

Two-tiered Binding Domain Formation: Evidence from Czech¹

Anne Sturgeon

University of California, Santa Cruz

1 Introduction

Considering a configurational approach to binding theory from the perspective of a language such as English, which has a wide range of logophoric uses of anaphors, can be misleading. It has led some to discount configurational analyses entirely (Pollard and Sag 1992, Reinhart and Reuland 1993). A deeper look at anaphora within languages which do not have logophors is necessary to develop a more complete understanding of the role of syntactic structure in predicting the distribution of pronouns.

Czech is among those languages which lack logophors, but which, nevertheless, exhibit non-complementarity between reflexives and pronominals in certain positions. The distribution of reflexive possessives is of interest because both the reflexive and the non-reflexive possessive are possible in (1).

(1) **Ztratila jsem svou/mou kočku.**

lost aux.1sg self's/my cat

I lost my cat.

In the literature it has generally been assumed that reflexive and non-reflexive pronouns cannot occur in the same positions, or if they do, these pronouns are outside the domain of binding theory (Pollard and Sag 1992, Reinhart and Reuland 1993). Current research on this topic predicts that contrasts such as those in (1) are not possible, when the possibility that these pronouns are exempt from binding theory is ruled out. Focusing on these areas of non-complementarity, I propose a configurational account of reflex-

¹ I thank: Judith Aissen, Anna Bondaruk, Daniel Büring, Donka Farkas, Kateřina Fraim, Rodrigo Gutiérrez-Bravo, Jana Hejduková, Tomáš Koukolík, Vera Lee-Schoenfeld, Jim McCloskey, Hana Priser, and Irena Polić for their help. Remaining errors are mine.

ivity in Czech which not only predicts these unexpected areas of non-complementarity between reflexives and non-reflexives, but also adequately describes the more usual complementarity effects which also surface.

Combining insights from both Chomsky (1986a,b) and Dalrymple (1993), the domain formation approach advocated for here makes crucial use of both argument structure and tense domains. The analysis presented here discusses several families of constructions which highlight important syntactic characteristics of reflexives in Czech. First, non-finite complement clauses are considered and then two types of complex nominal phrases. Through consideration of these constructions it is possible to determine the sensitivity of these reflexives to argument structure and tense domains.

2 Current Configurational Approaches

2.1 Overview of Binding Facts

As is common cross-linguistically, Czech reflexives must be c-commanded by their antecedent; this suggests that a configurational approach to binding is necessary (cf. Pollard and Sag 1992, Reinhart and Reuland 1993).²

- (2) **Bratr Jany₁ vařil večeři ve *svém₁/jejím₁ bytě.**
brother Jana.gen cooked dinner in self's/her apartment
Jana's₁ brother cooked dinner in her₁ apartment.
- (3) **Petrův₁ obrázek v Time rozrušil *svou₁/jeho₁ matku.**
Petr's picture in *Time* upset self's/his mother
Petr's₁ picture in *Time* upset his₁ mother.

In (2-3) the reflexive pronouns cannot be anteceded by the nominal embedded within the subject.³

² Abbreviations: masc (masculine), fem (feminine), neut (neuter), pl (plural), sg (singular), acc (accusative), gen (genitive), dat (dative), adj (adjective), aux (auxiliary), refl (reflexive), neg (negative morpheme), cl (clitic), inf (infinitival).

³ One case of a reflexive without a c-commanding antecedent is:

Both possessive and object (corresponding to *her/himself* in English) reflexives are found in Czech. Object reflexives, like their English counterparts, must be bound within their minimal clause and are, generally, in complementary distribution with their pronominal counterparts.

- (4) **Jan₁ nenávidí sebe₁/*jeho₁.**
Jan hates self/him
Jan₁ hates himself₁.

The same is not true of possessive reflexives; they can be bound from outside of some infinitival clauses and are in non-complementary distribution with their pronominal counterparts in this position.⁴

- (5) **Jan slyšel₁ Petra₂ zpívat svou_{1/2}/jeho_{1/2} písničku.**
Jan heard Petr.acc sing.inf self's/his song
Jan₁ heard Petr₂ sing his₁ song.

In this sentence both the pronominal and the reflexive are grammatical when bound by either the matrix subject, *Jan*, or the embedded subject, *Petr*.

The behavior of these two types of reflexives contrasts in two important ways. First, object reflexives, in general, are in complementary distribution with their pronominal counterparts and must

-
- (i) ?Svoje je nejlepší.
self's is best.
One's own is the best.

This sentence is marginally grammatical for speakers in a context where the elided head N is recoverable.

⁴ For all speakers there is non-complementarity within embedded clauses, though, for many speakers possessive reflexives are in complementary distribution in the minimal clause for third person forms. Non-complementarity in these cases, however, appears to be an innovation among young speakers and a dialect variation of speakers from Moravia. '%' indicates that the form is grammatical for some, but not all, speakers.

- (i) Mirek₁ ztratil svou₁/%jeho₁ knihu.
Mirek lost self's/his book
Mirek₁ lost his₁ book.

For all speakers there is non-complementarity between pronominals and reflexives with 1/2nd person antecedents. For the purposes of this paper, I assume non-complementarity with all persons of possessive reflexives.

be bound within the minimal clause containing them. Second, possessive reflexives and pronominals are, generally, in non-complementary distribution and can find an antecedent outside their minimal clause in some circumstances. The analysis presented here shows that these two differences are linked in important ways.

2.2 *Domain Formation Approach*

Under this approach binding domains for pronouns⁵ enlarge in specific ways to satisfy the binding requirements of *in situ* reflexives. The basic logic of this type of analysis is due to Chomsky (1986a,b) and Hestvik (1991); innovations combining this analysis with Dalrymple (1993) are introduced in §3.

Confronting non-complementarity within a configurational framework, Hestvik (1991) proposes an approach which makes crucial use of subjectless binding domains (see also Huang 1983 and Bresnan 1987). Relevant definitions incorporating Hestvik's modification of 'binding domain' are given here:⁶

(6) *Binding Domain*:⁷ (to be revised)

A binding domain for α is the most deeply embedded Complete Functional Complex (CFC) containing α in which the basic binding requirements for α can be met.

(7) *Complete Functional Complex*:

An XP in which all the θ -roles compatible with a lexical head are assigned in A-positions.

An XP which contains all the arguments associated with the theta roles of its theta-assigning head can form a binding domain, regardless of whether the head assigns a theta role associated with a 'subject' position. This means that a PP, an XP which lacks a 'subject,' can form a binding domain. Additionally, it is posited

⁵ *Pronominal* is used to refer to non-reflexive pronouns while *pronoun* is a cover term used to refer to both pronominals and reflexives.

⁶ Hestvik's definition of binding domain includes this additional requirement: 'contains a governor for α .' This is unnecessary for the Czech data.

⁷ A slight reformulation of Chomsky (1986a) due to James McCloskey.

that anaphors and pronominals have different binding requirements (recall Principles A, B).

(8) *Basic Binding Requirements:*

(i) For α , **an anaphor**, can be met in principle in a category C iff there is an assignment of indices to DP's within C (perhaps different from the actual assignment of indices within C) according to which α is A-bound.

(ii) For α , **a pronominal**, can be met in principle in a category C iff there is an assignment of indices to DP's within C (perhaps different from the actual assignment of indices within C) according to which α is A-free.

The different binding requirements of pronominals and anaphors are reflected in the calculation of the binding domain. Pronominals must be free within their binding domain and anaphors must have the potential to be bound.

Informally, the Binding Domain for α is the most deeply embedded CFC in which the basic binding requirements for α , a pronominal or anaphor, can, in principle, be met. Two questions are relevant when determining the Binding Domain for α : What is the CFC which most immediately contains α ? and Is it possible for α 's basic binding requirements to be met in that CFC? If the answer to the second question is yes, the minimal CFC is the Binding Domain for α . But, if that is not the case, the next higher CFC is considered, and the procedure is repeated.

This analysis accounts for the non-complementarity in (9).

- (9) **Nakonec ho uložil₁ do postele vedle sebe₁/něho_{1/2}...**
at-last him put to bed next-to self/him
[_{IP} At last he₁ put him to bed [_{PP} next to himself₁/him₁...]]
(Kopřiva 1988)

In this case, the binding domain for the pronominal is the PP which contains it. The calculations proceed as follows: the PP is an XP containing a theta-assigning head, P, one theta-role is assigned to the DP in object position. This qualifies the PP as a CFC and, thus, a binding domain for the pronoun. The pronominal's binding

requirements (that it be A-free) can be met within that domain; the PP is therefore determined to be the binding domain. Since the pronoun, in fact, has no antecedent in that domain, the structure is well-formed. However, the binding domain for the reflexive must expand beyond the minimal CFC containing it, the PP. Its binding requirements cannot be met within the PP since there is no potential antecedent within that domain. The binding domain for the reflexive is the next higher CFC containing it (the VP, assuming a subject-internal VP hypothesis); within that domain, the reflexive is in fact bound, and the structure is, thus, grammatical.

Within this analysis, complementarity is predicted under certain circumstances: when a reflexive has a c-commanding, co-argument binder only the reflexive is possible; a pronominal in the same configuration will, however, be ungrammatical, since it would be bound within its minimal CFC, the co-argument domain. However, when there is no coargument within the minimal CFC containing the pronoun, non-complementarity is predicted to hold. The binding domain for the reflexive can expand to include the next higher CFC, while the binding requirements for the pronominal are met, it is A-free. These predictions are correct for Czech and tend to hold cross-linguistically (Huang 2000).

3 Binding and Infinitival Complements

The distribution of object reflexives within infinitival clauses falls out straightforwardly under the account outlined above.⁸ Two facts are important to keep in mind. First, possessive and object reflexives exhibit different distributions; object reflexives must be bound within the minimal clause containing them, while possessive reflexives, under certain circumstances, may be bound from outside their minimal non-finite clause. Secondly, possessive

⁸ Binding object reflexives out of complements to verbs of perception and object control structures is impossible for the majority of my consultants. There is disagreement in the literature. Toman (1991) maintains that binding out of non-finite complements is impossible, while Veselovská (1995), and Avgustinová, Gardent and Oliva (1997) say that it is possible.

reflexives are always alternate freely with their pronominal counterparts.

(10) **Poslouchal₁ Petra₂ mluvit o sobě_{2/*1}.**
listened-to.masc Petr.acc talk.inf about self
He₁ listened to [_{CFC/VP} Peter₂ talk about *himself*_{2/*1}.]

(11) **Petr₁ zakázal Janovi₂ mluvit o sobě_{2/*1}.**
Petr forbid Jan.dat talk.inf about self
Petr₁ forbid Jan₂ [_{CFC/IP} PRO₂ to talk about himself_{2/*1}.]

It is impossible for object reflexives to be bound from outside infinitival complements to verbs of perception, (10), and object control constructions, (11).

Considering the definitions given in (6-8), these facts are unsurprising. The embedded infinitival in (10), assumed to be of the category VP, is the minimal CFC containing the reflexive.⁹ Within that domain there is a potential binder for the reflexive, the embedded subject, *Petr*. The binding requirements of the reflexive are met within the infinitival clause so the binding domain of the reflexive cannot extend to include the matrix subject; that coindexing is ungrammatical. A parallel calculation can be made for the object control construction in (11), under the assumption that a PRO element, coreferential with the matrix object, fills the subject position in the embedded infinitival.

The distribution of pronominals also falls out from this account; they are ungrammatical under coreference with the embedded subject, but perfectly grammatical when coreferring to the matrix subject.

(12) **Poslouchal₁ Petra₂ mluvit o něm_{1/*2}.**
listened-to.masc Petr.acc talk.inf about him
He₁ listened to [_{CFC/VP} Peter₂ talk about him_{1/*2}.]

The fact that the embedded infinitival is the binding domain of the pronominal correctly predicts that the pronominal, which is not

⁹ I assume that argument P's assign a theta role through the V which selects them. Thus, the minimal CFC containing the reflexive in this case is the VP (Hestvik 1991).

free within that domain, cannot be bound by the embedded subject. The same is true for object control constructions.

Turning now to possessive reflexives within object control constructions, they are in non-complementary distribution with their pronominal counterparts.

(13) **Přinutila₁ Janu₂ lhát o svém_{2*1}/jejím_{1/2} životě .**

forced.fem Jana.acc lie.inf about self's/her life

She₁ forced Jana₂ [_{CFC/IP} PRO₂ to lie about [_{CFC/DP} her life.]]

In contrast with the cases in (10-11), both the pronominal and the reflexive are grammatical under coindexation with the embedded subject, *Jana*.

What is the relevant difference between these two reflexives that could account for this distributional fact? As opposed to object reflexives, possessive reflexives, due to their syntactic position in the clause, have no potential binder within their coargument domain (see also Burzio 1999 and Dalrymple 1993). This fact crucially leads to their distinct behavior.

Consider the binding predictions for (13), the DP, *her life*, forms the minimal CFC containing both the reflexive and the pronominal. Within this domain the binding requirements of the pronominal can of course be met (and, in fact, are met): it is A-free. The reflexive, however, must look to a higher CFC within which to be bound. The infinitival clause, IP, forms the binding domain; within this domain the reflexive has a potential binder, the occurrence of PRO bound by the DP, *Jana*. The reflexive cannot look to a higher clause, the matrix, within which to be bound since the infinitival clause is a CFC within which the reflexive could, in principle, be bound. The infinitival, then, forms the domain within which the reflexive must be bound. The matrix subject, *she* in (13), for instance, is outside this domain and is, therefore, too distant to function as an antecedent for the reflexive. Since the possessive sits in the highest position in its minimal clause, the DP, it has no potential binders within its minimal CFC; thus, non-complementarity between pronominals and reflexives is predicted.

3.1 Possessive Reflexives and Infinitival Complements

An observation new to the literature is that possessive reflexives contrast with object reflexives in that they can be bound from outside an embedded non-finite complement to a verb of perception.

(14) **Jan slyšel₁ Petru₂ zpívat svou_{1/2} písničku.**

Jan heard Petra.acc sing.inf self's song.acc

Jan₁ heard Petra₂ sing his₁ song.

In (14) the *song* in question can be associated with the referent of either the matrix or the embedded subject. What is the difference between infinitival complements to object control verbs and verbs of perception that leads to this distinct distribution of reflexives?

It is usually assumed that non-finite complements to verbs of perception and to object control verbs are of different phrasal types (see also Safir 1993). A CP or IP node is generally assumed to dominate the infinitival complement to an object control verb. The form of the non-finite verb in English provides evidence that object control verb and verbs of perception involve different structures.

(15) Michelle watched Kyra *slice* the avocado.

(16) Michelle reminded Kyra *to cook* the rutabagas.

It seems clear that the infinitival clause in (16) contains at least an IP node, the evidence is not as clear for the infinitival complement to *watch* in (15). The forms of the verbs are identical in both constructions in Czech, but there is other evidence which can distinguish these structures.

Syntactically, these complement clauses differ. It is possible to front the non-finite complement in an object control construction. However, the same fronting with the complement to a verb of perception is impossible.

(17) **Starat se o Janinu kočku Marie připoměla Janovi.**

take-care-of.inf Jana's cat Marie reminded Jan.dat

[_{XP} PRO₂ to take care of Jana's₂ cat] Marie reminded Jan.

- (18) ***Zpívat Daninu písničku slyšela jsem Petra.**
sing.inf Dana's song heard aux.1sg Petr.acc
*[X' Sing(ing) Dana's song] I heard Petr.

Assuming that only phrase level constituents can be fronted, the non-finite clause in (17) forms an XP. The same is not true of the fronted material in (18); under a subject-internal VP analysis this is an X', accounting for its ungrammaticality.

3.2 *Domain Formation and Possessive Reflexives*

Can the analysis as developed so far account for the distributional differences between possessive and object reflexives in complements to verbs of perception?

- (19) **Viděla₁ Petru₂ dívat se na sebe_{2/*1} do zrcadle.**
saw.fem Petra.acc look-at.inf refl-cl at self to mirror
She₁ saw Petra₂ look at herself_{2/*1} in the mirror.
- (20) **Viděl₁ Milana₂ políbit svou_{1/2} ženu.**
saw.masc Milan.acc kiss.inf self's wife.acc
He₁ saw Milan₂ kiss his_{1/2} wife.

In §3 it was shown that the syntactic position of the possessive reflexive in its clause contributed to the non-complementarity differences between possessive and object reflexives, (12-13). Recall, however, that possessive reflexives within infinitival complements to object control verbs cannot be bound by the matrix subject, (13). Local syntactic position cannot be the whole story. One possibility is that object and possessive reflexives are simply two different types of reflexives, sometimes described as 'short' vs. 'long distance' anaphors, and conform to different binding generalizations.

As a unified analysis of both reflexives is preferable, the clausal type of the embedded infinitival appears to be the relevant factor. A schematic of (19) is given here.

- (21) [_{IP} He₁ saw [_{CFC/VP} Milan₂ kiss [_{CFC/DP} self's_{1/2} wife.]

Thus far the binding domain has been assumed to expand by CFC. The smallest CFC containing the reflexive is the DP, *self's song*,

but since the reflexive is the most prominent element here, DP cannot be its binding domain. The next larger CFC containing the reflexive is the embedded VP. However, in this case the reflexive can be bound not only by the embedded subject, *Milan*, but also by the matrix subject. The Chomsky (1986a,b) proposal for domain expansion does not make the correct predictions for these cases.

At this point it is possible to make an important generalization: when the reflexive cannot be bound by a *coargument*, the binding domain extends beyond ‘the next higher’ CFC. This possibility seems appealing since the relevance of the co-argument domain of a higher lexical item to a reflexive pronoun is unclear.

In informal terms, if an anaphor can bind to a co-argument (an element within its minimal CFC), it will do so, to the exclusion of other binding possibilities. However, if this is inherently impossible because the anaphor has no c-commanding coarguments, it must be bound within the most deeply embedded IP which contains it. As can be seen from this description, both argument structure and tense play definitive roles in determining these binding patterns. These domains have cross-linguistic importance in binding (see Dalrymple 1993, Huang 2000, among others).

There are two distinct domains which are relevant for the behavior of anaphoric elements in Czech: the coargument domain (CFC) and the tense domain. To capture this generalization formally, the definition of binding domain is modified.

(22) *Binding Domain*:

A binding domain for α is the most deeply embedded CFC containing α if the binding requirements of α can be met within that domain. Otherwise, the binding domain of α is the most deeply embedded IP containing α .

(23) *Complete Functional Complex*: (as defined in (7))

An XP in which all the θ -roles compatible with a lexical head are assigned in A-positions.

This definition of binding domain combines two relevant domains discussed in Dalrymple 1993: the co-argument domain (CFC) and

the tense domain; these insights are combined with a Chomsky 1986-style binding analysis. If the anaphor cannot be bound in the coargument domain, it must be bound within the minimal IP containing it. For each syntactic structure, the binding domain of a reflexive can be calculated; there is no need to lexically specify the binding domain of a certain type of reflexive, for instance, specifying that possessive reflexives are bound within the minimal finite domain and object reflexives within the minimal CFC.

This two-tiered definition of binding domain makes correct predictions for both types of Czech reflexives.

- (24) **Poslouchal₁ Petra₂ mluvit o sobě_{2/*1}/něm_{1/*2}.**
listened-to.masc Petr.acc talk.inf about self/him
He₁ listened to_[CFC/VP Peter₂ talk about himself_{2/*1}/him_{1/*2}.]

In (24) the reflexive pronoun has a c-commanding coargument by which it must be bound. The small clause VP forms the minimal CFC and binding domain for both the object reflexive and the pronominal. A pronominal is not possible under coreference with the small clause subject, and the reflexive must be bound within that domain; complementarity is predicted.

The possessive reflexive has a different distribution.

- (25) **Viděl₁ Milana₂ políbit svou_{1/2}/jeho_{1/2} ženu.**
saw.masc Milan.acc kiss.inf self's/his wife
[_{IP} He saw [_{VP} Milan kiss [_{CFC/DP} his wife.]]]

The possessive reflexive has no c-commanding coargument within its minimal CFC, the DP. As a result the binding domain for the reflexive expands to include the minimal IP, the matrix clause; the 'next higher CFC,' the small clause VP is skipped. Within that domain the reflexive is grammatically bound, by either the matrix or embedded subject. The basic binding requirements of the pronominal, on the other hand, can be met within the minimal CFC. Pronominals are predicted to be grammatical under any indexing.

The analysis of reflexives contained within infinitivals in object control structures proceeds differently.

- (26) **Připoměl₁ Janovi₂ starat se o svou_{2/*1}/jeho_{1/2} kočku.**
reminded Jan.dat take-care about self's/his cat
He reminded Jan₂ [IP PRO₂ to take care of [DP his_{1/2} cat.]

In this case, the possessive reflexive cannot be bound within its minimal CFC, so its binding domain expands to include the minimal IP containing it, in this case the embedded IP. The pronominal, on the other hand, can be bound by the subject of the complement IP, as it is free within its binding domain, DP.

This two tiered approach to binding domain formation correctly predicts the distribution of both possessive and object reflexives and their corresponding pronominal counterparts. The difference in their binding behavior is a consequence of the fact that they occupy different syntactic positions.

4 Argument Structure: Binding and Complex DP's.

Binding within complex DP's provides direct evidence for the centrality of argument structure in binding domain formation.

4.1 Two Types of Complex DP's

Complex DP's headed by different types of nouns exhibit different binding patterns.

- (27) **Karlovy₁ básně o sobě₁/něm₁ jsou pěkné.**
Karel's poems about self/him are pretty
[DP Karel's₁ poems about himself₁/him₁] are pretty.
- (28) **Janova₁ důvěra v sebe₁/*něho₁ je obdivuhodná.**
Jan's trust in self/him is admirable
[DP Jan's₁ trust in himself₁/*him₁] is admirable.

Both the pronominal and the reflexive are grammatical under coreference with the syntactic possessor, *Karel*, in (27). The same, however, is not true for (28). Under coreference with *Jan* only the anaphor is possible. Argument structure differences between these head nouns account for these binding differences.

Two types of nouns readily take PP modifiers, *picture* nouns (Warshawsky-Harris 1976) and psychological nouns. Psych nouns

in Czech are related to verbs, for example: *obdiv* (pride): *obdivovat se* (to be proud of) and *podrážděnost* (irritation): *podráždit* (to be irritated at). The head of the argument PP, as well as the case of the NP argument, varies idiosyncratically with the head N. Prenominal possessors of such nouns are interpreted as experiencers, as are subjects of the corresponding verbs.¹⁰

Picture nouns, on the other hand, are not related to verbs and the head of the PP modifier is consistently, *o* (about) + locative. Nouns of this class include: *book*, *poem*, *letter* (see Warshawsky-Harris 1976 for a complete list). As opposed to psych nouns, there is no one consistent interpretation associated with the prenominal possessor.

(29) **Petrův článek o sobě**

Petr's article about himself.

Among the possible interpretations of *Petr* are: agentive, writer of the article; possessive, current owner of the article.¹¹ The only requirement for the possessor of *picture* nouns is that it be related to the head noun (see also Williams 1984).¹²

¹⁰ These patterns emerge with these two types of nouns in other languages as well, including Croatian, Polish, and Russian. English, a language which is not considered to have 'long distance' binding, exhibits some of the same nominal binding patterns. Runner 2000 conducted experiments (using the noun, *picture*) and showed that examples such as (i-ii) are grammatical for many speakers.

(i) Jill found Matt's article about herself.

(ii) Marissa hates Brandon's picture of herself.

Binding out of DP's headed by psych nouns, however, is ungrammatical.

(iii) *Jill found Matt's fear of herself surprising.

(iv) *Joanna was irritated by Mark's pride in herself.

These data suggest the cross-linguistic relevance of nominal argument structure.

¹¹ The agentive reading tends to be the strongest for my consultants.

¹² Another difference is that psych nouns can co-occur with a modifier related to the adverb, *neustále* (constantly), while *picture* nouns cannot (see also Grimshaw 1990).

(i) Petrův neustálý strach z hadu je bez důvodný.

Petr's constant fear of snakes is senseless.

(ii) *Petrův₁ neustálý článek o sobě₁...

Petr's constant article about himself...

Given these differences, I assume that an experiencer thematic role is assigned to the external argument of psych nouns while the *picture* nouns have no external arguments (see Georgopoulos 1991, Giorgi and Longobardi 1991, Giorgi 1987). Veselovská (1998), for Czech, assumes that all prenominal possessors are base generated as external arguments of N in [spec, NP] and raise from their base position to [spec, DP].

(30) Schematic DP: [DP POSS₁ [NP t₁ N PP]]

This analysis is adopted for psych nouns. I assume the PP is a complement to N as the head P varies idiosyncratically with the noun.

Within *picture* DP's I argue that the possessor is not assigned a thematic role. Differing from psych nouns, this prenominal DP is base-generated in [spec, DP] (contra Veselovská 1998).

(31) **Karlovy básně o Petrovi**

[DP Karel's [NP poems about Petr]]

It is less clear in this case that the modifying PP is an argument to the head noun because, unlike with psych nouns, the head of the PP is invariant; with every N the PP is headed by *o*, (about). However, it is possible to extract this PP, under the assumption that it is not a VP modifier, suggesting that it is not an adjunct.

(32) **O čem našel knihu?**

about what found.masc book

'About what did he find a book?'

Extraction of a DP adjunct PP would induce an ECP violation because the trace would not be governed by a lexical head. I assume that these PP's are arguments of N or adjuncts to NP; either analysis is compatible with the arguments presented here.

4.2 Accounting for Binding Differences

Binding within complex DP's headed by psych nouns is considered first. As seen in the previous section, when a reflexive can be bound by a co-argument, other indexings are ungrammatical and there is complementarity between reflexives and pronominals.

- (33) **Jana₁ byla překvapená Daninou₂ zlostí na sebe_{2/*1}.**
 Jana was surprised Dana's anger on self
 Jana₁ was surprised at Dana's₂ anger at herself₂.
- (34) **Honza₁ nenávidí Petrův₂ strach o sebe_{2/*1}/něho_{1/*2}.**
 Honza hates Petr's fear about self/him
 Honza₁ hates Petr's₂ fear of himself_{2/*1}/him_{1/*2}.
 Honza₁ hates [_{DP} Petr's₂ [_{CFC/NP} t₂ fear of self₂.]]

In (33-34), this prediction holds. To illustrate, the reflexive in prepositional object position in (34) has a co-argument potential antecedent, the trace of *Petr's*; the binding domain for the reflexive is the minimal CFC containing it, the NP. Within this domain it is possible for the reflexive to be bound, so other bindings, outside this domain, are ungrammatical. The pronominal, on the other hand, is ungrammatical when co-referring to the possessor DP; it would be ungrammatically bound within its binding domain (NP). Other indexings, such as with the matrix subject, are, however, grammatical, since these indexings will leave the pronominal free in its binding domain.

Possessive reflexives and pronominals, again, exhibit different behavior than object reflexives. First, they are in non-complementary distribution. Secondly, possessive reflexives can be bound from outside a complex DP headed by a psych noun.

- (35) **Pavel₁ pocítil Karlovo₂ zklamání nad svým_{1/2}/jeho_{1/2} životem.**
 Pavel felt Karel's disappointment on self's/his life
 Pavel₁ felt Karel's₂ disappointment in his_{1/2} life.

Pavel felt [_{DP} Karel's₂ [_{NP} t₂ disappoint. in [_{DP} self's life.]]]
 This is not a surprising finding. Since the possessive is the highest element in its co-argument domain, DP, it cannot be bound by a co-argument. As a result, it looks to the next higher binding domain, which, in this case, is the lowest IP containing the reflexive, the entire sentence. Within this domain, the reflexive can be

bound by either the matrix subject or the possessor within the complex DP. Calculations are similar for the pronominal.

Cases involving complex DP's headed by *picture* nouns exhibit different patterns. In these cases object reflexives exhibit seemingly 'long distance' behavior. In (36), the interpretation of the object reflexive is ambiguous between reference to the possessor within the complex DP and the matrix subject.

- (36) **Petr₁ zahodil Karlovy₂ básně o sobě_{1/2}.**
Petr threw-away Karel's poems about self
Petr threw away Karel's *poems* about himself_{1/2}.
[_{IP} Petr threw away [_{DP} Karel's [_{CFC/NP} poems about self.]]
(Toman 1991:24a)

These binding patterns are possible because the minimal CFC containing the reflexive, namely NP, does not contain a potential binder. Recall from our earlier discussion that one might assume either that the PP, *o sobě*, is an adjunct or an argument to N, crucially, though, NP does not contain a potential binder for the reflexive since it lacks an external argument. The binding domain expands to include the minimal IP, in this case, the entire sentence. Note that if the binding domain were assumed to expand to include the next higher CFC, DP, incorrect results follow; the object reflexive would be incorrectly predicted to be ungrammatical when co-indexed with the matrix subject.

In these constructions there is non-complementarity between reflexives and pronominals, as is expected, since the pronominal is free within its binding domain, NP.

- (37) **Olga₁ zahodila Karlovy₂ básně o %ni₁/něm₂.**¹³
Olga threw-away Karel's poems about her/him
Olga₁ threw away Karel's₂ poems about her₁/him₂.

Possessive reflexives within complex DP's headed by nouns like *picture* exhibit the same behavior as object reflexives; neither has

¹³ As is common when the antecedent is the matrix subject, a reflexive under this indexing is strongly preferred.

a c-commanding co-argument antecedent.

- (38) **Jan₁ nesnášel Petrovy₂ ódy na svého_{1/2}/jeho_{1/2} učitele.**
Jan neg-endured Petr's odes on self's/his teacher
[_{IP} Jan₁ couldn't stand Petr's₂ odes about [_{DP} his_{1/2} teacher.]]
(Toman 1991:50b)

I leave these calculations to the reader.

7 Remaining Issues: Bound Pronominals?

This analysis has gone farther than the *Knowledge of Language* binding theory in predicting areas of non-complementarity between pronominals and anaphors. The role of 'subjectless' binding domains in patterns of non-complementarity has been established. However, there remains a problematic prediction of this analysis: pronominals can be bound within their binding domain. As is common in languages with 'long-distance' anaphors, which can be bound only by 'subjects,' a pronominal *can* be bound to a non-subject DP within its binding domain.

- (39) **Hana₁ mluvila s Janou₂ o ní_{2/*1}.**
Hana talked with Jana.instr about her.
Hana₁ talked with Jana₂ about her₂.

The pronominal in this case *can* corefer with the object but not the subject. It seems that pronominals must be only 'subject' A-free within their binding domain.

This is a problem for any GB analysis of long distance anaphora which includes condition B. Binding analyses have been presented without condition B, which claim that pronominals occur wherever reflexives are blocked by another principle (such as Reinhart 1983). While an analysis which includes condition B, such as the one I posit in this paper, cannot explain why pronominals can be bound within their binding domains, an analysis without condition B would fail to explain patterns of non-complementarity between pronominals and anaphors.

8 Conclusion.

The account developed here provides a unified analysis for new Czech data exhibiting areas of non-complementarity between pronominals and reflexives. It also accounts for the surprising difference in distribution between object and possessive reflexives by making reference to two key domains that reflexives are sensitive to: argument and tense.

Additionally, the data show that complementarity holds just where the anaphor is bound from a position outside its coargument domain, which is predicted by the two-tiered definition of binding domain. This generalization reflects broader typological patterns across languages (see Huang 2000).

References

- Avgustinová, Tania, Claire Gardent, and Karel Oliva. 1997. Binding of reciprocals particular reference to Czech. Ms., University of Saarbrücken.
- Chomsky, Noam. 1986a. *Barriers*. Cambridge: MIT Press.
- Chomsky, Noam. 1986b. *Knowledge of Language*. New York: Praeger.
- Bresnan, Joan. 1987. LSA Summer Institute class lectures, Stanford University. (Based on unpublished work by J. Bresnan, P-K Halvorsen and J. Maling).
- Dalrymple, Mary. 1993. *The Syntax of Anaphoric Binding*. Stanford: CSLI.
- Georgopoulos, Carol. 1991. On psych predicates. In *Interdisciplinary Approaches to Language: essays in honor of S.-Y. Kuroda*, ed. Carol Georgopoulos and Roberta Ishihara. Dordrecht: Kluwer.
- Giorgi, Alessandra. 1987. The notion of the Complete Functional Complex: some evidence from Italian. *Linguistic Inquiry* 18:511-18.
- Giorgi, Alessandra and Giuseppe Longobardi. 1991. *The Syntax of Noun Phrases*. Cambridge: Cambridge University Press.

- Grimshaw, Jane. 1990. *Argument Structure*. Cambridge:MIT Press.
- Hestvik, Arild. 1991. Subjectless binding domains. *Natural Language and Linguistic Theory* 9: 455-96.
- Huang, James. 1983. A note on the binding theory. *Linguistic Inquiry* 14:554-61.
- Huang, Yan. 2000. *Anaphora*. New York: Oxford Univ. Press.
- Kopřiva, Milan. 1984. *Mach a Sebestová*. Prague: Albatros.
- Pollard, Carl and Ivan Sag. 1992. Anaphors in English and the scope of binding theory. *Linguistic Inquiry* 23:261-303.
- Reinhart, Tanya and Eric Reuland. 1993. Reflexivity. *Linguistic Inquiry* 24: 657-720.
- Runner, Jeff. 2000. Freeing possessed NP's from binding theory. Collaborators: R. S. Sussman and M. K. Tanenhaus. Hand-out. May, 2000, UCSC.
- Safir, Ken. 1993. Perception, selection, and structural economy. *Natural Language Semantics* 2:47-70.
- Toman, Jindřich. 1991. Anaphors in binary trees: an analysis of Czech reflexives. In *Long Distance Anaphora*, eds. E. Reuland and J. Koster. Cambridge: Cambridge Univ. Press. 151-170.
- Veselovská, Ludmila. 1995. *Phrasal Movement and X⁰ Morphology*. Ph.D. Dissertation. Palacky University.
- Veselovská, Ludmila. 1998. Possessive movement in the Czech nominal phrase. *Journal of Slavic Linguistics* 6(2): 255-300.
- Warshawsky-Harris, Florence. 1976. Reflexivization. In *Syntax and Semantics 7: Notes from the Linguistic Underground*, ed. James D. McCawley. Academic Press.
- Williams, Edwin. 1984. Grammatical Relations. *Linguistic Inquiry* 15: 639-73

UCSC, Dept. of Linguistics
1156 High St.
Santa Cruz, Ca. 95064
annemar@ling.ucsc.edu