

**Binding by objects in Polish double object constructions –
acceptability and correlation with object order**

Aleksandra Gogłóza
Humboldt-Universität zu Berlin

Paulina Łęska
Adam Mickiewicz University in Poznań

Roland Meyer
Humboldt-Universität zu Berlin

Jacek Witkoś
Adam Mickiewicz University in Poznań

This paper presents selected results of two experiments testing acceptability of reflexive binding (Exp1) and possessive reflexive binding (Exp2) between two objects, IO_{DAT} and DO_{ACC}, in Polish double object constructions (DOCs), as in e.g. (1a) and (1b), a context also referred to throughout the paper as *object coreference structure*.

- (1) a. Babcia pokazała Janowi₁ siebie₁/jego₁ (samego) na
 grandmother showed J._{DAT} self/his_{ACC} alone on
 zdjęciu z dzieciństwa.¹
 pictures from childhood

· The work on this paper has been supported by the Polish National Science Centre (NCN) grant no. 2014/15/G/HS2/04715 and Deutsche Forschungsgemeinschaft (DFG) grant ME 4125/2-1.

¹ The following abbreviations are used throughout the paper: ACC – accusative, DAT – dative, F – feminine, FOC – focus, GEN – genitive, INSTR – instrumental, LOC – locative, M – masculine, N – neuter, NOM – nominative, 3SG – 3rd person singular.

b. Babcia pokazała Janowi₁ swoje₁/jego₁ zdjęcie.
 grandmother showed J._{DAT} self/his_{ACC} pictures

The two experiments are set up to review selected literature claims on: (a) binding by objects in Polish, (b) complementarity of pronouns and anaphors, and (c) canonical object order in Polish. Based on the results, we provide an analysis of the data in terms of an Index Theory of Binding, IT (Nikolaeva 2014, Hestvik 1992, a.o.), where the pronominal or reflexive (the index) moves covertly to either v or T and is bound only in these positions by NPs that c-command it from their case positions. The outline of IT is presented in section 4.

The paper is organized as follows. Section 1 briefly describes the literature claims tested in our study. Section 2 discusses the design, materials, the hypotheses, as well as the aims of our experiments. Section 3 presents the results of the experiments; Section 4 proposes a theoretical analysis of the data. Section 5 concludes the discussion.

1 Claims in the literature

In the literature on Polish pronominal and anaphor binding, it is claimed that only pronouns can be locally co-indexed with objects in double object constructions, whereas reflexives, either pronominal (2a) or possessive (2b), can only be bound by subjects.²

- (2) a. Piotr₁ pokazał chłopca₂ sobie_{1/*2}/jemu_{*1/2} (samemu) w lustrze.
 P._{NOM} showed boy_{ACC} self_{DAT} /him_{DAT} (alone_{DAT}) in mirror
 (Witkoś 2007: 458)
- b. Marta₁ opowiedziała Markowi₂ o swojej_{1/*2}/jego_{*1/2} młodości.
 M._{NOM} told M._{DAT} about self's_{LOC}/his youth
 (Bondaruk and Szymanek 2007)

² One exception to this conclusion is the reciprocal use of reflexives, (i), which can be locally bound by objects (Willim 1989; Witkoś 2007; Bondaruk and Szymanek 2007). For reasons of space, we cannot discuss reciprocals in this paper.

(i) Piotr₁ pokazał dziewczyny₂ sobie_{1/*2} (nawzajem) w lustrze.
 P._{NOM} showed girls_{ACC} self_{DAT} (reciprocally) in mirror

A similar observation is made in Reinders-Machowska (1991: 138,146) who concludes that these contrasts point to the complementarity of pronominals and reflexives in the local binding domain. We aim to test these claims.

Moreover, our investigation, based on Featherston's (2002) similar study on German, aims to test predictions with regard to binding by objects based on a hierarchy of grammatical functions. It has been argued for German that the opacity hierarchy of grammatical functions, namely: Subject < Direct Object < Indirect Object < Instrumental < Adverbial < Genitive, predicts grammaticality of various binding configurations (Grewendorf 1988, Hole 2014, a.o.). The binder is required to be higher on the hierarchy than the bindee, thus the hierarchy predicts e.g. that an indirect object can be bound by a direct one, but not otherwise. However, Featherston's (2002) experimental study on German shows that the opposite seems true. We test a parallel case for Polish.

The problem of the correlation of binding in object coreference structures and the hierarchy of grammatical functions is closely related to the problem of canonical object order. Recent studies suggest that even the notoriously scrambling Slavic languages show a basic word order (e.g. Bailyn 1995, 2014; Franks 1995 for Russian, Dornisch 1998; Witkoś 2007, 2008; Citko 2011 for Polish). However, in the case of Polish double object constructions, there is no agreement as to which of the object orders is in fact canonical. E.g. Dornisch (1998) argues for a $DO_{ACC} > IO_{DAT}$ order, while Witkoś (2007, 2008) and Citko (2011) argue for $IO_{DAT} > DO_{ACC}$. We aim to test which of the orders is basic and believe that if it ever becomes possible to facilitate one object in the ditransitive construction to bind the other, this relationship should be easier to obtain in the basic order, as any additional rearrangements should increase the computational burden.

2 Experiments

2.1 Aims and predictions

Exp1 concerned non-possessive reflexives, and Exp2 possessive reflexives. Both experiments tested for the two binary independent variables: (a) case (accusative vs. dative) and (b) bindee.type (anaphor vs. pronoun). Furthermore, Exp1 contained the variable (c) bindee.emph[asis] ($\pm samemu_{DAT}/samego_{ACC}$ 'self'), and Exp2 tested for the influence of deeper embedding of the bindee into its DP,

poss.embedd ($\pm$ embedding of the possessive). In this paper, we are focusing only on the first two variables, namely case and bindee.type. This choice of variables was dictated by an intention to test claims in the literature on object coreference structures, discussed in more detail in Section 1. Controlling for bindee.type, we scrutinise the complementarity of the distribution of pronouns and anaphors in their local binding domain (Reinders-Machowska 1991); moreover, we test whether only pronouns can be locally bound by objects (Willim 1989, Reinders-Machowska 1991, Witkoś 2003, 2007, Bondaruk and Szymanek 2007). Should both claims be true, we expect clearly higher ratings for pronouns than for anaphors (= H[ypothesis]1). Controlling for the cases of binder and bindee, we check which of the object orders in Polish might count as canonical, $DO_{ACC} > IO_{DAT}$ or $IO_{DAT} > DO_{ACC}$. Following Dornisch (1998), we initially assume $DO_{ACC} > IO_{DAT}$ as basic object order in Polish. Therefore, we expect higher acceptability rates for binders in accusative case. Additionally, the influence of case on binding might correlate with the hierarchy of grammatical functions (Grewendorf 1988, Hole 2014, a.o. for German); this would also point to higher acceptability for accusatives binding datives than for datives binding accusatives (= H2).

(3) **H1:** Only pronouns, not anaphors, may be bound by other objects.

H2: Accusatives may bind datives, but not the other way round.

2.2. Design

The participants were asked to rate the acceptability of 48 sentences per experiment, using a 7-point Likert scale, ranging from 1, fully unacceptable, to 7, fully acceptable. 24 sentences in each experiment constituted the experimental items, 24 the unrelated fillers, 12 grammatical and 12 ungrammatical, presented in random order. Each item was introduced by an adjunct clause constituting the context for the item. After a comma the experimental item occurred, followed by an intended interpretation, suggesting that it is an object that acts as a binder, rather than the subject. The experimental sentences were based on the three verbs *pokazać* 'to show', *polecić* 'to recommend' and *narysować* 'to draw'. The materials were organized in a Latin Square design in 8 treatment groups, with lexical realizations of the 8 tested experimental conditions varying in a balanced way across participants. I.e., a participant from treatment group1 would see the three realizations r1, p1, q1 in condition 1; a

participant from treatment group2 would see r1, p1, q1 in condition 2; and so on. This is a common design in psycholinguistics, intended to reduce repetition of lexical material within a questionnaire. Treatment group was included in the analysis of variance as a between-subjects factor. Both Exp1 and Exp2 were organized in a factorial design with three binary independent variables. 81 native Polish students of higher education took part in Exp1, of which only the first 64 entered the evaluation for reasons of balance of the design (52 women and 12 men, mean age: 23.2 years). 124 took part in Exp2; again, the first 64 entered the evaluation (53 women, 11 men, mean age 22.9 years). Fig. 1, 2 below provide an overview of the distribution of the acceptability ratings.

3 Results

3.1 Experiment 1: Reflexive binding

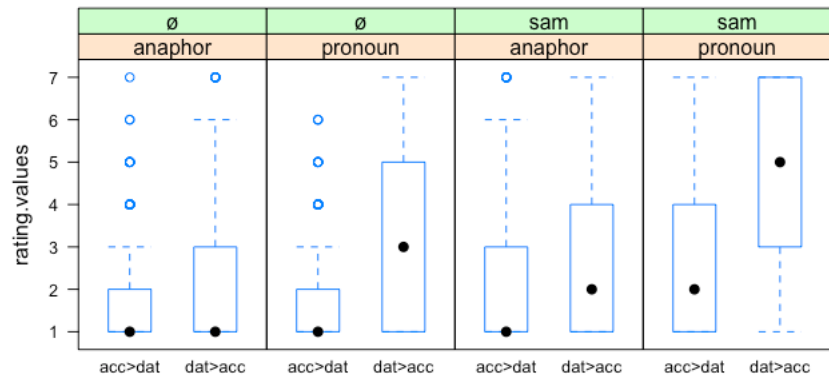


Fig. 1: Binding of reflexives vs. coreference with pronouns

Fig.1 shows a box-and-whiskers plot of the data according to case (dative binding accusative, dat>acc vs. accusative binding dative, acc>dat), bindee.type and bindee.emphasis. The data were evaluated in a 3-way repeated measures ANOVA with treatment (=questionnaire variant) as a between-subjects factor. The preconditions for a parametric test were met; sphericity holds trivially for binary factors, and normality of residuals and of participant-specific differences passed the Shapiro-Wilk test. We found significant effects for case ($F(1,56)=86.65$, $p<0.001$), bindee.type ($F(1,56)=30.07$, $p<0.001$) and bindee.emph ($F(1,56)=45.79$, $p<0.001$): A dative binding an accusative was generally rated better than

an accusative binding a dative; a pronominal bindee was rated better than an anaphor; and a bindee emphasized by *sam* was rated better than a bare bindee. At the same time, variation was considerable, and overall ratings rather low, with only the best constellation, a dative binding a pronominal accusative, attaining medium acceptability. Furthermore, we found significant interactions between case and bindee.type ($F(1,56)=33.28$, $p<0.001$), case and bindee.emph ($F(1,56)=9.11$, $p<0.01$), and bindee.type and bindee.emph ($F(1,56)=19.04$, $p<0.001$). This means that the dative binder preference is weaker with anaphoric accusative objects than with pronominal accusative objects, and weaker with bare bindees than with those emphasized by *sam*; and the positive effect of emphasizing was weaker with anaphoric objects than with pronominal ones. The treatment variable showed no significant effects or interactions, so the various lexical realizations had no unwanted side effects. Given the extremely low judgments for bound anaphors, we conclude that H1 may be accepted: Only pronouns, not anaphors may be co-referential with other objects. H2, however, must be rejected: The preference is clearly for the binder (or the controller of coreference) to be dative, not accusative.

3.2 Experiment 2: Possessive reflexive binding

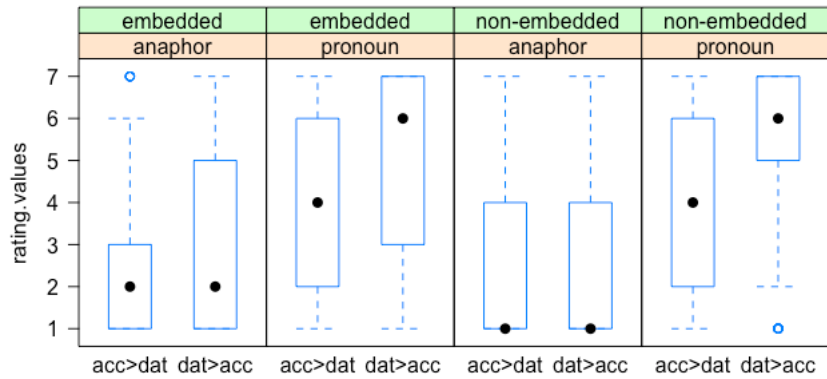


Fig. 2: Binding of possessive reflexives vs. co-reference with possessive pronouns

Fig.2 shows a box-and-whiskers plot of the data according to case, bindee.type and bindee.embedding. The data were evaluated in a 3-way repeated measures ANOVA with treatment (=questionnaire variant) as a

between-subjects factor. Concerning the preconditions for a parametric test, sphericity holds and normality of residuals passed the Shapiro-Wilk test; however, the means of participants' judgments were not distributed normally, but skewed towards the left, i.e. the lower half of the scale. The ANOVA showed significant effects of case ($F(1,56)=68.35$, $p<0.001$) and bindee.type ($F(1,56)=103.74$, $p<0.001$), but no effect of bindee.embedding. As in Exp1, there was a significant interaction between case and bindee.type ($F(1,56)=24.69$, $p<0.001$), indicating that a dative binder (or, controller of co-reference) was rated better than an accusative one only for coreferential possessive pronouns, not for bound possessive reflexives. It is important to note that the judgments for pronouns in Exp2 came out higher on the scale than those in Exp1, i.e., ranging between medium and almost full acceptability. However, variation was again considerable. There was a mildly significant interaction between bindee.type and bindee.embedding ($F(1,56)=4.30$, $p=0.043$), indicating a selective improvement for reflexive possessives; but judgments for the latter were so low in general that this is inconclusive. The treatment variable showed no main effect, but a significant interaction (only) with case ($F(7,56)=4.42$, $p<0.001$); thus, some experimental items were more prone to the case effect than others. As in Exp1, we may conclude that H1 should be accepted: Only possessive pronouns, not possessive reflexives may be co-referential with their co-objects. H2 must (again) be rejected: dative binders (controllers of coreference) are preferred over accusative ones. We could not detect an improvement of binding by deeper embedding of the bindee.

4 Theoretical analysis

4.1 Background – Index Theory (Hestvik 1992, Nikolaeva 2014)

Our analysis constitutes a part of a larger enterprise focusing on explaining why certain dative (and accusative) arguments can function as antecedents for reflexives in a grammar that otherwise shows strict nominative subject orientation in anaphoric binding. Thus, we have turned to a theoretical account (Nikolaeva 2014) which is as empirically adequate as possible and can explain why both a reflexive possessive and pronominal possessive are acceptable with identical co-indexation when a dative experiencer is the antecedent:

- (4) a. Marii₁ żal było swojej₁/jej₁ koleżanki.
 Maria_{DAT} sorrow_{3.SG.M} was_{3.SG.N} self's/her friend_{3.SG.F.GEN}
 'Maria felt sorry for her female friend.'
 b. [_{TP} index-T [_{VP} Maria_{DAT} [_{v'} index-v was [sorrow [index
 friend]_{GEN}]]]]

The system presented below is a development of Hestvik (1992), who postulates index (head) movement to T, but Nikolaeva (2014) also allows for adjunction to v. This is crucial to explain the facts in (4), as index raising to v places it in the c-domain of the dative experiencer in [spec,vP] and leads to its spell out as a reflexive possessive, while index raising to T places it outside the c-domain of the dative experiencer and leads to its spell out as a pronominal possessive, see (6iv-v). Significantly, nominative binders never allow for co-indexed pronominal possessives in their c-domain:

- (5) Maria₁ żałuje swojej₁/*jej₁ koleżanki.
 Maria_{NOM} feels.pity self's/*her friend
 'Maria feels pity for her friend.'

We take the difference between (4) and (5) to mean that the LF head movement of the index to T is not sufficient to capture the characteristics of dative and nominative binders.³ It also shows that dative experiencers are not placed in [spec,TP]. Furthermore, we believe that ex. (4) and the examples considered in this contribution show that dative experiencers of psychological predicates and dative goals occupy different A-positions, with the former high enough in the structure to c-command v and the index adjoined to it. Goal datives (as well as theme/patient accusative arguments) are placed in lower A-positions inside VP and thus cannot c-

³ A reviewer for this volume also points to Reuland (2011) as a feasible theoretical framework but we do not follow this approach, as it clearly makes use of ϕ -feature sharing involved in structural case valuation (T, nominative and v, accusative), while we are also interested in datives as antecedents, where such feature sharing does not hold. Additionally, we are preoccupied with possessive pronouns/reflexives and Reuland's system does not elaborate on their participation in Agree with T. Despić (2013, 2015), who develops Reuland's approach and applies it to Serbo-Croatian possessives, neither advances index-free theory of binding in this respect nor dwells on double object constructions.

command the index adjoined either to *v* or *T*.

One of the assumptions of the Index Theory as proposed in Nikolaeva (2014) for Russian is the existence of *Pronominal Raising*, a notion also applicable to analogous constructions in Polish. Pronominal Raising is a covert movement of pronominals and reflexives, which leads to subject-oriented binding and explains Anti-Cataphora Effects (ACE).⁴ Raising is typically implemented by phrasal movement to the first available specifier, tucking-in under the [spec,VP]. Pronominal Raising is the first step of a more general movement called *Index Raising*. Anaphors and pronouns are merged into the structure as indices. An index has no phonological form and driven by a need to determine its phonological shape, it undergoes movement in search for its binder.

(6) **Five principles of Index Theory** (Nikolaeva 2014):

- i. **Movement:** an index must undergo Index Raising unless it is at a Reflexivization site (or movement is no longer possible)
- ii. **Reflexivization site:** an index is sister to a node with label *D/v/T* and is c-commanded by a specifier
- iii. **Coargumental Reflexivization:** if an index is at a reflexivization site and is coindexed with a specifier which is its coargument, the index has to be realized as reflexive

⁴ This is to account for the ungrammaticality of (i):

- (i) *Maria pokazała [jej₁ pracę] [siostrze Ewy₁].
 Maria_{NOM} showed [her work_{ACC}] [sister_{DAT} Ewa's]

The ungrammaticality of (i) is taken to be due to Principle C violation, which indicates that the coindexed pronoun in (i) raises to a position from which it c-commands into the clause. In contrast to, e.g. English, *Cataphora* (or *Backward Anaphora*) in Russian or Polish is severely unacceptable unless the pronoun is embedded deep in the NP, see Witkoś (2008). Narrow focus on the pronoun can also improve the ratings of cataphora, see Wiland (2009: 98), (we are grateful to a reviewer for pointing this fact to us):

- (ii) To [jego_i nowego wykładowcę] Piotr pokazał studentowi_i.
 this [his new lecturer]_{ACC.FOC} P_{NOM} showed student_{DAT}
 'It was his new lecturer that Piotr showed to the student.'

In English cataphora is possible with non-focused R-expressions, as in (iii) (Chomsky 1976, Williams 1997):

- (iii) His_i mother LOVES John_i.
 (iv) *His_i mother loves JOHN_i.

iv. Reflexivization at spell-out: when the sentence is sent to spell-out, if an index is coindexed with the specifier of the projection to which it is adjoined, the index has to be realised as reflexive.

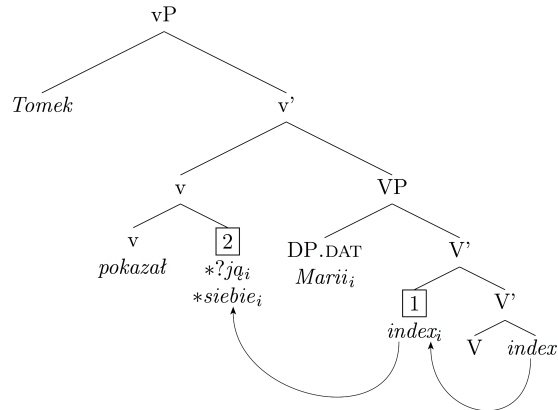
v. Pronominal is an elsewhere condition: if an index has not been realised as reflexive, it is realised as pronominal.

The outcome of the assumptions above is that anaphoric binding involves covert (LF) configurations in which reflexives and reflexive possessives are at their Reflexivization sites: either v or T, while the antecedents c-command them from their case positions in [spec,TP] or [spec,vP]. Overt configurations may be misleading, so binding-wise, ‘what you see is not what you get’, specifically in double object constructions.

4.2 Application

4.2.1 Reflexive binding. The results of Exp1 are illustrated in (7) - (8). The derivation of the non-scrambled structure in (7) is presented in (7’).

- (7) a. *[?]Tomek pokazał Marii_{1-DAT} ja₁ (sama)_{-ACC} (w lustrze).⁵
 b. *Tomek pokazał Marii_{1-DAT} siebie_{1-ACC} (w lustrze).
 (8) a. *Tomek pokazał Marię_{1-ACC} jej_{1-DAT} (w lustrze).
 b. *Tomek pokazał Marię_{1-ACC} sobie_{1-DAT} (w lustrze).
 ‘Tomek showed Maria her/herself (alone) (in mirror).’
 (7’)



⁵ The edge of the clause being prosodically prominent, the PP in brackets is added to protect the phonologically weak pronoun from focus interpretation. The tree diagram abstracts away from the PP.

In (7'), the index, a complement of V, moves via phrasal movement in search of its binder, tucking under the closest specifier, i.e. under [Spec,VP]. The index and the argument in [spec,VP], the DP *Marii*, are co-arguments; they are also co-indexed. However, the index cannot be bound in this position, because position 1 is not a reflexivisation site.⁶ V is not a proper reflexivisation label; only D/v/T are. Therefore, in search for a reflexivisation site, the index raises, via v-head adjunction, to position 2. In this position it turns out that the argument in [Spec,vP] is not co-indexed with the index. Therefore, the index can only be realised, very marginally, as a pronoun, by the elsewhere principle.⁷

Our results, illustrated in the examples in (7) and (8) clearly show an antiobject orientation of coargument pronouns in Polish. This means that object pronouns disprefer object binders that are their coarguments. The degraded status of the object pronoun arises due to conflicting demands on the index itself. For Nikolaeva (2014), the index must raise in order to be spelled out on the one hand (the domain of V is not a reflexivization site by definition), but on the other hand it needs to be accessible for

⁶As duly observed by an anonymous reviewer for this volume, movement to Nikolaeva's position 1 is a weak aspect of her theory, as this position must have an A-position status without further motivation. This can be avoided if the possessive is an adjunct and c-commands outside its host NP, as in Despić (2011, 2013) and Bošković (2012). We do not discuss this option in detail here for lack of space.

⁷A reviewer for this volume raises the issue of the rationale for index raising in a number of steps, of which the initial ones are phrasal. Nikolaeva (2014) claims that her theory falls back on the classic idea of clitic raising (Kayne 1991) and head movement (Matushansky 2006). The index tucks in under the c-commanding argument to observe some version of Locality/Relativized Minimality (RM). A further leg of movement is covert (LF) head movement, so RM is observed.

More complex cases involve reconstruction at LF when focalization or wh-movement affect the index (reflexive):

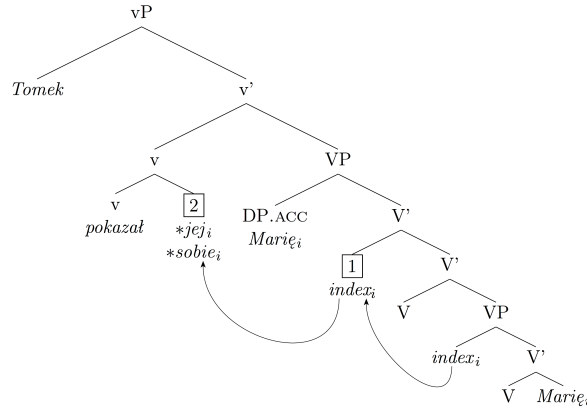
- (i) [ile donosów na siebie_i] Jan_i przeczytał wczoraj?
 how.many reports on self Jan_{NOM} read yesterday
 'How many reports on himself did Jan read yesterday?'
 (ii) [how many x, x: reports on self_i] [_{TP} Jan_i index_i-T [_{VP} Jan_i index_i-v [_{VP} read x, x: reports on self_i]]]

In ex. (ii) the bottom copy of the restrictor to the wh-operator serves as the launching position for IR to v and/or T. As the nominative subject is the only available antecedent the index is duly spelled out as a reflexive pronoun. Thus, a combination of the approach based on IT and a general minimalist theory of reconstruction (Chomsky 1995, Lebeaux 2009) yields correct results.

interpretation in position 1 as a coargument of the c-commanding binder in [spec,VP].⁸ For Hestvik (1992), this issue is much more straightforward, as he assumes that Binding Principle B must hold of both the overt (S-structure) and covert (LF) representations. Thus all the positions of the index, including Position 1 are visible to Binding Principle B. Note also that although ungrammatical, pronouns are still more acceptable, as compared to anaphors. This is because, position 1 is not a reflexivisation site and there is no coindexed antecedent c-commanding position 2. Therefore, anaphors are ungrammatical here, whereas, by elsewhere principle in (6v), the index can marginally be realized as a pronoun.⁹

The diagram in (8') illustrates the derivation of (8), involving scrambling of one of the objects.

(8')



⁸ This need for the visibility of the bottom position in the chain results from the tension between the need to raise on the part of the index, see (6i-ii) and it being a coargument of an element (another object) which is not placed in [spec,vP]. We assume that the coargument clause in (6iii) provides for the preservation of overt c-command relations at the VP-level.

⁹ The index realised as a sole pronoun is acceptable only marginally but the addition of *sam* to it considerably improves it and serves as a repair strategy for reflexivisation in Polish coargument contexts. In his comprehensive discussion of anaphoric binding and coreference relations, Reuland (2011) takes the combination of the pronoun and an emphatic element to be one of leading crosslinguistic strategies in forming lexical reflexives.

In the base generated configuration, the index is an IO_{DAT} c-commanding its binder. The DO_{ACC} object is scrambled via A-movement (Witkoś 2007) to the $[spec,VP]$ position (contra Witkoś 2007, suggesting movement to $[spec,vP]$).¹⁰ The index in this structure raises and tucks-in under the scrambled binder, DP_{ACC} . Because A-scrambling does not allow for reconstruction, the index does not produce ACE/Principle C violation. Because Position 1 is not a reflexivisation site, the index raises to position 2 in search for a local binder. By elsewhere principle, the index could potentially be spelled out as a pronoun in Position 2. However, the index and its scrambled binder, the DP *Marię*, are co-arguments. This means that on movement to Position 2, the coargument binder of the index, *Marię*, remains in $[spec,VP]$, too low to be able to bind its coargument index. Hence, the ungrammaticality of (8b).

The derivation (8') is essentially the same as in (7a). The crucial difference lies in the fact that pronouns in (8a) are rated lower. This, as we assume, is because scrambling produces a non-canonical word order, which is dispreferred, causes extra processing difficulty and thus blurs the contrast between anaphors and pronouns.¹¹ Provided that $IO_{DAT} > DO_{ACC}$ object order is basic, lower ratings for items as in (8a) can be due to scrambling rather than illicit pronoun binding.

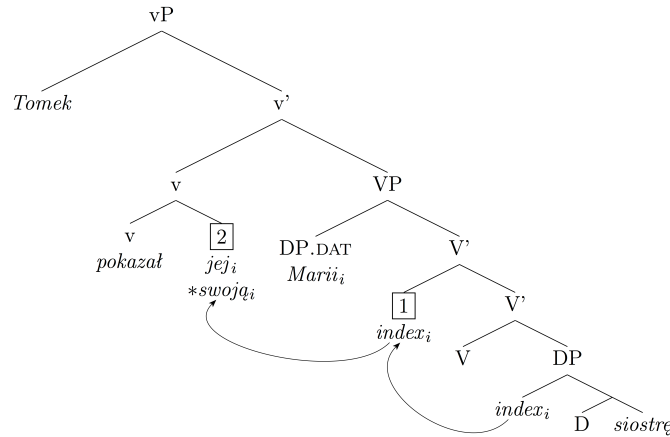
4.2.2 Reflexive possessive binding. In (9) and (10) we illustrate our findings for reflexive possessive binding in object coreference structures. (9') shows the derivation of a non-scrambled context.

¹⁰ We follow Chomsky (2001, 2008) and Citko (2014) and assume that the phase head (optionally) transfers (or copies) its features and the $[+EPP]$ property to its complement head. As v is a phase head this set of options is available to it as well; so, v hands down the $[+EPP]$ and ϕ -features to V , so that V now functions as the accusative case licensing head in mono- and di-transitive verbs in Polish in most contexts. Consequently, $[spec,VP]$ functions like $[spec,vP]$ in these cases and the raising of the accusative object to this position is justified as overt A-movement to the case position.

¹¹ This assumption is based on the results of previous experimental works on the processing of scrambled contexts in Russian (Sekerina 1997, 2003). These studies showed that non-canonical word order incurs additional processing cost which is evident in longer reading times for scrambled as compared to non-derived sentences elicited in online self-paced reading experiments, as well as lower ratings for scrambled sentences gathered in an off-line questionnaire.

- (9) a. Tomek pokazał Marii_{1-DAT} jej₁ koleżankę.
 b. *Tomek pokazał Marii_{1-DAT} swoją₁ koleżankę.
 (10) a. ?Tomek pokazał Marię_{1-ACC} jej₁ koleżance.
 b. *Tomek pokazał Marię_{1-ACC} swojej₁ koleżance.
 ‘Tomek showed Maria her/self’s friend.’

(9’)



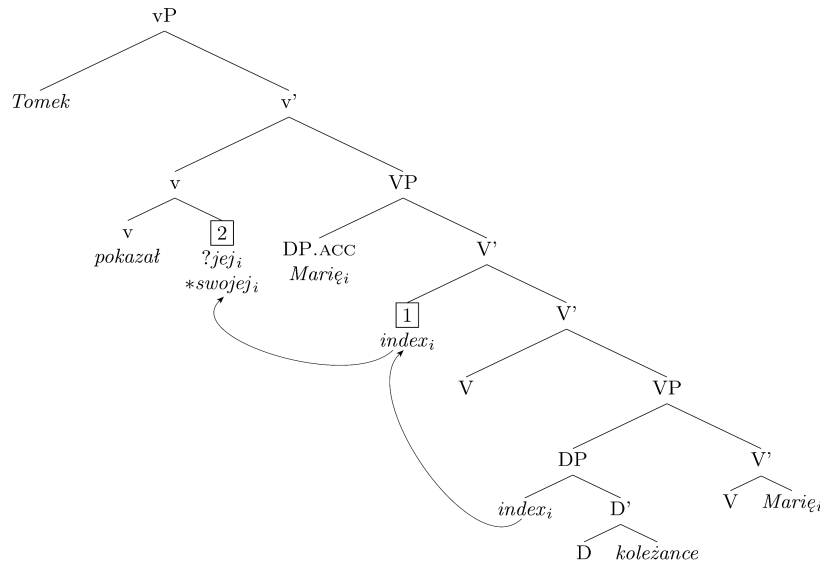
In (9’), the index tucks-in under the first available specifier, i.e. [spec,VP], the DP *Marii*. The index and the argument in [spec,VP] are coindexed; however, because they are not coarguments, the index does not have to be bound in position 1 and it is allowed to move higher in search for a reflexivization site. In doing so, the index adjoins to *v*, i.e. it moves to Position 2, from which it is no longer c-commanded by its binder. Because of this lack of c-command, no Principle B violation arises; also, the index does not c-command into the clause, hence it causes no Principle C violation/no ACE.¹² Crucially, there is a profound

¹² Nikolaeva (2014: 93-94) assumes that the index does not c-command from its head-adjoined position at *v* or T. She follows the definition of c-command in Hestvik (1992: 574): ‘x c-commands y iff every node dominating x includes x and y, and x does not dominate y (where x includes y iff y is dominated by every segment of x, as proposed in May (1985)).’ Such a definition leaves the c-command domain of the adjunct undefined, as the node dominating the adjunct at the adjunction site does not include it. This may not be the best step for both *X⁰* and *XP* adjunction, so alternatively, we can invoke the Word Interpretation notion from Chomsky (1995: 322): ‘at LF, *X⁰* is submitted to independent word interpretation processes WI,

difference between this case and (7a) with the bare pronoun above: Nikolaeva stresses the fact that the possessive and the DP objects are not coarguments, so position 1 is less relevant for the interpretation here, whereas Hestvik openly claims that although c-commanded by the object at S-structure, the possessive pronoun is free because it is placed in a different binding domain ($[_{DP} jej koleżankę]$), cf. fn. 6.

(10') illustrates possessive reflexive binding in object coreference structures with a scrambled object.

(10')



The first step in (10') is movement to position 1, namely the index tucks-in under the scrambled ACC object. The index and the ACC argument are coindexed; however, because they are not coarguments, the index does not have to be bound in position 1, and it is allowed to move higher in search for a reflexivization site. The index does so via head-movement to *v*. The structure is, thus, fairly comparable to the non-scrambled

where WI ignores principles of the computational system within X^0 .⁷ As c-command between links of the movement chain is a principle of computation, we assume that a head adjoined to another head does not c-command either its own copy/trace or any other syntactic object at LF.

structure, the difference in pronominal binding judgments, higher to the DAT>ACC object order, seems to be due to a preference for the basic word order.

5 Conclusions

The paper showed that possessive pronouns can be coindexed with and anteceded by the other object. Double object constructions with non-possessive coargument pronouns exhibit anti-object orientation. Moreover, the results of our experimental studies indicate that the DAT>ACC object order might be canonical, as it was rated significantly higher in both experiments.

References

- Bailyn, J. F. 1995. *A Configurational Approach to Russian 'Free' Word Order*. Ph.D. Dissertation, Cornell University.
- Bailyn, J. F. 2014. *The syntax of Russian*. Cambridge: Cambridge University Press.
- Bondaruk, A., Szymanek, B. 2007. Polish nominativeless constructions with dative Experiencers: form, meaning and structure. *Studies in Polish Linguistics* 4, 61-99.
- Chomsky, N. 1976. Conditions on rules of grammar. *Linguistic Analysis* 2, 303-351.
- Chomsky, N. 1995. *The Minimalist program*. Cambridge, MA: MIT Press.
- Chomsky, N. 2001. Derivation by phase. In Michael Kenstowicz (ed.), *Ken Hale: A life in language*, 1-52. Cambridge, MA: The MIT Press.
- Chomsky, N. 2008. On phases. In R. Freidin, Carlos P. Otero, and M. L. Zubizarreta (eds.), *Foundational issues in linguistic theory*, 133-66. Cambridge, MA: MIT Press.
- Citko, B. 2011. *Symmetry in Syntax*. Cambridge: Cambridge University Press.
- Citko, B. 2014. *Phase Theory: An Introduction*. Cambridge: Cambridge University Press.
- Despić, M. 2011. Syntax in the absence of Determiner Phrase. Ms. University of Connecticut.
- Despić, M. 2013. Binding and the structure of NP in Serbo-Croatian. *Linguistic Inquiry* 44(2), 239-270.

- Despić, M. 2015. Phases, reflexives and definiteness. *Syntax* 18(3), 201-234.
- Dornisch, E. 1998. *Multiple wh-questions in Polish. The interactions between wh-phrases and clitics*. PhD thesis, Cornell University.
- Emonds, J. 1980. Word order in Generative Grammar. *Journal of Linguistic Research* 1, 33-54.
- Featherston S. 2002. Coreferential objects in German: Experimental evidence on reflexivity. *Linguistische Berichte* 192, 457-484.
- Franks, S. 1995. *Parameters of Slavic morphosyntax*. Oxford University Press, USA.
- Grewendorf, G. 1988. *Aspekte der deutschen Syntax: Eine Rektions-Bindungs-Analyse*. Studien zur deutschen Grammatik 33. Tübingen: Narr.
- Hestvik, A. 1992. LF movement of pronouns and antisubject orientation. *Linguistic Inquiry* 23(4), 557-594.
- Hole, D. 2014. *Dative, Bindung und Diathese*. [Studia grammatica 78]. Berlin/Boston: de Gruyter Mouton.
- Kayne, Richard. 1991. Romance clitics, verb movement and PRO. *Linguistic Inquiry* 22, 647-686.
- Lebeaux, D. 2009. *Where does binding theory apply?* Cambridge, MA: MIT Press.
- Matushansky, O. 2006. Head movement in linguistic theory. *Linguistic Inquiry* 37, 69-109.
- May, R. 1985. *Logical Form*. Cambridge, MA: MIT Press.
- Nikolaeva, L. 2014. *The secret life of pronouns*. Ph.D. dissertation. MIT.
- Reinhart, T. and E. Reuland. 1993. Reflexivity. *Linguistic Inquiry* 24, 657-720.
- Reinders-Machowska, E. 1991. Binding in Polish. In: *Long-distance Anaphora*, J. Koster and E. J. Reuland (eds), 137-150. Cambridge: Cambridge University Press.
- Reuland, E. 2011. *Anaphora and language design*. Cambridge, MA: MIT.
- Sekerina, I. 1997. *The Syntax and Processing of Scrambling Constructions in Russian*. Ph.D. dissertation. State University of New York at Stony Brook.
- Sekerina, I. 2003. Scrambling and processing: Dependencies, complexity and constraints. In: *Scrambling and word order*, S. Karimi (ed.), Malden, MA: Blackwell.

- Williams, E. 1997. Blocking and anaphora. *Linguistic Inquiry* 28, 577-628.
- Willim, E. 1989. *On Word Order: A Government and Binding Study of English and Polish*. Kraków: Zeszyty Naukowe Uniwersytetu Jagiellońskiego.
- Witkoś, J. 2003. *Movement and Reconstruction: Questions and Principle C Effects in English and Polish*. Frankfurt am Main: Peter Lang.
- Witkoś, J. 2007. Polish A-type Scrambling. In: P. Kosta and L. Schürcks (eds.). *Linguistic investigations into formal description of Slavic languages*. Frankfurt am Main: Peter Lang.
- Witkoś, J. 2008. On the correlation between A-type scrambling and Weak Crossover Effects. *Studia Anglica Posnaniensia* 44, 297-328.

aleksandra.gogloza@hu-berlin.de
 pleska@wa.amu.edu.pl
 roland.meyer@hu-berlin.de
 wjacek@wa.amu.edu.pl