# Overt Evidence from Left Branch Extraction in Polish for Punctuated Paths\*

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In Polish, wh-questions are formed by the pied-piping of an entire wh-NP or by the extraction of a left-branch wh-phrase (LBE). A question formed by a fronted wh-NP is given in (1). In this squib it is argued that an NP stranded by a wh-phrase marks a position in which a wh-NP has been merged in its derivational history and, thus, the LBE facts provide evidence for successive-cyclic movement. There can be at least four such positions, all marked by a stranded NP: the base generated position of the wh-NP, (2); the left edge of the VP, (3); the left edge of the vP, (4); and—in the case of long distance wh-movement—the left edge of the embedded CP, (5).

- (1) **Jaki samochód** Paweł kupił swojej żonie  $t_{wh}$ ? what car Paweł-NOM bought his wife-DAT 'What car did Paweł buy his wife?'
- (2) **Jaki** Paweł kupił swojej żonie **samochód**? what Paweł-NOM bought his wife-DAT car
- (3) **Jaki** Paweł kupił **samochód** swojej żonie  $t_{wh}$ ? what Paweł-NOM bought car his wife-DAT
- (4) **Jaki** Paweł **samochód** kupił swojej żonie  $t_{wh}$ ? what Paweł-NOM car bought his wife-DAT
- (5) ?**Jaki** pro myślisz **samochód** (\*że) Paweł kupił swojej żonie  $t_{wh}$ ? what (you) think car that Paweł-NOM bought his wife-DAT 'What car did Mary think Paweł bought his wife?'

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:

(6) %**Jaki** Maria **samochód** myślała że Paweł kupił żonie  $t_{wh}$ ? what Maria-NOM car think that Paweł bought wife-DAT 'What car did Mary think Paweł bought his wife?'

Constructions in which the movement of the left branch strands the NP in a fronted position, then, provide new evidence for successive-cyclic movement and, more broadly, for punctuated paths in syntax. In this squib, I follow the logic of McCloskey's (2000) work on a dialectal Irish English or Barbiers' (2002) work on Dutch, where remnants of constituents stranded in a fronted position are argued to teach us about the nature of movement. In what follows, it is argued that the positions marked by the stranded NP are indeed edges of phases: CP, vP, and—perhaps somewhat less obviously—VP. In sections 1 and 2, I outline the basics of word order and wh-movement in Polish. In section 3, I argue that LBE can take place from wh-NPs fronted to the edges of phases. In section 4, it is shown that the dislocations of wh-NPs to phase edges are truly instances of successive-cyclic movement and cannot be analyzed as scrambling.

## 1 The position of arguments in Polish

The basic word order of monotransitive constructions in Polish is S-V-O (6), and the basic word order of ditransitive constructions is S-V-IO-DO, (7).

- (7) Paweł lubi kawę
  Paweł-NOM likes coffee-ACC
- (8) Paweł dał Marii ksiażkę
  Paweł-NOM gave Mary-DAT book-ACC

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  $V-(IO_{dat})-DO_{acc}$ :

- (9) a. masz (ci) babo placek have you-DAT woman-VOC pie-ACC 'what a bad luck'
  - b. piłkarze gryzą trawę footballers-NOM bite grass-ACC

'footballers put their hearts into the game'

The same word order is the only one attested in discontinuous idioms. As shown in (10), the core of the idiom includes the verb and the DO, while the open position involves the IO and precedes the DO.

- (10) a. dać NP lanie give NP-DAT downpour-ACC 'beat somebody up'
  - b. pokazać NP figę
    show NP-dat fig-acc
    'take somebody 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. A discontinuous idiom in Polish comprises the core, which is a constituent formed exclusively by the verb and the DO (11a), which further undergoes combination with the open position (the IO) and the Subject (11b).<sup>2</sup>

(11) a. 
$$[_{VPcore} \text{ V NP}_{DO}]$$
  
b.  $[_{VPidiom} \text{ NP}_{Subj} \text{ V [NP}_{IO} [_{VPcore} \text{ t}_{V} \text{ NP}_{DO}]]]$ 

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

(12) 
$$\begin{bmatrix} v_P & NP_{Subj} & v' & [V+v] & [V_P & NP_{IO} & [V' & t_V & NP_{DO}]] \end{bmatrix} \end{bmatrix}$$

In turn, the position of VP-adverbs such as *szybko* 'quickly', or *wolno* 'slowly', which occupy the left edge of the vP in Polish, indicates that in declarative clauses the verb arguably does not move higher than the little v, since it does not cross a VP-adverb:

- (13) a. [Jan [ $_{vP}$  szybko [ $_{v'}$  otworzył [ $_{VP}$  t $_{V}$  okno ]]]]]

  Jan-NOM quickly opened window-ACC

  Jan quickly opened the window.
  - b. [Jan [ $_{vP}$  szybko [ $_{v'}$  oddał [ $_{VP}$  Marii [ $_{V'}$  t $_{V}$  książki ]]]]]

    Jan-NOM quickly returned Mary-DAT books-ACC

    'Jan quickly returned the books to Mary'.

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 in (14)–(16) show, the IO clitic must precede the DO clitic.

- (14) 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
- (15) 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
- (16) 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.ACC him-CL.DAT intend return

In the remainder of the paper, I will continue to assume that in Polish the verb raises to the little v and the basic (unmarked) position of objects is post-verbal.

# 2 Wh-fronting

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. 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 (see for instance Citko and Grohmann (2001)). This is indicated by the position of the overt complementizer  $\dot{z}e$  'that' which precedes all fronted wh-phrases:

- (17) a. Jan myślał [ $_{CP}$  że [ $_{\Sigma P}$  **jaki samochód** Paweł kupił Jan-NOM thought that what car-ACC Paweł-NOM bought swojej żonie  $\mathbf{t}_{wh}$ ]]?

  his wife-DAT

  'What car did Jan think Paweł bought his wife?' (approx.)
  - b. \*Jan myślał [ $_{CP}$  jaki samochód że [ Paweł kupił swojej Jan-NOM thought what car-ACC that Paweł-NOM bought his żonie  $\mathbf{t}_{wh}$ ]] ? wife-DAT
- (18) a. Jan myślał  $[CP \dot{z}e \quad [\Sigma P \mathbf{co}_2 \quad \mathbf{komu}_1 \quad Paweł \quad kupił \quad \mathbf{t}_1 \quad \mathbf{t}_2]]?$ Jan thought that what whom Paweł-NOM bought

  'What did Jan think Paweł bought to whom?' (approx.)
  - b. \*Jan myślał [ $_{CP}$   $\mathbf{co}_2$  że [ $_{\Sigma P}$   $\mathbf{komu}_1$  Paweł kupił  $\mathbf{t}_1$   $\mathbf{t}_2$ ]]?

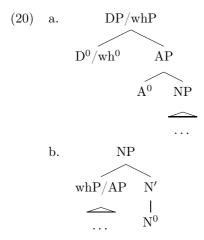
    Jan thought what that whom Paweł-NOM bought
  - c. \*Jan myślał [ $_{CP}$  jaki samochód $_2$  że [ $_{\Sigma P}$  komu $_1$  Paweł kupił  $_1$  Jan thought what car that whom Paweł-NOM bought  $_1$ ]?

Constructions in (17b) and (18b,c) are ruled out by the Doubly Filled Comp Filter.

Single wh-questions can also be construed by the subextraction of the wh-phrase from the wh-NP.<sup>4</sup> The examples in (19) are synonymous.<sup>5</sup>

- (19) a. **Jaki samochód** Paweł kupił swojej żonie t? what car-ACC Paweł-NOM bought his wife-DAT
  - b. Jaki Paweł kupił swojej żonie [t samochód]? what Paweł-NOM bought his wife-DAT car-ACC 'What car did Paweł buy his wife?'

LBE in Polish appears to be correlated with the lack of determiners, which Bošković (2005), (2008a), (in press) claims to be a cross-linguistically attested generalization. Bošković argues that whPs and APs dominate NPs in languages which have determiners, (cf. (20a)). In turn, in languages without determiners, whPs/APs are dominated by NPs, (cf. (20b)). Only the latter languages allow for LBE, since only in these languages whPs/APs are phrasal specifiers.



While LBE constitutes a potent argument for the lack of the DP-layer in Polish (e.g. 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 in this paper 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 D<sup>0</sup>-projection or not, being an independent question). Nevertheless, the Polish facts do appear to be predicted by the direct extraction analysis of LBE advanced in Bošković's work, as opposed to the remnant movement analysis (e.g. Abels (2003), Bašić (2004)). According to the latter analysis, it is the wh-word that is stranded by the extraction of the NP, which undergoes scrambling. In the second step of the derivation, the remnant phrase which includes the wh-word is moved to a position above the fronted NP. I will briefly come back to this issue in the final part of the paper.

#### 3 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':

(21) a. 
$$[CP]_{\Sigma P}$$
 Jaki  $[IP]_{P}$  Paweł  $[VP]_{VP}$  kupił  $[VP]_{VP}$  swojej żonie  $[VP]_{VP}$  kupił  $[VP]_{VP}$  swojej żonie  $[VP]_{VP}$  samochód samochód  $[VP]_{VP}$  car-ACC

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c. [CP \ [\Sigma P \ ] \mathbf{Jaki} \ [IP \ ] \mathbf{Pawel} \ [vP \ [ \mathbf{t} \ \mathbf{samoch\acute{o}d} ] \ \mathbf{kupil} \ [vP \ \mathbf{swojej} ] what Pawel-NOM car-ACC bought his żonie \mathbf{t} = \mathbf{t} = \mathbf{t} = \mathbf{t}  wife-DAT
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'What car did Paweł buy his wife?'

In (21a), the wh-word strands the NP in its base-generated position. In (21b) and (21c), the NP is stranded in a fronted position. Given what has been established about Polish word order in section 1, the position of the NP-remnant stranded in between the verb (in the little v<sup>0</sup>) and the DO in (21b) corresponds to the edge of the VP. In turn, the position of the fronted wh-NP in (21c) arguably corresponds to the edge of the vP. Since we know that a well-formed wh-question involves movement of either an extracted wh-phrase or an entire wh-NP, a construction like in (21b) or (21c) provides visible evidence for an intermediate derivational stage. (Note that while it has been standardly assumed that it is vP that constitutes the phase, there exists work which argues that either VP itself is a phase or that vP and VP are both phases, in the sense that they are targeted by successive-cyclic movement (see for instance McGinnis (2001); Fox and Pesetsky (2003), (2005); Ko (2005); a.o.).

In long distance wh-questions, an NP can also be stranded at the edge of the embedded vP:

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(22) ?Jan myślał, [CP] że [\Sigma P] jaki Paweł [vP] [t samochód] kupił Jan-NOM thought that what Paweł-NOM car-ACC bought swojej żonie t ]]]? his wife-DAT 'What car did Jan think that Paweł bought his wife?'
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A percentage of speakers also accept long-distance wh-questions, in which the NP can be stranded in its base-generated position (23b), at the edge of the embedded VP (23c(i)), at the edge of the embedded VP (23c(ii)), or at the edge of the embedded CP (23d). The sentences in (23) are synonymous.

- (23) a.  $[CP \mid \Sigma P \text{ Jaki samoch\'od} \mid IP \mid Pro \mid vP \mid Proved ziale\'s \mid CP \mid ZP \mid Proved ziale\'s \mid VP \mid Proved ziale\'s \mid Proved ziale\'s \mid Proved ziale zia$ 
  - b.  $?[_{CP} [_{\Sigma P} ]$  **Jaki**  $[_{IP} ]$  pro  $[_{vP} ]$  powiedziałeś  $[_{CP} ]$  (że)  $[_{IP} ]$  Paweł  $[_{vP} ]$  kupił what (you) said that Paweł bought  $[_{VP} ]$  żonie [ t **samochód**]]]]]]]]]? wife-DAT car-ACC
  - - (ii)  $?[_{CP} [_{\Sigma P} \mathbf{Jaki} [_{IP} \text{ pro} [_{vP} \text{ powiedziałeś} [_{CP} (\dot{\mathbf{z}}e) [_{IP} \mathbf{Paweł} [_{vP} [\mathbf{t} \mathbf{what} (you) said that Paweł]]]]]]]]?$   $\mathbf{samochód} [\mathbf{kupil} [_{VP} \dot{\mathbf{z}}onie \mathbf{t} ]]]]]]]]?$   $\mathbf{car-ACC} \mathbf{bought} \mathbf{wife-DAT}$
  - d.  $?[CP \ \Sigma P \ \mathbf{Jaki} \ IP \ pro \ [vP \ powiedziałeś \ [CP \ [t \ \mathbf{samochód}] \ (*\dot{z}e) \ [IP \ \mathbf{vhat} \ (you) \ said \ car-ACC \ that$ Paweł  $[vP \ kupił \ [VP \ \dot{z}onie \ t \ ]]]]]]]]?$ Paweł bought wife-DAT

    'What car did you say Paweł bought his wife?'

In (23c(i)) the NP-remnant is stranded between the verb (in the little  $v^0$ ) and the DO, the position which arguably marks the edge of the VP. In (23c(ii)), in turn, the extraction of the wh-word takes place from the wh-NP fronted to a position between the Subject and the verb in  $v^0$ , which 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 (23b-d) receive a slightly forced reading and their acceptability among speakers varies. The sentences in (23b,c), though acceptable for a percentage of speakers, are slightly worse than (23d).

In (23d) 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. (17b) and (18b,c)). There is more to say about (23d), though. Recall that wh-phrases in Polish do not move to Spec-CP but to a projection below the complementizer, which I have referred

to as  $\Sigma P$ . Despite this, stranding the NP in the  $\Sigma P$  is impossible, even for speakers who accept (23b-d):

(24)  $*[_{CP} [_{\Sigma P} ]$  **Jaki**  $[_{IP} ]$  pro  $[_{vP} ]$  powiedziałeś  $[_{CP} ]$  że [ t **samochód**]  $[_{IP} ]$  Paweł  $[_{vP} ]$  what (you) said that car-ACC Paweł kupił  $[_{VP} ]$  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  $\Sigma P$ . (See Bošković (2008b) for an account). Note that at the same time the presence of the overt complementizer  $\dot{z}e$  'that' is obligatory in embedded declarative clauses (25), and as shown in (26) there is no that-trace effect in Polish (cf. Szczegielniak (1999)):

- (25) Maria powiedziała, że/\*Ø Robert wygrał wybory.

  Maria-NOM said that Robert-NOM won election-ACC

  'Maria said that Robert had won the election.'
- (26) Kto<sub>i</sub> pro powiedziałeś, że  $t_i$  przyprowadzi Marię? who-NOM (you) said that bring Mary-ACC 'Who did you say would bring Mary?'
- (23d), 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.

What is also particularly interesting is the fact that most speakers accept long-distance whquestions in which the NP can also be stranded at the vP-edge of a matrix clause:

(27) a.  $\%[CP]_{\Sigma P}$  Jaki  $[IP]_{Maria}$   $[VP]_{VP}$  [t samochód] $[VP]_{VP}$  powiedziała  $[CP]_{VP}$  że what Maria car-ACC said that pro [vP] kupiła t [l][l][l][l]? bought 'What car did Maria say she bought?'  $[CP]_{\Sigma P}$  Jakie [IP] oni [vP] [t książki] powiedzieli [CP] że they-NOM books-ACC said that profesor  $[v_P \text{ kaza}]$  [przynieść  $t_{wh}$  na zajęcia]]]]]]]?

ordered bring

professor

'What books did they say that the Professor asked them to bring to class?'

on classes

## 4 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) suggests that scrambling feeds wh-movement in German.

Nevertheless, (27) already provides strong evidence for successive-cyclicity. The wh-NP is fronted here to the edge of the vP of a subordinating clause, while scrambling in Polish is strictly clause-bound in finite clauses. Consider, for instance, (28). Scrambling of the direct object is felicitous across any constituent, as long as it does not cross the CP-boundary:

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(28) Maria (* pieniądze) powiedziała, [_{CP} że (^{\checkmark} pieniądze) Piotr (^{\checkmark} pieniądze) Maria money said that money Piotr money oddał (^{\checkmark} pieniądze) bratu t_{NP}]. returned money brother 'Mary said that Piotr had returned the money to his brother.'
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Since NPs do not scramble across the CP-boundary, wh-NP-fronting which targets intermediate phase edges en route to the matrix  $\Sigma P$  is induced by successive-cyclic movement. LBE from displaced wh-NPs in Polish, then, provides overt evidence for punctuated paths in syntax. Note also that the fact that NPs resist scrambling across the CP-boundary constitutes a challenge to the remnant movement analysis of LBE, according to which the NP undergoes scrambling before the remnant phrase is fronted. Additionally, as indicated in (24), the remnant NP cannot be stranded in the position between the complementizer and the Subject, the position which is targeted by scrambled (topicalized) NPs, as shown in (28) above or in note 9.

#### Notes

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 $^{1}$  McCloskey (2000) 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  $C^{o}$  and shows that the edge of an embedded CP and the VP in which the wh-phrase originates are such

positions. In this short paper, I attempt to show that there exists overt evidence for intermediate movements not only to the edge of an embedded CP, vP, and VP, but also to the edge of the vP of a subordinating clause.

<sup>2</sup> In other words, the structure of Polish idioms does not differ from a universal architecture of idioms advanced in Marantz (1997).

 $^3$  In Polish, the IP is split into projections that host particles and verbal affixes, which are argued in Wiland (2009) to either affix-hop onto the participle or to cliticize onto a preverbal host. Wh-phrases appear to target one or more specifiers of the CP- and/or IP-area. 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  $\Sigma P$ , without further identification of its properties.

<sup>4</sup> LBE is incompatible with multiple wh-questions:

(i) \*Czyjej<sub>1</sub> jaki<sub>2</sub> kupił Paweł [ $_{NP}$  t<sub>1</sub> żonie][ $_{NP}$  t<sub>2</sub> 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).

- <sup>5</sup> In matrix questions the verb can optionally be fronted to a projection above the subject. The question in (i) is, thus, a well-formed variant of (19a).
  - (i) Jaki samochód kupił Paweł swojej żonie t ? what carACC bought Paweł-NOM his wife-DAT 'What car did Paweł buy his wife?'

Both variants appear to be equally grammatical for Polish speakers. I will continue to discuss the variant with the verb left in situ in the little  $v^0$ , since it allows us to better recognize the edge of the vP in matrix questions.

 $^6$  The subextraction of the wh-word is also well-formed from a wh-constituent whose remnant NP is stranded in the position immediately preceding the VP-adverb:

(i)  $[CP]_{\Sigma P}$  **Jaki**  $[IP]_{IP}$  Paweł  $[VP]_{VP}$  [t **samochód**] $[VP]_{VP}$  szybko kupił  $[VP]_{VP}$  swojej what Paweł-NOM car-ACC quickly bought his żonie t ]]]]]]? wife-DAT

(ii)??[ $_{CP}$  [ $_{\Sigma P}$  Jaki [ $_{IP}$  Paweł [ $_{vP}$  szybko [ $_{vP}$  [t samochód] kupił [ $_{VP}$  swojej what Paweł-NOM quickly car-ACC bought his żonie t ]]]]]]? wife-DAT

If manner adverbs indeed occupy the vP edge here, then the NP *samochód* 'car' is arguably stranded at the outer or derived specifier of the vP only in (i) but not in (ii), in which case it occupies the inner Spec-vP. Apart from this difference the construction in (i) is identical to what we see in (21c).

<sup>7</sup> Importantly, the NP cannot be stranded simply in any position in the clause. Notably, the NP resists stranding in (at least certain positions) in the IP-area of the clause, as in the following:

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(i) ?*[_{CP} [_{\Sigma P} ] Jaki [_{IP} ] Paweł [_{MoodP} ] by [ [t samochód] [_{ModP} ] mógł [_{vP} ] dać what Paweł-NOM PRT car-ACC could give swojej żonie [_{wh} ]]]]]]]]? his wife-DAT
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(ii)?\*[
$$_{CP}$$
 [ $_{\Sigma P}$  Jaki [ $_{IP}$  Paweł [ $_{ClP}$  jej [ [t samochód] [ $_{MoodP}$  by [ $_{vP}$  what Paweł-NOM her-CL.DAT car-ACC PRT dał t $_{jej}$  t $_{wh}$  ]]]]]]]]?

<sup>8</sup> What is also striking is the fact that there is a great variation among speakers with respect to the presence versus absence of the complementizer in sentences like (23a-c). Speakers who prefer the variant with an overt complementizer  $\dot{z}e$  disprefer the variant with the null one, and vice versa.

 $^{9}$  We have seen that while in wh-questions the wh-phrase targets its criterial wh-position in  $\Sigma P$ , which is below CP, it has to pass through the phonological edge of the CP in long distance wh-questions. Jacek Witkoś (p.c.) points out that additional evidence for an A'-position below CP ( $\Sigma P$  or different) comes from topicalization in embedded clauses, which is well-formed in Polish:

(i) pro Powiedziałeś, że samochód Paweł kupił żonie t. (you) said that car-ACC Paweł-NOM bought wife-DAT 'You said that it was a car that Paweł bought his wife.'

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