Binding

Final papers: due Friday at midnight, submit on IVLE
Review session (optional): April 18, 2pm, AS7 01-06
Exam (not optional): May 3, 9am–11am, MPSH1-A (sort of behind University Health Center)

1 Reference and coreference

Given two DPs, can they refer to the same individual (*corefer*; be *coreferential*)? It depends:

(1) **Coreference between two DPs:**

a. Obligatory: John likes himself.

b. Optional: John likes his car.

c. Ungrammatical: John likes him. / He likes John.

Effects as in (1) are the result of (we think, traditionally) the Binding Theory:

(2) **The Binding Theory:**

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.

And if two (type e) DPs are coreferential, how exactly does that happen?

(3) **Three ways two DPs could co-refer:**
"He likes his car." *he*/*his* = John

a. Re-using the same index:
He_6 likes his_6 car $g = [6 \mapsto \text{John}]$

b. Accidental co-reference:
He_4 likes his_7 car $g = [4 \mapsto \text{John}, 7 \mapsto \text{John}]$

c. Bound variable:
He_3 [1 [t_1 likes his_1 car]] $g = [3 \mapsto \text{John}]$

Question: Can we tell which of these options in (3) are actually used?
Here we need to distinguish *syntactic binding* from *semantic binding*. Semantic binding means variable binding by a λ binder. Option (3c) is semantic binding. We say *he* semantically-binds *his* in (3c) because *he* is the argument of the λ-binder which binds *his*, even though *he* and *his* have different indices.

2 What does the Binding Theory care about?

Claim: The Binding Theory cares about *semantic* binding, not *syntactic* binding.[1]

2.1 Condition C

(4) **Basic examples with lower names:**

a. * John/He likes John.

b. * John/He thinks [John is handsome].

Note that in these examples, it is unclear which of the coreference strategies in (3) are involved.

(5) **Some interesting examples from Grodzinsky and Reinhart (1993, p. 78):**

a. (Who is this man over there?) He is Colonel Weisskopf.

b. Only Churchill remembers Churchill giving the speech about blood, sweat, toil, and tears.

c. Everyone has finally realized that Oscar is incompetent. Even he has finally realized that Oscar is incompetent.

d. I know what Ann and Bill have in common. She thinks that Bill is terrific and he thinks that Bill is terrific.

Reinhart (1983); Grodzinsky and Reinhart (1993): The examples in (5) are simultaneously interesting for two reasons!

- Their interpretation cannot be due to variable binding (option 3c).
- They seem to violate Binding Condition C, but are grammatical.

(6) **Have Local Binding! (Büring, 2005a,b):**[2]
For any two NPs α and β, if α could semantically bind β (i.e. if it c-commands β and β is not semantically bound in α's c-command domain already), α must semantically bind β, unless that changes the interpretation.

(7) **Binding Condition C:**
An r-expression must be *semantically free*.

Explaining Binding Condition C (Büring, 2005a): In examples like (4), Rule I says the lower *John* must be interpreted as a bound variable. But it doesn't make sense to say that names (and r-expressions more generally) are bound variables; in particular, their interpretation does not depend on the index they carry (because they don't use the Traces & Pronouns rule). Therefore r-expressions must be semantically free (Binding Condition C).

[1] The material today is based less on H&K and more on works such as Reinhart (1983); Grodzinsky and Reinhart (1993); Heim (1998); Fox (2000); Büring (2005b), but radically simplified in presentation.

[2] Büring's *Have Local Binding!* is designed to combine two earlier rules: Rule I of Grodzinsky and Reinhart (1993); Heim (1998) and Rule H of Fox (2000). H&K informally discuss Rule I in §10.5.

2.2 Condition B

The same goes for pronouns and Binding Condition B:

(8) **Basic examples with lower pronouns:**

a. * John/He likes him.

b. John/He thinks [he is handsome].

(9) **Some examples with questions:**

Students are grading each other's assignments. Unfortunately the assignments were distributed at random, and not in a smart way.

a. Q: Which student(s) graded John?

A: JOHN graded John/him.

b. Q: Which student(s) graded John?

A: # JOHN graded himself.

c. Q: Which student(s) graded themselves?

A: JOHN graded himself.

Notice that the appropriate answer to *Which student(s) graded John?* in (9a) violates Binding Condition B. At the same time, it cannot be interpreted as a bound variable.

(10) **Binding Condition B:**

A pronoun must be *semantically free* in its Binding Domain.

3 Strict and sloppy readings

(11) "John likes his car." *his* = John

a. Accidental co-reference:

John likes his_6 car. g = [6 ↦ John]

b. Bound variable:

John [5 [t_5 likes his_5 car]]

(12) John likes his car and Bill does Δ too.

a. Δ = likes John's car *strict*

b. Δ = likes Bill's car *sloppy*

(13) Every man likes his car and Mary does Δ too.

a. Δ = likes Mary's car

b. * Δ = likes John's car

c. * Δ = likes the men's cars

Idea: Indices under ellipsis preserve whether they are bound or free.

(14) ***Rosa* c-commands *her*:** (H&K p. 267)
You can keep Rosa in her room for the whole afternoon, but not Zelda.
a. = you can't keep Zelda in Rosa's room. *strict*
b. = you can't keep Zelda in Zelda's room. *sloppy*

(15) ***Rosa* does not c-command *her*:** (H&K p. 267)
Felix is kissing Rosa in her favorite picture but not Zelda.
a. = Felix is not kissing Zelda in Rosa's favorite picture. *strict*
b. * = Felix is not kissing Zelda in Zelda's favorite picture. *sloppy*

These effects extend beyond ellipsis:

(16) **A contrast with *only*:**
a. You can only keep ROSA in her room for the whole afternoon.
b. Felix is only kissing ROSA in her favorite picture.

4 Three DPs and Dahl's puzzle

(17) John said that he likes his mother. Bill did Δ too. (Dahl, 1974; Fox, 2000)
a. Δ = say that John likes John's mother
b. Δ = say that Bill likes Bill's mother
c. Δ = say that Bill likes John's mother
d. * Δ = say that John likes Bill's mother

(18) Every man is afraid that only HE voted for his proposal. (Heim, 1998; Büring, 2005b)

References

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Dahl, Östen. 1974. How to open a sentence: Abstraction in natural language. In *Logical grammar reports, number 12*. University of Götenberg.

Fox, Danny. 2000. *Economy and semantic interpretation: a study of scope and variable binding*. MIT Press.

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Heim, Irene. 1998. Anaphora and semantic interpretation: A reinterpretation of Reinhart's approach. In *The interpretive tract*, ed. Uli Sauerland and Orin Percus, 205–246. MIT Working Papers in Linguistics.

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