.*
  - *Being silly.*
  - *Drinking beer again.*
  - *Watching TV. Making some kind of comment on the TV.*

# Ambiguous unexpressed you without contextual antecedent

- *Remains ambiguous even with pictures*
  - *What happened on that holiday?*
  - *Got drunk...eh... sunbathed.*

# Provisional pronoun disambiguation in verb subjects

## ■ subjects specified by the annotator

### □ finite verbs:

- *What happened there?*
- *Went to the club.*

### □ progressive tense :

- *What were you doing?*
- *Drinking beer.*
  
- *About to go out clubbing*  
→ *We are about to go out clubbing.*

## ■ subjects left unspecified

### □ nominalizations

- *What's this?*
- *Opening **of** a new gallery.*

### □ participial clauses

- *What's this?*
- *Drinking beer again, strangely enough.*

# Access to manual, data, editor

- manual (pdf):

<http://ufal.mff.cuni.cz/~cinkova/>

- data for playing around (working version, still):

[http://ufal.mff.cuni.cz/~cinkova/speech\\_En/data/JS-9-M3-D.zip](http://ufal.mff.cuni.cz/~cinkova/speech_En/data/JS-9-M3-D.zip)

input = .wdata (NAP transcript in PML)

output = .mdata (speech-reconstructed text)

- MEd annotation tool

<http://ufal.mff.cuni.cz/~pajas/med/index.html>