

Binding, phases, and locality

1. Introduction

The larger context of this paper has been one of the central concerns of syntactic theory, at least since Ross 1967: how local is syntax and what are the measures of syntactic locality? The principle result of the research presented here is that movement and anaphoric relations are governed by a unified concept of locality.

Focusing in on the specific phenomena investigated as part of this research program, both the relation between an anaphoric element and its antecedent and the relation between a possessor dative and its origin site inside the possessed nominal are subject to strict locality requirements. In the general case, neither anaphor and antecedent nor possessee and possessor may be separated by a PHASE boundary,¹ and if the POSSESSOR DATIVE CONSTRUCTION (PDC) is analyzed as possessor raising, i.e. A-movement (in line with Landau 1999), it is possible to explain both BINDING and the PDC as governed by the phase as the single determinant of locality.

Exploiting their local nature, I propose that binding and the German PDC serve as diagnostics for the complexity of various phrase-types, including infinitive clauses and, in particular, a reduced type of infinitival complement known as ACCUSATIVUS CUM INFINITIVO (ACI). The main focus of this paper is the binding diagnostic (see sections 2.2 and 3) and the understanding of phasehood it led me to develop (see section 4), but I also present evidence for German possessor raising (see section 2.1) and that its locality restriction is consistent with the proposed understanding of phase.²

2. Coherence tests: Diagnosing infinitival complexity

According to Gunnar Bech's (1955/57) classic work on COHERENT versus NON-COHERENT infinitive constructions in German, the difference in transparency between the infinitival complements in (1)-(3) is explained as follows. The AcI-introducing verb *lassen* 'let, allow,

¹ For a discussion of binding as a grammatical operation that is sensitive to phase-boundaries, see also Chomsky 2005.

² See Lee-Schoenfeld 2007 for a more in-depth discussion of possessor datives and locality.

have' in (1) and the control verb *versuchen* 'try' in (2) enter into a coherent construction with their infinitival complements, i.e. take complements that are smaller than CP, while the control verb *behaupten* 'claim' in (3) enters into a non-coherent construction, i.e. takes a full CP-complement.

- (1) a. Er ließ [den Hund laufen].
 he let the dog (ACC) run
 'He let the dog run.'
- b. **Der Hund** wurde [__ laufen] gelassen.
 the dog (NOM) was (PASS) run let
 'The dog was allowed to run.'
- (2) a. Er hat versucht [den Hund einzufangen].
 he has tried the dog (ACC) in-to-catch
 'He tried to catch the dog.'
- b. **Der Hund** wurde versucht [__ einzufangen].
 the dog (NOM) was (PASS) tried in-to-catch
 'They (impersonal) tried to catch the dog.'
- (3) a. Er hat behauptet [den Hund zu vermissen].
 he has claimed the dog (ACC) to miss
 'He claimed to miss the dog.'
- b. ***Der Hund** wurde behauptet [__ zu vermissen].
 the dog (NOM) was (PASS) claimed to miss
 'They (impersonal) claimed to miss the dog.'

Of the two control verbs in (2) and (3), only *versuchen* allows so-called LONG PASSIVE movement (first discussed by Höhle 1978), i.e. movement of the embedded direct object into the matrix subject position. As shown in Wurmbrand 2001, Bech's binary distinction between matrix verbs that enter into a coherent (transparent) construction and matrix verbs that enter into a non-coherent (opaque) construction with their infinitival complement is not sufficient. There are control verbs, like *planen* 'plan', whose complements appear to be transparent for pronoun fronting (see (4b)), one of the classic coherence diagnostics designed to test for a CP-boundary, but not for long passive movement (see (4a)).

- (4) a. *... dass **der Traktor** [__ zu reparieren] geplant wurde.
 that the tractor (NOM) to repair planned was (PASS)
 '... that they planned to repair the tractor.'

- b. ... weil **ihn** der Hans [__ zu reparieren] plante.
 because it (MASC) the Hans to repair planned
 ‘...because Hans planned to repair it.’

(Wurmbrand 2001: 267-268)

Based on long passive and scrambling as probes for the presence of an agentive vP-boundary, Wurmbrand proposes a more fine-grained typology of infinitival complements, going beyond Bech’s binary distinction. AcI-introducing verbs like *lassen* (see (1)), along with modals and raising verbs, are classified as obligatorily transparency-inducing FUNCTIONAL RESTRUCTURING (FR) predicates. Control verbs like *versuchen* (see (2)) are classified as optionally transparency-inducing LEXICAL RESTRUCTURING (LR) predicates whose complements are either full CPs or bare VPs. Control verbs like *planen* (see (4)) are classified as REDUCED NON-RESTRUCTURING (RNR) predicates whose complements are bigger than a bare VP but smaller than a full CP, namely a vP or TP. Finally, control verbs like *behaupten* (see (3)) are classified as FULL NON-RESTRUCTURING predicates.

2.1 *The German Possessor Dative Construction (PDC)*

German possessor datives, if analyzed as undergoing possessor raising, provide support for Wurmbrand’s distinction between LR and RNR predicates. The following offers some background on the German PDC and motivates a movement account of the construction.

In order to make sense of the dual function of so-called ‘external possessors’, which play the role of not only possessor but also affectee, I argue that the German PDC, exemplified in (5), is best analyzed as possessor raising.

- (5) Tim hat **der Nachbarin** das Auto gewaschen.
 Tim has the neighbor (DAT) the car washed
 ‘Tim washed the neighbor’s car for her.’

The possessor (here *der Nachbarin*), starts its life in the position that possessors normally occupy, namely the specifier of the possessed DP. Since it needs to check case but cannot do so if the D-head of the possessee lacks the ability to license genitive case, it needs to move into a higher verbal projection that can fulfill its needs. In a syntactic derivation that includes an affectee vP projection, but no extra DP (besides the possessee, the possessor, and the subject)

that can be assembled from the numeration, the case-seeking possessor will move into the specifier of the dative-case-licensing affectee ν P.³ A control or binding analysis of the PDC (see e.g. Hole 2005), cannot straightforwardly explain its strict locality requirements. If the possessor dative does not move but is merged directly into the specifier of the affectee ν P and controls or binds a PRO or null anaphor inside the possessed DP, we have no account of the fact that a possessor dative may not be separated from the possessee by a clause (ν P/TP) or PP-adjunct boundary. As shown in (6) and (7), neither a control nor a binding analysis captures this.

- (6) a. Jan_i hat dem Direktor versprochen [_{ν P/TP} PRO_i zur Party zu kommen].
 Jan has the director (DAT) promised to-the party to come
 ‘Jan promised the director to come to the party.’
- b. *Tim hat seiner Schwester_i geplant [_{ν P/TP} PRO_i das Radio heile zu machen].
 Tim has his sister (DAT) planned the radio intact to make
 ‘Tim planned to fix his sister’s radio for her.’
- (7) a. Der Direktor_i lässt Jan nicht [_{PP} neben sich_i] sitzen.
 the director lets Jan not next-to self sit
 ‘The director doesn’t let Jan sit next to him.’
- b. *Tim musste Lena_i [_{PP} neben \emptyset _i dem Sessel] aufräumen. (\emptyset = null anaphor)
 Tim had-to Lena (DAT) next-to the armchair up-tidy
 ‘Tim had to tidy up next to Lena’s armchair for her.’

The (a)-examples show that a PRO in a classic control context *is* and German anaphors *can be* coindexed with a DP on the other side of a clause or PP-adjunct boundary. As illustrated in the ungrammatical (b)-examples, where the possessor position inside the possessed nominal is represented as a PRO and a anaphor, respectively, possessor datives behave differently.

³ When the D-head of the possessed DP *can* license genitive case, possessor raising does not happen. What may look like a possessor dative in examples like (i), brought up by a reviewer, is a so-called ‘ficiary’ dative (see McIntyre 2006).

(i) Er hat der Maria mein Radio wieder heile gemacht.
 he has the Maria (DAT) my radio again intact made
 ‘He fixed my radio for Maria.’

The dative plays the role of affectee (perhaps Maria broke the radio and is positively affected by it being fixed) but not of possessor (the radio is not Maria’s), and the dative is introduced via direct (external merge), not via internal merge.

Getting back to Wurmbrand's distinction between LR predicates like *versuchen* 'try' and RNR predicates like *planen* 'plan', *versuchen* allows movement of the possessor dative from the embedded domain into the matrix clause, *planen* does not.

- (8) a. Tim hat versucht/geplant [_{INF} **seiner Schwester** das Radio heile zu machen].
 Tim has tried/ planned his sister (DAT) the radio intact to make
 'Tim tried/planned to fix his sister's radio.'
- b. Tim hat **seiner Schwester** versucht/*geplant [_{INF} ___ das Radio heile zu machen].
 Tim has his sister (DAT) tried/ planned the radio intact to make
 'Tim tried/planned to fix his sister's radio.'

While it is hard to determine whether instances of scrambling are A-movement, and thus whether they are a good diagnostic for the presence of *vP*, the situation is more straightforward with the PDC. Possessor raising may not move the case-seeking possessor dative across an intervening A-position. The fact that *versuchen* does but *planen* does not allow a possessor dative to move out of its complement therefore suggests that the complement of the former does not but the latter does include a subject-introducing and accusative-case-checking (agentive) *vP*. This confirms Wurmbrand's claim that *versuchen* and *planen*, despite the fact that both verbs pass classic coherence tests like pronoun fronting, cannot simply be categorized as coherent. One can take a bare VP-complement, which is characteristic of Wurmbrand's LR predicates, while the other takes a bigger *vP* or TP-complement, which in turn is characteristic of Wurmbrand's RNR predicates.

2.2 Binding in AcI-constructions

Binding in German AcI-constructions corroborates the need to go beyond coherence (in the sense of Bech 1955/57). The possessor raising diagnostic, illustrated in (8), supports Wurmbrand's restructuring typology as far as control verbs go (i.e. the distinction between LR and RNR predicates), but the binding diagnostic, specifically, pronominal binding in AcI-constructions, which is my main focus here, suggests that AcI-introducing verbs are misanalyzed as a type of FR predicate. They do not necessarily enter into a transparent construction with their complements. As shown in (9), AcI-complements with unergative and transitive infinitives (see (b) and (c)) are clearly bigger than a bare VP because they contain a 'subject', and AcI-introducing causative and perception verbs clearly differ from modals and raising verbs in that

they constitute a lexical domain separate from the infinitival domain. Thus, the AcI-constructions in (9b) and (c) each have two lexical domains with two referentially distinct subjects.⁴

- (9) a. Der kleine Junge ließ [_{AcI} den Stein fallen].
 the little boy let the rock (ACC) fall (INF)
 ‘The little boy let the rock fall.’
- b. Die Eltern lassen [_{AcI} das Kind spielen].
 the parents let the child (ACC) play (INF)
 ‘The parents let the child play.’
- c. Der Professor sieht [_{AcI} den Studenten den Artikel lesen].
 the professor sees the student (ACC) the article (ACC) read (INF)
 ‘The professor sees the student read the article.’

Despite their syntactic dependence on the matrix predicate – AcIs cannot be extraposed and do not constitute a separate tense or negation domain – unergative and transitive AcIs can therefore be considered “semantically complete” and must be bigger than a bare VP. Only the unaccusative AcI-complement in (9a) can be argued to consist of nothing but a VP and thus form a completely coherent unit with the matrix domain. Since it is well-established that AcIs are generally smaller than TP (see e.g. Haider 1993), they can maximally consist of a subject-containing (agentive) *v*P.

Given that *v*P functions as binding domain for reflexives and pronominals – this is the focus of the following section – the pronominal binding facts in (10) are an indication of the possible degrees of AcI-complexity, more specifically, of two different AcI-clause-sizes.⁵

- (10) a. Die Spieler_i hören [_{AcI} die Fans sie_i anfeuern].
 the players hear the fans them on-cheer
 ‘The players hear the fans cheer them on.’

⁴ As pointed out by a reviewer, it is already stated in Wurmbrand 2001 that the presence of a structural external argument (in Spec *v*P) makes an infinitive an independent clausal domain. Wurmbrand does not, however, flesh out her analysis with respect to AcI-constructions and lists AcI-introducing verbs as “semi-functional restructuring predicates”.

⁵ Note that reflexive binding in German really is a reliable indicator of the complexity of the material intervening between anaphor and antecedent because, unlike in English, there are no exempt anaphors, i.e. logophors (see Kiss 2001).

- b. Die Großmutter_i lässt [_{AcI} die Krähe ihr_i auf den Kopf fliegen].
 the grandmother lets the crow her on the head fly
 ‘The grandmother lets the crow fly onto her head.’
- c. Der kleine Junge_i lässt [_{AcI} den Stein ihm_{*i} auf den Kopf fallen].
 the little boy lets the rock him on the head fall
 ‘The little boy lets the rock fall on his head.’

Since the pronominals in (10a) and (b) can refer to the matrix subject and are thus free in the AcI-complement, the transitive infinitive in (a) and the unergative infinitive in (b) must project an agentive *v*P. The unaccusative infinitive in (c), on the other hand, as part of an AcI-complement within which a pronominal cannot be free, must lack an agentive *v*P-projection. This unaccusative AcI may be argued to be either a bare VP or a defective verbalizer *v*P.

3. Binding: A phase-based account

Since the binding diagnostic discussed in section 2 is based on the assumption that *v*P is a pronominal binding domain, i.e. a domain in which a syntactically bound pronominal is free, this section lays out in detail the motivation for this assumption. In particular, I will show that the relevant binding domain for both pronominals and reflexives is the minimal phase containing the anaphoric element. If this is tenable, then agentive *v*Ps, which have been argued to be phase-defining by many (see e.g. Chomsky 2000, 2001, Fox 2000, and Nissenbaum 2000), must be one of the phrase-types that qualify as binding domains.

3.1 *Non-complementarity*

The main piece of evidence that I will offer in support of the phase as the relevant binding domain for reflexives and pronominals comes from instances of non-complementarity. While there is clear-cut complementarity of reflexive and pronominal in constructions involving a matrix verb with a finite clausal complement (see (11)), there is potential overlap when the matrix verb takes an AcI as its complement (see (12)). The apparently long-distance reflexives in (12a-d), marked as coreferent with the matrix subject, range from fully to marginally acceptable, with example (d) illustrating a truly marginal case.⁶ The reason I include this

⁶ My judgments here have been confirmed by an informal questionnaire-based study, in which 10 native speakers, mostly from Northern Germany, rated sentences on a scale from 1 (readily acceptable) to 5 (completely unacceptable). No mark corresponds to a rating of 1 or 2 (1: perfect, no special context required; 2: fine given a

example at all is that, although the long-distance binding option of *sich* sounds almost entirely bad here, it is still more plausible of an option than in (11). Taking the perspective of the players, and knowing that fans do not usually cheer themselves on, there does seem to be a way to accept the long-distance reflexive. The same cannot be said about (11), where a CP-boundary intervenes between matrix subject and reflexive.

- (11) Die Spieler_i hören [_{CP} dass die Fans_j sich_{i/*j}/sie_{i/*j} anfeuern].
 the players hear that the fans self/they on-cheer
 ‘The players hear the fans cheer them/themselves on.’
- (12) a. Martin_i hört [_{VP} seinen Freund_j über sich_{i/j}/ihn_{i/*j} reden].
 Martin hears his friend about self/him talk
 ‘Martin hears his friend talk about him/himself.’
- b. Die Großmutter_i lässt [_{VP} die Katze_j sich_{i/j}/ihr_{i/*j} auf den Kopf langen].
 the grandmother lets the cat self/her on the head grab
 ‘The grandmother lets the cat grab itself/her on the head.’
- c. Die Mutter_i lässt [_{VP} die Kleine_j sich_{i/j}/ihr_{i/*j} die Schokolade in den Mund stecken].
 the mother lets the little one self/her the chocolate in the mouth stick
 ‘The mother lets the little girl stick the chocolate in her mouth.’
- d. Die Spieler_i hören [_{VP} die Fans_j sich_{i/*j}/sie_{i/*j} anfeuern].
 the players hear the fans self/they on-cheer
 ‘The players hear the fans cheer them/themselves on.’

Interestingly, the binding possibilities in constructions involving a complex DP (with a possessor in its specifier) seem to parallel those in AcI-constructions. Just as in the examples in (12), the reflexive embedded in the complex DP in (13) can be bound by either the embedded or the matrix subject.

- (13) Martin_i hört nicht gern [_{DP} Thorstens_j Geschichten über sich_{i/j}/ihn_{i/*j}].
 Martin hears not with-pleasure Thorsten’s stories about self/him
 ‘Martin doesn’t like to hear Thorsten’s stories about himself/him.’

A DP needs to be complex (i.e. have a specifier that is filled with at least a covert possessor/subject) in order to provide these binding possibilities. A plain DP like that in (14) does not allow for a pronominal to be bound by the matrix subject.

certain context). A question mark roughly corresponds to a rating of 2.5, and a double question mark to a rating of 3.5.

- (14) Martin_i hat [_{DP} Angst vor sich_i/ihm*_i (selbst)].
 Martin has fear of self/him (self – emphatic)
 ‘Martin is afraid of himself.’

The binding possibilities observed thus far can then be summarized as follows. A reflexive cannot be bound across a CP boundary, but it can be bound across an agentive vP and a complex DP boundary, while a pronominal is free inside a CP, an agentive vP, and a complex DP. The non-complementarity is a result of the domain in which the reflexive can be bound being bigger than the domain in which the pronominal must be free. The binding conditions for reflexive and pronominal then appear to be accurately described by (15a-b).

- (15) a. A reflexive must be bound within the minimal **TP** containing it.
 b. A pronominal must be free within the minimal **agentive vP or complex DP** containing it.

In order to improve on at least the disjunction inside the statement describing the distribution of pronominals in (15b), it would be desirable to find a way of representing “agentive vP and complex DP” as a single, unified domain. This can be done relatively easily since both agentive (i.e. transitive and unergative) v and D have been argued to be (strong) phase-defining categories (see Chomsky 2000, 2001, Fox 2000, Nissenbaum 2000, McCloskey 2000, and Svenonius 2004). The condition in (15b) can therefore be stated as follows:

- (15) b.⁷ A pronominal must be free within the minimal **phase** containing it.⁷

Another obvious improvement would be to find a way to have the widely attested case of complementarity exemplified by (11), repeated here in (16), fall out directly from the way the binding conditions are stated.

- (16) Die Spieler_i hören [_{CP} dass die Fans_j sich_i/*_i/sie_i/*_j anfeuern].
 the players hear that the fans self/they on-cheer
 ‘The players hear the fans cheer them/themselves on.’

⁷ By “minimal phase containing it”, I mean the most deeply embedded phase that properly contains the anaphoric element – elements at the phase-edge are not properly contained in the phase. Specifying this phase as “minimal” is reminiscent of the binding-theoretic way of defining binding domains but is actually not necessary. If we assume that, upon completion of a phase, its proper contents are not part of the narrow-syntactic operations of the derivation anymore, then, at each stage of the derivation, there is always only one phase that properly contains the anaphoric element within which the binding conditions of the anaphoric element must be met.

The non-overlapping binding possibilities in sentences involving finite complementation follow straightforwardly, of course, from a set of binding conditions that posit the same binding domain for reflexive and pronominal. If the binding domain for both pronominal *and* reflexive were the minimal phase containing it, instances of complementarity like the example of finite complementation given here would be taken care of. The question, then, is what to do about the cases of non-complementarity in (12). As laid out in the following subsection, if analyzed as resulting from the reflexive gaining access to the higher phase, cases of non-complementarity can be explained by reflexive movement to the embedded phase-edge.

3.2 *Covert reflexive raising*

Safir (2004) compares the German reflexive *sich* to the French reflexive clitic *se* and proposes that movement of *sich* is the covert version of overt reflexive clitic movement in French. Appealing to this parallel between German and French reflexives in order to explain instances of seemingly long-distance binding in German, Safir suggests “that covert clitic movement from prepositional object position is possible for German *sich* and that certain causative constructions permit the domain of covert clitic movement to pass a specified subject” (p. 162). Following Safir (as well as Chomsky (1986), who made a proposal along these lines more than 20 years ago), I argue that reflexives, unlike pronominals, may covertly raise to their phase-edge to gain access to contents of the higher phase. Unlike Safir, however, I assume that the possibility of covert movement exists even for non-PP-embedded reflexives. Given the well-known parallel between the binding behavior of French clitics and A-movement (Kayne 1975), this seems like a reasonable move. Both clitics and A-moved phrases can engage in apparently unbounded grammatical interactions by means of establishing successive-cyclic local relations, and it is precisely in response to phenomena involving successive-cyclicality that the MINIMALIST PROGRAM proposes movement via phase-edges. As for this movement being covert, within the framework of the COPY THEORY OF MOVEMENT, the only difference between covert and overt movement is the pronunciation of the lower instead of the higher copy of the moved element (see e.g. Bošković 2001, Bobaljik 2002, and Reintges, LeSourd, & Chung 2005).

3.3 *Binding by phase*

Seeing that reflexives are generally grammatically active in ways that pronominals are not – reflexives, for example, must be syntactically bound, while pronominals can refer to an antecedent mentioned in previous discourse or may not have a linguistic antecedent at all – it is not surprising that reflexives do but pronominals do not have the ability to reach the phase-edge. The binding domain for both reflexive and pronominal can now accurately be described as the minimal phase containing the anaphoric element, and the binding conditions in (15) can be revised as given here in (17):⁸

- (17) a. A reflexive must be bound in its phase.
 b. A pronominal must be free in its phase.

Cases of complementarity are now accounted for straightforwardly, and cases of non-complementarity are a result of the reflexive being clitic-like in having the ability of moving to the phase-edge.

I envision Conditions A and B to proceed by way of an evaluation at LF upon completion of each phase (see also Baltin 2003).⁹ A case of non-complementarity like that in (12c), repeated here as (18), comes about as follows.

- (18) Die Mutter_i lässt [_{vP} die Kleine_j sich_{j/?i}/ihr_{i/*j} die Schokolade in den Mund stecken].
 the mother lets the little one self/her the chocolate in the mouth stick
 ‘The mother lets the little girl stick the chocolate in her mouth.’

If the reflexive is interpreted as bound by the embedded subject, here *die Kleine*, no covert movement takes place. At the completion of the embedded phase, the bracketed AcI-vP, Condition A checks whether any reflexive contained in the domain that is being evaluated has a potential antecedent. In this case, the reflexive has the AcI-subject as its antecedent. If, on the other hand, the reflexive is interpreted as bound by the matrix subject, here *die Mutter*, covert reflexive raising becomes necessary. I assume that an uninterpretable (possibly reflexive) feature on the D-head of the reflexive pronoun gets probed by a matching feature and an EPP

⁸ Again, as explained in footnote 7, by “its phase”, I mean the one phase that, at a given stage of the derivation, properly contains the anaphoric element, not the phase at whose edge the anaphoric element is.

⁹ See Hicks 2005 (presented at the binding workshop in Stuttgart) for a different view.

feature on the head of the embedded phase-edge. This is an agentive v -head in the case of an AcI-construction like (18), and a D-head in a construction involving binding into a complex DP. As explained in the previous subsection, the fact that this movement is covert simply means that it is the lower instead of the higher copy of the moved element that is pronounced when it comes to spell-out. At the completion of the matrix phase, Condition A, again, checks whether any reflexive contained in the domain that is being evaluated has a potential antecedent. Now that *sich* has moved to the embedded phase-edge, the edge of the AcI in (18) and the edge of DP in a complex DP-construction, it is properly contained in the next higher phase, the matrix vP . This time, it is the matrix subject, here *die Mutter*, which is available as an antecedent for the reflexive, and Condition A is once again satisfied. As for Condition B, which also evaluates the syntactic object being derived at the completion of each phase, it checks whether any pronominal contained in the domain being evaluated, here *ihr*, is free. Since there is no feature-checking relation that allows a pronominal embedded in a vP or DP to move to the phase-edge, our pronominal is properly contained in the embedded phase and, unlike its reflexive counterpart, will not be evaluated as part of the same domain as the matrix subject (i.e. the higher phase). Thus, as long as the pronominal is not coreferent with the embedded subject, *die Kleine*, it is free even if bound by the matrix subject, *die Mutter*, because Condition B is satisfied at the completion of both the lower and the higher phase. When the proper content (material that is not at the phase-edge) of the lower phase gets evaluated, the matrix subject is not in the picture yet, and when the higher phase gets evaluated, the proper contents of the lower phase are not accessible anymore.

3.4 *PP as binding domain*

Just focusing on vP and DP, phasehood is not the only way to conceptually unify the relevant binding domains for reflexive and pronominal. Both agentive vPs and complex DPs host a ‘subject’ in their specifier, so the reason that a syntactically bound pronominal is free if properly contained in these domains could be that it is separated from its antecedent by a specified subject. One could simply invoke the SPECIFIED SUBJECT CONDITION (SSC) (Chomsky 1973) then. The data in (19), however, showing instances of non-complementarity in sentences with PP-embedded anaphoric elements, suggest that phasehood covers more ground than the SSC.

- (19) a. Welches kleine Boot ließ er_i einfach [_{PP} neben sich_i/ihm_i] untergehen?
 which little boat let he simply next-to self/him under-go
 ‘Which little boat did he simply let sink next to him?’
- b. Er_i sah [_{PP} direkt vor sich_i/ihm_i] eine Schlange auf dem Boden.
 he saw directly in-front-of self/him a snake on the floor
 ‘He saw directly in front of him/himself a snake on the floor.’
- c. Er_i setzte den großen Teddybären [_{PP} neben sich_i/ihn_i].
 he sat the big teddy-bear next-to self/him
 ‘He sat the big teddy bear next to himself/him.’

Just as the data in (12) and (13), which show non-complementarity in *v*Ps and DPs, these PP-data illustrate the possibility for both the reflexive and the pronominal to be bound by the matrix subject. Only in this case, there is no intervening embedded subject. All that separates the pronominals in (19a-c) from their antecedent is a PP-boundary, but, as shown in (20), not just any PP-boundary allows for a pronominal to be free.

- (20) Die Frau_i interessiert sich nur [_{PP} für sich_i/sie_{*i} (selbst)].
 the woman interests self only for self/her (self – emphatic)
 ‘The woman is only interested in herself.’

What the PPs in (19) have in common and what differentiates them from the PP in (20) is that they are headed by Ps which assign their own θ -role to their respective complements. Unlike in (20), where the reflexive verb *sich interessieren für* ‘be interested in’ selects both the preposition and the argument type of the prepositional object, the θ -requirements of the verbs in (19) do not reach into the prepositional domain. The PPs in (a) and (b) are adjuncts, and, although the locative PP in (c) is an argument of the verb *setzen* ‘sit, place’, the preposition here still assigns its own θ -role. The verb selects a locative P, but the exact thematic relation this P establishes between the direct object and the prepositional object is not predetermined.¹⁰ In Hestvik’s (1991) terms, PPs that are characterized by independent and phrase-internally complete θ -role assignment are a COMPLETE FUNCTIONAL COMPLEX (CFC) and thus a binding domain despite being subjectless. If θ -independent PPs are phases, just like CPs, agentive *v*Ps, and complex DPs, we can account for the cases of non-complementarity in (19) without appealing to the binding-specific construct ‘CFC’. This finds support from the idea of phases being domains that

¹⁰ Since the judgments on the acceptability of the pronominal in (19c) vary, there may be speakers for whom argument PPs cannot be θ -independent.

are self-sufficient and in a way “saturated” and also from Baltin’s (1982) argument that extraction from PP proceeds by way of its specifier. Assuming that “saturation” and extraction via the specifier of a phrase are viable diagnostics for phasehood, PPs are indeed a reasonable addition to the class of potentially phase-defining constituents.

The phase-based binding system just laid out then accounts for all the cases of “long-distance”-bound reflexives and free pronominals discussed here. What has not been accounted for is that a reflexive bound by the matrix subject is somehow less readily acceptable when not embedded in a PP. The reflexives in (12c-d), for example, are only marginally acceptable, while those in (12a) and (19a) are judged as perfectly grammatical. These data are repeated here in (21) and (22).

- (21) a. Die Mutter_i lässt [_{vP} die Kleine_j sich_j/ihr_{i/*j} die Schokolade in den Mund stecken].
the mother lets the little one self/her the chocolate in the mouth stick
‘The mother lets the little girl stick the chocolate in her mouth.’
- b. Die Spieler_i hören [_{vP} die Fans_j sich_j/sie_{i/*j} anfeuern].
the players hear the fans self/them on-cheer
‘The players hear the fans cheer them/themselves on.’
- (22) a. Martin_i hört [_{vP} seinen Freund_j über sich_i/ihn_{i/*j} reden].
Martin hears his friend about self/him talk
‘Martin hears his friend talk about him/himself.’
- b. Welches kleine Boot ließ er_i einfach [_{PP} neben sich_i/ihm_i] untergehen?
which little boat let he simply next-to self/him under-go
‘Which little boat did he simply let sink next to him?’

A possible explanation, in line with Grewendorf 1983, is that θ -independent PPs are generated as adjoined to the embedded phase-edge, outside of the lexical VP. This would ensure that reflexives inside PPs like those in (22a-b) are accessible to the higher phase without covert raising to the embedded vP -phase-edge. The marginality of “long-distance” reflexives that are not PP-embedded (see (21a-b)) could be a result of speakers’ having to make the extra step of covert reflexive raising a part of the derivation.¹¹ PPs, at least, whether or not they clearly are θ -

¹¹ Note, however, that covert reflexive raising to the edge of PP, as opposed to vP , must be less of a derivational complication. Otherwise, reflexives like those in (22) would be trapped in their PP-phases and therefore unacceptable. I thank a reviewer for bringing this to my attention.

independent (the *über*-PP in (22a) may not be) are easily construed as adjoined to the edge of the verbal domain and thus automatically part of the higher phase.

4. The phase as the key to locality effects

The possessor dative data discussed in section 2.1 and the binding facts just covered have led me to posit the phase as the single, unifying determinant of locality governing both movement and anaphoric relations. In this final section, I discuss a characterization of ‘phase’ that makes this claim possible.

Both the German possessor dative construction and binding into AcIs and other sub-clausal domains point to v , D, P, and C as potentially phase-defining categories. Exactly what types of v , D, and P-heads qualify as (strong) phases is the focus of much recent work (see e.g. Legate 2003, Abels 2003, and Svenonius 2004).

As shown in sections 2 and 3, agentive v Ps are opaque, while defective “verbalizer” v Ps (which may be argued to close off any “bare” VP) are transparent for possessor raising and binding. How do malefactive/benefactive (affectee) v Ps behave when it comes to transparency for grammatical interactions? Since case-checking, even if it is not coupled with movement, cannot cross phase-boundaries, examples like (23), an unaccusative AcI-construction, suggest that affectee v Ps are not opacity-inducing and thus not phase-defining.

- (23) Der kleine Junge [_{vP(agent)} lässt [_{vP(affect)} seinem Freund [_{vP(def)} den Stein auf den Kopf fallen]]].
 the little boy lets his friend (DAT) the rock (ACC) on the head fall
 ‘The little boy lets the rock fall on his friend’s head.’

The AcI-subject *den Stein* checks accusative case with the matrix v . At the same time, the possessor *seinem Freund* raises to the specifier of the dative-case-licensing affectee v P. If affectee v Ps were phases, the static Agree relation between the AcI-subject *den Stein* and the matrix v would not be possible to establish. Despite hosting an external argument, affectee v Ps then pattern with defective “verbalizer” v Ps, not with agentive v Ps.

As for DPs and PPs, the pronominal binding diagnostic presented in section 3 indicates that they can be phases. DPs must be complex, i.e. have (at least a covert) possessor in their specifier, and

PPs, which are inherently subjectless, must be θ -independent and thus, in a sense, semantically “complete” in order to be opaque for pronominal binding. As for CPs, they are inherently subjectless, and, as confirmed by the reflexive binding facts in section 3.1, always opacity-inducing. Based on these observations, we arrive at the following characterization of ‘phase’.

- (24) A phrase of type α , with α being v , D, P, or C, which is saturated and topmost is a phase.
- (25) A phrase of type α is saturated if it has the maximum number of arguments that lexical items of type α can in principle take.
- (26) A phrase of type α is topmost if it is not itself the complement of a phrase of type α .

Given the definition of “saturated” in (25), (24) ensures that v and D-heads, which can in principle take two arguments, are not phase-defining when they do not have a filled specifier. The combination of (24) and (25) also ensures that C and P-heads, which take maximally one semantically selected argument, *are* phase-defining, even if lacking a filled specifier. Given the definition of “topmost” in (26), (24) ensures furthermore that affectee v Ps are not defined as phases. Having a filled specifier is phase-defining only in connection with being the topmost potential phase-head in one’s shell. Since affectee v Ps are always dominated by either an agentive or a “verbalizer” v P, they can never be topmost.

In conclusion, the proposed characterization of ‘phase’ unifies binding and possessor raising as governed by the same locality constraint and makes sense of these phenomena as diagnostics for clausal and phrasal complexity. Since this phase-based understanding of locality builds on recent proposals as to which categories are potentially phase-defining and is grounded in fundamental notions like argument and hierarchical structure, it seems worth exploring to what extent it accounts for opacity phenomena cross-linguistically.

References

- Abels, Klaus. 2003. Successive cyclicity, anti-locality, and adposition stranding. Ph.D. dissertation, University of Connecticut, Storrs.
- Baltin, Mark. 1982. A landing site theory of movement rules. *LI* 13 (1). 1-38.
- Baltin, Mark. 2003. The interaction of ellipsis and binding: Implications for the sequencing of Principle A.

- Bech, Gunnar. 1955/57. *Studien über das deutsche Verbum infinitivum*. Kopenhagen. 2nd edition 1983. Tübingen: Niemeyer.
- Bobaljik, Jonathan. 2002. A-chains at the PF-interface: Copies and ‘covert’ movement. *NLLT* 20. 197-267.
- Bošković, Željko. 2001. *On the nature of the syntax-phonology interface: Cliticization and related phenomena*. Amsterdam: Elsevier.
- Chomsky, Noam. 1973. Conditions on transformations. In S. Anderson & P. Kiparsky (eds.) *A festschrift for Moris Halle*. New York: Holt, Rinehard and Winston.
- Chomsky, Noam. 1986. Knowledge of language: Its nature, origin, and use. New York: Praeger.
- Chomsky, Noam. 2000. Minimalist inquiries: The framework. In R. Martin, D. Michaels, & J. Uriagereka (eds.) *Step by step: Essays on minimalist syntax in honor of Howard Lasnik*. Cambridge, MA: MIT Press, 89-156.
- Chomsky, Noam. 2001. Derivation by phase. In M. Kenstowicz (ed.) *Ken Hale, A life in language*. Cambridge, MA: MIT Press, 1-51.
- Chomsky, Noam. 2005. On phases. Ms. Massachusetts Institute of Technology.
- Fox, Danny. 2000. *Economy and semantic interpretation*. Cambridge, MA: MIT Press.
- Grewendorf, Günther. 1983. Reflexivierung in deutschen A.c.I.-Konstruktionen – Kein transformationsgrammatisches Dilemma mehr. *GAGL* 23, 120-196.
- Haider, Hubert. 1993. *Deutsche Syntax – Generativ*. Tübingen: Narr.
- Hestvik, Arild. 1991. Subjectless binding domains. *NLLT* 9, 455-496.
- Höhle, Tilman. 1978. Lexikalistische Syntax. *Die Aktiv-Passiv-Relation und andere Infinitivphrasen im Deutschen*. Tübingen: Niemeyer.
- Hole, Daniel. 2005. Reconciling “possessor” datives and “beneficiary” datives – Toward a unified voice account of dative binding in German. In C. Maienbourg & A. Wöllstein-Leisten (eds.) *Event arguments: Foundations and applications*. Tübingen: Narr, 213-242.
- Kayne, Richard. 1975. *French syntax: The transformational cycle*. Cambridge, MA: MIT Press.
- Kiss, Tibor. 2001. Anaphora and Exemptness. A comparative treatment of anaphoric binding in German and English. In D. Flickinger & A. Kathol (eds.) *The Proceedings of the 7th International Conference on Head-Driven Phrase Structure Grammar*. CSLI Publications 2001, 182-197.
- Landau, Idan. 1999. Possessor raising and the structure of VP. *Lingua* 107, 1-37.
- Lee-Schoenfeld, Vera. 2007. Beyond Coherence: The syntax of opacity in German [Linguistik Aktuell 114]. Amsterdam: Benjamins.
- Legate, Julie. 2003. Some interface properties of the phase. *LI* 34, 506-516.
- McCloskey, James. 2000. Quantifier float and Wh-movement in an Irish English. *LI* 31, 57-84.
- Nissenbaum, Jon. 2000. Investigations of covert phrase movement. PhD dissertation. MIT, Cambridge, MA.
- Reintges, Chris, Philip LeSourd & Sandra Chung. 2005. Movement, Wh-agreement, and apparent Wh-in-situ. In L. Cheng & N. Cover (eds.) *Wh-Movement on the Move*. Cambridge, MA: MIT Press.
- Ross, John. 1967. Constraints on variables in syntax. Ph.D. dissertation. MIT, Cambridge, MA.
- Safir, Ken. 2004. *The Syntax of anaphora*. Oxford University Press.

- Svenonius, Peter. 2004. On the edge. In D. Adger, C. de Cat, & G. Tsoulas (eds.) *Peripheries*. Dordrecht: Kluwer, 259-287.
- Wurmbrand, Susi. 2001. *Infinitives: Restructuring and clause structure*. Berlin & New York: Mouton de Gruyter.