Binding, Coreference, and Presuppositions in the Binding Theory

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Binding Verus Coreference

- Classical binding theory (e.g., Chomsky 1981) did not distinguish binding from coreference, simply regulates coindexing.
- Reinhart (1983a,b): The binding theory should regulate only syntactic binding, not coreference.

This Talk

1. We get a simpler and more empirically adequate binding theory if it regulates both binding and coreference.
2. Propose a new binding theory combining Precede-and-Command (Bruening 2014) with the presuppositional approach to Binding Condition A (Sauerland 2013).

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(1) Every middle-aged man believes that he is an above-average driver.
every middle-aged man λx.x believes that x is an above-average driver

(2) a. Goofy knows that he is an idiot.
Goofy λx.x knows that x is an idiot.

b. Goofy knows that he is an idiot.
Goofy λx.x knows that he is an idiot. (he=Goofy)

Motivating the Distinction: Strict and Sloppy Readings

Standard analysis:
Sloppy readings = variable binding, strict readings = coreference
(Sag 1976, Reinhart 1983b, Heim & Kratzer 1998).

(3) Samantha called her mother. The teacher did too.
    sloppy reading: 'The teacher called the teacher's mother.'
    strict reading: 'The teacher called Samantha's mother.'

(4) Samantha called her mother. The teacher did too.

    a. Samantha λx.x called x's mother.
       The teacher λx. x called x's mother.

    b. Samantha called her mother. (her=Samantha)
       The teacher called her mother. (her=Samantha)

(5) Even GOOFY knows that he is an idiot.

    a.   even Goofy λx.x knows that x is an idiot.

    b.   even Goofy λx.x knows that he is an idiot. (he=Goofy)

Note

"Sloppy readings = variable binding, strict readings = coreference" is too simplistic:

(6) All assistant professors think they are underpaid, and all associate professors do too.
(strict reading could not be coreference; Fiengo & May 1994: 115–117)

(7) Every wife thinks that only she respects her husband.
(strict reading could not be coreference; example in Reinhart 2006 based on Heim 1998)

(8) The woman he lived with told Bill to get out, and the woman Ken lived with did too.
(sloppy reading not capturable by binding; Davis 2009: note 30)

The Binding Conditions Regulate Only Binding

Reinhart (1983a,b):

- The binding conditions should only regulate syntactic binding.
- Coreference is in principle free, but some sort of pragmatic obviation principle bars coreference when binding would be possible and indistinguishable in interpretation.
- Adopted by: Grodzinsky & Reinhart (1993), Heim (1998), Fox (2000), Safir (2004), Büring (2005b), Reinhart (2006), Roelofsen (2010).
- Also part of reductionist account of Reuland (Reuland 2001, 2011, 2017, Volkova & Reuland 2014).
- (Opponents: Lasnik 1989, Heim 2007.)

(9)   * He_1 knows that $Goofy_1$ is an idiot.

    a.   * He $\lambda x.x$ knows that x is an idiot.

    b.   * He knows that Goofy is an idiot. (he=Goofy)

(10)   Even HE_1 knows that $Goofy_1$ is an idiot.

    a.   Even HE $\lambda x.x$ knows that x is an idiot.

    b.   Even HE knows that Goofy is an idiot. (he=Goofy)

The classical binding theory is too strict.

The Reinhart View is Too Permissive

- It predicts many more exceptions to the binding principles than actually exist;
- It has to have pragmatic principles duplicate the syntactic binding conditions so that coreference appears to obey them.
- Actual fact: coreference is subject to the binding principles.

(11) a. The judge questioned the man who defended himself about why his lawyer couldn't. ('defend him') (McKillen 2016: 27, (31))

    b. Mary did something really terrible. Everyone hates her now. Even SHE hates herself. (modified from McKillen 2016: 57, (15))

Strict Readings of Reflexives

- Claims that reflexives can only have sloppy readings: Keenan (1971), Williams (1977), Partee & Bach (1984), Heim & Kratzer (1998).

- Observation that they can have strict readings: Dahl (1973), Sag (1976), Fiengo & May (1994), Hestvik (1995), Büring (2005a).

- Recent experimental work shows that strict readings are readily available for reflexives and that they are not limited to certain syntactic contexts as works like Hestvik (1995) have claimed:

- Frazier & Clifton (2006), Kim & Runner (2009), Ong & Brasoveanu (2014), and especially McKillen (2016).

- Not a peculiarity of English: Lidz (2001) shows that reflexives in Dutch and Kannada also allow strict readings in ellipsis (see also Rooryck & Vanden Wyngaerd 2011 on Dutch).

Strict Readings and Condition B

Reflexive is required even in cases of strict identity in ellipsis:

(12) a. * The judge questioned the man who$_1$ defended him$_1$ about why his lawyer couldn't. ('defend him')

b. She$_1$ blames herself$_1$/*her$_1$. Her boss does too, and is likely to fire her. ('blame her')

- Given the ellipsis, coreference and binding give rise to two different interpretations;
- So nothing should block the use of a coreferential pronoun in approaches where the binding conditions regulate only binding.

As noted by Reinhart (2006):

(13)   a.   * He$_1$ likes Max$_1$'s mother and Felix does too.
           (Reinhart 2006: 184, (35b))

       b.   * She$_1$ thinks Melinda$_1$'s paper will be published but Sandra
           doesn't.

Reinhart's Account

- Reinhart (2006: 185): An interpretation that is banned by the grammar (Conditions B and C) cannot be "snuck in" by using coreference instead.
- But this is equivalent to saying that coreference is subject to Conditions B and C.
- Reinhart has to develop a very convoluted account to maintain her proposal that the binding conditions regulate only syntactic binding and not coreference.

Condition B and Focus

- Reinhart (1983b) claimed that focus can permit violations of Condition B with pronouns;
- See the references in Roelofsen (2010):

(14) (Roelofsen 2010: 118, (9–11))
   a. Only Max himself voted for him.
   b. I know what John and Mary have in common. John hates Mary and Mary hates her too.
   c. If everyone voted for Oscar, then certainly Oscar voted for him.

- Some have noted that sentences of this form are not fully acceptable to native speakers, many speakers reject them (Schlenker 2005b, Jacobson 2007, Heim 2007).
- Experiments in McKillen (2016): subjects uniformly reject them.
- I take these to be unacceptable, and another incorrect prediction of the Reinhart account.

Attested Examples

Are almost all first and second person:

(15) (all examples cited in McKillen 2016: 160)

    a. Even I laughed at me when I built this alien cross-species genetic analyser. (Futurama S05E05)

    b. Mycroft: I got you out. Sherlock: No, *I* got me out. (Sherlock S03E01)

- I take these to be acceptable;
- Explaining the difference between third person and first/second person will be important in a theory.

Taking Stock

The classical binding theory struggles with:

1. Acceptable violations of Condition C in focus;
2. Acceptable violations of Condition B with first and second person pronouns.

The Reinhart view:

1. Predicts incorrectly that binding conditions can be violated in the antecedent clause in ellipsis cases with strict readings;
2. Predicts incorrectly that focus enables violations of Condition B with third person pronouns;
3. Has two distinct sets of principles (syntactic and pragmatic) that partially duplicate each other.

Existing Modifications of Condition C Permit Exceptions

Schlenker (2005a), *Minimize Restrictors!*:

- Condition C says you can't use an R-expression if you could have used a pronoun;
- But it allows exceptions for pragmatic purposes, including disambiguation and adding expressive content.
- Bruening (2014) adapts this kind of formulation of Binding Condition C into a version of the classical binding theory.
- Note that this does not allow violations of Condition B, which is mostly correct.
- If the classical binding theory can account for the difference between third person and first/second person pronouns, then it will be doing much better than the Reinhart view.

Acquisition and Processing

- Grodzinsky & Reinhart (1993), Reinhart (2006): It is a benefit of the Reinhart system that it is so complicated:
- It requires a high processing load to compare the effects of binding and coreference;
- There is evidence for this high processing load from child language acquisition and from other sources.
- The acquisition data regarding Condition B seems to have been misunderstood; see Elbourne (2005) and Conroy et al. (2009).
- In the alternative classical binding theory with exceptions to Condition C for pragmatic purposes, it also takes additional processing to allow for the pragmatic exceptions to Condition C;
- Language users have to consider the intentions of speakers and whether or not they may have some reason to use an R-expression rather than a pronoun.
- Processing does not decide in favor of Reinhart's view.

Summary

- Coreference mostly seems to be subject to the binding conditions.
- Exceptions are much more restricted than they should be on the Reinhart view.
- It is better to have a single set of syntactic conditions.
- Task then is to allow certain principled exceptions.

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The Presuppositional Approach

Sauerland (2013), McKillen (2016): Binding Condition A is actually a presupposition of SELF anaphors.

- SELF anaphors have no at-issue content;
- They add a presupposition to the effect that the predicate of the clause they occur in has two identical arguments.
- Identity subsumes both binding and coreference.

Advantage: Focus

(16) The presuppositions of F-marked NPs or NPs linked to an F-marked NP can be absent in focus alternatives. (McKillen 2016: 146, (104))

Because "linked to" is very imprecise, I will instead state the generalization as follows:

(17) The presuppositions of F-marked NPs or NPs whose denotations are identical to them can be absent in focus alternatives.

Explains Strict Reading in Focus

(18) Only Tatiana hates herself. (strict reading: 'no one else hates Tatiana')
focus alternatives: {x hates herself (herself=Tatiana)}

- *Herself* is coreferential with Tatiana;
- Still is in focus alternatives;
- In focus alternatives, the presupposition of argument identity is not present.

Ellipsis Licensing Condition

Focus matching (Merchant 1999: 34):

(19) A VP in constituent C_E can be elided if there is a constituent C_A, where:

    a. $[\![C_A]\!]^{g,o} \in [\![C_E]\!]^{g,f}$, and

    b. $[\![C_E]\!]^{g,o} \in [\![C_A]\!]^{g,f}$.

Strict Readings in Ellipsis

Elided clause can have a pronoun rather than a reflexive:

(20) The accused defended himself before his lawyer did.
    a.   *antecedent clause:* the accused defended himself (himself=the accused)
         alternatives: {x defended himself (himself=the accused)}
    b.   *elided clause:* his lawyer did [defend him] (him=the accused)
         alternatives: {x defended him (him=the accused)}

The ordinary semantic value of the elided clause is a member of the focus semantic value of the antecedent clause, if the presupposition of Condition A is absent from the focus alternatives.

von Heusinger (2007), Sauerland (2013), McKillen (2016):

(21)   a.   Only I did my homework.
            (other people did not do theirs; first person presupposition not
            projected)

       b.   *Scenario: One German professor attended the party, three*
            Japanese professors, five English professors, and also two
            office workers.
            Sam only talked to the GERMAN professor.
            (uniqueness presupposition not satisfied for alternative 'talked
            to the Japanese/English professor')

       c.   *Scenario: John, Mary, and Bill all worked as waiters. But John*
            and Bill moved on to different jobs.
            Only Mary is still a waitress.
            (female presupposition not satisfied in alternatives)

Drawbacks to Analysis as Formulated

- Both Sauerland (2013) and McKillen (2016) posit syntactic movement to get the analysis to work.
- Sauerland (2013): SELF moves and adjoins to the predicate.
- McKillen (2016), SELF combines first with a pronoun and then with the predicate, without the need for movement;
- But movement is still necessary with ECM predicates for McKillen.

(22) a. She$_1$ washed herself$_1$/*her$_1$ and him.

    b. The Queen$_1$ invited the baron and herself$_1$/*her$_1$ to tea.

(23) a. self-washed, self-invited

    b. * self-washed and him, *self-invited the baron and

(24) The president$_1$ considers both himself$_1$/*him$_1$ and his advisors to be above the law.

Second Drawback: Only Condition A

(25) *Condition B*

    a.   Trump$_1$ and his campaign manager have very different opinions. Only the campaign manager actually considers him$_1$ worth voting for.

    b.   Brandon is proud of her$_1$ and she$_1$ is too.

(26) *Condition C*

    a.   Melissa and her husband have very different views of what she has done. Only he thinks that Melissa's accomplishments have been significant.

    b.   Brandon is proud of what Melissa$_1$ has accomplished and she$_1$ is too.

Not clear that Sauerland's and McKillen's analyses can be extended to pronouns and R-expressions.

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The Analysis in Bruening 2014

Bruening (2014): the binding conditions do not refer to c-command, as in the classical binding theory, but to *precede-and-command*.

(27) Binding
A binds B iff A and B are coindexed and A precedes and phase-commands B.

(28) Phase-Command: X phase-commands Y iff there is no ZP, ZP a phasal node, such that ZP dominates X but does not dominate Y.

(29) Phasal nodes: CP, vP, NP

Left-to-Right Syntax

- Structures are processed and built syntactically in a left-to-right fashion.
- As structures are built and processed, the grammar/processor keeps track of discourse referents.
- Precedence is relevant because syntax works left-to-right;
- Phase-command is relevant because certain things happen at the right edge of phase boundaries.

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Reformulation with Presuppositions

The PPC Binding Theory ("Presuppositional Precede-and-Command"):

- Follow Heim (2007): assume that all quantifiers raise out of argument position and leave behind trace of type e.

(30) PPC Discourse Sets:

    a.   PPC Discourse Set D: Consists of all denotations of NPs of type e in the current discourse.

    b.   PPC Discourse Set C (the *active* set): Consists of denotations of NPs of type e in the sentence currently being processed.

    c.   PPC Discourse Set A (the *local* set): Consists of denotations of NPs of type e in the local argument domain currently being processed.

Reformulated Processing Principles

(31) PPC Processing Principle 1:
Move denotation of NP N out of local set A and into the active set C *at the left edge of an argument domain that does not include N*.
(Heuristic: Move when encounter

1. Clause boundary; or
2. Predicate that did not assign case or thematic role to N; or
3. NP M such that M receives case and thematic role from a predicate other than the one that assigned case/role to N.)

(32) PPC Argument Domain:
An argument domain is the set of elements that includes a predicate P and all the arguments of P.

(33) PPC Processing Principle 2:
Move denotation of NP N out of sets A and C and into set D at the right edge of a phasal node that dominates N.

Types of NPs

NPs are specified as being one of the following:

(34) a. Local anaphors (e.g., reflexives)

    b. Det R (R-expression)

    c. Det R̶ (pronoun)

- Local anaphors do not have a designated form, both Det R and Det R̶ could be specified as being a local anaphor;
- If not specified, then default as above;
- Can also be ambiguous (both local anaphor and not); e.g. English possessive pronouns.
- (Note that a given NP could also be subject to other conditions, for instance that it must be syntactically bound, or is antilogophoric, or . . .)

(35) PPC Binding Condition A:
If a newly processed NP is a local anaphor, its denotation is presupposed to be identical to a denotation already in set A.

(36) PPC Binding Condition B (to be revised):
The denotation of any NP that is not a local anaphor is presupposed not to be identical to a denotation in set A.

(37) PPC Binding Condition C (Minimize Restrictors):
The denotation of an NP of the form *Det R* is presupposed not to be identical to the denotation of an NP in active set C if R could have been dropped without affecting either (i) the descriptive content of the NP or (ii) its various pragmatic effects.

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Examples

IP
- NP — the bear
- VoiceP
  - VP
    - V — washed
    - NP
      - NP — itself/it
      - and
      - NP
        - NP — its
        - N — cub

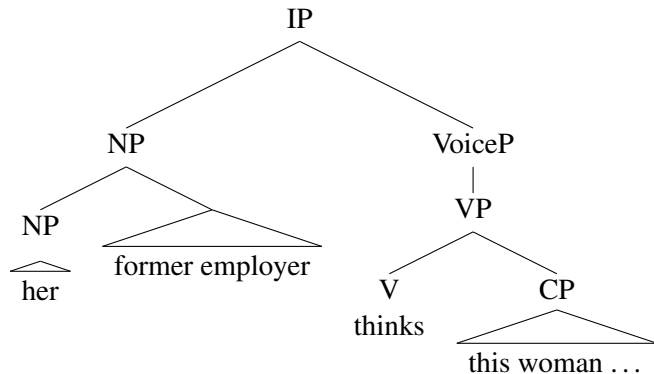(38) a. The bear washed itself and its cub.

b. The bear washed it and its cub.

- Possessive pronoun is ambiguous between an anaphor and a pronoun.

(39)   * The bear thinks the man will feed itself.

Condition C

(40) a. She thinks this woman will be successful.

b. Her former employer thinks this woman will be very successful.

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(41) Mary did something really terrible. Everyone hates her now. Even SHE hates herself. (modified from McKillen 2016: 57, (15))
alternatives: {x hates herself (herself = Mary)}

- Presupposition must be satisfied in ordinary semantic value;
- But can be violated in focus semantic value.

(42) The accused defended himself before his lawyer did.

    a.   *antecedent clause:* the accused defended himself (himself=the accused)
         alternatives: {x defended himself (himself=the accused)}

    b.   *elided clause:* his lawyer did [defend him] (him=the accused)
         alternatives: {x defended him (him=the accused)}

(43) Trump$_1$ and his campaign manager have very different opinions. Only the campaign manager actually considers him$_1$ worth voting for.
alternatives: {x actually considers him worth voting for (him=Trump)}

(44) Brandon is proud of her and she is too.

    a.   *antecedent clause:* Brandon is proud of her (her=Melissa)
          alternatives: {x is proud of her (her=Melissa)}

    b.   *elided clause:* she is [proud of herself] (herself=Melissa)
          alternatives: {x is proud of herself (herself=Melissa)}

(45) Melissa and her husband have very different views of her abilities.
Only he thinks that Melissa's accomplishments have been significant.
alternatives: {x thinks that Melissa's accomplishments have been
significant}

Ellipsis: Condition C

(46) Brandon is proud of what Melissa has accomplished and she is too.

    a.   *antecedent clause:* Brandon is proud of what Melissa has accomplished
          alternatives: {x is proud of what Melissa has accomplished}

    b.   *elided clause:* she is [proud of what she has accomplished] (she=Melissa)
          alternatives: {x is proud of what she has accomplished (she=Melissa)}

(47)   a.   * The judge questioned the man who$_1$ defended him$_1$ about why his lawyer couldn't. ('defend him')

       b.   * She$_1$ thinks Melinda$_1$'s paper will be published but Sandra doesn't.

Presupposition must be satisfied in the ordinary semantic value.

- Reinhart's approach stumbles here, current account correctly predicts distinction between elided clause and antecedent clause.

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Reciprocals

- Most alternatives to the classical binding theory ignore reciprocals;
- Current analysis accounts for them easily by having multiple meaning components:
  1. At-issue content (meaning of reciprocal);
  2. Presupposition: Condition A.
- See Sauerland (2013).
- Reciprocals allow strict readings:

(48) a. They hate each other almost as much as their enemies do. ('hate them')

 b. We blamed each other. The boss did, too, and fired us both. ('blamed us')

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(49)   John$_1$ is so careless that the idiot$_1$ will get killed in an accident one of these days. (Nediger 2017: (23a))
       (cf. *He$_1$ is so careless that John$_1$ will get killed in an accident one of these days.)

Allowed by current Condition C: Dropping the restriction would lose the descriptive content of *idiot*.

(50)   a.   * John$_1$ is so careless that he$_1$ will kill the idiot$_1$ in an accident
            one of these days. (Nediger 2017: 112, (23))

       b.   John$_1$ is the stupidest realtor ever. *He$_1$ accidentally sold the
            idiot$_1$'s own house.

Follows from Condition B:

(51)   PPC Binding Condition B (to be revised):
       The denotation of any NP that is not a local anaphor is presupposed
       not to be identical to a denotation in set A.

(52) a.   Only BERTRAND likes Bertrand.

       b.   Even BERTRAND hates Bertrand.

       c.   A: Nobody likes Bertrand. B: BERTRAND likes Bertrand.

(53) a.   Bertrand only likes BERTRAND.

       b.   Bertrand even likes BERTRAND.

       c.   A: Bertrand doesn't like anybody. B: Bertrand likes BERTRAND.

(54) PPC Binding Condition C (Minimize Restrictors):
The denotation of an NP of the form *Det R* is presupposed not to be
identical to the denotation of an NP in active set C if R could have
been dropped without affecting either (i) the descriptive content of the
NP or (ii) its various pragmatic effects.

(55) Even BERTRAND thinks Bertrand is a fool.

Repeating name disambiguates to coreferential reading.

(56)   (modified from Roelofsen 2010: 118, (9–11))

    a.   * Only Max himself voted for him.

    b.   * I know what John and Mary have in common. John hates Mary and Mary hates her too.

    c.   * If everyone voted for Oscar, then certainly Oscar voted for him.

Focus: First and Second Person

(57) (all examples cited in McKillen 2016: 160)

   a. Even I laughed at me when I built this alien cross-species genetic analyser. (Futurama S05E05)

   b. Mycroft: I got you out. Sherlock: No, *I* got me out. (Sherlock S03E01)

Empirical Fact

Condition B can be violated by repeated names and by repeated first and second person pronouns, but it cannot be violated by epithets or third person pronouns.

- Repetition not actually required:

(58) A: Who did the suspect call? B: The suspect, who we are calling Person X, called Person X.

- Focus maybe not required, either:

(59) OK, here's what I think happened: Prisoner 1 stabbed prisoners 2 and 4, then prisoner 3 stabbed prisoner 1 and prisoner 3.

Points to disambiguation being crucial.

(60) PPC Binding Condition B (final version):
Unless NP N that is not a local anaphor is being used specifically to refer unambiguously to a referent in the discourse, the denotation of N is presupposed not to be identical to a denotation in set A.

- Epithets are not used to unambiguously refer, they are used to add expressive content, so can never violate Condition B.
- Third person pronouns not used to unambiguously refer, an R-expression always serves that purpose better.
- No R-expression for first and second person, only choice for unambiguous reference is pronoun.

(61) a.   A: Who did every suspect call? B: Every suspect called every suspect. (*'Every suspect called him/herself.')

      b.   NO ONE got no one out. (*'No one got him/her self out.')

In contrast, epithets can be quantificational:

(62)   Every one of my captors$_1$ was so cruel that I am convinced the evil bastard$_1$ has a special place reserved for them in hell.

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Nediger (2017) notes that epithets as possessors also cannot be locally bound:

(63)   (Nediger 2017: 112–113, (24–25))

    a.   Every bastard$_1$'s mother thinks the bastard$_1$ is crazy.

    b.   * Every bastard$_1$ raised the bastard$_1$'s hand.

    c.   * He$_1$ raised the bastard$_1$'s hand.

    d.   * Jacob$_1$ raised the bastard$_1$'s hand.

    e.   * The bastard$_1$ raised the bastard$_1$'s hand.

(64) (Nediger 2017: 113, (27))

    a.   * Raisa$_1$ showed Olga the idiot$_1$'s house.

    b.   ? Raisa showed Olga$_1$ the idiot$_1$'s house.

(65) a. * He's so stupid, I was able to sell him_1 the $idiot_1$'s own pants.
(cf. I was able to sell the $idiot_1$ his_1 own pants.)

   b. * The hostess placed him_1 next to the poor $bastard_1$'s ex-wife.
(cf. The hostess placed the poor $bastard_1$ next to his_1 ex-wife.)

   c. * They finally told him_1 about the poor $bastard_1$'s children.
(cf. They finally told the poor $bastard_1$ about his_1 children.)

Explanation: Locally Bound Possessive Pronouns are Anaphors

- Epithets can never be anaphors,
- So always ruled out with a local antecedent.
- Predicts that non-local subject is fine:

(66) a. $John_1$ is so careless that the $idiot_1$'s poor driving is going to kill someone one of these days.

  b. $John_1$ was devastated when his own advisor accidentally destroyed the poor $bastard_1$'s research notes.

Supports Ambiguity Account

If we were to formulate the binding conditions so that the local subject was outside the binding domain of a possessive pronoun, we would have no explanation for the behavior of epithet possessors.

- Argument in favor of treating forms that can have a local antecedent or not as ambiguous.
- Possessive pronouns with a local subject as antecedent are anaphors:

(67)   She$_1$ lost her$_1$ keys.

"Massive Ambiguity is a Bad Analysis"

(e.g., Reuland 2011)

- Languages are full of items that do double duty;
- E.g., English *any* NPs are systematically ambiguous between NPIs and free choice items.

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Strong Crossover as Condition C

Wasow (1972), Chomsky (1981); see Lasnik & Funakoshi 2017 for an overview:

(68) * Which girl$_1$ does she$_1$ think John likes ~~which girl$_1$~~?

Focus Doesn't Help

(69)   * Who$_1$ does only HE$_1$ (HIMSELF) still think Mary likes t_1?
(Lasnik & Funakoshi 2017: (89))

(70) PPC Binding Condition C (Minimize Restrictors):
The denotation of an NP of the form *Det R* is presupposed not to be identical to the denotation of an NP in active set C if R could have been dropped without affecting either (i) the descriptive content of the NP or (ii) its various pragmatic effects.

- In the null copy, *R* can not actually be dropped without violating the grammar.
- In Condition C, the only thing that allows *R* not to be dropped is affecting either the denotation or the pragmatics.
- Result: Dropping *R* violates the grammar, but not dropping *R* violates Condition C.
- There is simply no way to get around violating something, and so strong crossover always results.

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Overlapping Reference

PPC binding theory rules out some cases of overlapping reference but allows others:

(71) a. * $John_1$ and Mary like $himself_1$.

     b. * He_1 argued that $John_1$ and Mary should be given the contract.

     c. * The $bear_1$ washed it_1 and its cub.

(72) a. A: Who did you guys vote for?
        B: We all voted for me.

     b. A: Who recommended who?
        B: Well, $John_1$ and Mary recommended him_1, Stan and Sue recommended Kyle, ...

     c. A: What did $John_1$ and $Mary_2$ go to see the boss about?
        B: $They_{\{1,2\}}$ went to argue that $John_1$ was the best person for the job.

I contend that this is correct (contra Lasnik 1981, 1989, Higginbotham 1983).

Results of a SNAP Judgment Task

n=5; unacceptable=0, marginal=0.5, acceptable=1

sentence	sum
A: Did some of the animals clean some of the other animals? B: Yes, the bear washed it and its cub. (it, its refer to the bear)	0
A: Which animal did the bear and the zookeeper clean together? B: The bear and the zookeeper cleaned itself together. (itself refers to the bear)	0
A: What did John go to see the boss about? B: He wanted to convince the boss that John and Mary should be assigned to the new project. (he refers to John)	1
A: Who recommended who? B: Well, Mary and John recommended her, but Stan and Sue recommended Kyle. (her refers to Mary)	2
A: Who did you guys vote for? B: We all voted for me.	4.5
A: What did John and Mary go to see the boss about? B: They wanted to convince the boss that Mary was the best person for the job. (they refers to John and Mary)	5

Conclusion

- We get a simpler, more empirically adequate binding theory if it regulates both binding and coreference (identity).
- Proposed a new binding theory combining the presuppositional analysis with the precede-and-command analysis;
- This new binding theory (the PPC Binding Theory) explains numerous facts and has numerous advantages.
- Incompatible with existing reductionist accounts (e.g., Reuland 2011), but these are unsuccessful anyway.

Table of Contents

Bruening, Benjamin. 2014. Precede-and-command revisited. *Language* 90. 342–388.

Büring, Daniel. 2005a. *Binding theory*. Cambridge: Cambridge University Press.

Büring, Daniel. 2005b. Bound to bind. *Linguistic Inquiry* 36. 259–274.

Chomsky, Noam. 1981. *Lectures on government and binding*. Dordrecht: Foris.

Conroy, Anastasia, Eri Takahashi, Jeffrey Lidz & Colin Phillips. 2009. Equal treatments for all antecedents: How children succeed with Principle B. *Linguistic Inquiry* 40. 446–486.

Dahl, Östen. 1973. On so-called 'sloppy identity'. *Synthese* 26. 81–112.

Davis, Henry. 2009. Cross-linguistic variation in anaphoric dependencies: Evidence from the Pacific Northwest. *Natural Language and Linguistic Theory* 27. 1–43.

Elbourne, Paul. 2005. On the acquisition of Principle B. *Linguistic Inquiry* 36. 333–365.

Fiengo, Robert & Robert May. 1994. *Indices and identity*. Cambridge, MA: MIT Press.

References II

Fox, Danny. 2000. *Economy and semantic interpretation*. Cambridge, MA: MIT Press and MIT Working Papers in Linguistics.

Frazier, Lyn & Charles Clifton, Jr. 2006. Ellipsis and discourse coherence. *Linguistics and Philosophy* 29. 315–346.

Grodzinsky, Yosef & Tanya Reinhart. 1993. The innateness of binding and coreference. *Linguistic Inquiry* 24. 69–101.

Heim, Irene. 1998. Anaphora and semantic interpretation: A reinterpretation of Reinhart's approach. In Uli Sauerland & Orin Percus (eds.), *The interpretive tract*, vol. 25 MIT Working Papers in Linguistics, 205–246. Cambridge, MA: MITWPL.

Heim, Irene. 2007. Forks in the road to Rule I. Invited talk at NELS 38, available at https://semanticsarchive.net/Archive/TA0ZGI3O/Nels%2038%20talk.pdf.

Heim, Irene & Angelika Kratzer. 1998. *Semantics in generative grammar*. Oxford: Blackwell.

Hestvik, Arild. 1995. Reflexives and ellipsis. *Natural Language Semantics* 3. 211–237.

References III

von Heusinger, Klaus. 2007. Alternative semantics for definite NPs. In Kerstin Schwabe & Susanne Winkler (eds.), *On information structure, meaning and form: Generalizations across languages*, 485–508. Amsterdam: John Benjamins.

Higginbotham, James. 1983. Logical form, binding, and nominals. *Linguistic Inquiry* 14. 395–420.

Jacobson, Pauline. 2007. Direct compositionality and variable-free semantics: The case of 'Principle B' effects. In Chris Barker & Pauline Jacobson (eds.), *Direct compositionality*, 191–236. Oxford: Oxford University Press.

Keenan, Edward L. 1971. Names, quantifiers, and the sloppy identity problem. *Research on Language and Social Interaction* 4. 211–232.

Kim, Christina S. & Jeffrey T. Runner. 2009. Strict identity, coherence, and parallelism in VP ellipsis. In Ed Cormany, Satoshi Ito & David Lutz (eds.), *Proceedings of semantics and linguistic theory (SALT) 19*, 275–287. eLanguage.

Lasnik, Howard. 1981. On two recent treatments of disjoint reference. *Journal of Linguistic Research* 1. 48–58.

Lasnik, Howard. 1989. On the necessity of binding conditions. In Howard Lasnik (ed.), *Essays on anaphora*, 149–172. Dordrecht: Reidel.

Lasnik, Howard & Kenshi Funakoshi. 2017. Condition C violations and strong crossover. In Martin Everaert & Henk van Riemsdijk (eds.), *The Wiley Blackwell companion to syntax*, vol. II, 1052–1078. Somerset, NJ: John Wiley and Sons 2nd edn. DOI: https://doi.org/10.1002/9781118358733.wbsyncom021.

Lidz, Jeffrey. 2001. Condition R. *Linguistic Inquiry* 32. 123–140.

McKillen, Alanah. 2016. *On the interpretation of reflexive pronouns*. McGill University dissertation.

Merchant, Jason. 1999. *The syntax of silence: Sluicing, islands, and identity in ellipsis*. University of California Santa Cruz dissertation.

Nediger, Will. 2017. Overcoming empirical challenges for an extended approach to Condition C. *Linguistic Inquiry* 48. 99–127.

Ong, Matthew & Adrian Brasoveanu. 2014. Strict and sloppy reflexives in VP ellipsis. In Christopher Piñón (ed.), *Empirical issues in syntax and semantics 10*, 251–268. Online publication: http://www.cssp.cnrs.fr/eiss10/.

Partee, Barbara H. & Emmon Bach. 1984. Quantification, pronouns, and VP anaphora. In Jeroen Groenendijk, Theo M. V. Janssen & Martin Stokhof (eds.), *Truth, interpretation and information: Selected papers from the third amsterdam colloquium*, 99–130. Dordrecht: Foris.

Reinhart, Tanya. 1983a. *Anaphora and semantic interpretation*. Chicago: University of Chicago Press.

Reinhart, Tanya. 1983b. Coreference and bound anaphora. *Linguistics and Philosophy* 6. 47–88.

Reinhart, Tanya. 2006. *Interface strategies*. Cambridge, MA: MIT Press.

Reuland, Eric. 2001. Primitives of binding. *Linguistic Inquiry* 32. 439–492.

Reuland, Eric. 2011. *Anaphora and language design*. Cambridge, MA: MIT Press.

Reuland, Eric. 2017. Grammar of binding in the languages of the world: Unity versus diversity. *Cognition* 168. 370–379.

Roelofsen, Floris. 2010. Condition B effects in two simple steps. *Natural Linguistic Semantics* 18. 115–140.

Rooryck, Johan & Guido Vanden Wyngaerd. 2011. *Dissolving binding theory*. Oxford: Oxford University Press.

Safir, Kenneth. 2004. *The syntax of anaphora*. Oxford: Oxford University Press.

Sag, Ivan. 1976. *Deletion and logical form*. Massachusetts Institute of Technology dissertation. Distributed by MIT Working Papers in Linguistics, Cambridge, Mass.

Sauerland, Uli. 2013. Presuppositions and the alternative tier. In Todd Snider (ed.), *Proceedings of semantics and linguistic theory (SALT) 23*, 156–173. eLanguage: http://elanguage.net/journals/salt/index.

Schlenker, Philippe. 2005a. Minimize restrictors! (notes on definite descriptions, condition c and epithets). In Emar Maier, Corien Bary & Janneke Huitink (eds.), *Proceedings of sinn und bedeutung 9*, 385–416. Radboud University Nijmegen: NCS. www.ru.nl/ncs/sub9.

Schlenker, Philippe. 2005b. Non-redundancy: Towards a semantic reinterpretation of Binding Theory. *Natural Language Semantics* 13. 1–92.

Volkova, Anna & Eric Reuland. 2014. Reflexivity without reflexives? *The Linguistic Review* 31. 587–633.

Wasow, Thomas. 1972. *Anaphoric relations in English*. Massachusetts Institute of Technology dissertation. Distributed by MIT Working Papers in Linguistics, Cambridge, Mass.

Williams, Edwin. 1977. Discourse and logical form. *Linguistic Inquiry* 8. 101–139.

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