Review
Overview

• Homework tips
• SPR and COMPS
• Technical details (lexical entries, trees)
• Cascades of identities in Wambaya
• Analogies to other systems you might know
• Your questions...
• Problems
Homework tips/requests

- Type whenever possible
- Answer each part of each question separately
- Be sure to answer each part of each question, and follow the directions!
- Look over the problems early and ask questions
- Check your work
- Monitor GoPost
- WORK TOGETHER
SPR value on AP/PP?

- Kim grew fond of baseball.
- Kim and Sandy ate lunch in the park.
- Kim and Sandy are in the park.
COMPS on PP?

- Kim put the books here.
- Here, have a cookie.
- Kim put the books here have a cookie.
- Kim put the books on the table.
COMPS on D?

\[
\langle \text{iniyaga}, \begin{array}{l}
\text{word} \\
\text{HEAD} \\
\text{VAL}
\end{array}
\begin{bmatrix}
\text{det} \\
\text{AGR} \\
\text{CASE} \\
\text{SPR} \\
\text{COMPS}
\end{bmatrix}
\begin{bmatrix}
\text{GEND masc} \\
\text{acc} \\
\langle \rangle \\
\langle \text{NP[masc, acc]} \rangle
\end{bmatrix}
\rangle
\]
COMPS on D?

\[
\langle\text{iniyaga}, \text{word}\rangle
\]

\[
\begin{aligned}
\text{HEAD} & : \begin{bmatrix}
\text{det} \\
\text{AGR} \\
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\end{bmatrix} \begin{bmatrix}
\text{GEND masc} \\
\text{acc}
\end{bmatrix} \\
\text{VAL} & : \begin{bmatrix}
\text{SPR} \\
\text{COMPS}
\end{bmatrix} \begin{bmatrix}
\langle\rangle \\
\langle\text{NP[masc, acc]}\rangle
\end{bmatrix}
\end{aligned}
\]
Which grammar does this tree go with?

NP
  /\  
 D   NOM
 / \
the N \
  \  
cat
What’s wrong with this?

⟨here, ⟨word HEAD prep COMPS ⟨ ⟩ SPR ⟨ ⟩⟩⟩
What’s wrong with this?

\[ \langle \text{out,} [\text{word} \quad \text{prep} \quad \text{VAL} \quad \text{SPR} \quad \text{COMPS} \quad \langle \text{VP} \rangle \quad \langle \text{(PP \mid NP)} \rangle] \rangle \]
What’s wrong with this?

⟨ grew,
    word
    HEAD
    verb
    AGR  3sing
    SPR ⟨ NP ⟩
    COMPS ⟨ AP ⟩
⟩
What’s wrong with this?

\[ \langle \text{out,} \begin{bmatrix} \text{word} \\ \text{HEAD} \\ \text{preposition} \\ \text{VAL} \end{bmatrix} \begin{bmatrix} \text{SPR} \\ \langle \rangle \\ \text{COMPS} \\ \langle ( \text{NP} | \text{PP} ) \rangle \end{bmatrix} \rangle \]
What’s wrong with this?

\[
\langle \text{out,} \quad \begin{bmatrix}
\text{word} \\
\text{HEAD} \\
\text{prep} \\
\text{VAL} \\
\text{COMPS} (\text{NP} \mid \text{PP})
\end{bmatrix}\rangle
\]
What’s wrong with this?

\[ \langle \text{there}, \begin{bmatrix} \text{phrase} \\
\text{HEAD} \\
\text{pre} \end{bmatrix} \begin{bmatrix} \text{VAL} \\
\text{SPR} \langle \rangle \\
\text{COMPS} \langle \rangle \end{bmatrix} \rangle \]
Tags & lists

• What’s the difference between these two?

\[
\begin{align*}
\text{SPR} & \ [1\langle NP \rangle] \\
\text{SPR} & \ \langle [1\langle NP \rangle] \rangle
\end{align*}
\]

• When does it matter?
What’s wrong with this tree?

```
NP
  D
the
  N
[COMPS ⟨ (1PP) ⟩ ]
  photos
  [1PP
  of the suspect]
NOM
```
What’s wrong with this tree?
What’s wrong with this tree?

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What’s wrong with this tree?

[HEAD 4verb]
SPR ⟨ ⟩
COMPS ⟨ ⟩

[HEAD 6noun]
SPR ⟨ ⟩
COMPS ⟨ ⟩

I

[HEAD 4verb]
SPR ⟨ ⟩
COMPS ⟨ ⟩

rely

[HEAD 5prep]
SPR ⟨ ⟩
COMPS ⟨ ⟩

[HEAD 5prep]
SPR ⟨ ⟩
COMPS ⟨ ⟩

[HEAD 6noun]
SPR ⟨ ⟩
COMPS ⟨ ⟩

on

Kim

What’s wrong with this tree?

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What’s wrong with this tree?
What’s wrong with this?

\[
\text{\langle hundred, } \begin{bmatrix}
\text{word} \\
\text{\langle HEAD number } \\
\text{ SYN} \\
\text{ VAL} \\
\text{ COMPS} \\
\text{ INDEX } i \\
\text{ MODE } \text{ ref} \\
\text{ SEM} \\
\text{ RESTR} \\
\text{ \langle RELN times } \\
\text{ RESULT } k \\
\text{ FACTOR1 } l \\
\text{ FACTOR2 } m \\
\text{ \langle RELN plus } \\
\text{ RESULT } i \\
\text{ TERM1 } j \\
\text{ TERM2 } k \\
\end{bmatrix}
\text{\rangle, }
\begin{bmatrix}
\text{RELN constant } \\
\text{ INST } m \\
\text{ VALUE } 100 \\
\end{bmatrix},
\begin{bmatrix}
\text{RELN plus } \\
\text{ RESULT } i \\
\text{ TERM1 } j \\
\text{ TERM2 } k \\
\end{bmatrix}
\text{\rangle}
\]
Better version

\[\langle \text{word} \rangle,
\begin{align*}
\langle \text{SYN} \rangle &:
\begin{cases}
\text{HEAD} & \text{number} \\
\text{VAL} & \langle \text{SPR} \rangle \\
\text{COMPS} & \langle \text{HEAD number} \rangle
\end{cases} \\
\langle \text{SEM} \rangle &:
\begin{cases}
\text{INDEX} & i \\
\text{MODE} & \text{ref} \\
\text{RESTR} & \langle \text{RELN times} \rangle \\
\text{RESULT} & k \\
\text{FACTOR1} & l \\
\text{FACTOR2} & m \\
\text{RELN plus} & \langle \text{RELN constant} \rangle \\
\text{RESULT} & i \\
\text{TERM1} & j \\
\text{TERM2} & k \\
\text{RELN INST} & m \\
\text{VALUE} & 100
\end{cases}
\end{align*}\]
Information passing in Wambaya
What requires this identity?
How about this one?
Is this tree really valid for Wambaya?
What’s a predication?
What’s a predication?

• A feature structure ...
• ... which appears on RESTR lists ...
• ... and has the feature RELN ...
• ... among others
Type hierarchy analogies
Type hierarchy analogies

• How is this formalism like OOP?
Type hierarchy analogies

- How is this formalism like OOP?
- How is it different?
Type hierarchy analogies

• How is this formalism like OOP?
• How is it different?
• How is the type hierarchy like an ontology?
Type hierarchy analogies

- How is this formalism like OOP?
- How is it different?
- How is the type hierarchy like an ontology?
- How is it different?
Type hierarchy analogies

• How is this formalism like OOP?
• How is it different?
• How is the type hierarchy like an ontology?
• How is it different?
• How is this formalism like the MP’s formalism?
Type hierarchy analogies

• How is this formalism like OOP?
• How is it different?
• How is the type hierarchy like an ontology?
• How is it different?
• How is this formalism like the MP’s formalism?
• How is it different?
3.4: Coord. & Modification

- NOM > NOM PP; VP > VP PP
  - (i) Alex walks and talks without difficulty
  - (ii) Terry likes the poetry and music on the program
- (i) and (ii) are ambiguous; draw the trees
- Should PP be able to attach to S and NP as well? Provide an argument using examples with coordination to show that they should.
4.2 Spanish NPs I

(i)  
- a. La jirafa corrió.  
  The.FEM.SG giraffe ran.3SG  
  ‘The giraffe ran.’  
- b.*Las/El/Los jirafa corrió.

(ii)  
- a. Las jirafas corrieron.  
  The.FEM.PL giraffes ran.3PL  
  ‘The giraffes ran.’  
- b.*La/El/Los jirafas corrieron.

(iii)  
- a. El pingüino corrió.  
  The.MASC.SG penguin ran.3SG  
  ‘The penguin ran.’  
- b.*La/Las/Los pingüino corrió.

(iv)  
- a. Los pingüinos corrieron.  
  The.MASC.PL penguins ran.3PL  
  ‘The penguins ran.’  
- b.*La/Las/El pingüinos corrieron.

- Do Spanish nouns obey the SHAC?
- Is GEND appropriate for 3sing only?
- Write lexical entries for la, los, and pinguino
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