

Aspects of Order Preservation in Polish and English

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Introduction

This work is about word and morpheme order. In particular, it investigates the explanatory potential of the Cyclic Linearization theory advanced in Fox and Pesetsky (2003, 2005a), whereby syntactic derivations must be order preserving. In such a theory, the derivation proceeds in cycles or phases, which are defined by the application of the Spell-out of the syntactic subtree to the phonological component where information about linear order is encoded. According to the CL theory, successive-cyclic effects of movement reflect the order preservation condition on linearization in the following way: in order not to introduce contradiction to collective information about linearization of nodes α , β at the Spell-out of domain D_1 , the relative order between α , β must be preserved at the application of Spell-out to domain D_{1+n} .

While certain fairly well-known cases of order preserving successive-cyclic movements in a rigid word order language like English can provide support for the CL theory, of particular importance to the assessment of its explanatory potential are the predictions CL makes for a language like Polish, which exhibits a considerable degree of word order freedom. In this work, I evaluate to what extent order preservation is observed in Polish, especially in constructions that do not have their direct correlates in English (like scrambling or left branch extraction). The investigation provides a number of ancillary results regarding the structure and derivation of the Polish participle, A- and A'-scrambling, wh-extraction, and a reanalysis of certain constructions that bleed/feed weak cross-over.

Chapter 1 discusses a robust asymmetry in the locality of Agree and (overt) movement and then presents the assumptions and details of Fox and Pesetsky's theory in the domain of Scandinavian Object Shift.

Chapter 2 discusses the internal and external syntax of the Polish finite participle, whose position in the clause is central to the evaluation of order preservation in virtually all sentential constructions. This discussion also makes a case for fine grained syntactic representations and for the base-generation of the external argument in Spec-VoiceP, in a system in which Voice and the little *v* are separate heads in syntax.

Chapter 3 argues that the sister-driven Spell-out of the syntactic tree that is predicted by the Phase Impenetrability Condition is undefineable within the bare phrase structure theory and

should, hence, be replaced by a simple node-driven Spell-out. The latter one is implicitly but necessarily adopted by the system in which order preservation plays a role in the derivation.

Chapter 4 provides an account of Polish A-scrambling. It is argued that the locality problem and the look-ahead problem (characteristic to discourse-based approaches to scrambling) are both dispensed with if A-scrambling is feature-driven. However, such a solution, if correct, is identified to pose a challenge to the CL theory, as at least one felicitous word order derived in such a way involves a derivation that violates order preservation.

Chapter 5 investigates the properties and the derivation of the Polish OVS construction. It is concluded that despite its complexity, there is convincing evidence that the construction involves order preserving derivational steps. The account additionally provides a reanalysis of the asymmetric behavior of OVS with Agentive and "quirky" Subjects with respect to weak cross-over.

Chapter 6 argues that the subextraction of wh-words from displaced wh-phrases in Polish provides overt evidence for the existence of punctuated chains in syntax. The construction also reveals the case of blocking in the environment in which the lack thereof would produce an order preservation violation.

The main outcome is that while certain fairly complex constructions indeed turn out to involve order preserving derivations under a closer inspection, only one case of blocking reducible to order preservation has been identified. It is also concluded that order preservation more likely constitutes a well-formedness requirement on the output of syntactic derivation rather than the mechanism responsible for the existence of successive-cyclic movements in syntax.

1 An Order Preservation Condition on Linearization in Fox & Pesetsky (2003, 2005a)

1.1 Locality of Movement ≠ Locality of Agree

There are two sources of locality in current minimalism: *Relativized Minimality* and phases. While the two notions are irreducible to one another, attempts have been made to reduce the effects of phase-hood to some other property or constraint of the grammar organ. Perhaps one single most robust effect predicted by the main device of the phase theory -- the Phase Impenetrability Condition (PIC) -- is the existence of punctuated chains in syntax, as illustrated by long distance *wh*-movement:

- (1) a. I wonder [_{CP} which book Jack [_{VP} __ thinks [_{CP} __ Hilda [_{VP} __ read __]]]]
b. [_{CP} To whom will Jack [_{VP} __ say [_{CP} __ that Hilda [_{VP} __ gave the book __]]]]?

Evidence for punctuated paths comes from reconstruction facts (Barss 1986, Lebeaux 1988, Fox 1999), agreement morphemes in intermediate positions (Chung 1998), pronunciation of intermediate chain links in child language (Thornton 1995, van Kampen 1997), or quantifier standing in West Ulster English (McCloskey 2000).

Accounts of successive cyclicity assume the existence of local domains, such as bounding nodes, barriers, or phases. In the latter approach, the source of locality is the PIC (Chomsky 2001) and its notion of the phase edge, whereby only the phasal head (C and v) and its specifiers are visible to operations outside the phase.¹

¹ Abels (2003) observes that van Riemsdijk's (1978: 169) Head Constraint that constitutes a direct precursor to the PIC.

- (i) The Head Constraint
No rule may involve X_i (X_j) and Y in the structure ... X_i ... [_α ... Y ...] ... X_j ...
if Y is c-commanded by the head of α; α ranges over V''', N''', A''', P'''.

Nevertheless, Pesetsky (2007a) points out that Chomsky's (1977) own work includes the earliest (representational) formulation the PIC in the form of the combined of the Tensed-S Condition and the Specified Subject Condition: "no rule can involve X and Y in the structure ...X...[_α...Y...]...X... where α is a tensed-S (the Tensed-S Condition) or where α contains a subject distinct from Y and not controlled by X (the Specified Subject Condition)" (p. 176), where:

- (ii) Tensed-S Condition
No rule can involve X, Y in the structure ...X...[_α...Y...]
where α is a tensed sentence.

In order to reduce the PIC to a more general property of the system, one needs to show that the effects it predicts result from a different condition of the grammar organ. An alternative to phase impenetrability is advanced in Fox & Pesetsky's (2003, 2005a) theory of "Cyclic Linearization" (CL) , where it is argued that intermediate movements to phase edges (like in (1)) are necessary for linearization of the syntactic structure at the PF interface. Apart from conceptual differences, perhaps the major discrepancy between Fox & Pesetsky's system and the PIC concerns the set of operations which they govern. Whereas CL restricts overt movement, the PIC restricts all syntactic operations, including Agree. The claim that covert operations are restricted by the PIC is not free from challenges. While the PIC notion of the "escape hatch" at the edge of the phase controls for phase-external movements, it does not straightforwardly control for felicitous Agree in an environment in which a goal is merged below the phase edge and is probed from a phase-external position. Consider for instance clause bound and long distance Genitive of Negation (GenNeg) in Polish, in (2) and (3) respectively.

- (2) a. Jan pocałował Marię/*Marii
 Jan-NOM kissed Mary-ACC/*GEN
 b. Jan nie pocałował Marii/*Marię.
 Jan-NOM not kissed Mary-GEN/*ACC
 'Jan didn't kiss Mary.'

- (3) a. Jan musiał pocałować Marię/*Marii.
 Jan-NOM must-PST kiss-INF Mary-ACC/*GEN
 b. Jan nie musiał pocałować Marii/*Marię.
 Jan-NOM not must-PST kiss-INF Mary-GEN/*ACC
 'Jan didn't have to kiss Mary.'

In (2), an ACC-marked object of a mono-transitive verb changes its Case to GEN in the presence of Negation. A similar situation holds in (3), where the presence of Neg in the matrix clause triggers GEN-marking on the object of the infinitive in the embedded clause. Polish GenNeg is restricted to ACC-objects and indirect or singleton DAT-objects do not

(iii) Specified Subject Condition
 No rule can involve X, Y in the structure ...X...[α ...Z...-WYV...]
 where Z is the specified subject of WYV in α .

undergo the GEN-shift in the presence of Negation, as shown in (4) and (5), respectively.

- (4) a. Jan zaufał swojemu szefowi/*swojego szefa
Jan-NOM trusted-PERF self's boss-DAT/*GEN
'Jan trusted his boss.'
- b. Jan nie zaufał swojemu szefowi/*swojego szefa.
Jan-NOM not trusted-PERF self's boss-DAT/*GEN
'Jan didn't trust his boss.'
- (5) a. Jan posłał Piotrowi list.
Jan-NOM sent-PERF Piotr-DAT letter-ACC
- b. Jan nie posłał Piotrowi/*Piotra listu.
Jan-NOM not sent-PERF Piotr-DAT/*GEN letter-GEN
'Jan didn't send Piotr a letter.'

Likewise, GenNeg does not apply to objects of prepositions, irrespective of whether they are marked as ACC (cf. (6)), or not (cf. (7)).

- (6) a. Oni pojechali na urlop/*urlopu.
they-NOM went-PERF on vacation-ACC/*GEN
- b. Oni nie pojechali na urlop/*urlopu.
they-NOM not went-PERF on vacation-ACC/*GEN
'They didn't go on vacation.'
- (7) a. Oni siedzieli na ławce/*ławki
they-NOM sat-PROG on bench-INST/*GEN
- b. Oni nie siedzieli na ławce/*ławki
they-NOM not sat-PROG on bench-INST/*GEN
'They weren't sitting on a bench.'

In a double object construction, GenNeg applies to a direct object but not to an indirect object:

- (8) a. Jan posłał Piotrowi list/*listu.
Jan-NOM sent Piotr-DAT letter-ACC/*GEN

- b. Jan nie posłał Piotrowi/*Piotra listu/*list
 Jan-NOM not sent Piotr-DAT/*GEN letter-GEN/*ACC
 'Jan didn't send Piotr a letter.'

This happens despite the fact that an indirect object appears to be *closer* to *nie* 'not', under the definition of *Closeness* as in (9).

(9) ***Closeness* (first approximation, to be revised in (17))**

α is closer to γ than β iff γ c-commands an occurrence of α , β and α asymmetrically c-commands an occurrence of β

where "occurrence of α " is a member of the chain $C=(\alpha_1, \dots, \alpha_{1+n})$.

GenNeg reveals that the locality of Agree (cum the locality of the probe-goal relation) is not conditioned by the PIC. According to minimalist guidelines, the little v^0 assigns ACC to the direct object, which is immune to Case-probing from vP-external positions (Chomsky 2001, *et seq.*). However, the presence of *nie* 'not' above the little v^0 licenses GEN on the object in the vP-internal domain.

It has either been assumed (e.g. Witkoś 2000, 2007) or argued explicitly (e.g. Wiland 2008a, and later in this work) that in Polish the verb occupies the little v^0 in declaratives.² One of the arguments for the position of the finite verb in v^0 is the fact that it typically follows VP-adverbs like *szybko* 'quickly' or *wolno* 'slowly', which are located in Polish at the left edge of the vP:³

² See Chapter 2 for discussion of morpho-syntactic consequences of the little v^0 hosting an inflected verb.

³ Similarly to English, the finite verb can also be placed to the right of the VP-adverb:

- (i) Jan posłał szybko Marii kwiaty.
 Jan-NOM sent quickly Mary-DAT flowers-ACC
 'Jan sent Mary the flowers quickly.'

In the post-verbal variant of the adverb placement, the only difference between Polish and English is that in English the adverb (or PP) must not be adjacent to the verb:

- (ii) I sent Mary quickly the flowers.
 (iii) I sent Mary the flowers quickly.
 (iv) * I sent quickly Mary the flowers.

There is considerable consensus in the literature that the low/high placement of VP-adverbs is a result of the alternative merger of the adverb. Well known evidence in support of this comes from the interpretive differences which are attributed to the size of the tree that is in the scope of alternatively merged adverbs (for a discussion see

- (10) Jan [vP szybko [v' posłał [vP Marii kwiaty]]]
 Jan-NOM quickly sent Mary-DAT flowers-ACC
 'Jan quickly sent Mary the flowers.'

Since the verb precedes the object(s), it follows that the basic (unmarked) position of the object(s) is vP-internal.⁴ Other words, none of the objects in constructions in (2)-(6) occupies the vP-edge making it accessible to vP-external probing under the PIC. Yet, there exists considerable agreement in the literature that *nie* 'not' Spells-out the head of the NegP, which dominates the vP (see Witkoś 1996; Błaszczak 2003, in press; Zeijlstra 2004, 2007; a.o.), yielding the relevant piece of the functional hierarchy as follows:⁵

- (11) [_{NegP} Neg⁰ [... [_{vP} v⁰ [_{vP} V⁰]]]]

Thus, if GenNeg involves a probe-goal relation between Neg⁰ and a direct object, as it apparently does, then this relation is not constrained by the PIC.

A direct way of salvaging the PIC in an environment where Agree holds across a phase edge demands showing that such a relation involves a mediating phase head. In the case in question, GenNeg would have to first involve a relation between Neg⁰ and v⁰, which, perhaps by feature inheritance⁶, becomes a GEN-licensing probe itself. Once endowed with new Case features, the little v⁰ could license GEN on the direct object. But the PIC can be salvaged in the way just suggested only when it can be determined why it is precisely the Neg-feature that is mediated by v⁰ while other features are never mediated. Note that if it was simply a class of Case features that was mediated, then we would expect objects to undergo NOM-

Jackendoff 1972, McConnell-Ginet 1982, Travis 1988, Bowers 2002, Göbbel 2007). If this is a correct conclusion, then the finite verb in Polish always occupies the little v⁰ in declaratives and its variable placement with respect to the VP-adverb does not result from an optional verb movement higher than v⁰. On the other hand, the contrast in (ii)-(iv) is due to Case adjacency, whereby a DP must be prosodically adjacent to the verb (or other Case licenser).

⁴ I argue in Chapter 4 that the vP-edge is an available -- though definitely not exclusive -- landing site for A-scrambled objects. A-scrambling in Polish is optional and fronted constituents are marked as discourse-anaphoric. Apart for the lack of discourse-anaphoric marking in sentences in (2)-(6), there is other convincing evidence provided in Witkoś (2007) that the S-V-(IO_{DAT})-DO_{ACC} word order is basic. I return to this issue in Chapter 4.

⁵ In fact, Błaszczak (in press) arguing against an adverbial analysis of *nie* 'not' does not merely conclude that NegP dominates the vP, but that it dominates a projection responsible for ACC Case checking/assignment in the low IP area, be it the vP or a different functional projection.

⁶ In the sense of Chomsky (2006).

shift in the presence of T^0 , counter fact.

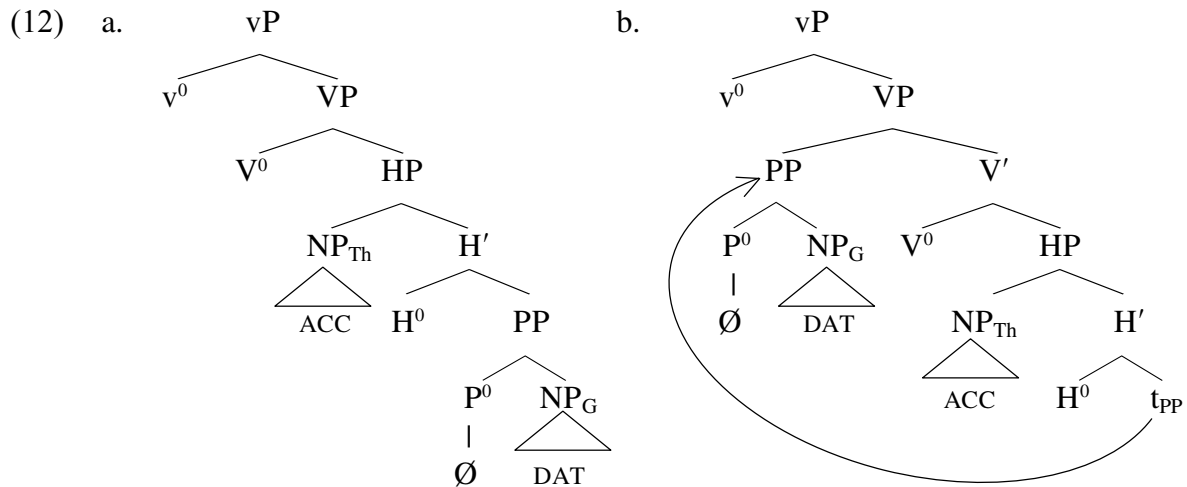
Also, if Case is a reflex of Agree (cum a probe-goal relation) between v^0 , Neg^0 and the NP object, then licensing ACC, GEN on the direct object in a double object construction seems to violate minimality.⁷ As already noted, there is convincing evidence that the basic (unmarked) word order in Polish S-V-(NP_{DAT})-NP_{ACC}.⁸ Thus, in a double object construction (cf. (9)), the indirect object is *closer* to v^0 , Neg^0 than the direct object, but it is the latter that participates in Agree with v^0 , Neg^0 . Nevertheless, there are good reasons to believe that minimality violation in this context is only apparent. However, what needs to be rejected right away is the supposition that at no point in the derivation is the NP_{G(oal)} *closer* to v^0 , Neg^0 than the NP_{Th(eme)}. In what follows, I first exhibit why this way of salvaging minimality is wrong headed and then I make a case for an alternative solution based on a procedurally defined application of *Closeness*.

1.1.1 Covert Dative Shift

According to the definition of *Closeness* in (9), for the NP_{Th} to be *closer* to v^0 , Neg^0 than the NP_G, it needs to asymmetrically c-command an occurrence of the latter. Since the NP_G precedes the NP_{Th}, this can be achieved if the double object construction in Polish is derived by a covert Dative Shift. Suppose that the Goal θ -role is assigned to an NP by a silent P^0 in a position lower than the base position of the Theme, which is assigned by a separate head, say H^0 (cf. (12a)), and that the surface word order V-NP_G-NP_{Th} is derived by fronting the PP above the position of the Theme (cf. (12b)). In (12a), the NP_{Th} asymmetrically c-commands an occurrence of the NP_G and is hence *closer* to v^0 . In (12b), the situation is identical.

⁷ Polish nominal phrases lack determiners and have been argued not to project the DP-layer at all (Willim 2000, a.o.). See also Bošković (2005), who generalizes that (Slavic) languages which do not project the DP-layer allow for left-branch extractions. Since Polish allows for LBE and does not have (overt) determiners, the initial hypothesis that it does not project the DP-layer at all is justified. Nevertheless, some other analyses (e.g. Rutkowski 2007) argue for a covert DP-layer. I will continue to refer to Polish nominals as NPs rather than DPs, but nothing particular in the present discussion hinges on this assumption.

⁸ I further discuss this issue in Chapter 4 to the conclusion that the basic/unmarked word order in the Polish double object construction is indeed S-V-NP_{DAT}-NP_{ACC}. Note, however, that Bailyn (1995b) argues that the basic word order in Russian is S-V-NP_{ACC}-NP_{DAT}. For arguments against Bailyn's analysis of Russian see Dyakonova (2007).



If covert Dative Shift derives the surface V-NP_G-NP_{Th} word order, marking the latter as ACC/GEN across the surface position of the former does not violate minimality. Despite this fact, the covert Dative Shift analysis must be rejected since there exists evidence that the NP_G c-commands the NP_{Th} from its surface position and, hence, the former cannot be dominated by a covert projection.

First, observe that in (13a), adapted from Witkoś (2007), the NP_G binds the anaphoric NP_{Th}:

- (13) a. Piotr pokazał [dziewczynom_i][siebie_i nawzajem] w lustrze.
 Piotr-NOM showed girls-DAT each other-ACC in mirror
 'Piotr showed the girls to each other in a mirror.'
- b. * Piotr pokazał [siebie_i nawzajem] [dziewczynom_i] w lustrze.
 Piotr-NOM showed each other-ACC girls-DAT in mirror

The ill-formedness of (13b) is due to the lack of reconstruction in anaphoric binding in A-chains. In (14a), the NP_G binds the pronominal NP_{Th}:

- (14) a. Jan zwrócił [adwokatom żony_i] [jej_i pieniądze].
 Jan-NOM returned attorneys wife's-DAT her money-ACC
 'Jan returned his wife's attorneys their money.'
- b. * Jan zwrócił [jej_i pieniądze] [adwokatom żony_i].
 Jan-NOM returned her money-ACC attorneys wife's-DAT

The ill-formedness of (14b) is due to the prohibition against backward pronominalization in Polish.

Second, only the surface scope $NP_G > NP_{Th}$ is possible:

- (15) Jan dał [jakieś chłopcu] [każdą naszą monetę] $\exists > \forall; * \forall > \exists$
 Jan-NOM gave some boy-DAT our each coin-ACC
 'Jan gave some boy each coin of ours.'

If binding and scope taking is determined by c-command then the NP_G c-commands the NP_{Th} , then the hypothesis that the double object construction in Polish is derived by a covert Dative Shift must be rejected.⁹

1.1.2 Closeness Procedurally

Suppose that the solution to the locality problem can be sought elsewhere than *Closeness*. In what follows, I argue that the solution take the form of the definition of the domain to which *Closeness* applies.

Since *Closeness* is itself structurally defined, a definition of the domain of its application in structural terms would be vacuous in the best case. The other possibility is to define such a domain procedurally. If *Closeness* applies to all elements at all derivational stages, then the NP_G is always *closer* to Neg^0, v^0 than the NP_{Th} . But if *Closeness* applies only to elements whose status at a particular derivational stage is identical, then the NP_G is never *closer* to Neg^0, v^0 than the NP_{Th} . The qualification of this statement rests on two assumptions: the Case hierarchy and the Earliness Principle.

⁹ With respect to binding and scope, the double object construction in English looks similar to Polish: NP_G binds and takes scope over NP_{Th} , as in (i) and (ii) respectively.

- (i) a. John showed Mary_i herself_i in the mirror.
 b. * John showed herself_i Mary_i in the mirror.
 (ii) John gave a boy every coin. $\exists > \forall; * \forall > \exists$

Irrespective of other frequently discussed properties of the double object construction and the *to*-Dative variant, which Polish lacks, the c-command facts suffice to reject the hypothesis that NP_G in the configuration $NP_G > NP_{Th}$ is dominated by a covert projection. This leaves the locality problem of ACC-assignment unresolved by an appeal to *Closeness* in languages like Polish and English.

It is well known that Cases are arranged hierarchically¹⁰ rather than randomly (see for instance McCreight and Chvany 1991, Blake 1994, Baerman, et al. 2005, Bobaljik 2008, but also Keenan and Comrie 1977 on Case accessibility hierarchy). In particular, the Case hierarchy according to Blake (1994) looks as in (16).¹¹

(16) NOM > ACC/ERG > GEN > DAT > LOC > INST/ABL > COM > other OBL

Following the work by Starke (2006) and Caha (2008), I assume that the Case hierarchy does not constitute a primitive arrangement of same class items, but is a reflex of the functional hierarchy in syntax (cf. Cinque 1999 and much subsequent work on rigid sequential arrangement of syntactic projections). From this assumption it follows that in a double object construction in which a NP-DAT c-commands an NP-ACC on the surface, there must exist a derivational stage in which NP-ACC c-commands NP-DAT, in concert with (16). Other words, DAT is assigned lower than ACC, but it surfaces higher than ACC.

(The assumption of the Case hierarchy has eliminated a criterial DAT-position as a trigger for the movement of NP-DAT above NP-ACC. It remains somewhat unclear now why this movement takes place. What seems plausible, however, is a hypothesis that the Goal enters a binding relation with Theme, such that "Goal > Theme" must hold. A reversal of the relation, i.e. "Theme > Goal" as in the *to*-dative variant, results in a different semantic interpretation. There is a long tradition of identifying differences in the semantics of both variants (see especially Oehrle 1976 and Pesetsky 1995: §5 & 6 and the references cited there), which attribute them to syntactic positions of arguments.)

Since NP_G does not constitute an intervener for the assignment of ACC (or GEN) at a derivational stage where it c-commands NP_{Th}, an immediate conjecture is that *Closeness* does not hold at this stage of the derivation. Let us suppose that *Closeness* holds at an earlier stage where NP_{Th} c-commands NP_G, that is at a stage where DAT is assigned and which roughly corresponds to (12a). If *Closeness* applies at a level where NP_{Th} c-commands NP_G, it follows

¹⁰ In the sense similar to Silverstein's hierarchy of features (Silverstein 1976).

¹¹ An observation which additionally motivates the Case hierarchy is that while languages typically employ only subsets of cross-linguistically attested Cases, they do not differ with respect to the hierarchies in which these Cases appear. For instance, the Cases in German (in (ii)) constitute a proper subset of Cases found in Slavic (in (i)), but their hierarchical arrangements are identical.

- (i) NOM > ACC > GEN > DAT > LOC > INST
- (ii) NOM > ACC > GEN > DAT

that the source of DAT does not c-command NP_{Th} . Let us suppose that P^0 is such a source.

Let us now assume with Pesetsky (1989) and Chomsky (1995b: §4) that a syntactic operation applies immediately upon creating an environment in which it can apply.¹² For a bottom-to-top derivation, it means that upon the merger of NP_{Th} in the tree, NP_G has already been assigned DAT by Agree with P^0 as the only NP in P^0 's search domain. Thus, NP_G becomes an inactive goal with respect to Case probing even before NP_{Th} is merged in the tree (where "inactive" is understood in the sense identical to the notion of "checked", "valued", "deleted", or any other theoretical notion which makes sure that features once matched do not continue to be unsatisfied in a derivation ad infinitum). Next, H^0 , NP_{Th} , and V^0 are merged in the tree and NP_G remerges with V^0 , forming a specifier.¹³ A subsequent merger of v^0 results in the assignment of ACC to NP_{Th} , as it is the only active goal in v^0 's search space, despite being structurally lower than by now inactive NP_G . Since a condition that elements be "active" in the search domain of a probe is a restriction on what counts for the evaluation of minimality, it can be implemented in the definition of *Closeness*, now defined as follows.

(17) ***Closeness (second and final approximation)***

α is closer to γ than β iff

- a. γ c-commands an occurrence of α , β
- b. α asymmetrically c-commands an occurrence of β
- c. α , β are active

where "occurrence of α " is a member of the chain $C=(\alpha_1, \dots, \alpha_{1+n})$.

Note that (17) departs from Rizzi's (1990) type-based *Relativized minimality* and is closer in spirit to Starke's (2001) reformulation based on feature specificity, with one significant difference. In Starke's version, intervention takes place only when the intervener completely matches the features of the attractor:

¹² In Pesetsky's (1989) formulation, an application of a syntactic operation (or rather "filter satisfaction") is delimited by the hierarchy of levels: DS > SS > LF > L(anguage) P(articular structure). The current formulation of the principle neither rests on the assumption that certain syntactic operations are assigned to particular levels of representation, nor that there are such levels. The only delimitation is "an environment in which [a syntactic operation] can apply", which subsumes all other delimitations if understood broadly.

¹³ If structure building proceeds cyclically and extends the root of a tree, NP_{Goal} must form Spec-VP before v^0 is merged in the tree.

- (18) a. * $\alpha_i \dots \alpha_j \dots \alpha_i$
 b. * $\alpha\beta \dots \alpha\beta \dots \alpha\beta$
 c. * $\alpha \dots \alpha\beta \dots \alpha$
 d. $\alpha\beta \dots \alpha \dots \alpha\beta$

Thus, (18a-c) produce a minimality effect, but (18d) does not, since the intervener does not fully agree with the features of the target. The difference between (17) and minimality in (18) is that in the former certain features can become opaque in the course of the derivation to the effect that they no longer intervene, despite their identity with and structural proximity to the probe.

One more comment about the scope between NP_{Th} and NP_G is in place here. The analysis of the non-intervention in Case-probing relies on NP_{Go} being assigned DAT below the surface position of NP_{Th} . Meantime, as pointed out in (15) about Polish and in fn. 8 about English, only the surface scope between the two objects is available. Note, however, this fact does not mean that NP_G has not been merged in a position below NP_{Th} in a derivation, but merely that it does not reconstruct in this position. In fact, if NP_G is θ -selected below NP_{Th} , then it must not reconstruct in this position in concert with Johnson & Tomioka's (1997) constraint on scope reconstruction:

- (19) Reconstruction into θ -positions is prohibited.¹⁴

This restriction can perhaps be made more systematic, if reconstruction is obtained by *lowering* and not merely by the *interpretation* of a lower copy (see Boeckx 2001 in favor of "literal" lowering). In such case, a ban on reconstruction into a θ -position simply follows from the impossibility of movement into a θ -position.

Irrespective of the source of (19), perhaps the most robust prediction that it makes is lack of scope reversal between a subject and Neg:

- (20) [Everyone_i does not [_{VP} t_i smoke]]. $\forall > Neg; *Neg > \forall$

¹⁴ See also Heim's (1997) theory of quantification, which is in fact referred to in Johnson & Tomioka's work, which derives the same effect by forcing a quantificational DP to occupy a position external to a constituent (VP) in which it is θ -marked.

The inability of a quantificational subject to reconstruct below *not* cannot be simply due to a purported ban on scope reconstruction in A-chains advanced in Lasnik (1999), since there do exist cases of reconstruction in such a context. Consider for instance (21), which is ambiguous between (a) and (b):

- (21) A squirrel appears to have eaten our cashews.
- a. It appears that there is a squirrel which has eaten our cashews.
==> [appears [a squirrel to have eaten our cashews]]
 - b. There is a squirrel which appears to have eaten our cashews.
==> [a squirrel_i appears [t_i to have eaten our cashews]]

Under the reading in (21a), the indefinite is within the scope of *appear*. Under the reading in (21b), *appear* is in the scope of the indefinite. The two positions of the indefinite w.r.t. *appear* correspond to chain links of a subject-to-subject raising construction, an A-dependency. Several other facts discussed in Romero (1997), Lebeaux (1998), Sportiche (1999), Fox (2000), and Iatridou & Sichel (2008) suggest that Lasnik's generalized ban on reconstruction in A-chains is too strong. But if delimitation of scope evaluation in A-contexts indeed reduces to (19), then the fact that NP_G does not reconstruct below NP_{Th} does not constitute a problem for the analysis of anti-intervention effect in Case-probing advanced here.

While the lack of intervention in Case assignment to the direct object from v⁰ or Neg⁰ follows from the Case hierarchy and a revised version of *Closeness* in (17), Case assignment to the direct object from Neg⁰ is an operation which breaches the vP-edge boundary, a scenario disallowed by the PIC. A weakened version of the PIC would need to state that it constrains overt movement but it does not constrain Agree. But the reduction of the PIC to a more general property of the grammar organ becomes easier once Agree is eliminated and what is left is successive cyclic movement.

The rationale behind CL is that successive cyclicity does not teach us about the existence of special positions from which movement can take place, but instead that it is necessary for the linearization of a syntactic structure at PF. The key features of CL are multiple Spell-out and Order Preservation.

1.2 Phases as Spell-out Domains and Order Preservation

CL and the PIC-based phase theory share the assumption that Spell-out applies more than once throughout the derivation. The domain that undergoes Spell-out is a syntactic constituent that is mapped to phonology.¹⁵ While the higher Spell-out domain is a CP phase in both models, Fox & Pesetsky (2003, 2005a) and Ko (2005) argue that the size of the lower domain may vary cross-linguistically and can in principle be vP, or VP.¹⁶ (I return to this issue in the remainder of this chapter).

Each time the domain D_1 is constructed Spell-out linearizes D_1 at the PF interface. Once a new Spell-out domain D_{1+n} is completed, the tree of D_{1+n} is linearized, and the information about its linearization is added to the information collectively generated by previous applications of Spell-out. The two ideas which CL advances are as follows:

- information about linearization established at the Spell-out of a domain D is never changed or deleted throughout a derivation; thus, consecutive applications of Spell-out add new information to previously established ordering statements
- in order not to introduce contradiction to information about linearization of nodes α , β at the Spell-out of a domain D_1 , the relative order between α , β must be preserved at each application of Spell-out of a domain D_{1+n}

Since traces (cum covert copies) are PF-vacuous, only heads of trivial and non-trivial movement chains are parts of ordering statements. An ordering statement is a precedence relation " $<$ " between nodes which is established at each application of Spell-out.

(22) $<$

An ordering statement of the form $\alpha < \beta$ is understood by PF as meaning that the last element dominated by α (and not dominated by a trace) precedes the first element dominated by β (and not dominated by a trace).

¹⁵ There is some debate whether constituents mapped onto PF and LF at Spell-out are of identical size (see for instance Felser 2004 and Marušič 2006). Throughout the discussion, I will largely ignore the consequences of cyclic mapping between syntax and LF, though.

¹⁶ The fact that it is the VP (assumed to be a sister to v^0) which constitutes the lower Spell-out domain is reminiscent of Chomsky's (2001, *passim*) notion of a phase edge, whose consequence is that it is a complement to the phase head that is inaccessible to operations from outside the phase.

In F&P's formalism, a syntactic tree of a domain D is being Spelled-out according to Laws of Precedence (LP), which decide how nodes that participate in a certain instance of concatenation in syntax (head-complement, spec-head) are linearized with respect to one another (e.g. "if X is the mother of α and β and β is a complement of α , then α precedes β ", and others in a familiar way). LP(D) is mapped into a set L(D) by the operation LINEARIZE, which consists of ordering statements for elements of the domain D.¹⁷ All L(D)'s are being added to the Ordering Table:

(23) **LINEARIZE**

- a. Form the Linearization Set L(D):=

$$\{\alpha' < \beta' : \alpha < \beta \in LP(K), \text{ and } \alpha' \text{ is an End of } \alpha \text{ and } \beta' \text{ is a Beginning of } \beta\}$$
- b. Update the Ordering Table by adding the members of L(D)

where End and Beginning are defined as follows:

(24) **End**

x is an End of α iff x is an element reflexively dominated by α and $\neg \exists y$ such that y is dominated by α and $x < y \in \text{Ordering Table}$

(25) **Beginning**

x is a Beginning of α iff x is an element reflexively dominated by α and $\neg \exists y$ such that y is dominated by α and $y < x \in \text{Ordering Table}$

Perhaps the most important feature of F&P's system is a prohibition against ordering adjustments after the Spell-out of D. Other words, while movements within D may apply only *before* it is linearized, revisions of already established order *after* the Spell-out of D are impossible.

This is precisely what we observe in a long distance *wh*-movement:

¹⁷ In fact, in F&P's exact formulation ordering statements consist of terminal elements. Such a formulation rests on an assumption that only terminal nodes can lexicalize. Since I do not understand how this assumption influences the Laws of Precedence, I will continue not to restrict ordering statements to involve only terminals in view of work which suggests that Spell-out can target also non-terminal nodes (e.g. McCawley 1968 or Neeleman & Szendroi 2007).

(26) [CP To whom₅ will Jack [VP t₄ say [CP t₃ that Hilda [VP t₂ gave the book t₁]]]]?

The t₁-to-t₂ movement revises the order of nodes within VP in such a way that *to whom* precedes *gave the book*. Thus, the lower Spell-out domain, VP, provides the following ordering statement to the PF branch:

(27) [VP to < whom < gave < the < book]

Next in the derivation, the VP undergoes Spell-out and merges externally with the subject *Hilda* and the complementizer. The t₂-to-t₃ movement adds *to whom* to the ordering statement of the higher Spell-out domain, CP:

(28) [CP to whom < that < Hilda < [VP to whom < gave < the book]]

Subsequent movements t₃-t₄-t₅ add *to whom* to the ordering statements of the higher VP and CP. The successive cyclic movement of *to whom* proceeds in such a way that at the Spell-out of VP and CP, the previously established relative word order is conserved:

(29) [CP to whom < will < Jack < [VP to whom < say <
[CP to whom < that < Hilda < [VP to whom < gave < the book]]]]

The t₁-to-t₂ movement revised the base-derived word order before the VP linearized. Consider a scenario in which the t₁-to-t₂ movement does not take place, and *to whom* targets the left-most CP-position in one fell swoop, yielding (30).

(30) [... [CP to whom that Hilda [VP gave the book t₁]]]

If *to whom* moves to the CP directly from the complement position of *gave* without targeting the left edge of the VP first, then the Spell-out of both domains derives an ordering contradiction:

(31) [... [CP to whom < that < Hilda < [VP gave < the book < to whom]]]]

According to CL's thesis, the ordering statements in (31) become unlinearizable PF. In the

CP domain, *to whom* precedes *that, Hilda*, and the VP-material *gave* and *the book*, while the ordering statement established at the Spell-out of the VP says that *to whom* is preceded by *gave* and *the book*. Such a conflict makes the linearization of (31) impossible.

Spell-out linearizes a domain D once it is complete and merges with α (cf. (32b)). Likewise, the material of the higher (i.e. created later) domain D' becomes linearized only after the Spell-out of D' and the information about the linearization of D is added to the Ordering Table (cf. (32c)).

- (32) a. $[_D X Y Z]$
 b. $[\alpha [_D X < Y < Z]]$
 c. $[_{D'} \dots < \alpha < [_D X < Y < Z]]$

Assuming that order preservation is necessary for the linearization of an entire syntactic structure, F&P (2005) consider the following four derivational scenarios:

(33) **Movement from a left-edge position**

$$[_{D'} X \alpha [_D t_X Y Z]] \implies [_{D'} X < \alpha < [_D X < Y < Z]]$$

(34) **Movement from a non-left-edge position**

$$* [_{D'} Y \alpha [_D X t_Y Z]] \implies * [_{D'} Y < \alpha < [_D X < Y < Z]]$$

(35) **Movements from both left-edge and non-left-edge positions**

$$[_{D'} X Y \alpha [_D t_X t_Y Z]] \implies [_{D'} X < Y < \alpha < [_D X < Y < Z]]$$

(36) **Movement from a non-left-edge position with ellipsis**

$$[_{D'} Y \alpha [_D \cancel{X} t_Y \cancel{Z}]] \implies [_{D'} Y < \alpha < [_D \cancel{X} \cancel{Y} \cancel{Z}]]$$

In (33), the movement of X from the left-edge position preserves the order established at the Spell-out of D, since X precedes Y, Z after the Spell-out of D and D', where it also precedes α . (33) contrasts with (34), in which the non-edge movement of Y derives an unlinearizable α .

representation. At the Spell-out of D, Y follows X and precedes Z, while at the Spell-out of D', Y precedes X, which produces an ordering contradiction. In (35), both X and Y precede Z in D and D', and X precedes Y in D and D'. Note that this scenario derives a linearizable representation irrespective of whether X or Y moves first. Both possibilities have been independently motivated. For instance, if Y is a head and X is a phrase, Y moves first and creates a specifier to which X moves. (The reversed order of operations has been argued to give rise to an illicit vacuous movement (cf. Baker's 1988 Government Transparency Corollary, or Deprez' 1989 Dynamic Minimality)). No illicit movement is going to take place if X and Y are both phrases or heads, though. The derivational scenario in (36) involves a repair strategy, known as salvation by deletion (due Ross 1967). Y moves from the position following X in D to a position preceding X in D', which derives an ordering contradiction as in (34). However, since only overt categories are visible at PF, the offending domain D can undergo ellipsis yielding a well-formed representation.

1.3 Explaining Holmberg's Generalization

F&P (2003, 2005a) argue that CL as outlined above accounts for Scandinavian Object Shift (OS), which is well known to be conditioned by Holmberg's Generalization.

(37) **Holmberg's Generalization (as formulated as in Holmberg 1999: 15)**

Object shift cannot apply across a phonologically visible category asymmetrically c-commanding the object position except adjuncts.

Since Mainland Scandinavian and Icelandic are VO languages, the c-command relation between the phonologically visible category and the object translates into a linear precedence. HG defined in terms of hierarchical precedence as in (37) in fact makes the wrong prediction about right VP/V'-adjoined PPs, which c-command objects merged as V⁰-sisters. According to (37), all nodes above V⁰ which are phonologically visible should block object shift under asymmetric c-command. As (38) shows, this prediction is wrong, as the object *mej* 'me' moves past the VP even when it is c-commanded by the following phrase. The fact that left-adjoined adverbs do not constitute a barrier to OS indicates that they are not part of the lower Spell-out domain (i.e. they do not contribute to its ordering statement).

- (38) [_{CP} Ut kastade dom mej inte [_{VP} t_V t_O [bara ned för trappan]]]
 out threw they me not (only down the stairs)
 'They didn't throw me out, only down the stairs.' (Holmberg 1997: 209)

Also, HG is not category-sensitive. As will be shown below, not only verbs but any overt categories block OS. This implies that OS is not constrained by narrow syntax (at least not trivially), but by the PF interface.

Throughout the discussion of the Scandinavian facts, the underlying position of the subject is going to be ignored. Whether subjects are base generated in Spec-IP or raise to this position from Spec-vP is irrelevant at this point (though the underlying position of subjects is going to be important in the remainder of this work), since in either case subjects are not part of the VP and, hence, do not contribute to the ordering statement of the lower Spell-out domain.

Scandinavian languages are verb-second in main clauses, while embedded clauses rarely show this pattern. In V2 contexts, V moves to C, unless it is occupied by an auxiliary, in which case V-to-C movement is blocked. While object-DPs either optionally or obligatorily move leftward out of VP when V moves to C, OS is impossible when V does not move to C (as stated by HG). The negative adverb *inte* occupies the VP-external position and marks the VP boundary.

- (39) **OS blocked by unmoved verb in (b) and (c):**¹⁸
- a. Jag kysste henne inte [_{VP} t_V t_O]
 I kissed her not
 - b. * ... att jag henne inte [_{VP} kysste t_O]
 ... that I her not kissed
 - c. * Jag har henne inte [_{VP} kysst t_O]
 I have her not kissed

F&P assume that in the cases as in (39), OS does not target the left-edge of the Spell-out domain (VP), hence (39b) and (39c) must be instances of the scenario in (34), which derives an ordering contradiction. On the other hand, (39a) instantiates the well-formed representation predicted by the scenario in (35), where the movement of both elements to a

¹⁸ If not indicated otherwise, all Scandinavian examples are adopted from Holmberg (1999).

higher Spell-out domain recreates their relative order in the lower domain. In turn, in (39b), in the embedded clause V does not move to C and blocks OS. OS across the unmoved V produces a contradictory word order at the Spell-out of CP:

$$(40) \quad * \left[{}_{CP} C \left[{}_{IP} S \underset{\uparrow}{O} Adv \left[{}_{VP} V t_O \right] \right] \right] \implies * \left[{}_{CP} C < S < O < Adv < \left[{}_{VP} V < O \right] \right]$$

At the Spell-out of the CP domain, O precedes Adv and V of the lower domain, whereas in the previously linearized VP domain, O is preceded by V. The unattested representation in (39c) also violates Order Preservation:¹⁹

$$(41) \quad * \left[{}_{CP} S aux \left[{}_{IP} t_S t_{aux} \underset{\uparrow}{O} Adv \left[{}_{VP} V t_O \right] \right] \right] \implies$$

$$* \left[{}_{CP} S < aux < O < Adv < \left[{}_{VP} V < O \right] \right]$$

As we saw previously, the derivation in (39c)/(40) is ill-formed since O cannot both precede V and follow V in the Ordering Table.

Since PF blocking is not category-sensitive, not only verbs but also other categories that need to be linearized interfere with OS. The derivations below show that OS is impossible across the intervening indirect object (cf. (42a)) and the particle (cf. (42b)).

(42) **OS blocked by indirect object:**

- a. * Jag gav den inte [_{VP} Elsa t_O].
 I gave it_{ACC} not Elsa_{DAT}

OS blocked by particle:

- b. * Dom kastade mej inte [_{VP} t_V ut t_O].
 They threw me not out

Both representations are unattested due to violations of order preservation. As shown below, V precedes O in both domains, but the ordering between O and the IO/Particle is

¹⁹ Following F&P, I take subjects to move to Spec-CP, in concert with den Besten's (1983) analysis of V2. Zwart (1996) proposes that the subject raises only as high as Spec-TP and the verb moves to T. In either case, the relative word order between all elements involved remains the same.

inconsistent:

- (43) * $[_{CP} S V [_{IP} t_S O Adv [_{VP} t_V XP_{IO/Prt} t_O]]] \implies$
-
- * $[_{CP} S < V < O < Adv < [_{VP} V < XP_{IO/Prt} < O]]$

The scenario in (35) derives a well-formed representation, once the movement from the non-left edge position of Y in D is combined with the movement from the left-edge position of X in D in such a way that the relative order of X, Y in D is the same in D'. A well-formed OS is an implementation of this scenario.

(44) **Movement of the intervening indirect object:**

- a. Vem gav du deno inte $[_{VP} t_V t_{wh} t_O]$?
 who gave you_{DAT} it_{ACC} not
 'Who didn't give it to you?'

Movement of the intervening particle:

- b. Ut kastade dom mej inte $[_{VP} t_V t_{prt} t_O]$.
 out threw they me not
 'They didn't throw me out.'

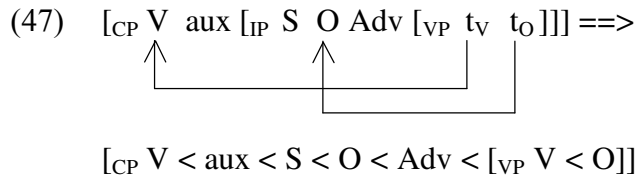
- (45) $[_{CP} XP V [_{IP} S O Adv [_{VP} t_{XP} t_V t_{XP} t_O]]] \implies$
-
- $[_{CP} XP < V < S < O < Adv < [_{VP} XP < V < O]]$

In (44)/(45), the XP intervener unblocks OS by first moving successive-cyclically (the first dotted line) to the left-edge of VP, and once the VP undergoes Spell-out, the XP moves further leftward to the higher domain. The verb moves to C and the XP A-bar moves to the CP-initial position, which conserves the word order Spelled-out in the VP domain. Note that the movement that revised the word order before VP was Spelled-out, is precisely what we observe in English *wh*-movement constructions in (1).

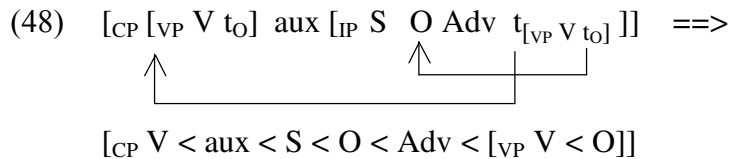
Holmberg (1999) shows that OS is possible not only if V moves to C, but also when V moves to Spec-CP when C is occupied by an auxiliary ("bare V Topialization"):

(46) **Bare V Topicalization**

Kysst har jag henne inte (bara hållit henne i handen)
 kissed have I her not (only held her by the hand)



Unblocking OS by V movement to Spec-CP is consistent with the derivational scenario in (35) and preserves the word order, but V movement to Spec-CP itself violates the Head Movement Constraint. F&P offer an alternative analysis of (46), which does not involve head movement, but a remnant VP fronting. Namely, after the Spell-out, the VP is vacated by OS and undergoes phrasal movement to the clause-initial position:



In (48), V precedes O at the Spell-out of VP. Next, O moves counter-cyclically to the higher domain. Finally, the remnant VP targets Spec-CP. At the Spell-out of CP, V precedes O, which preserves the first domain word order since the trace of the object-DP within VP is PF-vacuous.

There are two empirical arguments in favor of the remnant VP fronting analysis. First, topicalization of the indirect object with the verb *without* the direct object is possible (cf. (49)), while topicalization of the direct object with the verb *without* the indirect object is impossible (cf. (50)):

(49) **Well-formed topicalization of [VP V IO t_{DO}]**

? [CP [VP Gett henne_{IO} t_{DO}] har jag den_{DO} inte t_{VP}]
given her have I it not

(50) **Ill-formed topicalization of [VP V t_{DO} IO]**

* [CP [VP Gett t_{IO} den_{DO}] har jag henne inte t_{VP}]
given it have I her not

In (49), DO moves out of VP prior the topicalization of the remnant, which moves to the clause-initial position. In the unattested construction in (50), IO vacates VP prior the topicalization of the remnant. In this way, (49) derives a linearizable representation, while (50) violates order conservation.

The other argument in support of the remnant VP fronting comes from ECM constructions. The ECM subject resists OS, since the remainder of the infinitival complement follows the subject at the point of Spell-out of the higher VP domain.

(51) **Ill-formed OS in ECM contexts**

* [CP [VP Hört t_O hålla föredrag] har jag henne_O inte t_{VP}]
heard give talk have I her not

Henne precedes *hålla föredrag* in the VP, and *hålla föredrag* precede *henne* at the CP level, which yields an unlinearizable representation.

According to the CL logic, we have so far seen that while OS itself is a counter-cyclic operation, linearization of syntactic structures is a cyclic operation.

1.4 The Inverse Holmberg Effect

In the previous section it was established that movement across the intervener is impossible unless the intervener moves out of the way in such a manner that the respective word order is preserved. However, there also exists a scenario in which movement across the intervener is going to derive a well-formed representation. F&P argue that movement across the intervener is in fact possible if it first targets a left-edge of VP or CP. Such a movement across the preceding element within a domain revises the relative word order before the application of

Spell-out and is hence licit. This is precisely the type of movement that revised the word order in (26), and which also shows in Scandinavian Quantifier Movement (QM).²⁰

Rögnvaldsson (1987) and Svenonius (2000), among others, show that QM takes place across V, which violates Holmberg's Generalization.

(52) **Icelandic QM**

Jón hefur ekkert_Q [_{VP} sagt Sveini_{IO} t_Q]
 Jón has nothing said Svein
 'Jón hasn't told Svein anything.'

The representation in (52) gives the superficial effect of Order Preservation violation. However, if *ekkert* first moves by QM to the left edge of VP, it revises the word order and the derivation becomes linearizable:

$$(53) \quad [_{CP}[_{IP} \dots \underset{\uparrow}{Q} \dots [_{VP} t_{Q^2} V IO t_{Q^1}]]] \implies [_{CP} \dots < Q < \dots < [_{VP} Q < V < IO]]$$

Rögnvaldsson (1987) points out that QM is possible only in the *absence* of an auxiliary occupying C, as shown below.

$$(54) \quad * [_{CP} Jón \text{ sagdhi ekkert}_Q [_{VP} t_{Q^2} t_V \text{ Sveini}_{IO} t_{Q^1}]] \implies$$

Jón said nothing Svein

$$* [_{CP} \dots < V < Q < [_{VP} Q < V < IO]]$$

If order preservation is necessary for linearization which proceeds cyclically, then the fact that QM is incompatible with V movement to C comes as expected. As shown above, such a combination derives an ordering contradiction between Q and V.

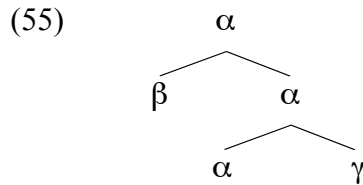
1.5 Wrapping up

The claim behind the PIC is that no part of a syntactic tree which constitutes a phase α_1 can

²⁰ As noted in F&P (2005a: 31, fn.23), unlike other Scandinavian languages, Norwegian QM does observe HG and appears to operate in concert with well-formed derivations in (33), (35), and (36).

participate in an operation which involves a syntactic tree of an upper phase α_2 , with an exception of nodes which constitute a phase edge.

According to PIC, in a tree like in (55) where α is a phase head -- in the sense that it projects its label -- a phase edge is nothing but a node which is either labeled as α or is a specifier to a node bearing such a label.



Since specifiers do not share the label of the head they merge with, their status of a phase edge is dubious given its exceptional character within the set of nodes which count as such. Even more problematic is the fact that a phase edge is hard to define in a bare phrase structure theory. In the tree like in (55), nodes β and γ are both sisters to (some projection of) α and are both dominated and c-commanded by (some projection of) α . Nevertheless, it is only β but not γ that constitutes the phase edge together with α .

CL avoids these problems by simply not assuming the existence of a phase edge (cum "an escape hatch" position for movement) and, instead, it advances that the effects predicted by PIC follow from a set of assumptions about linearization.

In the remainder of this work, I investigate a number of predictions the CL theory makes and whether order preserving derivations hold in the syntax of Polish, a language which exhibits a considerable amount of word order freedom. Of special importance to the discussion of clause-internal and clause-external movements in Polish is the position of the participle in the clause. In what follows, I discuss the internal and external syntax of the participle and then I consider the consequences it has for the linearization of certain constructions involving the displacement of the verb and the arguments.

2 Refining Slavic Verbal Morphology: Evidence from Polish

A standard assumption about the constituent structure of a Slavic verb is that it follows the Jakobsonian template (with the prefix being optional):

(56) $[_{Agr} [_T [_{ThV} [_{\sqrt{root}} [_{Pref} Pref] \sqrt{root}] ThV] T] Agr]$

The constituent structure in (1), originally proposed for Russian (Jakobson 1948), continues to be adopted for Slavic (for Polish see Schenker 1954, Laskowski 1975, Gussmann 1980, Czaykowska-Higgins 1988 among many others; for a recent discussion of Russian see Halle 2008). According to (56), the tree structure of the verb is left-branching and the root with a prefix (if present) constitute the most embedded part of the word and are dominated by a sequence of functional affixes: Theme vowel (ThV), Tense, and Person/Number Agreement. However, evidence from Polish suggests that the template in (56) is wrong.

In what follows, I argue that the constituent structure of the verb is right-braching and that it is the functional morphemes that are most embedded in the word. Thus, the constituent structure of a finite verb in Polish is as in (57):

(57) $[_{Pref} Pref [_{ThV} [_{\sqrt{root}} \sqrt{root}]] [_{ThV} ThV [_{Voice} Voice [_T T [_{Agr} Agr]]]]]]]$

I will then outline a consequence the structure in (57) has for phonology. Throughout the discussion, I will assume that all word formation takes place in syntax.

The first refinement that needs to be made to (56) is the inclusion of Voice morphology into the structure. Before making a case for the inclusion of the Voice morpheme into the template, consider first the status of the morpheme preceding Voice in (57), i.e. the verbalizing suffix or Theme vowel (ThV).

2.1 Theme Vowels in Verbal Stems

The following is the list of Polish Theme vowels:

(58)

Theme vowel	Infinitive: $\sqrt{\text{ROOT-THV-INF}}$	Gloss
<i>i</i>	pal-i-ć	'smoke'
<i>e</i>	widzi-e-ć	'see'
\emptyset	gryź- \emptyset -ć	'bite'
<i>a</i>	pis-a-ć	'write'
<i>aj</i>	zn-a-ć ²¹	'know'
<i>Ej</i>	łysi-e-ć	'lose hair'
<i>ova</i>	bud-owa-ć	'build'
<i>non</i>	kop-ną-ć	'kick'

I have advanced elsewhere (Wiland 2008a) that verbalizing suffixes (ThVs) Spell-out the lower phase head, the little v^0 . There are two independent arguments in favor of the claim that ThVs are phonetic exponents of v^0 .

First, according to minimalist guidelines, the phasal v^0 determines syntacto-semantic properties of the phase it heads (Chomsky 2007). Indeed, as discussed in Svenonius (2004a) and especially in Jabłońska (2007), there is a considerable degree of correlation between the ThV of a participle and its argument structure. Jabłońska reports that while *-e-*, *- \emptyset -*, and *-a-* classes are not productive in Modern Polish and verbs that belong to the *-ova-* class do not form a homogenous syntactic class, *-i-*, *-aj-*, *-Ej-*, and *-non-* class stems each participate in their own syntactic structures.

For instance, *-i-* class stems are only transitive or unergative (e.g. *pal-i-ć* 'smoke', *wierz-y-ć* 'believe', *nos-i-ć* 'carry', *prowadz-i-ć* 'lead'/'drive', *rob-i-ć* 'do', etc.) and *-Ej-* class stems are only unaccusative (e.g. *łysi-E-ć* 'lose hair', *topni-E-ć* 'melt', *głupi-E-ć* 'become stupid', *ładni-E-ć* 'become pretty', etc.). (The fact about *-i-* and *-Ej-* stems is reported to hold also in Russian in Svenonius 2004a).

Some other ThVs are linked with Aspect. For instance, while in Slavic aspectual contribution to the semantics of a participle is derived by prefixation (e.g. Imperfective

²¹ Morpheme final glides in Theme vowels *-aj-* and *-Ej-* do not surface before the infinitival suffix *-ć-* [tɕ] due to the cyclic phonological rule of Glide Truncation, which deletes a glide before a consonant (Jakobson 1948). The underlying representations of these theme vowels surface in finite forms, as for instance in *łysi-Ej-esz* 'lose hair'-2SG.PRES.

robić – Perfective *z-robić* 'do'), Svenonius (p. 183) points out that Slavic stems can also exhibit a Perfective~Imperfective alternation without prefixation. Namely, stems whose ThV is *-i-* in the Perfective, become Imperfective once the Theme vowel is substituted by *-aj-*, as in the examples from Townsend (1975) for Russian and from Milićević (2004) for Serbo-Croatian (as cited in Svenonius' work):

(59) **Perfective-Imperfective alternation in Russian**

	<u>Perfective</u>	<u>Imperfective</u>	<u>Gloss</u>
a.	končítj	končátj	'end'
b.	plenítj	plenátj	'captivate'
c.	brosítj	brosátj	'throw'
d.	stupítj	stupátj	'sleep'

(60) **Perfective-Imperfective alternation in Serbo-Croatian**

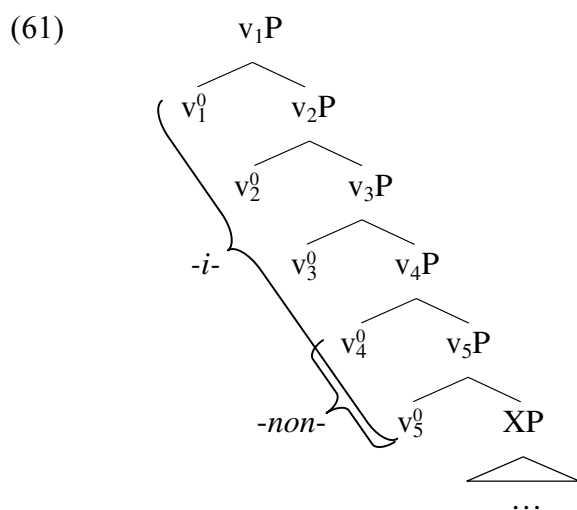
	<u>Perfective</u>	<u>Imperfective</u>	<u>Gloss</u>
a.	baciti	bacati	'show'
b.	skociti	skakati	'jump'
c.	udariti	udarati	'hit'

What is particularly interesting is that in Polish, apart from the pattern discussed in Svenonius' work, Imperfectivity can be achieved by merging *-aj-* with a root of a stem which belongs to conjugation class other than *-i-*. Thus, while *skocz-y-ć* – *skak-a-ć* 'jump', *uderz-y-ć* – *uderz-a-ć* 'hit' follow the familiar *i~aj* alternation pattern, Imperfectivity by merging with *-aj-* is available to *-non-*stems as well (e.g. *kop-ną-ć* – *kop-a-ć* 'kick', *parsk-ną-ć* – *parsk-a-ć* 'snort', *zamarz-ną-ć* – *zamarz-a-ć* 'freeze', *mach-ną-ć* – *mach-a-ć* 'wave').²² Note that while the Imperfectivity-marking ThV *-aj-* can be confused here with the ThV *-a-* due to the following consonant-initial infinitival morpheme *-ć-* [tɕ] which triggers the Glide Truncation rule (cf. fn. 21), its underlying representation is retained for instance in Imperative, as in *parsk-aj-Ø* 'snort'-IMP, *mach-aj-Ø* 'wave'-IMP, etc. Since the phonetic exponent of the Imperative morpheme is *-Ø-*, no environment for the deletion of the final glide in *-aj-* is created.

²² Also, Svenonius (2004a) and Jabłońska (2007) point out that the *-non-* morpheme itself has a semelfactive function and indicates a punctual event. Again, the same is reported to hold in Russian (Romanova 2004), Serbo-Croatian (Milićević 2004), as well as Bulgarian (Istratkova 2004).

I take these facts to indicate that there exists a certain degree of dependence between the ThV and the syntactic and semantic properties associated with the verbal stem.

Despite the fact that Jabłońska (2007) discusses the syntax of ThVs in abstraction from phases, she reaches a conclusion about them in a way similar to the one reached here, namely that ThVs lexicalize the light verb system. She concludes, however, that there is more than one position in the functional hierarchy of the clause which Spells-out as a ThV. In particular, she adopts the lexicalization system of Starke (2006) and Ramchand (2008) and proposes that ThVs lexicalize non-terminal nodes and span across whole sequences of syntactic projections. In this way the lexical insertion of ThVs targets subsets of the light verb system. For instance, as outlined in (61), ThV *-i-* lexicalizes the sequence $v_1^0 \dots v_3^0$ and ThV *-non-* lexicalizes the sequence $v_4^0 \dots v_5^0$, that is it spans across the subset of the sequence lexicalized as *-i-*.



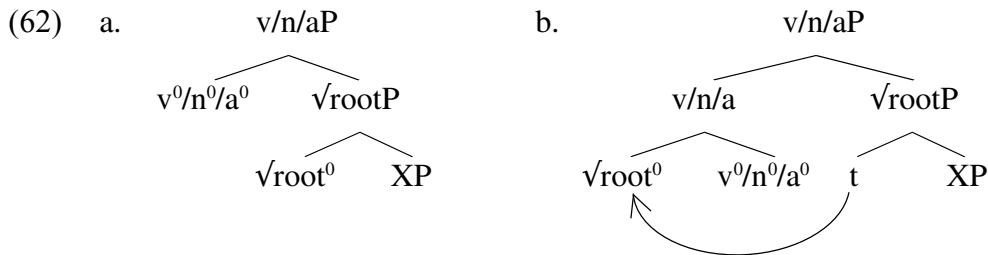
Despite this difference, the conclusion of Jabłońska's work is to a certain extent in concert with the approach to ThVs taken here, especially if a phase head can be recursive.²³ Nevertheless, I will continue to refer to the phase head as a singleton head.

The other argument for the little v^0 Spelling out as a ThV comes from the theory of syntactic categories.

In an approach to morphology like Marantz (1997), syntactic categories are created in

²³ As far as I can see, nothing particular in the theory prohibits phase heads from being recursive.

syntax by merging a pre-categorial root with a category assigning little v^0 , n^0 , or a^0 :



Within such an approach to syntactic categories, showing that ThVs that are present in verbal stems Spell-out the little v^0 demands demonstrating that nominal and adjectival stems comprise the same pre-categorial root and a Theme vowel which Spells-out the little n^0 or a^0 , respectively. Other words, what needs to be demonstrated is the fact that just like ThVs in verbal stems are verbalizing suffixes, nominalizing ThVs can be found in nominal stems and adjectivizing ThVs can be found in adjectival stems. However, while the autonomy of roots in verbal, nominal, or adjectival stems is a descriptive fact of Polish (cf. (63)), there is no straightforward evidence for the presence of a Theme vowel in nominal stems.

(63)	<u>$\check{v}+V$</u>	<u>(pref+)$\check{v}+N$</u>	<u>$\check{v}+A$</u>
	pal-ić 'smoke'	(za-)pal-enie 'inflammation'	pal-ony 'smoked'
	widz-ieć 'see'	widz-enie 'seeing'	widz-ący 'able to see'
	gryź-ć 'bite'	(u-)gryzi-enie 'bite'	gryzi-ony 'bitten'
	pis-ać 'write'	pis-mo 'writing'	pis-any 'written'
	zn-ać 'know'	(po-)zn-anie 'familiarity'	zn-any 'familiar'
	łys-ieć 'lose hair'	łys-ina 'bald spot'	łys-y 'bald'
	bud-ować 'build'	bud-ynek 'building'	bud-ujący 'under construction'
	kop-nąć 'kick'	kop-niak 'kick'	kop-iący 'kicking'

In what follows, I will demonstrate that the lack of a Theme vowel in nominal stems is only apparent and that it is present in an underlying representation of a noun. We will see that evidence for Theme vowels comes from the derivational approach to phonology, developed in Chomsky & Halle (1968), Pesetsky (1979), Kiparsky (1982), Halle & Vergnaud (1987), and most recently advanced in Halle & Nevins' (2008) work on Slavic. In such an approach, phonological rules are organized into two blocks: cyclic and post-cyclic. Rules of

the cyclic block apply iteratively from smaller to larger morphological constituents. Rules of the post-cyclic block apply once to the entire word after all cyclic rules have applied. Organization of rules in both blocks is determined by strict ordering. For the sake of the argument, I will concentrate on nominal stems only, with the proviso of extending the same logic to adjectival stems.

2.2 Unifying the Format of Lexical Categories: Theme Vowels in Nominal Stems

The existence of Theme vowels in nominal (as well as adjectival) stems has been often unacknowledged in the literature on Polish phonology (e.g. Rubach 1984, Gussmann 2007) due to the fact that they are not present overtly in nominal declensions. Against this tradition, I will briefly reiterate the argument for the existence of Theme vowels in the underlying representations of nominal stems from my earlier work (see Wiland 2008b for a more elaborate discussion). It will be shown that the fact that a Theme vowel is not retained in the surface representation of a noun is motivated phonologically. On top of that, we will see that a Theme vowel does appear in the surface representation of certain nominal stems under a condition on the phonological shape of the Case suffix, which follows it.

I start with outlining the Polish vowel system and a subset of rules that will be relevant to the discussion.

Phonetically, Polish has the following vowels: *i ɨ u e o a*. Phonologically distinguishable vowels include also two abstract yers: [-back] /I/ and [+back] /U/. The feature geometry of Polish vowels that appear in the underlying representations of morphemes are as follows:²⁴

Table 1: Feature geometry of Polish vowels

	[i]	[ɨ]	[u]	[e]	[a]	[I]	[U]	[E]	[O]
ATR	+	+	+	+	+	-	-	-	-
Back	-	+	+	-	+	-	+	-	+
Round	-	-	+	-	-	-	+	-	+
High	+	+	+	-	-	+	+	-	-

²⁴ Throughout the presentation, I make a background assumption about feature geometry as developed in Sagey (1986) and Halle (1995, 2003, 2005), with a notable remark on feature spreading made in Halle (2005: 30).

Perhaps the one single most prominent rule that applies to Polish and Slavic vowels is Vowel Truncation:

(64) **Vowel Truncation**

$$V \implies \emptyset / _ V$$

The rule, which was originally discovered to operate in Russian conjugation in Jakobson (1948), deletes a vowel that precedes a morpheme beginning with a vowel. This eliminates vowel sequences in Slavic. Importantly, the rule is listed only in the cyclic block of rules. Since Slavic prefixes are well-known not to be subject to cyclic rules, they are immune to Vowel Truncation. This is observed whenever a prefix ending with a vowel merges with a vowel-initial root, as in *prze-obrażony* [pʃeobraʒonɨ] 'transformed'-A, or *na-uka* [nauka] 'science'-N, instead of unattested *[pʃobraʒonɨ], or *[nuka]. Other morphemes, however, are subject to cyclic rules, including Vowel Truncation. As will be argued in the remainder of this section, the fact that ThV is not retained in a surface representation of a noun is merely a result of the application of Vowel Truncation.

In Polish (and in Slavic, more generally) yer vowels, although present underlyingly, do not appear in the surface representation of a word. This is due to the fact that they are subject to two rules: Yer Lowering and Yer Deletion (see Lightner 1972, Pesetsky 1979, Gussmann 1980, Rubach 1984, Szpyra 1992, Halle and Matushansky 2006):

(65) **Yer Lowering**

$$V_{[+high, -ATR]} \implies E / _ C_0 V_{[+high, -ATR]}$$

(66) **Yer Deletion**

$$V_{[+high, -ATR]} \implies \emptyset / \text{elsewhere than (65)}$$

Unlike in Russian, where the [-back] yer lowers to /E/ and the [+back] yer lowers to /O/, both yers in Polish lower to /E/. In Russian, the Lowering rule is, thus, simplified as in (67):

$$(67) \quad V_{[+high, -ATR]} \implies [-high] / _ C_0 V_{[+high, -ATR]}$$

As has been extensively discussed in the literature on Slavic phonology, while Yer

Lowering is listed both in the cyclic and the post-cyclic block of rules, Yer Deletion is listed only in the post-cyclic block, i.e. it applies to the entire word after all cyclic rules have applied.

The rule in (65) lowers the abstract vowels /I/ and /U/ to /E/ and underlies the vowel~zero alternation as in the noun *walec* 'roll'. The Masculine Nominative Sg form of the nominal stem /valUts-/ is [valEts] and the Genitive Sg is [valtsa]. The Nominative Sg Case exponent of the masculine stem /valUts-/ is a yer *-U*, which once added to the stem triggers the Lowering rule and subsequently deletes in the post-cycle, yielding [valEts]:

(68) **Derivation of Msc.Nom.Sg**

/valUts+U/	Underlying representation
[valEts+U]	by cyclic <i>Yer Lowering</i>
valEtsØ	by post-cyclic <i>Yer Deletion</i>
valEts	Correct output

The exponent of the Masculine Genitive Sg morpheme is *-a-*, hence its addition to /valUts-/ does not create the environment for the application of Yer Lowering in the stem. Yer Deletion applies as usual, deriving [valtsa]:²⁵

(69) **Derivation of Msc.Gen.Sg**

/valUts+a/	Underlying rep.
valØtsa	by post-cyclic <i>Yer Deletion</i>
valtsa	Correct output

As has been often emphasized in the literature on Slavic, the vowel~zero alternation cannot involve epenthesis. Perhaps the strongest argument against the ephenthetic analysis comes from the fact that the alternation cannot be predicted from the phonological context. For instance, as pointed out in Szpyra (1995: 99), despite the fact that in an example like (68) a word-final sonorant-obstruent cluster is broken by a yer, such clusters do form well-formed codas. Consider for instance the noun *walc* [valts] 'waltz'-MSC.NOM.SG. The addition of the Masculine Nominative Sg exponent *-U* to the stem /valts-/ derives [valts], not *[valEts]. This is expected if /valUts-/ *walec* 'roll' but not /valts-/ *walc* 'waltz' includes a yer in the

²⁵ Analogous examples of the application of (67) in Modern Russian are provided in Halle & Nevins (2008).

underlying representation:

(70) **Derivation of Msc.Nom.Sg**

/valts+U/	Underlying rep.
valtsØ	by post-cyclic <i>Yer Deletion</i>
valts	Correct output

Obviously, the addition of the Genitive Sg exponent *-a-* to /valts-/ yields a surface representation identical to the one in (69):

(71) **Derivation of Msc.Gen.Sg**

/valts+a/	Underlying rep.
valtsa	Correct output

For more arguments against the epenthetic analysis of yers see Szpyra (1995: chap. 3).

2.2.1 Evidence from Instrumental Sg *-mU*

As noted in the literature on Latvian (Halle 1992) and Russian (Halle 1994 and Halle & Matushansky 2006), the Theme vowel determines the inflection class of the nominal and the adjectival stem. This idea can account for the fact that nominal stems with identical stem-final clusters belong to different declension classes despite the fact that ThVs are not retained in surface representations of nouns. For instance, while word-final clusters in Masculine Nominative Sg forms of *pan* [pan] 'mister' or *kran* [kran] 'tap' are identical, the two nouns combine each with a different Genitive Sg suffix, *pan-a* [pana] and *kran-u* [kranu], respectively.

In order to see how the vowel~zero alternation provides evidence for a Theme vowel in the nominal stem, consider the derivations of Masculine Nominative and Instrumental Sg forms of *tlen* 'oxygen': [tɬEn]-NOM.SG – tlenem [tɬEnEm]-INSTR.SG, and *pień* 'tree trunk': [p'En']-NOM.SG – *pniem* [p'n'em]-INSTR.SG.

On the face of it, in order to derive the surface form of Nominative Sg of *tlen* [tɬEn] 'oxygen', all one needs to say is that the Case suffix *-U-* attaches directly to the root [tɬIn-]. This would mean that the underlying representation of *tlen* is /tɬIn+U/ and the derivation

proceeds as follows:

(72)	/tIn+U/	Underlying rep.
	[tIn+U]	<u>cycle 1</u> :
	↓	- "/t/ ==> /l/" rule (to be discussed in the next section)
	[tIn+U]	
	↓	- <i>Yer Lowering</i>
	[tEn+U]	<u>post-cycle</u> :
	↓	- <i>Yer Deletion</i>
	[tEnØ]	
	tEn	Correct output

However, Genitive Sg reveals that the underlying representation assumed for (72) is wrong. Since Case endings in nouns begin mostly with a vowel, a preceding ThV in the stem (as advanced here) does not surface due to Vowel Truncation. One of the few exceptions is Instrumental Sg suffix of masculine stems *-mU-* (cf. Halle 1992, 1994, 2008 on Latvian and Russian; Halle & Nevins 2008 on Russian and Czech; and Wiland 2008b on Polish). Since the addition of the Instrumental Sg to the nominal stem does not create an environment for the application of Vowel Truncation, the Theme vowel is retained in the surface representation of the noun, as in *tlenem* [tInEm]. This, in turn, indicates that the underlying representation of *tlen* comprises not two but three morphemes, the pre-categorial root, the ThV, and the Case suffix, yielding /tIn+U+Case/. Given this representation, the derivation of Nominative Sg proceeds as follows:

(73)	/tIn+U+U/	Underlying rep.
	[tIn+U]+U	<u>cycle 1</u> :
	↓	- "/t/ ==> /l/" rule
	[tIn+U]+U	
	↓	- <i>Yer Lowering</i>
	[tEn+U+U]	<u>cycle 2</u> :
	↓	- <i>Vowel Truncation</i>
	[tEn+Ø+U]	<u>post-cycle</u> :
	↓	- <i>Yer Deletion</i>
	[tEnØØ]	

tlEn Correct output

The same subset of rules applies in the derivation of Instrumental Sg. Of particular importance is the application of Lowering on the 2nd cycle, as this is precisely where the apparent "zero" present in the surface representation of Nominative Sg surfaces overtly as *E*:

(74) **Derivation of Instr.Sg**

/tʎIn+U+mU/	Underlying rep.
[tʎIn+U]+mU	<u>cycle 1</u> :
↓	- "/ʎ/ ==> /l/" rule
[tlIn+U]+U	
↓	- <i>Yer Lowering</i>
[tlEn+U+mU]	<u>cycle 2</u> :
↓	- <i>Yer Lowering</i>
[tlEn+E+mU]	<u>post-cycle</u> :
↓	- <i>Yer Deletion</i>
[tlEnEmØ]	
tlEnEm	Correct output

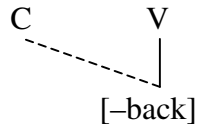
Since the exponent of Genitive Sg is *-mU*, the preceding ThV *-U-* Lowers to *-E-* as usual. Note that while Vowel Truncation will delete any ThV (as it does on the 2nd cycle in (73)), we have good evidence that the ThV in *tlen* is indeed a [+back] yer *-U-*, not *-E-* which surfaces in Instrumental Sg. (If the ThV was *-E-*, Yer Lowering simply would not have anything to apply to on the 2nd cycle in (74), without the influence on the surface form of the word). The evidence for *-U-* (and against *-E-*) comes from *Palatalization*. At the same time, this process provides a second argument for the existence of ThVs in nominal stems.

2.2.2 Evidence from Palatalization

Palatalization is a process whereby a [-back] vowel forces the spread of the [-back] feature onto a preceding consonant.²⁶

²⁶ See Gussmann (1980) and much subsequent work on this process in Polish, and Halle (2005) for an analysis of palatalization as feature assimilation.

(75) **Palatalization**



Palatalization processes come in several flavors. For instance, coronals palatalize to prepalatal fricatives and affricates: *pas* [pas] – *pasie* [paɕe] 'belt'-1SG.NOM–LOC or *mróz* [mrus] – *mrozie* [mroʐe] 'cold'-1SG.NOM–LOC, *but* [but] – *bucie* [butɕe] 'shoe'-1SG.NOM–LOC or *lód* [lud] – *lodzie* [lodʐe] 'ice'-1SG.NOM–LOC. On the other hand, velars palatalize to [-back] consonants, as in *mak* [mak] – *maczek* [matɕek] 'poppy'-1SG.NOM–DIM, *mózg* [musk] – *mózdzek* [muzɕdek] 'brain'-1SG.NOM–DIM, *mech* [mex] – *meszek* [meɕek] 'moss'-1SG.NOM–DIM, etc.

In the derivations (72)-(74) I have proposed a tentative rule which changes a back voiced alveolar lateral approximant /ɫ/ into a voiced labial velarized approximant /ʌ/. There are two lateral approximants in the inventory of Polish consonants, a front /l/ and a back /ɫ/, and the latter one always surfaces as [w]. While both lateral approximants are attested in a variety of contexts, as for instance in [l]as 'forrest', [l]is 'fox', [l]uneta 'spy-glass', [w]otr 'rascal', [w]ykać 'to swallow', [w]ata 'patch', /ɫ/ additionally undergoes Palatalization. The rule, which applies unexceptionally to all consonants, is responsible for contrasts like *miot[w]a* 'a sweep' – *miot[l]iśmy* 'sweep'-1PL.MSC.PAST; *by[w]yśmy*-1PL.FEM.PAST – *by[l]iśmy*-1PL.MSC.PAST 'to be'; *robi[w]-2SG.MSC.PAST* / *robi[w]a*-2SG.FEM.PAST / *robi[w]o*-2SG.NEU.PAST – *robi[l]i*-2PL.MSC.PAST 'to do', etc. Thus, the cyclic rule which I dubbed as "/ɫ/ ==> /ʌ/" in the derivations (72)-(74), should be substituted by a general rule in (75), whereby /ɫ/ in the stem /tʃIn-/ becomes palatalized before the [-back] yer /ʌ/ in these derivations.

While /ɫ/ undergoes Palatalization before *E* as in *szko[w]a* 'school' – *szko[l]enie* 'schooling', it can also fail to do so and surface as [w] as in [w]ep 'a head' or *by[w]em*-1SG.MSC.PAST 'be'. This contrast can be explained if the non-palatalizing *E* is underlyingly a [+back] yer *U*, which surfaces as *E* by Yer Lowering. Since Palatalization is triggered by any [-back] vowel, the ThV in *tlen* must be underlyingly -*U*-, not -*E*-.

Note that the examples like *pas* [pas] – *pasie* [paɕe] 'belt'-1SG.NOM–LOC or *mróz* [mrus] – *mrozie* [mroʐe] 'cold'-1SG.NOM–LOC also indicate that word-finality does not trigger

Palatalization, which is solely conditioned by the presence of a following [-back] vowel. This means that whenever a word-final consonant is Palatalized, it is followed by a [-back] vowel in an underlying representation of a word. This fact can be used as evidence for the presence of a [-back] Theme vowel in an underlying representation of a noun whose stem ends with a soft consonant. Take Nominative Sg *pień* [p'En'] 'tree trunk' as an example. The source of the palatalized word-final nasal must be different than the Case suffix, since the exponent of Nominative Sg is a [+back] yer *-U* (cf. (68), or (70)). Palatalization in this context is expected if a nominal stem comprises a pre-categorial root /pIn-/ and a nominalizing suffix (ThV) whose exponent is a [-back] vowel. For a moment, let us assume that the exponent of the nominalizing ThV selected by the root /pIn-/ is *-E-*, the issue I will come back to shortly.²⁷ The derivation of *pień* [p'En']-NOM.SG proceeds as follows:

(76) **Derivation of Msc.Nom.Sg**

/pIn+E+U/	Underlying rep.
[pIn+E]+U	<u>cycle 1:</u>
↓	- Palatalization (2x)
[p'In'+E+U]	<u>cycle 2:</u>
↓	- Vowel Truncation
[p'In'ØU]	<u>post-cycle:</u>
↓	- Yer Lowering
[p'En'ØU]	
↓	- Yer Deletion
[p'En'ØØ]	
p'En'	Correct output

Note that while Yer Lowering is listed both in the cyclic and the non-cyclic block of rules, the yer in the root /pIn-/ lowers to *E* by the application of Yer Lowering in the post-cycle. This is so since only the deletion of the ThV on the 2nd cycle derives the environment for the application of Yer Lowering. (An alternative would involve Yer Lowering and Vowel Truncation both applying on the 2nd cycle. Evidence provided in Gussmann 1980 indicates that such an alternative is wrong headed since Vowel Truncation is later than Yer

²⁷ Given the mirror principle, whereby surface morpheme orders mirror the syntactic hierarchy, it is in fact the ThV that selects a root since the former c-commands the latter before movement takes place (cf. (62)).

Lowering. Despite that fact that Vowel Truncation derives an environment for the application of Yer Lowering here, Lowering does not get "a second chance" to apply due to the principle of strict cyclicity (Kean 1974, Mascaro 1976), whereby if a rule does not apply to a substring in a cycle it cannot apply to this substring on a later cycle).

The form of Instrumental Sg *pniem* [p'n'Em] reveals both that there is a yer in the underlying representation of the root (as indicated by the vowel~zero alternation) and that the ThV is not a [-back] *-I-* but [-back] *-E-*, as the ThV does not trigger Lowering in the root:

(77) **Derivation of Msc.Instr.Sg**

/pIn+E+mU/	Underlying rep.
[pIn+E]+mU	<u>cycle 1</u> :
↓	- Palatalization (2x)
[p'In'+E+mU]	<u>cycle 2</u> :
↓	- no rules apply
[p'In'EmU]	<u>post-cycle</u> :
↓	- Yer Deletion (2x)
[p'Øn'EmØ]	
p'n'Em	Correct output

If the exponent of the ThV was *-I-*, the surface representation of Genitive Sg would be *[p'En'Em], counter fact. Recall that Lowering in the root in the Nominative Sg form takes place post-cyclically and is triggered by the Nominative Sg suffix *-U-*. Since the Instrumental Sg suffix is *-mU*, no environment for the Lowering in the root is created in this context.

If nominal stems do not include a ThV, then the vowel~zero alternation and palatalization in nominal stems either remain unexplained or must be explained by postulating contextually *undefined* allomorphy (given arguments against epenethesis and the distribution of hard and soft consonants in identical phonological environments). In contrast, the vowel~zero alternation and palatalization facts follow from the constituent structure of nominal stem which comprises not one but two morphemes: a root and a category-defining suffix (ThV). This, in turn, makes a case for a theory of syntactic categories according to which they are derived in syntax by the merger of the root with a

(82) **Impersonal**

Zwolnio-**n-o** Jolę, [żeby PRO zrobić miejsce dla Marii]
fire-PASS-AGR:DEF Jola-ACC to make place for Mary-GEN
'Jola was fired in order to make a vacancy for Mary.'

Thus, both types of passive can have an implicit Agent controller, but only the periphrastic passive can have an overt one.

In concert with the minimalist guidelines that the Causative head, which is attributed to the little v^0 , is responsible for the assignment of structural ACC to the direct Object in the active Voice, passivization in English-type languages has often been accounted for by postulating some kind of "defectivity" of the little v^0 (following the insight in Chomsky 2000, *et seq.*).³⁰ Such an analysis cannot be extended to Polish-type languages, which not only manifest the lack of ACC-absorption but also stack passive morphology on top of the Theme vowel (the little v^0), as in the examples above. This indicates that in Polish, Voice⁰ is the locus of voice morphology and, given the mirror principle, VoiceP dominates vP :³¹

³⁰ Suffice it to say that there exist a number of alternative analyses of the English passive construction, including but not limited to Collins (2005) or Gehrke & Grillo (2008).

³¹ For the tree in (28) and throughout this work, "dominance" is distinguished from "immediate dominance". Unless indicated otherwise, a sequence of projections such as in (i) should be read as " αP dominates βP ".

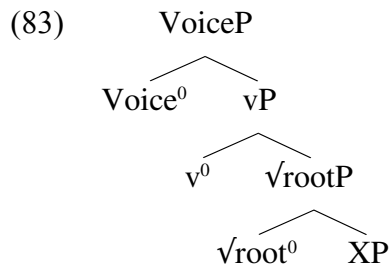
(i) $[_{\alpha P} \alpha^0 [_{\beta P} \beta^0]]$

Such a formulation does not provide information about other nodes between αP and βP (including the lack thereof). For (83) it means that: (a) VoiceP dominates vP ; (b) VoiceP and vP dominate $\sqrt{\text{root}P}$; (c) the tree delimited by VoiceP and $\sqrt{\text{root}P}$ may also include some other nodes. Contrary to the suggestion made in Cinque (1999) that the sequence of functional projections is determined by selection, I assume that the functional hierarchy is determined by a semantic inclusion (\subset). While both scenarios allow (i) and rule out (ii), only the latter scenario implies that if (i) is correct then (iii) is also correct.

(ii) * $[_{\beta P} \beta^0 [_{\alpha P} \alpha^0]]$

(iii) $[_{\alpha P} \alpha^0 [_{xP} x^0 [_{\beta P} \beta^0]]]$

This is so since both in (i) and (iii) $\beta P \subset \alpha P$, but α^0 selects βP only in (i) (under the standard assumption that selection is restricted to sister nodes). Since the optional presence/absence of certain nodes (such as, for instance, NegP) does not strictly condition the presence of neighboring nodes (such as, say, VoiceP or vP), it appears that the functional hierarchy is determined by inclusion rather than selection.



Once we have the evidence that Voice⁰ and v⁰ are separate heads in the passive, the issue now is to determine whether Voice⁰ and v⁰ are separate heads also in the active. The question though rarely, if ever, raised is non-trivial, since one can imagine a scenario in which Voice_{pass}P is selected in the passive construction but the active construction is generated simply by not selecting VoiceP on top of vP. Nevertheless, circumstantial evidence for the presence of VoiceP in both the passive and the active in Polish comes from the dependency between the occurrence of an (explicit) Subject and voice morphology.

Within the proposals that argue for the split between VoiceP and vP, there exist two major hypotheses about the position in which the Subject is base-generated. The two alternative hypotheses advance that

- the Subject is externally merged in Spec-VoiceP (e.g. Pyllkänen 2002 on Japanese adversity causatives and passives, Harley 2006 on nominalizations)
- the Subject is externally merged in Spec-vP (and then perhaps moves to Spec-VoiceP) (e.g. Collins 2005, Merchant 2007).

The underlying position of the Subject is disguised in English-type languages which do not manifest separate Voice and Causative morphology, and have hence been argued to be 'Voice-bundling' in Pyllkänen's 2002 work. On the other hand, the base position of the Subject in Polish-type languages, which lexicalize both a (passive) Voice morpheme and the verbalizing morpheme, is easier recognized and, at least for Polish and Slavic, must be identified as Spec-VoiceP. This conclusion is enforced by the fact that there is a direct dependency between the presence of an (explicit) Subject (external argument) and passive/active Voice morphology:

(84)	Voice		(Explicit)
	<u>morphology</u>		<u>Subject</u>
	-n/t-	==>	no
	-∅-	==>	yes

At the same time, the presence/absence of the Subject does not depend on the Theme vowel, which is an invariant part of the verbal stem. What also indicates that a property of a verbalizing suffix is not linked to the selection of the Subject is the fact that all verb classes can form active and passive participles:

(85)	ThV	Infinitive	Passive	Gloss
	<i>i</i>	pal-i-ć	pal-o-n-y	'smoked'
	<i>e</i>	widzi-e-ć	widzi-a-n-y	'seen'
	<i>∅</i>	gryź-∅-ć	gryzi-o-n-y	'bitten'
	<i>a</i>	pis-a-ć	pis-a-n-y	'written'
	<i>aj</i>	zn-a-ć	zn-a-n-y	'known'
	<i>Ej</i>	si-a-ć	sia-n-y ³²	'sown'
	<i>ova</i>	bud-owa-ć	bud-owa-n-y	'built'
	<i>non</i>	kop-ną-ć	kop-nię-t-y	'kicked'

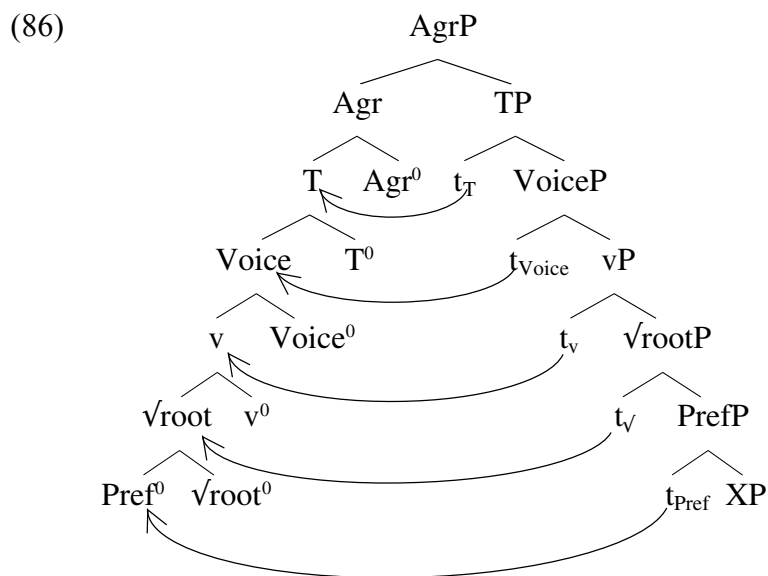
The independency between the presence of the Subject and the ThV in the verbal stem, coupled with the fact that little v^0 is not "defective" in the passive in Polish, indicates that Subjecthood is independent from the properties of the little v^0 . On the other hand, the dependency in (84) indicates that Subject is introduced by an active Voice head, whose phonetic exponent is zero.

2.4 Upward Snowballing and Its Challenge

The constituent structure of the verb assumed in (56) can only be derived by an upward snowballing movement, starting with the $\sqrt{\text{root}}^0$ or the Prefix (if present) and moving all the way up to Agr⁰. In such a derivation, a consecutive application of head movement, applied first to $\sqrt{\text{root}}^0$ or the Prefix and then to each derived subconstituent, will roll-up the terminal

³² The underlying representation of the ThV is retained in *si-Ej-e-sz* (PRES.3SG).

nodes of the functional sequence in the space between PerfP and AgrP:³³



Indeed, in several works the formation of a finite verb in Polish has been argued to be derived by movement of the verbal stem into the IP- or CP-system of the clause.

Among such proposals are Borsley & Rivero (1994), who advance that the tensed verb incorporates into the Person/Number agreement Auxiliary, which occupies I^0 (cf. (87a)). In cases in which the Auxiliary undergoes a "phonological" enclitization onto a pre-verbal constituent, the verb stays in situ in V^0 (cf. (87b)).³⁴

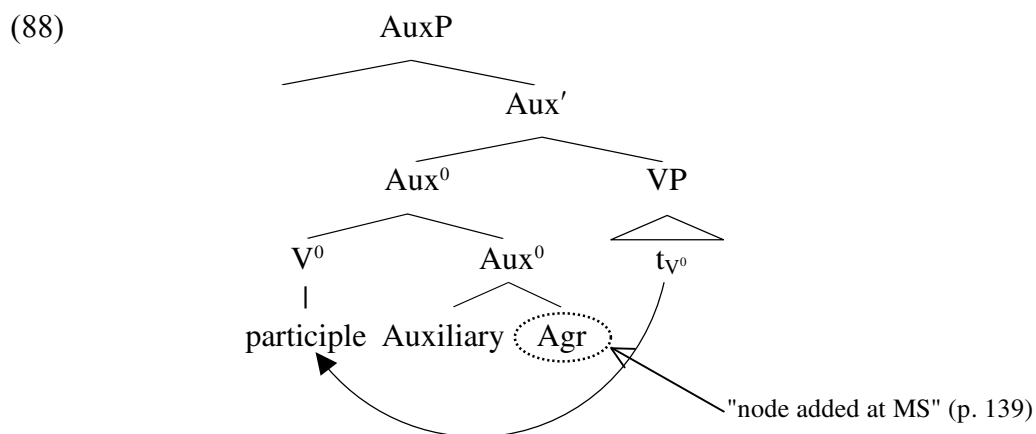
³³ There exists some evidence that XP movement can participate in word formation along X^0 movement (e.g. Svenonius 2007a, Mathieu 2008, a.o.). If snowballing movement of the phrasal constituent replaces the snowballing head movement assumed in (86), the morphemic structure of the verb derived in such a way is going to be identical.

³⁴ The encliticization of the Agreement morpheme/clitic cannot be phonological but syntactic. This is indicated by the fact that the clitic placement is sensitive to the syntactic structure. For instance, clitics do not attach to embedded constituents:

- (i) Szybko-śmy im pomogli wczoraj.
quickly-CL.2PL them helped yesterday
- (ii) ? Wczoraj szybko-śmy im pomogli.
yesterday quickly-CL.2PL them helped
'We helped them quickly yesterday.'
- (iii) * [Bardzo szybko-śmy] im pomogli.
very quickly-CL.2PL them helped
'We helped them very quickly' (intended)

- (87) a. i. $[\text{IP Ty} \quad [\text{I}' \text{czytał-eś} \quad [\text{VP } t_{V^0} \text{ tę książkę}]]]$
 you-NOM read-2SG.MSC this book-ACC
 'You read this book.'
- ii. $[\text{CP Kiedy} \quad [\text{IP widział-eś} \quad [\text{VP } t_{V^0} \text{ ten film}]]]?$
 when saw-2SG.MSC this movie-ACC
- b. i. *encliticization at PF*
 $[\text{IP Ty-ś}_i \quad [\text{I}' t_i \quad [\text{VP czytał tę książkę}]]]$
 you-CL.2SG.MSC read this book-ACC
 'You read this book'
- ii. $[\text{CP Kiedy-ś}_j \quad [\text{IP } t_j \quad [\text{VP widział ten film}]]]?$
 when-CL.2SG.MSC saw this movie-ACC
 'When did you see this movie?'

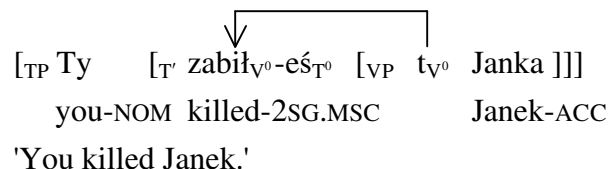
The upward movement of the participle is also advanced in Embick's (1995) modification of Borsley & Rivero's analysis. Embick assumes the Case & Licensing system of Marantz (1991) and proposes that the verb first raises from its base position in V^0 to an empty Aux^0 in the IP-system. After the derivation is complete, the Agreement morpheme is added to the participle in a post-syntactic Morphological Structure (MS):



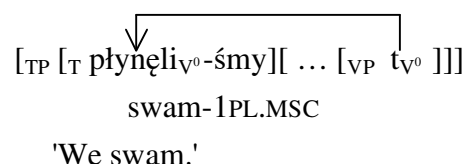
The contrast between (ii) and (iii) indicates that the placement of the Auxiliary clitic in Polish need not observe the Wackernagel Law as long as the host is not embedded in a larger constituent.

Verb movement to the IP-system is also advanced in Szczegielniak (1997) and Migdalski (2006). Both accounts assume a functional hierarchy with a different number of positions, but both propose that the participle moves from V⁰ to T⁰ (across NegP, MoodP and some other projections):

(89) **V⁰-to-T⁰ movement in Szczegielniak (1997, ex. (16))**



(90) **V⁰-to-T⁰ movement in Migdalski (2006, ex. (148a))**



Proposals that advance the movement of the participle to T⁰ in Polish are based on the relative ordering between the verb and Auxiliary clitics, and sentential particles. The latter elements are, however, themselves mobile and, hence, constitute imperfect diagnostics for the verb movement in Polish (cf. Witkoś 1998). The major challenge for approaches that advance the formation of the participle by upward head movement in Polish is the position of the participle w.r.t. to (arguably) immobile elements such as VP-adverbs or sentential negation.

2.4.1 ...T<volitional<manner<V

As already discussed in Chapter 1, in unmarked constructions, the participle in Polish follows manner adverbs like *szybko* 'quickly', *wolno* 'slowly', and other.

(91) **Manner<V in unmarked constructions**

- a. Maria wolno pisze na maszynie.
 Maria-NOM slowly writes on machine-ACC
 'Maria types slowly.'

- b. Jan szybko otworzył okno i wyskoczył, ale że wolno
 Jan-NOM quickly opened window-ACC and jumped but that slowly
 biegał, to został szybko złapany.
 ran it was quickly caught
 'Jan quickly opened and jumped out of the window, but since he ran slowly, he
 was quickly caught.'
- c. Jan ostrożnie zajrzał do piwnicy.
 Jan-NOM carefully looked into cellar-ACC
 'Jan looked carefully into the cellar.'
- d. etc.

Since manner adverbs restrict only the range of situations and events they refer to, they immediately precede the part of the tree associated with situation and events (cf. Peterson 1997; Wyner 1994, 1998). For this reason, the highest position that manner adverbs can occupy in the clause is the VP (under a certain definition of the VP, which specifies the upper boundary of the tree where situation and event are encoded).

Similarly to English, where the manner adverb can be placed before the verb or in the VP-final position, as in *John (quickly) opened the window (quickly)*, the manner adverb can optionally occupy the post-verbal position in (arguably) stylistically neutral constructions in Polish. Thus, the examples in (91) are equally well-formed when the *V<manner* order holds, e.g. *Maria pisze wolno na maszynie*, etc. Nevertheless, the optional *V<manner* order does not constitute evidence against *manner<V* in Polish or English, but rather indicates the optionality in the placement of the manner adverb. As noted in fn.3, it has been often advanced that the two orders are derived by the alternative merger of the manner adverb in the VP. Some evidence in support for this comes from constructions with two such positions filled, e.g. *John has quickly raised his hands quickly* (Cinque 2004: 700 fn. 34).³⁵

There is, however, some initial evidence that adverbs can scramble in Polish, which disguises the position of other elements in the clause:

³⁵ Alternatively, the post-verbal placement of the manner adverb can follow from (remnant) VP-fronting to a position above the one and only position of the manner adverb. This leaves the the double occurrence of the adverb unexplained, though.

- (92) a. Szybko_i Maria t_i pisze na maszynie.
 quickly Maria-NOM writes on machine-ACC
 'Maria types *quickly*.' (emphatic)
- b. ? Szybko_j Jan t_j otworzył okno i wyskoczył.
 quickly Jan-NOM opened window-ACC and jumped
 'Jan *quickly* opened and jumped out of the window' (emphatic)
- c. Ostrożnie_k Jan t_k zajżał do piwnicy.
 carefully Jan-NOM looked into cellar-ACC
 'Jan looked into the cellar *carefully*.' (emphatic)

Nevertheless, the presence of other adverbs constraints adverb scrambling in such a way that its output must preserve the universal adverb hierarchy advanced in Cinque (1999: 106):

- (93) [*frankly* Mood⁰_{speech act} [*fortunately* Mood⁰_{evaluative} [*allegedly* Mood⁰_{evidential} [*probably* Mod⁰_{epistemic} [*once* T⁰_(Past) [*then* T⁰_(Future) [*perhaps* Mood⁰_{irrealis} [*necessarily* Mod⁰_{necessity} [*possibly* Mod⁰_{possibility} [*usually* Asp⁰_{habitual} [*again* Asp⁰_{repetitive(I)} [*often* Asp⁰_{freq(I)} [*intentionally* Mod⁰_{volitional} [*quickly* Asp⁰_{celerative(I)} [*already* T⁰_(Anterior) [*no longer* Asp⁰_{terminative} [*still* Asp⁰_{continuative} [*always* Asp⁰_{perfect(?)} [*just* Asp⁰_{retrospective} [*soon* Asp⁰_{proximative} [*briefly* Asp⁰_{durative} [*characteristically(?)* Asp⁰_{generic/progressive} [*almost* Asp⁰_{prospective} [*completely* Asp⁰_{SgCompletive(I)} [*tutto* Asp⁰_{PlCompletive} [*well* Voice⁰ [*fast/early* Asp⁰_{celerative(II)} [*again* Asp⁰_{repetitive(II)} [*often* Asp⁰_{freq(II)} [*completely* Asp⁰_{completive(II)}]

Similarly to what is well-known about English, also in Polish when the adverbs shift their relative positions in the hierarchy, the acceptability of the sentence becomes degraded:^{36 37}

³⁶ Though certain deviations from the Cinque's hierarchy that produce strong ungrammaticality in English are acceptable in Polish, especially in stylistically marked constructions:

- (i) *evaluative > epistemic*
- (ii) ✓ Niestety szef prawdopodobnie zwolnił Marię.
 ✓ Unfortunately boss-NOM probably fired Mary-ACC
- (iii) ? Prawdopodobnie szef niestety zwolnił Marię.
 * Probably boss-NOM unfortunately fired Mary-ACC

- (94) a. Maria prawdopodobnie pewnego razu szybko otworzyła
 Maria-NOM probably once quickly opened
 całkowicie okno
 completely window-ACC
 'Maria probably once quickly opened the window completely.'
- b. ?? Maria prawdopodobnie szybko pewnego razu otworzyła
 Maria-NOM probably quickly once opened
 całkowicie okno
 completely window-ACC
- c. * Maria szybko prawdopodobnie pewnego razu otworzyła
 Maria-NOM quickly probably once opened
 całkowicie okno
 completely window-ACC
- d. *! Maria szybko całkowicie pewnego razu prawdopodobnie
 Maria-NOM quickly completely once probably
 otworzyła okno
 opened window-ACC
- e. etc.

Since in Cinque's theory each adverb occupies a specifier of a silent functional head, then if a participle in Polish is formed by a successive-cyclic V^0 -to- T^0 movement we, expect a fully inflected verb to occupy the projection which licenses temporal adverbs (cf. (93)). This prediction is not borne out. Instead, while verb placement below the sequence of temporal, volitional, and manner adverbs is well-formed, verb placement between temporal and volitional adverbs is degraded:

(95) *T<volitional<manner<V*

Jan pewnego razu celowo szybko **zamknął** drzwi do piwnicy.
 Jan-NOM once intentionally quickly closed door-ACC to cellar-GEN

³⁷ Acceptability of the sentences in (94b) and (94c) among speakers varies between "moderately acceptable" to "completely unacceptable". Nevertheless, all my informants agree that: (i) (94a) is unambiguously well-formed, (ii) (94d) is ill-formed, and (iii) (94c) is considerably worse than (94a).

(96) ***? T<V<volitional<manner**

*? Jan pewnego razu **zamknął** celowo szybko drzwi do piwnicy.
Jan-NOM once closed intentionally quickly door-ACC to cellar-GEN

Thus, assuming that the adverb hierarchy reflects the sequence of functional heads in syntax, the position of the verb w.r.t. adverbs strongly suggest that the fully inflected participle in Polish is not formed by upward head movement to T⁰.³⁸ (In fact, since the participle comprises the Pers/Num agreement morpheme, we would expect it to raise even above temporal adverbs if it is formed by upward snowballing).

2.4.2 Neg<V

The ordering between the verb and negation corroborates the conclusion that the participle does not raise to T⁰ in Polish (or, at least, it does not have to raise to T⁰ obligatory). The ordering between these two elements in the clause has served as evidence for high verb movement in French and lack thereof in English in Emonds (1970), Pollock (1989) (cf. (97) & (98)), and much subsequent comparative work on verb movement.

(97) **French V<Neg<Obj as V⁰-to-T⁰ movement**

a. Jean (ne) parle pas polonais
Jean speak-2SG not Polish
'Jean does not speak Polish.'

b. * Jean ne pas parle polonais
Jean not speak-2SG Polish

c. [AgrP Jean [XP (ne) [TP parle+T⁰ [NegP pas [VP t_{V⁰} polonais]]]]]

(98) **English *V<Neg<Obj & *Neg<V<Obj as the lack of V⁰-to-T⁰ movement**

a. * John speaks not Polish
b. * John not speaks Polish

³⁸ Note that this conclusion is maintained irrespective of whether adverbs are specifiers of (phonetically empty) functional heads as in Cinque's approach, or they are sister nodes to projections they modify (e.g. Ernst 2002), since in both scenarios adverb placement is constrained by the functional hierarchy.

Applying the same logic to Polish, the verb does not raise to the IP-system since it does not cross Neg:

(99) **Polish *V<Neg<Obj as the lack of V⁰-to-T⁰ movement**

- a. Jan nie zna francuskiego.
 Jan-NOM not know-2SG French-GEN
 'Jan does not speak Polish'
- b. * Jan zna nie francuskiego.
 Jan-NOM know-2SG not French-GEN

As discussed in Chapter 1, there is considerable consensus in the literature on Polish that *nie* 'not' Spells-out the head Neg⁰. Morphologically, *nie-* is a prefix, despite the fact that Polish spelling convention requires that *nie-* be spelled separately in front of verbs (but jointly with nouns, adjectives, and adverbs, as in *nietakt* 'faux pas', *nieoczekiwany* 'unexpected', *nieoczekiwanie* 'unexpectedly', etc.). The morphological status of the "*nie+V*" complex is manifested by the fact that the two constituents form a phonological word (ω) and no element can be placed between them:

- (100) a. (znowu) {_ω nie- (*znowu) kup-i-l-iśmy } (znowu) piwa
 again not again bought-THV-PAST-1PL again beer-ACC
 'We didn't buy beer again'
- b. (jej) {_ω nie (*jej) moż-Ø-e-cie } (jej) kup-i-ć (jej) piwa
 her not her can-THV-PRES-2PL her buy-THV-INF her beer-ACC
 'We cannot buy her beer.'
- c. etc.

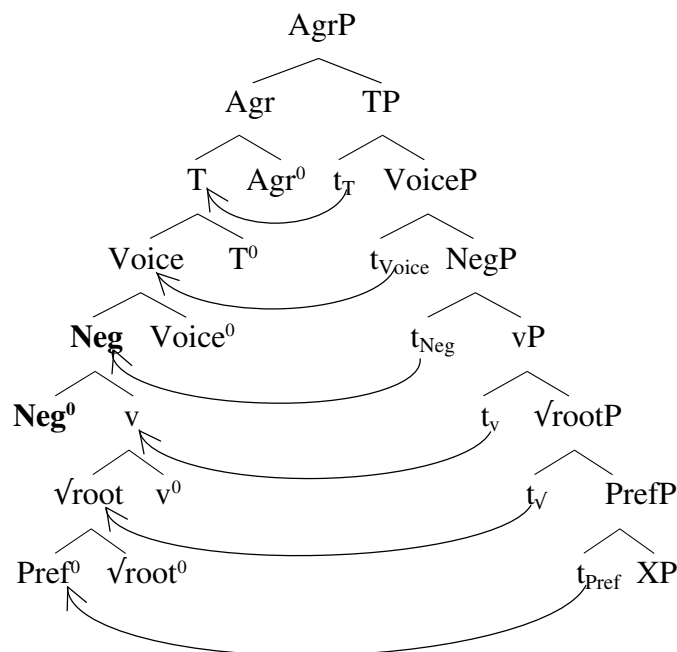
The fact that *nie* is a prefix may potentially constitute an obstacle to the application of the logic used for English (cf. (98)) or French (cf. (97)) to Polish, since in the former languages Neg is a free morpheme. Nevertheless, the position of a negated participle in stylistically neutral declarative clauses³⁹ in Polish remains instructive about the height of verb

³⁹ As opposed to, for instance, Negative Imperatives (cf. (i)), yes/no questions (cf. (ii)), or clauses with focused constituents (cf. (iii)):

movement. Consider the following.

In order to maintain the idea that the participle in Polish is formed by upward roll-up of the terminals of the tree from $\sqrt{\text{rootP}}$ up to AgrP, the verb must be stipulated to move to the little v^0 in concert with the mirror principle, then to move to Neg^0 in violation of the mirror principle, and then to continue to move in concert with the mirror principle again, as in (101). (Let us disregard for the moment the ordering between NegP and VoiceP; I return to this issue in the next section).

(101)



Despite obtaining the correct order of morphemes, such a derivation must be rejected as it predicts that Neg is an embedded subconstituent. This prediction is wrong, since Neg is

-
- (i) Nie pij już więcej!
not drink already more
'Don't drink more!'
 - (ii) Nie widzieliście wczoraj Pawła?
not saw-2PL yesterday Paweł-ACC
'Didn't you see Paweł yesterday?'
 - (iii) Nie chciał Paweł z nami jechać, to i nie pojechał.
not wanted-2SG Paweł-NOM with us drive-INF so and not drove-2SG
'Paweł didn't want to go with us, and he didn't' (emphatic).

able to scope outside the participle. This is indicated by the ability of a verb prefixed with Neg to license negative polarity:

- (102) a. Jan *(nie) widział nikogo
 Jan not saw-3SG nobody
 'Jan didn't see anybody.'
- b. Jan *(nie) spotkał żadnych znajomych
 Jan not met-3SG no friends
 'Jan didn't meet any friends.'
- c. Jan *(nie) poszedł do żadnego sklepu.
 Jan not went-3SG to no store
 'Jan didn't go to any store.'
- d. Jan *(nie) poszedł starać się o pracę dla nikogo
 Jan not went-3SG apply-INF REFL about job to nobody
 'Jan didn't go to ask for a job for anyone.'

A situation in which a prefix scopes outside the word is non-standard. Consider for instance restitutive *re-* prefixation in English. As noted recently in Williams (2007), in a sentence like (103) *re-* does not have scope over the time adverbial.

- (103) John re-washed the dishes on Tuesday.

Since *on Tuesday* is outside the scope of *re-*, (103) presupposes that dish washing took place before the event asserted in (103), but not necessarily on Tuesday. Williams concludes that the fact that prefixes scope only over the arguments of the item to which they attach follows from "the Lexicalist Hypothesis", whereby prefixes are attached to verbs in the Lexicon and the internal structure of words is inaccessible to phrasal syntax. The word-external scope of *nie-* prefixation does not support this conclusion. Instead, if scope is determined by *c-command*, then a situation in which a prefix scopes outside the word indicates that its node dominates other subconstituent nodes of the word, the issue I come back to shortly.

The placement of a fully inflected verb to the right of VP-adverbs and negation indicates that the participle is not derived by successive-cyclic raising of the verbal stem to the IP-

domain in Polish. Instead, what seems to hold is a reverse scenario: it is the functional morphemes that lower onto the verb stem (cum Affix Hopping).

2.5 Alternative: Affix Hopping

Whereas adverb and Neg placement facts indicate the potential behind the Affix Hopping analysis of participle formation in Polish, what goes on looks to be more complex than that. The following is a list of what has been argued so far about Polish morpho-syntax:

- (104) a. Syntactic categories are uniformly derived by the v^0 -to- x^0 raising,
 $x^0 = \{v^0, n^0, a^0\}$ (section 2.1)
 b. Voice^0 and v^0 are separate heads and VoiceP dominates vP (section 2.3)
 c. NegP dominates vP and if NegP is present, Neg^0 and the verb form a constituent of which Neg^0 is a prefix (section 2.4)
 d. In stylistically neutral indicative clauses, a fully inflected participle follows manner adverbs (section 2.4)

Granting the validity of the arguments from phonology, (104a) is straightforward. Whereas both VoiceP and NegP dominate vP , (104b) and (104c) make no implication about the ordering between VoiceP and NegP . In (101), I have provisionally marked VoiceP on top of NegP without the consequence for the linear order of morphemes in the participle, since Voice^0 is a suffix and Neg^0 is a prefix. Nevertheless, there exists some evidence that it is NegP that dominates VoiceP , which yields the hierarchy of functional projections in Polish is as in (105a).

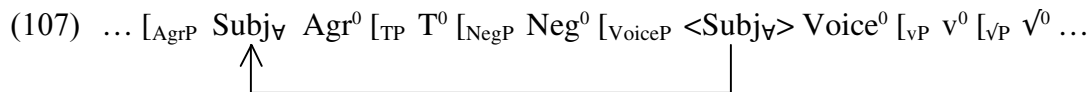
- (105) a. ... [AgrP Agr^0 [TP T^0 [NegP Neg^0 [VoiceP Voice^0 [vP v^0 [vP v^0 ...
 b. * ... [AgrP Agr^0 [TP T^0 [VoiceP Voice^0 [NegP Neg^0 [vP v^0 [vP v^0 ...

An argument in favor of (105a) comes from the inverse scope between the Subject and negation, which is available in Polish:⁴⁰

⁴⁰ This contrasts with English, in which the Subject does not reconstruct below sentential negation in a similar environment (cf. Chapter 1). However, as observed in Jackendoff (1972), the Subject in English does reconstruct below negation under a fall-rise intonation:

- (106) a. *Wszyscy nie żyją.* $\forall > Neg; Neg > \forall$
 all/everybody-NOM not live-3PL
 'Everybody is dead.'
- b. *Wszystkie dzieci nie zjadły jeszcze mielonki.* $\forall > Neg; Neg > \forall$
 all children-NOM not ate-3PL yet spam-ACC
 'All the children haven't eaten the spam yet.'
- c. etc.

It has been concluded in section 2 that Subjects are base-generated in Spec-VoiceP. This position is in the scope of negation in the representation in (105a), not in (105b). Assuming that the inverse scope is a consequence of the Subject reconstructing to its merge position in Spec-VoiceP, then $Neg > Subj_V$ is predicted only by (105a):



I will, thus, continue to assume that (105a) is a sequence of functional heads in Polish.

(104c) states that the merger of Neg⁰ and the verb does not follow the mirror principle, since despite the fact that Neg⁰ is structurally higher than the verb, Neg⁰ Spells-out as a prefix. Certain non-mirroring morpheme orders have been reported to be cross-linguistically attested (see for instance Keenan & Polinsky 1998 on Malagasy, Rice 2000 on Athapaskan, Embick & Noyer 2001 on Lithuanian, Muriungi & Starke 2008 on Kiitharaka). In Williams's (2008) terms, mirror effects are in principle size-relative or "fractal", in the sense that they only hold in domains of a certain size and, hence, non-mirroring orders are expected. What remains unclear is the mechanism in which Neg⁰ ends

-
- (i) All the men didn't go. $Neg > \forall$
-

And perhaps more generally -- at least for some speakers -- the Subject does reconstruct below negation when Neg is contracted (cf. (iii))(Chomsky 1995):

- (ii) Everyone seems not to be there yet. $\forall > Neg; *Neg > \forall$
- (iii) (It seems that) everyone isn't there yet. $\forall > Neg; Neg > \forall$

It, thus, appears that the Polish and English patterns are not entirely contradictory and that there exists such environment in which the Subject reconstructs below Neg in both languages. (Nevertheless, the way both patterns are derived remains unclear, especially in view of the alleged ban on reconstruction into a θ -position, cf. Chapter 1).

up as a prefix on the verb, or rather, a particular implementation of the operation merge responsible for the structure of such a constituent.

2.5.1 Other Prefixes Outside the vP

A situation in which a syntactic head α Spells-out as a prefix on a constituent made up of nodes which are dominated by αP is by no means limited to the case of *nie*-prefixation. In principle, affixal aspectual heads on top of vP in Polish and Slavic will Spell-out as prefixes on the verb in violation of the mirror principle.

With respect to semantic and syntactic properties, Slavic prefixes are generally classified in the literature into two classes, which are sometimes referred to as "lexical" and "superlexical" (Smith 1991, Ramchand 2004, Svenonius 2004b) or "internal" and "external" (DiSciullo & Slabakova 2005). For the sake of the argument, I will only briefly outline the two classes of prefixes referring to the evidence from Polish. For an extensive discussion and presentation of facts from other Slavic languages see Svenonius (2004a, 2004b) and the references provided there.

In principle, L(exical) prefixes are resultative and bear a predicational relation to the object. In particular, lexical prefixation with *wy-* 'out', *w-* 'in', *prze-* 'through', often demands the selection of a particular NP-object:

- (108) a. *bić* \implies *wy-bić okno* (cf. **bić okno*)
 beat out-beat window beat glass
 'beat' 'break a window'
- b. *łączyć* \implies *w-/wy-łączyć światło* (cf. **łączyć światło*)
 connect in-/out-connect light connect light
 'connect' 'turn on/off the light'
- c. *gapić się* \implies *prze-gapić film* (cf. **gapić film*)
 stare REFL through-stare movie stare movie
 'stare' 'miss a movie'

Also, the presence of a lexical prefix can change the grammatical function (and the case) of the post-verbal NP object:

- (109) a. stać w/na miejscu
stand in/on place-LOC
'stand in a place'
- b. w-stać z miejsca
in-stand from place-GEN
'stand up (from a place)'
- (110) a. Nauczyciel rzucił kredą (w) ucznia.
teacher-NOM threw chalk-INST in student-ACC
'The teacher threw the chalk at the student.'
- b. Nauczyciel wy-rzucił kredę przez okno.
teacher-NOM out-threw chalk-ACC through window-ACC
'The teacher threw the chalk through the window.'
- (111) a. Kucharz lał śmietnę na grzyby.
cook-NOM poured cream-ACC on mushrooms-ACC
'The cook was pouring the cream on the mushrooms.'
- b. Kucharz za-lał grzyby śmietaną
cook-NOM behind-poured mushrooms-ACC cream-INST
'The cook poured the mushrooms with the cream.'
- (112) a. Marek pił wino/*Janka.
Marek-NOM drank wine-ACC/Janek-ACC
'Marek drank the wine.'
- b. Marek u-pił Janka winem
Marek-NOM at-drank Janka-ACC wine-INST
'Marek got Janek drank on wine' (Svenonius 2004b: 216, crediting Jabłońska)

Also, spacial relations, perhaps best understood in terms of geometric Figure-Ground relations (cf. Talmy 1978, 2000; Jackendoff 1990; Svenonius 2007b, a.o.) are often lexicalized in the form of lexical prefixes. In particular, a lexical prefix introduces the Ground, understood as the reference point for the location of the Figure. In (113), the Ground is the NP, which is either directly post-verbal (a-b), or preceded by a preposition, yet another spacial particle, (c-d):

- (113) a. *Prze-kroczyliśmy* granicę.
 through-crossed-1PL boarder-ACC
 'We crossed the boarder.'
- b. *Błyskawica prze-szyła* niebo.
 thunder-NOM through-crossed-3SG sky-ACC
 'A thunder crossed through the sky.'
- c. *Wy-jechaliśmy z* Polski.
 out-drove-2PL from Poland-LOC
 'We left Poland.'
- d. *W-skoczyliśmy* do basenu.
 in-jumped-2PL into pool-GEN
 'We jumped into the pool.'

Unlike L-prefixes, S(uper) L(exical) or Aktionasart prefixes are essentially non-resultive and non-spacial, instead, they often bring in aspectual and quantificational meaning. The following are examples of verbs prefixed with completive *na-* 'on', excessive *roz-*, delimitative *po-* 'after', repetitive *prze-* 'through', and inceptive *za-* 'behind':

- (114) a. *na-łożyć*
 on-put
 'put on'
- b. *roz-łożyć*
 EXCES-put
 'spread'
- c. *po-łożyć*
 after-put
 'put down'
- d. *prze-łożyć*
 through-put
 'put back/postpone'
- e. *za-łożyć*
 behind-put
 'put on/take on'

In contrast to L-prefixes, SL-prefixes rarely if ever contribute to the predicative properties of the verb. Hence, SL's do not change the grammatical function of the NP-object (cf. (115) & (116)). They are, instead, perfectivizing (cf. (116c)):

(115) a. stać w/na miejscu (cf. (109))

stand in/on place-LOC

'stand in a place'

b. *po*-stać w/na miejscu

after-stand in/on place-LOC

'stand in a place'

(116) a. pisać list

write letter-ACC

'write a letter' (imperf.)

b. *prze*-pisać list

through-write letter-ACC

're-write a letter'

c. *na*-pisać list

on-write letter-ACC

'write a letter' (perf.)

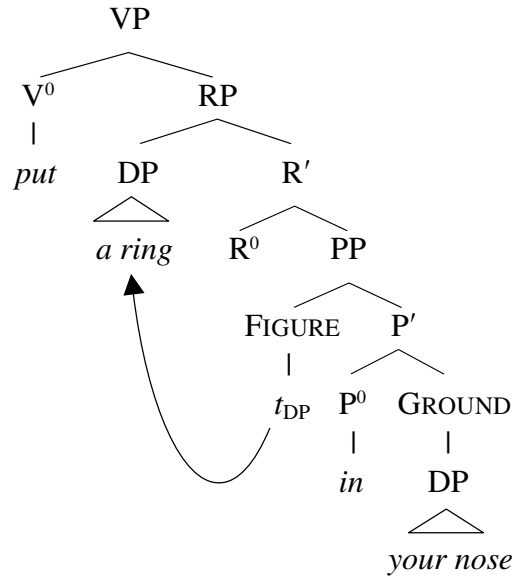
Of particular importance to the present discussion is Svenonius's (2004b) account of Slavic prefixes, which attributes their distribution and properties to the place in the syntactic structure in which they are generated. Svenonius argues that lexical prefixes in Slavic are much like Germanic particles in the sense that they are both resultative and often denote Place (like *in*, *at*, *on*, etc.). For this reason, like Germanic particles, L-prefixes are small clause predicates and are base-generated in the VP-internal domain. In particular, Svenonius adopts the approach to predication as in Ramchand (2008) and proposes that lexical prefixes originate as PPs in the complement of R⁰(esult). In other words, in Germanic (some node associated with) RP is realized as a particle (cf. (117)), and in Slavic as a lexical prefix (cf. (118)).⁴¹

⁴¹ Suffice it to say, the current presentation of Svenonius' analysis is a simplification made for reasons of space and coherency. See the original work for an elaboration of the arguments I refer to here.

(117) **Germanic particles (Svenonius 2004b: 209-210)**

a. put a ring in your nose

b.



In Slavic, the node which lexicalizes as a prefix raises from its base-position in the VP-internal domain to a pre-verbal position (presumably for scope-related reasons).

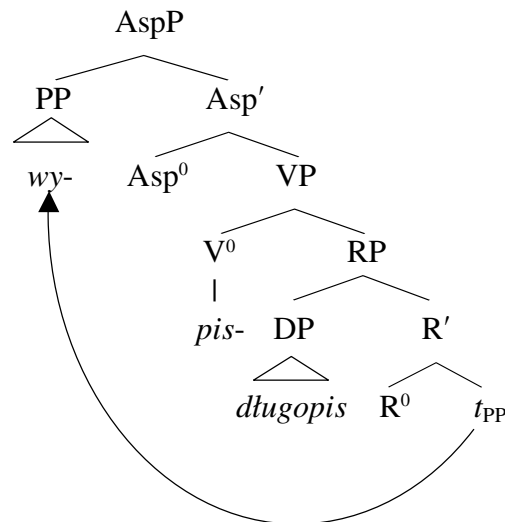
(118) **Lexical prefixes (adapted from Svenonius, p. 243)**

a. Ona wy-pisała swój długopis.

she out.of-wrote her pen

'She has written her pen out of ink.'

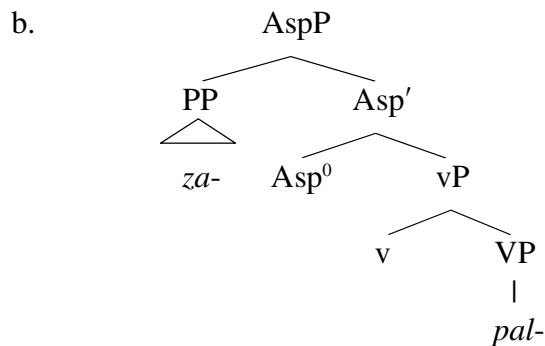
b.



In contrast to L-prefixes, SL-prefixes are primarily aspectual and are, hence, argued to be base-generated in the VP-external domain:

(119) **Superlexical prefixes (adapted from Svenonius, p. 231)**

- a. *za-palić*
 behind-smoke-INF
 'smoke'



In such an analysis, thus, both classes of prefixes at a certain point in the derivation occupy a position above the verb stem: L-prefixes move there from the prepositional complement of the verb, SL-prefixes are base-generated above the VP.⁴²

Within such an approach, the fronting of L-prefixes from the prepositional complement of the verb targets a position (or a set of positions) below the base positions of SL-prefixes. In other words, SL-prefixes remain external to the L-prefixes even after the raising of the latter. This makes a correct prediction about prefix stacking on the verb stem, in which SL-prefixes (which can also be stacked) remain external to L-prefixes, as exemplified below:

(120) **SL-(SL)-prefixation**

- a. *prze-kładać*
 REPET-put
- b. *po-prze-kładać*
 DELIM-REPET-put

⁴² Suffice it to say, there exist alternative accounts of Slavic prefixes couched within a different set of assumptions about clausal architecture. For a lexicalist analysis of the aspects of syntax and semantics of prefixation in Polish see especially Willim (2006).

c. *po-na-kładać*
 DELIM-DISTR-put

d. *po-za-kładać*
 DELIM-INCP-put

(121) **SL-L-prefixation, *L-SL-prefixation**

a. *po-wy-kładać*
 DELIM-out-put
 'put something out'

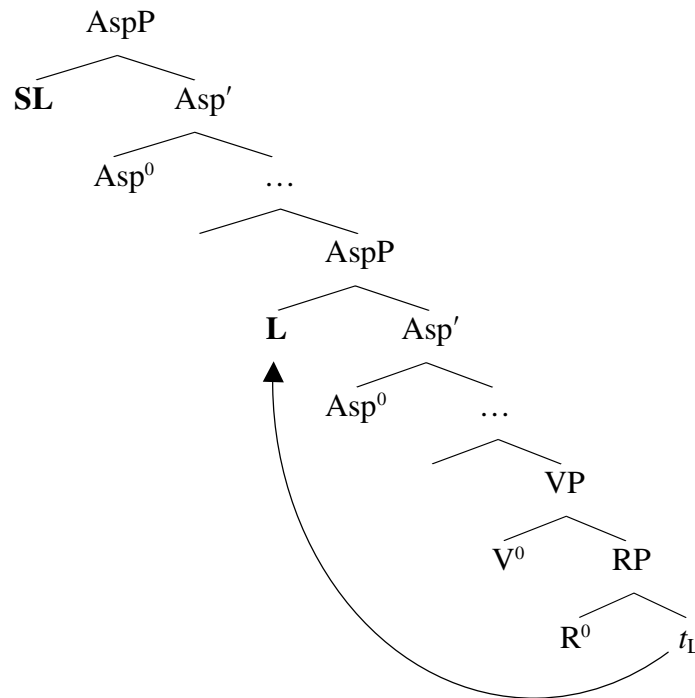
b. *po-w-kładać*
 DELIM-in-put
 'put something in'

c. * *wy-po-kładać*
 out-DELIM-kładać

d. * *w-po-kładać*
 in-DELIM-put

After L-prefixes raise to the VP-external domain of the clause, the relative sequence of prefixes in syntax looks as follows:

(122)



Note that whenever NegP is present in the functional sequence, Neg⁰ always Spells-out as the most external prefix on the verb stem:

(123) **Neg-SL-SL-prefixation**

- a. *Nie-po-na-kładałeś* dżemu do słoików.
 not-DELIM-DISTR-put-2SG.MSC jam-ACC into jars-GEN
 'You didn't put the jam into the jars.'
 (cf. **po-nie-na-kładałeś*)
- b. *Nie-po-na-lewałeś* wina do kieliszków.
 not-DELIM-DISTR-poured-2SG.MSC wine-ACC into glasses-GEN
 'You didn't pour down the wine into the glasses.'
 (cf. **po-nie-na-lewałeś*)

(124) **Neg-SL-L-prefixation**

- a. *Nie-po-wy-kładałeś* naczyń ze zmywarki.
 not-DELIM-out-put-2SG.MSC pottery-ACC from dishwasher-GEN
 'You didn't take out the dishes from the dishwasher.'
 (cf. **po-nie-wy-kładałeś*)
- b. *Nie-po-wy-cierałeś* kurzu z mebli.
 not-DELIM-out-rubbed-2SG.MSC dust-ACC from furniture-GEN
 'You didn't remove the dust from the furniture.'
 (cf. **po-nie-wy-cierał*)

Given that all prefixation derives non-mirroring orders, then NegP delimits the prefixation site in syntax, in the sense there is no higher projection than NegP whose head Spells-out as a prefix on a verb stem.

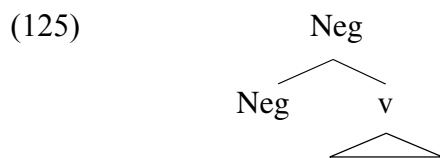
2.5.2 Prefixation as Complement-creating Movement

The prefixation facts outlined above lead to a conjecture that the "prefix+verb stem" constituent is derived by such an implementation of merge which results in a non-mirroring order. In what follows, I will make a case that prefixation is derived by a complement-creating movement, advanced in Pesetsky (2007b) under the name of *undermerge*.

Complement-creating merge or *undermerge* is a situation in which a syntactic element of a certain size merges with a head as its sister (as opposed to a situation in which a syntactic object merges with a head to which it is not a sister, cum a "specifier-head" relation). Pesetsky (2007b) proposes that just like a specifier-forming operation is not restricted to the first merge, also complement-creating operation is not restricted to the first merge and can in principle create a "second complement".

(Note that the complement-creating movement violates the Extension Requirement (ER) only if each application of merge must extend the tree at the root. But the complement-creating movement -- nor any other merge operation -- does not violate ER if ER is about creating a node somewhere in the tree, not necessarily at the root.⁴³ Recent work on tucking-in (Richards 2001), and an array of work on multi-dominant structures has made a case for the latter formulation of ER.)

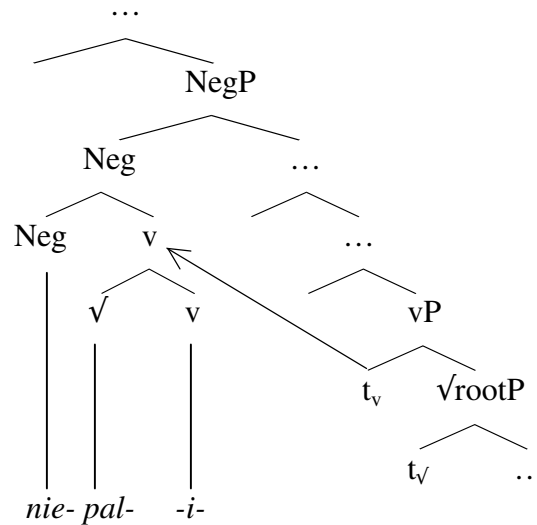
The Slavic prefixation facts indicate that aspectual nodes and the Neg-node merge with a verb stem in such a way that they provide the label for the merger (this is perhaps a standard case scenario, given Brody's 1998, 2000 insight that "the target projects"). This is perhaps best exhibited by the scope of *nie*-prefixation discussed in section 2.4.2, which is predicted by the representation in which it is the Neg-node which projects the label for the {Neg, v} merger at the word level:



Such a representation is obtained by the application of *undermerge* in syntax, as exemplified on the partial derivation of the *i*-class verb *nie-pal-i-* 'not-smoke-THV-':

⁴³ In principle, such a formulation of ER eliminates substitution from the theory.

(126) **v-to-Neg movement in the partial derivation of *nie-pal-i-* 'not-smoke-THV-'**



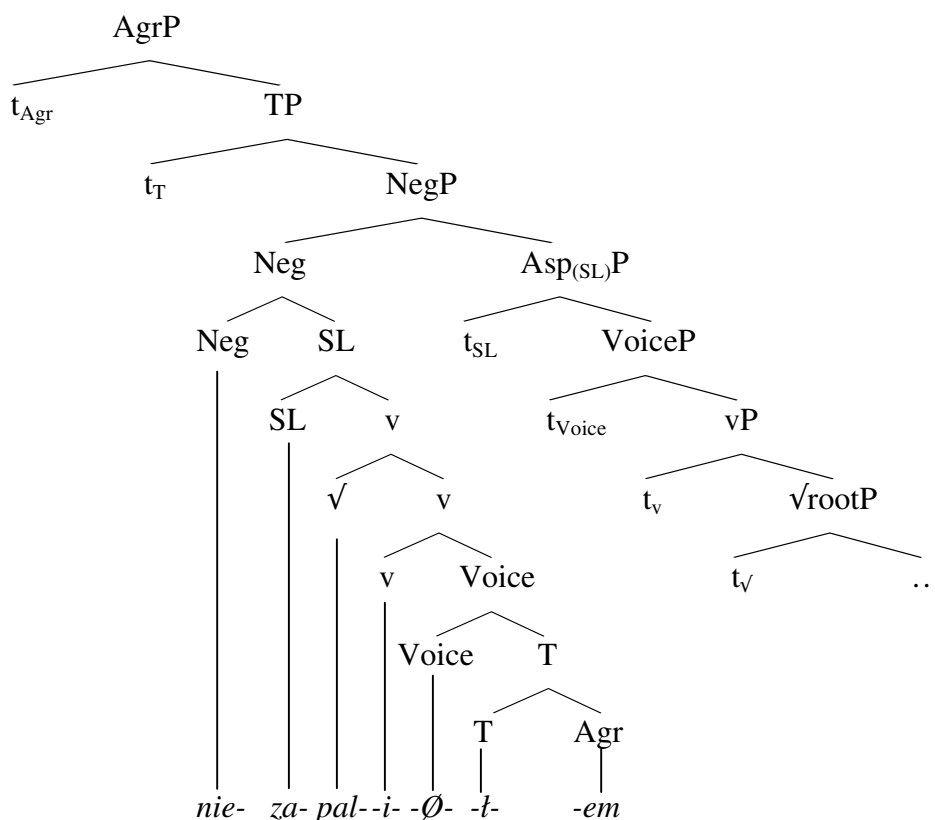
In this way, the non-mirroring orders follow from the general rule of Polish whereby the head is linearized to the left of the complement-node, whereas the mirroring orders follow from the rule whereby heads are linearized to the right of the specifier-node.⁴⁴

In turn, prefix stacking facts indicate that the complement-creating movement operates in a Markovian way: if more than one "prefix-node" (i.e. aspectual or Neg) is present in the structure, then the constituency is derived by a multiple application of *undermerge*. This is exemplified by the partial derivation of (124a) *nie-po-wy-ktad-a-* in (127) below. First, the stem is created by the upward \checkmark -to-*v* movement. The stem then moves upward to the complement position of the aspectual L-node, which provides the label for the merger. Next, the derived L-constituent moves upward to the complement position of the higher aspectual SL-node and then the derived SL-constituent moves upward to the Neg-node in the same manner. In each application of upward movement it is the targeted node which provides the label for the merger.

⁴⁴ Note that the formulation of linearization rules based on labels does not rely on the size of the constituent which makes up a node. In other words, the size of the constituent of the head-, specifier- or the complement-node does not influence the way the nodes of a tree are linearized. In fact, there is no alternative to a node-based linearization if labeling in syntax is derivational rather than templatic (X-bar particular rules) and the distinction between "head" and "terminal/non-terminal" is superfluous (bare phrase structure; Chomsky 1995a).

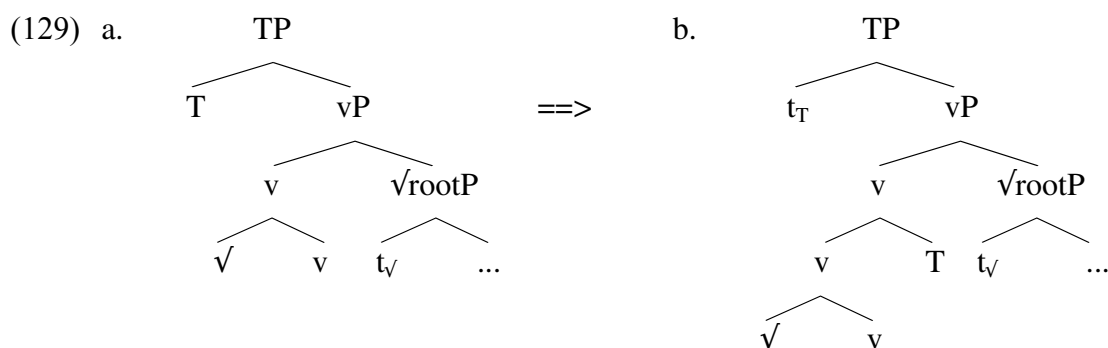
the VP-adverbs and Neg⁰ (to which it moves) has led us to the conclusion Agr⁰ and T⁰ lower onto the verb stem rather than the verb stem raises to merge with them in the upper IP-area. In this way, despite the differences in the number of phonologically realized heads and the merger with Neg, participle formation in Polish patterns more with the way the participle is derived in English than in French. Applying successive-cyclic movement as in the high verb-raising analysis of participle formation but reversing the direction of movement, what lowers onto the verb stem is a node made up of Agr⁰, T⁰, and Voice⁰:⁴⁵

(128) **Affix hopping in the derivation of *nie-za-pal-i-Ø-t-em***
'not-INCP-smoke-THV-ACT-PAST-1SG.MSC'



⁴⁵ While the placement of the verb with respect to adverbs and negation facts indicate that it is Agr⁰ and T⁰ that move to the verb stem, it is in fact less clear whether Voice⁰ lowers onto the verb stem or the verb stem moves upward to Voice⁰. As concluded earlier, VoiceP is projected lower than NegP and since the verb stem merges with Neg⁰ by *undermerge*, both options are possible. Nevertheless, since I do not know of any evidence to the contrary, I will continue to cautiously assume that Voice⁰ lowers onto the verb stem just like other typically verbal functional heads do, i.e. Agr⁰ and T⁰, and unlike Neg⁰ and aspectual nodes ("L", "SL") to which, in turn, the verb stem moves.

Successive-cyclic head-movement of (i) Agr⁰-to-T⁰, (ii) {T, Agr}-to-Voice⁰, and (iii) {Voice, {T, Agr}}-to-v⁰, combined with an upward movement of the verb stem to SL and Neg⁰ derives the verb. Importantly, despite the fact that certain nodes move downward (Agr, T, and perhaps Voice -- under the proviso in fn. 45) and some other upward (\checkmark , v, and L, SL, if present), each leg of movement targets the head of the constituent it merges with. This is essentially different from what is advanced by an approach to morphology like in Embick & Noyer (2001), which assumes that there exists a post-syntactic component that can manipulate syntactic nodes in a way which is not predicted by a syntactic derivation. For instance, in such an approach, the lowering of T⁰-to-v⁰ in English derives a representation like (129b), in which T⁰ is eventually merged with a non-terminal node of the verb stem:



In contrast, the verb structure like in (128) simply follows from the fact that head-movement (upward or downward) targets heads in narrow syntax and it is the targeted node that provides the label for the merger (cf. Brody 1998, 2000).

It has been argued so far that there are reasons to believe that the formation of a fully inflected participle in Polish is derived in a more complex way than by a simple movement of the verb stem up its projection line from vP to AgrP. Only such a uniform snowballing movement can derive the Jakobsonian template in (56). (Save for the placement of the prefix node, which (56) stipulates to be a sister to \checkmark root). Instead, the constituent structure of the verb is as in (57), when it is derived by a combination of raising and Affix Hopping.

2.6 Excursus: About "AgrP"

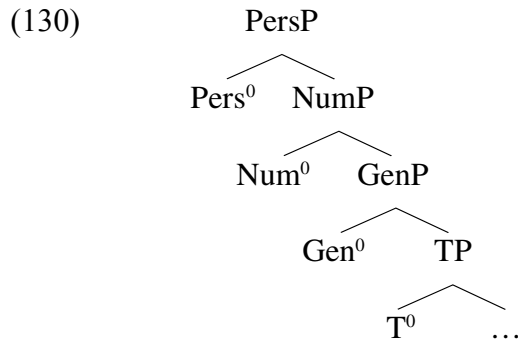
On the one hand, it has been made a case for the dissociation of the verb structure into

heads such that each head encodes a singleton feature (like the category feature, Voice, Neg, Asp, T) which all merge with a yet another independent head, $\sqrt{\text{root}}^0$. On the other hand, it has so far been comfortably assumed that there exists a head Agr^0 , which agrees with the Subject in Person and Number and which Spells-out as a morpheme on the verb stem. These two approaches are hardly reconcilable, to the effect that one is forced to conclude that despite the fact that all projections below AgrP encode a singleton feature, AgrP is the only special projection in the sense that its head bundles Person and Number features. (Also, it remains unclear which feature of the {Person, Number} bundle provides the label for the maximal projection of "Agr"). What is more, in the Past Tense conjugation, "Agr" on the verb stem realizes overtly not only Person and Number features but the Gender feature as well. The distribution of overtly realized Gender feature has been discussed by descriptive grammars of Polish (e.g. Zagórska-Brooks 1975, among many others) and is exhibited below in Table 2.

Table 2. Present and Past Tense conjugation of *stać* 'stand'

	Present			Past
1.SG	stoj-ę	1.SG	MSC/FEM	stał-em /-am
2.SG	stoi-sz	2.SG	MSC/FEM	stał-eś /-aś
3.SG	stoi-Ø	3.SG	MSC/FEM/NEU	stał-U /-a /-o
1.PL	stoi-my	1.PL	MSC	stał-iśmy
			FEM/NEU	stał-yśmy
2.PL	stoi-cie	2.PL	MSC	stał-iście
			FEM/NEU	stał-yście
3.PL	stoj-ą	3.PL	MSC	stał-i
			FEM/NEU	stał-y

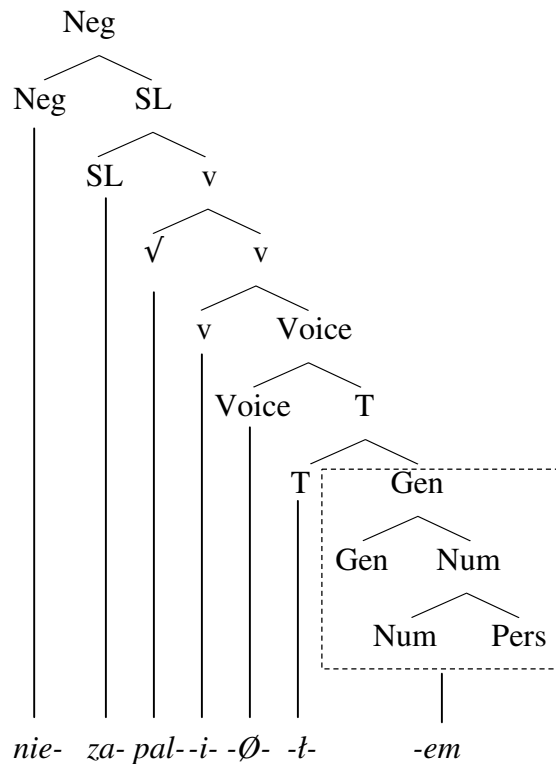
The alternative to postulating that Agr^0 is the one and only head in the extended projection of the verb which can bundle several features is to split it into what it in fact encodes, i.e. into Person-feature, Number-feature, and Gender-feature, all of which project a singleton head in syntax. If this is indeed the right move, then the fine-grained structure of AgrP is, thus, as in (130). (Obviously, the position of TP with respect to now refined AgrP is identical to what has been discussed so far).



It seems that the fact that three separate nodes altogether Spell-out as a singleton morpheme on the verb stem does not constitute a counter-argument to substituting feature bundling on a singleton head for refining a representation such that it includes a singleton feature per head. (The latter is precisely what has been made a case for in the domain below "AgrP" so far). Phonologically, Polish "Agr" Spells-out as a singleton morpheme, but this does not equal to saying that it is a singleton head in syntax. It has been sometimes argued that Spell-out can target non-terminal nodes in syntax. Such a pattern of the lexicalization of syntactic structures has been advanced on independent grounds in McCawley (1968), Weerman & Evers-Vermeul (2002), Neeleman & Szendroi (2007), and is the logic behind the nano-syntax hypothesis (e.g. Starke (2006), and others). If "Agr" is split into singleton features, it indicates that what lowers onto the verb stem is a node derived by a successive-cyclic application of lowering of intermediate heads, yielding (131), (next page).

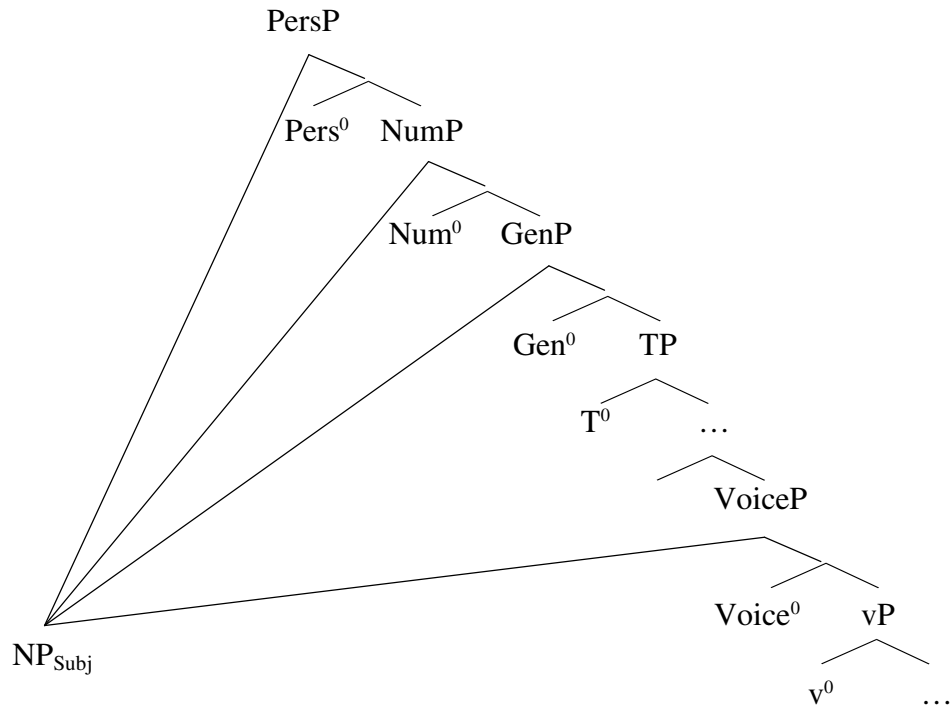
For phonology, there is no difference between the verb structure in (131) and (128), since in both representations there exists such a node which Spells-out the feature set {Pers, Num, Gen} as a singleton morpheme. The difference is in the formulation of the Spell-out rule. For (128), the rule trivially states that the terminal node "Agr" Spells-out these features. If the tree looks like in (131), the rule must say that it is the entire constituent dominated by the Gen-node that is targeted by Spell-out.

(131) The structure of *nie-za-pal-i-Ø-t-em* 'not-INCP-smoke-THV-ACT-PAST-1SG.MSC'



Where splitting AgrP into PersP, NumP, and GenP potentially makes a difference is narrow syntax. Since the fact that the Subject, which is base-generated in Spec-VoiceP (cf. section 2.3), must move to a specifier position of "AgrP" literally means that it must remerge as a sister to a node projected by a feature with which it agrees, the immediate conjecture is that the Subject must remerge in a specifier of PersP, NumP, and GenP once AgrP is split. If this is a correct conjecture, then the representation has more than one Subject position, where "the Subject position" is understood as a node in which the Subject is merged at a certain point in the derivation (as in (132)). I leave this issue at this point.

(132)



2.7 Consequences to Phonology: A Sketch of a Theory.

In section 2.1, it has been argued that the evidence for ThVs in nouns comes from a derivational theory of phonology. These arguments led to the conclusion that in Polish not only verbal stems, but also nominal (and perhaps also adjectival) stems are formed by the merger of a pre-categorial $\sqrt{\text{root}}$ with a category-assigning affix – a scenario advanced in Marantz (1997). In a derivational approach to phonology, rules are listed in two blocks: cyclic and post-cyclic. Cyclic rules apply iteratively to each morpheme in a constituent. After the final rule of the cyclic block has applied, rules of the post-cyclic block apply once to the entire word. Certain morphemes, however, are immune to the application of cyclic rules. At least in all Slavic languages, all prefixes (including Neg) are not subject to cyclic rules (e.g. Pesetsky 1979, Rubach 1984, Halle & Nevins 2008, among many others).

The non-cyclicity of prefixes is perhaps best exhibited by the fact that sequences of vowels are attested only at the prefix-stem boundary (e.g. *na-uczać* 'teach', *wy-obrażać* 'imagine', *za-orać* 'PERF-plough', *po-otwierać* 'DELIM-open', *u-iścić* 'pay a fee', and *przed-stawić* 'introduce', *pod-trzymać* 'uphold', etc.), and the Neg-prefix boundary (e.g. *nie-u-chronić* 'not-PERF-save', *nie-u-pilnować* 'not-PERF-guard'). A sequence of three vowels is, thus, only

attested in a word with two prefixes and a vowel at the stem boundary (*nie-u-iścić* 'not pay a fee').

The non-cyclic status of prefixes is not restricted to verbs only, as exhibited by the sequences of vowels in nouns (e.g. *na-uka* 'science') and adjectives (e.g. *na-ukowy* 'scientific'). Similarly to vowels, also sequences of glides are only attested at the boundary with a prefix in adjectives (since no verbal prefix ends in a glide in Polish), as in *naj-lepszy* 'best'.

Hiatus and sequences of glides in morphemes other than prefixes are not retained in a surface representation of a word due to two cyclic rules: Vowel Truncation and Glide Truncation. The first rule has been discussed in detail in section 2.1. In turn, Glide Truncation deletes a glide before a consonant:

(133) **Glide Truncation**

$j, w \Rightarrow \emptyset / _ C_0$

The rule is, for instance, responsible for the deletion of the morpheme final glide of the ThV *-Ej-* in the Past Tense, as in *tysi[E]li* 'lost hair'-1PL (instead of **tysi[Ej]li*). (The underlying representation of *-Ej-* is retained in 1sg Present Tense, the environment in which Glide Truncation does not apply: *tysi[Ej]esz* 'lose hair'-2SG). Importantly, these rules are listed only in the cyclic block. Hence, a vowel in the underlying representation of a prefix before another vowel and a glide in the underlying representation of a prefix before a consonant are going to be retained in the surface representation of a word.

The fact that prefixes are not subjected to cyclic phonological rules has been so far taken to follow from the approach to morphology which assumes the existence of certain affix classes. Within such an approach, prefixes are simply listed as "non-cyclic morphemes" and other morphemes such as $\sqrt{\text{root}}$, ThV, Tense, and Agr are memorized as "cyclic".

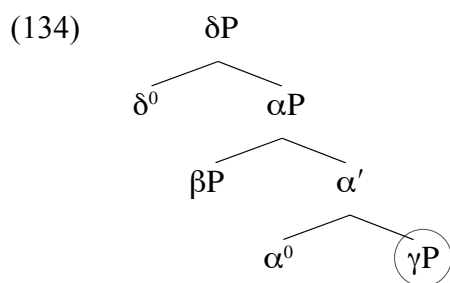
The constituent structure of the participle in Polish in (131), indicates that there exists a certain set of nodes which Spell-out as traditionally "non-cyclic" morphemes. Namely, it appears that all nodes dominated by the category-defining node *v* lexicalize as "cyclic" morphemes. All other nodes (i.e. all prefixes, which were argued to constitute heads for a complement-creating movement) lexicalize as "non-cyclic" morphemes. It, thus, seems that

the cyclic vs. non-cyclic distinction need not be stipulated but, instead, can be structurally defined. (This connects with Marantz' 2007 proposal that the phasal head v^0 , n^0 , or a^0 has consequences for phonology in the sense that it defines the boundary between the "internal" and "external" domain of application. However, since Marantz assumes uniform left-branching trees, the details of his proposal are not applicable to the tree in (131)). It remains to be shown whether the (non-)cyclicity of morphemes can be predicted in the way just outlined also in other languages.

3 The Size of the Spell-out Domain

What CL shares with the phase theory is the assumption that derivation takes place in an incremental phase-by-phase fashion. What CL does not share with the phase theory is the prediction about the size of the tree which is Spelled-out.

According to Chomsky (2000, *et seq.*), a sister to the head of the "strong" phase (i.e. CP, transitive vP) is targeted by Spell-out and "the edge" of the phase (i.e. the head and its specifier(s)) is Spelled out only at the next higher phase. Thus, if α^0 in (134) is the head of the phase, γ P Spells-out. The edge (α^0 , β P) Spells out as part of the constituent which is a sister to the next upper phase.

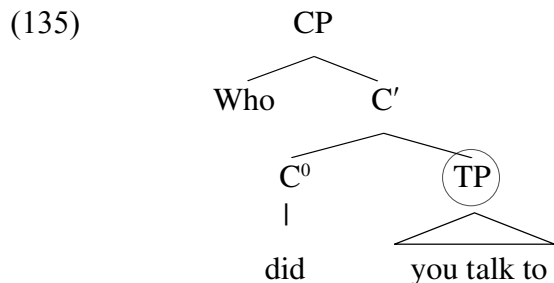


In what follows, I argue that the sister-driven Spell-out crucially relies on the representational X^0/XP distinction (i.e. the X-bar particular distinction) and is, hence, not a part of a derivational theory. In turn, within the bare phrase structure theory, the sister-driven Spell-out predicts the specifier not to constitute the edge, or it makes the specifier undefineable as the edge in the best case. I will then make a case for a simple node-driven Spell-out, implicitly but necessarily adopted by CL, which linearizes the entire tree, including the specifier(s) of each phase.

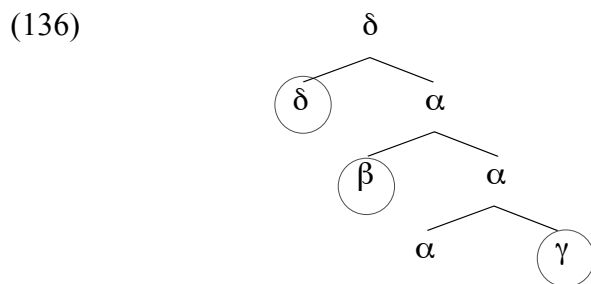
3.1 Sister-driven Spell-out

If α is the head in the sense that it is the *terminal node* of its projection (i.e. α^0 in (134)) and levels of projection of a node are computationally identifiable (cf. Kayne 1994), what Spells out as "a sister to the phase head" is its complement node only. This leaves all other nodes, including the edge nodes α^0 and β P, subject to Spell-out at the next upper phase. However, if there is no upper phase in the tree, the sister-driven Spell-out leaves the edge nodes unlinearized. For instance, if C^0 is a phase head (cum the *terminal node* of the C-

projection), *who* and *did* in a matrix wh-movement construction like in (135) are predicted not to be Spelled out, counter fact.



In turn, if α is the head in the sense that it provides the label for the merger (i.e. as in (136)), what Spells out as "a sister to the phase head" is the set of nodes $\{\delta, \beta, \gamma\}$.



The set of Spelled-out nodes includes both the specifier and the complement of α , which reduces the edge to the head α only. For the tree in (135) it means that *did* cannot Spell-out, counter fact.

3.2 Node-driven Spell-out

An alternative to a situation in which the presence of a phase head in the tree triggers the Spell-out of its sister is the simple Spell-out rule defined as follows:

(137) If α is a phase head, α Spells-out.

Within the bare phrase structure theory, where headedness equals to labeling, the application of the rule in (137) to a tree in (136) Spells-out the set of nodes $\{\alpha, \beta, \gamma\}$, i.e. the entire subtree delimited by the top-most node of the α -projection. This has a consequence for the tree in (135), which is Spelled-out in its entirety by (137).

It was advanced in Chapter 2 that the cyclic/non-cyclic distinction in Polish (verbal) morphology is structurally defined. In particular, it was pointed out that the cyclic phonological rules apply to the morphemes which lexicalize the subtree delimited by the categorial head (the little *v*) and non-cyclic phonology applies elsewhere. At the same time, on the basis of its distribution, it was argued that the ThV in verbs lexicalizes the categorial little *v* and ThV itself is a cyclic morpheme. If the little *v* is a phase head and domains of application of phonological rules are sensitive to the constituent structure in the way advanced in the previous chapter, then the Spell-out domain must essentially be defined by (137).

Consider (131). By (137), the lower Spell-out domain of the tree includes the nodes which lexicalize as the following morphemes: \checkmark , ThV, Voice, T, and Agr. The rule in (137), then, correctly predicts that the only morphemes which are not subject to cyclic rules are all prefixes, as these and only these nodes lexicalize the subtree not dominated by *v*. In contrast, if it is the sister to *v* which is Spelled-out, then the lower domain of the tree excludes not only the prefixes but also \checkmark . Thus, only the node-driven Spell-out correctly predicts the domain of the application of cyclic phonological rules in the Polish verb.

Moreover, the size of the Spell-out domain defined as in (137) corresponds to the size of the material that counts for the calculation of order preservation in CL, i.e. it includes the complement of the head and the edge nodes (see sections 1.2—1.3). Consider how CL predicts the intermediate leg of *wh*-movement to be well-formed when it targets the edge of the phase α , $\alpha = \{C, v\}$ and what Spells-out is α :⁴⁶

(138) Who did John talk to?

(139) [_{CP} Who [_{C'} did [_{AgRP} John [_{VP} <who> [_{v'} talk [_{VP} ... [_{PP} to <who>]]]]]]]] ==>

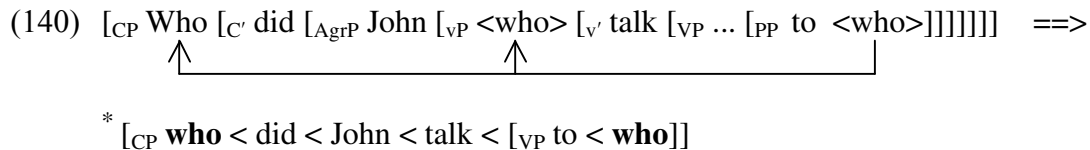
\checkmark [_{CP} **who** < did < John < [_{vP} **who** < talk < to]]]

The intermediate leg of movement of *who* from within the complement of [_v *talk*] to its specifier revises the order between *talk*, *to* and *who* such that the order *who*<*talk*<*to* is Spelled-out at the completion of *vP* (i.e. at the point at which *v* does not project further). At the completion of *CP*, the order *who*<*did*<*John* is added to the existing information about

⁴⁶ Let us ignore at this point the underlying position of the Subject. I will return to this issue shortly.

the linear order in vP. The ordering in CP does not contradict with the word order in vP and the entire representation is correctly predicted to be well-formed.

In contrast, within the CL theory, representation is predicted to be ill-formed if Spell-out targets the sister to the phase head, say, VP, even if the Spell-out of the entire CP-domain is somehow controlled for:⁴⁷



Since the edge of v is not linearized together with the complement of v in a sister-driven Spell-out, the intermediate leg of the wh-movement to the vP-edge does not revise the underlying word order between *to* and *who* in the lower Spell-out domain. It does so only in the upper Spell-out domain, which produces the ordering contradiction between *who* and *to* in the following way: *who* precedes *to* at the CP-level, but *to* precedes *who* at the VP-level. In other words, if sister Spell-out is applied to (140), the construction is wrongly predicted to be ill-formed, on the grounds that it instantiates the derivational scenario (34), whereby the movement from the non-edge position produces an ordering contradiction.

Despite the fact that the size of the Spell-out domain predicted by CL is different than in the phase theory, it seems that the notion of phase defectivity of the little v (cf. Chomsky 2001, 2006) has a consequence for CL as well. Consider the English Locative Inversion construction (LI).

3.3 Locative Inversion

Why is LI possible only with intrinsically unaccusative verbs and passives (cf. (141) and (142)) and is impossible with transitive and unergative verbs (cf. (143) and (144))?

- (141) a. Into the room walked John.
 b. Down the hill rolled the car.
 c. In the room stand two lamps.

⁴⁷ Which, as noted earlier, remains unclear in the sister-driven Spell-out system.

- (142) a. The reclusive lyrebird can be found in this rainforest.
 b. In this rainforest can be found the reclusive lyrebird. (Bresnan 1994)
- (143) a. * Into the park walked John his dog.
 b. * Down the hill rolled John the car.
- (144) * On the ground spat the man.

The restriction on the type of the predicate that can co-occur in the LI construction can be explained in terms of order preservation. According to the phase theory, unaccusative vP is "defective", in the sense that it does not constitute a strong phase and, hence, it does not trigger Spell-out (cf. Chomsky 2001: 8-9).⁴⁸ If the distinction between "defective" and "non-defective" phases is made relevant to CL then, according to the CL logic, a defective phase does not linearize at PF as a separate Spell-out domain. In other words, since an unaccusative vP is not targeted by Spell-out, the overt material which lexicalizes the nodes of the unaccusative vP is not included in the calculation of order preservation at an upper Spell-out domain, say, CP.

The English LI construction is an alternation in the order of the Theme and Location arguments of a locative predicate. In a LI construction, the Locative PP is fronted to a clause-initial position and the DP argument occupies a post-verbal position. In LI, the fronted Locative PP must be a complement to an intrinsically unaccusative verb (Coopmans 1989, Bresnan 1994):

- (145) a. John walked into the room with a bottle in his hand.
 b. * With a bottle in his hand walked John into the room.
 c. Into the room walked John with a bottle in his hand.
- (146) * On the corner was drinking a woman.

⁴⁸ But see Legate (2003) for arguments that both transitive and unaccusative vPs constitute strong phases and den Dikken's (2006) assessment of Legate's argumentation.

The post-verbal DP is NOM-marked⁴⁹ and it agrees with the verb in Person/Number:

- (147) a. Into the room came HE/*HIM.
b. In the basement hid I/*ME.
- (148) a. Down the hill were/*was rolling the cars.
b. In the room stand/*stands two lamps.

In a LI construction, the fronted PP does not undergo the Subject-Aux Inversion and it does not trigger the *do*-support:

- (149) a. * Was down the hill rolling a car?
b. * Did down the hill roll the car?
c. * Did into the room walk John?
d. * Did in the room stand two lamps?
e. * Do in the basement hide I?

The exception is a case when the reading of the fronted PP in a sentence like in (a) below is such that "*in the basement* is somewhere which is good place to hide", in which case agreement holds, as in (b):

- (150) a. In the basement was a good place to hide.
b. Was in the basement a good place to hide? (Williams 2006)

The fronted PP in LI behaves like a Topic with respect to the well-known restriction on topicalized DPs, according to which indefinite DPs cannot occur in a Topic position (cf. Hankamer 1971, among many others):

- (151) a. The sandwich, I will put in my lunch basket.
b. * A sandwich, I will put in my lunch basket.

⁴⁹ Unless the pronoun is deictic:

(i) Into the forest ran HIM. (Rochemont 1986)

As pointed out in Schachter (1992), the indefinite locative pro-form cannot occur in LI:

- (152) a. A child was found somewhere.
b. * Somewhere was found the child.

Also, like (other) Topic-phrases, the PP cannot appear in subordinate clauses introduced by *if/whether* (cf. (153) and (154)), nor can it appear in infinitival clauses (cf. (155) and (156)):

(153) * I wanted to know [if/whether the sandwich you put in my lunch basket].

- (154) a. * I wanted to know [if/whether into the room walked John].
b. * I wanted to know [if/whether down the hill rolled the car].
c. * I wanted to know [if/whether in the room stand two lamps].

- (155) a. * I wanted [the sandwich, to put in my lunch basket].
b. * I would like [the sandwich, to put in my lunch basket].

- (156) a. * I wanted [into the room to walk John].
b. * I would like [into the room to walk John].

Moreover, like (other) Topic-phrases, the fronted PP induces the wh-island effect:

(157) * How do you think [that the room Mary painted t_{wh}]?

- (158) a. * How do you think [that into the room ran John t_{wh}]?
b. * How do you think [that down the hill rolled the car t_{wh}]?

The Topic properties of the fronted PP are predicted by the "Topicalization" analysis of LI (Newmeyer 1987, Rochemont and Culicover 1990, a.o.). According to the "Topicalization" analysis, the PP is fronted to the clause initial position where it receives the Topic interpretation and the DP argument is a Subject which is extraposed to the post-verbal position:

(159) [_{CP} [_{PP} into the room] C⁰ [_{IP} t_{Subj} I⁰ [_{VP} [_{VP} came t_{PP}] John].

A challenge to the post-verbal placement of the DP constitutes the fact that the manner adverb in a LI construction can only follow the post-verbal DP, while no such restriction holds in transitive constructions:

- (160) a. Into the room ran John quickly.
 b. * Into the room ran quickly John.

- (161) a. Down the hill rolled the car abruptly.
 b. * Down the hill rolled abruptly the car.

- (162) a. Into the room strode Robin boldly.
 b. * Into the room strode baldly Robin. (Kathol and Levine 1992)

In the alternative "unaccusative" analysis of LI (e.g. Hoekstra and Mulder 1990, a.o.), the post-verbal DP is a part of the small clause selected by the unaccusative verb and the Locative PP of the SC is fronted to the criterial Subject position. Since the unaccusative analysis takes the DP argument not to be an external argument it does not face the problem of non-canonical placement of the Subject. Nevertheless, the unaccusative approach is, instead, challenged by the Topic properties of the fronted PP and the adverb placement facts.

Note that the fact that the manner adverb must follow the post-verbal DP cannot be simply taken to reflect the case adjacency requirement between the verb and the DP-object:

- (163) a. John opened the window *quickly*.
 b. John *quickly* opened the window.
 c. * John opened *quickly* the window.

The phonological adjacency requirement in English does not merely hold between any verb and any object (in an A-context), but rather between the assigner of ACC case and the DP (cf. Stowell 1981, Neeleman and Weerman 1999, a.o.). For this reason, case adjacency in

English is equally required between an ECM-predicate and the ACC-marked Subject of the embedded clause in a raising-to-object construction (cf. (164)), but is not required between a transitive verb and a PP-argument, since the DP-object in such an environment is assigned ACC by the preposition (cf. (165)).

- (164) a. We *sincerely* believed John to be a liar.
 b. We believed John *sincerely* to be a liar.
 c. * We believed sincerely John to be a liar.
 d. We *incorrectly* estimated the distance to be 20 km.
 e. We estimated the distance *incorrectly* to be 20 km.
 f. * We estimated *incorrectly* the distance to be 20 km.

- (165) a. Jack talked to Mary *slowly*.
 b. Jack talked *slowly* to Mary.

Since the post-verbal DP in a LI construction is NOM-marked and LI occurs with unaccusative verbs, it is unclear how the adverb placement facts in (160)-(162) should follow from the case adjacency requirement.

Despite the lack of an analysis which uniformly captures all the relevant properties of the LI construction, what is clear is that the Locative PP is fronted across the rest of the vP material into the clause initial position. More precisely, the position in which the PP is spelled-out and in which it receives the Topic interpretation provides an argument for the existence of an independent TopP in English, since LI is well-formed in embedded clauses introduced by *that* (and is ill-formed with the covert complementizer):

- (166) a. Mary said [_{CP} that [_{TopP} [_{PP} into the room] [_{Top'} Top⁰ [... [came John t_{PP}]]]].
 b. * Mary said into the room came John.

The embedded LI construction, thus, constitutes a challenge to "edge semantics" (Chomsky 2006), whereby Topic (and Focus) are assumed to be licensed in a specifier of the phasal C. Note also that an account based on the "feature inheritance" of the Topic-feature spreading from C to the lower head whose specifier constitutes the criterial Subject position (Spec-TP, or other) along the lines advanced in Chomsky (2006) is in turn challenged by the LI

construction with the expletive *there*:

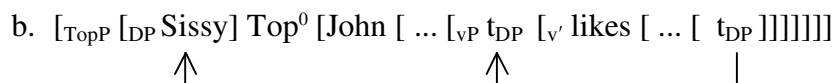
- (167) a. Into the room there came John.
 b. Down the hill there rolled the car.

If *there* is merged in the criterial Subject position in existential constructions (for the reason of satisfying the "EPP-requirement", or other), there must exist a position above the surface position of *there* which is occupied by the fronted PP. While the two variants of the LI construction are not uniform⁵⁰, in both variants the fronted PP is a Topic and both variants are well-formed in clauses embedded under *that*:

- (168) Mary said that into the room (there) came John.

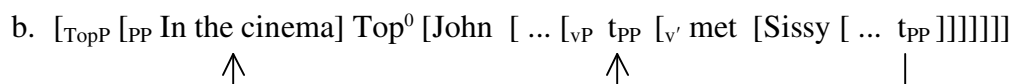
In the case of simple PP-fronting in transitive constructions like in (170), the intermediate movement to the vP-edge, which revises the vP-internal order, can be perhaps stipulated in a way similar to intermediate movement of DP-arguments in A'-movement constructions, like Topicalization in (169).

- (169) a. Sissy, John likes.



==> ✓ [_{CP} **Sissy** < John < [_{vP} **Sissy** < likes]]

- (170) a. In the cinema, John met Sissy.



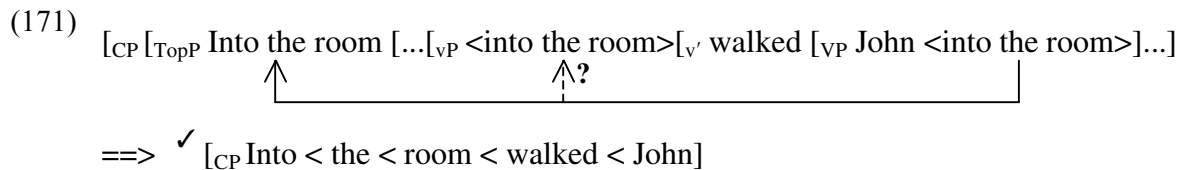
==> ✓ [_{CP} **In < the < cinema** < John < [_{vP} **in < the < cinema** < met < Sissy]]

But the existence of the edge positions in unaccusative vPs is more controversial. For this reason, the fronting of the Locative PP across the verb and the post-verbal DP to the clause-

⁵⁰ For instance, the extraction of the fronted PP out of an embedded clause does not give rise to the that-trace effect when the embedded LI construction has the expletive (cf. Bresnan 1994, Postal 2004):

- (i) * In which shop do you think [that t can be found the most expensive jewelry]?
 (ii) In which shop do you think [that t there can be found the most expensive jewelry]?

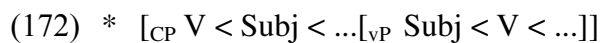
initial position runs in the face of CL as it instantiates the derivational scenario in (34). But once the distinction between defective and non-defective phases is made relevant for CL, then the restriction that only inherently unaccusative verbs occur with LI can follow from the fact that only a defective phase does not linearize at PF as a separate Spell-out domain. In other words, the surface word order of LI construction at the CP-level is not calculated against the word order at the vP-level, since the latter does not linearize as an independent domain. The order preservation requirement in a LI construction is, thus, preserved vacuously:



Note that the fact that LI is well-formed only with unaccusatives does not depend on the ability or disability of defective phases to project the edge. Even if movement from within the complement domain of an unaccusative verb proceeds through its edge, this intermediate merge position does not count for the evaluation of order preservation since the defective vP does not Spell-out as a separate domain in the first place. (But if unaccusatives do in fact project the edge, then the attempt to reduce successive-cyclic movement to the order preservation requirement is challenged).

3.4 Subject < V, V < Subject

Once node-driven Spell-out is adopted, the underlying position of the Subject in Spec-vP is going to produce an ordering contradiction whenever the verb moves higher than the surface position of the Subject, since it derives the following representation:




This is apparently the case with Polish wh-question constructions, in which the participle can be optionally placed above the surface position of the Subject, as in (b) below:⁵¹

⁵¹ Constructions in (a) and (b) are synonymous.

- (173) a. Jaki samochód Paweł kupił swojej żonie?
 what car-ACC Paweł-NOM bought his wife-DAT
 b. Jaki samochód kupił Paweł swojej żonie?
 what car-ACC bought Paweł-NOM his wife-DAT
 'What car did Paweł buy his wife?'

Representationally speaking, the V<Subj order in Polish wh-questions is in essence similar to a what we observe in Swedish, where the linearization of the lower Spell-out domain does not take into account the external argument, negation, or VP-adverbs.⁵² This is exhibited by the "bare V Topicalization" construction, repeated below, in which the remnant VP is fronted to the clause-initial position after prior fronting of the Object above Neg:

- (174) Kysst har jag henne inte (bara hållit henne i handen)
 kissed have I her not (only held her by the hand)

- (175) $[_{CP} [_{VP} V t_O] \text{ aux } [_{IP} \text{ Subj } O \text{ Neg } t_{[VP} V t_O] }]]$

 $\implies \checkmark [_{CP} V < \text{aux} < \text{Subj} < O < \text{Neg} < [_{VP} V < O]]$

If the underling (vP-internal) position of the Subject is included in the calculation of linearization of the lower Spell-out domain, the representation in (174) is predicted to be ill-formed, counter fact. F&P (2003) consider two solutions to the Swedish problem.

The first one assumes that the size of the lower Spell-out domain can vary cross-linguistically and it is VP rather than vP that Spells-out in Swedish. The Spell-out of VP leaves the underlying position of the Subject in Spec-vP excluded from the calculation of linearization in the lower domain, as in (175).

This solution, however, becomes unavailable if the Spell-out rule in (137) is adopted, which does not leave room for the parametrization of the size of the tree which Spells-

⁵² While it is indeed the case that these elements are not included in the calculation of order preservation at the vP-level, the Polish V<Subj construction will be argued in Chapter 5 to involve a substantially more complex derivation than a simple verb-fronting to a position above the Subject, with some of its consequences to be discussed subsequently.

out.⁵³ (Moreover, this solution relies on the assumption that Neg in Swedish is placed lower than in English or Polish while we observe that Neg precedes the material identified as the vP in the latter languages. Also, if the category "V" is derived in syntax by $\sqrt{\text{to-v}}$ raising, then V in (175) marks the vP-boundary).

The other solution that F&P consider is a situation in which it is vP that Spells-out as a lower domain in Swedish, but the Subject (and Neg) are merged in Spec-vP by a *covert* external merge, which takes place after vP has already been linearized. F&P propose that since *covert movement* is invisible for phonological Spell-out, *covert external merge* can perhaps be made available to operate after the linearization.

Such a solution, however, must allow for a post-cyclic modification of a syntactic structure, in particular, for a mechanism responsible for a structure building in syntax after Spell-out. I will not evaluate these solutions in any greater detail, and I will instead point out that the Polish V<Subj problem is only apparent.

It was advanced in the previous chapter that the morphological make-up of a participle in Polish provides evidence for the independence of Voice and the little v. Moreover, the dependency between the presence of the (explicit) external argument in the clause and Voice morphology and the lack of such a dependency between the external argument and the little v suggested that it is the former head that introduces the external argument (contra the assumption made about Spec-vP in F&P). In other words, if the Subject is base-generated in Spec-VoiceP and the size of the lower Spell-out domain is defined by (137), the fronting of the verb across the surface position of the Subject is correctly predicted to be well-formed, since the Subject is not linearized as a subconstituent of the lower Spell-out domain.

If external arguments are introduced by the Voice-projection universally present in syntax, then the fact that the linearization of the lower Spell-out domain does not take account of the external argument and Neg (on top of vP) in Swedish can receive an identical explanation.

⁵³ In fact, the "VP solution" reintroduces the sister-driven Spell-out into the system.

4 A-Scrambling

In the clause-medial position, Polish allows for a considerable degree of freedom in the placement of objects with respect to one another and the participle. If such word orders are derived by largely unbounded movements across the edge of the vP Spell-out domain, then the order preservation hypothesis is challenged. In what follows, I argue that under a particular analysis, Object-scrambling indeed turns out to be an exclusively vP-internal process and, hence, the construction does not constitute a challenge to the CL theory. Nevertheless, the situation becomes less obvious if A-scrambling involves refined syntactic representations. The latter may turn out to be necessary as a solution to the problem of locality of Polish scrambling.

4.1 The Position of Objects in Unmarked Constructions

The basic word order of monotransitive constructions in Polish is S-V-O (cf. (176)), and the basic word order of ditransitive constructions is S-V-IO_{DAT}-DO_{ACC} (cf. (177)).

(176) Paweł lubi kawę
Paweł-NOM likes coffee-ACC
'Paweł likes coffee.'

(177) Paweł dał Marii książkę.
Paweł-NOM gave Mary-DAT book-ACC
'Paweł gave Mary a book.'

Although scrambling can change the order of arguments in Polish, there exists evidence that the S-V-IO-DO word order is indeed basic. For instance, Witkoś and Dziemianko (2006) advance that the evidence for the S-V-IO-DO order as basic comes from the syntax of idioms. Idioms have been extensively argued to involve unmarked word orders (see Larson 1988 and Svenonius 2005 and the references cited therein) and the word order of Polish idioms is V-(IO_{DAT})-DO_{ACC}:

- (178) a. masz babo placek
 have woman-DAT pie-ACC
 lit. 'what a bad luck'
- b. masz ci los
 have you-CL.DAT fate-ACC
 lit. 'what a bad luck'
- c. piłkarze gryzą trawę
 footballers-NOM bite grass-ACC
 lit. 'footballers put their hearts into the game'
- d. połknąć bakcyła
 swallow bug-ACC
 lit. 'become interested in something'

The same word order is the only one attested in discontinuous idioms. As shown below, the core of the idiom includes the verb and the DO, while the open position involves the IO and precedes the DO:

- (179) a. dać NP lanie
 give NP-DAT downpour-ACC
 lit. 'beat someone'
- b. suszyć NP głowę
 dry NP-DAT head-ACC
 lit. 'reprimand someone'
- c. oddać NP przysługę
 return NP-DAT favor-ACC
 lit. 'do someone a favor'
- d. pokazać NP figę
 show NP-DAT fig-ACC
 lit. 'take someone in'

At the same time, Witkoś and Dziemianko (2006) report that idioms with an open DO but a fixed IO are unattested in Polish.

The syntax of discontinuous idioms is also argued in Witkoś (2007) to constitute evidence

for overt movement of the verb from V to v in Polish declarative clauses. The argument goes as follows. A discontinuous idiom in Polish comprises the core, which is a constituent formed exclusively by the verb and the DO (as in (180a)), which further undergoes combination with the open position (the IO) and the Subject (as in (180b)).⁵⁴

- (180) a. [VP_{core} V NP_{DO}]
 b. [VP_{idiom} NP_{Subj} V [NP_{IO} [VP_{core} t_v NP_{DO}]]]

Since the verb precedes the IO in the open position, the structure of idioms indicates that the verb raises overtly from within VP to the little v:

- (181) [vP NP_{Subj} [v' [v V+v] [vP NP_{IO} [v' t_v NP_{DO}]]]]
-
- The diagram shows a bracketed structure [vP NP_{Subj} [v' [v V+v] [vP NP_{IO} [v' t_v NP_{DO}]]]]. An arrow points from the 'v' in the inner [v' [v V+v]] up to the 'v' in the outer [v' t_v NP_{DO}]].

Thus, the argument from idioms supports the conclusion reached in Chapter 2 that the participle in Polish is formed by the $\sqrt{\text{to-v}}$ raising.

Another argument for the S-V-IO-DO order as basic comes from the ordering of pronominal clitics, which reflects their base position in a clause (see for instance Richards 1999, 2001). As the contrasts below show, the IO clitic must precede the DO clitic:

- (182) a. Jan mu go posłał w zeszłym tygodniu.
 Jan-NOM him-CL.DAT it-CL.ACC sent in last week
 'Jan sent it to him last week.'

- b. ??Jan go mu posłał w zeszłym tygodniu.
 Jan-NOM it-CL.ACC him-CL.DAT sent in last week

- (183) a. Jan jej go dał w prezencie.
 Jan-NOM her-CL.DAT it-CL.ACC gave in gift
 'Jan gave it to her as a gift.'

- b. ??Jan go jej dał w prezencie.
 Jan-NOM it-CL.ACC her-CL.DAT gave in gift

⁵⁴ In other words, the structure of Polish idioms does not differ from a universal architecture of idioms advanced in Marantz (1997).

- (184) a. Czy wy mu go zamierzacie oddać?
 if you-NOM him-CL.DAT it-CL.ACC intend return
 'Are you going to return it to him?'
 b. * Czy wy go mu zamierzacie oddać?
 if you-NOM it-CL.DAT him-CL.DAT intend return

Note also that the binding facts indicate that the IO which precedes the DO c-commands it: in (185a), the IO binds the anaphoric DO and in (186a), the IO binds the pronominal DO.⁵⁵

- (185) a. Piotr pokazał [dziewczynom_i] [siebie_i nawzajem] w lustrze.
 Piotr-NOM showed girls-DAT each other-ACC in mirror
 'Piotr showed the girls to each other in a mirror.'
 b. * Piotr pokazał [siebie_i nawzajem] [dziewczynom_i] w lustrze.
 Piotr-NOM showed each other-ACC girls-DAT in mirror
- (186) a. Porywacze oddali [Marka rodzicom_j] [ich_j chłopca].
 kidnappers returned Mark's parents-DAT their boy-ACC
 'The kidnappers returned Mark's parents their boy.'
 b. * Porywacze oddali [ich_j chłopca] [Marka rodzicom_j].
 kidnappers returned their boy-ACC Mark's parents-DAT (Witkoś 2007)

The example in (185b) is infelicitous due to the lack of reconstruction in anaphoric binding in A-chains; (186b) is infelicitous due to the prohibition against backward pronominalization in Polish. In non-anaphoric contexts, however, scrambling of the DO across the IO is felicitous and can target the position immediately below the verb as in (a),

⁵⁵ This is not to say that the DO when placed before the IO cannot bind the latter, as (i) is as well-formed as (185a).

- (i) Piotr pokazał [dziewczyny_i] [sobie_i nawzajem] w lustrze.
 Piotr-NOM showed girls-ACC each other-DAT in mirror
 'Piotr showed the girls to each other in the mirror.'

These facts, thus, indicate that both internal arguments occupy A-positions in such an environment and only the evidence from idioms and clitics constitutes true arguments for the V-IO-DO order as basic.

above the verb as in (b), below the Subject as in (c), or above the Subject as in (d) below:⁵⁶

- (187) a. Piotr szybko oddał pieniądze bratu t_{DO}
 Piotr-NOM quickly returned money-ACC brother-DAT
- b. Piotr szybko pieniądze oddał bratu t_{DO}
 Piotr-NOM quickly money-ACC returned brother-DAT
- c. Piotr pieniądze szybko oddał bratu t_{DO}
 Piotr-NOM money-ACC quickly returned brother-DAT
- d. Pieniądze Piotr szybko oddał bratu t_{DO}
 money-ACC Piotr-NOM quickly returned brother-DAT
- 'Piotr quickly returned the money to his brother.'

Despite the inapplicability of the binding test due to the prohibition against cataphoric binding, the scope interaction test indicates that A-scrambling results from movement, not base-generation. As will be shown below, movement also derives a local scrambling of the DO across the IO, as in (187a).

4.2 A-Scrambling as Movement

There exist two major approaches to scrambling: the accounts based on base-generation and movement. The base-generation accounts have been most notably advanced in Haider (1993), Bayer and Kornfilt (1994), Neeleman (1994), Neeleman and Reinhart (1998), Bošković and Takahashi (1998), and, more recently, in Fanselow (2001). The movement account of scrambling has been advanced, among many others, in Bailyn (1995, 2001), Müller and Sternefeld (1993) for Russian; Mahajan (1990) for Hindi; Saito (1992), Miyagawa (1997), McGinnis (1999), Sauerland and Elbourne (2002) for Japanese; Webelhuth (1989), Fanselow (1990), Grewendorf and Sternefeld (1990) for German. These accounts have been attempted to explain both local as well as long distance scrambling. At this point, I will narrow down the discussion of broadly understood scrambling to instances of local reordering of internal arguments with respect to one another and the participle.

⁵⁶ The presence of the manner adverb indicates the approximate vP-boundary. In line with the evidence provided in Chapter 2, I will continue to assume that the participle in Polish declarative clauses does not move higher than vP.

In the domain of Polish double object constructions, Tajsner (1998) has proposed that the underlying order of internal arguments is free and the V-IO-DO as well as the V-DO-IO word order results from base-generation. (Note that if we define scrambling as reordering between arguments (cf. Ross 1967), such a proposal equals to the hypothesis that local scrambling in Polish is base-generated). The argument provided in Tajsner's work in favor of the base-generation analysis of V-IO-DO/DO-IO comes from binding: if the word orders in (186) above and (188) below were derived by movement, the prohibition against backward pronominalization or the Principle C violation would not be expected, counter fact.

- (188) a. *?Piotr pokazał [jego_i nowego wykładowcę][każdemu studentowi_i].
 Piotr-NOM showed [his new lecturer]-ACC [each student]-DAT
 b. *?Piotr pokazał [jego_i nowym studentom][każdego wykładowcę_i].
 Piotr-NOM showed [his new students]-DAT [each lecturer]-ACC

Nevertheless, as has been discussed earlier, constructions like in (186a) or (188) are in fact expected to be ruled out by the prohibition against backward pronominalization if the Object with a co-indexed pronoun simply occupies an A-position. This is so since in Polish the prohibition against backward pronominalization holds in A-contexts but can be obviated in A'-contexts, as exhibited by the following:

- (189) ?? [Jego_i nowy wykładowca] pokazał [studentowi_i] [podręczniki].
 [his new lecturer]-NOM showed student-DAT coursebooks-ACC
 * 'His new lecturer showed the coursebooks to the student.'
 (190) To [jego_i nowego wykładowcę] Piotr pokazał [studentowi_i] t .
 it [his new lecturer]-ACC Piotr-NOM showed student-DAT
 'It is his new lecturer that Piotr showed to the student.'

In (189), the pronoun is contained within the NP-Subject of a (stylistically neutral) indicative clause, and, hence it arguably occupies an A-position (like Spec-PersP, or other). In turn, in (190), the pronoun is contained in a clefted NP-Object, a canonical instance of A'-dependency.⁵⁷ Since backward pronominalization is licit in an A'- but not in A-context,

⁵⁷ I will return to the discussion of the A'-status of NP-Objects fronted to a position above the Subject in the next chapter.

examples like (186a) or (188) teach us about the A-position of the post-verbal Object rather than the (non)application of movement in such an environment.

In contrast, what indicates that (even local) scrambling in Polish is derived by movement is perhaps one single most robust property of movement, namely scope reconstruction. Consider the following.

When both internal arguments are quantificational and the IO precedes the DO in the vP, only the surface scope reading is available:

- (191) a. Piotr (szybko) dał [DAT jakimuś chłopcu] [ACC każdą naszą monetę] $\exists > \forall$
 Piotr quickly gave some boy each coin of ours
- b. Piotr (szybko) [DAT jakimuś chłopcu] dał [ACC każdą naszą monetę] $\exists > \forall$
 Piotr quickly some boy gave each coin of ours
- c. % Piotr (szybko) [DAT jakimuś chłopcu][ACC każdą naszą monetę] dał $\exists > \forall$
 Piotr quickly some boy each coin of ours gave
 'Piotr (quickly) gave some boy each coin of ours.'

When the DO is scrambled across the IO as in (a) below, or further across the verb as in (b), both narrow and wide scope readings are available, which indicates that the IO c-commands the trace of the DO. Likewise, when both objects are fronted to the immediately pre-verbal position as in (c), both narrow and wide scope readings are available:⁵⁸

- (192) a. Piotr (szybko) dał [ACC każdą naszą monetę] [DAT jakimuś chłopcu] $\forall > \exists, \exists > \forall$
 Piotr quickly gave each coin of ours some boy
- b. Piotr (szybko) [ACC każdą naszą monetę] dał [DAT jakimuś chłopcu] $\forall > \exists, \exists > \forall$
 Piotr quickly each coin of ours gave some boy
- c. Piotr (szybko) [ACC każdą naszą monetę][DAT jakimuś chłopcu] dał $\forall > \exists, \exists > \forall$
 Piotr quickly each coin of ours some boy gave

Maintaining the assumption that the pre-verbal position of the manner adverb indicates the approximate upper vP-boundary, the facts above exhibit the following pattern.

⁵⁸ Despite the fact that most of my consultants confirm this observation, for some speakers only the surface scope is available. I do not know how to account for this asymmetry.

- (193) a. [... manner <[_{VP} v < DAT < ACC]] $\exists > \forall$ cf. (191a)
 b. [... manner <[_{VP} DAT < v < ACC]] $\exists > \forall$ cf. (191b)
 c. [... manner <[_{VP} DAT < ACC < v]] $\exists > \forall$ cf. (191c)
 d. [... manner <[_{VP} v < ACC < DAT]] $\forall > \exists, \exists > \forall$ cf. (192a)
 e. [... manner <[_{VP} ACC < v < DAT]] $\forall > \exists, \exists > \forall$ cf. (192b)
 f. [... manner <[_{VP} ACC < DAT < v]] $\forall > \exists, \exists > \forall$ cf. (192c)

When both internal arguments are quantificational, DO-fronting across the IO results in ambiguous scope, irrespective of whether the DO also moves across the verb (cf. (192b)/(193e)) or across the IO and the verb (cf. (192c)/(193f)). If scope ambiguity results from reconstructive properties of movement, then the paradigm above provides an argument against a base-generation account of A-scrambling.

The weak cross-over (WCO) test indicates that the vP-internal scrambling indeed shows A-properties, as DO-fronting across the IO with a coindexed pronoun is felicitous:⁵⁹

- (194) a. Policja (szybko) odesłała [_{ACC} syna Kowalskich]_i [_{DAT} jego_i rodzicom] t .
 police-NOM quickly sent Kowalski's son his parents
 b. Policja (szybko) [_{ACC} syna Kowalskich]_i odesłała [_{DAT} jego_i rodzicom] t .
 police-NOM quickly Kowalski's son sent his parents
 'The police quickly sent back the Kowalski's son to his parents.'

This contrasts with the DO-fronted across the IO with a co-indexed pronoun by a wh-movement or by clefting, as in (195) and (196) respectively.⁶⁰ The contrast indicates that cross-over constructions are sensitive to the A/A' distinction in Polish.

- (195) * [Którego syna Kowalskich]_i jego_i rodzice odesłali t do domu ?
 [which son Kowalski's]-ACC his parents-NOM sent-back to home
 'Which of Kowalski's son did his parents send back home?'

⁵⁹ In what follows, I focus on canonical instances of A-type scrambling, which reorder internal arguments in the middle field of the clause, abstracting away from certain instances of scrambling across the surface position of the Subject into the left-periphery of the clause, like topicalization or focus movement, which can also exhibit A-properties in Polish. I discuss the word order of these constructions in Chapter 5.

⁶⁰ See Tajsner (2008) who argues that the cleft construction in Polish is an A'-dependency derived by focus movement.

- (196) * To [syna Kowalskich]_i jego_i rodzice odesłali t do domu.
 it [son Kowalski's]-ACC his parents-NOM sent-back to home
 'It's the Kowalski's son that his parents sent back home.'

If scrambling of the type discussed above indeed targets positions in the vP-internal domain, as the placement of the manner adverb indicates, then Subject raising from its base-generated position does not constitute a problem for the CL theory. Consider the following.

If we follow the minimalist guidelines the Subject argument is externally merged in Spec-vP, and internal merge targets the outer specifier of vP (cf. Chomsky 2000, *passim*) we expect the internal argument(s) in constructions (193b,c,e,f) to be fronted to a position before the base position of the external argument. For (193b), for instance, (197) is the representation derived at the completion of the vP domain:

- (197) (*manner* ...) [_{vP} IO_i [_{v'} Subj [_{v'} [_v √+v] [_{VP} ... t_i ... DO]]]]
-

The subsequent raising of the Subject to its surface position in the upper Spell-out domain produces the ordering contradiction as the Subject does not move from the phonological edge of the lower Spell-out domain:

- (198) [_{CP} Subj ... (*manner*...) [_{vP} IO t_{Subj} V t_i DO]] ==>
-

* [_{CP} **Subj** < (*manner*) < [_{vP} IO < **Subj** < V < DO]]

In (198), *IO* scrambled to the vP-edge precedes *Subj* in the vP Spell-out domain. Since *Subj* precedes the manner adverb in the CP Spell-out domain but *IO* does not, then by transitive closure, *Subj* precedes *IO*, which yields an ordering contradiction. The well-formedness of (193c)(as well as similar constructions with objects scrambled to the immediately preverbal position like in (193c,e,f)) is, thus, unexpected under the CL theory. But if representations are refined to the effect that Voice and the little *v* head their own projections in syntax and -- as was advanced in Chapter 2 -- the external argument is

introduced by Voice, then scrambling which targets the vP-edge is consonant with the CL theory:

$$(199) \quad [_{CP} [_{PersP} \text{Subj} [\dots [_{VoiceP} t_{Subj} [\dots (manner) \dots [_{vP} IO \ V \ t_i \ DO]]]]] \implies$$

$$\checkmark [_{CP} \text{Subj} < (manner) < [_{vP} IO < V < DO]]$$

In such a case, *Subj* raises from Spec-VoiceP to a position in the IP-system (Spec-PersP, or other), none of which positions are Spelled out in the lower vP domain. Consequently, there is no ordering contradiction between *IO* and *Subj* and the construction is correctly predicted to be well-formed.

On the other hand, if Polish A-scrambling is derived in the way proposed in Witkoś (2007), an ordering contradiction is expected to arise between the verb and the DO in a construction like in (193d)/(192a).

Witkoś (2007) assumes that the participle in Polish moves outside vP to Asp^0 and proposes that scrambling is derived by the optional addition of the EPP feature on v^0 or Asp^0 or on both v^0 and Asp^0 . (190d)/(189a) is argued to be derived as follows:⁶¹

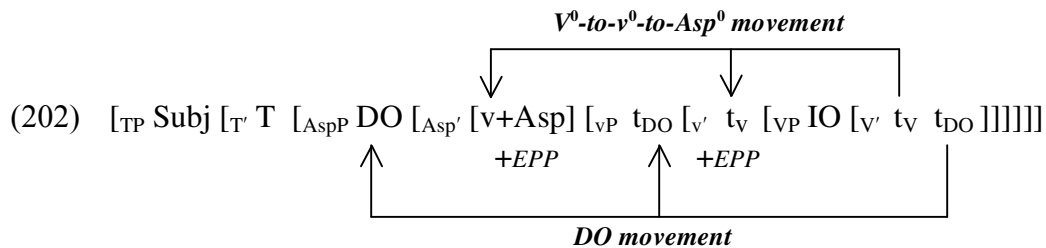
$$(200) \quad [_{TP} \text{Subj} [_{T'} T [_{AspP} [V+Asp] [_{vP} DO [_{v'} t_v [_{VP} IO [_{V'} t_V t_{DO}]]]]]]]]$$

First, the addition of [+EPP] on the little *v* licenses overt movement of the DO to its specifier. Then, the verb moves to Asp^0 , which is assumed to be the standard case in Polish. Such a representation is expected to give rise to an ordering contradiction as *V* but not *DO* precedes the vP Spell-out domain at the CP-level, whereas *DO* precedes *V* in the vP Spell-out domain (in other words, (200) instantiates an illegal movement from the non-edge position which is not followed by a compensating movement of the element from the edge):

⁶¹ I disregard the underlying position of the external argument for the reasons given above.

(201) * [CP Subj < V <[_{vP} DO < V < IO]] [= (200)]

In contrast, the construction in which the DO precedes the verb, as in (193e)/(192b), is proposed in Witkoś's work to be derived by the satisfaction of the EPP feature present on both v^0 and Asp^0 by the DO, as in the following:



Since Asp^0 is also equipped with a movement diacritic, this derivation -- despite the fact that it is discussed in Witkoś's work in abstraction from CL -- is order preserving: the movement of the verb from the non-edge position in vP is followed by an order-revising movement of the DO into the upper CP Spell-out domain:

(203) ✓ [CP Subj < DO < V <[_{vP} DO < V < IO]] [= (202)]

This leaves the former derivation but not the latter one as a challenge to the CL theory. In what follows, I make a case for an alternative account of Polish A-scrambling, which departs from deriving the word order by assigning the EPP feature to heads and which does not lead to order contradictions.

4.3 Old/New Information Marking by Movement

If scrambling is licensed by the presence of the EPP feature on a head c-commanding the NP-object, then DO-fronting across the IO violates locality. Likewise, the EPP-based account runs into a well-known problem of optionality in syntax and the association of the presence/lack of scrambling with the presence/lack of the movement diacritic is, in essence, a restatement of the problem.

The simplest solution to both these problems which, I believe, is the most promising one is to depart from the EPP-driven scrambling altogether. The reason for this move starts with

an observation that Polish A-scrambling is not semantically vacuous, instead, Object fronting (IO, or DO) licenses a discourse-anaphoric interpretation. For this reason, basic and scrambled word orders are not merely derivational possibilities of otherwise identical constructions. In particular, the Polish facts seem to lend support to the theory of scrambling advanced in Neeleman and van de Koot (2008), who propose the mapping rule between syntax and information structure, whereby the fronted Object is marked as old information (or "given") and its sister constituent is marked as New Information, according to the following template:

- (204) a. [OLD INFO α [NEW INFO β]]
 b. * [NEW INFO β [OLD INFO α]]

According to the old information template, for α to be marked as old information/given, it must be licensed in an A-position: when β is a sister constituent to α , it becomes marked as new information. The pattern is, thus, similar to what is observed in constructions involving Topic and Focus (typically, A'-dependencies), where the sister to the Topic is interpreted as Comment, and the sister to Focus is interpreted as Background (see Gundel 1974, 1988; Reinhart 1982; Lambrecht 1994; Rizzi 1997; a.o.). But while the association of scrambling and Givenness-marking eliminates the optionality problem, motivating movement by an interpretive template, in turn, creates a look-ahead problem in the Y-model of grammar, in which syntax comes before LF. (Note also that the fact that even local scrambling is sensitive to binding and cross-over rules out the possibility that scrambling takes place in the post-syntactic component.) In the remainder of this section I will ignore the look-ahead problem and I will make a case for the derivation of scrambling which avoids it only in the next section.

Since the evidence from scope reconstruction indicates that Polish A-type scrambling is not base-generated but is derived by movement, the requirement that in order to be interpreted as old information, α must be "licensed in an A-position" means that α *must be moved to an A-position*.⁶² If fronting did not play a role in old/new information marking in Polish, the basic V-IO-DO word order, in which both objects are in A-positions, would be expected to be interpreted as discourse-anaphoric. This is not the case, and the V-IO-DO

⁶² Note that Neeleman and van de Koot's (2008) analysis does not rely on the assumption that the interpretive template is derived by movement in syntax.

order is unmarked, as evidenced by the syntax of idioms (and is not derived by movement, as evidenced by the lack of scope reconstruction, cf. (193a)).

The evidence for old/new information marking by movement comes from the wh-question/answer test. Since a wh-phrase in a wh-question licenses a new information focus in an answer sentence, we predict an answer to wh-phrase to be licensed in sentence-final position, in line with the old/new information template. This prediction is correct. Consider the following.

- (205) Q: Komu Maria dała książkę?
who-DAT Maria-NOM gave book-ACC
'Who did Mary give a book to?'
- A: Maria dała książkę Pawłowi. \ *Maria dała Pawłowi książkę.
Mary-NOM gave book-ACC Paweł-DAT
'Mary gave a book to Paweł.'
- (206) Q: Komu Maria posłała list?
who-DAT Mary-NOM sent letter-ACC
'Who did Mary send a letter to?'
- A: Maria posłała list Pawłowi. \ *Maria posłała Pawłowi list.
Mary-NOM sent letter-ACC Paweł-DAT
'Mary sent a letter to Paweł.'
- (207) Q: Co Maria dała Pawłowi?
what-ACC Mary-NOM gave Paweł-DAT
'What did Mary give Paweł?'
- A: Maria dała Pawłowi książkę. \ *Maria dała książkę Pawłowi.
Maria-NOM gave Paweł-DAT book-ACC
'Mary gave Paweł a book'
- (208) Q: Co Maria posłała Pawłowi?
what-ACC Mary-NOM sent Paweł-DAT
'What did Mary send Paweł?'

A: Maria posłała Pawłowi list. \ *Maria posłała list Pawłowi.
 Mary-NOM sent Paweł-DAT letter-ACC
 'Mary sent Paweł a letter.'

In (205) and (206), in which the *wh*-phrase is an IO, only the scrambled V-DO-IO word order constitutes a felicitous answer to the question. The V-IO-DO word order is ill-formed as an answer, since it does not mark the IO as new information, which is licensed by the *wh*-phrase. Since the scope reconstruction facts in (193d)/(192a) indicate that the V-DO-IO is derived by DO-fronting, we can conclude that old/new information marking in Polish can be achieved by movement into an A-position. In turn, when the *wh*-phrase is a DO, as in (207) or (208), the well-formed answer to the *wh*-question involves the V-IO-DO word order, in which the DO is new information and the IO is old or "given". The same fact is reported to hold in Russian, a canonical S-V-IO-DO word order language, in Neeleman et al. (2008), as shown below.

(209) Q: Komu Anja dala knigu?
 who-DAT Anna-NOM gave book-ACC
 'Who did Anna give the book to?'
 A: Anja dala knigu Kate
 Anna-NOM gave book-ACC Kate-DAT
 'Anna gave the book to Kate.'

(210) Q: Čto Anja dala Kate?
 what-ACC Anna-NOM gave Kate-DAT
 'What did Anna give Kate?'
 A: Anja dala Kate knigu
 Anna-NOM gave Kate-DAT book-ACC
 'Anna gave Kate the book.'

If the verb in stylistically unmarked declarative clauses indeed occupies the little *v* in Polish, then the positions to which the objects are fronted in constructions in (193) are all vP-internal, as the position of the manner adverb suggests. In the ideal case scenario, the discourse-anaphoricity is derived by the movement of the constituent marked as old information only, without additional operations on the remainder of the tree. In other

words, if (193a) is the unmarked word order, the word order alternations in (193b-f) are derived by a singleton movement which marks the fronted constituent as old information and the sister to its landing site as new information as outlined below. (Fronted old information constituents are underlined).

(211) **Basic/unmarked word order [= (193a)]:**

[_{CP}[Jan [szybko [_{VP} posłał [_{VP} Marii [książkę]]]]]]
 Jan-NOM quickly sent Mary-DAT book-ACC
 'Jan quickly sent Mary a book.'

(212) **IO scrambling across the verb [= (193b)]:**

[_{CP}[Jan [szybko [_{VP} Marii [_{V'} posłał [_{VP} t [książkę]]]]]]]]
 Jan-NOM quickly Mary-DAT sent book-ACC

(213) **DO scrambling across the verb [= (193e)]:**

[_{CP}[Jan [szybko [_{VP} książkę [_{V'} posłał [_{VP} Marii [t]]]]]]]]
 Jan-NOM quickly book-ACC sent Mary-DAT

(214) **DO & IO scrambling across the verb [= (193f)]:**⁶³

[_{CP}[Jan [szybko [_{VP} książkę [_{V'} Marii [_{V'} posłał [_{VP} t [t]]]]]]]]]]
 Jan-NOM quickly book-ACC Mary-DAT sent

In all these derivations the fronted object targets a position between the manner adverb and the verb, which I have provisionally marked as Spec-vP. In the previous chapter, an argument from embedded *there*-LI constructions has been provided against the "edge semantics", whereby discourse functions (like Topic or Focus) are licensed in the (multiple) specifier of the CP-phase (cf. Chomsky 2006). But the "edge semantics" can be, instead, made a case for if old information NPs are licensed in the (multiple) specifier(s) of the vP-

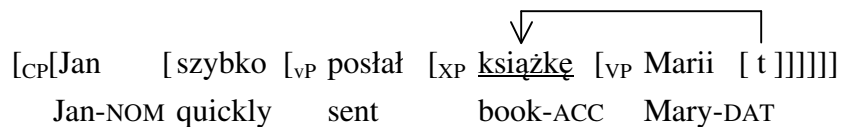
⁶³ Note that the scope ambiguity in a construction S<*manner*<DO<IO<V with quantificational objects predicts this construction to be derived by crossing movement paths.

phase, as marked in (211). On the other hand, Belletti (2004) argues on the basis of Italian data that there exists an independent low Focus projection at the edge of vP, in which low foci are licensed, much in the way TopP and FocP licenses Topic and Focus in the left periphery of a clause.⁶⁴

4.4 Scrambling and Locality

While the analysis of (193b,e,f) as proposed above can fare with both "edge semantics" and cartography since the old information NPs are fronted into the same area of the clause, the construction in (193d) is equally problematic for both approaches. This is so because there is no one single designated position where old information is licensed. In other words, the "edge semantics" approach fails since the old information NPs is fronted to a position below the vP-edge (i.e. it remerges in a specifier of some other head in the vP-internal domain). In turn, the low Focus projection approach fails as well, as the paradigm in (193) indicates that there is no one single head in the clause whose functional specifier licenses old information. Consider (193d)/(192a).

(215) **Local DO scrambling across the IO (but below the verb)** [= (193d)]:




Since the DO is fronted here to a position above the IO but below the verb (and the manner adverb), it quite clearly does not target the vP-edge. This indicates that neither the phase head licenses A-scrambling in Polish, nor is there a single designated projection where old information is licensed.

Nevertheless, despite the fact that the paradigm above indicates that there is no singleton projection which is targeted by A-scrambling, there exists a circumstantial argument in favor of the cartographic analysis of scrambling. As discussed above, DO-scrambling across IO is well-formed (cf. (213) and (215)). As such, despite its well-formedness, the construction appears to violate locality. However, the well-formedness of DO-fronting

⁶⁴ Nevertheless, Belletti's (2004) analysis concerns the post-verbal position of the Subject, not A-scrambled objects.

across IO is expected if the feature responsible for discourse-anaphoric interpretation is projected in syntax and A-scrambling involves a probe-goal relation just like Topic- and Focus-movement do. If this is the case, then DO-fronting across IO is in accord with Starke's (2001) formulation of *Relativized minimality* based on feature specificity, whereby intervention takes place iff the intervener completely matches the features of the probe (cf. (18)). In this way, the presence of the checkable "old information" feature in the structure of the DO but not the IO, yields DO-movement across IO licit (in exactly the same way Topic- or Focus-movement of the Object across the Subject does not produce the minimality effect):

(216) Jan szybko [_{VP} posłał [_{OldP} książkę_[old] [_{Old'} Old⁰ [_{VP} Marii_[Ø] [_{<książkę_[old]>]]]]]]}

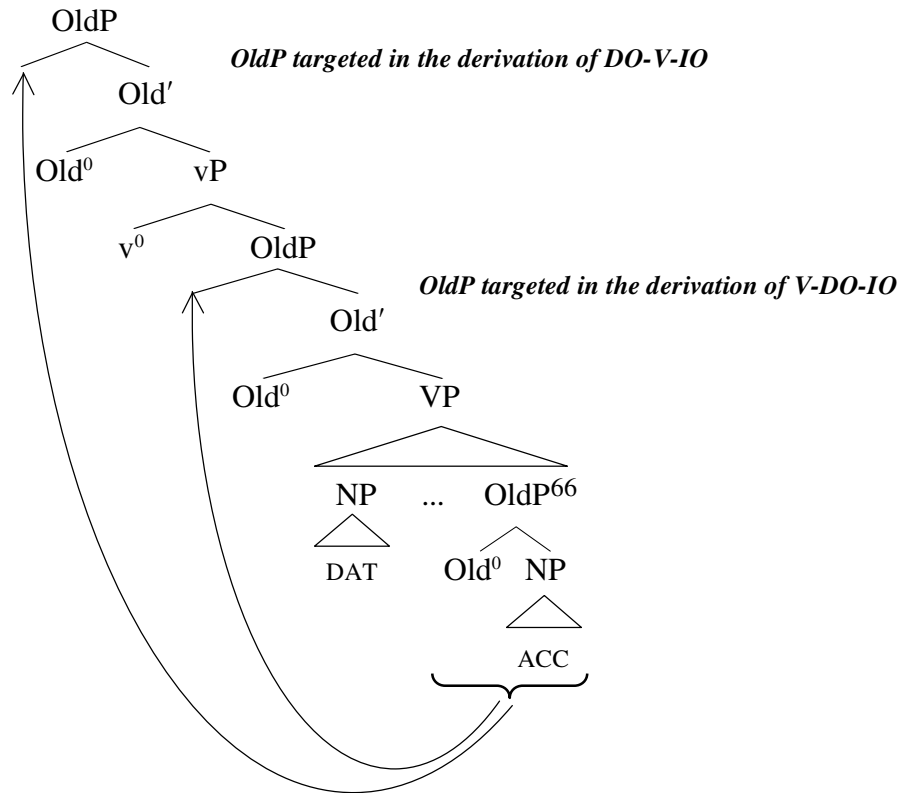


Note also that the association of scrambling with a feature in syntax eliminates the look-ahead problem as scrambling is now reduced to feature-driven movement. Under such a premise, it is only the output of scrambling that receives the proper interpretation in the information structural component. In this sense, A-scrambling is essentially identical to Topic-, Focus-, or *wh*-movement, which are all derived in narrow syntax and which all have distinct interpretive properties. Since an account of the locality problem along these lines demands the projection of the old information feature in syntax, it cannot be straightforwardly applied by the "edge semantics" approach.

While such an account offers a fairly straightforward solution to the locality problem, it has a trade off in postulating more than one designated functional projection in the middle field of the clause (in particular, on top of *vP* and on top of some *VP* as in (217) below).⁶⁵ This is so since, as discussed above, A-scrambling can target a position either below or above the participle.

⁶⁵ Neeleman and van de Koot (2007) reject such a scenario on conceptual grounds pointing out that the idea of having more than one discourse-projection in the functional structure runs in the face of the cartography program. This, however, need not be so, if -- for some specific reason -- certain features can project their own head in more than one place in the functional hierarchy. Recall the earlier mentioned double projection of certain manner adverbs in the clause, as in *John has quickly raised his hands quickly* (Cinque 2004: 700 fn. 34). This issue remains unsettled at this point though a certain degree of optionality in the place where discourse-projections can occupy has been occasionally proposed (including Rizzi's 1997 work).

(217)



The scenario in which a fronted constituent in a *vP*-internal domain is marked as old information and the sister to its landing site is marked as new information predicts that it is not necessarily the NP-object that must be fronted, but a larger constituent as well. In other words, the theory predicts that some larger part of the tree can be made marked as old information to the effect that some other part of the tree will be marked as new. In what follows, I argue that this prediction is correct and (193c) does not involve scrambling of individual objects, but rather a remnant VP-fronting. The ancillary result is an account of the asymmetry in the restitutive and repetitive reading of *znowu* 'again' in double object constructions with scrambled word orders.

⁶⁶ Following the discussion of the verb structure in Chapter 2, I continue to assume that each feature heads its own projection in syntax, to the effect that the checkable old information feature inside the nominal argument also heads its own projection. Though, the details of the NP-structure are largely irrelevant to the present discussion.

4.5 Restitutive and Repetitive *znowu* 'again'

Znowu 'again' in Polish can receive a repetitive or restitutive reading, depending on the position it occupies in the clause. When *znowu* 'again' immediately precedes the verb (as in (218a) below), it receives a repetitive reading. When *znowu* occupies a position between the verb and the object (as in (218b)), it receives a restitutive reading.

- (218) a. Jan **znowu** otworzył okno. (*repetitive*)
 Jan-NOM again opened window-ACC
 b. Jan otworzył **znowu** okno. (*restitutive*)
 Jan-NOM opened again window-ACC

Importantly, *znowu* also receives a restitutive reading when it is placed between the verb and objects in a double object construction:

- (219) Jan posłał **znowu** Marii książkę. (*restitutive*)
 Jan-NOM sent again Mary-DAT book-ACC

The repetitive ("outer") reading of (218a) presupposes that *Jan* himself had opened the window before. The restitutive ("inner") reading of (218b) presupposes that the window had been open before but was not necessarily opened by *Jan* or any other agent.

Consider the following paradigm.

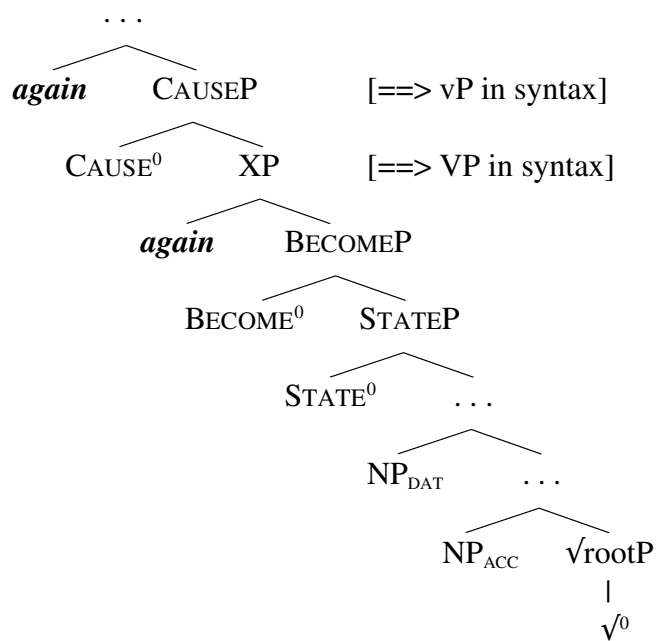
- (220) a. Jan **znowu** posłał Marii książkę. (*repetitive*)
 Jan-NOM again sent Mary-DAT book-ACC
 b. Jan **znowu** Marii posłał książkę. (*repetitive*)
 Jan-NOM again Mary-DAT sent book-ACC
 c. Jan **znowu** książkę posłał Marii. (*repetitive*)
 Jan-NOM again book-ACC sent Mary-DAT
 d. Jan **znowu** posłał książkę Marii. (*repetitive*)
 Jan-NOM again sent book-ACC Mary-DAT
 e. Jan **znowu** Marii książkę posłał. (*restitutive*)
 Jan-NOM again Mary-DAT book-ACC sent
 'Jan (again) sent Mary the book (again).'

In (a) above, the basic S-V-IO-DO word order is modified by a preverbal adverb *znowu* 'again', which receives a repetitive reading. When either the IO (b) or the DO (c) and (d) is scrambled, the preverbal adverb *znowu* 'again' retains the repetitive reading. In contrast, when both objects are scrambled to a preverbal position and are preceded by *znowu* (in (e)), the adverb receives a restitutive reading.

4.6 Verbless VP-fronting

In what follows, I adopt a slightly modified version of McCawley (1971) and von Stechow's (1996) analyses, who attribute that the two readings of *again* to the scope it takes in the syntactic structure. Consider (221).

(221)

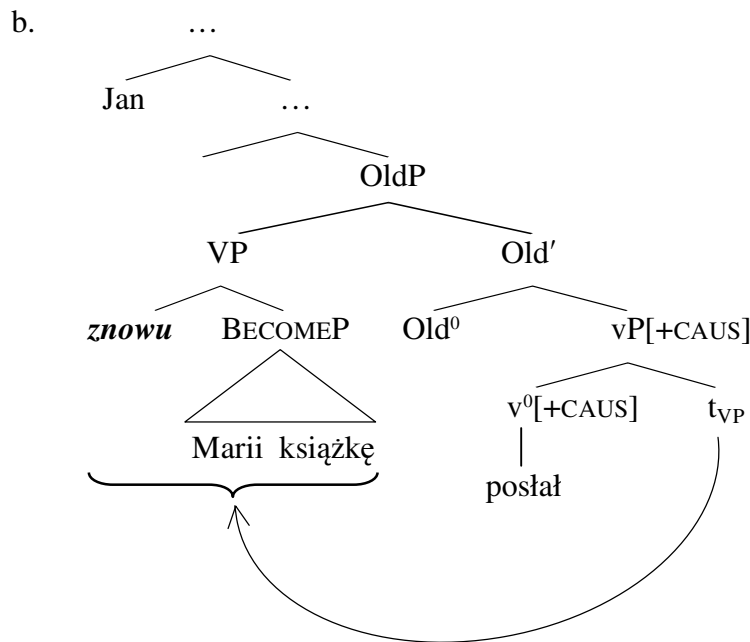


When *again* is merged above the projection of the CAUSE-functor (attributed to the vP in syntax), it c-commands and takes scope over the CAUSE subevent and, hence, receives a repetitive reading. In contrast, when *again* is merged on top of to the projection of the BECOME- and STATE-functor (attributed to lower projections in the VP-structure where the internal arguments are generated), it does not c-command the CAUSE-functor and, hence, receives a restitutive reading.

The structural account in (221) explains the parallelism between the distribution of *znowu*

'again' and its different readings in (220a-d)/(218a) on the one hand, and (218b)/(219) on the other. However, *znowu* in (220e) receives a restitutive reading despite the fact that it is immediately followed by both objects scrambled to a preverbal position (identified earlier as Spec-vP). This fact can be explained if (220e) is not derived by independent movements of both objects, but by VP-fronting, as outlined below.

- (222) a. Jan **znowu** Marii książkę posłał. (restitutive)
 Jan-NOM again Mary-DAT book-ACC sent
 'Jan (again) sent Mary the book (again).'



Note that the restitutive reading of *znowu* modifying the fronted VP correctly predicts that the verb now follows the fronted VP, since it occupies the little v. Also, a singleton fronting operation that targets VP correctly predicts that when the both objects are quantificational in such a structure, only the surface scope is available (cf. (193c)/(191c)).

I have written elsewhere (Wiland 2008a) that the repetitive reading of *znowu* can result from *znowu* taking scope over the Agent Subject externally merged in Spec-vP. But once representations are refined to the effect that VoiceP and vP are independent projections and the external argument is base-generated in Spec-VoiceP, such an explanation must be modified as the higher *znowu* is not able to take scope over the base position of the external

argument.⁶⁷ It seems that all that needs to be said about (221) is that the repetitive reading is obtained when *znovu* has scope over the subtree which includes the CAUSE-functor.

4.7 A Remaining Problem

The effort of the analysis was to investigate whether A-type scrambling in Polish targets positions in the vP-internal domain. If A-scrambling does not cross the vP boundary and the external argument is base-generated in the upper Spell-out domain (Spec-VoiceP), then none of the scrambling configurations in (193) conflicts with the external argument (or the verb in the little v) in the calculation of order preservation at the CP-level. But in order to provide a solution to the locality and the look-ahead problem it has been proposed that OldP is projected immediately above the position of the participle, i.e. on top of vP. If OldP is indeed projected on top of vP, then such a configuration eventually turns out to be problematic for CL, as the derivation of (193b) and (193e) involves Object-fronting across the participle at the vP-boundary, which must lead to an ordering contradiction as in (223) and (224) respectively, despite the fact that these constructions are well-formed.

(223) [_{CP} Subj [_{OldP} IO [_{Old'} Old⁰ [_{vP} V t_{IO} DO]]]]
 ==> * [_{CP} Subj<IO<[_{vP} V<IO<DO]]

(224) [_{CP} Subj [_{OldP} DO [_{Old'} Old⁰ [_{vP} V IO t_{DO}]]]]
 ==> * [_{CP} Subj<DO<[_{vP} V<IO<DO]]

On the other hand, though, these derivations do not constitute a challenge to the CL theory once Object fronting to the position above the participle simply targets Spec-vP. Nevertheless, the solution to the locality problem which I have suggested above cannot be straightforwardly adopted by the "Spec-vP" alternative. The matter of how to render instances of A-scrambling to a pre-verbal position in line with both CL and *Relativized minimality* remains at this point unclear, unless we simply assume that A-movement must proceed through the vP-edge just like A'-movement does, in which case it will always yield order preserving derivations at the vP-level.

⁶⁷ Unless *znovu* is merged not directly on top of the CAUSE-functor (vP) but higher, such that it has scope over VoiceP as well.

5 Nesting and Crossing Dependencies in the Polish OVS Construction

Similarly to English, Polish left-peripheral Topicalization and Focalization exhibit some of the properties characteristic of A'-dependencies, such as reconstruction in anaphoric and pronominal binding (cf. (225) and (226)) and, less obviously, the WCO effect (cf. (227) and (228)).⁶⁸

- (225) a. [DP The pictures of herself]_i], Mary_i found t in the internet.
 b. [PP On each other's]_i faces], the children_i painted colorful marks t .
 c. [PP For his]_i own benefit], the boss_i agreed not to call a press conference t .
- (226) a. (To) [NP sobie]_i nawzajem], (to) [Marek i Paweł]_i nie pomogą t .
 it each other it Marek and Paweł not help
 'Marek and Paweł will not help each other.'
 b. (To) [PP o sobie]_i samej], (to) Maria nie będzie słuchać dowcipów t .
 it about her self it Mary not will listen jokes
 'Mary will not listen to jokes about herself.'
 c. (To) [PP w swoim/jego]_i własnym interesie], (to) premier_i zwolnił
 it in his own interest it prime-minister fired
 swoją ulubioną sekretarkę t .
 his favorite secretary
 'The prime minister fired his favorite secretary in his own interest.'
- (227) a. Everybody else_i, I told his_j/_{*i} wife that I had called t_i . (Postal 1993)
 b. His_i mother shot JOHN_{*i/j}.
 b'. His_i mother shot John_{i/j}. (WCO generated when the co-indexed DP
 is stressed; Chomsky 1977)

⁶⁸ It has been sometimes observed that in English, only (unambiguously) quantificational Topics produce WCO effects. Thus, non-quantificational Topics are well-formed in a cross-over context:

- (i) a. John_i, I believe his_j mother loves t_i .
 b. This book_j, I would never ask its_j author to read t_i . (Lasnik and Stowell 1991)

- (228) a. ?? (To) [ACC syna Kowalskich]_i policja odesłała [DAT jego_i rodzicom] t .
 it Kowalski's son police-NOM sent his parents
 b. (To) [ACC syna Kowalskich]_i policja odesłała [DAT jego_j rodzicom] t .
 'It's the Kowalski's son that the police sent back to his parents.'

While VP-internal scrambling feeds WCO (cf. Chapter 4), DO-fronting to a position above the Subject as in (228) gives a WCO effect. This parallels with the behavior of wh-questions:

- (229) a. Kogo_i jego_{*i/j} matka wyrzuciła t_i z pracy?
 whom his mother thrown-out from work
 'Who did his mother fire?'
 b. [Którego_i chłopaka] jego_{?i/j} matka wyrzuciła t_i z pracy?
 which boy-ACC his mother-NOM thrown-out from work
 'Which boy did his mother fire?'

Despite this parallelism, the WCO test is a less perfect diagnostic for the A/A' distinction in Polish than the anaphoric and pronominal reconstruction test, as object fronting across the Subject with a co-indexed pronoun is considerably better than DO-fronting across the IO with a co-indexed pronoun (cf. (228)):

- (230) a. (To) Piotra_i (to) jego_i własna matka wyrzuciła t_i z pracy.
 it Piotr it his own mother thrown-out from work
 'His own mother fired Piotr.'
 b. (To) Marię_i (to) jej_{i/j} rodzina wysłała t_i na emigrację zarobkową.
 it Mary it her family sent on emigration job-related
 'Her family sent Mary on job emigration.'

If left-peripheral Topicalization and Focalization is an A'-movement dependency that involves a chain link at the vP edge like wh-movement does, then the derivations of all these constructions involve the reversal of the word order of the vP Spell-out domain before it is linearized. An argument for the parallelism between Topicalization, Focalization, and wh-movement can be drawn from Fox's (2000) discussion of the following examples from Lebeaux (1990).

- (231) a. [_{WhP} Which of the papers that he_i gave Mary_j] did every student_i ask her_j to read carefully?
 b. * [_{WhP} Which of the papers that he_i gave Mary_j] did she_j ask every student_i to revise?

Fox argues that the well-formedness of (231a) provides evidence for an intermediate movement of the WhP to the vP edge in the following way. The only position in which the WhP can reconstruct is below *every student* (in line with the Principle B) but above the VP which contains the co-referential *her*. The reconstruction below *her*, in the base-generated position of the WhP, results in the configuration in which the Principle C is violated. In this way, the position in which the WhP reconstructs roughly corresponds to the vP edge. In contrast, the ill-formedness of (231b) stems from the fact that the reconstruction of the WhP between *she* and *every student* results in the violation of the Principle B and C. The reconstruction of the WhP below *every student* results in the violation of the Principle C.

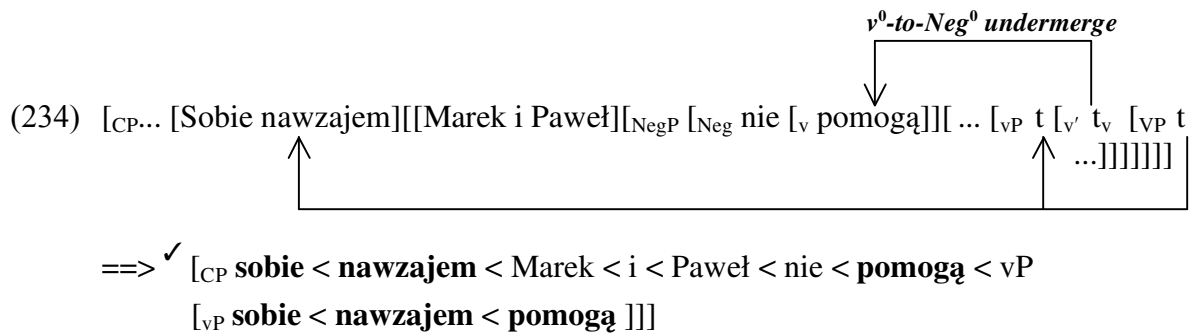
Note that the logic of the argument from reconstruction for the existence of a chain link at the vP edge can be applied to (232a), where the fronted constituent it is DP-Topic.

- (232) a. ? [_{Top} All the papers that he_i gave Mary_j], every student_i asked her_j to read.
 b. * [_{Top} All the papers that he_i gave Mary_j], she_j asked every student_i to revise.

Thus, A'-movement of a constituent from the vP-internal position into the left-periphery of the clause in English and Polish revises the order between the moving constituent and the verb (and other vP material, if present) as in (233) or (234), respectively.

- (233) [_{CP} ... [The pictures of herself] [Mary [... [_{vP} t [_{v'} found [_{VP} ... t ... [_{PP} in the internet]]]]]]]]]]

==> ✓ [_{CP} **the** < **pictures** < **of** < **herself** < Mary < vP
 [_{vP} **the** < **pictures** < **of** < **herself** < found < in < the < internet]]



The difference between English (233) and Polish (234) is that in the latter case, the participle is not linearized as part of the vP Spell-out domain. This is so since the participle in (234) forms a constituent with Neg^0 by raising to its complement position (see the discussion in Chapter 2). The v^0 -to- Neg^0 raising of the participle crosses *sobie nawzajem*, which is fronted to the vP edge by successive-cyclic A' -movement. But since *sobie nawzajem* is subsequently fronted to a position above the landing site of the participle, the derivation is order preserving. In other words, the derivation instantiates the scenario predicted by (35), where the movement from the non-left edge position of the vP is followed by the movement from the left-edge of vP.

In turn, the Polish OVS construction, as in (235), appears to pose a problem for the CL theory.

(235) **Polish OVS**

- a. Marię okradli sąsiedzi.
 Mary-ACC robbed neighbors-NOM
 'The neighbors robbed Mary.'
- b. Marii spodobał się brat Pawła.
 Mary-DAT liked REFL brother-NOM Paweł-GEN
 'Mary got attracted to Paweł's brother.'
- c. Marię irytowało zachowanie Pawła.
 Mary-ACC irritated behavior-NOM Paweł-GEN
 'Paweł's behavior irritated Mary.'

OVS is argued in Witkoś (2007) to be derived by A -type scrambling of the object into the specifier of some agreement projection in the IP-system. If the OVS construction indeed involves A -movement of the object, then its derivation constitutes a challenge to the CL

theory in the following way. The fronting of the NP-argument across the verb in the little *v* en route to the A-position in the IP-system is going to produce an ordering contradiction, unless A-movement is claimed to proceed successive-cyclically just like A'-movement does. (Note that while this latter option cannot be ruled out, it only follows as a theorem and the evidence for successive-cyclic movement to phase edges comes from properties of A'-movement). In turn, in his reaction to Witkoś (2007), Tajsner (2008) proposes that OVS constructions do involve constituent fronting to the IP-system (specifically, to Spec-TP), but that this position in fact exhibits certain A'-properties. Despite the fact that adopting the latter proposal would allow us to assume the derivation of the OVS construction to be order preserving, (granting the A'-status of a position in the IP system), I will argue instead that the derivation of OVS involves (remnant) movement of an entire subtree containing the *v*P (with the verb and the object) followed by subsequent fronting of the object into FocP. Such a derivation of OVS will be subsequently shown to be well-formed with respect to order preservation requirement on linearization.

In what follows, I first briefly discuss the syntax of left-peripheral Topic and Focus in Polish and, then, I discuss the properties of the OVS constructions.

5.1 Left-peripheral Topic and Focus

The exhaustive discussion of information structure of constructions involving left-peripheral Topicalization and Focalization is a task that goes beyond the scope of this work. What is, however, central to the present discussion is the identification of the place of Topicalized and Focalized constituents in the left periphery of the clause.

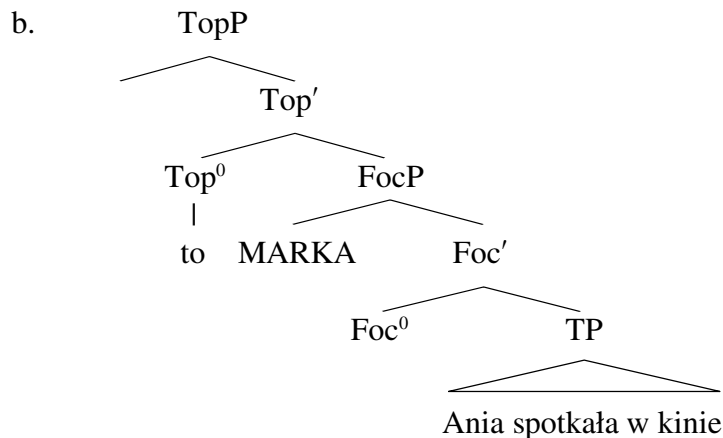
As indicated in (226), constituents fronted to an A'-position above the Subject can optionally occur with the indicative particle *to* 'it'. Despite being homophonous with the Neuter NOM/ACC personal pronoun, the particle cannot be analyzed such, as both these elements can co-occur with one another as in the following:

- (236) a. **To** (właśnie) to Paweł miał na myśli.
 it-PRT exactly it-ACC Paweł-NOM had on mind-LOC
 'This is (exactly) what Paweł meant.'

- b. **To** (właśnie) to skłoniło Marię do przejścia na wcześniejszą emeryturę.
 it-PRT exactly it-NOM made Mary-ACC to come-through on earlier retirement-ACC
 'This is (exactly) what made Mary retire early.'
- c. etc.

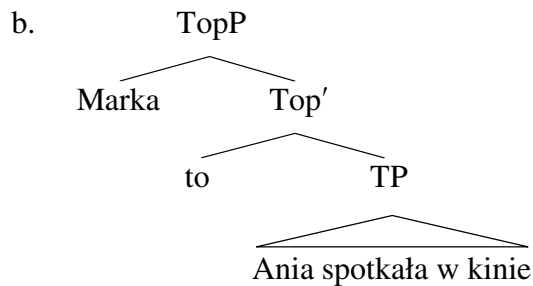
Tajsner (2008: Chap. 6) identifies *to* as the exponent of the head of TopP and argues, in line with Rizzi (1997), that TopP dominates FocP in the Polish left-periphery as in the following:

- (237) a. **To** MARKA Ania spotkała w kinie.
 it Marek-ACC Ania-NOM met in cinema-LOC
 'Marek, Ania met in the cinema.'



Tajsner concludes that since the fronted constituent receives a focal stress in front of *to*, it occupies Spec-FocP. (As indicated in (226), the fronted constituent need not be a NP-object, on par with what we see in similar English constructions). In turn, the placement of the particle after the fronted constituent, indicates fronting to Spec-TopP, as in the following:

- (238) a. **Marka** to Ania spotkała w kinie.
 Marek-ACC to Ania-NOM met in cinema-LOC
 'Marek, Ania met in the cinema.'



Such an analysis of Polish *to* is, thus, in line with the approach to discourse particles in other languages, which constitute central evidence for the cartographic organization of the left periphery of the clause. For instance, Aboh's (1998, 2004) analysis of Gungbe is a case in point:

- (239) a. ...do Kofi **ya** gankpa me **we** kponon le su i do
 that Kofi Top prison in Foc policemen PL shut him there
 'that the policemen shut Kofi in prison'
- b. * ...do gankpa me **we** Kofi **ya** kponon le su i do
 that prison in Foc Kofi Top policemen PL shut him there
- (Aboh 1998)

In Gungbe, the Topic particle *ya* is followed by the Focus particle *we*, which provides a strong argument for the existence of TopP and FocP whose functional specifiers host fronted Topics and Foci (and whose heads can receive phonological realization). On top of that, the ill-formedness of (239b) indicates that Topics are licensed higher than Foci in syntax. If Tajsner's analysis is correct, then the difference between Polish and Gungbe is limited to the fact that in Polish there is no particle that Spells-out Foc⁰ but Top⁰ can be (optionally) lexicalized in constructions involving fronted Foci (perhaps similarly to the optional lexicalization of the English complementizer as \emptyset or *that*).

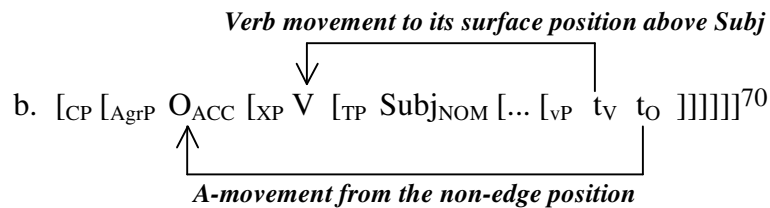
5.2 OVS as Object-fronting to IP and Its Challenges

Despite the differences in the details of their analyses of the Polish OVS construction (cf. (235)), both Witkoś (2007, 2008) and Tajsner (2008) propose that it involves Object fronting to a position in the IP area of the clause.

5.2.1 Witkoś (2007, 2008)

According to Witkoś's analysis, Object-fronting in the OVS construction is triggered by the EPP feature present on some high head in the IP system (like Agr⁰ or other) and the Object moves to its specifier, which is an A-position.⁶⁹ As pointed out above, if the Object is fronted by A-movement in the OVS construction, the construction poses a challenge for the CL theory, as the A-fronted Object introduces an ordering contradiction (unless we simply assume that evidence for the existence of successive-cyclic A'-movements to the vP edge teaches us exactly the same about the nature of A-movement). Consider the following derivational scenario of the OVS construction involving A-type scrambling.

- (240) a. Marię okradli sąsiedzi.
 Mary-ACC robbed neighbors-NOM
 'The neighbors robbed Mary.'



==> * [CP **O** < **V** < Subj <[_{vP} **V** < **O**]]

Lack of successive-cyclic A-movement of the Object does not revise the order of elements in the vP Spell-out domain and, hence, the V<O order is linearized.

The movement of the verb to a position above the Subject does not introduce an ordering contradiction as the verb does not cross the Object. But a subsequent (A-) movement of the Object to an IP-initial position (like Spec-AgrP) from the non-edge position in the vP does alter the V<O word order linearized at the Spell-out of the vP domain. The derivation is, thus, predicted to be ill-formed, counter fact.

⁶⁹ Witkoś (2007) argues that the Polish OVS is essentially similar to Russian OVS, which is proposed in Bailyn (2003) to be derived by the so-called "Generalized Inversion", an A-movement, and contrasts it with Bailyn's analysis of A' "Dislocation" that derives OSV constructions, which is essentially a Topic and/or Focus movement.

⁷⁰ In line with what has been discussed earlier, the underlying position of the external argument (Spec-VoiceP) can be disregarded here, as VoiceP is not a part of the lower Spell-out domain.

Witkoś's proposal that OVS involves A-movement of the Object to a projection in the IP system is based on two observations: the inverse binding and the lack of the WCO effect. Consider (241b) with *podobać się* 'like/please + REFL' and (242b) with a psych verb *przerazić* 'frighten' where the anaphor can be bound by the fronted NP-object, and also (243b) with a monotransitive *zasypać* 'bury' where anaphoric binding by the fronted NP-object is also possible.

- (241) a. [Nowe książki Kowalskich_i o sobie_{i/*j}] spodobały się Nowakom_j
 [new books Kowalskis' about each other]-NOM pleased REFL Nowaks-DAT
 b. Nowakom_j spodobały się [nowe książki Kowalskich_i o sobie_{i/j}]
 Nowaks-DAT liked REFL [new books Kowalskis' about each ther]-NOM
 'The Nowaks liked Kowalskis' new books about themselves/each other.'

- (242) a. [Nowe książki Kowalskich_i o sobie_{i/*j}] przeraziły Nowaków_j
 [new books Kowalskis about each other]-NOM frightened Nowaks-ACC
 b. Nowaków_j przeraziły [nowe książki Kowalskich_i o sobie_{i/j}]
 Nowaks-ACC frightened [new books Kowalski's about each other]-NOM
 'Kowalski's new books about themselves/each other frightened the Nowaks.'

- (243) a. [Stos książek Kowalskich_j o sobie_{i/*j}] zasypał Nowaków_j
 [pile books-GEN Kowalskis about each other]-NOM buried Nowaks-ACC
 b. Nowaków_j zasypał [stos książek Kowalskich_i o sobie_{i/?j}]
 Nowaks-ACC buried [pile books-GEN Kowalskis about each other]-NOM
 'A pile of Kowalski's books about themselves/each other buried the Nowaks.'

(Witkoś 2007)

According to Witkoś (2007, 2008), the well-formedness of the (b) examples above is a result of binding characteristic to A-chains: the NP-object fronted to an A-position can bind into the Subject (under the assumption that the binding domain is established in overt syntax only, cf. Lasnik and Hendrick 2003). In turn, if the NP-object in the (b) examples was fronted by A'-movement, we would predict the WCO effect to arise, counter fact. Indeed, as Witkoś (2008) observes, the fronted Object in an OVS construction does not produce a WCO effect as in the (244b) example below. (Recall that A'-movement in Polish does produce the WCO effect, as discussed earlier).

- (244) a. *? [Jego_i mama] kocha Piotra_i. (canonical SVO)
 his mother-NOM loves Piotr-ACC
 b. Piotra_i kocha [jego_i mama]. (non-canonical OVS)
 Piotr-ACC loves his mother-NOM
 'Piotr is loved by his mom.' (Witkoś 2008: 317)

Nevertheless, it appears that the fact that anaphor binding is well-formed in the environment like in (242) or (243) does not necessarily teach us about the A-status of fronted Objects in OVS. This is so since binding can simply take place here from a lower A-position in the chain in essentially the same way the wh-Subject binds an anaphor inside the Object (both in Polish and English), as below:

- (245) a. Kto_i [t kupił książkę o sobie_i (samym)]?
 who-NOM bought book-ACC about self (own-self)
 'Who bought a book about himself?'
 b. Które dzieci_i [t napisały już opowiadania o sobie_i (samych)]?
 which children-NOM wrote already stories-ACC about self (own-selves)
 'Which children have already written stories about themselves'
 c. Którzy nauczyciele_i [t nie znali siebie_i nawzajem (przed spotkaniem
 which teachers-NOM not knew each other-ACC before meeting
 integracyjnym)]?
 interrogative
 'Which teachers didn't know each other before the integration meeting?'

Moreover, if the presence of the particle *to* is indeed instructive about the position of left-peripheral Topics or Foci, then it appears that the Object in an OVS construction occupies a functional specifier of Foc^0 and can perhaps also occupy a specifier of Top^0 (i.e. the positions which have been identified above as A'). This is so since *to* can precede (cf. (246)) and perhaps also follow (cf. (247)) the fronted NP-Object or the PP in both OSV (as in (226)) and OVS as below:⁷¹

⁷¹ Also in this case, the constituent immediately following *to* carries focal stress.

- (246) a. (To) [_{NP} sobie_i nawzajem] pomogą [Marek i Paweł]_i
 it each other help [Marek and Paweł]-NOM
 'Marek and Paweł will help each other.'
- b. (To) [_{PP} o sobie_i samej], nie będzie słucać Maria dowcipów
 it about her self not will listen Maria-NOM jokes-ACC
 'Mary will not listen to jokes about herself.'
- c. (To) [_{PP} w swoim_i/jego_i własnym interesie], zwolnił premier_i
 it in his own interest fired prime-minister
 swoją ulubioną sekretarkę
 his favorite secretary
 'The prime minister fired his favorite secretary in his own interest.'
- (247) a. [?] [_{NP} sobie_i nawzajem] (to) pomogą (tylko)[Marek i Paweł]_i
 each other it help only [Marek and Paweł]-NOM
 '(Only) Marek and Paweł will help each other.'
- b. [?] [_{PP} O sobie_i samej], (to) nie będzie słucać Maria_i dowcipów
 about her self it not will listen Maria-NOM jokes-ACC
 'Mary will not listen to jokes about herself.'
- c. [?] [_{PP} W swoim_i/jego_i własnym interesie], (to) zwolnił premier_i
 in his own interest it fired prime-minister
 swoją ulubioną sekretarkę
 his favorite secretary
 'The prime minister fired his favorite secretary in his own interest.'

Note also that the well-formedness of the examples above indicates that the fronted anaphoric constituent reconstructs for binding, which is predicted if it occupies an A'-position.

However, an example that contrast with the pattern above is provided Witkoś (2007) and includes the predicate *podobać się* 'like + REFL'. In the OSV construction in (248a), the fronted anaphoric Dative NP reconstructs for binding (as in typical left-peripheral Topicalization and Focalization), but it does not reconstruct in (248b), where the order is OVS.

- (248) a. [Jemu_i samemu][nowe książki o Janie_i] nawet się spodobały.
 [him self]-DAT [new books about Jan]-NOM even REFL liked
 'New books about Jan pleased himself.'
- b. *?[Jemu_i samemu] spodobały się [nowe książki o Janie_i].
 [him self]-DAT liked REFL [new books about Jan]-NOM

Witkoś concludes that the lack of reconstruction in (248b) indicates that the Object in OVS constructions occupies an A-position in the IP-system of the clause.

5.2.2 Tajsner (2008)

In his reply, Tajsner (2008) argues that the Object in an OVS construction is indeed fronted to the IP area, namely to Spec-TP, but that Spec-TP can have an A'-property, as exhibited by the possibility of anaphoric reconstruction in certain other cases. (The examples in (246) and (247) have already illustrated the A'-status of fronted constituents in OVS). The difference between the examples in favor of the A'-property of the fronted Object in (246)/(247) above and Tajsner's example in (249) is that the latter does not include the particle *to*. (The addition of *to* is felicitous in (249) as well, therefore I take the liberty to include it in parentheses in the example from Tajsner's work).

- (249) a. (To) [swoją_i siostrę] ([?]to) Marysia_i zdradziła.
 it her sister-ACC it Marysia-NOM betrayed
- b. (To) [swoją_i siostrę] ([?]to) zdradziła Marysia_i.
 it her sister-ACC it betrayed Marysia-NOM
 'Marysia betrayed her own sister' (Tajsner 2008: 340)

This difference seems to indicate that OVS involves Object fronting to FocP or TopP rather than to Spec-TP, as concluded in Tajsner's work.

In order to account for the apparent A-position of the fronted NP in the OVS in (248b), Tajsner observes that the lack of reconstruction in such contexts is limited to sentences with "quirky subjects" of psych verbs such as, for instance, the experiencer predicate *podobać się*, or *frighten*-type verbs like *irytować* 'irritate', *niepokoić* 'disturb', *przerażać* 'frighten', etc. Of particular importance is the contrast in (250): in the OVS construction, the fronted Experiencer argument fails to bind the anaphor inside the Nominative Agent Subject (cf.

(250a)), but it binds the anaphor inside the Nominative Theme argument (cf. (250b)):

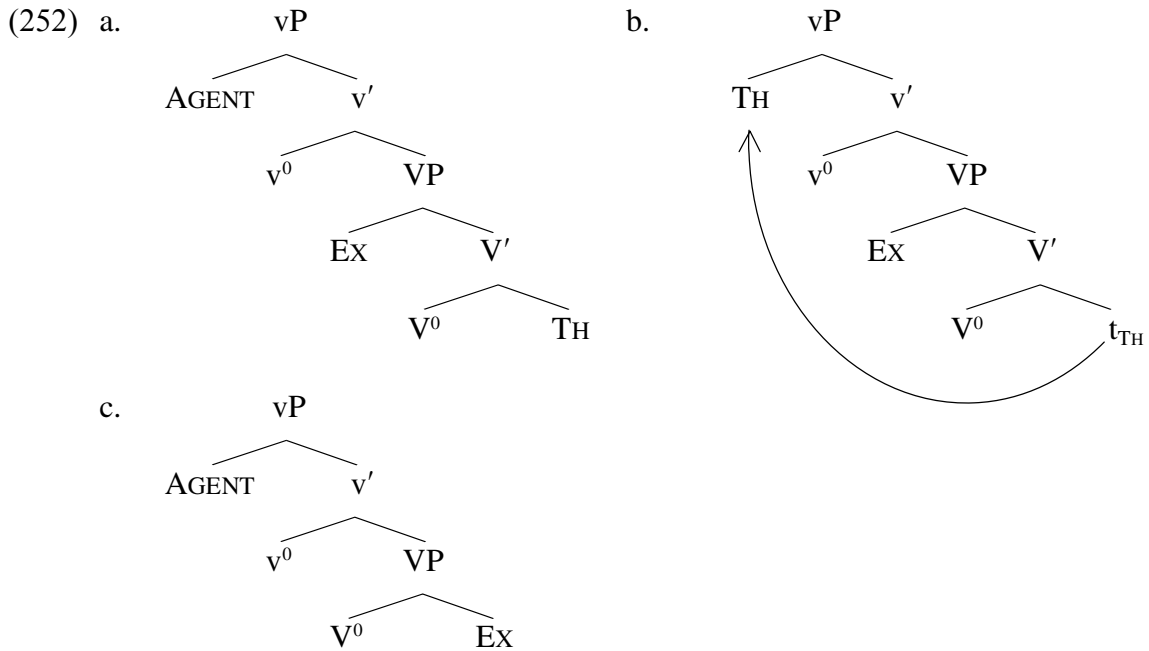
- (250) a. * [EX Marię]_i irytowali [AGENT sąsiedzi ze swojej_i kamienicy]
Mary-ACC irritated neighbors from self house-NOM
'Mary was irritated by her neighbors from her apartment-house.'
- b. [EX Marię]_i irytowały [TH historie ze swojego_i dzieciństwa]
Mary-ACC irritated stories from self childhood-NOM
'Mary was irritated by the stories from her childhood' (Tajsner 2008: 349)

Tajsner associates the lack of reconstruction of the "quirky subject" of *podobać się* in (248b) with the contrast in (250). In particular, Tajsner attributes the contrast to the fact that these verbs take two arguments: the DAT or ACC Experiencer (DAT for object experiencer -- often reflexive -- verbs like *podobać się* 'like + REFL', ACC for *frighten*-type verbs like *irytować* 'irritate') and the NOM Theme (cf. Klimek and Rozwadowska 2004). Tajsner's account relies on the Thematic Hierarchy as in (251) and the application of covert DP/NP-movement inside the vP.

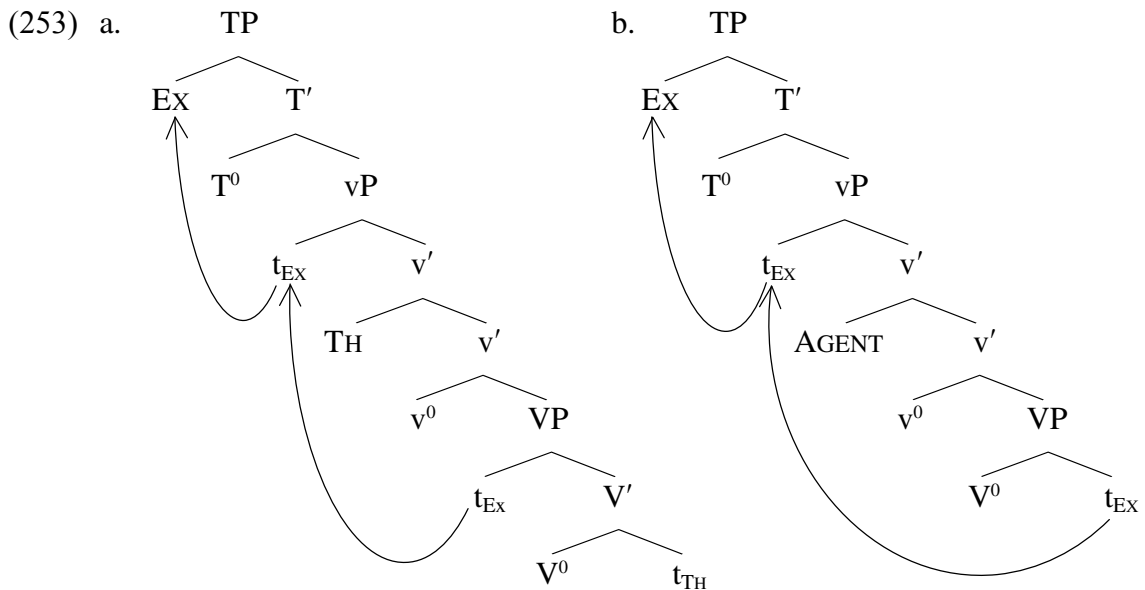
(251) [Agent [Experiencer [Goal/Source/Location [Theme]]]]

(Grimshaw 1990, Dowty 1991, a.o.)

Tajsner follows the assumption that the Thematic Hierarchy reflects the order of externally merged arguments in the vP in which Agent is merged in Spec-vP, Experiencer in Spec-VP, and Theme in V-Complement, as in (252a). Tajsner proposes that in constructions with psych verbs in which the Agent argument is not selected, the Theme argument moves to Spec-vP position across Experience as in (252b) "in order to avoid the early Spell-out at the vP phase" (p. 352) and to become available for probing from T⁰. No such movement takes place in constructions with psych verbs in which the Nominative argument is the Agent (and Theme is not selected), as in (252c).



In the next step of the derivation, the Experiencer moves to the outer specifier of the vP in order to check the EPP feature of v^0 and, in the last step of the derivation, the Experiencer argument moves to Spec-TP, as in (253a) or (253b):



Tajsnér attributes the asymmetry in binding reconstruction with psych verbs to the two representations above and argues that reconstruction takes place "at the site of first mergers

(base positions) of sentence constituents" (p. 353). According to this analysis, the ill-formedness of (248b) follows from the fact that the reconstruction of the Dative Experiencer and Nominative Theme in their base positions in the VP produces the Principle C violation. Likewise, the Principle C is violated in (250a) since the Accusative Experiencer reconstructs in its base position in the VP where it is c-commanded by an Agent with a co-indexed anaphor (as in (253b)). In contrast, the well-formedness of (250b) follows from the fact that the anaphor in the Theme argument is c-commanded by the binder in its surface representation as well as in its reconstruction site in the VP, where EX<TH holds (as in (253a)).

It seems that apart from the fact that the fronted NP in the OVS construction can co-occur with the Topic particle *to*, which suggests its location in the left-periphery of the clause, problematic to Tajsner's proposal is the fact that in the movement of the NP-Theme across the NP-Experiencer (cf. (252b)) or the NP-Experiencer across the NP-Agent (cf. (253b)) violates locality. Both these steps are indeed necessary within the set of assumptions about syntactic representations that Tajsner adopts, namely that the external argument (the Agent) is base-generated in Spec-vP and that the external argument must be fronted to the vP-edge in order to be able to raise to Spec-TP.⁷²

In what follows, I offer an alternative analysis of OVS, which also attributes the contrasts between OVS constructions with transitive and psych verbs to the syntactic hierarchy, but which avoids the problems pointed out above. The alternative account of the derivation of OVS will turn out to be order preserving.

5.3 OVS as Remnant XP-fronting + Subextraction

Consider what has been established so far:

- fronted (cum Topicalized or Focalized) constituents in an OSV (in fact, XPSV) constructions reconstruct for binding (cf. (226)) just like wh-fronted Objects do, as shown below:

⁷² Note that the proposal that the fronting the external argument to Spec-vP in order to be closer to T⁰ than the NP-argument in the inner specifier of the vP (Theme in (253a), or Agent in (253b)) appears to resort to look-ahead.

(254) [Ile książek o sobie] Maria_{i/*j} już napisała t ?
 [how-many books about herself]-ACC Mary-NOM already wrote
 'How many books about herself has Mary written already?'

- reconstruction for binding in OSV and OVS constructions is equally possible with or without the particle *to* (cf. (226), (246), (247))
- in the OVS construction in a cross-over environment, the fronted Object produces a WCO effect (cf. (228)) unless the verb is a psych verb *which takes a Theme argument*, in which case a WCO effect does not arise (cf. (241b), (242b)).

Note also that Tajsner (2008) takes the asymmetry in an "O *psych*-V S" construction with an Agent in (250a) and Theme in (250b) to exhibit a contrast in binding, not a contrast in feeding/bleeding WCO that we expect to follow from our conclusion listed under the final bullet above. Since the reconstruction facts discussed above indicate that the Object in an OVS construction does occupy an A'-position, in what follows I show that the contrast between (250a) and (250b) in fact does reduce to feeding/bleeding WCO in the way we expect it to follow from the last bullet above. In particular, I will argue that whereas an OVS construction with a transitive verb or a psych verb which takes an Agent argument involves a crossing A'-dependency, an OVS construction with a psych verb which takes a Theme argument involves a nesting A'-dependency. Hence, the fact that OVS constructions with psych verbs which select a Theme argument do not produce WCO effects follows from the fact that there is no environment in which a WCO effect can arise.

Consider the format of the constituent that follows the fronted XP and precedes the Subject in the OVS constructions below, some of them discussed earlier and repeated here for convenience.⁷³

(255) a. Marii spodobał się brat Pawła.
 Mary-DAT liked REFL brother-NOM Paweł-GEN
 'Mary got attracted to Paweł's brother.'

⁷³ Since the facts suggesting that the fronted constituent in an OVS (or, rather, *XPVS*) construction occupies an A'-position have been extensively discussed above I will not reiterate them here. I will simply continue to assume that the co-occurrence with *to* and the reconstruction facts indicate the A'-status of the constituent in a sentence initial position in these constructions.

b. * Marii spodobał brat Pawła się.
 Mary-DAT liked brother-NOM Pawła-GEN REFL

(256) (To) [_{PP} o sobie_i samej], nie będzie słuchać Maria dowcipów
 it about her self not will listen Maria-NOM jokes-ACC
 'Mary will not listen to jokes about herself.'

(257) a. (To) Marii dał Paweł_i [swoją_i najnowszą książkę].
 it Mary-DAT gave Paweł-NOM [his newest book]-ACC
 b. (To)[swoją_i najnowszą książkę] dał Paweł_i Marii.
 it [his newest book]-ACC gave Paweł-NOM Mary-DAT
 c. (To) Marii [swoją_i najnowszą książkę] dał Paweł_i
 it Mary-DAT [his newest book]-ACC gave Paweł-NOM
 'Paweł gave his newest book to Mary.'

In (255a) with the reflexive verb *podobać się* 'like/please + REFL', it is not only the verb itself but the verb together with the reflexive clitic *się* that occupies the position before the Subject. As indicated in (255b), stranding the reflexive clitic in the post-Subject position is in fact impossible. In (256), in turn, where the ACC-Object is left in the post-Subject position and what is fronted is the PP, it is the entire sequence of the auxiliary (prefixed with Neg) and the verb *nie będzie słuchać* 'not+will listen' that is placed before the Subject. In a double object construction in (257c), only the verb precedes the Subject, but the clause initial position (below the particle *to*) can be occupied by both NP-Objects. The facts strongly suggest that in an OVS construction, it is not the verb itself but rather an entire constituent that is fronted to a position before the surface position of the Subject.⁷⁴ The fronted constituent can in principle be a remnant, which is indicated by the possibility of leaving certain subconstituents of the fronted tree behind the Subject, like the DO in (256) or (257a), or the IO in (257b). (In fact, the constituent fronted to a position below the surface position of the Object (or other clause-initial XP) must also include the trace of the external argument, assuming that the external argument is base-generated in Spec-VoiceP).

⁷⁴ Recall that fronting of both objects in vP-internal domain has been argued in Chapter 4 to be only apparent and instead to instantiate fronting of a remnant constituent of which only the two object are lexicalized in its landing site.

It seems that the size of the tree that is fronted by a remnant movement is considerably larger than vP. Two facts point to this. First, the constituent must be at least as large as NegP, which -- as argued in Chapter 2 -- delimits the prefixation site in syntax⁷⁵ and which is licensed above the projections that introduce verbal auxiliaries, as evidenced by the fact that in Polish, *nie* merges with the top-most verbal element in the clause (cf. (256)). Second, as shown in (258), certain frequentive adverbs like *często* 'often', or perfective adverbs like *zawsze* 'always' must precede the verb in the fronted constituent and cannot be stranded behind the surface position of the Subject.

- (258) Marię **zawsze/często** irytowały [historie ze swojego
 Mary-ACC always/often irritated [stories from herself
 dzieciństwa] (***zawsze**/***często**)
 childhood]-NOM always/often
 'Stories from Mary's childhood irritated her.'

I will, thus, assume that the fronted constituent is TP, that is a projection large enough to include all the material that we have empirical evidence that is fronted, and small enough to exclude PersP, which is the highest projection in whose specifier the NP-Subject is merged in overt syntax (cf. the discussion in a number of places earlier in this work). Of course, a more detailed investigation can perhaps indicate that it is not TP, but some other projection of the low IP area of the clause, like some AspP, ModP, or other. The precise label of the projection that delimits the size of the tree that is fronted above the Subject in OVS is, however, not central to the present discussion.

At this point, the structure after the application of the (remnant) TP-fronting to a specifier of some XP above the surface position of the Subject, looks as in the following sample derivation:

⁷⁵ I have not been able to find an example in which any type of verbal prefixation blocks the formation of the OVS construction. I therefore cautiously conclude that this fact indicates that all projections that lexicalize as prefixes, i.e. a subset of Asp-projections, must be included in the tree that is fronted above the surface position of the Subject.

(259) **Partial derivation of *Marię okradli sąsiedzi* (OVS)**

- a. *Marię okradli sąsiedzi.*
 Mary-ACC robbed neighbors-NOM
 'The neighbors robbed Mary.'

- b. $[XP [TP \dots [VoiceP t_{Subj} [VP okradli_V Marię_{Obj}]]]] [X' X^0 [PersP sąsiedzi_{Subj} Pers^0 [\dots t_{TP}]]]$
-
- remnant TP-fronting*

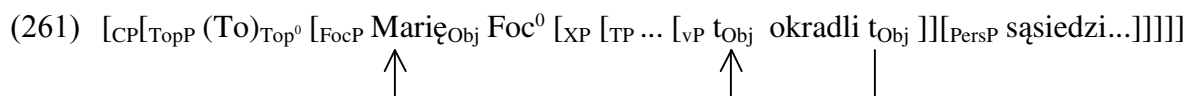
At this point, the derivation may stop, which results in a construction like in (260) below. (It is important to mention at this point Slioussar's (2007) analysis of Russian OVS, which she argues to involve the fronting of a remnant constituent (though, smaller than TP) in essentially identical way to the one advanced here about Polish). Note also that in (260) the placement of *to* before the fronted TP is impossible. Why this is so may, but need not follow from what the next step of the derivation involves if the derivation continues.

- (260) (**To*) *Okradli Marię_i (je_i (własni)) sąsiedzi.*
 it robbed Mary-ACC her own neighbors-NOM
 'Mary's neighbors robbed her.'

If the derivation continues, the subsequent step of the derivation targets the Object (or some other subconstituent of the fronted TP, if present). The OVS order is derived by a subsequent fronting of the Object (or some other targeted constituent). If this fronting is A'-movement that targets Spec-FocP, as indicated by its co-occurrence with *to* and focal stress, then the reconstructive properties of fronted Objects in OVS follow from this last step of the derivation.⁷⁶ Importantly, the Focus movement of the Object proceeds through the

⁷⁶ Save for certain differences in the identification of projections that undergo fronting and the landing site, a similar derivational step is advanced also in Slioussar's (2007) account of Russian OVS. Slioussar's analysis is based on the observation that the manner adverb precedes both the verb and the post-verbal Subject (cf. the Polish example with the frequentive and/or perfective adverbs in (258) above). If OVS in Polish and Russian involves identical derivations, then the Polish cross-over facts are also expected to hold in Russian. It remains to be investigated whether similar WCO facts are indeed attested in Russian and the account of cross-over as I advance for Polish in the remainder of this chapter can be extended to Russian.

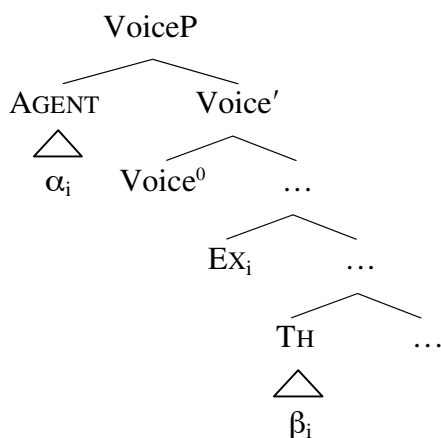
edge of the vP in concert with the successive-cyclic nature of A'-movement, as below:⁷⁷



What remains to be accounted for is the contrast between OVS constructions with psych verbs whose NOM-marked argument can be Agent or Theme. I show below that the asymmetry between (250a) and (250b) follows from the derivation of OVS as outlined above.

In line with the assumption often made in this work that all sorts of hierarchies in grammar in fact reflect the one and only hierarchy, namely the sequence of functional projections in syntax, the Thematic Hierarchy reflects the order in which arguments are base-generated in syntax. (At this point, this is almost exactly in concert with the assumption about the Thematic Hierarchy made in Tajsner's 2008 analysis, save for the differences that I will flesh out in what follows). I have also argued earlier that the external argument is introduced in Spec-VoiceP and continued to assume the position that internal arguments are all introduced by designated projections that all together make up the "VP" of the sentence, as below. Additionally, suppose that Experiencer can be coreferential with α , which is a pronominal subconstituent of the Agent or with β , which is pronominal subconstituent of the Theme.




(262) **(A subset of) Thematic Hierarchy**



⁷⁷ I do not see any principled reason why successive-cyclicality should not hold in A'-chains whose members are merged in fronted constituents.

If OVS is derived in the way I advanced above, (250a), which includes the Agent and the Experiencer, is derived as follows.



(263) **The derivation of *EX_i-V-AGENT_i**

- a. [FocP ... [XP ... [PersP [AGENT α_i] [TP ... [VoiceP <AGENT α_i> [EX_i]]]]]]]]

- b. [FocP ... [XP [TP ... [VoiceP <AGENT α_i> [EX_i]]]] [PersP [AGENT α_i] t_{TP}]]]

- c. [FocP EX_i [XP [TP ... [VoiceP <AGENT α_i> [<EX_i>]]]] [PersP [AGENT α_i] t_{TP}]]]


The (NOM-marked) Agent raises from Spec-VoiceP to its surface position (say, PersP), as in (263a). Subsequently, the TP is fronted to a projection above PersP (to XP), as in (263b). In the last step of the derivation, the Experiencer is successive-cyclically fronted to Spec-FocP, as in (263c).⁷⁸ It is precisely this final step that is responsible for the ill-formedness of (250a): the Experiencer fronted to an A'-position crosses over the position of the Agent containing α which produces a WCO effect.⁷⁹

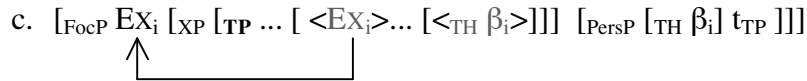
In turn, (250b) which includes the Experiencer and the Theme is correctly predicted to be well-formed as the derivation involves a nesting dependency between the operator and β:

(264) **The derivation of EX_i-V-TH_i**

- a. [FocP ... [XP ... [PersP [TH β_i] [TP ... [EX_i ... [<TH β_i>]]]]]]]

- b. [FocP ... [XP [TP ... [EX_i ... [<TH β_i>]]]]] [PersP [TH β_i] t_{TP}]]]


⁷⁸ For expository reasons, I do not indicate this intermediate movement step to the vP-edge in this diagram.

⁷⁹ Suffice it to say, if OVS was derived by A-movement, the WCO effect would not be unexpected in this context.

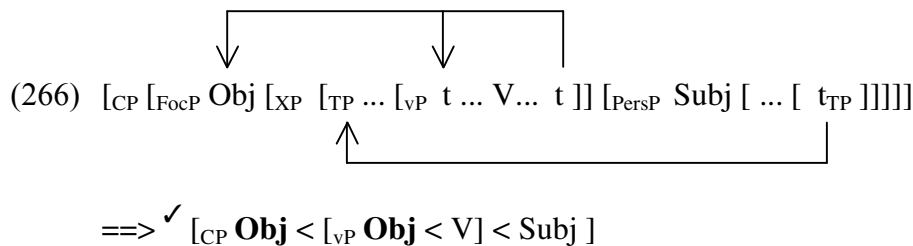


In (264a), the NOM-marked Theme raises to PersP. Then, the remnant TP is fronted (in (264b)), and the Experiencer moves (successive-cyclically) to FocP. The A'-movement of the Experiencer does not cross β and, hence, the derivation is correctly predicted to be well-formed.

The derivation of the OVS as above makes also a correct prediction about the fact that wh-movement in Polish produces a WCO effect only in OSV constructions (cf. (265a)) but not in OVS construction (cf. (265b)).

- (265) a. ?? Którego sąsiada_i jego_i żona otruła?
 which neighbor-ACC his wife-NOM poisoned
 b. Którego sąsiada_i otruła jego_i żona?
 which neighbor-ACC poisoned his wife-NOM
 'Which neighbor did his wife poison?'

Finally, the A'-movement responsible for the final step of the OVS derivation reveals that the construction is order preserving since the final operation in the vP, i.e. before it is Spelled-out, involves the successive-cyclic movement of the Object to the vP-edge, yielding the O<V order:



The Object, then, continues to precede the verb at the CP-level (and the Subject is not included in the calculation of order preservation of the vP material as usual).

6 Local Blocking of Left Branch Extraction

So far, it has been advanced that certain constructions in Polish that appear challenging to the CL theory, turn out to involve order preserving derivations under a closer investigation. On the other hand, however, no clear case of blocking reducible to order preservation violation has been yet demonstrated to hold in Polish syntax. Such a situation is challenging to the CL theory as well, since the lack of order preservation violation effects in a language limits the explanatory potential behind CL. Nevertheless, I will try to demonstrate that there does exist a construction in Polish in which the order violation effect holds. In particular, it will be argued that the asymmetry in the availability of the extraction of the left branch wh-phrase as in (267) follows from the order preservation requirement.

(267) a. [CP **Jaki** [Paweł [vP [whP ___ **samóchod**] szybko kupił swojej żonie t_{whP}]]]?
 what Paweł-NOM car-ACC quickly bought his wife-DAT
 'What car did Paweł buy his wife?'

b. ?? [CP **Jaki** [Paweł [vP szybko [whP ___ **samóchod**] kupił swojej żonie t_{whP}]]]?
 what Paweł-NOM quickly car-ACC bought his wife-DAT

In (267a), the subextraction of the left-branch wh-phrase (LBE) from the fronted wh-NP is well-formed when the remnant NP is stranded in a position above the manner adverb. In (267b), in contrast, the subextraction of the wh-phrase is ill-formed when the remnant is stranded in a position immediately following the adverb. The asymmetry can be reduced to the satisfaction vs. violation of order preservation if the extraction of the wh-phrase takes place from the wh-NP fronted to the phonological edge of the lower vP Spell-out domain in (267a) but not in (267b). In such a case, then, (267a) involves an order preserving derivation like in (268), whereby at the Spell-out of the CP domain, the wh-phrase continues to precede the all the overt material it precedes at the Spell-out of the lower vP domain.

(268) ✓ [CP **jaki** < Paweł < [vP **jaki** < samochód < szybko < kupił < swojej < żonie]]

In contrast, in (267b), the extraction of the wh-phrase across the manner adverb produces an ordering contradiction as the adverb precedes the wh-phrase in the vP Spell-out domain,

but the order of the two elements is reversed at the CP-level, as outlined in (269):⁸⁰

(269) * [_{CP} **jaki** < Paweł < [_{vP} szybko < **jaki** < samochód < kupił < swojej < żonie]]

The derivation in (267b)/(269), thus, instantiates the illegal case of movement from the non-edge position (without a subsequent "compensating" movement of the adverb from the vP edge to a position above *jaki* in the CP domain).

In what follows, I qualify this analysis and argue that there is some evidence that the wh-NP in an environment like in (267) is indeed fronted to the edge of the vP Spell-out domain, with the consequences for the subextraction of the wh-word as given above. The account provides also an ancillary result regarding the nature of successive-cyclic A'-movement. Namely, it will be demonstrated that a wh-NP in a long distance wh-question construction proceeds through the phonological edge of the CP phase in Polish, a language in which a criterial wh-position is lower than CP.

In line with what has been established so far, I will continue to assume that in Polish a fully inflected participle occupies the little *v* and the basic (unmarked) position of Objects is post-verbal.

6.1 Wh-Fronting and wh-Extraction

Polish is a multiple wh-fronting language. While there exists agreement in the literature about the lack of the wh-superiority in clause-bounded questions in Polish (e.g. Rudin 1988, Witkoś 1995, Bošković 1998, Lubańska 2005), the precise position to which wh-phrases move is a subject of debate. The precise identification of the locus of fronted wh-phrases, however, is not central to the present discussion. I will continue to label this projection as Σ P, without further identification of its properties. What is clear, however, is that none of the wh-phrases move to Spec-CP in questions, but to a projection between the CP and the Subject in Spec-IP. This is indicated by two facts. First, as observed in Tajsner

⁸⁰ Under the (debatable) assumption that the manner adverb is vP-internal.

(2008), Topicalized constituents in the left-periphery of the clause can co-occur with wh-questions, in which case the wh-phrase is fronted to a position below TopP:⁸¹

- (270) a. [TopP Marka [Top' to [**gdzie** [Anna [vP spotkała t_{wh}]]]]]?
 Marek-ACC it where Anna-NOM met
 'Where did Anna meet Marek?'
 b. * Marka **gdzie** to Anna spotkała?
 c. * **Gdzie** Marka to Anna spotkała?

Likewise, when *to* co-occurs with a Topicalized indirect or direct Object, the other wh-Object can be fronted only to a position below *to*:

- (271) a. Markowi to **co** Anna dała t_{IO} t_{wh} na urodziny?
 Marek-DAT it what-ACC Anna-NOM gave on birthday
 'What did Anna give Marek for his birthday?'
 b. * **Co** Markowi to Anna dała t_{IO} t_{wh} na urodziny?
 c. * Markowi **co** to Anna dała t_{IO} t_{wh} na urodziny?
- (272) a. Zegarek to **komu** Anna dała t_{wh} t_{DO} na urodziny?
 watch-ACC it whom-DAT Anna gave on birthday?
 'To whom did Anna give a watch for birthday?'
 b. * **Komu** zegarek to Anna dała t_{wh} t_{DO} na urodziny?
 c. * Zegarek **komu** to Anna dała t_{wh} t_{DO} na urodziny?

According to cartographic guidelines, such a situation indicates that the criterial wh-position is located below TopP.⁸² Second, the overt complementizer *że* 'that' in embedded wh-questions always precedes all fronted wh-phrases, as in (273) or (274):⁸³

⁸¹ As observed in Tajsner's work, the placement of the wh-operator in the restriction of the particle *to*, as here, results in the formation of a polarity wh-question, to the effect that the sentence in (270a) has the meaning "where of the specified locations did Anna meet Marek". This contrasts with plain wh-questions licensed by a wh-operator in the left-periphery of the clause in the absence of *to*, in which case the construction *Gdzie Anna spotkała Marka?* means "in which location did Anna meet Marek".

⁸² Note that this point is valid irrespective of the interpretive effects of the "Topic+wh" construction, since it simply indicates that there exists a position below TopP to which wh-phrases are attracted. Since the placement of the wh-phrases in such an environment matches the position in which FocP is projected, that is the position immediately below *to* (cf. Chapter 5), it appears plausible to associate the criterial wh-position in

- (273) a. Jan myślał, [_{CP} że [_{ΣP} **jaki samochód** Paweł kupił swojej żonie t_{wh}]]?
 Jan thought that what car-ACC Paweł-NOM bought his wife-DAT
 'What car did Jan think Paweł bought his wife?'
 b. * Jan myślał [_{CP} **jaki samochód** że [Paweł kupił swojej żonie t_{wh}]]?
 Jan thought what car-ACC that Paweł-NOM bought his wife-DAT
- (274) a. Jan myślał [_{CP} że [_{ΣP} **co**₂ **komu**₁ [Paweł kupił t₁ t₂]]]?
 Jan-NOM thought that what whom Paweł-NOM bought
 'What car did Jan think Paweł bought to whom?'
 b. * Jan myślał [_{CP} **co**₂ że [_{ΣP} **komu**₁ [Paweł kupił t₁ t₂]]]?
 Jan-NOM thought what that whom Paweł-NOM bought
 c. * Jan myślał [_{CP} **jaki samochód**₂ że [_{ΣP} **komu**₁ [Paweł kupił t₁ t₂]]]?
 Jan-NOM thought what car that whom Paweł-NOM bought

Since in the ill-formed (273b) and (274b,c) the wh-phrases/words occupy the specifier of the top-most projection of the embedded clause and are followed by the overt complementizer *że*, it can be perhaps concluded that such constructions are ruled out by the Doubly Filled Comp Filter.⁸⁴

Wh-questions in Polish can be formed by the pied-piping of an entire wh-NP or by the extraction of a left-branch wh-phrase.⁸⁵ A question formed by a fronted wh-NP is given

Polish with FocP. Such a proposal has been put forth in Bošković (2000, 2007) or Lubańska (2005), among many others. I will not assess the strength of the arguments in favor of such an analysis this point. Instead, I will simply take this fact to indicate that the criterial wh-position in Polish is lower than TopP.

⁸³ Sentences in (273) or (274) can be interpreted as echo-questions as well. Nevertheless, as noted in the literature (e.g. Wachowicz 1974, Bošković 2002), wh-phrases in a language like Polish have to move even in echo questions, then both interrogative clauses and echo questions are instructive about the position of wh-phrases in the left periphery of a clause. Note also that while wh-words in echo questions must be fronted as in (i), a wh-NP is an unambiguous echo question construction must be left in situ as in (ii).

- (i) a. Kto co komu dał?
 who what whom gave
 b. ?? Kto co dał KOMU?
 who what gave whom
- (ii) Jan myślał, że Paweł kupił swojej żonie JAKI SAMOCHÓD? (cf. (273))
 Jan-NOM thought that Paweł-NOM bought his wife-DAT what car-ACC

⁸⁴ At least, analogous examples in English and other languages initially motivated the formulation of the DFCE.

⁸⁵ LBE is incompatible with multiple wh-questions:

below.⁸⁶

- (275) **Jaki samochód** Paweł kupił swojej żonie t ?
what car Paweł-NOM bought his wife-DAT
'What car did Paweł buy his wife?'

For the contrast in (267) to constitute evidence for the existence of order preservation violation effect in Polish, the remnant NP stranded by the LBE of the wh-phrase must occupy the edge of the Spell-out domain. Below, I argue that an NP stranded by a wh-phrase marks a position in which the entire wh-NP has been merged in its derivational history. There can be at least three such positions, all marked by a stranded NP: the base generated position of the wh-NP (as in (276)); the left edge of the vP (as in (277)); and -- in the case of long distance wh-movement -- the left edge of the embedded CP (as in (278)).⁸⁷

- (276) **Jaki** Paweł kupił swojej żonie **samochód**?
what Paweł-NOM bought his wife-DAT car
'What car do you think Paweł bought his wife?'

-
- (i) * Czyjej₁ jaki₂ kupił Paweł [_{NP} t₁ żonie] [_{NP} t₂ samochód] ?
whose what bought Paweł-NOM wife-DAT car-ACC

This seems to be true also about other Slavic languages that allow LBE (see Fernandez-Salgueiro 2006 for an analysis for Serbo-Croatian).

⁸⁶ In embedded questions the verb stays in its basic position in the little v. Matrix questions, however, can also have an OVS syntax. The question in (i) below is, thus, a well-formed variant of (275).

- (i) Jaki samochód kupił Paweł swojej żonie t ?
what car-ACC bought Paweł-NOM his wife-DAT
'What car did Paweł buy his wife?'

Both variants appear to be equally grammatical for Polish speakers. In the previous chapter, it was demonstrated on the basis of the size of the pre-verbal material, adverb placement facts, and the WCO test that OVS constructions -- including wh-OVS -- involve remnant movement of a constituent that includes the participle. For the sake of the argument, I will continue to discuss the OSV variant of a wh-question construction, since it allows us to better recognize the edge of the vP in matrix questions.

⁸⁷ Consider here McCloskey's (2000) important work on quantifier float in a dialectal Irish English. McCloskey assumes that a quantifier stranded by a wh-word marks a position in which a wh-NP has originated or through which it has passed en route to C⁰ and shows that the edge of an embedded CP and the VP in which the wh-phrase originates are such positions. Below, I make a similar assumption about stranding and I attempt to show that there exists overt evidence for intermediate movements not only to the edge of an embedded CP and vP, but also to the edge of the vP of a subordinating clause.

(277) **Jaki** Paweł **samochód** kupił swojej żonie t_{wh} ?
 what Paweł-NOM car bought his wife-DAT

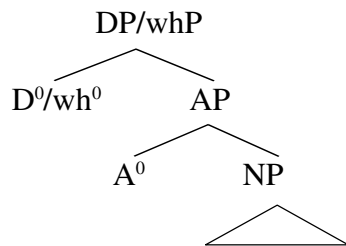
(278) ? **Jaki** *pro* myślisz **samochód** (*że) Paweł kupił swojej żonie t_{wh} ?
 what (you) think car that Paweł-NOM bought his wife-DAT

Interestingly, a percentage of speakers also accept a long-distance wh-question construction in which a wh-NP is stranded at the edge of the upper vP:

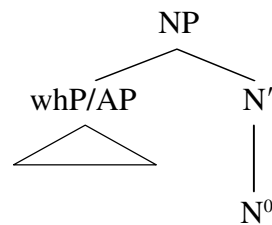
(279) % **Jaki** Maria **samochód** myślała, że Paweł kupił żonie t_{wh} ?
 what Mary-NOM car-ACC thought that Paweł-NOM bought wife-DAT
 'What car did Mary think Paweł bought his wife?'

LBE in Polish appears to be correlated with lack of determiners, which Bošković (2005) claims to be a cross-linguistically attested generalization. Bošković argues that whPs and APs dominate NPs in languages which have determiners, (cf. (280a)). In turn, in languages without determiners, whPs/APs are dominated by NPs, (cf. (280b)). Only the latter languages allow for LBE, since only in these languages whPs/APs are phrasal specifiers.

(280) a.



b.



While LBE constitutes a potent argument for the lack of the DP-layer in Polish (see Willim 2000), the existence of the covert DP in Slavic languages which allow LBE has also been proposed (e.g. Rutkowski 2007 for Polish, Pereltsvaig 2007 for Russian). Importantly, the argument advanced here does not rely on the DP-less hypothesis of the Polish noun phrase, but on the availability of LBE (whether it is linked to the lack of the D⁰-projection or not, being an independent question).

6.2 LBE from Fronted wh-NPs

Consider the following constructions in which the *wh*-NP *jaki samochód* 'what car' is split by the extraction of the *wh*-word *jaki* 'what':

(281) a. [_{CP} [_{ΣP} **Jaki** [_{IP} Paweł [_{VP} kupił swojej żonie [_{__}**samochód**]]]]]?
 what Paweł-NOM bought his wife-DAT car-ACC

b. [_{CP} [_{ΣP} **Jaki** [_{IP} Paweł [_{VP} [_{__}**samochód**] kupił swojej żonie t]]]]?
 what Paweł-NOM car-ACC bought his wife-DAT
 'What car did Paweł buy his wife?'

In (281a), the *wh*-word strands the NP in its base-generated position. In (281b), the NP is stranded in a fronted position. Given what has been established about Polish word order earlier, the position of the fronted *wh*-NP in (281b) arguably corresponds to the edge of the *vP*. Since a well-formed *wh*-question involves movement of either an extracted *wh*-phrase or an entire *wh*-NP, a construction like in (281b) provides visible evidence for an intermediate derivational stage.

In embedded questions, an NP can also be stranded at the edge of the embedded *vP*:

(282) ? Jan myślał, [_{CP} że [_{ΣP} **jaki** [Paweł [_{VP} [_{__}**samochód**] kupił swojej żonie t]]]]?
 Jan thought that what Paweł-NOM car-ACC bought his wife-DAT
 'Jan thought that what car Paweł bought his wife?'

A percentage of speakers also accept long-distance *wh*-questions, in which the NP can be stranded in its base-generated position (cf. (283b)), at the edge of the embedded *vP* (cf. (283c)), or at the edge of the embedded CP (cf. (283d)). (The sentences in (283) are synonymous).

- (283) a. [CP [_{ΣP} **Jaki samochód**] [IP *pro* [_{VP} powiedziałaś [CP (że) [Paweł [_{VP} kupił
 what car-ACC (you) said that Paweł bought
 żonie t]]]]]]]?
 wife-DAT
- b. ? [CP [_{ΣP} **Jaki** [IP *pro* [_{VP} powiedziałaś [CP (że) [Paweł [_{VP} kupił
 what (you) said that Paweł-NOM bought
 żonie [__ **samochód**]]]]]]]]?
 wife-DAT car-ACC
- c. ? [CP [_{ΣP} **Jaki** [IP *pro* [_{VP} powiedziałaś [CP (że) [Paweł [_{VP} [__ **samochód**] kupił
 what (you) said that Paweł-NOM car-ACC bought
 żonie t]]]]]]]?
 wife-DAT
- d. ? [CP [_{ΣP} **Jaki** [IP *pro* [_{VP} powiedziałaś [CP [__ **samochód**] (*że) [Paweł
 what (you) said car-ACC that Paweł-NOM
 [_{VP} kupił żonie t]]]]]]]?
 bought wife-DAT
 'What car did you say Paweł bought his wife?'

In (283c), the extraction of the wh-word takes place from the wh-NP fronted to a position between the Subject and the participle in v, which arguably corresponds to the edge of the vP. It must be emphasized that unlike long distance wh-questions with "unsplit" wh-NPs, long distance wh-questions with stranded NPs like in (283b-d) receive a somewhat forced reading and their acceptability among speakers varies. The sentences in (283b,c), though acceptable for a percentage of speakers, are slightly worse than (283d).⁸⁸

In (283d) we also see that the stranded NP at the edge of the embedded clause cannot be followed by an overt complementizer, as this is prohibited by the DFCF (cf. (273b) and (274b,c)). There is more to say about (283d), though. Recall that wh-phrases in Polish do not move to Spec-CP but to a projection below the complementizer, which I have referred

⁸⁸ What is also striking is the fact that there is a great variation among speakers with respect to the preference of the presence complementizer in sentences like (283a-c).

to as ΣP . Despite this, stranding the NP in Spec- ΣP is hardly possible, even for speakers who accept (283b-d):

- (284) ?* [_{CP} [_{ΣP} **Jaki** [_{IP} *pro* [_{vP} powiedziałaś [_{CP} że [_{ΣP} [_{___} **samochód**]] [_{IP} Paweł
what (you) said that car-ACC Paweł-NOM
[_{vP} kupił żonie t]]]]]]]]?
bought wife-DAT

This shows that before the NP is stranded, the full wh-NP is fronted to the phonological edge of the clause, not to the intermediate ΣP .⁸⁹ Note also that at the same time the presence of the overt complementizer *że* 'that' is obligatory in embedded declarative clauses, as in (285), and as shown in (286) there is no *that*-trace effect in Polish (cf. Szczegielniak 1999):

- (285) Maria powiedziała, że/* \emptyset Robert wygrał wybory.
Maria-NOM said that Robert-NOM won election-ACC
'Maria said that Robert had won the election.'

- (286) Kto_i *pro* powiedziałaś, że t_i przyprowadzi Marię ?
who-NOM (you) said that bring Mary-ACC
'Who did you say would bring Mary?'

(283d), then, provides evidence for successive-cyclic movement through the edge of the CP phase in a language in which wh-phrases do not target CPs in clause-bounded wh-questions. Note also that in CL terms, the movement of the wh-word across the complementizer in the environment like in (284) instantiates the illegal case of non-edge movement that leads to the ordering contradiction in exactly the same way as LBE across the adverb at the vP-edge in (267b) does.

⁸⁹ We have seen that while in simple wh-questions the wh-phrase targets its criterial wh-position in ΣP , which is below CP, it has to pass through the phonological edge of the CP in long distance wh-questions. Jacek Witkoś (p. c.) has pointed out to me that additional evidence for an A-bar position below CP (ΣP or different) comes from Topicalization and Focalization in embedded clauses, which is well-formed in Polish:

- (i) *pro* Powiedziałeś, że (to) **samochód** (to) Paweł kupił żonie t.
(you) said that it car-ACC it Paweł-NOM bought wife-DAT
'You said that it was a car that Paweł bought his wife.'

What is also particularly interesting is the fact that some speakers accept long-distance wh-questions in which the NP can also be stranded at the vP-edge of a matrix clause:

- (287) % [_{CP} [_{ΣP} **Jaki** [_{Maria_i} [_{vP} [_{___} **samochód**] powiedziała [_{CP} że [(wczoraj)
 what Maria-NOM car-ACC said that (yesterday)
 [*pro*_i [_{vP} kupiła t]]]]]]]]?
 (she) bought
 'What car did Maria say that she bought?'

6.3 Successive-cyclic Movement, Not Scrambling

It remains to be shown whether the dislocations of the wh-NPs to the edges of phases as discussed so far indeed provide evidence for successive-cyclic movement. This needs to be unambiguously determined since there does not exist a *prima facie* argument against a scenario in which a subextraction of a wh-phrase is preceded by scrambling of a wh-NP to the phase edge. For instance, Wiltschko (1998) advances that scrambling feeds wh-movement in German. Whereas this matter is central to the assessment to what extent the displaced remnants of constituents stranded by LBE provide evidence for successive-cyclic A'-movement, this issue is of a lesser importance as regards the contrast in (267). This is so since for the contrast in (267) to be reduced to order preservation violation, the WhP must simply occupy the phonological edge of the vP Spell-out domain, irrespective of the type of operation which is responsible for its placement in this position (including a hypothetical base-generation of the WhP at the vP-edge).

Nevertheless, (287) already provides evidence for successive-cyclic movement (under a proviso of "%- acceptability" of such constructions). The wh-NP is fronted here to the edge of the vP of a subordinating clause, while scrambling in Polish is clause-bound in finite clauses.⁹⁰ Consider, for instance, the examples in (288). Scrambling of the direct object is felicitous

⁹⁰ Except for restructuring contexts. For instance, subjunctives as well as tensed clauses introduced by *chciał(ł/a)by* 'would like to (MSC/FEM)' allow for scrambling across the clause boundary (cf. Willim 1989):

- (i) Na pewno [nasze pieniądze] chciałbyś ulokować t na zagranicznym koncie.
 on sure [our money]-ACC would-like locate-INF on foreign account
- (ii) Na pewno [nasze pieniądze] chciałbyś żebyśmy ulokowali t na zagranicznym koncie.
 on sure [our money]-ACC would-like COMP+SUBJECTV+2PL locate-INF on foreign account
 'You would like us to locate our money on a foreign account.'

across any constituent, as long as it does not cross the CP-boundary (cf. (288d)).

- (288) a. Maria powiedziała, [_{CP} że Piotr oddał **pieniądze** bratu t].
 Maria-NOM said that Piotr returned money-ACC brother-DAT
 'Mary said that Piotr had returned the money to his brother.'
- b. Maria powiedziała, [_{CP} że Piotr **pieniądze** oddał bratu t].
 Maria-NOM said that Piotr money-ACC returned brother-DAT
- c. Maria powiedziała, [_{CP} że **pieniądze** Piotr oddał bratu t].
 Maria-NOM said that money-ACC Piotr returned brother-DAT
- d. * Maria **pieniądze** powiedziała, [_{CP} że Piotr oddał bratu t].
 Maria-NOM money-ACC said that Piotr returned brother-DAT

Since NPs do not scramble across the CP-boundary, it appears that wh-NP-fronting which targets intermediate phase edges en route to the matrix Σ P is induced by successive-cyclic movement.

6.4 The Positions of the Remnant

Although the data discussed so far indicates that A'-movement involves a punctuated path in which the wh-NP is fronted to the phonological edge of vP and CP, it remains somewhat unclear whether these two positions are the exclusive positions through which the wh-NP passes en route to its criterial wh-position. While the phase-based minimalism predicts the Spec-vP & Spec-CP scenario, this picture is made more complex by the fact that wh-LBE in Polish can strand the NP in (at least) one more position:

- (289) **Jaki** Paweł kupił **samochód** swojej żonie t ?
 what Paweł-NOM bought car-ACC his wife-DAT

Given that the verb occupies the little v and the order of Objects in the VP is IO<DO, the position of the remnant NP in (289) indicates that it has been placed in the post-verbal position by movement. This fact, if correctly understood, indicates that not only phase heads (C, v) but also certain other heads can host successive-cyclic A'-movement. This, in turn, constitutes a challenge for a phase-based account of successive-cyclic movement, unless certain other heads can be strong phases as well. Ko (2005) indeed argues on the basis of

asymmetries in scrambling that in Korean both the VP and vP are Spell-out domains since movement across their boundaries is sensitive to order preservation. In this view, of special importance to the present discussion is not only the contrast between (267a) and (267b), but also the asymmetry between (267b), repeated below as (290), and (291).

(290) ?? [_{CP} **Jaki** [_{VP} Paweł [_{VP} szybko [_{whP} __ **samóchod**] kupił [_{VP} swojej żonie t]]]]?
 what Paweł-NOM quickly car-ACC bought his wife-DAT

(291) [_{CP} **Jaki** [_{VP} Paweł [_{VP} szybko kupił [_{VP} [_{whP} __ **samochód**] swojej żonie t]]]]?
 what Paweł-NOM quickly bought car-ACC his wife-DAT

In (267b)/(290) the remnant NP resists stranding in the position between the manner adverb and the participle (recall that the construction is well-formed when the adverb is not present as in (267a)). In (291), the remnant NP can be stranded in the position following the participle. In view of what has been discussed so far, the asymmetry can be accounted for as follows. In (267b)/(290), the extraction of the wh-word across the adverb at the vP-edge produces the ordering contradiction (cf. (269)).⁹¹ In contrast, (291) is correctly predicted to be well-formed if NP-stranding below the participle indicates the existence of a phase boundary not only at the vP- but also at the VP-level (as proposed in Ko's work on Korean). Since in (291) the extraction of the wh-word takes place from the phonological edge of the VP Spell-out domain, such movement does not produce the ordering contradiction at the Spell-out of a higher domain.

Thus, under the premise that not only CP and vP, but also some (projection of the) VP constitutes the Spell-out domain in Polish, the ill-formedness of LBE across the adverb at the vP-edge or across the overt complementizer in (284) can be reduced to cases of illegal movement from non-edge positions. This, if understood correctly, provides evidence for the existence of certain order preservation violation effects in Polish syntax.

⁹¹ Note that the situation becomes more complex if we adopt an approach to adverbs like Cinque (1999), whereby an adverb occupies a specifier of a designated functional projection. However, even within such an approach, the analysis need not be modified if we assume that it is precisely the little v which can introduce the manner adverb in its specifier.

7 Overview and Conclusion

What has been done is (i) to investigate whether order preserving derivations exist in a language like Polish, which unlike English, exhibits a considerable degree of word order freedom; and (ii) to investigate whether there exist blocking effects reducible to order preservation.

The answer to the first question is positive under certain assumptions about the position of the participle and the base position of arguments in the clause. The answer to the second question is only moderately positive. On the one hand we have managed to identify the existence of blocking in the domain of *wh*-extraction from displaced *wh*-phrases, on the other hand, though, there is surprisingly little evidence, if any, for order preservation effects in the domain of local as well as long distance scrambling in Polish.

It also appears that order preservation constitutes more of a well-formedness constraint rather than the driving force behind successive-cyclic movements in syntax (this point is in fact made explicit in Fox and Pesetsky 2005b). If the latter was true, we simply would not expect cases of order preservation violation to be attested at all, as all elements would be in principle able to pass through the edge of the Spell-out domain in all contexts. In the domain of Polish syntax, the single yet robust case of blocking constitutes evidence against such a scenario.

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