

How to Reconcile a Multidominant Theory of Movement with Late Merge? A View from Polish

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ABSTRACT

This paper presents a way to reconcile so-called Principle C anti-reconstruction effects with a Multidominant Theory of Movement. One of the most popular accounts of this phenomenon involves Late Merge (typically assumed to be possible with adjuncts but not arguments) and has been used as an argument against Multidominant theories of movement, and in favor of the Copy Theory of Movement (Larson 2016, Witkoś 2021). The paper provides a multidominant account of Principle C effects that does not rely on the argument/adjunct distinction, given the fact that the contrast between adjuncts and argument clauses is absent in Polish (Witkoś 2000, 2004), and has been questioned for English as well.

KEYWORDS multidominance · Principle C anti-reconstruction effects · Late Merge

1 INTRODUCTION

This paper presents a way to reconcile so-called Principle C anti-reconstruction effects with a Multidominant (MD) Theory of Movement. One of the most popular accounts of this phenomenon involves Late Merge (typically assumed to be possible with adjuncts but not arguments). The reason it is important to show that the effects of Late Merge can be derived in a MD Theory of Movement is that Late Merge has been used as an argument against MD theories of movement, and in favor of the Copy Theory of Movement (Larson 2016, Witkoś 2021). Furthermore, the paper provides a multidominant account of Principle C effects that does not rely on the argument/adjunct distinction, given the fact that the contrast between adjuncts and argument clauses is absent in Polish (Witkoś 2000, 2004), and has been questioned for English as well.

2 PRINCIPLE C ANTI-RECONSTRUCTION EFFECTS IN COMPLEMENT AND ADJUNCT CLAUSES

Adjuncts are often taken to contrast with complements with respect to Principle C anti-reconstruction effects; this is what has come to be known as the Lebeaux effect, illustrated in (1–2) (van Riemsdijk & Williams 1981, Lebeaux 1988, 1991, 1998, among others).

- (1) a. ??Which picture of **John_i** did **he_i** like?
 b. Which picture that **John_i** saw did **he_i** like best?
 (van Riemsdijk & Williams 1981:201)
- (2) a. *Whose claim that **John_i** likes Mary did **he_i** deny?
 b. Which claim that **John_i** made did **he_i** later deny? (Lebeaux 1991:211)

I focus on Polish, which, as noted by Witkoś (2000, 2004), does not distinguish between complement and adjunct clauses with respect to Principle C anti-reconstruction effects; in the a examples in (3) and (4) the R-expression is inside a complement clause, in the b

examples it is inside a relative clause, and both are grammatical.¹

- (3) a. Na czyje oświadczenie, [że rząd pomaga Janowi_i finansowo]
to whose statement that government helps John financially
zareagował on_i gniewem?
reacted he with.anger
'To whose statement that the government helps John financially did he react with anger?'
- b. Na czyje oświadczenie, [które Jan_i początkowo taktownie przemilczał]
to whose statement which Jan first tactfully disregarded
zareagował on_i gniewem?
reacted he with.anger
'To whose statement which Jan first tactfully disregarded did he react with anger?'
(Witkoś 2000:177)
- (4) a. Ile skarg, które Jan_i złożył osobiście, musiał (?on_i)
how.many complaints which Jan made personally, had.to he
wycofać?
withdraw
'How many complaints which Jan made personally did he have to withdraw?'
- b. Ilu skarg, że Jan_i jest złym szefem, musiał (?on_i)
how.many complaints that Jan is bad boss had.to he
wysłuchać?
listen.to
'How many complaints that Jan is a bad boss did he have to listen to?'

In both cases an overt pronoun can alternate with a null one (*pro*); while in (5a–b), for example, the variant with a null subject is slightly better, the degradation most likely has to do with some form of Avoid Pronoun principle, as it is not the case that *c*-command by a *pro* does not induce Principle C effects:

- (5) a. *(On_i zobaczył Jana_i)
he saw Jan
'He saw Jan' (with the interpretation 'Jan saw himself')
- b. Ilu skarg, że Jan_i jest złym szefem, musiał (?on_i)
how.many complaints that Jan is bad boss had.to he
wysłuchać?
listen.to
'How many complaints that Jan is a bad boss did he have to listen to?'

¹Witkoś also discusses the contrast between PP nominal modifiers, which do not show Principle C anti-reconstruction effects, and genitive modifiers, which do. He attributes it to "the fact that the [+Genitive] case feature in Polish is strong, thus the specifier must be concatenated with the nominal constituent prior to the concatenation of the nominal constituent with the verb." (Witkoś 2004:14).

- (i) *Ile rękawiczek Piotra_i zgubił on_i w parku?
how.many gloves Peter.GEN lost he in park
'How many of Piotr's gloves did he lose in the park?'
- (ii) ?Ile nowych książek o Piotrze_i chciałby on_i znaleźć w księgarni?
how.many new books about Piotr would.like he find in bookshop
'How many new books about Piotr would he like to find in a bookshop?'
(Witkoś 2004)

Since my primary focus here is how to make an account of Principle C anti-reconstruction effects compatible with a multidominant theory of movement, rather than on how to account for the presence of Principle C anti-reconstruction effects in some constructions, but its absence in others, I will not try to incorporate them here.

Witkoś also observes that both get worse if the matrix subject pronoun is preverbal:^{2,3}

- (6) a. ?Na czyje oświadczenie, [że rząd pomaga Janowi_i finansowo]
to whose statement that government helps John financially
on_i zareagował gniewem?
he reacted anger.INS
'To whose statement that the government helps John financially did he react with anger?'
b. ?Na czyje oświadczenie, [które Jan_i początkowo taktownie przemilczał]
to whose statement which Jan first tactfully disregarded
on_i zareagował gniewem?
he reacted anger.INS
'To whose statement which Jan first tactfully disregarded did he react with anger?'
(Witkoś 2000: p.43, fn.38)

Witkoś also notes that Principle C reconstruction effects re-appear (in other words, Principle C anti-reconstruction effects disappear), with Left Branch Extraction, as shown in (7–8), which is not surprising given that the clause containing the name remains in a position where it is c-commanded by the pronoun.

- (7) a. ***Ile_j** musiał (**on_i**) wycofać **t_j skarg, które Jan_i złożył**
how.many had.to he withdraw complaints which Jan made
osobiście?
personally
'How many complaints which Jan made personally did he have to withdraw?'
b. ***Ile_j** musiał (**on_i**) wysłuchać **t_j skarg, że Jan_i jest złym**
how.many had.to he listen.to complaints that Jan is bad
szefem?
boss
'How many complaints that Jan is a bad boss did he have to listen to?'
(8) a. ***Ile_j** (**on_i**) przeczytał wczoraj **t_j książek o Janie_i?**
how.many he read yesterday books about Jan
b. ?**Ile** **książek o Janie_i** przeczytał **on_i** wczoraj?
how.many books about Jan read he yesterday
'How many books about Jan did he read yesterday?' (Witkoś 2000: p.124)

Witkoś, following Safir (1999), attributes the lack of Principle C effects to a Vehicle Change mechanism, which replaces a name with a pronoun with the same index, as shown in (9a–c):

- (9) a. **Ile** skarg, które **Jan_i** złożył osobiście, musiał **on_i** wycofać?
how.many complaints which Jan made personally, had.to he withdraw?
'How many complaints which Jan made personally did he have to withdraw?'
b. **Ile** musiał **on_i** wycofać skarg, które **Jan_i** złożył osobiście? *Principle C violation*
c. **Ile** musiał **on_i** wycofać skarg, które **pro/on_i** złożył osobiście? *Vehicle Change*

And he points out that since Vehicle Change replaces the name with a pronoun, it should

²Witkoś (2000:177) marks them as *%, which suggests some variation in judgments.

³Biskup (2006) discusses Principle C anti-reconstruction effects in Czech, contrasting clausal and non-clausal adjuncts, and arrives at the following generalization:

- (i) *Background Adjunct Coreference Principle*
Coreference between an R-expression within an adjunct clause and a pronoun in the matrix clause is possible only if the R-expression is backgrounded in the adjunct clause. (Biskup 2006:102)

sometimes give rise to Principle B violations, since pronouns have to be free in their bindings domains. But, as pointed out by Citko (2001), Vehicle Change in itself will not explain contrast between *wh*-questions and relative clauses with respect to Principle C reconstruction, illustrated in ((10)a–b).⁴

- (10) a. *Które zdjęcie **Jana_i** (**on_i**) zgubił które zdjęcie **Jana_i**?
 which picture Jan.GEN he lost
 ‘Which picture of John did he lose?’
 b. zdjęcie **Jana_i**, które (**on_i**) zgubił zdjęcie **Jana_i**?
 picture Jan.GEN which he lost
 ‘a picture of Jan which he lost’

The contrast between complements and adjuncts with respect to Principle C reconstruction has been questioned for English as well (Heycock 1995, Safir 1999, Henderson 2007, Bruening & Al Khalaf 2019, Varaschin et al. To appear, among others). Bruening & Al Khalaf (2019: p.247), in a series of experiments, ‘find absolutely no evidence of an argument–adjunct distinction in reconstruction for Binding Condition C.’⁵ (11a–b) are examples of two of their experimental conditions; in the WH ARG condition given in (11a), the italicized phrase contains the complement clause *that Hillary Clinton was running for president*, whereas in the WH ADJ condition given in (11b) it contains the relative (hence adjunct) clause *that Hillary Clinton had tried to take back*. In both cases, the B answer, in which the pronoun *she* refers to Hillary Clinton, illustrates the Principle C anti-reconstruction effect. As the table below shows, both answers are available

- (11) a. A female staffer told everyone *which of the announcements that **Hillary Clinton** was running for president* **she** had actually authorized. (WH ARG)
 b. A female staffer told everyone *which of the announcements that **Hillary Clinton** had tried to take back* **she** had actually authorized. (WH ADJ)
 c. Who authorized the announcement?
 A: The staffer.
 B: Hillary Clinton

(12)

| WH ARG | WH ADJ |
|----------------------|--------|
| 42.7% | 56% |
| percent ‘B’ response | |

For the purpose of this paper, I will abstract away from the question of whether there is any contrast between Polish and English, and focus on the question of how to account for the lack of Principle C effects in Polish complement and adjunct clauses alike. I will take Lebeaux’s Late Merge account as a starting point, since Late Merge has been used as an argument against a multidominant theory of movement.

3 LATE MERGE AND MULTIDOMINANCE

3.1 THE ISSUE

The Late Merge account of Principle C anti-reconstruction effect relies on the ability to merge adjuncts (but not arguments) late, *i.e.*, after *wh*-movement takes place, as shown schematically in (13-a)–(13-b).

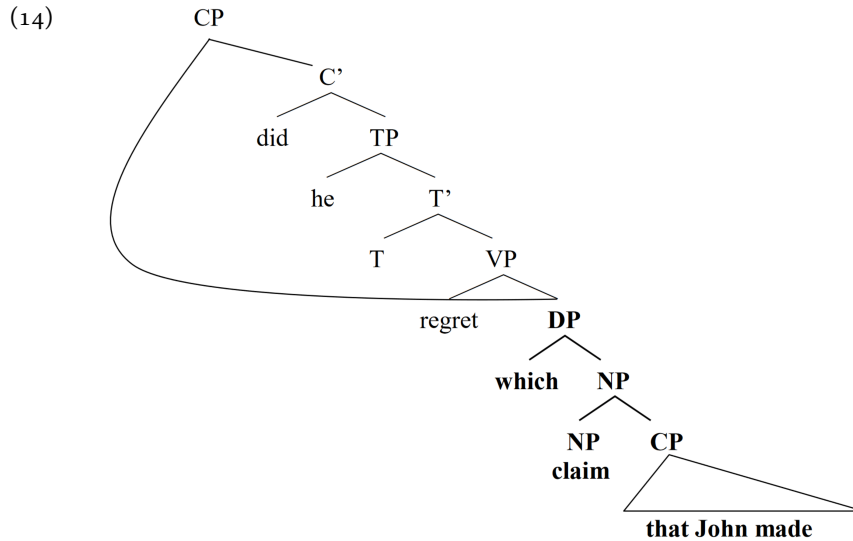
- (13) a. Which claim did **he** later deny ~~which claim?~~ *wh-movement*

⁴Citko’s account relies on a Matching (Deletion under Identity in her terms) derivation for relative clauses, not on Vehicle Change. The contrast between relative clauses and *wh*-questions with respect to Principle C reconstruction was first noted by Munn (1994). This contrast is only surprising on the Head Raising derivation for relative clauses, independently well motivated at least for a subset of relative clauses.

⁵They furthermore ‘suggest that those speakers who report such a contrast (linguists, primarily) are following a pragmatic bias, and not Condition C’ (Bruening & Al Khalaf 2019: p.247).

- b. Which claim [that **John_i** made] did **he_i** later deny **which-claim**? *Late Merge*

The account crucially relies on there being two (or more) copies of a wh-phrase in a movement chain, which is what allows the adjunct to adjoin to a higher copy. This, as argued by Larson (2016), provides a way to distinguish the MD theory of movement and the Copy theory of movement. On the copy theory of movement, since there are two copies, it is possible to adjoin to one without adjoining to the other; this is what was done in (13). On the MD account of movement, however, there is a single copy of the moved element occupying two positions, so ‘the adjunct is late-adjoining low as well as high and the lack of Principle C effects is not predicted’ (Larson 2016: p.14). This is illustrated schematically in (14).



3.2 JOHNSON (2012, 2018)

Larson also discusses pronunciation and interpretation, which, though at first glance problematic for MD accounts, in reality are not. The solution she provides to capture the interpretation of MD elements is the solution that can be adopted to account for the lack of Principle C reconstruction.⁶ The issue is that the higher and lower copies have different interpretations; on the copy theory of movement, this is ensured by the mechanism known as trace conversion (Fox 2002).

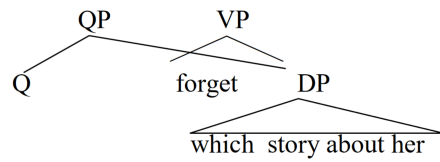
- (15) a. Which person did you see <which person>?
b. Which person λx [you saw the person x]?

As Larson notes, Johnson’s (2012) account, on which DP is parallel merged with the Q particle and the verb, as shown in (16), ensures the same result: the Q head serves as an operator and the DP as a variable (see also Hagstrom 1998, Kishimoto 2005, Cable 2007, 2010).

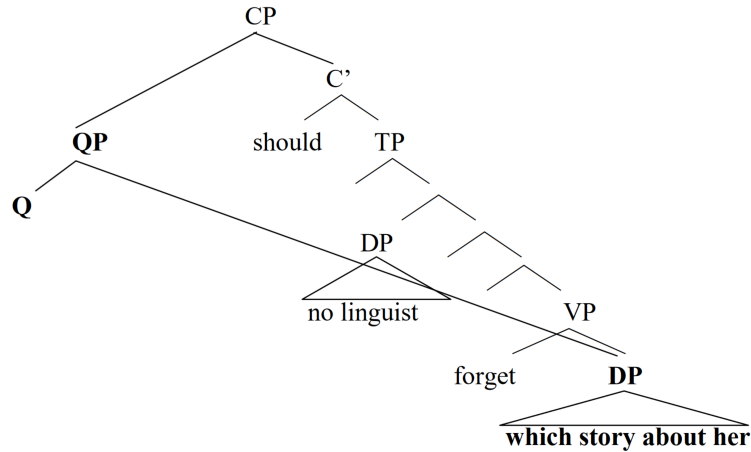
- (16) a. Which story about her should no linguist forget?

⁶As far as pronunciation is concerned, Larson assumes that the explanations for which copy is pronounced on the Copy theory of movement ‘translate’ easily into explanations for in which positions the multiply dominated element is pronounced. For example, according to Nunes, the copy with more checked features is pronounced (2001, 2004). On the MD copy of movement, the multiply-dominated element is pronounced in a position where more features are checked.

b. Parallel Merge DP *which story about her* with *forget* and Q



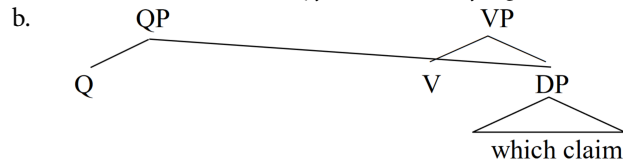
c.



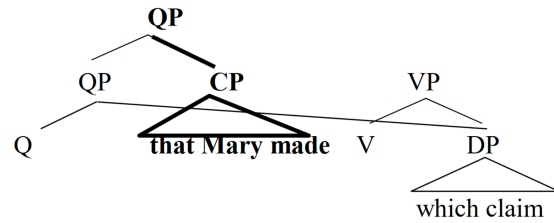
(adapted from Johnson 2012)

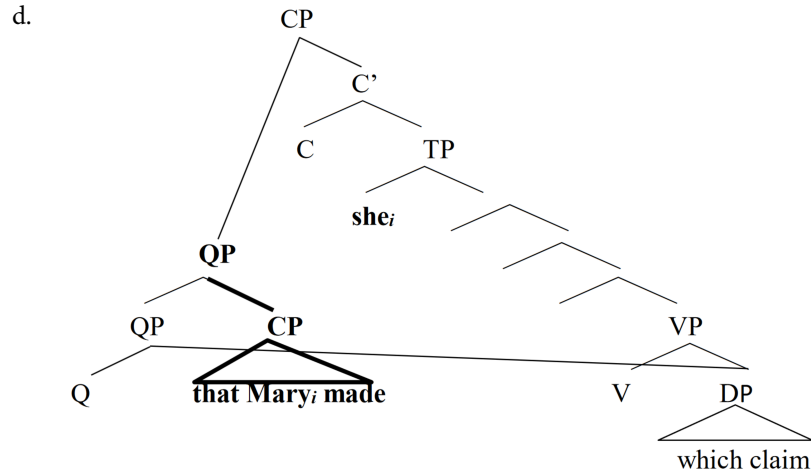
The insight that the *wh*-phrase undergoes Parallel Merge with the verb and the Q particle opens up a possibility that the relative clause can adjoin in one position without necessarily adjoining in the other. This is illustrated in (17a–d).

(17) a. Which claim that **Mary_i** made did **she_i** regret?



c.





The derivation in (17) explains the lack of Principle C effects, given that at no point in the derivation does the pronoun *she* c-command the R-expression *Mary*.⁷ It also does not involve countercyclic adjunction, which has also been a problem for Late Merge (see Sportiche 2019, for example. This is particularly evident if we adopt a derivational approach to c-command of the kind given in ((18)a–b).⁸ The pronoun was never merged with any constituent containing the R-expression.

- (18) a. *Derivational c-command*
 X c-commands all and only the terms of the category Y with which X was concatenated by Merge of Move in the course of the derivation.
- b. *Term*
 L is a term of K iff
- a. L = K, or
 - b. L is a term of a category concatenated to form K.
- (Epstein et al. 1998:61–62)

However, the problem with the structure in (17) is that the relative clause ends up too high, given the common assumption that restrictive relative clauses adjoin to NPs. Furthermore, such a derivation is incompatible with a raising derivation; it is not clear how the head could have moved from the relative clause. However, we see Principle C anti-reconstruction effects in relative clauses involving idiom chunks in both English and Polish (as shown in (19) and (20)), and we know that idiom chunks force head raising.⁹

- (19) a. Which picture that **Mary**_i took did **she**_i later destroy?
 b. How much headway that **Mary**_i made on this project did **she**_i subsequently lose?
 (Henderson 2007: p.214)
- (20) Tych słów, co **Jan**_i rzucił na wiatr, **pro**_i później pożałował.
 these words COMP Jan threw to wind later regretted
 ‘These words that John said carelessly, he regretted later.’

Johnson’s (2018) account avoids the issue of the adjunction being too high. I give his simplified representation in (21); what distinguishes it from the structure given above

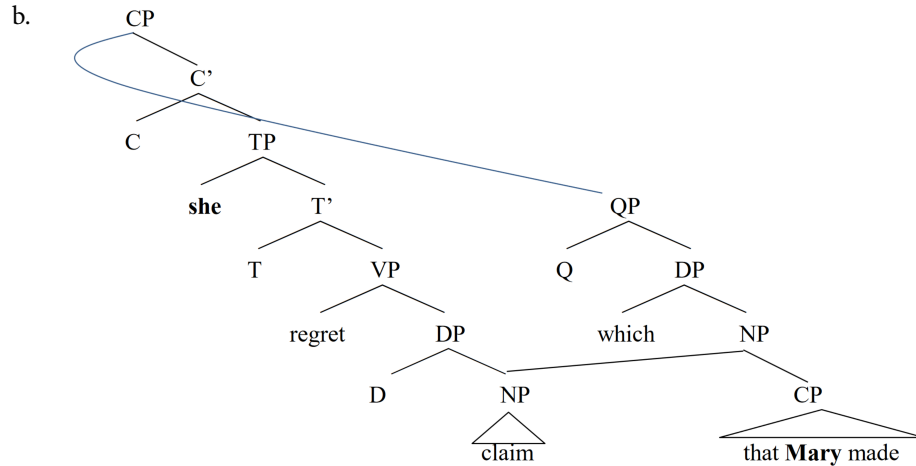
⁷Gajewski (2000) makes the same point, deriving Principle C anti-reconstruction effects on the assumption that the relative clause head moves in a sideward fashion.

⁸The lack of c-command also follows from the way Citko & Gračanin-Yuksek (2021) conceptualize derivations in a grammar that contains multidominant structures. In particular, they propose that the two rooted objects in an MD structure (QP and CP before the Internal Merge of QP) correspond to two different derivations. They become a part of a single derivation only when QP merges with a CP (Citko & Gračanin-Yuksek 2021).

⁹Munn (1994) and Sauerland (1998) report such examples to be bad.

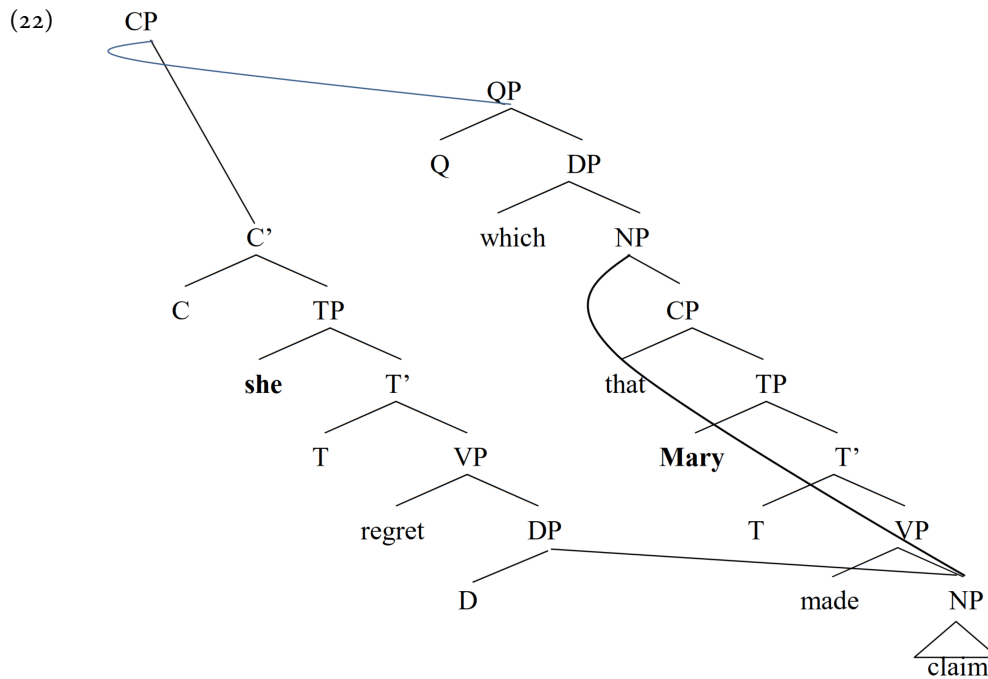
is that the relative clause is at the right level (NP level).¹⁰ Furthermore, the element undergoing Parallel Merge is the head of the relative clause, rather than the wh-phrase.

(21) a. Which claim that **Mary**_i made did **she**_i regret?



(adapted from Johnson 2018)

This derivation is in principle compatible with Head Promotion; the relative head **claim** can raise from the relative clause internal position and undergo Parallel Merge with the matrix verb, resulting in (22). Head raising, like any movement, results in a multiply-dominated structure, in which the head undergoes Internal Merge with CP, and is marked with a bolded line.



¹⁰This is a very simplified representation of my understanding of Johnson's (2018) structure, which includes a lot of semantic details (not directly relevant for the purposes of this paper). Any misinterpretations of his intentions are solely mine.

3.3 ALTERNATIVE

One question that the structure in (21) might raise concerns linearization/pronunciation; the QP should be linearized/pronounced in its higher position (*i.e.*, Spec,CP in this case); however, the QP contains the NP *claim*, which is not fully dominated by this QP. So it is not clear how to ensure that the structure in (21) ‘comes out’ as (23-a), not (23-b) or (23-c). If multiply-dominated elements have to be linearized in final positions (as proposed by Wilder 1999), we would expect (22) to be linearized as (23-b) with the QP *which that Mary made* linearized in Spec,CP and the head *claim* linearized together with D, as the complement of the matrix verb *regret*.¹¹

- (23) a. **Which claim that Mary made** did **she** regret?
 b. ***Which that Mary made** did **she** regret **claim**?
 c. ***Which** did **she** regret **claim that Mary made**?

The string in (23-c) represents Left Branch Extraction (ungrammatical in English, but grammatical in Polish), and we saw above that Principle C effects re-appear with Left Branch Extraction. The relevant examples are repeated below:

- (24) a. ***Ile_j** musiał (**on_i**) wycofać **t_j skarg**, **które Jan_i złożył**
 how.many had.to he withdraw complaints which Jan made
osobiście?
 personally
 ‘How many complaints which Jan made personally did he have to withdraw?’
 b. ***Ile_j** musiał (**on_i**) wysłuchać **t_j skarg**, **że Jan_i jest złym**
 how.many had.to he listen.to complaints that Jan is bad
szefem?
 boss
 ‘How many complaints that Jan is a bad boss did he have to listen to?’

The ungrammaticality of the examples in (24-a)–(24-b) thus shows Left Branch Extraction cannot arise from the structure in (21).

The alternative derivation that avoids the issue with linearization outlined above is given in (25a–d); instead of the relative clause head *claim*, an empty D head undergoes Parallel Merge, as shown in (25b).¹²

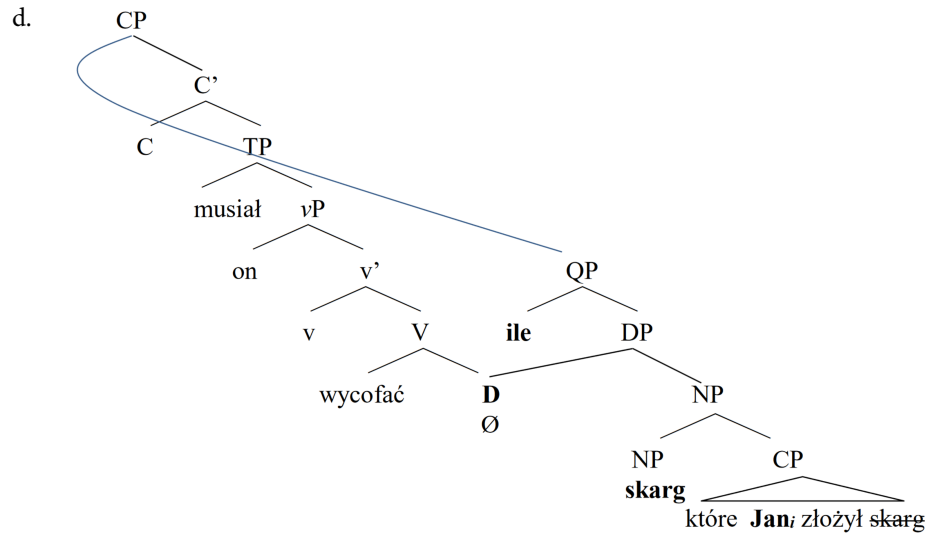
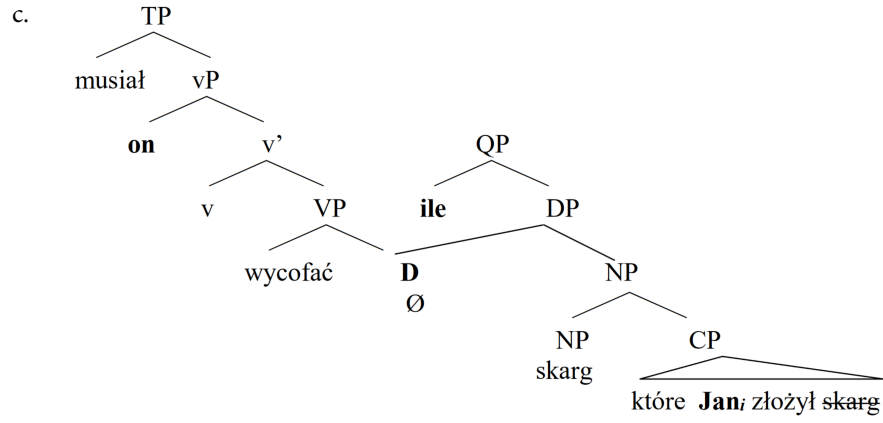
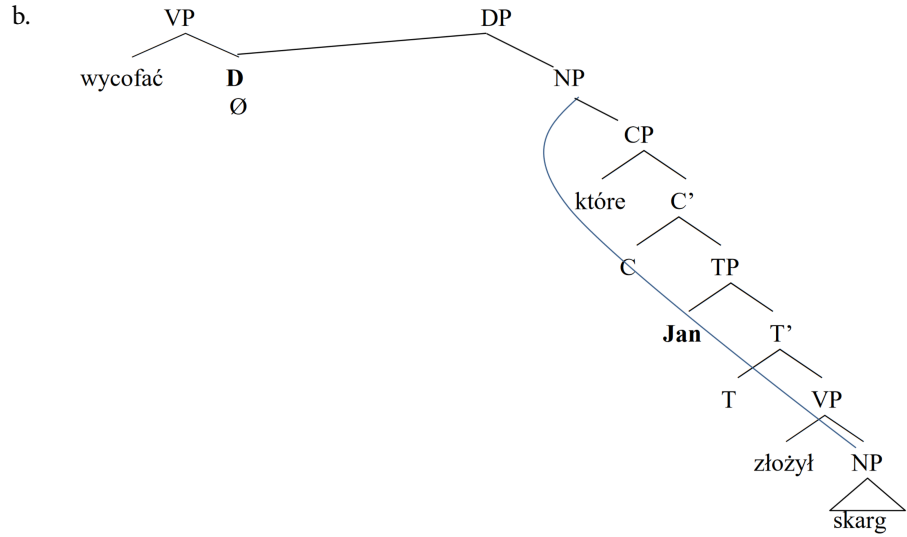
The DP *skarg, które Jan złożył* ‘complaints that Jan made’ next merges with the Q head *ile* ‘how many’, shown in (25c). The VP, on the other hand, merges with *v*, the subject *on* ‘he’, T and C. This is shown in (25c). And finally, the QP internally merges with CP, as shown in (25).¹³

- (25) a. **Ile** skarg, **które Jan_i złożył** osobiście, musiał (**on_i**)
 how.many complaints which Jan made personally, had.to he
 wycofać?
 withdraw?
 ‘How many complaints which Jan made personally did he have to withdraw?’

¹¹I cannot think of any linearization algorithm that would linearize the structure in (22) as (23-c). This, of course, would be a well-formed string in a language like Polish, which allows Left Branch Extraction, but, presumably, this string would not be the result of the structure in (22).

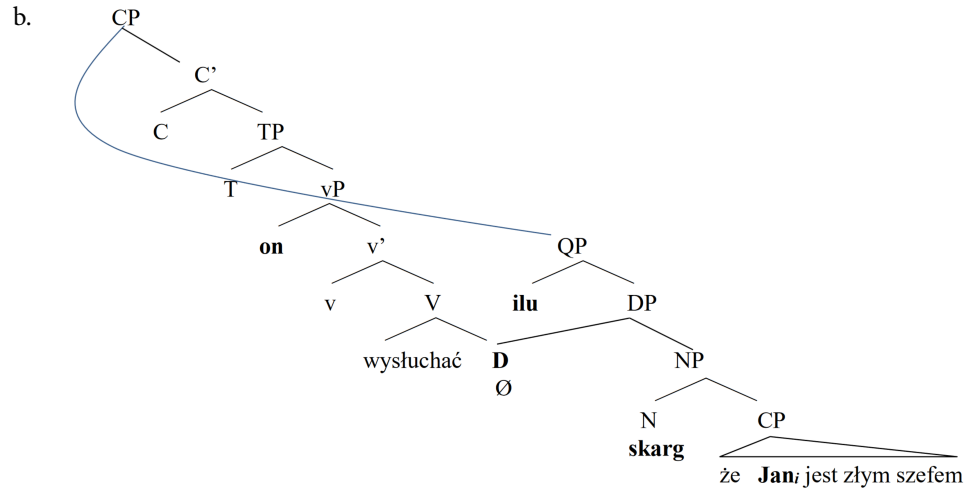
¹²It looks like a D head is a complement of the verb here, but on bare phrase structure, this D would be simultaneously a maximal and a minimal projection in its position as a complement of the verb.

¹³For simplicity’s sake, I represent head raising as ‘copy and delete’ in (25c–d).



This structure gets the right linear order. The QP is linearized in Spec,CP, which is the only position it occupies. The shared D is empty, so it does not matter whether it is linearized as part of QP or in its base position. Since there is nothing in the derivation given in (25) that relies on the complement/adjunct distinction, this proposal also accounts for Principle C anti-reconstruction effects with complement clauses. This is shown in (26a–b).

- (26) a. *Ilu skarg, że Jani jest złym szefem, musiał (on_i)
 how.many complaints that Jan is bad boss had.to he
 wysłuchać?
 listen.to
 'How many complaints that Jan is a bad boss did he have to listen to?'*

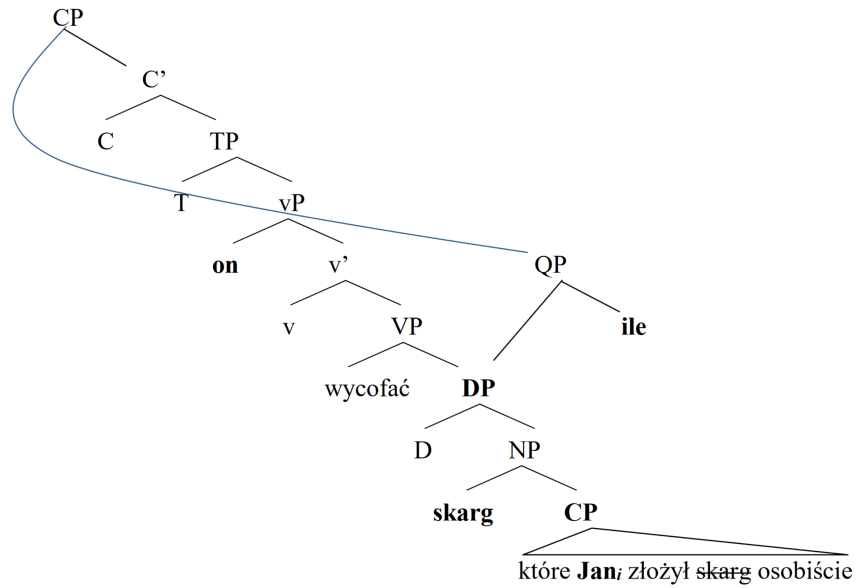


The last question I want to address here, and offer a somewhat speculative answer to, is why Principle C reconstruction effects re-emerge in Left Branch Extraction configurations, irrespective of the adjunct complement distinction. The relevant examples are repeated in (27a–b).

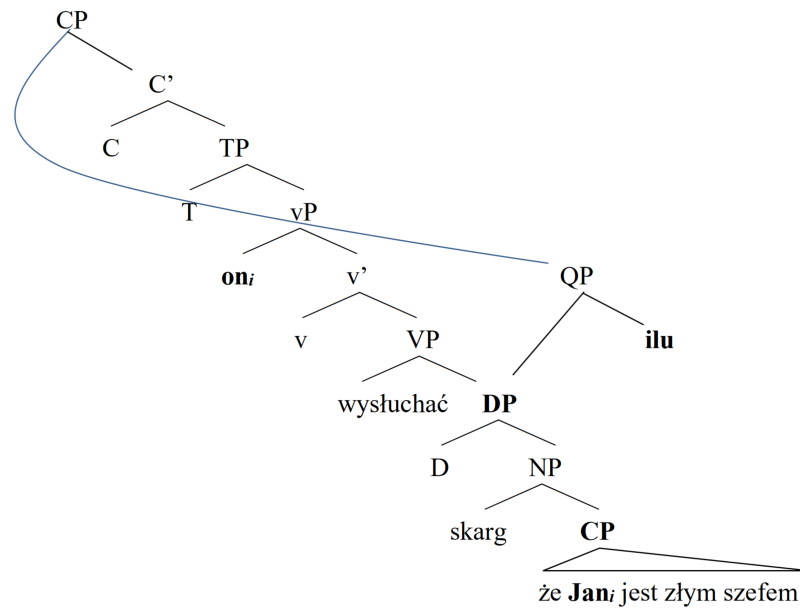
- (27) a. **Ile_j musiał (on_i) wycofać t_j skarg, które Jan_i złożył
 how.many had.to he withdraw complaints which Jan made
 osobiście?
 personally
 'How many complaints which Jan made personally did he have to with-
 draw?'*
- b. **Ile_j musiał (on_i) wysłuchać t_j skarg, że Jan_i jest złym
 how.many had.to he listen.to complaints that Jan is bad
 szefem?
 boss
 'How many complaints that Jan is a bad boss did he have to listen to?'*

One possibility is that instead of a D head, an entire DP (containing the relative or complement clause) undergoes Parallel Merge (with the verb and Q). In both cases the pronoun *on* does c-command *Jan*, which incurs a Principle C violation, as shown in (28a–b).

(28) a. structure of (27a)



b. structure of (27b)



4 CONCLUSION

To conclude briefly, I have shown in this paper that there is a way to reconcile Principle C Anti-Reconstruction Effects with a Multidominant Theory of Movement. Crucially, it cannot (and it does not) rely on Late Merge, which was shown to be problematic for Multidominant Theories of Movement. The solution presented in this paper can also capture Principle C anti-reconstruction effects with both complement and adjunct clauses, a welcome result for a language like Polish, and most likely, English as well.

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ABBREVIATIONS

| | | | |
|------|----------------|-------|-------------------|
| COMP | complementizer | MD | multidominant |
| GEN | genitive | QPART | question particle |
| INS | instrumental | | |

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