Lexical-Functional Grammar

Anaphora, Raising, Control

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Outline

Anaphora

Raising and Control

Recap: R-expression, anaphor and pronoun

Definition

- R-expression: A DP that gets its meaning by referring to an entity in the world.
- Anaphor: A DP that obligatorily gets its meaning from another DP in the sentence.
- Pronoun: A DP that may (but need not) get its meaning from another word in the sentence.

Example

(1) a. Felicia wrote a fine paper on Zapotec. (R-expression)
    b. Heidi bopped herself on the head with a zucchini. (Anaphor)
    c. Aaron said that he played basketball. (Pronoun)

Some binding facts

Key observations

Anaphors, R-expressions, and pronouns can only appear in specific parts of the sentence.

(2) *Herself bopped Heidi on the head with a zucchini.

The three basic principles

As a rough characterization, we can say:

A: Anaphors must be bound within a particular domain.

B: Pronominals must be free within a particular domain.

C: Referring expressions (R-expressions) must be free.

The trick is in how we define *bound*, *free*, *domain*, ...

Recap: Binding in GB (1)

- Bind: X binds Y iff X c-commands Y and X and Y are coindexed.
- Binding domain: The clause containing the DP (anaphor, pronoun, or R-expression).

The three principles in GB

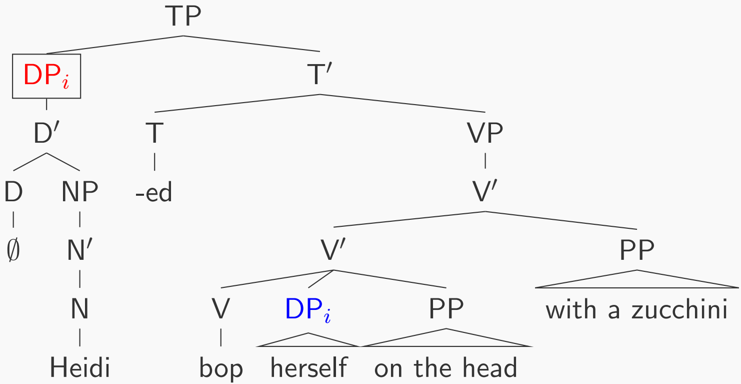
A: An anaphor must be bound in its binding domain.

B: A pronoun must be free in its binding domain.

C: An R-expression must be free.

Recap: Binding in GB (2)

Based on configuration



Pronoun in LFG

(3) *she*:

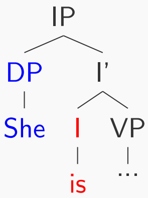
$$\begin{bmatrix} \text{PERS} & 3 \\ \text{NUM} & \text{sg} \\ \text{GEND} & \text{fem} \\ \text{NUCL} & - \\ \text{INDEX} & i \\ \text{PRED} & \text{`pro'} \\ \text{CASE} & \text{nom} \end{bmatrix}$$

agr	PERS
	NUM
	GEND
bind	NUCL
	INDEX

The nuclear feature

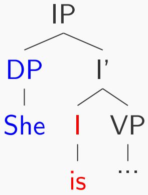
- Anaphors: [NUCL(ear) $+$]
- Pronouns: [NUCL $-$]
- R-expression: $\neg(\uparrow$ NUCL$)$

Pronoun incorporation



$$\left[\text{SUBJ} \quad f_{\text{DP}}\begin{bmatrix}\text{PRED} & \text{'pro'} \\ \text{BIND} & \beta \\ \text{AGR} & \alpha \\ \text{CASE} & \kappa\end{bmatrix}\right]$$

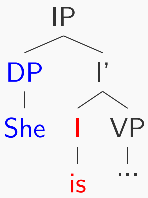
Pronoun incorporation



$$\left[\begin{array}{ll} \text{SUBJ} & f_{\mathsf{DP}}\left[\begin{array}{ll} \text{PRED} & \text{'pro'} \\ \text{BIND} & \beta \\ \text{AGR} & \alpha \\ \text{CASE} & \kappa \end{array}\right] \end{array}\right]$$

$$g_{\mathrm{I}}\left[\begin{array}{ll} \text{SUBJ} & \left[\begin{array}{ll} \text{AGR} & \alpha \\ \text{CASE} & \kappa \end{array}\right] \end{array}\right]$$

Pronoun incorporation



$$\begin{bmatrix} \text{SUBJ} & f_{\text{DP}}\begin{bmatrix} \text{PRED} & \text{`pro'} \\ \text{BIND} & \beta \\ \text{AGR} & \alpha \\ \text{CASE} & \kappa \end{bmatrix} \end{bmatrix}$$

$$g_{\text{I}}\begin{bmatrix} \text{SUBJ} & \begin{bmatrix} \text{AGR} & \alpha \\ \text{CASE} & \kappa \end{bmatrix} \end{bmatrix}$$

Pronoun incorporation/pronominal inflection

An incorporated pronoun or pronominal inflection is a bound morpheme that specifies a complete pronominal f-structure.

- semantic feature: special PRED value 'pro'

Crosslinguistic analysis

Crosslinguistic concerns

- Morphological words may determine the same kinds of functional structures as syntactic phrases.
- Grammatical vs. anaphoric agreement

Chichewâ

- 18 gender classes (or noun classes)
- S→ NP VP | VP NP
- Verbal inflectional morphology: SubjM-T/A-(DIR)-(ObjM)-V_{stem}
- The functional specifications of a pronoun is incorporated with the functional specifications of the stem.

Subject marker

Verbal inflectional morphology

SM-T/A-(DIR)-(OM)-V_{stem}

(4) a. *njûchi zi-ná-lum-a a-lenje*
10.bee 10.S-PST-bite-FV 2-hunter
'the bees bite the hunters'

b. *zi-ná-lum-a a-lenje*
10.S-PST-bite-FV 2-hunter
'they bite the hunters'

SM-:V_{infl}	$(\uparrow \text{SUBJ NOUNCLASS}) = 10$
optional	$((\uparrow \text{SUBJ PRED}) = \text{'pro'})$

Object marker

Verbal inflectional morphology

SM-T/A-(DIR)-(OM)-V_{stem}

(5) a. *njûchi zi-ná-wá-lum-a a-lenje*
10.bee 10.S-PST-2.O-bite-FV 2-hunter
'the bees bite them, the hunters'

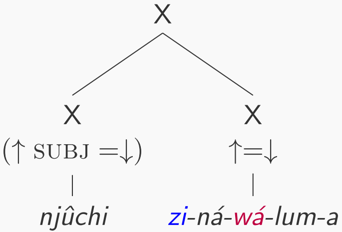
b. *njûchi zi-ná-wá-lum-a*
10.bee 10.S-PST-2.O-bite-FV
'the bees bite them'

c. **njûchi zi-ná-lum-a*
10.bee 10.S-PST-bite-FV
'the bees bite'

OM-:V_{infl}	$(\uparrow \text{SUBJ NOUNCLASS}) = 2$
obligatory	$(\uparrow \text{SUBJ PRED}) = \text{'pro'}$

Pro-drop

njûchi	$(\uparrow \textsc{pred}) = \text{`bee'}$
	$(\uparrow \textsc{nounclass}) = 10$
zi-ná-wá-lum-a	$(\uparrow \textsc{pred}) = \text{`bite}\langle\textsc{subj}, \textsc{obj}\rangle\text{'}$
optional	$((\uparrow \textsc{subj pred}) = \text{`pro'})$
	$(\uparrow \textsc{subj nounclass}) = 10$
obligatory	$(\uparrow \textsc{obj pred}) = \text{`pro'}$
	$(\uparrow \textsc{obj nounclass}) = 2$



$$\begin{bmatrix} \textsc{pred} & \text{`bite}\langle\textsc{subj},\textsc{obj}\rangle\text{'} \\ \textsc{subj} & \begin{bmatrix} \textsc{pred} & \text{`bee'} \\ \textsc{nounclass} & 10 \end{bmatrix} \\ \textsc{obj} & \begin{bmatrix} \textsc{pred} & \text{`pro'} \\ \textsc{nounclass} & 2 \end{bmatrix} \end{bmatrix}$$

Pro-drop

njûchi	$(\uparrow \text{PRED}) = \text{'bee'}$
	$(\uparrow \text{NOUNCLASS}) = 10$
zi-ná-wá-lum-a	$(\uparrow \text{PRED}) = \text{'bite}\langle \text{SUBJ}, \text{OBJ} \rangle\text{'}$
optional	$((\uparrow \text{SUBJ PRED}) = \text{'pro'})$
	$(\uparrow \text{SUBJ NOUNCLASS}) = 10$
obligatory	$(\uparrow \text{OBJ PRED}) = \text{'pro'}$
	$(\uparrow \text{OBJ NOUNCLASS}) = 2$

X
|
X
↑=↓
|
zi-ná-wá-lum-a

$$\begin{bmatrix} \text{PRED} & \text{'bite}\langle \text{SUBJ,OBJ} \rangle\text{'} \\ \text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{'pro'} \\ \text{NOUNCLASS} & 10 \end{bmatrix} \\ \text{OBJ} & \begin{bmatrix} \text{PRED} & \text{'pro'} \\ \text{NOUNCLASS} & 2 \end{bmatrix} \end{bmatrix}$$

Basic concepts

A nonconfigurational binding theory

Instead of stating the binding theory in terms of configurations, we can use the notion of Functional Hierarchy (FH): $\mathrm{SUBJ} \succ \mathrm{OBJ} \succ \mathrm{OBJ}_\theta \succ \mathrm{OBL}_\theta \succ \mathrm{COMP}/\mathrm{XCOMP} \succ \mathrm{ADJ}/\mathrm{XADJ}$

Definition (Syntactic rank)

- X locally outranks Y if X and Y belong to the same f-structure and X is more prominent than Y on the FH.
- X outranks Y if X locally outranks some C which contains Y.

Definition (bind/free)

- X binds Y if X outranks Y and X and Y are coindexed.
- Y is bound/free if some/no X binds Y.

Bound/free

Using f-descriptions

X binds Y if X outranks Y and $(X\ \textsc{index}) = (Y\ \textsc{index})$.

Example

(6) * $\begin{bmatrix} \textsc{pred} & \text{'...'} \\ \textsc{subj} & \begin{bmatrix} \textsc{pred} & \text{'pro'} \\ \textsc{nucl} & - \\ \textsc{index} & i \\ \ldots & \end{bmatrix} \\ \textsc{obj} & \begin{bmatrix} \textsc{pred} & \text{'ann'} \\ \textsc{index} & i \\ \ldots & \end{bmatrix} \end{bmatrix}$

A nonconfigurational binding theory

Definition (Nucleus)

Given an f-structure f, the nucleus of f is the subset of f consisting of the PRED element and all of the elements whose attributes are functions designated by the PRED.

The three principles in LFG

- **A:** A nuclear (reflexive) pronoun must be bound in the minimal nucleus that contains it.
- **B:** A nonnuclear pronoun must be free in the minimal nucleus that contains it.
- **C:** (Other) nominals must be free.

The advantages of non-configurational binding

Voilation of GB analysis

(7) a. Mary talked [to John$_i$] [about himself$_i$].

b. *Mary$_i$ talked [to John$_j$] [about him$_j$].

Correct prediction by LFG

(8)
$$\begin{bmatrix} \text{PRED} & \text{`talk}\left\langle \text{SUBJ,OBL}_{\text{GOAL}} \right\rangle\text{'} \\ \text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{`mary'} \end{bmatrix} \\ \text{OBL}_{\text{GOAL}} & \begin{bmatrix} \text{PRED} & \text{`john'} \\ \text{INDEX} & i \end{bmatrix} \\ \text{ADJ} & \left\{ \begin{bmatrix} \text{PRED} & \text{`pro'} \\ \text{INDEX} & i \\ \text{NUCL} & +/- \end{bmatrix} \right\} \end{bmatrix}$$

Formalization of the binding constraints (1)

Inside-out constraint

$(\textsc{gf}\ f) = g \equiv g[\textsc{gf}\ f]$

Positive/negative binding constraint

- ((DomainPath $\uparrow$) Antecedent $\textsc{index}$) $=$ ($\uparrow$ $\textsc{index}$)
- ((DomainPath $\uparrow$) Antecedent $\textsc{index}$) $\neq$ ($\uparrow$ $\textsc{index}$)

F-structure DomainPath condition

All *DomainPath*s in positive and negative binding constraints must be constructed so that:

1. DomainPath $=$ GFα for some possibly empty attribute string α;
2. Antecedent $=$ GF' and
3. GF' $\succ$ GF in the FH.

Formalization of the binding constraints (2)

Off-path constraint

$$(\uparrow \text{TOPIC}) \quad = \quad (\uparrow \underset{(\rightarrow \text{LDD}) \neq -}{\text{COMP}^*} \quad \text{OBJ})$$

Together with inside-out constraint

(9) $$(\underset{\neg(\rightarrow \text{PRED})}{\text{GF}} \quad f \quad)$$

'$\rightarrow$' stands for the f-structure that is the value of GF, which is f.

Formalization of the binding constraints (3)

Minimal nucleus condition

A binding constraint designator ((GF α $\uparrow$) GF') in a nuclear (respectively nonnuclear) binding constraint is subject to the minimal nucleus condition only if:

1. GF and GF' are argument functions; and
2. when the attribute string α is nonempty, upon setting $\alpha = xa$ for some attribute α and possibly empty string of attributes x, the off-path constraint $\neg(\rightarrow\ \textsc{subj})$ (respectively $\neg(\rightarrow\ \textsc{pred})$ holds for every attribute in GF x.

Nuclearity constraints

A nuclear pronoun is lexically specified

$$((\text{DomainPath}\ \alpha\ \uparrow)\ \text{Antecedent}\ \textsc{index}) = (\uparrow\ \textsc{index}),$$

subject to the minimal nucleus condition.

Formalization of the binding constraints (3)

Minimal nucleus condition

A binding constraint designator ((GF α $\uparrow$) GF') in a nuclear (respectively nonnuclear) binding constraint is subject to the minimal nucleus condition only if:

1. GF and GF' are argument functions; and
2. when the attribute string α is nonempty, upon setting $\alpha = xa$ for some attribute α and possibly empty string of attributes x, the off-path constraint $\neg(\rightarrow\ \textsc{subj})$ (respectively $\neg(\rightarrow\ \textsc{pred})$ holds for every attribute in GF x.

Nuclearity constraints

A nonnuclear pronoun is lexically specified

$$((\text{DomainPath}\ \alpha\ \uparrow)\ \text{Antecedent}\ \textsc{index}) \neq (\uparrow\ \textsc{index}),$$

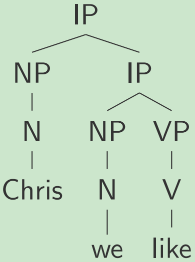
subject to the minimal nucleus condition.

Recap: LDD

- TopicCat $\equiv$ NP|PP|VP|AP|CP
- TopicPath $\equiv$ GF*GF
- GF $\equiv$ $\text{SUBJ}|\text{OBJ}|\text{OBJ}_\theta|\text{OBL}_\theta|\text{COMP}|\text{XCOMP}|\text{ADJ}|\text{XADJ}$

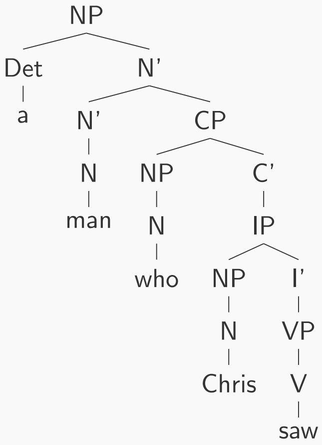
Functional uncertainty

$$\begin{array}{lcc} \text{IP} \rightarrow & \text{TopicCat} & \text{IP} \\ & (\uparrow \textsc{topic}){=}\downarrow & \uparrow{=}\downarrow \\ & (\uparrow \textsc{topic}){=}(\uparrow \text{TopicPath}) & \end{array}$$



Relative clause (1)

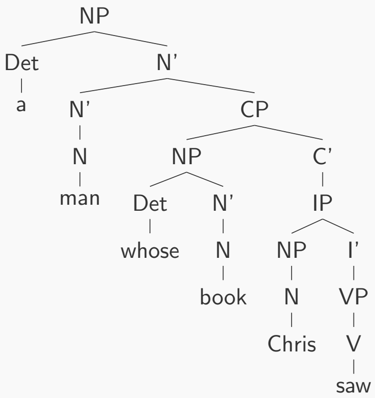
(10) a man who Chris saw



$$\begin{bmatrix} \text{PRED} & \text{`man'} \\ \text{SPEC} & \begin{bmatrix}\text{PRED} & \text{`A'}\end{bmatrix} \\ \text{ADJ} & \left\{ \begin{bmatrix} \text{TOPIC} & \boxed{1}\begin{bmatrix}\text{PRED} & \text{`pro'} \\ \text{PRONTYPE} & \text{REL}\end{bmatrix} \\ \text{RELPRO} & \boxed{1} \\ \text{PRED} & \text{`see}\left\langle\text{SUBJ,OBJ}\right\rangle\text{'} \\ \text{SUBJ} & \begin{bmatrix}\text{PRED} & \text{`chris'}\end{bmatrix} \\ \text{OBJ} & \boxed{1}\end{bmatrix} \right\} \end{bmatrix}$$

Relative clause (2)

(11) a man whose book Chris read



$$
\left[\begin{array}{ll}
\text{PRED} & \text{`man'} \\
\text{SPEC} & \left[\text{PRED} \quad \text{`A'}\right] \\
\text{ADJ} & \left\{\left[\begin{array}{ll}
\text{TOPIC} & \boxed{1}\left[\begin{array}{ll}
\text{SPEC} & \left[\begin{array}{ll} \text{PRED} & \text{`pro'} \\ \text{PRONTYPE} & \text{REL} \end{array}\right] \\
\text{PRED} & \text{`book'}
\end{array}\right] \\
\text{RELPRO} & \boxed{1} \\
\text{PRED} & \text{`see}\left\langle \text{SUBJ,OBJ} \right\rangle\text{'} \\
\text{SUBJ} & \left[\text{PRED} \quad \text{`chris'}\right] \\
\text{OBJ} & \boxed{1}
\end{array}\right]\right\}
\end{array}\right]
$$

Functional constraints

Annotated PS rule

$$\begin{array}{lcc} \text{CP} \rightarrow & \text{RelP} & \text{C'} \\ & (\uparrow \textsc{topic}){=}\downarrow & \uparrow{=}\downarrow \\ & (\uparrow \textsc{topic}){=}(\uparrow \text{RTopicPath}) & \\ & (\uparrow \textsc{relpro}){=}(\uparrow \text{TopicRelPath}) & \\ & (\uparrow \textsc{relpro prontype}){=}_c \text{ REL} & \end{array}$$

RelP

(12) a. **NP**: a man who I selected

b. **PP**: a man to whom I gave a book

c. **AP**: the hind of person proud of whom I could never be

d. **AdvP**: the city where I live

Functional constraints

Annotated PS rule

$$
\begin{array}{lcc}
\text{CP} \to & \text{RelP} & \text{C'} \\
& (\uparrow \textsc{topic}){=}\downarrow & \uparrow{=}\downarrow \\
& (\uparrow \textsc{topic}){=}(\uparrow \text{RTopicPath}) & \\
& (\uparrow \textsc{relpro}){=}(\uparrow \text{TopicRelPath}) & \\
& (\uparrow \textsc{relpro prontype}){=}_c \text{ REL} &
\end{array}
$$

English RTopicPath

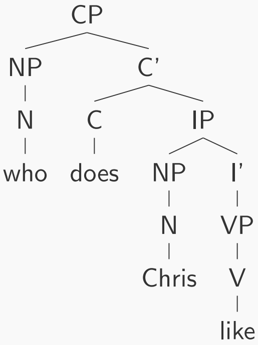
RTopicPath $\equiv$ F S

$$
\text{F} \equiv \left\{ \begin{array}{ccccc} \textsc{xcomp} & | & \textsc{comp} & | & \textsc{obj} \\ & & (\to \textsc{ldd}) \neq - & & (\to \textsc{tense}) \end{array} \right\}^*
$$

$$
\text{S} \equiv \left\{ \begin{array}{ccc} \left(\begin{array}{cc} \textsc{adj} & \in \\ \neq (\to \textsc{tense}) & \end{array} \right) (\text{GF}) & | & \text{GF} \end{array} \right\}
$$

Wh-question

(13) who does Chris like



$$\left[\begin{array}{ll}
\text{FOCUS} & \boxed{1}\left[\begin{array}{ll}\text{PRED} & \text{‘pro’} \\ \text{PRONTYPE} & \text{WH}\end{array}\right] \\
\text{Q} & \boxed{1} \\
\text{PRED} & \text{‘like}\left\langle \text{SUBJ,OBJ} \right\rangle\text{’} \\
\text{SUBJ} & \left[\begin{array}{ll}\text{PRED} & \text{‘chris’}\end{array}\right] \\
\text{OBJ} & \boxed{1}
\end{array}\right]$$

Functional constraints

Annotated PS rule

$$\text{CP} \rightarrow \begin{array}{cc} \text{QuesP} & \text{C'} \\ (\uparrow \textsc{focus}){=}\downarrow & \uparrow{=}\downarrow \\ (\uparrow \textsc{focus}){=}(\uparrow \text{QFocusPath}) & \\ (\uparrow \textsc{q}){=}(\uparrow \text{FocusWhPath}) & \\ (\uparrow \textsc{q prontype}){=}_c \text{WH} & \end{array}$$

QuesP

(14) a. **NP**: Who do you like?

b. **PP**: To whom did you give a book?

c. **AP**: How tall is Chris?

d. **AdvP**: When did you sleep?

Functional constraints

Annotated PS rule

$$\text{CP} \rightarrow \begin{array}{cc} \text{QuesP} & \text{C'} \\ (\uparrow \textsc{focus}){=}\downarrow & \uparrow{=}\downarrow \\ (\uparrow \textsc{focus}){=}(\uparrow \text{QFocusPath}) & \\ (\uparrow \textsc{q}){=}(\uparrow \text{FocusWhPath}) & \\ (\uparrow \textsc{q prontype}){=}_c \text{WH} & \end{array}$$

English QFocusPath

$$\text{QFocusPath} \equiv \text{F S}$$

$$\text{F} \equiv \left\{ \begin{array}{ccccc} \text{XCOMP} & | & \text{COMP} & | & \text{OBJ} \\ & & (\rightarrow \text{LDD}) \neq - & & (\rightarrow \text{TENSE}) \end{array} \right\}^*$$

$$\text{S} \equiv \left\{ \begin{array}{ccccc} (\text{ADJ} & \in &) & (\text{GF}) & | & \text{GF} \\ & \neq (\rightarrow \text{TENSE}) & & & & \end{array} \right\}$$

Outline

Anaphora

Raising and Control

Control (1)

(15) a. David seemed to yawn.

b. $\begin{bmatrix} \text{PRED} & \text{`seem}\langle \text{XCOMP} \rangle \text{SUBJ'} \\ \text{SUBJ} & \boxed{1}\begin{bmatrix} \text{PRED} & \text{`david'} \end{bmatrix} \\ \text{XCOMP} & \begin{bmatrix} \text{PRED} & \text{`yawn}\langle \text{SUBJ} \rangle\text{'} \\ \text{SUBJ} & \boxed{1} \end{bmatrix} \end{bmatrix}$

Functional control

- Raising verbs exemplify functional control.
- The SUBJ of the raising verb *funtionally controls* the SUBJ of the subordinate complement.
- Functional control verbs require as an argument an open complement XCOMP.

Control (2)

(16) a. David believed Chris to know the answer.

b.
$$
\left[\begin{array}{ll}
\mathrm{PRED} & \text{'believe}\left\langle \mathrm{SUBJ},\mathrm{XCOMP} \right\rangle \mathrm{OBJ}\text{'} \\
\mathrm{SUBJ} & \left[\begin{array}{ll} \mathrm{PRED} & \text{'david'} \end{array}\right] \\
\mathrm{OBJ} & \boxed{1} \left[\begin{array}{ll} \mathrm{PRED} & \text{'chris'} \end{array}\right] \\
\mathrm{XCOMP} & \left[\begin{array}{ll}
\mathrm{PRED} & \text{'know}\left\langle \mathrm{SUBJ},\mathrm{OBJ} \right\rangle\text{'} \\
\mathrm{SUBJ} & \boxed{1} \\
\mathrm{OBJ} & \left[\begin{array}{ll} \mathrm{PRED} & \text{'answer'} \\ \mathrm{SPEC} & \text{THE} \end{array}\right]
\end{array}\right]
\end{array}\right]
$$

Functional constraints

PS Rule

$$\begin{array}{ccccc} \text{V'} & \rightarrow & \text{V} & \text{(NP)} & \text{(VP)} \\ & & \uparrow=\downarrow & (\uparrow \text{OBJ}) =\downarrow & (\uparrow \text{XCOMP}) =\downarrow \end{array}$$

Lexicon entries

$$\begin{array}{lll} \textit{seemed} & \text{V} & (\uparrow \text{PRED}) = \text{`seem}\langle\text{XCOMP}\rangle\text{SUBJ'} \\ & & (\uparrow \text{SUBJ}) = (\uparrow \text{XCOMP SUBJ}) \\ \textit{believed} & \text{V} & (\uparrow \text{PRED}) = \text{`believe}\langle\text{SUBJ,XCOMP}\rangle\text{OBJ'} \\ & & (\uparrow \text{OBJ}) = (\uparrow \text{XCOMP SUBJ}) \end{array}$$

David seemed to yawn

P319. Textbook.
On whiteboard

Anaphoric control (1)

(17) a. David tried to leave.

b. $$\begin{bmatrix} \text{PRED} & \text{‘try}\left\langle \text{SUBJ,COMP} \right\rangle\text{’} \\ \text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{‘david’} \end{bmatrix} \\ \text{COMP} & \begin{bmatrix} \text{PRED} & \text{‘leave}\left\langle \text{SUBJ} \right\rangle\text{’} \\ \text{SUBJ} & \color{red}\begin{bmatrix} \text{PRED} & \text{‘pro’} \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

Anaphoric control contrasts with functional control

- The subordinate complement in an anaphoric control construction is COMP, not XCOMP.
- The relation in anaphoric control
  - is semantically much closer to an anaphoric binding relation
  - does not involve syntactic identity

Anaphoric control (2)

(18) a. David convinced Chris to leave.

b.
$$\left[\begin{array}{ll} \textsc{pred} & \text{`convince}\left\langle \textsc{subj},\textsc{obj},\textsc{comp} \right\rangle\text{'} \\ \textsc{subj} & \left[\begin{array}{ll} \textsc{pred} & \text{`david'} \end{array}\right] \\ \textsc{obj} & \left[\begin{array}{ll} \textsc{pred} & \text{`chris'} \end{array}\right] \\ \textsc{comp} & \left[\begin{array}{ll} \textsc{pred} & \text{`leave}\left\langle \textsc{subj} \right\rangle\text{'} \\ \textsc{subj} & \left[\begin{array}{ll} \textsc{pred} & \text{`pro'} \end{array}\right] \end{array}\right] \end{array}\right]$$

Anaphoric vs. functional control

- In an anaphoric control construction, the anaphorically controlled SUBJ of the subordinate COMP is syntactically independent from the matrix controller.

⇒ Syntactic restrictions imposed on the subject of the COMP is not relevant for the matrix controller.

Example

VP complement drop is impossible for XCOMP, but possible for COMP argument of many predicates:

(19) a. *[Did David really yawn?] He seemed.

b. *[Did Chris really know the answer?] David believed him.

(20) a. [Did David really leave?] He tried.

b. [Will Chris leave?] If David can convince him.

Two types of anaphoric control constructions

Obligatory anaphoric control

Coreference is required between an argument of the matrix clause and the controlled position in the subordinate clause.

- An anaphor in an anaphoric control construction may be assigned an antecedent by the rules of sentence grammar.

Arbitrary anaphoric control

No coreference constraints are imposed by the control verb.

- The controlled argument in the subordinate clause finds its referent in a way very similar to an ordinary pronoun,

Obligatory anaphoric control

PS Rule

$$\begin{array}{ccccc} \text{V'} & \to & \text{V} & \text{(NP)} & \text{(VP)} \\ & & \uparrow=\downarrow & (\uparrow \text{OBJ}) =\downarrow & (\uparrow \text{XCOMP}|\text{COMP}) =\downarrow \end{array}$$

Lexicon entries

$$\begin{array}{lll} \textit{tried} & \text{V} & (\uparrow \text{PRED}) = \text{‘try}\langle\text{SUBJCOMP}\rangle\text{’} \\ & & (\uparrow \text{COMP SUBJ PRED}) = \text{‘pro’} \\ \textit{convinced} & \text{V} & (\uparrow \text{PRED}) = \text{‘convince}\langle\text{SUBJ,OBJ,COMP}\rangle\text{’} \\ & & (\uparrow \text{COMP SUBJ PRED}) = \text{‘pro’} \end{array}$$

Arbitrary anaphoric control

(21) a. David gestured to follow Chris.

b. $$\begin{bmatrix} \textsc{pred} & \text{`gesture}\left\langle \textsc{subj},\textsc{comp} \right\rangle\text{'} \\ \textsc{subj} & \begin{bmatrix} \textsc{pred} & \text{`david'} \end{bmatrix} \\ \textsc{comp} & \begin{bmatrix} \textsc{pred} & \text{`follow}\left\langle \textsc{subj},\textsc{obj} \right\rangle\text{'} \\ \textsc{subj} & \begin{bmatrix} \textsc{pred} & \text{`pro'} \end{bmatrix} \\ \textsc{obj} & \begin{bmatrix} \textsc{pred} & \text{`chris'} \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

- **Meaning**: *David gestured for some unspecified individual(s) to follow Chris.*
- **Syntactically**, *obligatory and arbitrary control constructions do not differ.*

$$\begin{array}{lll} \textit{gesture} & \text{V} & (\uparrow \textsc{pred}) = \text{`gesture}\langle \textsc{subj},\textsc{comp} \rangle\text{'} \\ & & (\uparrow \textsc{comp}\ \textsc{subj}\ \textsc{pred}) = \text{`pro'} \end{array}$$

Reading

- *Lexical Functional Grammar*
  - 11.1, 11.2
  - 12.1, 12.3, 12.5