

# Le charme discret of remnant movement: crossing and nesting in Polish OVS sentences\*

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## Abstract

Remnant movement, once believed not to be a part of grammar at all, has since become a tool of analyzing phenomena like verb fronting, word order alternations, or covert movement. What has been largely missing from the discussion of remnant movement are the effects a remnant constituent has on the nodes in the clause it has crossed. This paper argues that remnant movement has particular consequences for clausal syntax since it gives rise to crossing and nesting movement dependencies. This point is illustrated on the example of certain robust asymmetries in the Polish OVS syntax. The analysis of Polish OVS sentences has a broader benefit, namely that the proper identification of crossing and nesting paths provides convergent evidence for the existence of remnant movement in the first place.

**Key words:** remnant movement, smuggling, binding, weak cross-over, Polish syntax

## 1 Introduction

Since its appreciation in the late 90's, remnant movement has been implored to account for certain word order permutations (e.g. Kayne (1998)) and advanced as a replacement for head movement (e.g. Hinterhölzl (1999), among many others). Remnant movement, traditionally defined as a remerger of a constituent with an ungoverned trace, can in principle target constituents of different sizes, including constituents with only a single overt element (which is the case with reanalyses of head movement as remnant movement), but also constituents of a considerable size whose only a single element is a trace and several other elements are overt.

This paper focuses on and makes a case for the existence of the latter scenario, in particular remnant movement of entire clausal subtrees in Polish. The analysis provides a uniform solution to three robust SVO–OVS asymmetries in weak cross-over and binding in a structural way.

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## 2 Asymmetries in the Polish SVO/OVS syntax

### 2.1 The canonical position of objects

Polish is a consistent head-initial SVO language, as in (1), which allows for non-canonical OVS word orders, as in (2).<sup>1</sup>

- (1) Canonical SVO:
- a. Jan kocha Marię.  
Jan-NOM loves Mary-ACC  
'Jan loves Mary.'
  - b. Jan nie kocha Marii.  
Jan-NOM not loves Mary-GEN  
'Jan does not love Mary.'
- (2) Non-canonical OVS:
- a. Marię kocha Jan.  
Mary-ACC loves Jan-NOM  
'Jan loves Mary.'
  - b. Marii nie kocha Jan.  
Mary-GEN not loves Jan-NOM  
'Jan does not love Mary.'

Although the canonical SVO word order in Polish can be altered by object scrambling, there exists convincing evidence that the basic/unmarked order of an affirmative monotransitive sentence in Polish is indeed SVO and the basic/unmarked word order of a double object construction is S-V-IO-DO. The relevant facts come from often discussed asymmetries in binding (see, for instance, Willim (1989) and Witkoś (2003), (2007)) and the syntax of idioms discussed in detail in Witkoś and Dziemianko (2006).

Further evidence for S-V-(IO)-DO as basic (as opposed to, e.g., S-V-DO-IO or S-DO-V-IO, which are derived by scrambling) comes from pragmatically unmarked answers and scope reconstruction facts.<sup>2</sup>

The basic word order of a double object construction in Polish is S-V- $O_{ind}$ - $O_{dir}$ . This is indicated by the fact that only this order, as for instance in (3) or (4), can serve as a pragmatically unmarked answer to a question 'What happened?':

- (3) Jan dał Marii swoją najnowszą książkę. SVO $_{ind}$ O $_{dir}$   
Jan-NOM gave Mary-DAT his newest book-ACC  
'Jan gave Mary his newest book.'

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<sup>1</sup>The genitive case of the object in (1-b) and (2-b) is an instance of the Genitive-of-Negation, a phenomenon whereby a nominal object with a structural case in an affirmative clause surfaces with a genitive case in the scope of sentential negation. Gen-of-Neg will not be discussed in the remainder of the paper; (1-b) and (2-b) are provided in order to indicate the position of sentential negation in SVO sentences.

<sup>2</sup>Suffice it to say, for the purposes of this paper, I only briefly report on an often made assumption that the S-V-IO-DO word order is basic in Polish and other word orders result from short or long-distance scrambling. For a more elaborate argumentation, see Witkoś (2003), (2007), Witkoś and Dziemianko (2006), and Wiland (2009), where it is argued that word orders other than S-V-IO-DO in Polish are all derived by discourse-sensitive movements.

- (4) Jan        posłał Marii        list        miłosny.                                  SVO<sub>ind</sub>O<sub>dir</sub>  
Jan-NOM sent    Mary-DAT letter-ACC love  
'Jan sent Mary a love letter.'

In turn, that the S-V-DO-IO word order is derived from the canonical S-V-IO-DO order by a local scrambling of the DO across the IO is indicated by scope reconstruction. Consider the sentences in (5). When both internal arguments are quantificational and the IO precedes the DO, only the surface scope reading is available, as in (5-a). When the DO is placed in front of the IO as in (5-b), both narrow and wide scope readings are available, which indicates that the IO c-commands the trace of the DO, given the standard assumption about the c-command requirement on scope in syntax.

- (5) a. Piotr dał [jakiemuś chłopcu] [każdą naszą monetę]                                   $\exists > \forall$   
Piotr gave some        boy-DAT each        our        coin-ACC  
b. Piotr dał [każdą naszą monetę] [jakiemuś chłopcu]                                   $\forall > \exists$ ,  $\exists > \forall$   
Piotr gave each        our        coin-ACC some        boy-DAT  
'Piotr gave some boy each coin of ours.'

In the remainder of the paper I will continue to assume that the SVO order is basic, the position now widely accepted in the literature on the Polish word order.

There are three robust asymmetries between canonical SVO and non-canonical OVS sentences in Polish: the sensitivity of *wh*-movement and object-fronting with respect to weak cross-over and binding contrasts with experiencer verbs.

## 2.2 WCO asymmetry in *wh*-movement

Weak cross-over effects arise when a quantificational operator (*WH*, Focus, or a quantifier like *everyone*) c-commands a pronoun it binds, as in (6).

- (6) \*Who<sub>i</sub> does [ his<sub>i</sub> mother ] like t<sub>i</sub> ?

In other words, the WCO effect configuration is as follows, where the pronoun<sub>i</sub> and the trace t<sub>i</sub> do not c-command each other:<sup>3</sup>

- (7) \*Op<sub>i</sub> ... pronoun<sub>i</sub> ... t<sub>i</sub>

In contrast, as illustrated by a well-formed (8), in an environment such as (9) where the trace of the quantifier is in an A-position, the WCO effect does not arise.

- (8) Who<sub>i</sub> t<sub>i</sub> loves [ his<sub>i</sub> mother ]?

- (9) Op<sub>i</sub> ... t<sub>i</sub> ... pronoun<sub>i</sub>

But in OVS constructions, which on the surface may look like an instance of (7), the *wh*-movement of the object does not give rise to weak cross-over, as in the (a) examples below. In contrast, *wh*-movement is sensitive to WCO in OSV constructions, as in the (b) examples:

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<sup>3</sup>If the pronoun<sub>i</sub> and the trace t<sub>i</sub> c-command each other, the strong cross-over effect arises, as in ill-formed:

- (i) \*Who<sub>i</sub> did she<sub>i</sub> think [ t<sub>i</sub> looked beautiful ]?

- (10) a. [ Którego sąsiada ]<sub>i</sub> otruła jego<sub>i</sub> żona? O<sub>wh</sub>VS  
 which neighbor-ACC poisoned his wife-NOM
- b. ??[ Którego sąsiada ]<sub>i</sub> jego<sub>i</sub> żona otruła? O<sub>wh</sub>SV  
 which neighbor-ACC his wife-NOM poisoned  
 ‘Which neighbor<sub>i</sub> did his<sub>i</sub> wife poison?’ (intended)
- (11) a. [ Którą dziewczynkę ]<sub>i</sub> odebrała ze szkoły jej<sub>i</sub> matka? O<sub>wh</sub>VS  
 which girl-ACC took from school her mother
- b. ??[ Którą dziewczynkę ]<sub>i</sub> jej<sub>i</sub> matka odebrała ze szkoły? O<sub>wh</sub>SV  
 which girl-ACC her mother took from school  
 ‘Which girl<sub>i</sub> did her<sub>i</sub> mother pick up from school?’ (intended)
- (12) a. Kogo<sub>i</sub> uratował [ jego<sub>i</sub> ojciec ]? O<sub>wh</sub>VS  
 who-ACC rescued his father-NOM
- b. \*Kogo<sub>i</sub> [ jego<sub>i</sub> ojciec ] uratował? O<sub>wh</sub>SV  
 who-ACC his father-NOM rescued  
 ‘Who did his father rescue?’

The contrast is not limited to the fronting of accusative whPs, as dative indirect wh-objects produce a similar result:

- (13) a. Komu<sub>i</sub> podarował [ jego<sub>i</sub> ojciec ] zegarek? O<sub>ind.wh</sub>VSO<sub>dir</sub>  
 who-DAT gave his father-NOM watch-ACC
- b. \*Komu<sub>i</sub> [ jego<sub>i</sub> ojciec ] podarował zegarek? O<sub>ind.wh</sub>SVO<sub>dir</sub>  
 who-DAT his father-NOM gave watch-ACC  
 ‘Who did his father give a watch to?’

### 2.3 WCO asymmetry in object fronting

Just like wh-movement, Focus-fronting also gives rise to the WCO effect. This can be seen in an often discussed contrast between (non-quantificational) Topic-fronting in (14-a) and (quantificational) Focus-fronting in (14-b) in Italian given in Rizzi (1997):

- (14) a. Gianni<sub>i</sub>, [ sua<sub>i</sub> madre ] lo<sub>i</sub> ha sempre apprezzato.  
 Gianni his mother him has always appreciated  
 ‘Gianni, his mother always appreciated him.’
- b. ??GIANNI<sub>i</sub> [ sua<sub>i</sub> madre ] ha sempre apprezzato (non Piero).  
 Gianni his mother has always appreciated (not Piero)  
 Intended: ‘\*GIANNI, his mother has always appreciated, not Piero.’

Similarly to wh-movement, object-fronting in OVS constructions does not produce the WCO effect either, as in (15-a) or (16-a). The canonical SVO orders like in (15-b) or (16-b) are ill-formed due to a general prohibition on backward pronominalization in Polish.<sup>4</sup>

<sup>4</sup>In Polish, the dispreference toward cataphoric relations in A-contexts is robust and is not limited to subjects. We observe it also in clause internal scrambling where the accusative direct object is fronted to a position before the dative indirect object, like in (ii):

- (i) Jan zwrócił [ adwokatom żony<sub>i</sub> ] [ jej<sub>i</sub>/j pieniądze ].  
 Jan-NOM returned attorneys wife-DAT her money-ACC

- (15) a. Piotra<sub>i</sub> kocha [ jego<sub>i</sub> mama ]. OVS  
 Piotr-ACC loves his mom-NOM
- b. \*[ Jego<sub>i</sub> mama ] kocha Piotra<sub>i</sub>. SVO  
 his mom-NOM loves Piotr-ACC  
 ‘His mom loves Piotr.’ (example from Witkoś (2008: 317))
- (16) a. Marii<sub>i</sub> nie lubi [ jej<sub>i/j</sub> siostra ]. OVS  
 Mary-DAT not likes her sister-NOM
- b. \*[ Jej<sub>i</sub> siostra ] nie lubi Marii<sub>i</sub>. SVO  
 her sister-NOM not likes Mary-DAT  
 ‘Her sister doesn’t like Mary.’

In contrast, object fronting to the left periphery of the clause is sensitive to WCO elsewhere, as for instance in (17) or (18), where the fronting of the direct object over the indirect object with a coindexed pronoun produces a certain degree of ill-formedness.

- (17) [ Syna Kowalskich ]<sub>i</sub> porywacz odesłał [ jego<sub>??i/j</sub> mamie ].  
 son-ACC Kowalski’s kidnapper--NOM sent-back his mom-DAT  
 ‘The Kowalski’s son, the kidnapper sent back to his mom.’
- (18) Piotra<sub>i</sub>, wczoraj sekretarka przedstawiła [ jego<sub>??i/j</sub> nowemu szefowi ].  
 Piotr-ACC yesterday secretary-NOM introduced his new boss-DAT  
 ‘The secretary introduced Piotr to his new boss.’

It is important to note that only certain instances of object-fronting to the left periphery produce an observable yet rather moderate degree of the WCO effect. Sentences like in (17)-(18) contrast with sentences in which the fronted object is followed by a particle *to* ‘it’, which do not exhibit the WCO effect at all.

- (19) [ Syna Kowalskich ]<sub>i</sub> **to** policja odesłała [ jego<sub>i/j</sub> mamie ].  
 son-ACC Kowalski’s it-PRT police-NOM sent-back his mom-DAT  
 ‘The Kowalski’s son, the police sent back to his mom.’
- (20) Piotra<sub>i</sub> **to** wczoraj sekretarka przedstawiła [ jego<sub>i/j</sub>  
 Piotr-ACC it-PRT yesterday secretary-NOM introduced his  
 nowemu szefowi ].  
 new boss-DAT  
 ‘The secretary introduced Piotr to his new boss.’

This contrast follows from the fact that constituents placed in front of *to* are fronted Topics, which contrary to Focus-fronted constituents, do not give rise to WCO in a way similar to what we see in the Italian contrast in (14-a)-(14-b). We will resume this issue in section 4.

In summary, it turns out that while wh- and object-fronting in OSV orders give rise to

- 
- (ii) Jan zwrócił [ jej<sub>\*i/j</sub> pieniądze ] [ adwokatom żony<sub>i</sub> ].  
 Jan-NOM returned her money-ACC attorneys wife-DAT  
 ‘Jan returned his wife’s attorneys their money.’ (examples from Wiland (2009: 12))

The ill-formedness of (15-b)-(16-b) might also be due to Condition C violation if the referential features of pronouns contained in an NP can percolate to the NP, as argued for in Despić (2013), or due to a combination of both constraints holding at the same time in such a configuration.

the WCO effect in the relevant contexts, both wh- and object-fronting obviate the WCO effect in OVS orders.

## 2.4 Agent vs. theme binding asymmetry with experiencer verbs

As reported in Tajsner (2008: 349), in constructions with experiencer verbs (which include psych verbs like *irytować* ‘irritate’, *straszyć* ‘frighten’, *zasmucić* ‘sadden’, etc.), the experiencer object in OVS sentences fails to bind the anaphor inside the agent subject, while it properly binds the anaphor inside the theme subject, as in the (a) and (b) examples, respectively:

- (21) a. \*Marię<sub>i</sub> irytowali [ sąsiedzi ze swojej<sub>i</sub> kamienicy ]  
 Mary-EXP.ACC irritated neighbors-NOM from self house - AGENT  
 ‘Mary was irritated by her neighbors from her apartment-house.’  
 b. Marię<sub>i</sub> irytowały [ historie ze swojego<sub>i</sub> dzieciństwa ]  
 Mary-EXP.ACC irritated stories-NOM from self childhood - THEME  
 ‘Mary was irritated by the stories from her childhood.’
- (22) a. \*Jana<sub>i</sub> przestraszyli [ doradcy ze swojego<sub>i</sub> banku ]  
 Jan-EXP.ACC frightened counsellors-NOM from self bank - AGENT  
 ‘Jan was frightened by financial counsellors from his bank.’  
 b. Jana<sub>i</sub> przestraszył [ stan swojego<sub>i</sub> konta ]  
 Jan-EXP.ACC frightened balance-NOM self account - THEME  
 ‘Jan was frightened by the balance of his bank account.’
- (23) a. \*Właściciela<sub>i</sub> zasmucił [ księgowy swojej<sub>i</sub> firmy ]  
 owner-EXP.ACC saddened accountant-NOM self firm -AGENT  
 ‘The owner was saddened by the accountant of his company.’  
 b. Właściciela<sub>i</sub> zasmuciły [ wyniki sprzedaży swojej<sub>i</sub> firmy ]  
 owner-EXP.ACC saddened sales revenue-NOM self firm - THEME  
 ‘The owner was saddened by the sales revenue of his company.’

As pointed out in Tajsner’s work, the extension of the binding domain past the NP boundary is lost in the case of experiencer verbs if the NP includes a possessive lexical subject:

- (24) Marię<sub>i</sub> irytowały [ ich<sub>j</sub> historie o sobie<sub>\*i/j</sub> ]  
 Maria-EXP.ACC irritated their stories about self-NOM  
 ‘Mary was irritated by their stories about themselves.’

This holds true also of experiencer verbs which take dative subjects:

- (25) a. Marii<sub>i</sub> spodobała się [ ta historia o sobie<sub>i</sub> ]  
 Maria-DAT liked REFL that history-NOM about self  
 ‘Maria liked that history about herself.’  
 b. Marii<sub>i</sub> spodobała się [ ich<sub>j</sub> historia o sobie<sub>\*i/j</sub> ]  
 Maria-DAT liked REFL their history-NOM about self  
 ‘Maria liked their history about themselves.’

Nevertheless, this contrast in binding from experiencer subjects into agents vs. themes illustrated in (21)-(23) is not reduced to general a prohibition against the extension of the binding domain since it does not hold in the case of binding from non-experiencers. This

is illustrated in (26) where the binding from a sentential agent subject into the theme NP object which has a lexical possessive is licit.

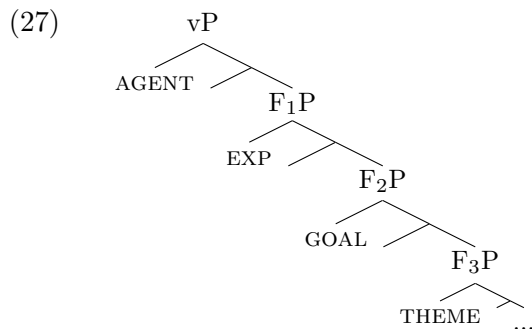
- (26)  $\text{Maria}_i$        $\text{przeczytała}$  [  $\text{ich}_j$   $\text{historie}$        $\text{o sobie}_{i/j}$  ].  
 Maria-NOM read                      their stories-ACC about self  
 ‘Maria read their stories about herself/themselves.’

### 3 The form of the solution

#### 3.1 Assumptions

In what follows, I advance a uniform account of the three asymmetries which rests on two basic assumptions, namely (i) the reduction of the  $\theta$ -hierarchy to the hierarchy of syntactic positions and (ii) the role of c-command between the nodes.

The first assumption is in line with the well-established cartographic approach to syntactic representations, which advances the reduction of all sort of syntactic hierarchies to the one and only hierarchy of functional projections in syntax (cf. Cinque and Rizzi (2008: 50)).<sup>5</sup> Under this assumption, the  $\theta$ -hierarchy of Agent  $\succ$  Experiencer  $\succ$  Goal  $\succ$  Theme (e.g., Belletti and Rizzi (1988), Jackendoff (1990), Van Valin (1990), Grimshaw (1990), among others) reflects the relative order in which arguments are merged in the articulate vP, as roughly represented in (27).



For present purposes, I will continue to refer to  $F_n$ P inside the vP simply as placeholders indicating layers of embedding without making or adopting auxiliary claims about their feature content. Note that (27) is not merely a consequence of adopting a fine-grained approach to syntactic representations. Analyses couched within a different set of assumptions about the degree of decomposition of the vP have recognized independent reasons for adopting a hierarchically layered VP (e.g., ‘VP shells’ in Larson (2014) or serial verb structure in Aboh (2009)). In order to observe that asymmetries in WCO and binding like in (10)-(23) teach us that remnant movement creates nesting and crossing dependencies at a clause level, all we need to assume is any version of the vP that links the  $\theta$ -hierarchy to syntactic positions.

Under the second assumption, c-command – but not a linear order – is necessary for establishing a dependency relation between constituents in syntax.

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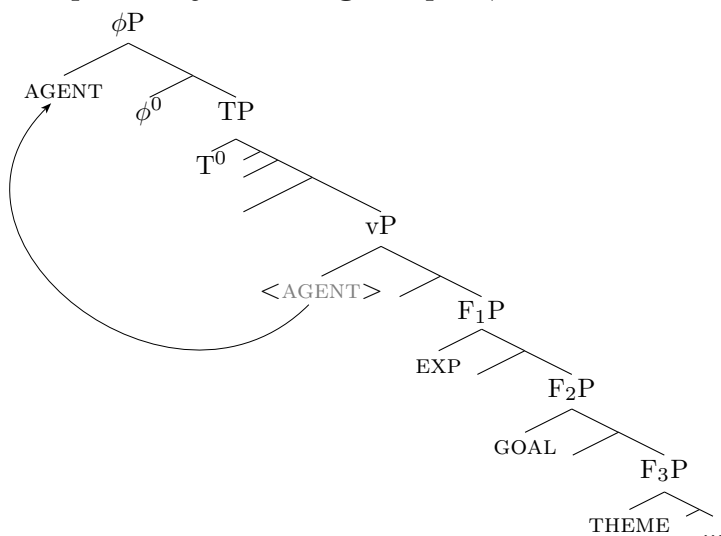
<sup>5</sup>Examples of such analyses include the reduction of the Silverstein’s Hierarchy to a sequence of nominal projections (Jabłońska (2008)), the reduction of the Blake’s ((1994)) Case Hierarchy to the sequence of individual Case layers (Caha (2009)), the reduction of the hierarchy of directional expressions to the sequence of syntactically represented Locations and Paths (e.g., Pantcheva (2010) or Svenonius (2008), (2010)), or the association of prefix stacking patterns in Polish to the hierarchy of aspectual projections (Wiland (2012)), among others.

### 3.2 Analysis

In what follows, I argue that the non-canonical OVS word order does not involve independent movements of the object and the verb across the subject but instead it involves the remnant movement of the entire TP above the surface position of the subject merged in a higher Spec- $\phi$ P.<sup>6</sup> This remnant TP fronting, which includes the silent copy of the subject, feeds object-fronting to the left periphery of the clause, in particular to the specifier of Q(estion)P (in the case of wh-movement as in (10) or (11)) and FocP or TopP (in the case of object-fronting as in (17)).<sup>7</sup>

The three relevant steps of the derivation of OVS are as outlined in (28)–(30).

(28) **Step 1: subject raising to Spec- $\phi$ P**



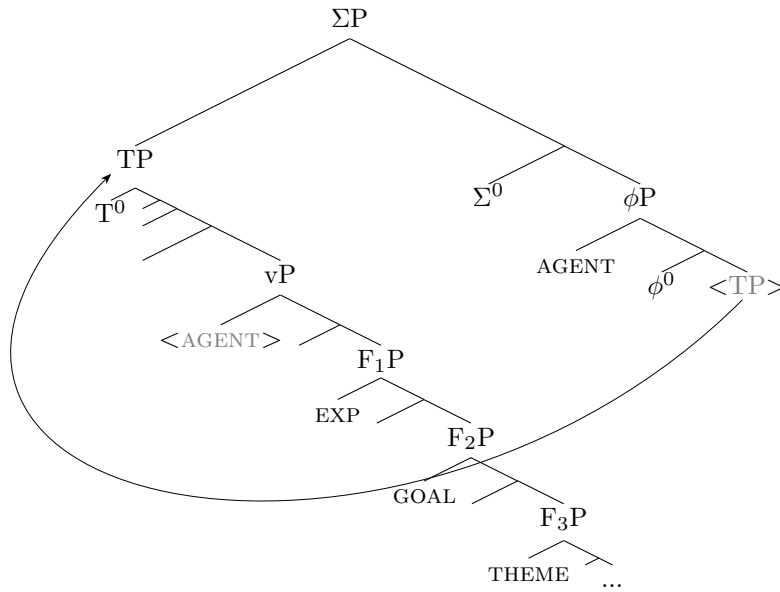

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<sup>6</sup>This contrasts with accounts of OVS in Polish in Witkoś (2008) and Tajsner (2008), which are to a certain approximation based on the analysis of a similar OVS in Russian in Bailyn (2004). All these analyses propose that the non-canonical OVS in Polish and Russian is derived by individual movements of the object and the verb to the TP area of the clause. While these proposals differ from one another with respect to the nature of the object movement and its exact landing site in the TP area, what is argued for in the present work is a wholesale different analysis.

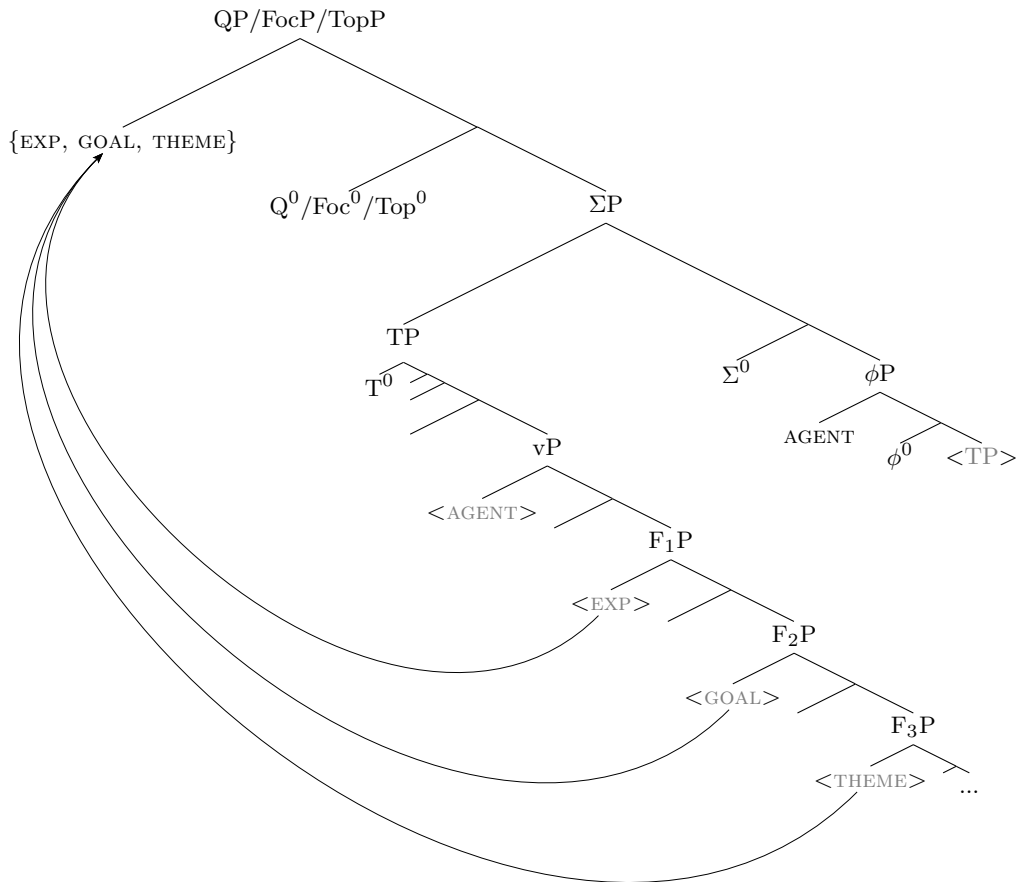
<sup>7</sup>The argumentation is not going to rely on the articulate map of the left periphery and its labels. I have adopted the labels ‘QP’, ‘FocP’, and ‘TopP’ in line with the rich cartographic work on the left periphery and the assumption made earlier about the strict hierarchical structure of the vP, but it is sufficient to acknowledge the fact that both wh- or discourse-related fronting moves the object to some functional specifier in the left periphery of the clause. In fact, the argumentation throughout the whole paper does not rely on any particular labels of projections but simply on constituent structure and levels of embedding.



- (29) **Step 2: remnant TP fronting to a position above the subject (Spec- $\Sigma$ P)**



- (30) **Step 3: wh-movement or discourse-related movement of the object (experiencer, goal, or theme) to a projection in the left periphery of the clause (QP, FocP, or TopP)**



In step 1, the closest NP overtly raises from its  $\theta$ -position in the vP to its surface position (in Spec- $\phi$ P) to satisfy the classic EPP requirement on subjects. This is the

position where the nominative case is licensed.

It is quite clear that subjects in Polish raise higher than TP, given the fact that they precede higher modal particles and other material of the articulate functional area above the vP (see Migdalski (2006) for an extensive discussion). One of the indicators of a high position of subjects is their placement above temporal adverbs like *dzisiaj* ‘today’ or *wczoraj* ‘yesterday’, which are often taken to modify the TP:<sup>8</sup>

- (31) Maria { dzisiaj, wczoraj } zrobiła zakupy.  
 Maria-NOM today yesterday made shopping-ACC  
 ‘Yesterday/today Maria did the shopping.’

Moreover, Polish verbs agree with subjects in person, number and gender, which are lexicalized as a fusional agreement morpheme on the verb or auxiliaries, as in the following format of the Polish verb (cf. Zagorska-Brooks (1975), Gussmann (1980), Czaykowska-Higgins (1988), a.o.):

- (32) **Morphological structure of the Polish verb**  
 (PREFIX) – ROOT – THEME – PARTICIPLE –  $\phi$ -AGR
- a. z – rob – i – L – a (active non-present: L-participle)  
 PREF – do – I – L – FEM.3SG  
 ‘(she has) done (it)’
- b. z – rob – i – (o)n – a (passive: N/T-participle)  
 PREF – do – I – N – FEM.3SG  
 ‘(she has been) done’

The structure of the Polish verb comprises the root, which can be optionally preceded by a prefix, a thematic morpheme (the so-called theme vowel), the participle morpheme (L for active non-present tense, and N/T for passive), and the subject agreement suffix. Given the mirror principle, the projection of  $\phi$  agreement features must be merged above the tense (or passive) participle projection in syntax. For this reason, it has been often accepted that the subjects in Polish, as well as several other Slavic languages which exhibit similar properties, raise to Spec- $\phi$ P above TP (e.g., Witkoś (2008) for Polish, Veselovska (1995) for Czech, and Bailyn (2004) for Russian), assuming for the ease of exposition that at least non-present tense L-participle roughly corresponds to the TP projection in syntax.<sup>9</sup>

In step 2, the entire TP constituent, which includes the trace of the raised agent argument, undergoes remnant movement to a projection above the surface position of the subject. I will continue to simply label this projection as  $\Sigma$ P.<sup>10</sup>

<sup>8</sup>Stjepanović (2003) uses exactly the same argument of *today*-placement to indicate that subjects raise higher than TP in Serbo-Croatian. However, just like Bailyn’s (2004) analysis of the OVS in Russian, Stjepanović’s (2003) analysis of OVS in Serbo-Croatian is not based on remnant movement but on the mechanism of pronunciation of lower copies motivated by PF reasons. It is beyond the scope of this paper to review this approach in detail.

<sup>9</sup>However, for a detailed syntactic structure of Polish and Czech L- and N/T-participles see Taraldsen Medová and Wiland (In press), where it is argued that different types of participles correspond to different kinds and amounts of projections that make up the participle zone of the clause.

<sup>10</sup>It will become evident that the precise identification of the nature of projection which the remnant TP moves to (i.e.  $\Sigma$ P) is in fact orthogonal to the analysis (though, “ $\Sigma$ P” is reminiscent of a projection put forward in Nilsen (2003), which in Wiklund et al. (2007) is taken to attract Topicalized non-subjects). What is important is that the entire remnant TP constituent becomes fronted to *some higher position* above the surface position of the subject. Section 4.2 presents positional evidence that this movement indeed takes place.

Finally, in step 3, any given internal argument of the vP, be it experiencer, goal, or theme, can become subsequently wh-fronted or Focus-fronted to the functional specifier in the left periphery of the clause to give the surface OVS word order. Since the accusative case is licensed vP-internally (or simply put, in a lower A-position than nominative), we correctly expect accusative objects to appear above nominative subjects as a result of A'-fronting to the left periphery of the clause, without any auxiliary assumptions about the hierarchy of case positions other than structural nominative > accusative.<sup>11</sup>

In what follows, I will first make a case for steps 1 and 2. Next, it will be demonstrated that the asymmetries in the sensitivity to WCO and binding reflect the dependency relation created as a result of step 3 in (30).

## 4 The position of the object and the verb in OVS sentences

### 4.1 The position of the object

What is essential in the investigation of the nature of the derivation resulting in the surface OVS word order is the observation that its intermediate step in (29) is independently attested. Namely, step 2 predicts that VOS is well-formed in Polish. As demonstrated in the (b) examples below, this prediction is borne out.

- |      |    |  |     |
|------|----|--|-----|
| (33) | a. | Dzisiaj nasza babcia                      zrobiła zakupy.    | SVO |
|      |    | today our    grandma-NOM did    shopping-ACC                 |     |
|      | b. | Dzisiaj zrobiła zakupy                      nasza babcia     | VOS |
|      |    | today did    shopping-ACC our    grandma-NOM                 |     |
|      | c. | Dzisiaj zakupy                      zrobiła nasza babcia     | OVS |
|      |    | today shopping-ACC did    our    grandma-ACC                 |     |
|      |    | ‘Today, our grandma did the shopping.’                       |     |
|      |    |  |     |
| (34) | a. | Śąsiedzi                      okradli Marię                  | SVO |
|      |    | neighbors-NOM robbed Mary-ACC                                |     |
|      | b. | Okradli Marię <sub>i</sub> jej <sub>i</sub> własni sąsiedzi. | VOS |
|      |    | robbed Mary-ACC her own    neighbors-NOM                     |     |
|      | c. | Marię <sub>i</sub> okradli jej <sub>i</sub> własni sąsiedzi. | OVS |
|      |    | Mary-ACC robbed her own    neighbors-NOM                     |     |
|      |    | ‘Mary’s neighbors robbed her.’                               |     |

Likewise, the VOS/OVS pattern equally holds with PP objects, as shown below.

- |      |    |   |     |
|------|----|---|-----|
| (35) | a. | Dzisiaj nasza babcia                      poszła na zakupy. | SVO |
|      |    | today our    grandma-NOM went    on shopping-ACC            |     |

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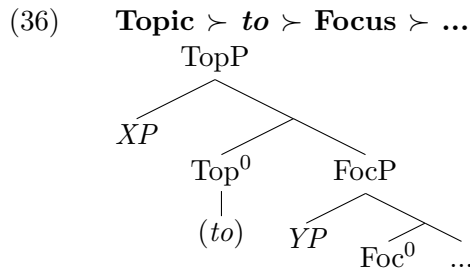
<sup>11</sup>In fact, given the recent work on case in Caha (2009) *et seq.*, there is no cross-linguistic variation with respect to the height of positions in which cases are licensed. According to Caha’s work, heads that select for (or ‘check’) nominative case (above the TP in Caha (2009) and in this work) are always higher than accusative selectors, which are in turn higher than genitive selectors, dative selectors, and other cases, if present in a given language, as in the hierarchy:

(i) NOM > ACC > GEN > DAT > prepositional cases > INST > COMITATIVE

- b. Dzisiaj poszła na zakupy      nasza babcia.      VOS  
 today went on shopping-ACC our grandma-NOM
- c. Dzisiaj na zakupy      poszła nasza babcia.      OVS  
 today on shopping-ACC went our grandma-ACC  
 ‘Today, our grandma did the shopping.’

With respect to the fronted position of the object, there exists positional evidence for its placement in the functional specifier<sup>12</sup> in the left periphery of the clause, which comes from Tajsner’s (2008) work on the position of contrastive Topics and Foci in Polish.

Tajsner advances that the left-peripheral FocP is projected below TopP in Polish and argues that the Topic particle *to* ‘it’ optionally lexicalizes Top<sup>0</sup>, to the effect that fronted contrastive Foci can be optionally preceded by *to*, whereas fronted Topics can be optionally followed by *to*, according to the representation in (36).



The fronted object can indeed either follow or precede the particle *to* in OVS sentences, as shown in (37-a), but not in VOS sentences, as shown in (37-b):

- (37) a. (To) Marię<sub>i</sub>      (to) okradli jej<sub>i</sub> sąsiedzi.      OVS  
 (it) Mary-ACC (it) robbed her neighbors-NOM
- b. (\*To) Okradli (?\*to) Marię<sub>i</sub>      jej<sub>i</sub> sąsiedzi.      VOS  
 (\*it) robbed (?\*to) Mary-ACC her neighbors-NOM  
 ‘Mary’s neighbors robbed her.’

This positional evidence for Topicalized or Focalized status of the fronted object is corroborated by the question–answer tests. It has been often observed (e.g. Buring (1999)) that contrastive Topics are used in constructions which move the conversation away from a presupposition given in the previous discourse. Consider (38).

- (38) A: Czy wiesz kto wczoraj okradł Jana?  
 ‘Do you know who robbed Jan yesterday?’
- B: Wiem tylko, że      Marię      (to) okradli jej własni sąsiedzi.  
 know-1.SG only that Mary-ACC (it) robbed her own neighbors-NOM  
 ‘I only know that it was Maria’s own neighbors who robbed her.’

Speaker B’s statement is not an answer to speaker A’s question as it does not accommodate the presupposition that it was *Jan* who was robbed. Instead, speaker B provides a contrastively conveyed proposition. The constituent that is substituted, *Maria*, the object of robbery, is a contrastive Topic. As predicted by Tajsner’s representation in (36), *Maria* can be optionally followed by the Topic particle *to*.

<sup>12</sup>In the sense of Rizzi (1997), et seq.

Another typical use of contrastive Topics are answers to pair-list questions like in (39) (e.g. Büring (2003), van Hoof (2003), Stoyanova (2008: 52)).

- (39) A: Kogo okradli jacy złodzieje?  
 whom robbed which thieves  
 ‘Who was robbed by which thieves?’  
 B: Marię okradli jej sąsiedzi, Jana okradli  
 Mary-ACC robbed her neighbors-NOM, Jan-ACC robbed  
 nieznani sprawcy, ...  
 unknown perpetrators-NOM  
 ‘Maria was robbed by her own neighbors, Jan was robbed by unknown per-  
 petrators, ...’

In speaker B’s answer, the objects that belong to the asserted set are contrasted with each other.

In turn, the fronted object in OVS sentences can also serve as a left peripheral Focus. Consider (40), where speaker B’s answer to speaker A’s question includes a correction by a contrastive Focus, which is further manifested by the addition of a negative tag (e.g. Kiss (1998), Vallduví and Vilkuna (1998), Drubig (2003)).

- (40) A: Powiedziano mi, że sąsiedzi okradli Jana. Wiesz coś o tym?  
 ‘I was told that the neighbors robbed Jan. Do you know anything about it?’  
 B: (To) Marię okradli sąsiedzi, (nie Jana).  
 (it) Mary-ACC robbed neighbors-NOM (not Jan-ACC)  
 ‘It was Mary who was robbed by the neighbors, not Jan.’

As predicted by the representation in (36), in such a case, the fronted object in an OVS sentence can be preceded by *to*.

All in all, both positional and interpretive facts indicate that the object in OVS sentences creates a position in the left periphery of the clause.

## 4.2 Remnant TP fronting

There are four pieces of evidence that OVS in Polish is not about simple verb movement but instead it involves movement of the entire TP, which includes the trace of the subject. The subject stays in its subject- $\phi$  position above TP after it raises from its vP-internal  $\theta$ -position, as outlined in step 2 in (29). Note that neither the central claim of this paper – that is that remnant movement targets entire subclauses, which in turn gives rise to crossing and nesting movement dependencies and their consequences at the sentence level – nor any piece of the argumentation in the remainder of this paper relies on the supposition that it is precisely the Tense projection that undergoes remnant movement. What is essential, instead, is that there exists a constituent of a considerable size that undergoes remnant movement, rather than an identification of its precise label. In what follows, it will be demonstrated that the constituent with a trace of a vP-internal subject that undergoes fronting is definitely larger than the vP but minimally smaller than the projection which the subject overtly moves to, i.e.  $\phi$ P. For this reason, I have labelled this projection as TP, but it might well become evident upon a detailed investigation that it is in fact some higher AspP or some other projection in the articulate IP-area in Polish that undergoes this fronting.

The evidence in favor of the remnant fronting a tree of a considerable size comes

from the position of the reflexive clitic, double object constructions, and the position of adverbs. At the same time, these facts provide evidence against deriving OVS by a simple verb movement.<sup>13</sup>

Consider first the placement of the clitic *się* in OVS sentences.

- (41) a. Maria przestraszyła się Jana. SVO  
 Mary-NOM scared CL Jan-ACC  
 ‘Mary got scared of Jan.’  
 b. Jana przestraszyła się Maria. OVS  
 Jan-ACC scared CL Mary-NOM  
 c. \*Jana przestraszyła Maria się. OVS  
 Jan-ACC scared Mary-NOM CL
- (42) a. Brat Pawła spodobał się Marii. SVO  
 brother-NOM Paweł-GEN liked CL Mary-DAT  
 ‘Mary got attracted to Paweł’s brother.’  
 b. Marii spodobał się brat Pawła. OVS  
 Mary-DAT liked CL brother-NOM Paweł-GEN  
 c. \*Marii spodobał brat Pawła się. OVS  
 Mary-DAT liked brother-NOM Paweł-GEN CL

In (41-b) and (42-b) with *podobać się* ‘like/please CL’ and *przestraszyć się* ‘scare CL’, respectively, it is not only the verb itself but a constituent containing at least the verb and the clitic *się* that occupies the position before the subject. As indicated in (41-c) or (42-c), stranding the clitic in a post-subject position is impossible, while the ill-formedness of these structures does not come from a ban on splitting the verb and the clitic, since the two need not be adjacent, as in well-formed (43).

- (43) Marii spodobał nagle się brat Pawła.  
 Mary-DAT liked suddenly CL brother-NOM Paweł-GEN  
 ‘Mary got suddenly attracted to Paweł’s brother.’

Consider now the positions of objects in OVS sentences with double object verbs.

- (44) a. Marii dał Jan [ swoją najnowszą książkę ].  $O_{ind}VSO_{dir}$   
 Mary-DAT gave Jan-NOM his newest book-ACC  
 b. [ Swoją najnowszą książkę ] dał Jan Marii.  $O_{dir}VSO_{ind}$   
 his newest book-ACC gave Jan-NOM Mary-DAT  
 c. Marii [ swoją najnowszą książkę ] dał Jan.  $O_{ind}O_{dir}VS$   
 Mary-DAT his newest book-ACC gave Jan-NOM  
 ‘Jan gave his newest book to Mary.’
- (45) a. Marii posłał Jan list miłosny.  $O_{ind}VSO_{dir}$   
 Mary-DAT sent Jan-NOM letter-ACC love

<sup>13</sup>This conclusion about Polish OVS is to an extent in line with what Slioussar (2006) proposed as a replacement for head movement of  $V^0$  in the Russian OVS. An analysis based on head  $V^0$  movement is proposed in Bailyn’s (2003), (2004) account of Russian OVS sentences and is further extended with modifications to the Polish OVS sentences in Witkoś (2008).

- b. List miłosny posłał Jan Marii.  $O_{dir}VSO_{ind}$   
 letter-ACC love sent Jan-NOM Mary-DAT
- c. Marii list miłosny posłał Jan.  $O_{ind}O_{dir}VS$   
 Mary-DAT letter-ACC love sent Jan-NOM  
 ‘Jan sent Mary a love letter.’

In (44) or (45) only the verb immediately precedes the subject and the clause initial position can be occupied by either a direct or indirect object or both. This latter possibility is illustrated in (44-c) and (45-c) and is expected if OVS sentences are derived by the fronting of a constituent of a considerable size rather than by a simple verb movement.

Another argument comes from the placement of frequentive and perfective adverbs in OVS sentences in (46) or (47). These adverbs can only precede the subject in OVS constructions as in the (a) examples but follow the subject in canonical SVO sentences, as in the (b) examples:

- (46) a. Marię {często/zawsze} irytowały [ historie ze  
 Mary-ACC often/always irritated stories-NOM from  
 swojego dzieciństwa ] { \*często/\*zawsze }.  
 self’s childhood often/always
- b. { \*Często/\*zawsze } [ historie ze swojego dzieciństwa ]  
 often/always stories-NOM from self’s childhood  
 { często/zawsze } irytowały Marię  
 often/always irritated Mary-ACC  
 ‘Stories from Mary’s childhood {often/always} irritated her.’
- (47) a. Marii {często/zawsze} podobał się brat Jana  
 Mary-DAT often/always liked CL brother-NOM Jan’s  
 { \*często/\*zawsze }.  
 often/always
- b. { \*Często/\*zawsze } brat Jana { często/zawsze } podobał się  
 often/always brother-NOM Jan’s often/always liked CL  
 Marii.  
 Mary-DAT  
 ‘Mary would {always/often} feel attracted to Jan’s brother.’

In sentences like above, adverbs ‘always’ or ‘often’ must precede the verb in the fronted constituent and cannot be stranded behind the surface position of the subject. Thus, given the relevant subset of Cinque’s hierarchy of adverbs as in (48), the placement of adverbs constitutes a challenge to analyses of the OVS based on verb movement.

- (48)  $T_{Past}P \succ \dots \succ often \succ \dots \succ always \succ \dots \succ vP$  (Cinque (1999: 106))

Instead, just like the position of clitics and double objects, the adverb placement facts indicate that in an OVS construction it is not the verb itself but rather an entire clausal subtree that is fronted above the surface position of the subject.

The fourth argument comes from the observation about binding made in Stjepanović (2003). She notes that the subject in OVS in Serbo-Croatian behaves as if it occupied an A-position high in the clause, as it binds a reflexive inside an adverbial which precedes the subject, as in (49):

- (49) Marię oblał wbrew swojej<sub>i</sub> woli nauczyciel<sub>i</sub> od fizyki.  
 Maria-ACC failed against self will teacher-NOM from physics  
 ‘The physics teacher<sub>i</sub> failed Mary against his<sub>i</sub> own will.’

In line with the present analysis, the subject is indeed higher than the adverbial phrase before the TP-constituent is fronted above the surface position of the subject in  $\phi P$ . Since binding is established in A-contexts and subsequent A'-movements do not change binding relations, TP-fronting to a position above *nauczyciel od fizyki* correctly predicts that the reflexive remains properly bound. We return to this issue in a greater detail in section 6.

### 4.3 TP-fronting as new information marking of the subject

In her analysis of Serbo-Croatian OVS, Stjepanović (2003: 157) correctly observes that such sentences are felicitous when the sentence-final subject represents new information focus. The same is true about subjects in OVS sentences in Polish.

There is a considerable body of work on new information focus. Some analyses pursue the explanation that discourse-sensitive movement is triggered by old information marking (e.g. *givenness*-movement by Kucerova (2007)) and some other argue that it is new information marking that triggers the fronting of other material over it (cf. Neeleman et al. (2009)). What is well established, however, is that the sister of a fronted constituent which is marked as old information (or ‘given’) becomes marked as new information, not vice versa, as outlined below after Neeleman et al. (2009):

- (50) a. [OLD INFO  $\alpha$  [NEW INFO  $\underline{\beta}$  ...]]  
 b. \*[NEW INFO  $\underline{\beta}$  [OLD INFO  $\alpha$  ...]]

The evidence for old/new information marking by movement comes from the wh-question and answer test. Since a wh-phrase in a wh-question licenses a new information focus in an answer sentence, we predict an answer constituent to be licensed in the sentence-final position, in line with (50-a). This prediction is correct and holds equally in clause-internal scrambling, resulting in non-canonical S-V-DO<sub>ACC</sub>-IO<sub>DAT</sub> orders as in (51) where the wh-question requires a direct object as an answer, and in OVS contexts as in (52).

- (51) Q: Komu mama dała książkę?  
 ‘Who did mom give a book to?’  
 A: Mama dała książkę Janowi.  
 mom-NOM gave book-ACC Jan-DAT  
 (cf. \*Mama dała Janowi książkę.)  
 ‘Mom gave a book to Jan.’

- (52) Q: Kto oblał Marię?  
 ‘Who failed Mary?’  
 A: Marię oblał nauczyciel od fizyki.  
 Maria-ACC failed teacher-NOM from physics  
 (cf. \*Nauczyciel od fizyki oblał Marię.)  
 ‘The physics teacher failed Mary.’

In (52), the wh-question requires a subject as an answer, which is achieved by fronting the given TP-constituent on top of the subject, to the effect that the latter becomes new information focus.



In view of the proposal that OVS structures are not only derived by remnant TP-fronting but also by subsequent object-fronting, one may wonder if this Focus- or Topic-fronting of the object is legal considering the fact that such sentences already include a sentence-final new information subject. There exists one potential well-known prohibition on complex information structures in the literature, namely, Topic-Comment structures cannot be embedded in the Background of the contrastive Focus (but Focus and Background can be embedded in the Comment)(e.g. Reinhart (2006), Lambrecht (1994), Neeleman and van de Koot (2008)). But sentences with new information subjects in the sentence-final position do not violate this constraint either by subsequent Topicalization or the fronting of a contrastively Focused object, as neither case results in the Topic-Comment structure embedded inside the Background.

New information marking also seems to be ruling out VP fronting instead of the TP fronting. We see in examples like (53) that VP fronting which strands the sequence *subject+particle+Modal* in the sentence final position is ill-formed.

- (53) a. \*Marię<sub>i</sub> [VP oblać t<sub>i</sub> (wbrew swojej<sub>j</sub> woli) ] nauczyciel<sub>j</sub> od fizyki  
 Mary-ACC fail against self will teacher-NOM from physics  
 by mógł.  
 SUBJ.PRT could
- b. \*?[VP oblać Marię (wbrew swojej<sub>j</sub> woli) ] nauczyciel<sub>j</sub> od fizyki  
 fail Mary-ACC against self will teacher-NOM from physics  
 by mógł.  
 SUBJ.PRT could

In the context of deriving the OVS construction by a subject-oriented wh-question, it seems legitimate to state that in ill-formed structures derived by VP fronting there does not seem to be a corresponding wh-question which requires an answer made of the subject plus the post subject material to the exclusion of the fronted VP. In other words, the sequence of *subject+particle+Modal* does not serve as new information focus for any well-formed wh-question.

## 5 The surface position of the subject

The present analysis feeds on the fact that the subject raises from its vP internal  $\theta$ -position to its surface position in the specifier of the agreement  $\phi$ P. In other words, it accommodates the fact that the classic EPP requirement on subjects is satisfied overtly in Polish. Alternatively, the surface OVS order could be hypothesized to involve individual movements of the object and the verb above the position of the subject under the supposition that the subject does not raise to its surface position in Spec- $\phi$ P but stays in situ in the vP.<sup>14</sup> Such a hypothesis must be rejected on the basis of word order facts and the ambiguous scope between the subject and sentential negation, which indicate that the subject in OVS sentences raises to its surface EPP position (in Spec- $\phi$ P) just like in canonical SVO sentences.

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<sup>14</sup>Note that such an alternative hypothesis which involves the verb movement is in fact already challenged by the clitic and adverb placement facts discussed in the previous section.

## 5.1 Word order

In canonical SVO sentences in Polish the subject always raises. This is indicated by the fact that in stylistically unmarked declarative SVO sentences, which can serve as an answer to the question ‘What happened?’, temporal adverbs and modal auxiliaries, modal particles, and sentential negation all follow the subject and precede the verb. This holds in both singleton and double object sentences, as shown in (54)-(55).<sup>15</sup>

- (54) Jan by znowu chętnie wystartował w wyborach.  
 Jan-NOM MOD-PRT again gladly started-3SG.MSC in elections  
 ‘Jan would gladly take part in the election again.’
- (55) Jan by nigdy nie dał Marii kwiatów.  
 Jan-NOM MOD-PRT never not gave-3SG.MSC Mary-DAT flowers-GEN  
 ‘Jan would never give Mary flowers.’

As shown in the corresponding examples in (56) and (57), the subject cannot be left in situ in its  $\theta$ -position in the vP (this fact holds even if we allow some flexibility in assuming the base position of the subject to be either above the verb and the manner adverb, or below them, as indicated in the following sentences by placing the subject in parentheses).

- (56) \* \_\_\_ by znowu (Jan) chętnie (Jan) wystartował (Jan) w  
 MOD-PRT again Jan-NOM gladly Jan-NOM started-3SG.MSC Jan-NOM in  
 wyborach.  
 elections  
 ‘Jan would gladly take part in the election again.’ (intended)
- (57) \* \_\_\_ by nigdy (Jan) nie (Jan) dał (Jan) Marii  
 MOD-PRT never Jan-NOM not Jan-NOM gave-3SG.MSC Jan-NOM Mary-DAT  
 kwiatów.  
 flowers-GEN  
 ‘Jan would never give Mary flowers.’ (intended)

## 5.2 Inverse scope between the subject and negation

Further evidence for subject raising to its surface EPP position comes from the ambiguous scope between the subject and sentential negation.

- (58) Wszyscy nie żyją.  $\forall \succ \neg, \neg \succ \forall$   
 all/everybod-NOM not live-3PL  
 ‘Everybody is dead.’
- (59) Wszystkie dzieci nie zjadły jeszcze mielonki.  $\forall \succ \neg, \neg \succ \forall$   
 all children-NOM not ate-3PL yet spam-ACC  
 ‘All the children have not eaten the spam yet.’

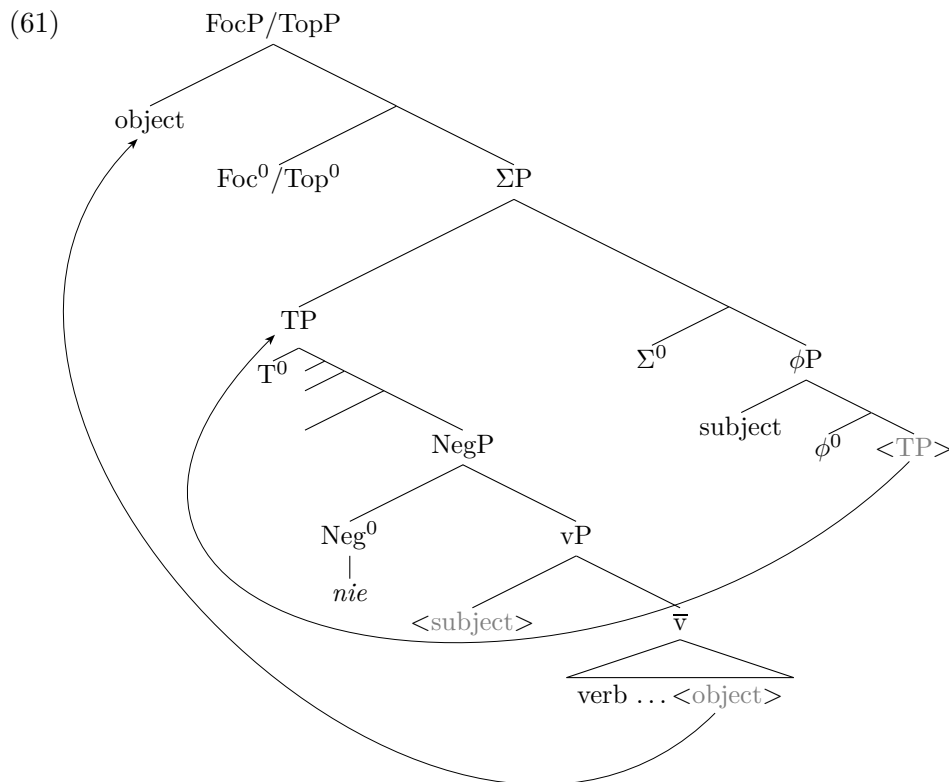
In sentences such as (58) or (59), the inverse scope between the quantificational subject and negation is perhaps best accounted for in terms of the reconstruction of the subject

<sup>15</sup>The genitive case on the direct object appears in the presence of sentential negation, cf. (1-b) and (2-b) and footnote 1. Sentential negation is included in (55) in order to better identify the relative placement of other elements in the clause.

in the position of its lower copy in the vP, below NegP. Importantly, the inverse scope between the subject and negation holds also in OVS sentences:

- (60) Mielonki nie zjadły jeszcze wszystkie dzieci.  $\forall \succ \neg, \neg \succ \forall$   
 spam-ACC not ate-3PL yet all children-NOM  
 ‘All the children have not eaten the spam yet.’

Under the remnant movement analysis outlined in (28)-(30), the inverse  $\forall \succ \neg$  scope in (60) is predicted, as the subject c-commands Neg before Neg is fronted as a subconstituent of the remnant TP, as shown in (61).



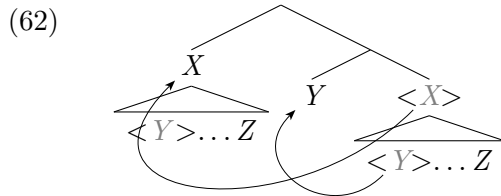
In contrast, the inverse  $\forall \succ \neg$  scope in *ONegV(yet)S* sentences is not predicted by an analysis which assumes that the subject stays in situ in the vP in such sentences, given the base-generated sequence  $\text{NegP} \succ \text{vP}$ .<sup>16</sup>

<sup>16</sup>One might attempt to defend the thesis that while the subject is left in situ in the vP in *ONegVS* sentences, the  $\forall \succ \neg$  scope results from some form of covert quantifier raising of the subject to a position above the sentential negation. Such a supposition is challenged by the fact that covert scope shifting operations by QR are generally hard to obtain in Polish. This is for instance shown in (5), where scope is taken only from the overt position. For this reason, only the surface scope is attested in (5-a) where both objects are placed in their base positions (and both surface and inverse scope is obtained in (5-b), where the direct object is overtly moved to a position above indirect object by scrambling and the inverse scope results from reconstruction into the trace position).

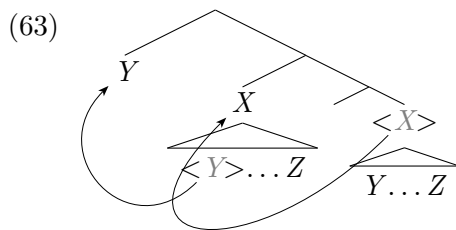
## 6 Crossing and nesting paths

### 6.1 Extraction from a remnant constituent

In a simple remnant movement derivation like in (62), the extraction of a subconstituent  $Y$  precedes the fronting of the remnant constituent  $X$ .



In a smuggling derivation, advanced in Collins's (2005a), (2005b) work on English passive and raising, it is the fronting of a larger constituent  $X$  (possibly but not necessarily over a potentially intervening node) that is followed by an extraction of a subconstituent  $Y$ , as in (63).



It is important to note that in a smuggling derivation the extraction of node  $Y$  violates the Freezing Principle, advanced in Wexler and Culicover (1980) and argued for in Müller (1998) to hold in German. Müller (1998) assumes Kayne's (1998) analysis of negative NP preposing which is followed by remnant VP-fronting:

(64) John [ $VP_2$  watches  $t_1$ ] [ $no\ sitcoms_1$ ]  $t_{VP}$  .

In German, remnant VP movement takes place overtly as it can derive V2 as in (65), where an independently attested  $NP_1$  scrambling feeds  $VP_2$  fronting.

(65) [ $VP_2$   $t_1$  Gelesen ] hat das Buch $_1$  keiner  $t_2$   
 read has the book no-one  
 'No-one read the book.'

As Müller (1998) shows in (66-b), extractions from the fronted remnant VP is blocked.

(66) a. Ich denke [ $CP$  [ $VP_2$   $t_3$   $t_1$  gegeben ] hat dem Fritz $_3$  das Buch keiner  $t_2$  ]  
 I think given has ART Fritz the book no-one  
 'I think no-one gave Fritz the book.'  
 b. \*Wem $_3$  denkst du [ $CP$  [ $VP_2$   $t_3$   $t_1$  gegeben ] hat das Buch $_1$  keiner  $t_2$  ]?  
 whom think you given has the book no-one  
 'To whom do you think that no-one gave the book?'

In Müller's analysis, the extraction of *wem* in (66-b) from a previously fronted remnant VP in (66-a) violates freezing.<sup>17</sup> While a considerable body of work has recognized envir-

<sup>17</sup>Müller (2002) discusses in detail why freezing should hold in this context by referring to the barrierhood

oments in which freezing appears to hold (see e.g. Bošković (2016) and the references cited there), there exists telling evidence against a universal ban on movement from a moved constituent. In fact, Müller (1998) is explicit about the lack of its universality and gives examples of anti-freezing extractions in examples based on Kayne’s (1998) preposing of negative and *only*-NPs:

- (67) a. Which book<sub>3</sub> did Jon [<sub>VP2</sub> give t<sub>3</sub> t<sub>1</sub>] [<sub>PP1</sub> to no-one] t<sub>2</sub> ?  
 b. About Nixon<sub>3</sub> John [<sub>VP2</sub> read t<sub>1</sub>] [<sub>NP1</sub> only one book t<sub>3</sub>] t<sub>2</sub> .

As advanced in Abels (2008), examples like the one above can be reduced to a generalized ban on improper movement rather than freezing.

While the format of this paper does not allow for a detailed assessment of constraints on remnant movement, it is essential to note that Polish generally tolerates extractions out of fronted constituents very well.<sup>18</sup> This can be illustrated by the extraction of wh-words from fronted wh-phrases. It is well known that Polish allows for both pied-piping (in (68-a)) and left-branch extraction (in (68-b)) of wh-words in question formation. However, left-branch wh-extractions from fronted wh-phrases are equally available (in (68-c)):

- (68) a. [<sub>WhP</sub> Jaki samochód ] Paweł kupił swojej żonie t<sub>WhP</sub>?  
           what car Paweł-NOM bought his wife-DAT  
 b. Jaki<sub>i</sub> Paweł kupił swojej żonie [ t<sub>i</sub> samochód ]?  
           what Paweł-NOM bought his wife-DAT car  
 c. Jaki<sub>i</sub> Paweł [<sub>WhP</sub> t<sub>i</sub> samochód ] kupił swojej żonie t<sub>WhP</sub>?  
           what Paweł-NOM car bought his wife-DAT  
           ‘What car did Paweł buy his wife?’

As discussed in Wiland (2010), examples like (68-c) are derived first by successive-cyclic fronting of the WhP and a subsequent left-branch extraction of the wh-word *jaki* and, thus, represent cases of anti-freezing.

Assuming that external arguments raise from their vP-internal to the surface subject position, another instance of the anti-freezing in Polish can be seen in extractions from subjects, which is licit in certain context, in particular, from subjunctive *żeby*-clauses.

- (69) a. [<sub>NP</sub> Zawodnicy [ której drużyny ] ] pro chciałeś, żeby t<sub>NP</sub> wygrali  
           players which team wanted-2SG.MSC COMP won  
           mecz?  
           game  
 b. [ Której drużyny ] pro chciałeś, żeby [ zawodnicy t ] wygrali  
           which team wanted-2SG.MSC COMP players won  
           mecz?  
           game  
           ‘Players of which team did you want to win the game?’

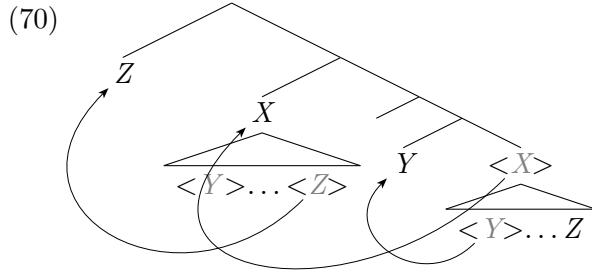
In (69-b), we see that the extraction of *której drużyny* ‘which team’ takes place from within the complex wh-NP subject of the *żeby*-clause.

What is outlined in the derivational steps in (28)-(30) leading to OVS in Polish is a derivation that essentially combines remnant movement and smuggling, as in the following:

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(of the VP) and strict cyclicity of Chomsky (1995), an apparatus I do not review here for space reasons.

<sup>18</sup>This is not to say that there are languages where a moved constituent becomes an island and languages where a moved constituent does not. Instead, the following facts indicate that anti-freezing derivations are in principle permissible.



Essentially, such a combination of remnant movement and smuggling of a large constituent leads to the creation of crossing and nesting movement paths. Since, as assumed at the beginning, c-command is necessary for establishing a dependency relation between nodes in syntax, we expect the formation of crossing and nesting paths in a derivation like in (70) to affect a dependency relation between the nodes. Indeed, it turns out that the existence of a dependency relation or the lack thereof is all we need to explain the three asymmetries in WCO and binding in the Polish OVS sentences.

## 6.2 The WCO asymmetries

Recall from (7) that an environment in which the WCO violation arises is the one in which a quantificational element c-commands a pronoun it binds from an A'-position. Consider again the derivational steps of OVS sentences in (28)-(30) and the way they are responsible for the lack of the cross-over effect in a sentence like in (71). According to this scenario, outlined in (72), the fronting of the wh-object co-indexed with a pronoun inside the subject does not produce the WCO effect in OVS since its movement does not cross the subject, which is moved to Spec- $\phi$ P, as we saw earlier.

(71) [ Którego sąsiada ]<sub>i</sub> otruła jego<sub>i</sub> żona? = (10-a) O<sub>wh</sub>VS  
 which neighbor-ACC poisoned his wife-NOM  
 ‘Which neighbor<sub>i</sub> did his<sub>i</sub> wife poison?’

(72) [ WH<sub>i</sub> [ΣP [TP... [vP <Subj> verb <WH<sub>i</sub>>]]] [[ $\phi$ P Subj<sub>i</sub> <TP>]]] O<sub>wh</sub>VS

The cross-over effect does not arise since the wh-object c-commands the co-indexed subject only *after* the wh-object has moved to the left periphery (step 3 in (30)). Before this takes place, the object is ‘smuggled’ in the fronted TP-constituent to ΣP, that is to a position above the surface position of the raised subject (step 2 in (29)). In other words, (71) does not constitute an environment in (7) for the WCO effect to arise.

In contrast, the wh-movement of the object leading to O<sub>wh</sub>SV as in (73) is correctly expected to produce the WCO effect in Polish just like in English, as the wh-fronting does cross the co-referential subject in this case, as outlined in (74).

(73) ??[ Którego sąsiada ]<sub>i</sub> jego<sub>i</sub> żona otruła? = (10-b) O<sub>wh</sub>SV  
 which neighbor-ACC his wife-NOM poisoned  
 ‘Which neighbor<sub>i</sub> did his<sub>i</sub> wife poison?’ (intended)

(74) ??[ WH<sub>i</sub> [ΣP [ $\phi$ P Subj<sub>i</sub> [TP... [vP <Subj> verb <WH<sub>i</sub>>]]]]] O<sub>wh</sub>SV

The movement of the object to the left periphery in OVS sentences reflects the same scenario that holds for object wh-movement in such sentences in (72). Consider (16) again.

- (75)  $\text{Marii}_i$  nie lubi [ jej<sub>i</sub>/<sub>j</sub> siostra ]. = (16) OVS  
 Mary-DAT not likes her sister-NOM  
 ‘Her sister does not like Mary.’

- (76) [ **Obj<sub>i</sub>** [ $\Sigma P$  [ $TP \dots [vP < \text{Subj} > \text{verb} < \text{Obj}_i > ]$ ] [ $\phi P$  **Subj<sub>i</sub>** <TP>]]] OVS
- 

Following the subject raising from its base position in the vP to its surface position in Spec- $\phi P$  (step 1 in (28)), the remnant TP-fronting smuggles the co-referential object to  $\Sigma P$ , a projection above the subject in  $\phi P$  (step 2 in (29)). The remnant TP-fronting to  $\Sigma P$  does not result in a WCO violation since neither this movement nor the subsequent Focus or Topic fronting of the object (step 3 in (30)) results in the object crossing the subject in Spec- $\phi P$ . This is, thus, essentially the same scenario that holds in wh-object fronting in  $O_{wh}VS$  sentences in (10-a)/(71) in that in both cases the object is  $A'$ -fronted to the left periphery from a previously fronted (remnant) TP-constituent.

### 6.3 Binding asymmetry in OVS with experiencer verbs

The asymmetry in binding in OVS sentences with agent and theme arguments also reduces to the contrast between crossing and nesting dependencies derived as a result of remnant movement of a clause chunk of a large size. In particular, an experiencer argument crossing an agent argument in an OVS construction does not felicitously bind it under reconstruction from a left-peripheral  $A'$ -position, while it felicitously binds a theme argument.

Recall that in OVS sentences with an experiencer object and an agent subject like in (77), the second fails to bind the anaphor inside the first.

- (77) \* $\text{Jana}_i$  przestraszyli [ doradcy ze swojego<sub>i</sub> banku ] = (22-a)  
 Jan-EXP.ACC frightened counsellors-NOM from self bank - AGENT  
 ‘Jan was frightened by financial counsellors from his bank.’

According to the derivation of OVS outlined in steps (28)-(30), the sentences with agent arguments of experiencer verbs in (24), (22-a), and (23-a) are derived as follows:

- (78) Step 1: [ $\phi P$   $\text{AG}_i$  [ $TP \dots [vP < \text{AG}_i > [ \text{verb} [ \text{EXP}_i ] ] ] ] ]$ ]  
  
 Step 2: [ $\Sigma P$  [ $TP \dots [vP < \text{AG}_i > [ \text{verb} [ \text{EXP}_i ] ] ] ]$ ] [ $\phi P$   $\text{AG}_i$  <TP>]]  
  
 Step 3: \*[  $\text{EXP}_i$  [ $\Sigma P$  [ $TP \dots [vP < \text{AG}_i > [ \text{verb} [ < \text{EXP}_i > ] ] ] ] ]$ ] [ $\phi P$   $\text{AG}_i$  <TP>]]]

In step 1, the agent argument raises from its vP-internal  $\theta$ -position to its surface position in Spec- $\phi P$  (by the assumption made in (27), agents are base-generated higher than experiencers). Step 2 involves the fronting of the remnant TP constituent, which includes the trace of the agent argument in the vP, to Spec- $\Sigma P$ , a projection above the raised agent subject. From this position the experiencer argument smuggled inside the TP does not

c-command the agent subject in Spec- $\phi$ P. In step 3, the experiencer is fronted to a left-peripheral A'-position resulting in the OVS word order. From this position the experiencer ultimately c-commands the agent subject in Spec- $\phi$ P.

Despite the fact that the experiencer argument ultimately c-commands the agent argument with a co-indexed pronoun the binding is infelicitous. Quite clearly, this is due to the fact that the only position from which the experiencer c-commands the agent is its surface position in the left periphery, while binding relations are not established from A'-positions, as illustrated by the following:

(79) \*John and Peter, each other's friends hate.

Note that the traces of both arguments in the A-positions inside the vP are ordered such that the agent c-commands the experiencer (in line with the assumption about the  $\theta$ -hierarchy made in (27)), a configuration that yields Principle C violation. This violation is not undone later by the fronting of the experiencer argument to the left periphery in step 3 of the derivation, as A'-movement does not create new binding configurations, as illustrated by the following familiar examples of Principle C violations:

(80) a. \*He<sub>i</sub> painted [ a picture of Peter<sub>i</sub> ] with his eyes shut.  
 b. \*[ Which picture of Peter<sub>i</sub> ] did he<sub>i</sub> paint <which picture of Peter<sub>i</sub>> with his eyes shut?

(81) a. \*I think she<sub>i</sub> expects John to be quite afraid of Margaret<sub>i</sub>.  
 b. \*[ How afraid of Margaret<sub>i</sub> ] do you think she<sub>i</sub> expects John to be <how afraid of Margaret<sub>i</sub>> ? Heycock (1995: 554)

In contrast, when the agent argument is replaced with a theme argument, binding is felicitous:

(82) Jana<sub>i</sub> przestraszył [ stan swojego<sub>i</sub> konta ] = (22-b)  
 Jan-EXP.ACC frightened balance-NOM self account - THEME  
 'Jan was frightened by the balance of his bank account.'

The explanation of this contrast boils down to the fact that the experiencer c-commands the theme but not the agent in the argument positions in the vP and that binding relations hold in A-positions. Note that the derivational steps in (28)-(30) that lead to OVS do not alter the felicitous way in which Principle A is observed, either. Consider the following.

(83) Step 1: [ $\phi_P$  TH<sub>i</sub> [ $TP$  ... [[ $FP$  <TH<sub>i</sub>> ] [ $vP$  verb [ EXP<sub>i</sub> < [ $FP$  TH<sub>i</sub> ]> ]]]]]  
  
 Step 2: [ $\Sigma_P$  [ $TP$  ... [[ $FP$  <TH<sub>i</sub>> ] [ $vP$  verb [ EXP<sub>i</sub> < [ $FP$  TH<sub>i</sub> ]> ]]]] [ $\phi_P$  TH<sub>i</sub> <TP>]]  
  
 Step 3: [ EXP<sub>i</sub> [ $\Sigma_P$  [ $TP$  ... [[ $FP$  <TH<sub>i</sub>> ] [ verb [ <EXP<sub>i</sub>> ]]]] [ $\phi_P$  TH<sub>i</sub> <TP>]]

In step 1, the theme argument raises to the subject position in  $\phi$ P and surfaces in nominative. However, since it is c-commanded by an experiencer in the vP, a direct raising across the experiencer is blocked for the reasons of locality. What the recent work on smuggling (Collins (2005a), (2005b)) has advanced is that intervention is circumvented if there exists a trigger which attracts a constituent containing a non-local NP to a position



above the local NP. This smuggling movement is indicated in step 1 above with a dashed line. While it remains a separate issue what exactly the label of the subconstituent (labeled simply as FP above) with a smuggled theme is and what exact position above the vP it targets, it is essentially the mechanism which must take place for the theme argument to be raised to the subject position and surface in nominative in the presence of an experiencer object (for Belletti and Rizzi (2012), the subconstituent with a smuggled theme which is fronted above the experiencer in Italian is simply a lexical VP).<sup>19</sup> Steps 2 and 3 proceed in by now familiar way: the remnant TP is fronted to  $\Sigma$ P and the experiencer argument is fronted to a Focus or Topic position in the left periphery.

Note that the subject raising in step 1 results in the theme argument c-commanding the experiencer from Spec- $\phi$ P, which does not result in the violation of Principle C. This seems to be due to the fact that the possessive anaphor is embedded inside the theme argument *stan swojego konta* lit. ‘balance (of) self account’ and does not c-command the experiencer. This is supported by the fact that when, in the same context, the anaphor is not embedded, Principle C becomes violated, as in:

- (84) a. \*Jana<sub>i</sub> przestraszyło [swoje<sub>i</sub> konto].  
 Jan-ACC.EXP frightened [self-NOM.SG account-NOM.SG]-THEME  
 ‘Jan was frightened by his account.’  
 b. \*Marię<sub>i</sub> przestraszyły [swoje<sub>i</sub> koty].  
 Maria-ACC.EXP frightened [self-NOM.PL cats-NOM.PL]-THEME  
 ‘Mary was frightened by her cats.’

Given the fact that A'-movement of the experiencer to its surface position in step 3 does not alter the binding configuration, Principle C violation in (84) must result from the nominative anaphoric theme c-commanding the co-referential experiencer from the subject position derived in step 1.

## 7 Conclusion

Cross-over effects and binding principles violations arise when co-reference fails in a structural context. Their account should, thus, be ideally based on the dependency relations resulting from constituency formation in the derivation. While remnant movement has been mostly advanced as a replacement for head movement (most notably, verb movement as a disguised remnant VP movement), the existence of remnant movement of an entire chunk of a clause which can include traces of arguments has been rarely explored. I have argued that the remnant movement of the entire subclause, of approximately TP size, which includes the trace of an extracted argument, derives a constituency from which the contrasts in WCO and binding follow under common assumptions about scope the application of the binding principles in syntax. The result is that the contrasts between canonical SVO and a marked OVS word orders as well as contrasts in behavior between different types of arguments in these word orders can receive a fairly straightforward, based on constituency, account.

<sup>19</sup>There exist attempts in the literature to account for intervention obviation in A-context based on Chomsky’s (1995) idea of equidistance between two arguments of the same type (i.e. two NPs in this case). A common problem for equidistance-based accounts is optionality. Namely, while it is possible to construe a definition of a domain in which vP-internal arguments do not intervene, it remains unexplained why it is one of them that gets attracted in a given derivation and not the other. That is, even if the theme and the experiencer are postulated to be equidistant from the subject position in  $\phi$ P in the vP, it remains puzzling why the theme but not the experiencer should move to this position. A smuggling derivation avoids this problem in a straightforward way.

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