Generalizing the Presuppositional Approach to the Binding Conditions

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rough draft, August 15, 2020, comments welcome (bruening@udel.edu)

Abstract

Almost all current approaches to the binding theory (the conditions that regulate covaluation between NPs within a sentence) have accepted the view of Reinhart (1983a,b), according to which the binding theory should regulate only syntactic binding and not coreference. In this paper, I argue that this is incorrect, and we need a binding theory that regulates both binding and coreference, as the classical binding theory had it (e.g., Chomsky 1981). I also show some problems with the idea that the binding conditions somehow involve or should reduce to syntactic movement or syntactic agreement (Agree), as many recent works argue. I suggest instead that we should pursue a presuppositional approach to the binding conditions, as proposed by Sauerland (2013) for Binding Condition A. I spell out such an analysis and illustrate some benefits of pursuing it.

1 Introduction

The classical binding theory (e.g., Chomsky 1981) did not distinguish between *binding* and *coreference*. Its conditions (Conditions A, B, and C) regulated both, by imposing conditions on coindexing. In contrast, almost all alternatives to the classical binding theory have accepted the view of Reinhart (1983a,b), according to which the binding theory should regulate only syntactic binding and not coreference.

In this paper, I present arguments that limiting the binding conditions to syntactic binding is not correct. In fact coreference is also subject to the binding conditions. What we need is a binding theory where the binding conditions regulate something that subsumes both binding and coreference. Of course there are well-known exceptions to the binding conditions, which is what motivated the distinction in the first place. Sauerland (2013) has proposed that viewing the covaluation requirement of local anaphors (Condition A) as a presupposition permits an elegant account of some of these exceptions as an instance of the independently attested phenomenon of the failure of presuppositions to project into focus alternatives. I suggest that we generalize this approach to all three binding conditions, and show how doing so can account for numerous facts.

On the other hand, Sauerland's (2013) specific implementation of his idea invokes syntactic movement of anaphors. This is a common move, where researchers propose syntactic movement in an analysis of binding phenomena, or they attempt to reduce the binding conditions to syntactic movement. A similar idea attempts to reduce the binding conditions to syntactic agreement (the

Agree relation of Chomsky 2000). I list some problems for such approaches; specifically, the empirical phenomena do not pattern together in several important respects.

Given the problems for movement and agreement approaches, I state the presuppositional approach in a very different way, one not related to either movement or agreement. Simply to be neutral, I use traditional statements of Binding Condition A, Binding Condition B, and Binding Condition C, basically following Heim (2007). This is not to propose that such conditions simply need to be stipulated as such as primitives in the model of grammar. It may be that they have to be so stipulated, but the hope is that by stating them in a very generic way, they can easily be adapted by future researchers to whatever approach to the binding conditions they think it is fruitful to pursue. My point is that a presuppositional approach to the binding conditions has merit, as I attempt to show.

I begin in section 2 by arguing that the binding theory should not be limited to syntactic binding. Section 3 then shows problems with invoking either syntactic movement or syntactic agreement in the binding theory. Section 4 lays out the presuppositional approach, and reformulates it for present purposes. Section 5 then illustrates some advantages for such an approach, and shows how it accounts for various phenomena, including the exceptions to the binding conditions that formed part of the motivation for distinguishing between binding and coreference.

2 The Binding Principles Regulate Both Binding and Coreference

The classical binding theory did not distinguish between binding and coreference. It considered both of them to use the same mechanism, coindexing, and imposed conditions on coindexing. Reinhart (1983a,b), in contrast, argued that the binding conditions should only regulate syntactic binding, and not coreference. Let me begin by reviewing what the distinction is, and why we need it (or something like it).

2.1 Binding Versus Coreference: Strict and Sloppy Readings

First, Reinhart views syntactic binding as the binding of a variable by a lambda operator. In the following example, the pronoun in the embedded clause can be a bound variable, which means that it is bound by the same lambda operator that binds the trace of the quantificational subject:

(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

This is also true of pronouns referring to non-quantificational, referential expressions; they can also be bound:

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

According to Reinhart, binding in the form of binding by a lambda operator is encoded in the syntax and is subject to syntactic conditions (c-command, for instance). Coreference, in contrast,

involves no syntactic relation at all. It is not available at all to non-referential expressions like quantifiers, but with referring expressions like *Goofy*, other NPs can be specified as being coreferential with them in a discourse model. In such a case, the two NPs are not related in the syntax in any way. Rather, the discourse model specifies what they refer to. This is encoded using parentheses, as in the following (for a more technical implementation, see Roelofsen 2010):

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

In (3), the pronoun is not related to its antecedent *Goofy* in the syntax; there it is simply a free variable. It is only in the model of discourse that it is specified as referring to the individual denoted by *Goofy*.

One of the main motivations for distinguishing between binding and coreference comes from strict and sloppy readings in ellipsis. Consider a simple example of this ambiguity:

(4) 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.'

The standard analysis of the strict/sloppy ambiguity is that sloppy readings arise from variable binding, while strict readings instead involve coreference (Sag 1976, Reinhart 1983b, Heim and Kratzer 1998):

(5) 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)

In the sloppy reading in (5a), the possessive pronoun is a variable bound by the same lambda operator that binds the subject, resulting in the mother being the mother of the subject in the elided clause as well as in the antecedent clause. In (5b), in contrast, the possessive pronoun is unrelated to the subject, and happens to refer to Samantha. It does so in the elided clause as well, resulting in the strict reading.

The strict-sloppy ambiguity also gives rise to different interpretations in cases of focus:

(6) 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)

In the sloppy reading of (6) in (6a), what alternatives to Goofy know is that they themselves are idiots. In the strict reading in (6b), what alternatives to Goofy know instead is that Goofy is an idiot (this is the more salient reading for this sentence).

Making a distinction between binding and coreference thus provides an account of the strict-sloppy ambiguity.[1] It is important to clarify at this point, though, that strict and sloppy readings do not by themselves argue for the view that the binding principles should regulate only binding and not coreference. They simply indicate that we need to make a distinction between binding and coreference, but making that distinction is a separate issue from deciding what the binding conditions regulate. That is, we can distinguish binding from coreference in general, but still have a binding theory whose binding principles do not care about that distinction.

2.2 The Argument for Binding Only

The argument that the binding theory should only regulate binding and not coreference comes from exceptions to the binding principles. Binding Condition C, for instance, says that an R-expression may not have a commanding antecedent:[2]

(7) * He$_1$ knows that Goofy$_1$ is an idiot.

However, in certain circumstances, for instance when the commanding pronoun is focused, Condition C can be violated (Evans 1980, Reinhart 1983b):

(8) Even HE$_1$ knows that Goofy$_1$ is an idiot.

Reinhart's proposal that the binding conditions should only regulate syntactic binding and not coreference is meant to account for this. Simplifying greatly, the basic idea is that only syntactic binding is regulated by the binding conditions like Condition C. Coreference is in principle free. However, a pragmatic obviation principle bars coreference when binding would be possible and indistinguishable in interpretation. This is what rules out coreference in a standard Condition C configuration:

(9) * He$_1$ knows that Goofy$_1$ is an idiot.

[1] I should note that it is too simplistic to simply equate sloppy readings with variable binding and strict readings with coreference, as the following examples show:

(i) a. All assistant professors think they are underpaid, and all associate professors do too.
b. Every wife thinks that only she respects her husband.
c. The woman he lived with told Bill to get out, and the woman Ken lived with did too.

In (ia), the strict reading ("all associate professors think that all assistant professors are underpaid") could not be due to coreference, because the NPs are non-referential quantifiers (see Fiengo and May 1994: 115–117, Safir 2014; this particular example comes from Satoshi Tomioka). Similarly for (ib) (example in Reinhart 2006 based on Heim 1998). In (ic), the available sloppy reading cannot be captured by binding, because the variable as the object of *told* needs to be bound by an NP that is buried inside the subject, not by the subject itself (Davis 2009: note 30). One could argue from such facts that the strict/sloppy ambiguity requires a different account, and therefore provides no support for distinguishing binding from coreference. This would then be an additional argument against a Reinhart-style approach where the distinction is crucial. I will not make this argument here, however, and for the purposes of argumentation grant that the binding/coreference distinction is the right account of the strict/sloppy ambiguity.

[2] Here and throughout, I use indices only for convenience, to indicate covaluation. I leave open whether indices should play any role in a model of grammar. (Note that Chomsky 1995 is simply incorrect that an Inclusiveness Condition makes indices illegitimate syntactic objects, since it is easy to build a model where they do not violate that condition. For instance, indices could be items in the lexicon which have to be merged with an N in the course of building an NP, just like other functional heads.)

a. * He λx.x knows that Goofy$_x$ is an idiot.

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

The grammar rules out binding of an R-expression as in (9a). Coreference as in (9b) would be allowed, but because it is indistinguishable in interpretation from the bound reading in (9a), it is ruled out.

In contrast, in the focus case in (8), coreference gives rise to a different interpretation from binding:

(10) Even HE$_1$ knows that Goofy$_1$ is an idiot.

a. * Even HE λx.x knows that Goofy$_x$ is an idiot.

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

The interpretation with binding (which is ruled out) would mean that alternatives to Goofy know that they themselves are idiots (the sloppy reading). The interpretation with coreference is different, it means that alternatives to Goofy know that Goofy is an idiot (the strict reading). This is a different interpretation from the bound interpretation, and it is therefore allowed. This explains why principles like Binding Condition C can be violated in certain circumstances, for instance with focus.

Hence, the argument is that the classical binding theory is too strict. On the face of it, (8) violates the classical formulation of Binding Condition C, and ought to be ruled out. The motivation for the view that the binding conditions should only regulate binding and not coreference is the fact that the classical binding theory does not admit of exceptions like the case of focus in (8).

The view that the binding principles should regulate only binding and not coreference has been adopted by, among others, Grodzinsky and Reinhart (1993), Heim (1998), Fox (2000), Safir (2004), Büring (2005b), Reinhart (2006), Hicks (2009), Roelofsen (2010), Safir (2014). It also forms a cornerstone of all reductionist accounts, like that of Reuland (Reuland 2001, 2011, 2017, Volkova and Reuland 2014) and accounts that try to reduce binding to Agree (Heinat 20098, Hicks 2009, Gallego 2010, Zubkov 2018). It appears that the field has overwhelmingly adopted Reinhart's proposal. One of the few exceptions is Heim (2007), who I will follow in many respects in subsequent sections.

2.3 The Binding Principles Regulate Coreference, Too

Contra Reinhart and all of the references just cited, I argue that the motivation for having the binding conditions regulate only binding and not coreference is lacking. In fact exceptions to the binding conditions are not as widespread as they should be under this conception. It actually appears that the binding conditions *do* regulate coreference in addition to syntactic binding.

To show this, I first need to make the important point that reflexives can have strict readings in ellipsis and under focus. This is made clear in the following examples:

(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))

It has often been claimed in the literature that reflexives can only have sloppy readings (Keenan 1971, Williams 1977, Partee and Bach 1984, Heim and Kratzer 1998), but others have noted that they can in fact have strict readings (Dahl 1973, Sag 1976, Fiengo and May 1994, Hestvik 1995, Büring 2005a). Importantly, recent experimental work has shown 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.[3] This experimental work includes Frazier and Clifton (2006), Kim and Runner (2009), Ong and Brasoveanu (2014), and especially McKillen (2016). It is also important that this is not a peculiarity of English. Lidz (2001) shows that reflexives in Dutch and Kannada also allow strict readings in ellipsis (see also Rooryck and Vanden Wyngaerd 2011 on Dutch). Zubkov (2018) mentions that reflexives can have strict readings in Russian. Reuland and Sigurjónsdóttir (1997) say the same about Icelandic. I suspect that NP reflexives in all languages will allow strict readings in facilitating contexts, like those in (11). So far informal conversations with native speaker linguists bear this out for several different languages. (Note that this fact itself is an argument against the view that the binding conditions are only about syntactic binding: in all approaches that adopt this view, reflexives that require a local antecedent are all posited to require a syntactic binding relationship and so should only ever allow sloppy readings.)

The next important fact is that the reflexive is required even in cases of strict identity in ellipsis, and a pronoun is not allowed:

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

b. Samantha$_1$ 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 (sloppy versus strict interpretations). In approaches following Reinhart, then, nothing should block the use of a coreferential pronoun, as in *Samantha blames her (her=Samantha)*. The fact that this *is* blocked is a problem for approaches that follow Reinhart (1983a,b) in having only binding be regulated by Condition B.

Note that this is still true where the elided clause precedes its antecedent, so one could not point to an effect of linear processing (saying that binding being ruled out initially cannot be recovered from when the elided clause is eventually encountered, for instance):

(13) a. Even though his lawyer was unable to, the judge still wouldn't let the man$_1$ defend himself$_1$/*him$_1$.

b. Even though her boss doesn't, Sally$_1$ continues to blame herself$_1$/*her$_1$.

In such cases, the strict reading in the elided clause coming first should certainly permit coreference in the antecedent.

The same problem arises for Binding Condition C, as was noted by Reinhart (2006). Condition C also cannot be violated in the antecedent clause in ellipsis, even though doing so should be allowed by virtue of giving rise to a different interpretation for the elided clause:

[3]McKillen's example in (11a) has been constructed so that the reflexive is inside a complex NP. In the analysis of Hestvik (1995), it would have to cross an island boundary in order to c-command the ellipsis site. Such examples, as well as the availability of the strict reading in cross-sentential examples like (11b) and in simple coordination (see the works cited for numerous examples), show that a movement approach like Hestvik's is not correct.

(14) 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.

In both of these examples, the binding and coreference interpretations are different (e.g., Felix liking his own mother versus liking Max's mother), and so coreference should be allowed, as it was in (8). This again is true even when the elided clause precedes the antecedent clause:

(15) a. * Since an anonymous informant already did, he$_1$ ratted out the hit man$_1$'s employer.
(cf. Since an anonymous informant already did, the hit man$_1$ ratted out his$_1$ employer.)
b. * If her advisor says to, she$_1$ will submit Melinda$_1$'s paper to the most prestigious cryptozoology journal.
(cf. If her advisor says to, Melinda$_1$ will submit her$_1$ paper to the most prestigious cryptozoology journal.)

What these examples show is that Reinhart's alternative to the classical binding theory is too permissive: it predicts more violations of the binding conditions than are actually allowed.

In addition, Reinhart (1983b) claimed that focus can permit violations of Condition B with pronouns, the same way it can Condition C with R-expressions as in (8) (see the references in Roelofsen 2010):

(16) (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.

However, some researchers have noted that sentences of this form are not fully acceptable to native speakers, and in fact many speakers reject them (Schlenker 2005b, Jacobson 2007, Heim 2007). In the experiments in McKillen (2016), subjects generally reject them, although there is a lot of variability. It is true, as McKillen (2016: 160) notes, that attested examples exist. They almost all involve first and second person, though, not third:

(17) (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)

Given the experimental results in McKillen (2016) and judgments that I have gathered informally from numerous native speakers, I take the empirical facts to be the following: With third person pronouns, Condition B cannot be violated easily (so, the examples in (16) are unacceptable for most speakers), but it can be with first and second person pronouns, as in (17).

What this means is that exceptions to the binding principles are nowhere near as widespread as they should be on the view that the binding conditions regulate only syntactic binding and not coreference. It should be possible to violate Conditions B and C in the antecedent clause of ellipsis

examples as in (12–14), and it should be possible to violate Condition B with third person pronouns in cases of focus as in (16).

What Reinhart (2006: 185) says about the ellipsis case is that 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. If something cannot violate a principle, then the simplest account is that that thing is subject to that principle. Since coreference in these cases is not able to violate Conditions B and C, we ought to conclude that it is in fact 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. It would be far simpler to adopt the view of the classical binding theory, where both are subject to the binding conditions.

Of course, this would leave unaccounted for the cases where Conditions B and C can be violated: cases of focus for Condition C (8), and cases of focus with first and second person pronouns only for Condition B (17). However, if the classical binding theory can be made to admit these exceptions and no others, then it will be doing better than the Reinhart view, since that view does not make exactly the right cut in the data (it incorrectly allows violations of Condition B with third person pronouns in existing formulations, for instance). Conceptually, the revised classical binding theory will have a distinct advantage, because it will not have two different systems (the syntactic binding principles and pragmatic principles governing coreference) that overlap in a redundant manner.

In fact, versions of Binding Condition C have already been proposed within the classical binding theory that permit certain exceptions. For instance, Schlenker (2005a) proposes a version of Condition C, *Minimize Restrictors!*, that allows R-expressions to have commanding antecedents for various pragmatic purposes, including disambiguation and adding expressive content. In (8), for instance, Condition C can be violated because doing so serves the purpose of disambiguating to the strict reading. Bruening (2014) adapts this kind of formulation of Binding Condition C into a version of the classical binding theory. What this means is that the classical binding theory is capable of permitting exceptions to its principles, meaning that it can be modified so that it is not too strict. The argument that we need to separate binding from coreference and have the binding conditions regulate only binding therefore disappears. And the fact that local anaphors can have strict readings argues for the opposite conclusion: the binding conditions regulate both binding and coreference.

Taking stock, then, the revised classical binding theory permits exceptions to Condition C as in (9b) but struggles with exceptions to Condition B with first and second person pronouns as in (17). It also permits strict readings for reflexives. On the other hand, the Reinhart alternative in which the binding principles regulate only binding and not coreference incorrectly predicts that Binding Conditions B and C can be violated in the antecedent clause of ellipsis examples and that Binding Condition B can be violated with third person pronouns. It also expects local anaphors to only permit sloppy readings. It will of course be possible to amend the Reinhart alternative so that it rules out the unattested exceptions to the binding conditions, but it is worth considering what it will be doing when it does this. As described above, in order to rule out violations of the binding conditions in antecedent clauses of ellipsis examples, it has to introduce complications that redundantly do the work of the binding conditions. That is, the pragmatic principles that govern coreference essentially make coreference subject to almost the same conditions as binding. Adding additional complications to account for third person pronouns will be doing more of the same. At

some point we have to admit that the general case actually seems to be that coreference is subject to the binding conditions, and the exceptions are exceptional. Since local anaphors admit strict readings and therefore do not require syntactic binding, it would appear that we have reached that point.

Reinhart does assert that it is a benefit of her system that it is so complicated (Grodzinsky and Reinhart 1993, Reinhart 2006). She claims that it requires a high processing load to compare the effects of binding and coreference, and that there is evidence for this high processing load from child language acquisition and from other sources. However, the acquisition data regarding Condition B is not so clear; the verdict is still out on whether children actually have problems with Condition B (see Elbourne 2005, Di Sciullo and Agüero-Bautista 2008, Conroy *et al.* 2009). Second, 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. This takes processing resources. Hence, there being a high processing load for permitted violations of Condition C does not decide in favor of Reinhart's theory. It is also consistent with a version of the classical binding theory that permits exceptions for pragmatic purposes. See more on this in section 5.4.

2.4 On the Relation Between Variable Binding and Condition C

I also need to address a putative empirical generalization that has formed a cornerstone of Reinhart's approach. This is that there is a correlation between the availability of bound variable anaphora and Binding Condition C effects. The claim is that Binding Condition C rules out covaluation between an R-expression R and another NP N just when N could be a binder binding something in the position of R as a bound variable. This claimed generalization has been taken by Reinhart and many others to motivate a view where Condition C effects arise because of a preference for variable binding.

It has been noted many times that this claimed correlation, as an empirical generalization, is simply false. Bound variable anaphora is available in a much wider range of cases than those where Condition C effects appear. Here are three examples illustrating this, from Bruening (2014). They compare perfectly licit bound variable anaphora with cases where Reinhart herself noted that there is no Condition C effect:

(18) (Bruening 2014: 374, (116))

a. Rosa is kissing every boy_1 passionately in his_1 high school picture.

b. People worship every UN $\text{Secretary-General}_1$ in his_1 native country.

c. So many people wrote to every actress_1 that she_1 couldn't answer them all.

(19) a. Rosa is kissing him_1 passionately in Ben_1's high school picture. (Reinhart 1976: 79, (27a))

b. People worship him_1 in Kissinger_1's native country. (Reinhart 1976: 79, (28a))

c. So many people wrote to him_1 that Brando_1 couldn't answer them all. (Reinhart 1976: 47, (63))

More generally, Barker (2012) shows that bound variable anaphora is available in a wide variety of structural configurations, and in particular where there is no structural command relation between

the quantifier and the variable (either c-command or phase-command; see Bruening 2014). Given this, it is simply not true that there is a correlation between Condition C effects and bound variable anaphora. The generalization is false.

It is true that Condition C effects appear in a *subset* of environments where bound variable anaphora is licit, and many have seized on this to try to maintain Reinhart's generalization in some form (e.g., Safir 2014). However, virtually *every* syntactic phenomenon appears in a subset of environments where bound variable anaphora is licit, simply because (1) bound variable anaphora is so unconstrained and (2) there are so few syntactic relations that could be relevant to any given syntactic phenomenon. The relation between case competitors in case competition models (e.g., Marantz 1991, Baker 2014); the relation between a negative polarity item and its licensor; the relation between two agreeing elements; the relation between an NP and a secondary predicate that modifies it; name any syntactic dependency and it will be licit in a subset of environments where bound variable anaphora is licit. There is no reason to pick out Binding Condition C in particular and claim that there is a significant correlation between it and bound variable anaphora. The actual fact is that there is a limited number of syntactic configurations that could be relevant to any given syntactic phenomenon (possibly as few as one: something like c-command or, more likely, phase-command), and so *all* syntactic phenomena correlate to a large extent. It is not significant in any way that Condition C effects show up in a subset of environments where bound variable anaphora is licit, because everything does.

Now consider epithets. Epithets show us that R-expressions can be used as bound variables:[4]

(20) a. John criticized every senator$_1$ in private while praising the bastard$_1$ in public. (Hornstein and Weinberg 1990: 134, (25a))

b. 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.

c. Every child$_1$ is so cute that you just have to love the little tyke$_1$.

Some R-expressions (those of the form *that N*) that can serve as a bound variable with a quantifier will give rise to a Condition C violation in a structurally identical example but with a pronominal antecedent:

(21) a. Every player$_1$ begins the round by exchanging cards with the person to that player$_1$'s right.

b. * He$_1$ began the round by exchanging cards with the person to that player$_1$'s right.

Since R-expressions can be bound variables, if it were true that the grammar always preferred to use variable binding whenever that were possible, there should never be Condition C violations. The grammar should simply force the R-expression to be a bound variable:

(22) a. * He λx began the round by exchanging cards with the person to that player$_x$'s right.

b. * He λx knows that Goofy$_x$ is an idiot.

[4]The fact that R-expressions can be used as bound variables appears to be a real problem for the "D-bound" theory of Safir (2014). In that theory, there is only one true bound variable, "D-bound," which takes its morphological form depending on the context. Morphological forms can only be grammatical ones, though, like pronouns or local anaphors, they cannot be lexical forms like R-expressions.

Reinhart's idea that Condition C effects arise from a preference for variable binding could not be correct, then. If it were, there would never be any Condition C violations, R-expressions would just be forced to be bound variables. We know that they can be. At the very least there should never be a Condition C effect with *that N* NPs as in (22a), since NPs of that form can easily be used as bound variables. (Note that an antilogophoric constraint on epithets as in Dubinsky and Hamilton 1998 would only rule out 22b and not 22a. While there is some overlap between the antilogophoricity constraint and Condition C, they are not the same. See more on epithets in sections 5.3–5.4.)

Given all of these issues, I conclude that it is not a desideratum of any approach to the binding conditions that it relate the distribution of Condition C effects to the distribution of bound variable anaphora.[5] The approach that I will propose in section 4 does not relate them.

2.5 Summary

To sum up this section, the view that the binding conditions should regulate only syntactic binding and not coreference does not appear to be correct. Coreference actually seems to be regulated by the binding conditions, too. I contend that it is better to pursue a theory with only one set of syntactic principles than a theory with redundant syntactic and pragmatic principles. There is also no significant correlation between Condition C effects and variable binding, and so it is not important for a theory of the binding conditions to relate them.

3 Problems for Analyzing Binding as Movement or Agreement

In section 4, I will propose an approach to the binding conditions according to which they regulate both binding and coreference. This approach will make no attempt to relate the binding conditions to either syntactic movement or syntactic agreement. Since many current approaches do attempt to do that, it may seem like the approach I am suggesting is at a disadvantage, as it appears to be stipulative where others are reductionist. I therefore take a moment to illustrate what I think are real problems for such reductionist approaches. The fact is that the binding conditions diverge from both movement and agreement in several important respects. This then motivates taking a different approach, along the lines of the one I suggest in section 4.

3.1 Problems with Movement Analyses

Claims that movement is involved in binding have come in various forms. Kayne (2002), Hornstein (2001), Zwart (2002) posited a movement relation between an anaphor and its antecedent. This sort of approach was shown to be unsuccessful by Safir (2008), and I will not address it further here. An analysis that has been more widely adopted says that some component of a local reflexive moves as a head to incorporate into the predicate of its clause. This is proposed by Lebeaux (1983), Chomsky (1986), Reuland (2001, 2011). Even Sauerland (2013), whose presuppositional approach I will adopt, posits this kind of movement. In a variation, Hestvik (1995) and Rooryck and Vanden Wyngaerd (2011) propose that a reflexive anaphor moves to a position adjoined to VP (or vP),

[5] Bruening (2014: 375) shows that weak crossover should also not be related to the Binding Conditions.

while Ahn (2015) proposes that certain anaphors move to VoiceP. Some work of Reuland (e.g., Reuland and Sigurjónsdóttir 1997) proposes feature movement.

The biggest problem for such approaches is the fact that local reflexives can occur in positions from which movement is banned. An important example of this comes from coordinated objects:

(23) a. She$_1$ washed herself$_1$/*her$_1$ and him.
b. The Queen$_1$ invited the baron and herself$_1$/*her$_1$ to tea.

As discussed in Bruening (2014), coordinated NPs like this involve a canonical Condition B effect: a pronoun is not allowed with a local antecedent, and a reflexive is required. It is true, as Reinhart and Reuland (1993) showed, that reflexives can be exempt from Binding Condition A in this environment and can have a non-local and non-commanding antecedent, but this is irrelevant to the local coreference cases illustrated here. When a local antecedent is present, a pronoun is not allowed and a local reflexive is required. This is therefore a canonical case of local anaphora covered by Conditions A and B.[6]

In movement theories, then, (some part of) *herself* in such examples must move. However, coordinate structures constitute islands to movement. Movement should not be possible from just one conjunct of a coordinate structure. Note that proponents of head movement to a predicate often point to compounds like *self-invited* and *self-washed* to lend plausibility to the head movement analysis; but incorporation of this type from a coordinate structure is never possible:[7]

(24) a. self-washed, self-invited
b. * self-washed and him, *self-invited the baron and

Lest anyone think this might be a peculiarity of English, the facts are exactly the same with the German reflexive *sich*. The following examples show that one conjunct of a coordinated NP must be *sich* and cannot be a pronoun with a local antecedent (examples based on Lee-Schoenfeld 2004: 152, (54a–c), judgments from Solveig Bosse, p.c.):

(25) a. Der Mann$_1$ kennt sich$_1$/*ihn$_1$ und seinen Hund.
the.Nom man knows SELF/*him.Acc and his.Acc dog
'The man knows himself and his dog.'
b. Die Frau$_1$ interessiert sich nur für sich$_1$/*sie$_1$ und ihre Forschung.
the.Nom woman interests SELF only for SELF/*her.Acc and her research
'The woman is only interested in herself and her research.'

[6]Hicks (2009: 72, note 8) claims that coordination does make a pronoun acceptable, citing the following example:

(i) a. * John$_1$ talked about him$_1$.
b. John$_1$ talked about him$_1$ and his$_1$ mother.

This only seems true on the reading where 'him and his mother' is the topic of discussion, meaning the relationship between them. If there are two different topics, coreference is unacceptable: *John will discuss two different topics: He$_1$ will talk about himself$_1$/*him$_1$ and China's trade policy.* On the single topic interpretation, it is likely that the syntactic structure is very different; perhaps there is even a null N head (note that in subject position, this NP takes singular agreement).

[7]Note that incorporation of an entire coordinated object is possible: *she is a dog and cat washer*.

c. Die Eltern$_1$ sind stolz auf sich$_1$/*sie$_1$ und ihren Sohn.
the.Nom parents are proud of SELF/*them.Acc and their.Acc son
'The parents are proud of themselves and their son.'

German and English behave the same in this respect. Neither language's anaphor appears to move, given that they are grammatical (and indeed required) inside a coordinate structure island.[8]

One could of course claim that there are differences between overt movement and whatever movement is involved in local anaphora. However, the fact is that *all* movement processes that have been identified are unable to move a single conjunct out of a coordinated phrase. We have just seen this for the head movement that is supposed to be involved in compounding (24b), and it is also true of A-movement, which is supposed to be analogous to Conditions A and B in its locality conditions (Chomsky 1981):

(26) a. They flew under the bridge and over the wall.
b. * The bridge was flown under and over the wall.
c. The bridge was flown both under and over. (across-the-board movement permitted)

If someone wanted to claim that there is some independent difference between binding and movement that leads to them behaving differently in coordination, it would be incumbent on that person to show that this difference is motivated and not simply stipulated. (Coordinated NPs also have important implications for ideas regarding how the local domain for anaphora is determined; see section 4.3.)

There are other cases where anaphors occur in positions from which movement is generally not possible. One such case is the subject of an embedded infinitive introduced by *for*, which can never undergo A-movement and can never incorporate:

(27) a. They$_1$ are hoping for themselves$_1$/*them$_1$ to win.
b. * They are hoped for to win.

[8] Ahn (2015) claims that prosody provides evidence for two distinct reflexives in English. According to Ahn, only locally subject-oriented anaphors that are not separated from their antecedent by an island boundary can be extrametrical for nuclear stress assignment. This relevance of islands then motivates a movement analysis of these reflexives for Ahn. Reflexives that are not subject-oriented or are separated from their antecedent by an island boundary do not move and are interpreted by a different mechanism. If Ahn is correct, then reflexives inside coordinated NPs are not a problem for a movement account, because in this environment they do not move. Aside from the less than optimal need for two different mechanisms for interpreting reflexives, however, Ahn just seems to be wrong about the stress facts. Coordinations are inherently contrastive, which is what forces the reflexive to be stressed in this environment. In this respect reflexives behave just like pronouns, which also require stress in a coordination:

(i) a. Dennis embarrassed Jenna and himsélf. (Ahn 2015: 37, (11b))
b. Dennis's friend embarrassed Jenna and hím.

A reflexive (and a pronoun) is still contrastive and requires stress even when what is coordinated is the entire clause:

(ii) a. Remy burned Marie and himsélf. (Ahn 2015: 62, (70))
b. Remy burned Maríe and he burned himsélf.

In (iib), the reflexive should be able to move in Ahn's theory and should therefore be expected to be stressless. In actual fact, reflexives behave just like pronouns in that they do not bear stress unless they are in positions of contrast. Movement islands have nothing to do with the stress facts.

c. * self-hoped-for to win

This is perhaps not the clearest case, as it is sometimes claimed that this is a position for exempt anaphors and that many speakers allow pronouns (e.g., Reinhart and Reuland 1993).

A third case is the well-known position of non-complementarity in PPs (e.g., Hestvik 1991, Reinhart and Reuland 1993, Lee-Schoenfeld 2004):

(28) a. She$_1$ pulled a blanket over her$_1$/herself$_1$.
b. * She was pulled a blanket over.
c. * self-pulled a blanket over

This is not a position for exempt anaphors; an anaphor is truly a local anaphor here (Hestvik and Philip 2001, Bruening 2014). Yet movement from the object of such a preposition is not possible (either head movement or A-movement).

A fourth case is reciprocals (and in some languages, reflexives) occurring as subjects of finite clauses, with their antecedents in the higher clause:

(29) We$_1$ didn't know what each other$_1$ wanted.

See Lebeaux (1983) on these in English. At least some such cases involve truly local anaphors and not exempt anaphors (Yang 1983, Sung 1990, Haddad 2007). The kind of head movement envisioned by some of the movement approaches to anaphora is incapable of crossing a finite clause boundary, as it would have to here. A-movement is also generally not allowed across a finite clause boundary.

All of these examples show that local anaphors can occur in positions from which movement is impossible. The locality conditions on Binding Conditions A and B are not the same as those on syntactic movement, either A-movement or head movement. I take this to indicate that it is probably not correct to attempt to reduce the binding conditions to movement, or to propose syntactic movement in an analysis of the binding conditions.

3.2 Agreement Approaches

Other researchers have tried to reduce binding to syntactic agreement, in particular the Agree operation of Chomsky (2000). Such attempts include Heinat (20098), Hicks (2009), Gallego (2010), Zubkov (2018). The basic idea is that an Agree relation must be established between an anaphor and its antecedent. This effectively derives the locality restriction on anaphors, reducing it to the locality restriction on syntactic agreement.

Coordination is a problem for this approach, the same way it is a problem for movement. In this case coordinations are not complete islands to agreement, but the patterns of agreement that we see with coordinations do not match what is required for binding.

An extensive literature with a long history has examined patterns of agreement with coordinated noun phrases (Corbett 1991, Dalrymple and Kaplan 2000, Benmamoun *et al.* 2009, Wechsler 2009, Bhatt and Walkow 2013, Marušič *et al.* 2015, Arsenijević and Mitić 2016, Willer-Gold *et al.* 2016, Murphy and Puškar 2018, among many others). The most recent research (summarized in Nevins 2018) agrees that there are four patterns of agreement with coordinated NPs. The first is *resolved agreement*, where the conjuncts combine and agree in features that none of them have singly. For

instance, a coordination of singulars will agree as a dual or a plural. The second pattern is *default agreement*, where again agreement is in features that none of the individual conjuncts have, but this time the features are not derived from the combination of the conjuncts' features but are simply the default in the language (e.g., neuter gender). The third is *closest conjunct agreement*, where one of the conjuncts controls agreement. Which conjunct controls agreement depends on linear order: the conjunct that is closest to the agreeing element controls the agreement. The fourth pattern is often called *"highest conjunct" agreement*, but this seems to always refer to the *first* conjunct. In certain languages, an agreement target that follows the coordinated NP can agree not with the closest, final, conjunct, but with the first one.

Turning to reflexives as conjuncts inside coordinated NPs, it is clear that the mechanisms of resolved agreement and default agreement cannot be what is relevant. The coordinated NP as a whole is not reflexive, and default agreement could not possibly satisfy a reflexive in Agree-based theories. Only an agreement pattern that targets a single conjunct could be relevant. There are two of these in the world's languages: closest conjunct agreement, and first conjunct agreement. The problem is that linear order is not relevant at all for reflexives inside coordinated NPs, and a reflexive does not even need to be a peripheral conjunct:

(30) a. The Queen$_1$ invited herself$_1$/*her$_1$ and the baron to tea.
b. The Queen$_1$ invited the baron and herself$_1$/*her$_1$ to tea.
c. The Queen$_1$ invited the baron, herself$_1$/*her$_1$, and her advisor to tea.

A single conjunct must be a reflexive and cannot be a pronoun when it has a local antecedent regardless of whether it is the first, last, or middle conjunct.

Reflexives inside coordinated NPs therefore could not be using the same mechanisms that give us syntactic agreement. Of course, one could claim that the theoretical mechanism of Agree can establish a relation between an antecedent and any conjunct of a coordinated NP, but then this mechanism is not what gives us syntactic agreement like subject-verb agreement. We would need a different mechanism for establishing subject-verb agreement with coordinated NPs, and we would then not have successfully reduced one to the other.

Note that it will also not help to say that the Agree relation is not between the reflexive and its antecedent directly, but via multiple steps of Agree with functional heads, as seems to be part of the account in Reuland (2011). As was just noted, linear order does not matter at all for reflexive binding in coordinations. This is as true for the relation between the coordinated NP and any functional heads as it is for the relation between the coordinated NP and the antecedent of the reflexive. This is especially apparent in German, where embedding the clauses in (25) reverses the order between the coordinated NP and the verb (and its associated functional heads, presumably), but does not change the binding facts in any way. Switching linear order between a coordinated NP and an agreeing element is known to affect syntactic agreement (see the references above), but it does not seem to affect the binding of a reflexive. Again, reflexive binding and syntactic agreement do not pattern in the same way.

Anaphors inside PPs are also an issue for the Agree theory (see 28a). In general, PPs block agreement: elements external to PPs never agree with the object of a P. Null PP structure is even sometimes posited to explain the failure of an NP to participate in agreement or movement or the blocking of another NP from doing so (e.g., Baker 2014). Yet anaphors can appear inside PPs and can sometimes even be required there (e.g., 52b).

Safir (2010, 2014) also argues against attempts to reduce binding to syntactic agreement, on the basis of differences between them in Icelandic. Given these issues, I conclude that the attempt to reduce the conditions on reflexives to a mechanism of syntactic agreement has not been successful.

3.3 Summary

Reflexives inside coordinated NPs and in other environments raise real problems for attempts to reduce binding to either movement or agreement. The mechanisms that force a reflexive and ban a pronoun with a local antecedent do not seem to be the same mechanisms at work in syntactic movement and syntactic agreement. Given this, I pursue an approach to the binding conditions that does not relate them to either movement or agreement.

4 A Presuppositional Binding Theory

In section 2, I argued that we need a binding theory that regulates both binding and coreference. In this section, I suggest that the presuppositional approach to Condition A of Sauerland (2013) can meet this desideratum and should be generalized to Conditions B and C. I show how this might be done, using very generic versions of the classical binding conditions. Section 5 then points out several advantages of adopting such an approach.

One important point must be made before continuing. This is that, for the purposes of this paper, I continue to assume that binding versus coreference is the right account of the strict/sloppy ambiguity, and continue to make that distinction in order to account for the ambiguity. This is only for expository convenience, however; footnote 1 noted real problems for that account. Some other approach would work just as well for the purposes of this paper, for instance the α and β indexing of Fiengo and May (1994). I should stress, though, that while I continue to use Reinhart's device of encoding coreference in parentheses, I have rejected Reinhart's claim that binding is encoded in syntax but coreference is not. What matters here is that there is some other notion subsuming both binding and coreference that is relevant to grammar, in particular the binding conditions. We then also need to distinguish two ways of getting co-construal, in order to capture strict versus sloppy readings. It is not particularly important here what the right way to capture this distinction is.

4.1 The Presuppositional Approach

Sauerland (2013) proposes that Binding Condition A is actually a presupposition of SELF anaphors. SELF anaphors have no at-issue content, but they add a presupposition to the effect that the predicate of the clause they occur in has two identical arguments. Two arguments being identical subsumes binding and coreference; both satisfy the presupposition. McKillen (2016) proposes a slightly different version of this presuppositional approach.

The presuppositional analysis has two advantages that I want to maintain here. The first is that it has the desired effect of subsuming both binding and coreference. The second is that it will allow many apparent violations of the binding conditions in focus and ellipsis contexts, without the need for mechanisms like vehicle change (Fiengo and May 1994) or Reinhart's split between syntactic and pragmatic principles. It does this by treating violations of the binding conditions as a case of weakened presupposition projection, something that is independently attested. Basically, certain

presuppositions are not projected into focus alternatives. McKillen (2016) states the generalization as follows:

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

I will modify this in (61) below.

Above we saw that reflexives can have strict readings in ellipsis and focus. This is allowed in the presuppositional approach because the presupposition of argument identity can be absent from focus alternatives, as stated in (31). This simplest case to explain is one like the following:

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

In an alternative semantics for focus (Rooth 1992), F-marked NPs are replaced with variables in the focus semantic value of the sentence. Since *Tatiana* is F-marked in this example, the focus alternatives are those shown, *{x hates herself}*. If we take *herself* to be coreferential with *Tatiana* rather than bound by the subject, this is the set of alternatives where x hates Tatiana. The sentence then asserts that Tatiana hates Tatiana, and none of the alternatives to Tatiana hates Tatiana. This is exactly the meaning of the sentence on the strict reading. In the focus alternatives, *herself* is allowed to be disjoint from the subject *x*, because its presupposition of argument identity is allowed to be absent from the focus alternatives since it is covalued with an F-marked NP (*Tatiana*). Note that in the ordinary semantic value, the presupposition cannot be absent and must be satisfied, and so *herself* cannot refer to anyone other than Tatiana.

As for strict readings in ellipsis, they are allowed under the ellipsis licensing condition in Merchant (1999: 34). This condition permits a VP to elide if it is focus-matched by its antecedent:

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

"$[\![C]\!]^{g,o}$" is the ordinary semantic value of C under some assignment function *g*, while "$[\![C]\!]^{g,f}$" is the focus semantic value of C under *g*. Merchant's licensing condition says that the ordinary semantic value of the antecedent clause must be a member of the focus semantic value of the elided clause, and the ordinary semantic value of the elided clause must be a member of the focus semantic value of the antecedent clause.

For a case of a strict reading in ellipsis like the following, the elided clause is then allowed to have a pronoun in it rather than a reflexive and still be elided:

(34) 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)}

In cases of VP ellipsis where the subjects of the two VPs contrast, the subjects are assumed to be F-marked. Given this, under the coreferential interpretation of *himself*, the ordinary semantic value

of the antecedent clause, *the accused defended the accused*, is a member of the focus semantic value of the elided clause, *{x defended the accused}*. The ordinary semantic value of the elided clause, *his lawyer did defend the accused*, is also a member of the focus semantic value of the antecedent clause, *{x defended the accused}*, if the presupposition of Condition A is absent from the focus alternatives. The bracketed part of the elided clause, *[defend him]*, is therefore allowed to elide, even though it is not strictly identical to its antecedent. Note that there is no need to have a mechanism of vehicle change (Fiengo and May 1994) in the theory; the fact that the elided clause can have a pronoun rather than an anaphor just follows from the licensing condition on ellipsis.

It is also important that presuppositions can only be absent from focus alternatives; they must be met in the ordinary semantic value. This means that in the antecedent clause, the anaphor must refer to the accused. This explains why the binding conditions can only appear to be violated in an elided clause, and never in the antecedent for an elided clause.

As can be seen, the presuppositional approach successfully permits strict readings of reflexives under focus and in ellipsis. Not only that, it does so in a way that is independently necessary. It relates the absence of the presupposition to other cases of weakened presupposition projection. von Heusinger (2007), Sauerland (2013), McKillen (2016) discuss a variety of cases of this, like the following:

(35) a. Only I did my homework. (other people did not do their homework)

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.

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.

In (35a), the first person presupposition of the pronoun *my* is absent from focus alternatives. In (35b), the alternatives to *Sam talked to the GERMAN professor*, with F-marking on *German*, are *Sam talked to the Japanese professor* and *Sam talked to the English professor*. But in the scenario given, there is no unique Japanese professor and there is no unique English professor. The fact that the sentence is felicitous in this context indicates that the uniqueness presupposition of the definite article does not need to be satisfied in the focus alternatives. Similarly, in (35c), the female presupposition of the suffix *-ess* does not need to be met in the focus alternatives.[9]

Notice also that in the presuppositional approach, the identity presupposition on a local anaphor is just like the presuppositions associated with its person, gender, and number features. All of these

[9]Note that *waitress* is not actually focused here. Presumably McKillen's "linked to" in (31) is meant to cover this case. Note that the presupposition of the *-ess* suffix is not suspended in ellipsis the way it is with focus:

(i) a. A: Mary is still a waitress. B: *I thought only John was.

b. The zoo in Philadelphia has a tigress, and the zoo in Washington D.C. does too. (has to have a tigress, not a male tiger)

In the account of ellipsis in the text, the presuppositions of the elided clause are not suspended, rather, the elided and antecedent clauses are allowed to differ in having a reflexive versus a pronoun. Apparently a clause with *N-ess* is not sufficiently identical to a clause with *N* to license ellipsis. It appears that only functional elements can differ (so, SELF is functional but *-ess* is lexical).

can also be absent from focus alternatives and do not have to hold in ellipsis (35a showed this for person with a pronoun):

(36) a. Out of all of us, Tatiana is the only one who won't promote herself. (alternatives include speaker and hearer, not limited to third person)

b. Tatiana won't promote herself but I certainly will. (promote myself)

(37) a. Only Tatiana hates herself. (not limited to comparing females)

b. Tatiana hates herself but Brandon doesn't. (hate himself)

(38) a. Tatiana won't promote herself but Brandon and Charles will. (promote themselves)

As can be seen, the presuppositional approach nicely captures the availability of strict readings for reflexives in ellipsis and in focus contexts, and it does so by treating them as an instance of an independently attested phenomenon. It also subsumes coreference and variable binding under a single cover, identity. These are two advantages that I would like to maintain by adopting these aspects of the analysis.

There are also two drawbacks of this analysis as it has been formulated so far. First, both Sauerland (2013) and McKillen (2016) posit syntactic movement to get the analysis to work. For Sauerland 2013, SELF moves and adjoins to the predicate. For McKillen 2016, SELF combines first with a pronoun and then with the predicate, without the need for movement. However, movement is still necessary with ECM predicates for McKillen. This does not seem to be correct, because coordination shows that there could be no movement even with ECM predicates:

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

The second drawback is that the presuppositional approach has only been formulated for Condition A. It would be desirable to extend it to Conditions B and C, too, since they exhibit similar behavior under focus and ellipsis:[10]

(40) *Condition B*

a. Trump$_1$ and his campaign manager have very different opinions. Only the campaign manager considers him$_1$ a liability.

b. Who is proud of Sally? Bill is proud of her$_1$ and she$_1$ is too. (McKillen 2016: 39, (57a))

c. He's the sort of star athlete who believes that no agent can promote him$_1$ any better than he$_1$ can. (Safir 2014: 109, (34))

d. James$_1$ says that if only one of the faculty would believe in him$_1$, then he$_1$ would too. (based on Safir 2014: 110, (35b))

(41) *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.

[10]Some previous work has claimed that Condition B cannot be violated in ellipsis (e.g., Fiengo and May 1994), but the examples here show that it can be, at least under some circumstances. See also Safir (2014).

For instance, in the discourse in (40a), the only referents are Trump and the campaign manager. The only alternative to the manager is therefore Trump. In the alternatives, then, Condition B appears to be violated (*{x considers him a liability (him=Trump)}*). Similarly for the other examples: Conditions B and C appear to be violated in the focus alternatives and in the elided clauses.

It is not clear that Sauerland's and McKillen's particular analyses can be extended to pronouns and R-expressions. Both analyses require a very local relation, basically co-argumenthood, which will not work for long-distance Binding Condition C. Since they also consider SELF reflexives to be a combination of SELF with a pronoun, where the SELF part has the identity presupposition, it will not be possible to impose a non-identity presupposition on pronouns (Condition B) without a conflict.

I will therefore not adopt the particular analyses proposed by Sauerland (2013) and McKillen (2016). Instead, I will adapt the spirit of their proposal to a generic version of the binding conditions, divorced from syntactic movement.

4.2 Reformulation and Extension

To distinguish the presuppositional approach from others, I will refer to the reformulated conditions as "Presuppositional Binding Condition A," "Presuppositional Binding Condition B," and "Presuppositional Binding Condition C," abbreviated PCondition A, PCondition B, PCondition C. I will state these binding conditions in a traditional way, but following Heim (2007) in several respects. First, to cover both referential NPs and non-referential NPs, I will follow Heim (2007) and numerous others and assume that all quantifiers raise out of argument position and leave behind a trace of type e. All NPs in argument position (which is what the binding conditions regulate) are then of type e. I also adopt Heim's definition of *covaluation*:[11]

(42) Two (occurrences of) NPs (of type e) are covalued in an utterance context iff they have the same extension under every variable assignment that extends the assignment given in that context.
I.e., α and β (occurrences of NPs of type e) are covalued in c (an utterance context) iff $[\![\alpha]\!]^{c,g} = [\![\beta]\!]^{c,g}$ for all $g \supseteq g_c$. (Heim 2007: 3, (7))

(This is Heim's "first attempt"; in section 5.5 I will present her second attempt as a means of dealing with certain cases of contingent identity.)

I will assume that NPs in the world's languages fall into three classes. The first is the class of local anaphors. Individual languages may (but need not) have forms that are lexically specified to be local anaphors. The second is the class of R-expressions. These consist of NPs of the form

[11] A reviewer objects to this formulation of covaluation on the basis of Madame Tussaud contexts (Jackendoff 1992, 1997). The reviewer's objection seems to be that Fidel Castro the person and a wax statue of Fidel Castro (for example) do not have the same extension, yet we want the binding theory to treat them as covalued in an example like *Castro expected himself/*him to be dressed in a uniform.* These types of examples are of course very important, but for present purposes it suffices to note that, both conceptually and as far as the grammar is concerned, Castro the person and a statue of Castro are in fact coextensive. Going into a wax museum, Castro can say, *I look good.* The indexical pronoun *I* is typically viewed as always referring to the speaker; this sort of example then shows that the statue of Castro is being treated as coextensive with the speaker. I will leave a full exploration of Madame Tussaud contexts to future research, and it may be that a better definition of the term *covalued* can be formulated, but for the purposes of this paper it is enough to treat an individual and a representation of that individual as coextensive.

Det(erminer) R(estriction). All other NPs fall into a default class. There is no class of pronoun; rather, following Elbourne (2001), Schlenker (2005a), and numerous others, pronouns are simply Det(erminer)s with a null restriction.[12] Being without a restriction takes them out of the class of R-expressions and makes them simply part of the default class. (I will leave open whether individual languages may have additional classes of NPs, and I will also leave open whether belonging to the class of local anaphor is simply stipulated as a lexical property, or is somehow derived from other properties of a lexical item. Note that I can also adopt the view that SELF anaphors are the combination of a reflexivizing element with a pronoun, since pronouns are just a default class with no properties of their own.)

The presuppositional binding conditions can then be stated as follows:

(43) Presuppositional Condition A:
A local anaphor is presupposed to be covalued with an NP in an argument position that precedes and phase-commands the local anaphor within its local domain.

(44) Presuppositional Condition B:
Any NP N that is not a local anaphor is presupposed not to be covalued with an NP in an argument position that precedes and phase-commands N within its local domain.

(45) Presuppositional Condition C (Minimize Restrictors):
An R-expression (an NP of the form *Det R*) is presupposed not to be covalued with any NP that precedes and phase-commands it if R could have been dropped without affecting the descriptive content of the R-expression.

Condition C is a modified version of the Minimize Restrictors! analysis of Schlenker (2005a). The result of dropping the restriction *R* in *Det R* is a pronoun, as mentioned above. Note that this approach to Condition C is very different from Reinhart's. For Reinhart, an economy condition favors bound variable anaphora. In this approach, an economy condition instead favors minimizing descriptive content.

I assume that Bruening (2014) is correct that precede-and-command is what is relevant for the binding conditions rather than c-command. Precede-and-command is the conjunction of linear precedence and a structural relation, phase-command, defined as follows:

(46) 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.

(47) Phasal nodes: CP, vP, NP

See Bruening (2014) for details, and arguments in favor of precedence plus phase-command over c-command. (But note also that for most of the data discussed in this paper, c-command would work just as well.)

Note that the definition of covaluation subsumes both binding and coreference (Heim 2007). The binding conditions refer to neither directly, though the grammar may distinguish the two for other purposes (strict versus sloppy readings; but note again that some other account of strict

[12]There are languages that do not have determiners. Many such languages do have R-expressions that are subject to Condition C, and they have pronouns. I assume that these languages have something that plays the role of Det in "Det R." That could be a null Det, or it could be some other element. (Note that I am *not* assuming the DP Hypothesis, and I do not identify Det with the D of the DP Hypothesis.)

versus sloppy readings may well be better than distinguishing binding and coreference). There is also no need for syntactic movement or agreement in this account: the binding conditions refer to covaluation.

4.3 The Local Domain

As for the local domain that is relevant for PCondition A and PCondition B, I will address several options and tentatively decide in favor of one, but this will not be crucial.

First, a lot of recent work suggests that the local domain is the phase (e.g., Lee-Schoenfeld 2004, Safir 2014, Charnavel and Sportiche 2016). This would fit right in with phase-command being the relevant structural notion: everything would then rely on the notion of the phase. As with all formulations of the local domain, however, there are issues with identifying it as the phase, among them the well-known problem of non-complementarity in PPs (e.g., Hestvik 1991, Reinhart and Reuland 1993, Lee-Schoenfeld 2004). See (52) below. A second, less well-known problem for defining the local domain as the phase comes from coordinated NPs, which have already figured prominently in this paper. NP nodes have to be phases, since elements dominated by NP do not phase-command out of NP. A coordinated NP should therefore be a phase, but we have seen that an NP inside a larger coordinated NP that has a local antecedent outside of that larger NP must nevertheless be an anaphor and cannot be a pronoun:

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

This should not be the case if the coordinated NP node is a phase and the phase is the local domain; the antecedent would be outside of the phase that contains the anaphor/pronoun, and we would then expect that the pronoun and not the reflexive would be required.

It is clear that one conjunct of a coordinated NP cannot license a local reflexive, indicating that conjuncts do not phase-command out of coordinated NPs and coordinated NPs are therefore phases, as we would expect:

(49) * James$_1$ and Elizabeth dressed himself$_1$.

Similarly, a pronoun can take one member of a local coordinated NP as its antecedent:

(50) a. John$_1$ talked about himself$_1$/*him$_1$.
b. John$_1$ and Mary talked about him$_1$. (Fiengo and May 1994: 43, (128))

An R-expression can also be covalued with one conjunct of a phase-commanding coordinated NP:

(51) a. * She$_1$ sat down with Melinda$_1$'s father to have "the talk."
b. Me and her$_1$ sat down with Melinda$_1$'s father to have "the talk."

So, in the case where the antecedent of some element is one member of a coordinated NP, the coordinated NP must be a phase, to block phase-command. But when one member of a coordinated NP has a local antecedent, the coordinated NP must not be a phase, otherwise we would expect a pronoun to be good and a reflexive to be bad, contrary to fact. This contradiction makes it very difficult to maintain that the local domain is the phase.

The idea that the local domain is defined by co-argumenthood (Reinhart and Reuland 1993) suffers from the same problem. According to Reinhart and Reuland (1993), at a semantic level,

*She$_1$ washed herself$_1$/*her$_1$ and him* decomposes into, *She$_1$ washed herself$_1$/*her$_1$* and *She$_1$ washed him*. In the first, the two NPs are co-arguments, and so the reflexive is required and the pronoun banned. But then we should expect that *John$_1$ and Mary talked about him$_1$* would also decompose into *John$_1$ talked about him$_1$* and *Mary talked about him*, and we would again expect the reflexive to be required and the pronoun to be banned.

The very old idea of delimiting the local domain with reference to the closest subject seems to cover the most empirical ground, surprisingly. It certainly captures the coordination data: there is no subject inside a coordinated NP, so an element inside a coordinated non-subject NP will have its local domain delimited by the subject of the clause (48). In contrast, a coordinated NP is a phasal node, so any NP inside a coordinated NP will not phase-command out of that coordinated NP (49, 50b, 51b). Defining the local domain with reference to the closest subject also has the potential to cover the problematic PP data. One possible approach is the indeterminacy idea of Bruening (2014: 379–381). Consider the following:

(52) a. She$_1$ pulled a blanket over her$_1$/herself$_1$.
b. She pulled the blanket$_1$ over itself$_1$/*it$_1$.

In examples like (52), the object of the P has a semantic subject, the object of the V. Bruening (2018) gives numerous arguments that the object of the V and the PP do not form a small clause. If that is correct, the object of the V is not syntactically a subject in any sense. It is, however, a semantic subject for the PP. Because syntax and semantics do not agree in this case, the grammar may face some indeterminacy about what the closest subject is and what the local domain then is. The grammar could either decide that the local domain is some node that dominates both the semantic subject (the object of the V) and the PP (VP, say), and then a pronoun is required in (52a) because the antecedent is outside this domain, or it could decide that the syntactic subject delimits the local domain, and then an anaphor is required in (52a). Regardless of which local domain is chosen in (52b), a local anaphor will be required.

The only real issue for delimiting the local domain by the closest subject comes from finite versus non-finite clauses. In some languages, including English, the subject of a non-finite clause (or at least, certain types of non-finite clauses) has the next higher clause up as its local domain, as would be expected, but the subject of a finite clause does not. There are ways to address this, for instance by saying that some other constraint rules out local anaphors as subjects of finite clauses (e.g., the anaphor agreement effect, Rizzi 1990, Woolford 1999). Or one can say that finite AGR always counts as the closest subject, as in the notion of SUBJECT from Chomsky (1981). One could also pursue the idea that finite clauses constitute absolute locality barriers, not just for anaphora but for all kinds of syntactic phenomena (all those that are not inherently unbounded). This is probably correct in general, and one could potentially exploit it to say that it is the syntax in general and not the binding theory in particular that causes finite clauses to be a local domain for anaphora.

Because it is the only approach that accounts for the coordination data, I will tentatively adopt the view that the local domain is delimited by the closest subject. Something also ensures that a finite clause always closes off the local domain. In what follows, all that will be important is that finite clause boundaries put an upper limit on the local domain, and a coordinated NP node does not.

4.4 Simple Examples of PConditions A, B, C

Let me now go through some examples, including some of the crucial ones from above. I begin with the case of a coordinated object:

(53) a. The bear washed itself and its cub.
b. The bear washed it and its cub.

In both (53a) and (53b) the subject NP *the bear* is an R-expression. It is therefore presupposed to not be covalued with any other NP that precedes-and-commands it in an A-position. There is no such NP, so the presupposition is met in both cases. In (53a), *itself* has the form of a local anaphor. It is therefore presupposed to be covalued with an NP that precedes-and-commands it within its local domain. Assuming that the coordinated NP node does not delimit the local domain, the only NP that does so is *the bear*. If the local anaphor refers to the same bear, then the presupposition is satisfied. In (53b), in contrast, *it* is not a local anaphor. It is therefore presupposed not to be covalued with any NP that precedes-and-commands it in its local domain. If it is disjoint in reference from *the bear*, then this presupposition is satisfied; if it is not, then the presupposition is violated. This correctly accounts for the fact that if one conjunct of a coordinated object is to be covalued with a local antecedent, it must be a local anaphor and may not be a pronoun.

In both sentences, *its cub* is an R-expression, which again must not be covalued with any NP that precedes-and-commands it. This presupposition is satisfied in both cases.

As for the possessive pronoun *its*, English possessive pronouns raise an interesting problem. They can either be covalued with a local antecedent, or not. I can see two possible analyses of such items within the current approach, and will leave open which is correct. The first says that such items are simply ambiguous between a local anaphor and a default NP. Put another way, there are two homophonous forms, one of which is a local anaphor and the other of which is not (it is also not an R-expression, so it is the default). The second approach instead says that there is a fourth class of NP, one that comes with no presuppositions regarding covaluation (they do have presuppositions derived from person, gender, and number features, of course). Lexical items belonging to this fourth class are then unrestricted: they can have local antecedents, non-local antecedents, or no antecedent at all. This is exactly the case for English possessive pronouns. I will not attempt to decide between these two approaches here.

Consider now a case of a Condition A violation, like the following:

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

Both *the bear* and *the man* are presupposed not to be covalued with any NP that precedes-and-commands them. These presuppositions are met (assuming that the bear and the man have different extensions, which they typically will). The local anaphor *itself*, in contrast, is presupposed to be covalued with an NP that precedes-and-commands it in its local domain. The local subject *the man* delimits its local domain. The result is that only *the man* precedes-and-commands *itself* in its local domain. However, *itself* also has a non-human presupposition. One of these presuppositions has to be violated, since *the man* is human. Hence the deviance of the example.

Consider now examples involving Condition C:

(55) a. She thinks this woman will be very successful.
b. Her former employer thinks this woman will be very successful.

In (55a), the R-expression *this woman* is presupposed not to be covalued with any NP that precedes and phase-commands it. This includes the pronoun *she*. These two NPs then cannot be covalued. In contrast, in (55b), the NP *her* is dominated by a phasal node that does not dominate the R-expression, namely the NP *her former employer*. *Her* therefore does not precede-and-command the R-expression *this woman*. *This woman* is therefore only presupposed not to be covalued with *her former employer*, but it can be covalued with *her*.

As can be seen, the presuppositional binding theory accounts for the basic facts of Conditions A, B, and C. It also accounts for the important case of a reflexive versus a pronoun as one conjunct of a coordinated object.

Let me go through one last example, a case where a local anaphor is the antecedent for another local anaphor (see Safir 2014 for discussion of cases like this):

(56) The guests expect each other to introduce themselves.

In this case, the R-expression *the guests* is presupposed not to be covalued with any NP that precedes-and-commands it; there is no such NP, so this presupposition is satisfied. The NP *each other* is in the class of local anaphors, which means that it is presupposed to be covalued with an NP that precedes-and-commands it in its local domain. *Each other* is also the subject of the embedded clause of a raising-to-object verb; such subjects are known to be in the local domain of the higher clause. The NP *the guests* can therefore satisfy this presupposition, if it and *each other* are covalued. I assume that they are (see Heim *et al.* 1991 for this issue with reciprocals, and Sauerland 2013 for discussion of reciprocals within the presuppositional approach). Finally, the local anaphor *themselves* is also presupposed to be covalued with an NP that precedes-and-commands it within its local domain. It is well-known that the subject of the embedded clause here, while counting as part of the higher clause local domain, also counts as part of the local domain of the lower clause. The presupposition can therefore be satisfied by *themselves* being covalued with *each other*.

4.5 Summary

This section has reformulated the presuppositional account of Condition A in Sauerland (2013) and extended it to Conditions B and C. The next section shows that adopting this approach can account for the exceptions to the binding conditions and has other advantages, as well.

5 Advantages of the Presuppositional Account

The main advantage of the presuppositional approach is that it can correctly capture the cases where the binding conditions appear to be violable. I go through these cases here, and also show that the behavior of epithets is as predicted. Another advantage I discuss is strong crossover, and the fact that focus fails to ameliorate it.[13]

[13] I believe additional support for the presuppositional view might come from cases where the presupposition is explicitly denied. Presuppositions sometimes fail to project when they are explicitly denied. It is not easy to do this with anaphora, but the following examples may be of the right kind:

(i) a. He is Robert, but he criticizes Robert at every opportunity.
b. He is Robert, but he criticizes Robert's work at every opportunity.

5.1 Violations in the Focus Semantics

We have already seen that all three binding conditions can be violated in the focus alternatives. Condition A can be violated in the focus alternatives, giving us strict readings in cases of focus and ellipsis:

(57) *Condition A violated in focus alternatives:*
   a. Only Tatiana hates herself. (strict reading: 'no one else hates Tatiana')
   b. The accused defended himself better than his lawyer did.

Condition B can also be violated in the focus alternatives and in ellipsis:

(58) *Condition B violated in focus alternatives*
   a. Trump_1 and his campaign manager have very different opinions. Only the campaign manager considers him_1 a liability.
   b. James_1 says that if only one of the faculty would believe in him_1, then he_1 would too. (based on Safir 2014: 110, (35b))

So can Condition C:

(59) *Condition C violated in focus alternatives*
   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.

These all follow straightforwardly from the idea that presuppositions can be absent from focus alternatives, as explained above. Because I believe that it provides a simpler and more accurate way of capturing the data, I will abandon the alternative semantics for focus and instead adopt the *structured meaning* approach (von Stechow 1991, Krifka 1992). In the structured meaning approach to focus, focus leads to a partition of the semantic material of an expression into a *background* part (B) and a *focus* part (F). The F-marked element forms the focus F, while the rest forms the background B, indicated as a pair $\langle$B, F$\rangle$:

(60) Only Tatiana hates herself. $\langle \lambda$x[x hates herself (herself=Tatiana)], Tatiana$\rangle$

Applying the background B to the focus F arrives at the ordinary semantic value. We can then restate the principle regarding when presuppositions have to hold as follows:

(61) In a focus meaning $\langle$B, F$\rangle$ where B has the form λx[...x...], presuppositions must be met only if they are triggered by an element of B and make no reference to x.

Consider the examples of weakened presupposition projection again from above:

(62) a. Only I did my homework. (other people did not do their homework)

These examples potentially show that explicitly denying the presuppositions of Conditions B and C enables those presuppositions to be violated.

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.

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.

In (62a), on the bound reading the variable associated with *my* is bound by x that will apply to F: ⟨λx[x did x's homework], I⟩. *My* is bound by λx, so the first person presupposition makes reference to x. The first-person presupposition therefore does not have to hold. In (62b), the presupposition belongs to F, it is not part of B at all; again it does not have to be satisfied. In (62c), the focus semantics is the pair ⟨λx[x is a waitress], Mary⟩. The presupposition comes from the main predicate, which is being applied to x; the presupposition is therefore about x. Once again it does not need to hold. In contrast, in *Even MARY criticized a waitress*, the female presupposition makes no reference to x, and so it must hold in the focus semantics (so all alternatives to Mary must also have criticized a female server).

We can now account for the violations of Condition A, B, and C under focus. I repeat the examples below, each with its focus semantics under the structured meaning approach. In each case we have coreference (or its equivalent), not binding.

(63) a. Only Tatiana hates herself. ⟨λx[x hates herself (herself=Tatiana)], Tatiana⟩

b. Trump$_1$ and his campaign manager have very different opinions. Only the campaign manager considers him$_1$ a liability.
⟨λx[x considers him a liability (him=Trump)], the campaign manager⟩

c. Melissa and her husband have very different views of what she has done. Only he thinks that Melissa's accomplishments have been significant.
⟨λx[x thinks Melissa's accomplishments have been significant], he⟩

In every case, we have an NP that comes with a presupposition regarding covaluation: *herself* in (63a), *him* in (63b), and *Melissa* in (63c). In all three cases, this presupposition regards covaluation of this NP with x. This means that all of these presuppositions make reference to x. None of these presuppositions then has to hold in the focus semantic value.

Notice that if the presupposition regards covaluation not with x but with some other NP that is also part of B, then the binding conditions cannot be violated:

(64) Even BILL thinks the president can't pardon himself.
⟨λx[x thinks the president λy y can't pardon y/himself(himself=the president)], Bill⟩

This example cannot mean that alternatives to Bill think the president cannot pardon Bill. This is because the covaluation presupposition of *himself* is part of B and makes no reference to x, and so it must be satisfied. This is true whether we choose to use coreference or binding. Condition B shows the same thing:

(65) Even BILL thinks the president won't pardon him.
⟨λx[x thinks the president λy y won't pardon x/*y/him(him=*the president/Bill)], Bill⟩

This example cannot mean that alternatives to Bill think the president will not pardon the president. This is because the anti-covaluation presupposition of *him* makes no reference to x, only to y, and so it must be satisfied.

Now let us turn to the ellipsis cases. We can restate the ellipsis licensing condition in the structured meaning approach as follows:

(66) A VP in constituent E can be elided if there is a constituent A such that $[\![E]\!] = \langle B, F\rangle$ and $[\![A]\!] = \langle B', F'\rangle$ and $B = B'$.

This condition says that the two clauses have to have identical backgrounds in their focus semantic values.

Let us now apply this to the ellipsis cases from above, starting with an apparent Condition A violation. As above, the elided clause has a pronoun in it, not an anaphor:

(67) The accused defended himself better than his lawyer did.

a. A: the accused defended himself (himself=the accused)
$\langle \lambda x$[x defended himself (himself=the accused)], the accused$\rangle$

b. E: his lawyer did [defend him] (him=the accused)
$\langle \lambda x$[x defended him (him=the accused)], his lawyer$\rangle$

Once again, where the two subjects contrast, it is the subject that is F. Given this, B of both clauses is identical, if we can ignore the presuppositions of the pronoun and the anaphor. Since these presuppositions regard covaluation with x, we can. B of both clauses is then identical, and VP ellipsis is licensed. There is no actual Condition A violation, because the elided clause has a pronoun, not an anaphor.

A Condition B case works similarly, only in this case the elided clause has an anaphor, not a pronoun:

(68) James$_1$ says that if only one of the faculty would believe in him$_1$, then he$_1$ would too.

a. A: one of the faculty would believe in him (him=James)
$\langle \lambda x$[x would believe in him (him=James)], one of the faculty$\rangle$

b. E: he would [believe in himself] (himself=James)
$\langle \lambda x$[x would believe in himself (himself=James)], he$\rangle$

The two subjects again contrast and so both are F. As in the previous case, B of both clauses is identical, if we can ignore the presuppositions of the pronoun and the anaphor. Since these presuppositions regard covaluation with x, we can. B of both clauses is then identical, and VP ellipsis is licensed. Once again there is no actual Condition B violation, because the elided clause has an anaphor, not a pronoun.

The Condition C case receives an analogous analysis. This time the elided clause has a pronoun:

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

a. A: Brandon is proud of what Melissa has accomplished
$\langle \lambda x$[x is proud of what Melissa has accomplished], Brandon$\rangle$

b. E: she is [proud of what she has accomplished] (she=Melissa)
$\langle \lambda x$[x is proud of what she has accomplished] (she=Melissa), she$\rangle$

Once again, ellipsis can be licensed even though the antecedent and the elided clauses do not strictly match. If the presuppositions are ignored, then the pronoun and the R-expression are identical, given that they both refer to Melissa. B is then the same in A and E, and VP can elide.

As we have seen, Conditions B and C can never be violated in the antecedent clause in a case of ellipsis. This is also true of Condition A:

(70) a. * Because Melissa$_1$ couldn't, Bill defended herself$_1$.
b. * The judge questioned the man who$_1$ defended him$_1$ about why his lawyer couldn't.
c. * She$_1$ thinks Melinda$_1$'s paper will be published but Sandra doesn't.

Presuppositions must be satisfied in the ordinary semantic value, and so we correctly account for the fact that the binding conditions can never be violated in the antecedent clause of an ellipsis example. Reinhart's approach stumbles here (at least on Conditions B and C), as it incorrectly predicts that the elided clause and the antecedent clause should exhibit parallel behavior.

5.2 Violations in the Ordinary Semantic Value

As we saw in section 2, the binding conditions admit certain exceptions. Condition C can be violated under focus:

(71) Even HE$_1$ knows that Goofy$_1$ is an idiot.

Condition B can violated, but only with first and second person pronouns for many speakers:

(72) (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)

(73) * Only Max$_1$ himself voted for him$_1$. (modified from Roelofsen 2010: 118, (9))

In the good cases, the violation is in the ordinary semantic value, not the focus semantic value, so saying that presuppositions do not have to be satisfied in the focus semantic value will not help. There are also two empirical differences between these cases and the previous ones: First, third person pronouns cannot violate Condition B as easily as first and second; and second, Condition A cannot be violated:

(74) Everybody laughed at James$_1$. *Even Brandon laughed at himself$_1$.

This means that we do not just want to say that all presuppositions regarding covaluation are suspended in cases of focus, even in the ordinary semantic value. Some presuppositions are not suspended (PCondition A, and PCondition B with third person pronouns.)

It should also be noted that it is not just first and second person pronouns that can violate Condition B, repeated names can too. This is true both when the antecedent is focused (75), and when the repeated name is focused (76):

(75) a. Only BERTRAND likes Bertrand.
b. A: Nobody likes Bertrand. B: BERTRAND likes Bertrand.

(76) a. Bertrand only likes BERTRAND.
b. A: Bertrand doesn't like anybody. B: Bertrand likes BERTRAND.

So it is not that there is a difference between third person and first/second, it is specifically third person *pronouns* that have a hard time violating Condition B.

R-expressions can also be repeated across clause boundaries, in violation of Condition C:

(77) a. Even GOOFY knows that Goofy is an idiot.
b. Even MELISSA thinks that Melissa's paper should be rejected.

To summarize so far, Binding Condition A can never be violated in the ordinary semantic value. Binding Conditions B and C can, but third person pronouns do not do so as easily as repeated names or first/second person pronouns. Before attempting to explain this state of affairs, let me bring in further data from epithets.

5.3 Epithets and Conditions B and C

Nediger (2017) discusses epithets and notes an apparent problem for the formulation of Binding Condition C as Minimize Restrictors! as in Schlenker (2005a). The fact is that epithets can appear to violate Condition C, as we have already seen:[14]

(78) a. * He_1 is so careless that John_1 will get killed in an accident one of these days.
b. John_1 is so careless that the idiot_1 will get killed in an accident one of these days. (Nediger 2017: (23a))

This is straightforwardly allowed by PCondition C, repeated below: Dropping the restriction (to use a pronoun) would lose the descriptive content of *idiot*, and so it is allowed not to drop.

(79) Presuppositional Condition C (Minimize Restrictors):
An R-expression (an NP of the form *Det R*) is presupposed not to be covalued with any NP that precedes and phase-commands it if R could have been dropped without affecting the descriptive content of the R-expression.

The issue raised by Nediger (2017) is that epithets cannot take a local antecedent:

(80) 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.

Nediger seems to be assuming that Condition C is what rules out an R-expression with a local commanding antecedent; the exception to Condition C should then permit an epithet in such cases. In the current account, however, Condition C is not what rules these out, Condition B is:[15]

[14]There is a restriction on epithets which I will not discuss here: epithets are anti-logophoric, which means that they cannot refer to the author of the attitude report they are embedded within (Dubinsky and Hamilton 1998). The examples here are constructed so that they do not.

[15]Earlier work on epithets concluded that they were subject to Condition B, either exclusively or in addition to Condition C (Jackendoff 1972, Lasnik 1989, Dubinsky and Hamilton 1998). The current approach states this differently (every NP except local anaphors is subject to Condition B), but the idea is the same.

(81) Presuppositional Condition B:
Any NP N that is not a local anaphor is presupposed not to be identical in extension to an NP in an argument position that precedes and phase-commands N within its local domain.

Epithets are not local anaphors, therefore they are always presupposed not to be identical in extension to any preceding-and-commanding NP in the local domain. They can therefore appear to violate Condition C, but never Condition B. Their behavior is therefore exactly as expected in the presuppositional binding theory.

The problem with this approach to Condition B, though, is that we then expect that it can never be violated, either with pronouns or R-expressions. This is not correct, as we have already seen: repeated R-expressions and first and second person pronouns can violate Condition B, under conditions of focus.

5.4 Explaining the Pattern of Violations in the Ordinary Semantic Value

The pattern of facts that we need to explain is the following: Binding Condition A can never be violated in the ordinary semantic value. Repeated names and first/second person pronouns can violate Binding Conditions B and C, but third person pronouns do not do so as easily. Epithets can violate Condition C but not Condition B.

The fact that epithets can violate Condition C is already accounted for by the formulation of PCondition C here, which permits exceptions for descriptive content. PCondition B as formulated here does not, so it correctly rules out epithets with local antecedents. So we just need to specify what it is about repeated names and first/second person pronouns that enables them but not epithets to violate PCondition B and PCondition C.

I suggest that the relevant difference is precisely that epithets can be bound variables and can have sloppy readings in ellipsis:

(82) a. Every congressman$_1$'s staff hates the sonofabitch$_1$ and every senator's secretary does too. (sloppy reading possible; Hornstein and Weinberg 1990: 136, (29a))

b. Every player$_1$ should pass the cards to that player$_1$'s right, and the dealer should too. (sloppy reading possible).

Repeated R-expressions and repeated first/second person pronouns do not have sloppy readings in ellipsis:

(83) a. Even MELISSA thinks Melissa's paper will be rejected. Sally does too. (strict reading only)

b. Even I laughed at me. You did too. (strict reading only)

Third person pronouns and epithets allow sloppy readings and are not able to (easily) violate PCondition B. Repeated R-expressions and first/second person pronouns do not allow sloppy readings and can violate PCondition B and PCondition C. Local anaphors also allow sloppy readings, and violations of PCondition A are never allowed. It therefore appears that the generalization is the following:

(84) Generalization: Presuppositions regarding covaluation can only be violated in the ordinary semantic value with NPs that do not permit sloppy readings.

The task now is to explain this generalization. I propose that the reason these NPs do not permit sloppy readings is that they refer directly to an individual in the discourse context. This is certainly true of first and second person pronouns in this use, and it is also true of names. I propose that these NPs can be used to refer directly to an individual in a discourse model. An NP used in this manner then has no presuppositions regarding covaluation in the syntax. For the moment I simply stipulate this, but hold out the hope that future work will be able to derive it:

(85) Direct Reference: An NP that is used to refer directly to an individual in the discourse has no presuppositions regarding covaluation in the syntax.

Note that applying this requires evaluating speaker intentions and is therefore probably difficult. Like Reinhart, then, we explain why such examples require considerable processing resources and may be difficult for certain populations.

The NPs that can be used to refer directly to an individual in a local context are, primarily, names and first and second person pronouns. First and second person pronouns can be used this way because there are no R-expressions in English for referring to the speaker and hearer.[16] Epithets are not used in this way, they are used to add descriptive content. Third person pronouns typically are not used for this purpose either, although it may well be that individual speakers differ in how easily they allow this use with third person pronouns. Hence we see speaker variation in judgments on Condition B violations with third person pronouns.

Regarding strict readings in ellipsis, an NP that refers directly in the discourse will only allow a strict reading. Direct reference is not binding. If sloppy readings arise through syntactic binding, then an NP that is used for direct reference will never allow a sloppy reading and will only allow a strict one.

Note that this way of looking at things correctly differentiates first and second person pronouns with a local antecedent from ones with a longer-distance antecedent. As we just saw, first and second person pronouns with a local antecedent do not permit sloppy readings; but first and second person pronouns with a longer distance antecedent do:

(86) a. Even I laughed at me. You did too. (strict reading only)
b. You think that you are a genius, and Trump does too. (strict or sloppy reading possible)

This is because PCondition B can only be violated by an NP that is being used for direct reference. This means that (86a) can only be acceptable on the reading where *me* refers directly to the speaker in the utterance context. This then rules out a sloppy reading. In contrast, PCondition B is not at issue in (86b), and so the embedded *you* could be used for direct reference, or not. This permits it to be a bound variable, which then gives rise to a sloppy reading in ellipsis. Note that adding emphasis and a pointing gesture again makes the sloppy reading vanish:

[16] A reviewer points out that the English first person plural pronoun is ambiguous: it can include the addressee or not, and it can include third persons or not. In my judgment, the first person plural does not lend itself to Condition B violations as readily as the singular first and second person pronouns. A search of COCA finds almost no examples of Condition B violations with *we* and *us*. Almost all the examples there are the "subject co-referential pronouns" discussed in Christian (1991), Webelhuth and Dannenberg (2006), Conroy (2007), Horn (2008), Bosse *et al.* (2012), like *If we had us some real music on that stereo things would be perfect.* There are a few odd cases of Condition B violations, but they mostly seem to be mistakes. I do not find any examples on COCA comparable to the ones with *I/me* and *you*. I believe this supports the account in the text: if first person plural is ambiguous, then it will be harder to use it for direct reference.

(87) I think that **I** [pointing at self] am a stable genius, and so does Trump. (strict reading only)

The pointing gesture makes it clear that direct reference is being used, and then only a strict reading is possible. What I am claiming is that violations of PCondition B and PCondition C with repeated R-expressions and repeated first/second person pronouns is essentially the same as this pointing gesture.

Safir (2005: 159–160) has noted the same effect in counterfactual conditionals:

(88) a. A: If I were you, I would hate myself. B: I do. (B could hate A, or B)
b. A: If I were you, I would hate me. B: I do. (B only hates A)

Once again, PCondition B can only be violated if an NP is used for direct reference, in this case to the speaker in the utterance context. Therefore (88b) is unambiguous. In contrast, (88a) is ambiguous because *myself* can refer either to the speaker in the actual world, or to the persona the actual speaker has taken on in the counterfactual world. The latter is compatible with syntactic binding, which results in a sloppy reading in the elided clause.

Safir (2005: note 21) also notes that third person pronouns do not permit this kind of use in counterfactual conditionals, exactly as the present account would expect. I change Safir's examples to something that is easier to parse:

(89) a. If pizzas were people, they would eat themselves. (pizzas qua people eat pizzas, or they are self-eaters)
b. If pizzas were people, they would eat them. (no sensical interpretation)

(89b) has no sensical interpretation, because third person pronouns are not used to directly refer and so cannot violate PCondition B. The pronoun *them* therefore cannot be covalued with *they*, which in the counterfactual conditional is both *pizzas* and *people*.

As we would expect on the current account, repeated R-expressions work much better for these counterfactual conditionals:

(90) a. If pizzas were people, they would eat pizzas.
b. If James were Melinda he would hate James.

This is because R-expressions can be used for direct reference and so violate PCondition B. As expected, only a strict reading is possible for a follow-up . . . *just like she does*.

In addition, since only NPs that can be used to refer directly can violate PCondition B, this account predicts that non-referential NPs can never violate it. This appears to be correct:

(91) 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.')

These two examples do not have a reading where x acts on x.

This account, where an NP that can be used to directly refer does not have any presuppositions regarding covaluation, correctly captures when PConditions B and C can be violated and when they cannot. PCondition C can be violated for one of two reasons: either direct reference, or for the purpose of adding descriptive content (epithets). PCondition B can only be violated due to direct

reference. This rules out epithets with a local antecedent. It also rules out violations of PCondition A, since local reflexives are not used for direct reference. (But note that it might be possible for *myself* and *yourself* to directly refer to the speaker and hearer, which then allows them to be used in violation of PCondition A in what has previously been accounted for as a logophoric use.) The account also successfully distinguishes first/second person pronouns from third person pronouns in how easily they can violate PCondition B.[17] It also captures the relation between violations of PCondition B and PCondition C and strict readings in ellipsis.

5.5 Uncertain Identity

Consider now cases of uncertain identity like the following:

(92) a. Was John the man in the bowler hat? I don't know, but he put on John's coat before leaving, so it may well have been. (Heim 2007: 4, (10), based on Higginbotham 1985: 570)

b. I think that the man in the devil costume is Joe. It is suspicious that he knows him so well. (Heim 2007: 4, (11), citing Macià-Fàbrega 1997)

These cases seem to be very different in character from the permitted violations of PCondition B and PCondition C discussed so far. A third person pronoun is absolutely perfect in (92b), while a reflexive is unacceptable in the same context:

(93) I think that the man in the devil costume is Joe. *It is suspicious that he knows himself so well.

This is very unlike the cases discussed above, where reflexives are permitted and third person pronouns do not work so well.

It rather seems to be the case that the two NPs at issue here are not covalued. That is why the reflexive fails: PCondition A is violated. PCondition B in (92b) and PCondition C in (92a) are then not violated at all, because the pronoun and the R-expression are not covalued with the NP that precedes and phase-commands them.

I will simply adopt Heim's (2007) solution to such examples. She redefines 'covaluation' such that it is relativized to subjective contexts:

(94) α and β (occurrences of NPs of type e) are covalued w.r.t. C (a subjective utterance context) iff for all $<$w,g$>\in$C and all g$'$ $\supseteq$g, $[\![\alpha]\!]^{w,g'} = [\![\beta]\!]^{w,g'}$. (Heim 2007: (12))

In (92a), *he* and *John* might have the same extension in some contexts (possibly the actual context), but they have different extensions in others. They are therefore not covalued under this definition of covaluation. See Heim (2007) for further details.

[17] An audience member at NELS 49 asks why the sequence *R-expression*$_1$ ... *R-expression*$_1$ is always better than the sequence *pronoun*$_1$ ... *R-expression*$_1$. It is not clear to me that this true, but if it is, the direct reference theory may explain it. Presumably the point of referring directly is to be as unambiguous in reference as possible. Since R-expressions can directly refer but third person pronouns cannot, it will be better to use a repeated R-expression rather than one R-expression and one pronoun.

5.6 Strong Crossover

The last topic that I will discuss is strong crossover. Following Wasow (1972) and Chomsky (1981), strong crossover is often accounted for as a Condition C violation (see Lasnik and Funakoshi 2017 for an overview):

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

In the copy theory of movement (Chomsky 1993), there is an unpronounced R-expression in the extraction site, as shown with strikethrough. This R-expression is covalued with an NP in an A-position that precedes and phase-commands it (the pronoun *she*). This is a violation of PCondition C.

Lasnik and Funakoshi (2017) and Nediger (2017) point out that, unlike standard Condition C violations, focus on the antecedent does not remedy the violation (Lasnik and Funakoshi cite a 2008 class handout of Seth Cable for this observation):

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

Both take this to suggest that Strong Crossover should not be accounted for as a Condition C violation.

In the current analysis, this is no barrier to analyzing strong crossover as a Condition C violation. As explained in section 5.4, focus permits apparent violations of PCondition C in non-wh cases because the R-expression is used for direct reference. An R-expression that is being used for direct reference does not have the PCondition C presupposition. Since the null R-expression is not pronounced in the wh-case in (96), there is no way it can serve this pragmatic function. An unpronounced element cannot be used for direct reference. The overt wh-phrase cannot be used for this purpose, either, because it is non-referential. Therefore focus does not help in (96). An unpronounced R-expression is always going to be subject to PCondition C, even in cases of focus.

Strong crossover therefore falls out from the way Condition C is stated here, as does the failure of focus to remedy the violation.

5.7 Summary

This section has attempted to show some of the advantages of pursuing a presuppositional binding theory. The primary advantage is that we can explain many cases of apparent violations of the binding conditions in focus and ellipsis as the independently attested phenomenon of the failure of presuppositions to project in the focus semantic value. Violations of the binding conditions in the ordinary semantic value are more limited and seem to be permitted by direct reference in the discourse context. For the moment I have stipulated the effect this has, but the hope is that it can be shown to follow from something in the future. I have also shown that the proposal explains the distribution of epithets and can capture cases of uncertain identity. Finally, the proposal explains why focus does not help to alleviate violations of strong crossover.[18]

[18]One thing I have not explained is the distribution of anaphoric *that-N* phrases. As was shown in section 2.4, these expressions can be bound by quantifiers as variables (ia) but seem to give rise to a Condition C effect if anteceded by a pronoun (ib):

6 Conclusion

In this paper, I have argued that the binding conditions govern coreference as well as binding. I have also pointed out that the conditions governing anaphora differ in important ways from those governing syntactic movement and syntactic agreement. For this reason I have suggested an approach different from most current ones, which take only binding to be involved and which try to reduce the binding conditions to either movement or agreement. Following Heim (2007) and Sauerland (2013), I have proposed a presuppositional approach to the binding conditions. I hope to have shown that this new approach has some merit and is worth pursuing.

This paper has also been very limited in its scope. It has made no serious attempt to evaluate the details of existing analyses. The approach suggested here is only programmatic and was framed in terms of a generic version of the classical binding conditions. No attempt has been made to account for cross-linguistic variation. The goal of the paper has only been to outline a new approach, and hopefully to stimulate research into all of these topics from the point of view of this new approach. If the approach has any merit, it will lead to new insights into all of these topics.

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(i) a. Every player$_1$ begins the round by exchanging cards with the person to that player$_1$'s right.
b. * He$_1$ began the round by exchanging cards with the person to that player$_1$'s right.
c. Any player$_1$ who has less than 1,000 points at the end of the round must declare himself$_1$/*that player$_1$ out.

However, the ability to violate Condition C in (ia) cannot be due to the exception to PCondition C for the purpose of adding descriptive content, because R here simply repeats the restriction of the quantifier. The violation in (ia) also cannot be permitted by direct reference, since this is a non-referential expression. I propose that anaphoric *that* is a special type of determiner. It does not permit its restrictor to delete, unlike deictic *that*, which is why (ia) is not a PCondition C violation: R could not have been deleted. As for (ib), it is also not a PCondition C violation. It is not acceptable because anaphoric *that* is "aggressively anaphoric" and requires that its restrictor R have been used in the linguistic context (or possibly another expression that R can be recovered from). R has not been used in the linguistic context in (ib). This account predicts that anaphoric *that* cannot violate PCondition B, which seems to be correct (ic).

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