We left last week having introduced the idea that the Repeated Name Penalty could be seen as the result of a competition between non-pronominal anaphoric definite descriptions and pronouns. Using the template I introduced last week, we can frame this competition with (1).

1. alternatives = (pronoun, anaphoric definite description)
2. \text{choose(pronoun)(definite description)} = the one that makes the best anaphoric reference to X.

This explained a variety of facts about where the repeated name penalty is felt.

2. a. A woman entered the room.
   i. She opened a book.
   ii. ?? The woman opened a book.
3. A man and a woman entered the room.
   i. * She opened a book.
   ii. The woman opened a book.

3. When you buy a used book, you should check the spine.
4. When you buy a used book, you should check it.

5. The department has a website.
   \text{compare:} It has a website.

Our role model for framing competition is scalar implicatures.

6. Let \( p \) and \( q \) be predicates of situations, \( s \). \( p \) is weaker than \( q \) if \( \{s: s \text{ is } q\} \subset \{s: s \text{ is } p\} \)

(7) Be Strong!
   a. alternatives = (some, all)
   b. \text{choose(some, all)} = the one that makes the sentence the strongest predicate of situations that is consistent with what the speaker believes is true.

The hope is that Be Strong! is one way of obeying Grice (1991)'s Maxim of Quantity, one clause of which is:

8. Make your [linguistic] contribution [to a conversation] as informative as is required (for the current purposes of the exchange).

When wedded with an inferencing engine, this generates shown below.

9. Some problems in number theory are hard.
   \text{inference:} I don't know that all problems in number theory are hard.

10. Some of my fingers are twisted.
    \text{inference:} not all of my fingers are twisted.

The Maxim of Quantity in the context of scalar terms defines "best." What we seek for the Repeated Name Penalty is a similar metric.

We also looked at what we might regard as a strengthening of the Repeated Name Penalty: Chomsky's Principle C.

11. a. The woman's son described things that bother her.
    b. ? The woman's son described things that bother the woman.
    c. The woman described things that bother her.
    d. ?? The woman described things that bother the woman.

A way of formulating Chomsky's Principle C.

12. A anaphoric definite description cannot be c-commanded by a DP if that DP is coreferent with it and in an Argument Position.
    \( \alpha \text{ c-commands } \beta \) if \( \beta \) is (reflexively) dominated by \( \alpha \)'s sister.
(Assume that “Argument position” is the same as the position to which a θ-role is assigned. In the trees I’m about to show you, I’m going to pretend that Specifier of TP is one of those positions.)

Tanya Reinhart had the idea that Principle C is the product of another competition: (13).

(13) Reinhart Competition
If an anaphoric definite description can be replaced by a variable bound by something in an Argument Position, and the referential dependency remains unchanged, then use the bound variable.

α is bound by β if \[ β [λx \ldots α \ldots ] \]. β is in an A-position if β has a trace in a position assigned a θ-role, and that trace c-commands α.

Reinhart assumes that pronouns, and traces, are the only terms that can be bound variables. Thus, if the sentences in (15) express the same anaphora, (13) will prevent the use of the definite description.

(15) a. The woman described things that bother the woman.
b. The woman \(_{1} [TP t_{1}] \) described things that bother her._{1}.

Reinhart assumed that non-pronominal definite descriptions could not be bound variables, but that might be incorrect:

(16) No woman\(_{1}\)’s son will describe things that bother the woman\(_{1}\).

If definite descriptions can be bound variables, then we should re-jigger (13) so that it chooses the pronoun of the two alternatives in (17).

(17) a. The woman\(_{1} [TP t_{1}] \) described things that bother the woman\(_{1} \).
b. The woman\(_{1} [TP t_{1}] \) described things that bother her\(_{1} \).

(18) Reinhart Competition
If an anaphoric definite description can be replaced by a pronoun bound by something in an Argument Position, and the referential dependency remains unchanged, then use the bound pronoun.

I reverted to Roelofsen (2010)’s version of the Reinhart Competition, which is a bit more explicit about the role that context plays in making a referential dependency the same.

(19) Coreference Rule
A speaker will never use a logical form LF in a context C if LF is semantically indistinguishable from one of its binding alternatives in C.

(20) Binding Alternatives
Let C be a context, let LF be a logical form, and let A and B be two DPs in LF such that A and B corefer in C and A is in an A-position that c-commands B in LF. Then, the structure obtained from LF by replacing B with a pronoun bound by A is called a binding alternative of LF in C. (Roelofsen 2010, lightly modified definitions 2 & 3, pp 119-20)

We left working through the evidence for the Reinhart Competition.

This evidence consists in showing that when the bound variable pronoun substitution doesn’t produce semantic indistinguishability, Principle C effects are weakened.

(21) a. Only Churchill remembers Churchill giving the speech about blood, sweat, toil, and tears. (Fodor 1975, p. 134)
b. Everyone has finally realized that Oscar is incompetent. Even HE has finally realized that Oscar is incompetent. (Evans 1980, (52))
c. I know what Ann and Bill have in common. She thinks that Bill is terrific and he thinks that Bill is terrific. (adapted from Evans 1980:49)

Consider first the second sentence in (21b). The presence of even and the associated focus invokes a presupposition, so the message communicated by this sentence can be parsed into two pieces:

(22) a. Oscar has finally realized that Oscar is incompetent.
b. Oscar is the least likely person to make “λx.x has realized that Oscar is incompetent” true.

Now compare this to the binding alternative Reinhart’s Competition invokes.

(23) Even HE\(_{1} t_{1}\) has finally realized that he\(_{1}\) is incompetent.

The two pieces of meaning that this invokes are:

(24) a. Oscar has finally realized that Oscar is incompetent.
b. Oscar is the least likely person to make “λx.x has realized that x is incompetent” true.

These two sentences don’t have the same meaning. If the difference in their presuppositional parts falls under what “referential dependency” means in (18), then there will be no alternative to (21b) that displaces it. Something similar is happening in (21c), though in this case presuppositions play no role and instead it is the QUD. That the QUD is relevant for overcoming the Principle C effect in (21c) is suggested by the contrast it has with (25).
(25)  A: What do you think about Bill and Ann?
    B: I don't know them well enough. But I know that she thinks that Bill is horrible and that he thinks that Bill is terrific.

There is a Principle C effect here. The QUD and partial answer are as in (26).

(26)  a. QUD: What is thought about Bill and Ann?
    b. ANS: I don't know anything relevant about Ann, but about Bill, I know that she (=Ann) thinks Bill is horrible and that he (=Bill) thinks Bill is terrific.

The putative binding alternative is:

(27)  ANS: I don't know anything relevant about Ann, but about Bill, I know that she (=Ann) thinks Bill is horrible and that he (=Bill) thinks he is terrific.

Carolyn brought up a possible alternative account of the (21b) example. On this alternative account, the weakening of the Principle C effect in (28) arises because it is a better candidate than (29) along another dimension.

(28)  Even HE realized that Oscar is incompetent.

(29)  Even HE realized that he is incompetent.

The pronoun in (29) licenses a de se reading, and the absence of a pronoun in (28) removes that reading. In the context that (21b) evokes, the de se reading is not what is being aimed for. Perhaps Oscar is licensed, over the objections of Principle C, in order to better signal that a de se report is not being aimed for. We might seek an example that does not have this confound in it. Rong suggested after class that we look at environments where de se attitude reports aren't involved. Is (30) one?

(30)  Everyone has finally met someone hates Oscar. Even HE has met someone who hates Oscar.

We left looking at (21a).

(21a)  Only Churchill remembers Churchill giving the speech about blood, sweat, toil, and tears.

I am somewhat skeptical of the existence of Principle C effects in contexts where names are repeated, as in this example. So I suggested that we look at a slightly different version of (21a).

(31)  context: Churchill gave his famous speech to an empty meeting of Parliament, so:
    a. ? Only HE can remember Churchill giving the speech about blood, sweat, toil, and tears.
    b. * He can remember Churchill giving the speech about blood, sweat, toil, and tears.

Principle C is incurred if replacing the anaphoric definite description, Churchill in (31) with a bound variable pronoun achieves the same meaning. So we take (31a) and first work out its meaning. It is possible to factor the meaning of (31a) into these two parts:

(32)  a. He (=Churchill) can remember Churchill giving the speech.
    b. No \[x \neq Churchill \land x\] can remember Churchill giving the speech

(32b) is the contribution that only and focus makes to (31a). Now we replace Churchill in (31a) with him, and check to see if it can achieve the same meaning.

(33)  Only HE \[i\] can remember him \[i\] giving the speech.
    a. He (=Churchill) can remember him (=Churchill) giving the speech.
    b. No \[x \neq Churchill \land x\] can remember \[x\] giving the speech

The are not the same meanings, so there is no Principle C effect.

The problem is that the interpretation that arises by replacing Churchill with a bound pronoun is not possible.

(34)  * Only HE \[i\] can remember him \[i\] giving the speech.
    a. He (=Churchill) \[\lambda x\] x can remember x giving the speech.
    b. No \[x \neq Churchill \land x\] can remember \[x\] giving the speech

This means that we should expect no Principle C effect in (31b) too.

The solution is to release the condition on defining alternatives from the restriction that it must be a pronoun.

(35)  Coreference Rule
    A speaker will never use a logical form LF in a context C if LF is semantically indistinguishable from one of its binding alternatives in C.
(36) Binding Alternatives
Let C be a context, let LF be a logical form, and let A and B be two DPs in LF such that A and B corefer in C and A is in an A-position that c-commands B in LF. Then, the structure obtained from LF by replacing B with a term bound by A is called a binding alternative of LF in C.

(Roelofsen 2010, slightly less modified definitions of 2 & 3, pp 119-20)

This makes (37) a binding alternative for (31b).

(37) He can remember Churchill giving the speech about blood, sweat, and tears.
He λx x can remember himself, giving the speech about blood, sweat, and tears.

(38) Only HE can remember himself, giving the speech.
   a. He (=Churchill) can remember Churchill giving the speech.
   b. No x [x ≠ Churchill] ∧ [x can remember Churchill giving the speech]

These have the same meaning (in this context), and so (37) is chosen in place of (31b). But the binding alternative does not have the same meaning in (31a).

(31a) Only HE can remember Churchill giving the speech.
   a. He (=Churchill) can remember Churchill giving the speech.
   b. No x [x ≠ Churchill] ∧ [x can remember Churchill giving the speech]

These aren't the same meanings, and so (38) isn't a binding alternative to (31a), and there is no Principle C effect.

As it stands, (35) captures Principle C effects. It has a glitch built into it that needs to be removed. It wrongly makes (39) ungrammatical.

(39) Churchill can remember himself giving the speech.

That's because (39) has a binding alternative in (40).

(40) Churchill λx x can remember him, giving the speech.

The meaning of (39) and (40) are the same, and this prevents the use of (39). Of course, this relationship is symmetric – (39) is also a binding alternative of (40) – and so (35) also makes (40) ungrammatical. We need to find something that will make (40) ungrammatical that isn't the Reinhart Competition.

If we allow definite descriptions to sometimes be bound variables, this same glitch shows up elsewhere. For instance, the pairs of sentences in (41) and (42) are binding alternatives for each other, and so all of these sentences are predicted to be ungrammatical.

(41) a. Mary λx x annoys the woman.
b. Mary λx x annoys herself.
(42) a. Mary λx x remembered things that annoy the woman.
b. Mary λx x remembered things that annoy her.

Indeed, once we see that definite descriptions are binding alternatives when they are construed as bound variables, we see that we've lost Principle C effects altogether. The Reinhart Competition will prevent coreference between a pronoun and a definite description it c-commands, but it won't prevent (indeed, it will force) binding between that pronoun and a definite description.

(43) a. * He met someone who knows the man.
b. He met someone who knows the man.

What's needed is a way of picking among possible forms of the bound variable in these contexts.

Reinhart's Competition – i.e. (35) – looks a lot like the Repeated Name Penalty. And the effects are similar. We might want to unify them. One strategy for doing that would be to look for a way of controlling alternatives, and find one competition that could give us both effects. We can take a first step with (44).

(44) a. Reinhart Competition
   If alternatives = (anaphor, variable bound from an A position), and
   the use of either alternative gives the same meaning in context, then
   choose variable bound from an A position.
b. Repeated Name Penalty
   If alternatives = (anaphoric definite description, pronoun), and
   the use of either alternative gives the same meaning, then choose the
   pronoun.

Allow these rules to apply recursively, and we'll correctly resolve the alternatives posed in (41) and (42). Let's see how.

Consider first the competition in (45).

(45) a. The woman amuses the woman.
b. The woman; amuses the woman.

In (45a), the two DPs are coreferent, and in (45b), the first binds the second. Reinhart's Competition chooses (45b) of these two. For this reason, (45a) is not a way this sentence can be interpreted. Consider next (46).
(46)  a. The woman amuses her.
    b. The woman amuses her1.

Reinhart’s competition applies here too, and chooses (46b). For this reason, (46a) is not a way this sentence can be interpreted. Now consider:

(47)  a. The woman1 amuses the woman1.
    b. The woman1 amuses her1.

Reinhart’s competition doesn’t pick a winner from this pair, but the Repeated Name Penalty does. It picks (47b). For this reason, (47a) is not an interpretation this sentence can get. Finally, consider:

(48)  a. The woman1 amuses her1.
    b. The woman1 amuses herself1.

We need to knock out (48a); (48b) is the only grammatical way of expressing coreference or binding between subject and object in this scenario. Neither Reinhart’s competition nor the Repeated Name Penalty will do that job. We need something else.

A popular way of thinking about this choice is in relation to Grice’s Maxim of Manner:

(49)  Be as clear, as brief, and as orderly as one can. Avoid obscurity and ambiguity.

Dowty (1980) offers this particular rendition of (49), designed to make the choice between reflexive and pronoun.

(50)  If a language has two (equally simple) types of syntactic structures A and B, such that A is ambiguous between meanings X and Y while B has only meaning X, speakers of the language should reserve structure A for communicating meaning Y (since B would have been available for communicating X unambiguously and would have been chosen if X is what was intended).

(51)  Be Clear!
    a. alternatives = (pronoun, reflexive)
    b. choose(pronoun, reflexive) = the least ambiguous one when they produce the same meaning.

Note that this is a competition between forms and not meanings. That is it compares a pronoun – whether it is construed as a bound variable or not – with a reflexive. The Reinhart Competition – Roelefon’s Coreference rule – cares about the semantic interpretation of the terms it compares. It looks to see if a bound variable – irrespective of morphological form – can be used to achieve the desired anaphora and if so, chooses it. In Dowty’s rule, the reference to “pronoun” has to be blind to how it gets its anaphoric interpretation. It has to be blind to the differences in (52).

(52)  Mary sings with Jane in the chorus.
    a. Mary annoys her (=Jane) when they do.
    b. Mary annoys her (=Mary) when they do.
    c. Mary \( \lambda x \ x \) annoys her\( x \) when they do.

Choosing “[hi]” in Mary annoys her is ambiguous because it permits all three interpretations in (52). What Be Clear! requires is that if the speaker intends either (52b) or (52c), she should choose the reflexive: Mary annoys herself.

So we have:

(53)  a. Principle C
    i. alternatives = (anaphor, variable bound from an A position)
    ii. choose(anaphor, variable bound from an A position) = the variable if it achieves the same meaning in context.

b. Repeated Name
    i. alternatives = (anaphoric definite description, pronoun)
    ii. choose(anaphoric definite description, pronoun) = the pronoun if it achieves the same anaphoric reference to X.

c. Principle B?
    i. alternatives = (pronoun, reflexive)
    ii. choose(pronoun, reflexive) = the least ambiguous one when they produce the same meaning.
If Dowty is right that we can ground what I’ve called Principle B in Grice’s Maxim of Manner, then we’ve determined a way of framing this choice in a way that is related to scalar implicatures. There is a cross-linguistic pattern about Principle B that speaks on behalf of Dowty’s proposal. In many cases, languages which allow their non-reflexive pronoun to be coreferent with and bound by a co-argument do not have a corresponding reflexive form. For instance, the first person pronoun in German is *ich/mich/mir*, and it can corefer with a co-argument.

\[ \text{context: What's happening?} \]

(54) Ich stimme für mich.
I vote for me
‘I’m voting for me.’

This isn’t possible with third person pronouns, which, like English, do not allow binding or coreference with co-argument.

\[ \text{context: What's happening?} \]

(55) Sie stimmt für sie.
She votes for her
‘She is voting for her.’

There is no reflexive form for the first person in German, but there is for the third person:

\[ \text{context: What's happening?} \]

(56) Sie stimmt für sich.
she votes for self
‘She is voting for herself.’

This pattern is exactly what would be expected on Dowty’s hypothesis.

But what about Principle C and the Repeated Name Penalty? In what sense are the \( \text{choose} \) functions in these conditions the "best" way of achieving the relevant communicative goal?

Levinson (1987) suggests that Repeated Name is tied to an injunction against being prolix.

\[ \text{The Maxim of Minimization} \]

Say as little as necessary, i.e. produce the minimal linguistic information sufficient to achieve your communicational ends.

(Levinson 1987, a minimized version of (31): 402)

Levinson relates this to the Maxim of Quantity, though the Maxim of Manner also has a similar clause (Be Brief!). He floats two ideas about what “minimal linguistic information” might mean. It could, on the one hand, be something semantic. On this view, then, the contrast between (58) is that *man* has information about age that *he* fails to have.

(58) Brian wears bow-ties.

\[ \begin{align*}
\text{a.} & \quad \text{The man might wear one today.} \\
\text{b.} & \quad \text{He might wear one today.}
\end{align*} \]

On the other hand, it could be something more articulatory in nature. For instance, it could be that pronouns beat other definite descriptions because they are simply shorter. Levinson (1987) studies Guugu Yimidhirra, language that has both overt pronomininals – like English’s *she, he, etc.* – and silent pronouns. The pattern he found suggests that the silent ones are preferred over the overt ones in certain contexts. So, for instance, the chains of sentences in (59) are dispreferred to the ones in (60).

(59) \[ \begin{align*}
\text{a.} & \quad \text{i. Brian wears bow-ties.} \\
& \quad \text{ii. He might today.} \\
& \quad \text{iii. He always dresses well anyway.} \\
\text{b.} & \quad \text{i. Brian wears bow-ties.} \\
& \quad \text{ii. pro might today.} \\
& \quad \text{‘pro’ is silent pronoun} \\
& \quad \text{iii. He always dresses well anyway.}
\end{align*} \]

(60) \[ \begin{align*}
\text{a.} & \quad \text{i. Brian wears bow-ties.} \\
& \quad \text{ii. He might today.} \\
& \quad \text{iii. pro always dresses well anyway.} \\
\text{b.} & \quad \text{i. Brian wears bow-ties.} \\
& \quad \text{ii. pro might today.} \\
& \quad \text{pro always dresses well anyway.}
\end{align*} \]

Something of this nature is reported for languages in which the silent pronouns have a meaning seemingly identical to the overt ones. For those languages, what might favor the silent ones over the overt ones looks less likely to be semantic. Johnson (2013) tried to use the semantic version of Maximize Minimization to

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\[ 1 \] Though, he notes that the pronouns in his language of study do not have exactly the same use as the English ones do. They cannot be used deictically, as can English pronouns.
derive Principle C as well. He attempted to make bound variables even less semantically contentful than non-bound pronouns.

It's worth noting here some problems.

Problem One

Heim (1998) notes that Reinhart's idea about the competition that derives Principle C makes a wrong prediction about where strict and sloppy readings of pronouns can be found. A pronoun in an ellipsis site can be understood as having the same referent that a parallel pronoun in the antecedent for the ellipsis has, giving rise to the strict reading.

(61) Is that Sarah?

Mary said that she (= Sarah) wouldn't come, and Sandy did △ too.

△ = say that she (=Sarah) wouldn't come.

But a pronoun in an ellipsis can also be interpreted as a variable bound by something different than the pronoun that matches it in the antecedent for the ellipsis.

(62) Who will come?

Mary λx said that she, wouldn't come and Sandy λx did △ too.

△ = say that she, wouldn't come

This is called the sloppy reading for the pronoun. Without modification, Reinhart's Competition will block (61) in favor of (62).

Problem Two

Levinson (1987) notes that there is a puzzle in the paradigm in (63).

(63) a. Mary came in and sat down.

b. Mary came in and she sat down.

c. ?? Mary came in and Mary sat down.

If Maximize Minimization is the engine behind the Repeated Name Penalty, then we might expect it to make (63b) as awkward as (63c). He suggests that the solution here is, just as I've framed it, in what gets to count as alternatives. We want to constrain the competition that Maximize Minimization judges to (63b) and (63c), and leave (63a) out of the fray. I hope it's clear that the choice of alternatives is not independent of choose, so we cannot let their choice be arbitrary. We need a theory of alternatives that tells us, given the nature of choose, what to compare.

Problem Three

Levinson (1987) notes that Be Strong! doesn't play well with the ideas we've seen for modulating anaphora. To see this, reconsider (3).

(3) When you buy a used book, you should check the spine.

The Maxim of Minimization might prefer this to:

(64) When you buy a used book, you should check its spine.

(I am assuming that the reference to the book's spine is unambiguous in both of these sentences, and so Be Clear! is not invoked. Of course, that isn't clear.)

We'll start next week with Reinhart and Reuland (1993).

References


