

Article

# Undoing Wh-Movement: On the Need for Multiple Copies

Jacek Witkoś 

Faculty of English, Adam Mickiewicz University, Grunwaldzka 6, 60-780 Poznań, Poland; wjacek@amu.edu.pl

**Abstract:** This contribution presents an outline of the current scholarly discussion of reconstruction with wh-movement, focussing on the Lebeaux Effect (LE) and wider aspects of reconstruction with wh-movement. It presents empirical problems for both the proposals based on the LE and the novel account of movement and reconstruction based on the notion of Minimal Copy. It points out that particular copies may differ not only in size (i.e., they do or do not include the adjunct as a relative clause or PP) but also in content. It refers to an analysis, where copies left by movement are levelled with copies left by ellipsis and subject to the mechanism of Vehicle Change. An account of reconstruction including multiple copies and Vehicle Change predicts that the structural complexity of the wh-phrase and its distance from the offending c-commanding pronoun (embedding and obviation effects) should contribute to an amelioration of Condition C in addition to the LE.

**Keywords:** movement and reconstruction; copy theory of movement; multidomination; late merger; vehicle change



**Citation:** Witkoś, J. Undoing Wh-Movement: On the Need for Multiple Copies. *Philosophies* **2021**, *6*, 99. <https://doi.org/10.3390/philosophies6040099>

Academic Editor: Peter Kosta

Received: 1 October 2021

Accepted: 22 November 2021

Published: 2 December 2021

**Publisher's Note:** MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



**Copyright:** © 2021 by the author. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

## 1. Introduction

Syntactic movement is typically presented as a chain consisting of a sequence of copies of the moved element, according to the Copy Theory of Movement (CTM) (Chomsky 1995 [1], Lasnik 1999 [2], Fox 1999 [3], 2002 [4], Hornstein 2001 [5], Nunes 2004 [6], Bošković 2007 [7], etc.). Multiple copies are the locus of reconstruction properties, frequently related to the Lebeaux Effect (LE) (Lebeaux 1988 [8], 1991 [9]). The effect consists of the bleeding of the Condition C effect detected when an adjunct (relative clause) is pied-piped with the moved wh-phrase, and in the feeding of the said Condition C when a complement is pied-piped. For decades the LE has been at the centre of the reconstruction debate, but recently its validity, as well as the validity of the complement/adjunct distinction in the context of reconstruction, has been seriously undermined. Bruening and Al Khalaf (2019) [10] forcefully argue against the LE and in favour of an approach that provides for antireconstruction effects to be the norm (the Minimal Copy approach).

This contribution presents an outline of the current scholarly discussion, focussing on the LE but also considering the wider context of reconstruction with wh-movement. It presents a number of challenges to current strategies of reconstruction, including the Minimal Copy approach. It points out that particular copies may differ not only in size (i.e., they do or do not include the relative clause or another adjunct) but also in content. In his analysis of reconstruction in wh-movement, Safir (1999) [11] matches copies left by movement with copies left by ellipsis and applies to them the mechanism of vehicle change (Fiengo and May 1994) [12]; a name ( $DP_i/NP_i$ ) may be represented in the copy as its pronominal correlate ( $\text{pron}_i$ ). The account of reconstruction, including multiple copies and vehicle change, predicts that the structural complexity of the wh-phrase (embedding and obviation effects) should contribute to the amelioration of Condition C.

This paper is structured as follows: Section 2 presents the Lebeaux Effect and some of its consequences for the debate about reconstruction; Section 3 reviews theoretical or empirical counterarguments to either the LE or Chomsky's Preference Principle in general, which complicate the view of reconstruction phenomena; Section 4 points to empirical

arguments that are inconvenient to the recently advanced Minimal Copy approach; and Section 5 concludes the paper.

## 2. Reconstruction: Late Merge and the Lebeaux Effect

The introduction of the Copy Theory of Movement in the Minimalist Program [1] paved the way for accounts of violations of grammatical principles involving copies, rather than the moved categories occupying positions at the head of their movement chains. The typical example of such a relation involves reconstruction of wh-movement—that is, interpretation of a copy left behind in the VP-internal position:

- (1) a. \*[Which claim [that John<sub>1</sub> was asleep]] was he<sub>1</sub> willing to discuss t?  
 b. [Which claim [that John<sub>1</sub> made]] was he<sub>1</sub> willing to discuss t?

This pair of examples comes from [8,9] and illustrates the so-called Lebeaux Effect (LE) or Late Merge. One would have expected that if the position of t in (1a,b) is filled with copies of the wh-phrase (the operator with the NP-restriction), so both (1a) and (1b) should be excluded as Condition C violation, as in both cases the pronominal subject c-commands a coindexed name embedded within the clause following *claim*. However, Lebeaux points out that the two clauses following *claim* differ in their status; while the clause in (1a) is a complement clause, the one in (1b) is a relative clause. He proposes treating the complement clause as an argument of the noun *claim*, its complement, while the relative clause receives the treatment of an adjunct. This distinction has profound consequences for the timing of the merger of the two clauses with *claim*. Refs. [8,9] argues for an early, cyclic merger of complements by invoking the Projection Principle of Chomsky (1981) [13]:

- (2) The Projection Principle: The subcategorization property of lexical items must be satisfied throughout the derivation.

The complement clause in (1a) is merged with *claim* cyclically, at the stage of creating the complex NP. Thus it finds itself in the c-command domain of the subject pronoun co-indexed with *John*, which triggers a violation of Condition C. If the wh-movement leaves copies behind, this violation persists. The relative clause is not subcategorised for by the noun *claim*, so it in fact it can be merged with it after the movement of which claim to [spec, CP]. However, if so, the copy of the wh-phrase (*which claim*) does not contain *John* in the c-command domain of the pronominal subject and Condition C is not violated.

Chomsky proposes accounting for the distinction between (1a,b) through the notion of the Preference Principle:

- (3) The Preference Principle [1], (p. 209): To account for the judgements [in (1a,b) above, J.W.] it is only necessary to add a preference principle for Reconstruction: do it when you can (i.e., try to minimize the restriction in the operator position).

The Preference Principle implies that in A-bar movement chains the bottom copy should be interpreted for binding relations, with the complement clause triggering Condition C violations but a relative clause absent from this position. The Principle is not inviolable and can be disobeyed when other relations relevant to the convergence of a given derivation should force its violation; see (11) below.

The empirical scope of a late merger is expanded further, beyond the argument/adjunct distinction pointed out by Lebeaux, to a wider context of syntactic movement. Takahashi and Hulsey (2009) [14] developed the hypothesis of a wholesale late merger, which goes a long way toward explaining the difference between reconstruction in A/'A-chains, different types of A'-chains, and QR. For instance, they provided a principled account of the standard observation that, while A-bar movement obligatorily leaves a trace and tends to reconstruct, A-movement seems to leave a trace only optionally. They followed [3,4] and relied on the procedure of Trace Conversion. Leaving aside the details of the justification for their proposal, Hulsey and Takahashi claimed that their LF Interpretability approach predicts that a restrictor of an operator/determiner should be able to be merged with this operator/determiner countercyclically (a wholesale late merger) unless other properties of

the grammar prohibit this option.<sup>1</sup> This is the crucial difference between a wholesale late merger and Lebeaux's late merge in (1) above. In concrete terms, they provide for a late merger in the following manner:

- (4) a. Merge as late in the derivation as possible not only adjuncts but also NP restrictions on quantifiers and determiners [13] (pp. 396–397).  
 b. DPs as a whole demand a case because both determiners and nouns, which constitute DPs, must receive a case [13] (p. 401).

An analysis of the following example serves as a brief illustration of their system:

- (5) ??\*[which argument that John<sub>1</sub> is a genius] did he<sub>1</sub> believe t?

There are two possible derivations of this construction at early stages:

- (6) a. [<sub>VP</sub> believe [which<sub>+case</sub>]]  
 b. \*[<sub>DP</sub> which<sub>+case</sub> [<sub>NP</sub> argument<sub>-case</sub> that John<sub>1</sub> is a genius]] did he<sub>1</sub> [<sub>VP</sub> believe [<sub>DP</sub> which<sub>+case</sub>]]] Condition (4b) violated  
 c. \*[<sub>VP</sub> he<sub>1</sub> [<sub>VP</sub> believe [<sub>DP</sub> which<sub>+case</sub> [<sub>NP</sub> argument<sub>+case</sub> [that John<sub>1</sub> is a genius]]]]] Binding Condition C violated

In the first option, the late merger of the NP-restriction applies in (6a), so only the wh-operator is merged with the verb within VP. At a later stage, this wh-operator has its case valued by v-V. In the final part of this derivation in (6b), the NP-restriction to the wh-operator is late-merged but only in the position of [spec, CP]. Thus, there is no structural environment for a Condition C violation, but the NP restriction (*argument*) has no case (it was absent from the vP domain when the wh-operator had its case valued) and the derivation crashes. The second possibility involves an early merger of the NP-restriction with the wh-operator in the domain of the verb phrase in (6c), which provides for case valuation of the NP-restriction but involves a cost in the form of a Condition C violation, on the strength of the Projection Principle in (3).

In brief, [13] predicted that wh-movement requires reconstruction of the NP-restriction in the VP for the reasons of case.<sup>2</sup> According to standard GB lore, case is assigned at the foot of the A-bar chain. Since case (for both the operator and its NP restriction) is valued at the head of the A-chain, no reconstruction is expected in this case:

- (7) [every argument [that John<sub>1</sub> is a genius]] seems to him<sub>1</sub> t to be flawless.  
 (8) [<sub>TP</sub> T [<sub>VP</sub> [<sub>DP</sub> every<sub>+case</sub> [<sub>NP</sub> argument<sub>+case</sub> that John<sub>1</sub> is a genius]] [<sub>VP</sub> seems [to him<sub>1</sub>]] [<sub>TP</sub> [<sub>DP</sub> every<sub>-case</sub>] to be flawless.

So, the wholesale late merger, with its insistence on the assignment of case to both the wh-operator/determiner and the NP restriction, correctly captures the distinction between A-bar movement and A-movement. In the former, case is assigned to elements within the bottom copy of the movement chain, while in the latter, it is assigned to the copy at the landing site of movement. Thus, the presence of the NP restriction (and whatever further elements it contains) at the bottom position in the A-chain is redundant. Consequently, A-movement is not expected to bring about reconstruction effects.

Recently, the debate on reconstruction with wh-movement has reappeared on the research agenda in the context of the debate on the nature of syntactic displacement. Syntactic movement can be presented as either a sequence of copies of the moved element, the Copy Theory of Movement [1], or a representation where a single element is dominated by multiple nodes (Multiple Domination (MD)) in (Gärtner 2002 [16], Franks 2017 [17], Citko and Gračanin-Yuksek 2021 [18] and Citko 2021 [19]).

- (9) [<sub>CP</sub> [wh...]] [<sub>TP</sub> ... [<sub>VP</sub> V ... {wh...}]]]

- (10) [<sub>CP</sub> \*C [<sub>TP</sub> ... [<sub>VP</sub> V ... \*]]] [wh ...]
- 

Although the MTC stems from mainstream minimalist theorising, MD appears to be its attractive junior sibling, as it seems to avoid several problematic aspects of overt

movement, specifically ones connected to successive cyclicity. As ref. [16] argues, an MD approach (or multiattachment, as he prefers to call it) reduces the tension between overt and covert movement and addresses the problem of irrelevance of intermediate landing sites.<sup>3</sup> Ref. [15] highlights the ‘resource problem’ caused by copies at the bottom of movement chains containing features that require checking/valuation at a later stage than the categories moved overtly (assuming there is a distinction between strong and weak features). Multiple attachment of one syntactic object to various addresses in the phrase marker, as shown schematically in (10), avoids these problems.

Larson (2016) [20] brings up an argument in favour of the CTM based on the Lebeaux Effect: bleeding of the Principle C effect is detected when an adjunct (relative clause) is pied-piped with the moved wh-DP, but feeding of the said Principle C takes place when a complement is pied-piped. Assuming that copies cannot be interpreted in parts in scattered positions, Larson points out that LE can be captured by the CTM, where the copies may be distinct from one another in size as a result of late adjunction of the relative clause. As a result, the offending name embedded in the RC is absent from the bottom copy and Principle C is ameliorated. Larson points out that an MD-inspired account of movement faces a challenge in this case, as it provides for one and the same constituent, including the RC, to be attached to two distinct nodes.

Larson acknowledges the fact that both systems make similar predictions in the case of the satisfaction of Binding Condition A:

(11) John<sub>1</sub> wonders [[which picture of himself<sub>1/2</sub>] Bill<sub>2</sub> took [~~which picture of himself<sub>1/2</sub>]]]~~

As is well known from [1], the CTM uses different copies (terms) for the distinct LF readings of this construction: the bottom copy in the wh-chain in VP is interpreted when the picture shows *Bill* and the meaning may be idiomatic (the components of the idiom *take the picture {of oneself}* must be interpreted in an adjacent position at LF), while the copy in [spec,CP] is interpreted when the picture shows *John*. In this case, the idiomatic reading is excluded. The general idea is that scattered interpretation of copies is unavailable. The MD can handle this correlation between interpretations and positions of attachment through the following postulate:

(12) If position 1 of element X is interpreted, then all elements Y that X dominates are also interpreted in position 1 unless elements Y displace to a yet higher position [20] (p. 13).

However, when satisfaction of Binding Condition C comes into play, differences between the CTM and MD show up. In this context, ref. [20] brings up an argument in favour of the CTM based on the Lebeaux Effect (LE):

(13) a. [which picture [RC that Bill<sub>1</sub> hated]] did he<sub>1</sub> say that Mary<sub>2</sub> took {x picture}?  
b. \*[which picture of Bill<sub>1</sub>] did he<sub>1</sub> say that Mary<sub>2</sub> took {x picture of Bill<sub>1</sub>}

Assuming that copies cannot be interpreted in parts in scattered positions, Larson points out that LE can be captured by the CTM, where the copies may be distinct from one another in size as a result of late adjunction of the relative clause (RC). As a result, the offending name (*Bill*), embedded in the RC, is absent from the bottom copy in (13a) and Principle C is ameliorated. An MD-inspired account of movement faces a challenge in this case, as it provides for one and the same constituent, including the RC to be attached to two distinct nodes.

Ref. [20] (pp. 13–14) observes that CTM accounts can rely on the late adjunction of the relative clause to capture these antireconstruction effects. The higher copy can be manipulated independently of the lower one and, if the relative clause is appended to the higher copy only, no Principle C effects are predicted. MD accounts can also resort to late adjunction, but the adjunct is adjoined late and low as well as high and the lack of Principle C effects is not predicted, simply because the name embedded in the RC in the position of low attachment in (10) ends up being c-commanded by the subject pronoun and postulate (12) prevents any splitting of wh-phrases in MD accounts.

### 3. The Lebeaux Effect Reconsidered

As MD fails to deal with reconstruction for Condition C, its proponents seek ways to undermine the LE and its predictive power. One option is to question the validity of a late, countercyclic merger in any shape or form.

Sportiche (2019) [21] provides an argument that a late merger is an extremely unwelcome operation for narrow syntax, as it presupposes unlimited countercyclicality and may lead to serious overgeneration. He points out that, while a late merger is taken to provide the right solution in case of local movement, it can also apply across a large number of phrasal boundaries and derivational phases (Chomsky 2000 [22], 2001 [23]):

- (14) Which villages near Picasso<sub>1</sub>'s estate did he<sub>1</sub> visit t?  
 (15) [which villages {near Picasso<sub>1</sub>'s estate}] did he<sub>1</sub> visit [which villages]  
 (16) [whose criticism of [Mary's rendition of ( . . . ) the claim that you formulated ( . . . ) the hypothesis [that Henri [ visited the villages {near Picasso<sub>1</sub>'s estate}]]]]<sub>2</sub> did he<sub>1</sub> endorse t<sub>2</sub>?

In (14) and (15), showing its alleged LF form, a late merger seems manageable, but in (16) every element below the head noun *criticism* is a complement of a complement, so it must be merged cyclically. Only at the very bottom is there the PP adjunct ({<sub>PP</sub> near Picasso's estate}). However, in order to access the lowest complement domain, the operation of the late merger of the adjunct needs to penetrate a number of phrases and derivational phases in an unbounded manner. As Sportiche points out, this is a very unwelcome effect in the context of current minimalism relying on phase-based operations.

Furthermore, Sportiche observes that, once taken seriously, a late merger should not be limited to an External Merger (as in the discussion initiated by Lebeaux) but also Internal Merge (Move), if both operations are said to be nearly identical and distinguished only by the source of the constituent merged in. So, the countercyclic nature of a late merger may lead to overgeneration and allow for structures resulting from illicit movement. Sportiche considers the following examples:

- (17) [near Paris] John thinks . . . that you live t.  
 (18) \*near Paris John said [ . . . that you live t] [ . . . when a plane crashed t]

(17) shows the regular case of adjunct movement following its cyclic Internal Merge. The presence of the trace/copy is required for appropriate computation of the scope of modification for the adjunct (so [<sub>PP</sub> near Paris] modifies the act of living rather than thinking). However, if the merger in Move is, to all intents and purposes, the same as the merger in External Merge in (16) above, and if it is practically unbounded, the door is open for licit derivations of illicit examples, as in (18). Here, the adjunct can first be merged in its overt position at the head of the syntactic object, and only then it can be late merged inside the two bracketed constituents. The lower copies then subsequently undergo trace conversion (as in Fox 2002) for the purpose of LF interpretation. Ultimately, (18) shows a nonexistent parasitic gap construction headed by a PP. An unlimited late merger certainly overgenerates in this case.<sup>4</sup>

Ref. [21] concludes that any form of late merger should be avoided in the grammar and all operations should follow the derivational cycle.<sup>5</sup> If so, the CTM loses its edge over MD on this count.

Another option is to deny the difference between arguments and adjuncts in wh-reconstruction ([10,16]). Ref. [16] points out empirical inadequacies of this distinction on several counts. Let me mention two of his arguments. First, he observes that in German a name embedded in the restriction of the wh-operator that is an argument does not violate Condition C, although it should and does so in the affirmative clause (19):

- (19) [Wessen Behauptung [dass Maria<sub>1</sub> krank sei]]<sub>2</sub> hat sie<sub>1</sub> (durch ihre<sub>1</sub>  
 whose claim that Mary ill be has she through her  
 Anwesenheit) t<sub>2</sub> wiederlegt?  
 presence refuted  
 'Whose claim that Mary was ill did she refute (through her presence).'



(20) \*Sie<sub>1</sub> widerlegte Peters Behauptung [dass Maria<sub>1</sub> krank sei].

So, the argument/adjunct distinction appears to be heavily language-dependent.<sup>6</sup>

Second, he provides evidence that certain adjuncts cannot be merged late in the derivation. He mentions the classic ‘that trace effect’—the trace/copy of the wh-extracted subject cannot be linearly adjacent to the lexical complementiser:

(21) \*Who<sub>1</sub> do you think [that t<sub>1</sub> will vote for Smith]

(22) Who<sub>1</sub> do you think [that [after all things are considered] t<sub>1</sub> will vote for Smith]

As (21) shows, the ‘that-trace’ effect disappears when an adjunct immediately follows the complementiser but precedes the (thus far illicit) trace. However, for the adjunct to perform its rescue mission vis-à-vis subject extraction, adjunct placement must be cyclic—that is, it must follow the formation of TP but precede wh-movement. This is necessary for both ECP-inspired accounts, such as [13], Chomsky (1986) [26], Aoun, Hornstein, Lightfoot and Weinberg (1987) [27], and Rizzi (1990) [28], and minimalist accounts like Pesetsky and Torrego (2001) [29]. Thus, the conclusion that Gärtner draws is that the concatenation of both the adjunct and the argument with the syntactic object under construction must be cyclic, as per [16] (p. 51):

(23) There are no countercyclic operations.

In the same vein, an even more radical approach to the argument/adjunct distinction in wh-movement reconstruction is taken in [10]. To put it bluntly, the authors conclude that the Lebeaux Effect finds little empirical confirmation. Bruening and Al Khalaf conducted a series of experiments (online acceptability judgement studies) showing that there is little difference in acceptability between expected reconstruction with NPs within arguments and antireconstruction with NPs within adjuncts. At the outset, they noted that the contrast captured by the Lebeaux Effect was not as strong as expected and, even in light of the wh-reconstruction debate in the late 1990s, many authors pointed out that this contrast would not come out as strongly as expected; see [10] (p. 250).

(24) Which witness’s attack on John<sub>1</sub> did he<sub>1</sub> try to get expunged t from the trial records?

(25) Which artist’s portrait of Nixon<sub>1</sub> do you think he<sub>1</sub> liked t best?

(26) Whose criticism of John<sub>1</sub> did he choose to ignore t?

The most illustrative empirical argument against the Lebeaux Effect comes from an empirical study in which four similar examples were considered, two involving affirmative structures and two involving embedded interrogatives (one including an NP in the argument part of the wh-restriction and the other involving an NP in the adjunct part of the wh-restriction). The embedding of the question was necessary for controlling the readings accessed by the subjects:

(27) A female staffer told everyone which of the announcements that Hillary Clinton was running for president she had actually authorised.

(28) A female staffer told everyone which of the announcements that Hillary Clinton had tried to take back she had actually authorised.

(29) A female staffer told everyone that she had actually authorised one of the announcements that Hillary Clinton was running for president.

(30) A female staffer told everyone she had actually authorised one of the announcements that Hillary Clinton had tried to take back.

The answers relevant for the experiment can be presented in the following manner [10] (p. 253):

(31) Empirical tests of the Lebeaux Effect

No Wh Arg	No Wh Adj	Wh Arg	Wh Adj
4.7%	2.7%	42.7%	56%

Where there is no wh-movement, subjects chose the answer violating Condition C at a rate of 4.7 and 2.7%, respectively. In the examples with wh-movement, the subjects

chose the Condition C-violating answers in nearly 50% of cases for both the argument- and adjunct-contained NP restrictions. If the Lebeaux Effect were genuine, a much lower percentage of the former and a much higher percentage of the latter should be expected. However, the results in (30) show that the Lebeaux Effect, on which so much theoretical literature has relied, does not have empirical confirmation. But the authors move further. The examples in (27–28) demonstrate wh-reconstruction/antireconstruction facts with the type of wh-constructions originally discussed by Lebeaux—that is, sizeable restrictions on wh-operators including clauses. Bruening and Al Khalaf also considered other types of frequently discussed constructions, involving PP restrictions postmodifying nouns. They used an analogous set-up of four closely corresponding examples and their results were very similar to the results of the first experiment: interpretations excluded by Condition C are marginal with nonmovement examples and account for 30% of the answers with both argument and adjunct PPs. So, again, the argument/adjunct status of the PP does not seem to make a difference. However, the difference that constantly shows up is between examples with no wh-movement and examples with wh-movement. The movement itself consistently ameliorates Condition C effects.

However, it would be spurious to expect that no effects of reconstruction with movement are present. The authors show that such effects do not show strongly only when the (wh-) fronted elements are DPs (with restrictions of differing sizes (CP, PP), but when the PP itself is fronted, it seems to reconstruct; see (32). Also, fronted AP predicates require reconstruction, as names embedded in them cannot be co-indexed with subject pronouns; see (33):

(32) \*Near Dan<sub>1</sub>, he<sub>1</sub> saw a snake t.

(33) ?\* How afraid of Margaret<sub>1</sub> do you think she<sub>1</sub> expects John to be t?

On the basis of their experiments, the authors formulated the following observation:

(34) Reconstruction for Binding Condition C: Where a phrase XP with head X occupies the head of an A-bar chain:

- a. if X is in category V, P, or A, X reconstructs along with the head Y of its complement YP;
- b. if X is in category N, only X reconstructs; none of its arguments or adjuncts do.

The postulate in (34) is supposed to capture the effect of embedding, generally perceived as facilitating antireconstruction (bleeding of Condition C). Any NP embedded in a postmodifier of the NP restriction, as well as any NP embedded in a postmodifier of the complement of the AP/PP restriction, is supposed to bleed Condition C. For instance, when the offending name is embedded further in the AP, the acceptability of the example increases dramatically; see (35):

(35) [How pleased with the pictures [Pollock<sub>1</sub> painted in his youth]] do you think he<sub>1</sub> really was t?

Clause (34b) means that ‘bare’ NP restrictions of wh-operators reconstruct, while whatever is further merged with them, either as argument or adjunct, does not:

(36) \*[which girl<sub>1</sub>] does she<sub>1</sub> claim t has seen the unicorn?

(37) [which portrait of the countess<sub>1</sub>] does she<sub>1</sub> consider t to be the most valuable?

In fact, they propose that dependents of the nominal head may have the semantics of either arguments or adjuncts, but, syntactically, they function as adjuncts. For instance, unlike verbal arguments, they are optional. Bruening and Al Khalaf referred to the findings of Grimshaw (1990) [30], where the mixed argument/adjunct properties of nominal dependents are discussed at length. In general, Grimshaw argues that, unlike verbs, nominals do not assign thematic roles. Only complex event nominals behave like verbs in the sense that they have argument structure and require that their arguments be projected in syntax in line with (2). However, even complex event nominals do not assign thematic roles and require assistance from prepositions to do so. Simple event nominals and result nominals are different from complex event nominals in the sense that they do not have an argument

structure and are semantically compatible with modifiers whose presence is not obligatory. Grimshaw notes that certain nouns may be ambiguous between the complex event and result readings, and the presence of the possessive subject somehow forces the complex event reading; see (38a,b). The clausal dependent of the nominal typically points to its result nominal status and it can be separated from it by the copula verb, which is taken to be a property of adjuncts (modifiers), such as (38c), rather than arguments, not only in [30] but also in Stowell (1981) [31] and Schutze (1995) [32], see (38d,e):

- (38) a. \*the instructor's deliberate examination.  
 b. The instructor's deliberate examination of the patient  
 c. the red car/the car is red  
 d. [the explanation [that he was temporarily insane]]  
 e. Paul's explanation was [that he was temporarily insane]

Significantly for the matter of reconstruction properties of nouns embedded in appositive clauses, [31] (p. 200) formulates the following view:

- (39) 'The derived nominals *guess*, *claim* and *explanation* do not refer to the action of guessing, claiming and explaining something, as is true for the verbs upon which they are based. A claim refers to the thing that is claimed, rather than to the act of claiming. The derived nominal heads actually refer to the same thing that their 'complements' do: the object argument of the verb. The relation between the derived nominal and its 'complement' is actually one of apposition, rather than theta role assignment.'

Against such a background of the debate on differences between verbal predicates and nominal heads in theta role assignment and argument licensing, Bruening and Al Khalaf conclude that nominals do not license arguments in syntax. The gist of their account and explanation for the findings of their experiments can be presented as three points:

- (40) a. Dependents of nominal heads (both CPs and PPs) function like syntactic adjuncts.  
 b. The copy mechanism involved in the derivation is constrained by economy in such a way that it will copy as little as possible for convergence (Minimal Copy). Minimal Copy retains the complements but leaves out adjuncts.  
 c. The derivation runs from top to bottom or left to right, so the 'pruned' copies find themselves at the bottom of the syntactic object.

The prevailing lack of reconstruction effects evident from the experimental part of the study is accounted for by the mechanism detailed in (34) and (40). For example, in the following case ([10] (p. 265)), Condition C is bled due to the application of Minimal Copy:

- (41) [CP [DP which corner [PP of John<sub>1</sub>'s room]]] was [TP he<sub>1</sub> sitting in {which corner}]]

The pruned copy of the wh-restriction does not contain the PP dependent (treated as an adjunct) that contains the offending name. Because the derivation is said to proceed from left to right, just like the order of parsing, the original wh-phrase is placed at the left periphery of the clause, and the (pruned) copy is placed inside the VP, in the c-command domain of the subject. Significantly, the combination of clauses (40a) and (40b) brings about reverse effects to Chomsky's Preference Principle in (3); the restriction of the wh-operator is minimised in the launch position of the movement chain (in terms of the mainstream bottom-to-top derivation) and is maximised in the position that the operator occupies in overt syntax.

Minimal Copy does not cause pruning of the copies of arguments/complements of non-NPs. Thus, AP contains them in full in the position c-commanded by the subject; hence the feeding of condition C in (33) above. However, as soon as the offending name is embedded further in an adjunct (a relative clause), as in (35), Minimal Copy sets in and ameliorates the expected Condition C effect.

Finally, Ref. [10] (pp. 268–269) addressed the question of why, if there is no argument/adjunct distinction with reconstruction, the issue of movement and Condition C reconstruction has dominated the research agenda for so long, with many authors treating the Lebeaux Effect as a fact and repeating it in their own intuitive judgements. They submit that this may be due to a strong pragmatic bias against coreference between two referential



DPs, which goes beyond sentence grammar and operates at the discourse level. As they show, coreference between the two names in the following example involving separate clauses is not acceptable:

(42) He<sub>1</sub> came in. John<sub>1</sub> sat down.

This ban on coreference can be lifted once the example is manipulated with and first a pronoun referring back to the name is introduced into the discourse and the name may be used again, but in a slightly different context (for instance, in a coordinate structure):

(43) Mary had been waiting for John<sub>1</sub> at the back of the room. Finally, he<sub>1</sub> came in. Then John<sub>1</sub> and Mary sat down, but not together.

Bruening and Al Khalaf provide for the construction of the syntactic object (through External and Internal Merge) in the top-to-bottom, left-to-right fashion, which is far from minimalist mainstream views. However, multiple copies of different sizes are still necessary for this system to operate. Thus, their proposal retains, rather than weakens, the need for creating movement chains including multiple copies.

Ref. [19] proposes a solution for the MD account that predicts antireconstruction with *wh*-movement and at the same time satisfies the structural requirement in (12). She reviews a number of options based on a parallel merge of some nodes in the nominal domain to both the selecting V inside its VP (to produce the effect of the copy at the bottom of the A-bar chain), and to further projections in the nominal domain that would eventually constitute the full *wh*-phrase. The *wh*-phrase, for a while built in a separate workspace, is ultimately linked to the CP area of the clause. Ultimately, Citko opts for the following structure:

(44) [which claim that Mary<sub>1</sub> made] did she<sub>1</sub> regret t?

(45) [<sub>VP</sub> regret [<sub>D</sub>0] [<sub>DP</sub> D<sub>0</sub> [<sub>NP</sub> [<sub>NP</sub> claim] [<sub>CP</sub> that Mary made]]]]

The part common to both phrase markers at this stage is the empty Determiner head <sub>D</sub>0 (marked in grey), merged in parallel with both V (*regret*) and its DP projection (while <sub>D</sub>0 is dominated by VP, DP is outside VP, in a separate workspace). The CP relative clause is adjoined to NP. Both workspaces teem with derivational activity and, at a later stage, the following objects are formed in them:

(46) a. [<sub>CP</sub> C [<sub>TP</sub> she [<sub>T'</sub> T [<sub>VP</sub> she [<sub>V'</sub> v [<sub>VP</sub> regret [<sub>D</sub>0]

b. [<sub>QP</sub> Q [<sub>DP</sub> which [<sub>D'</sub> D<sub>0</sub> [<sub>NP</sub> [<sub>NP</sub> claim] [<sub>CP</sub> that Mary made]]]]].

The object above VP projects to the full clause with the interrogative C at its head. The <sub>D</sub>0 projects further, with the interrogative determiner merged in at [spec, DP] and a separate Q head merged on top of the DP. The two objects are still separate (except for the link at <sub>D</sub>0) and become merged with QP, linked to CP at the final step of the derivation. Where does the antireconstruction effect come from? Ref. [19] (p. 26) proposes the following notion of derivational c-command:

(47) Derivational c-command:

a. X c-commands all and only the terms of the category Y with which X was concatenated by Merger or Move in the course of the derivation.

b. Term: L is a term of K if L = K, or L is a term of a category concatenated to form K (Epstein et al., 1998 [33] (pp. 61–62)).

On this definition, the pronominal subject (*she*) does not c-command *Mary* embedded within the relative clause because the relative clause is merged with the main spine of the projection only at the CP level, as part of QP. To all intents and purposes, this produces an MD equivalent to a late merger. Certainly, the CP tier of the structure is beyond the c-command domain of the subject. The key component of this account that leads to avoiding Condition C is the merger of the empty head <sub>D</sub>0, which projects further in a parallel workspace to be concatenated with CP above the position of the subject. The <sub>D</sub>0 is silent, so the entire QP can be pronounced as a single category at the head of the clause, with <sub>D</sub>0 satisfying the selection requirements of the verb. This account shows that, in fact, it is possible to have one's cake and eat it.

This account appears to be successful for the matter at hand but requires at least two caveats (and is subject to further comments in the section below). First, it makes the prediction that there should be no reconstruction effects for Condition C with nominal phrases at all; empty  $D^0$  is not accompanied by any NP restriction in its VP-internal position. Yet, as (36) shows, the NP restriction itself (stripped of any dependents) does produce Condition C effects stemming from reconstruction (taken to be the interpretation of the VP-internal copy). One wonders how this fact can be captured by the derivational mechanics proposed in [19]; as it stands, the silent Determiner account cannot predict the ungrammaticality of (36).

Second, this account, unlike an account based on multiple copies, cannot be extended to movement of other types of phrases. Ref. [10] observed that A-bar movement of APs and PPs shows effects of reconstruction; see (32–33). In the parlance of the MD architecture proposed in [19], this implies that these categories cannot be linked to some VP-internal position only through a category with a silent head that (for some derivational time) projects in a detached workspace. Probably in these cases, a more substantial part of the AP, PP, and VP is attached cyclically in the lower position.

The discussion above has shown that the foundations of the Lebeaux Effect have been shaken, if not undermined completely. However, wh-reconstruction is a complex phenomenon, and while the LE has been one of its pillars, there are other facts that require explanation, resting on the need for multiple copies.

#### 4. Challenges to the Minimal Copy Approach

This section presents four phenomena concerning connectivity effects that pose problems for the proposal that copies in the VP-internal positions should be maximally minimal: reconstruction required by Condition A, the correlation between D-linking and reconstruction, the correlation between antireconstruction and obviation effects, and the contrast between reconstruction with respect to the subjects versus reconstruction of the object.

##### 4.1. Reconstruction of Condition A Reconsidered

The first challenge comes from (11), repeated below for convenience:

(48) John<sub>1</sub> wonders [[which picture of himself<sub>1/2</sub>] Bill<sub>2</sub> took [~~which picture of himself<sub>1/2</sub>~~]]

My point of interest is the interpretation marked as 2, where *Bill* serves as the antecedent for *himself* and where the idiomatic interpretation of ‘take a picture’ is available. How can these interpretations be derived in the approach involving parallel merge and multidomination or Minimal Copy? If the derivation of (48) follows the same guidelines as the derivations in (41) or (46), these proposals predict that the subject of the embedded clause should c-command only the wh-operator and its NP restriction (*which picture*) or a silent Determiner:

(49) a. [<sub>TP</sub> Bill<sub>2</sub> took [~~which picture~~]]  
 b. [<sub>TP</sub> Bill<sub>2</sub> took [<sub>D<sup>0</sup></sub>]]

These representations do not include the lexical anaphor at the point in the derivation where it is c-commanded by its antecedent, so interpretation 2 is impossible to derive.

However, this is not an inescapable conclusion. Proponents of these analyses could claim that derivational mechanisms applied to cases of Condition A reconstruction and Condition C reconstruction should be distinct from each other. However, from the point of view of the satisfaction of Binding Conditions A and C, such derivational mechanisms should be radically distinct: while Condition A requires that the complement to the NP restriction (*of himself*) should be present at the derivational stage in shown in (49a), Condition C requires it to be absent. So, it appears that it would have to be a Minimal Copy proposal for the combination of wh-movement and Condition C cases and a ‘Maximal Copy’ approach for wh-movement and Condition A cases.

The Copy Theory of Movement, as proposed in [1], treats both types of constructions in an equivalent manner; both involve copies of the NP-restriction on the wh-operator that

need to be present in narrow syntax. Subsequently, the Preference Principle applies and feeds particular interpretations. The Preference Principle is far from perfect at accounting for connectivity phenomena in a precise manner (as the preceding sections show), but its use of multiple copies constitutes a common denominator for both (48) and (1). The novel proposals in [10,19] remove this common denominator.

#### 4.2. Connectivity Effects and D-Linking

Another problematic issue concerns only Condition C and the correlation between the semantic type of the *wh*-phrase and Condition C effects. Heycock (1995) [34] argues that *wh*-operators evoking specific or definite interpretations of their restrictions, typically *which*, are interpreted with their restrictions in the position of wide scope (out of the *vP* domain). Such *wh*-phrases are D(iscourse)-linked in the sense of Pesetsky (1987) [35].<sup>7</sup> The *wh*-operators evoking nonspecific interpretations of their restrictions, such as *how many* in the cardinal reading, are interpreted with the restriction taking narrow scope (*vP*-internal). Now, this distinction is strongly correlated with connectivity effects, specifically in constructions with verbs of creation:<sup>8</sup>

- (50) [Which allegations about John<sub>1</sub>]<sub>2</sub> do you think he<sub>1</sub> will deny t<sub>2</sub>?  
 (51) \*[How many stories about Diana<sub>1</sub>]<sub>2</sub> is she<sub>1</sub> likely to invent t<sub>2</sub>?  
 (52) \*[How many lies [aimed at exonerating Clifford<sub>1</sub>]]<sub>2</sub> is he<sub>1</sub> planning to come up with t<sub>2</sub>?

While an account of reconstruction based on Minimal Copy or parallel merge of a silent Determiner predicts antireconstruction effects for (50), where the *wh*-phrase is D-linked, takes wide scope, and is interpreted with its restriction outside *vP*, it does not predict the unacceptability of (51–52). For these examples to be struck out by Condition C, the copy in the *vP*-internal position, *c*-commanded by the pronominal subject, must be bigger than just the operator and the NP-restriction (*how many stories/how many lies*). In contrast, a syntactic representation of movement involving multiple full-size copies can serve as input to interpretive mechanisms that derive the differences between (50) and (51–52).

#### 4.3. Antireconstruction, Distance, and Obviation Effects

The discussion of reconstruction has shown that antireconstruction effects often appear in structures showing obviation, where the subject of the embedded clause bears a different index from the pronominal subject of the main clause. For instance, ref. [25] reports the following facts for Polish:

- (53) \**on*<sub>1</sub> odkurzył [zdjęcia Piotra]<sub>1</sub>  
 he<sub>NOM</sub> dusted off pictures<sub>ACC</sub> Piotr<sub>GEN</sub>  
 intended: ‘He dusted off Piotr’s pictures.’  
 (54) \**on*<sub>1</sub> chce [żeby Maria<sub>2</sub> odkurzyła [zdjęcia Piotra]<sub>1</sub>]  
 he<sub>NOM</sub> wants so-that Maria<sub>NOM</sub> dusted off<sub>PRT</sub>  
 pictures<sub>ACC</sub> Piotr<sub>GEN</sub> intended ‘He wants Maria to dust off Piotr’s pictures.’

A pronominal subject coindexed with a nominal possessor placed in its *c*-command domain triggers the Condition C effect irrespective of the distance between them; the coindexed pronoun may be either a local subject, (53), or the subject of the superordinate clause, (54). Yet, corresponding examples involving *wh*-movement of the object do not receive equal acceptability judgements:

- (55) \*[które zdjęcia Piotra]<sub>1</sub> *on*<sub>1</sub> odkurzył t?  
 which pictures<sub>ACC</sub> Piotr<sub>GEN</sub> he<sub>NOM</sub> dusted off  
 intended: ‘which pictures of Piotr did he dust off?’  
 (56) ?[które zdjęcia Piotra]<sub>1</sub> *on*<sub>1</sub> chce [żeby Maria<sub>2</sub> odkurzyła t]?  
 which pictures<sub>ACC</sub> Piotr<sub>GEN</sub> he<sub>NOM</sub> wants so-that Maria<sub>NOM</sub> dusted off<sub>PRT</sub>? ‘Which pictures of Piotr does he want Maria to dust off?’

A plain Condition C effect shows in (55), assuming the copy of the NP-restriction on the *wh*-operator is interpreted in the position marked with *t*, in line with the Projection

Principle. This effect is considerably ameliorated in (56), where the pronominal subject coindexed with name embedded in the NP-restriction is separated from the bottom copy of this restriction by another subject (*Maria*).

The effect of the distance between the name embedded in the bottom copy and the impact of obviation on the antireconstruction effects is captured neither by [10] nor by [19]. These sources do not take into account the distance of the wh-movement undergoing reconstruction. The operation of Minimal Copy in (36) and (37) or linking just a bare  $D_0$  in the VP-internal position in (44–45) render it impossible to capture the obviation effects, for the simple reason that the content of the material at the bottom of the wh-dependency is radically impoverished. Their prediction is that (55) and (56) should receive equal treatment in syntax. However, it must be admitted that a standard account of reconstruction based on the CTM should not do much better, as it predicts (56) to be as incorrect as (55), with a name in the copy c-commanded by the pronoun. I return to this issue in the section below.

#### 4.4. Antireconstruction Effects and the Subject/Object Asymmetry

As shown in ref. [25], an interesting subject/object asymmetry shows with wh-reconstruction phenomena in Polish:

- (57) ??[które listy Piotra<sub>2</sub> z Paryża] on<sub>2</sub> oddał Marii<sub>1</sub> po roku?  
 which letters Piotr<sub>GEN</sub> from Paris he<sub>NOM</sub> returned Maria<sub>AT</sub> after a year  
 Intended: ‘Which of Piotr’s letters from Paris did he return to Maria after a year?’
- (58) [które listy Piotra<sub>2</sub> z Paryża] Maria<sub>1</sub> oddała mu<sub>2</sub> po roku?  
 which letters Piotr<sub>GEN</sub> from Paris Maria<sub>NOM</sub> returned him<sub>DAT</sub> after a year  
 ‘Which of Piotr’s letters from Paris did Maria return to him after a year?’

Although the pronoun in the subject position can force what looks like Condition C reconstruction effects under favourable circumstances, as shown in (57) above, there is little evidence for reconstruction of the wh-phrase to a position below one of the objects in the double object construction. However, in affirmative clauses the first object c-commands the second one and triggers ungrammaticality (Condition C):

- (59) \*Maria<sub>1</sub> oddała mu<sub>2</sub> po roku [tamte listy Piotra<sub>2</sub> z Paryża].  
 Maria<sub>NOM</sub> returned him<sub>DAT</sub> after year those letters Piotr<sub>GEN</sub> from Paris

As soon as the object is wh-moved, this effect disappears entirely; see (58). Although the Minimal Copy approach may have little to say about the contrast in (57–58), it appears that the standard approach to reconstruction based on the CTM should be equally powerless. As (59) shows, the copy of the direct object in the VP-internal position is c-commanded by the indirect object, so a name embedded in the NP restriction of the operator c-commanded by a coindexed pronoun is expected to cause a Condition C effect in (58), contrary to fact.

However, an account of reconstruction based on the CTM can deal with data in (57) and (58), provided one adopts the hypothesis of Vehicle Change of [11]. Ref. [11] develops an analysis of reconstruction in wh-movement, which is inspired by an account of ellipsis presented in [12]. These authors propose a mechanism of Vehicle Change (VC) through which a name (DP<sub>i</sub>/NP<sub>i</sub>) embedded in the ellipsis site may be represented as its pronominal correlate (pron<sub>i</sub>). They support this premise with the following examples:

- (60) \*Lara loves Sol<sub>1</sub> and he<sub>1</sub> thinks that Sally loves Sol<sub>1</sub> too.  
 (61) a. Lara loves Sol<sub>1</sub> and he<sub>1</sub> thinks that Sally does [e] too.  
 b. Lara loves Sol<sub>1</sub> and he<sub>1</sub> thinks that Sally does {love him<sub>1</sub>} too.

Clearly, a local Condition B seems to be involved in (61), rather than the unconstrained Condition C, as in the unelided (60). Otherwise, both (60) and (61) should be ungrammatical. Ref. [11] applied VC to copies in the context of wh-movement. In the spirit of the day, he assumed the copy theory of movement and turned the CTM into a pivotal component of his account. He assumed that names in the copies left by movement can be replaced with their pronominal correlates (the b-examples represent intended copies at LF):<sup>9</sup>

- (62) a. [that John<sub>1</sub> was under surveillance] he<sub>1</sub> never realised t.  
 b. [that John<sub>1</sub> was under surveillance] he<sub>1</sub> never realised {that he<sub>1</sub> was under surveillance}  
 (63) a. Milt<sub>2</sub>, [Bill<sub>1</sub>'s pictures of whom<sub>2</sub>] he<sub>1</sub> was ashamed of  
 b. Milt<sub>2</sub>, [Bill<sub>1</sub>'s pictures of whom<sub>2</sub>] he<sub>1</sub> was ashamed of {his<sub>1</sub> pictures of whom<sub>2</sub>}

Safir' VC does not apply to every type of nominal phrase; it is constrained in the sense that Quantifier Phrases do not undergo VC, hence the contrast between (63) and (64):

- (64) a. \*Milt<sub>2</sub>, [everyone<sub>1</sub>'s pictures of whom<sub>2</sub>] he<sub>1</sub> was ashamed of  
 b. \*Milt<sub>2</sub>, [everyone<sub>1</sub>'s pictures of whom<sub>2</sub>] he<sub>1</sub> was ashamed of {everyone<sub>1</sub>'s pictures of whom<sub>2</sub>}

An account of reconstruction including vehicle change makes a number of predictions; for instance, it predicts that the distance between the pronoun and the offending name (calculated through clausal embedding and obviation effects) affects the acceptability of such constructions. The role of the distance is understandable if the pronominal correlate within the copy is involved, rather than the name, as Binding Condition B has a local domain of application, while Binding Condition C does not. An account including VC explains the data in (56) above when the bottom copy includes the possessive pronoun:

- (65) [które zdjęcia Piotra<sub>1</sub>] on<sub>1</sub> chce [żeby Maria<sub>2</sub> odkurzyła [x jego<sub>1</sub> zdjęcia]]  
 which pictures<sub>ACC</sub> Piotr<sub>GEN</sub> he<sub>NOM</sub> wants so-that Maria<sub>NOM</sub> dusted off<sub>PRT</sub> [x his pictures<sub>ACC</sub>]  
 (66) On<sub>1</sub> chce [żeby Maria<sub>2</sub> odkurzyła [jego<sub>1</sub> zdjęcia]]  
 he<sub>NOM</sub> wants so-that Maria<sub>NOM</sub> dusted off<sub>PRT</sub> [his pictures<sub>ACC</sub>]  
 'He wants Maria to dust off his pictures.'

If the copy at the bottom of the wh-chain includes the pronominal correlate for *Piotr* (*jego* 'his'), then its grammatical status is as good as the status of the affirmative (66), where the possessive pronoun is coindexed with the main clause pronominal subject.

A brief digression on Polish morphosyntax is necessary before I go any further: local nominative subjects license reflexive possessives, while nonlocal subjects and objects license pronominal possessives.<sup>10</sup> With this digression in mind, the subject/object asymmetry in reconstruction can be addressed by adopting the VC approach. From this perspective, the copy left by movement includes a pronominal correlate to the name (*Piotr* = him) and its nonmovement equivalent is (68) rather than (59):

- (67) [które listy Piotra<sub>2</sub> z Paryża] Maria<sub>1</sub> oddała mu<sub>2</sub> po roku [x jego<sub>2</sub> listy z Paryża]?  
 which letters Piotr<sub>GEN</sub> from Paris Maria<sub>NOM</sub> returned him<sub>DAT</sub> after a year [x his letters from Paris]  
 (68) Maria<sub>1</sub> oddała mu<sub>2</sub> po roku [jego<sub>2</sub> listy z Paryża].  
 Maria<sub>NOM</sub> returned him<sub>DAT</sub> after year those letters Piotr<sub>GEN</sub> from Paris

Now, it must be said again that the perfect acceptability of wh-constructions with double objects fully correlates with Binding Theory facts in their nonmovement equivalents. Although Polish (nominative) subjects act as strongly preferred antecedents to reflexive pronouns and reflexive possessives, Polish objects do not do so. Significantly, an object in Polish acts as an antecedent for a co-indexed pronominal possessive in the other object, while the local subject in Polish licenses a coindexed reflexive possessive *swój* 'self's'; see note 10:

- (69) \*on<sub>1</sub> odkurzył [zdjęcia Piotra<sub>1</sub>]  
 he<sub>NOM</sub> dusted off pictures<sub>ACC</sub> Piotr<sub>GEN</sub> intended: 'He dusted off Piotr's picture.'  
 (70) \*on<sub>1</sub> odkurzył [jego<sub>1</sub> zdjęcia]  
 he<sub>NOM</sub> dusted off [<sup>ok</sup>self's/\*his pictures<sub>ACC</sub>] intended: 'He dusted off his picture.'  
 (71) \*[które zdjęcia Piotra<sub>1</sub>] on<sub>1</sub> odkurzył t?  
 which pictures<sub>ACC</sub> Piotr<sub>GEN</sub> he<sub>NOM</sub> dusted off  
 (72) \*[które zdjęcia Piotra<sub>1</sub>] on<sub>1</sub> odkurzył [x jego<sub>1</sub> zdjęcia]  
 which pictures<sub>ACC</sub> Piotr<sub>GEN</sub> he<sub>NOM</sub> dusted off [x his pictures]



Thus, vehicle change is not sufficient to satisfy Binding Theory in this case; although it ameliorates a Condition C effect, it leads to a violation of Condition B: a possessive pronoun cannot be coindexed with a local subject. However, VC returns a perfect result when a possessive pronominal is co-indexed with a c-commanding object.

A potential counterargument can be raised against the analysis above on the grounds of lax word order discipline between the objects in Polish; with most verbal ditransitive predicates, they can appear in either order. If so, the object undergoing wh-movement (wh-o<sub>1</sub>) could be moving from a position above the other object (NP<sub>O2</sub>) and thus be out of the scope of its c-command domain altogether (assuming, for instance, that the lowest leg of movement constitutes an A-chain, so wh-o<sub>1</sub> is invisible to NP<sub>O2</sub>). It would then only reconstruct to the top position in its A-chain:

(73) [CP wh-o<sub>1</sub> [TP NP<sub>s</sub> [VP wh-o<sub>1</sub> [V' NPs [V' v [VP NP<sub>O2</sub> [V' V wh-o<sub>1</sub>]]]]]]]]

However, the examples above contain a safeguard against such a possibility. In (67–68), the indirect object is a clitic/weak pronoun that must be adjacent to the verb in the surface representation in Polish, so it must serve as the first of the two objects in the linear order with, possibly, the one c-commanding the other.

Furthermore, ref. [11] claims that VC does not apply to QPs. Now, it should be possible to construct an example where VC is arrested and an effect of Condition C caused by the c-commanding is evoked. The following set of data seems to confirm this proposal. (74) shows a Strong Crossover effect (Condition C) with a relevant co-indexation:

(74) Maria<sub>1</sub> pokazała mu<sub>\*2/3</sub> wczoraj [pięć zdjęć każdego profesora<sub>2</sub>]  
 Maria<sub>NOM</sub> showed him<sub>DAT</sub> yesterday five pictures every professor<sub>GEN</sub>  
 'Maria showed him five pictures of every professor yesterday.'

The ungrammaticality persists with the relevant co-indexation when the QP is embedded in a wh-phrase:

(75) [ile zdjęć każdego profesora<sub>2</sub>] Maria<sub>1</sub> pokazała mu<sub>\*2/3</sub> wczoraj t?  
 how many pictures<sub>ACC</sub> every professor<sub>GEN</sub> Maria<sub>NOM</sub> showed him<sub>DAT</sub> yesterday  
 'How many pictures of every professor did Maria show him yesterday?'  
 (76) [ile zdjęć każdego profesora<sub>2</sub>] Maria<sub>1</sub> pokazała mu<sub>\*2/3</sub> wczoraj [ile zdjęć każdego profesora<sub>2</sub>]?  
 how many pictures<sub>ACC</sub> every professor<sub>GEN</sub> Maria<sub>NOM</sub> showed him<sub>DAT</sub> yesterday [x pictures<sub>ACC</sub> every professor<sub>GEN</sub>]

The distributive reading of *mu* 'him' is unavailable in this example. Its unavailability can be credited to the same Crossover effect as in (74), because the QP is commanded by the pronoun coindexed with its restriction (within the copy) and the QP does not undergo vehicle change.

A lack of reconstruction effects with double object structures appears to evade the explanation in [10] based on (41) and the explanation that ref. [19] devises for the LE in (46) above, if my reading of these proposals is adequate. In both cases, the content of the VP-internal category is too limited to accommodate the facts above. Both proposals predict that there should be no distinction between reconstruction of the NP-restriction of the wh-phrase vs. the subject pronoun and vs. the object pronoun. However, the distinction is genuine, with some reconstruction effects vs. the subject pronoun but no reconstruction effects vs. the object pronoun. Take the MD-compatible solution proposed in (46). Crucially, the articulated QP is attached at the CP level, thus remaining outside the c-command domain of the subject pronoun in [spec, TP]. If an identical derivation were to be applied to ex. (57), with the possessive present only within the semi-attached QP, later to be attached to the CP area, the possessive should remain outside of the c-command domain of both the object and the subject, but this does not seem to be reflected in the speakers' judgements.

One more point: Bruening and Al Khalaf credited connectivity effects to pragmatic factors such as reluctance to use two co-referential nominal phrases a short distance from each other within the same discourse fragment, irrespective of such sentence grammar notions as c-command or Condition C. However, the phenomena of obviation and the

subject/object asymmetry mentioned above in Sections 4.3 and 4.4 belong to a set of well-defined and robust factors in syntactic studies.

## 5. Conclusions and Open Questions

I hope to have highlighted in the preceding discussion that reconstruction facts evade simple explanations. Lebeaux's and Chomsky's perspective, expressed through the Preference Principle in (1), was helpful with Condition A effects and certain aspects of Condition C effects. Connectivity effects are the expected norm and any deviations from them in more complex cases require additional assumptions ([11,14,34], Stepanov 2001 [38]). One such additional device applied to copies left by movement and quite helpful in accounting for a considerable set of data is the Vehicle Change of [11]. However, in spite of being fairly empirically adequate, it appears to be at loggerheads with at least two pivotal theoretical concepts: the Inclusiveness Condition<sup>11</sup> and Minimal Tampering<sup>12</sup>. I leave the matter of this inconsistency to further research.

Significantly, all the modifications applied to the approach based on the Preference Principle recognised the need for multiple copies and the CTM. Operations on copies, such as late merge or vehicle change, help explain more intricate properties of the interaction between BT and movement. However, a single proposal cannot account for all aspects of the reconstruction phenomena.

Renewed interest in reconstruction, partly stoked by the rivalry between CTM and MD views of movement, led to the formulation of novel proposals, such as the Minimal Copy account in [10]. This proposal exposes the inadequacies of its predecessors and has a considerable advantage over them: unlike the mostly intuitive proposals from the 1990s, it relies on firm empirical findings. It leads one to expect antireconstruction with most cases of movement affecting *wh*-NPs. The NP restriction placed in the launch position for movement should be reduced to a minimum and a distinction between complements and adjuncts is thus not expected either, with NPs embedded in both freely bleeding Condition C.

However, upon closer scrutiny, it appears that the Minimal Copy account successfully deals with a substantial section of data but leaves certain other problems of reconstruction with *wh*-movement unresolved. For instance, it calls for a distinct treatment of such phenomena as (a) Condition A effects in *wh*-constructions, (b) a strong tendency for reconstruction and Condition C effects with non-D-linked *wh*-phrases, (c) the correlation between reconstruction and obviation and the length of *wh*-movement chains, and (d) the subject/object asymmetry with Condition C violations. The Minimal Copy approach is a very promising step, but a comprehensive theory of reconstruction with *wh*-movement is yet to come.

**Funding:** This research received no external funding.

**Institutional Review Board Statement:** Not applicable.

**Informed Consent Statement:** Not applicable.

**Data Availability Statement:** Not applicable.

**Conflicts of Interest:** The author declares no conflict of interest.

## Notes

<sup>1</sup> The Trace Conversion proposed in [3,4] has two components; first, Variable Insertion introduces a predicate of type  $\langle e,t \rangle$  ( $\lambda y. [y = x]$ ) into a lower copy. The inserted predicate and the restrictor of the determiner, which is also of type  $\langle e,t \rangle$ , e.g., (*book*), are combined by Predicate Modification, which conjoins two predicates of type  $\langle e,t \rangle$  (Heim and Kratzer 1998) [15]. Thus, Trace Conversion establishes a variable-binding dependency between a lower copy and the  $\lambda$ -operator introduced by movement of the QP. Second, Determiner Replacement converts the lower copy into a definite description of type  $\langle e \rangle$ ; the determiner *every* is replaced by the determiner *the*:

- (i). [John read every book] > QR
- (ii). [[every book]  $\lambda x$ . [John read [every book]]] > Variable Insertion

- (iii). [[every book]  $\lambda x$ . [John read [every book  $x$ ]]] > Determiner Replacement
- (iv). [[every book]  $\lambda x$ . [John read [the book  $x$ ]]]

2 As ref. [14] observed, not every instance of A'-movement of Det without its NP restriction is bound to produce illicit results. When the NP-restriction is placed at the head of a raising relative clause, it has its case valued in that clause:

- (i). [which corner of John's<sub>1</sub> room [that Mary<sub>2</sub> repainted  $t'$ ]] was he<sub>1</sub> sitting in  $t'$
- (ii). [which<sub>+case</sub> {corner<sub>+case</sub>' of John's<sub>1</sub> room [that Mary<sub>2</sub> repainted  $t'$ ]} was he<sub>1</sub> sitting in [which<sub>+case</sub>]

The derivation of (i) is partly shown in (ii). Condition (4b) is satisfied in separate locations for Det and its NP restriction. Det (which<sub>+case</sub>) receives case from preposition *in* in the main clause, while the NP restriction (corner<sub>+case</sub>) receives case from the verb *repainted* in the relative clause (the relative clause is enveloped in curly brackets in (ii)). The determiner and the NP restriction, with the relative clause in tow, are then late merged following the movement of *which* to the CP area in the main clause.

3 Ref. [17] observes that, whenever overt wh-movement fails for any reason in English or Slavic languages, the wh-phrase typically remains in situ in the VP-internal position, rather than being lexicalised in the highest intermediate position—a position minimally distant from the target, which would be a reasonable expectation in a theory including multiple copies and intermediate steps.

4 Ref. [21] also demonstrates how the system of wholesale late merger of [14] leads to illicit overgeneration, where a NP restriction can be late merged to a Det in coordinate structures.

5 Ref. [21], (p. 423) alludes to a different type of operation: Neglect (Sportiche 2016) [24], which can distinguish between arguments and adjuncts by 'neglecting to fully spell out the content of a trace'.

6 Ref. [25] makes a similar observation for Polish. This judgement appears to be confirmed in [19].

7 Ref. [35] observes a difference between discourse-linked (D-linked) wh-phrases and non-D-linked wh-phrases. The former have their range of answers limited by a contextually defined set, so their expected answers are backgrounded and definite. D-linked wh-phrases produce minimal deficiency when crossing weak islands.

8 Ref. [16] used the examples in (50–52) to point out that the LE is not the only factor relevant to reconstruction.

9 Originally, ref. [12] allowed for vehicle change to substitute both pronouns and reflexive pronouns for names in the context of ellipsis. Ref. [11] limited vehicle change in copies left by movement to the replacement of names with pronouns.

10 Local subjects in Polish license reflexive possessives; while objects license pronominal possessives, reflexive possessives are subject-oriented (Willim 1989 [36], Reinders-Machowska 1991 [37]):

- (i). Piotr<sub>1</sub> spotkał swojego<sub>1</sub>/\*jego<sub>1</sub> brata Piotr<sub>NOM</sub> met self's/\*his brother<sub>ACC</sub> 'Piotr met his brother.'
- (ii). Piotr<sub>1</sub> pokazał Tomkowi<sub>2</sub> swojego<sub>1</sub>/\*jego<sub>1</sub>/\*swojego<sub>2</sub>/jego<sub>2</sub> brata Piotr<sub>1,NOM</sub> showed Tom<sub>2,DAT</sub> self's<sub>1</sub>/\*his<sub>1</sub>/\*self's<sub>2</sub>/his<sub>2</sub> brother<sub>ACC</sub> 'Piotr showed Tom his brother.'

11 Ref. [1], (p. 228): A 'perfect' language should meet the condition of inclusiveness: any structure formed by the computation (in particular,  $\pi$  and  $\lambda$ ) is constituted of elements already present in the lexical items selected for N(umeration); no new objects are added in the course of computation apart from rearrangements of lexical properties (in particular, no indices, bar levels in the sense of X-bar theory, etc.).

12 Minimal Tampering precludes operations altering the structure incrementally formed by earlier steps in the derivation ([22,23,38]):

- (i). Given a choice of operations applying to a syntactic object labelled  $\alpha$ , the computation must select one that does not change the set of c-command relations of that object. VC leads to replacement of a name in the copy with its pronominal correlate, which does not change c-command relations as such, but changes the consequences of such relations.

## References

1. Chomsky, N. *The Minimalist Program*; MIT Press: Cambridge, MA, USA, 1995.
2. Lasnik, H. *Minimalist Analysis*; Blackwell: Oxford, UK, 1999.
3. Fox, D. Reconstruction, binding theory and the interpretation of chains. *Linguist. Inq.* **1999**, *30*, 157–196. [[CrossRef](#)]
4. Fox, D. Antecedent Contained Deletion and the Copy Theory of Movement. *Linguist. Inq.* **2002**, *33*, 63–96. [[CrossRef](#)]
5. Hornstein, N. *Move! A Minimalist Theory of Construal*; Blackwell: Oxford, UK, 2001.
6. Nunes, J. *Linearisation of Chains and Sideward Movement*; MIT Press: Cambridge, MA, USA, 2004.
7. Bošković, Ž. On the locality and motivation of Move and Agree: An even more minimal theory. *Linguist. Inq.* **2007**, *38*, 589–644. [[CrossRef](#)]
8. Lebeaux, D. *Language Acquisition and the Form of Grammar*. Doctoral Dissertation, University of Massachusetts, Amherst, MA, USA, 1988.
9. Lebeaux, D. Relative clauses, licensing and the nature of the derivation. In *Perspectives on Phrase Structure: Heads and Licensing*; Rothstein, S., Ed.; Academic Press: San Diego, CA, USA, 1991; pp. 209–239.
10. Bruening, B.; Al Khalaf, E. No argument-adjunct asymmetry in reconstruction for Binding Condition C. *J. Linguist.* **2019**, *55*, 247–276. [[CrossRef](#)]
11. Safir, K. Vehicle change and reconstruction in A-bar chains. *Linguist. Inq.* **1999**, *30*, 587–620. [[CrossRef](#)]
12. Fiengo, R.; May, R. *Indices and Identity*; MIT Press: Cambridge, MA, USA, 1994.

13. Chomsky, N. *Lectures on Government and Binding*; Foris: Dordrecht, The Netherlands, 1981.
14. Takahashi, S.; Hulsey, S. Wholesale late merger: Beyond the A/A' distinction. *Linguist. Inq.* **2009**, *40*, 387–426. [[CrossRef](#)]
15. Heim, I.; Kratzer, A. *Semantics in Generative Grammar*; Blackwell: Oxford, UK, 1998.
16. Gärtner, H. *Generalised Transformations and Beyond: Reflections on Minimalist Syntax*; Akademie Verlag: Berlin, Germany, 2002.
17. Franks, S. *Syntax and Spell-Out in Slavic*; Slavica: Bloomington, IN, USA, 2017.
18. Citko, B.; Gračanin-Yuksek, M. *Merge: Binariness in (Multidominant) Syntax*; MIT Press: Cambridge, MA, USA, 2021.
19. Citko, B. How to reconcile a Multidominant Theory of Movement with Late Merge, with a view from Polish. In Proceedings of the Formal Approaches to Slavic Linguistics 2021 Conference, Virtual Conference, 13–16 May 2021.
20. Larson, B. The representation of syntactic action at a distance: Multidominance vs. the copy theory. *Glossa* **2016**, *1*, 1–18. [[CrossRef](#)]
21. Sportiche, D. Sombre prospects for Late Merger. *Linguist. Inq.* **2019**, *50*, 416–424. [[CrossRef](#)]
22. Chomsky, N. Minimalist inquiries. In *Step by Step: Essays on Minimalist Syntax in Honor of Howard Lasnik*; Martin, R., Michaels, D., Uriagereka, J., Keyser, S.J., Eds.; MIT Press: Cambridge, MA, USA, 2000; pp. 89–156.
23. Chomsky, N. Derivation by phase. In *Ken Hale: A Life in Language*; Kenstowicz, M., Ed.; The MIT Press: Cambridge, MA, USA, 2001; pp. 1–52.
24. Sportiche, D. *Neglect. Ms.*; UCLA: Los Angeles, CA, USA, 2016.
25. Witkoś, J. *Movement and Reconstruction: Questions and Principle C Effects in English and Polish*; Peter Lang: Frankfurt/Main, Germany, 2003.
26. Chomsky, N. *Barriers*; MIT Press: Cambridge, MA, USA, 1986.
27. Aoun, J.; Hornstein, N.; Lightfoot, D.; Weinberg, A. Two types of locality. *Linguist. Inq.* **1987**, *18*, 537–577.
28. Rizzi, L. *Relativised Minimality*; MIT Press: Cambridge, MA, USA, 1990.
29. Pesetsky, D.; Torrego, E. T-to-C movement: Causes and consequences. In *Ken Hale, a Life in Language*; Kenstowicz, M., Ed.; The MIT Press: Cambridge, MA, USA, 2001; pp. 355–426.
30. Grimshaw, J. *Argument Structure*; MIT Press: Cambridge, MA, USA, 1990.
31. Stowell, T. The Origins of Phrase Structure. Doctoral Dissertation, Massachusetts Institute of Technology, Cambridge, MA, USA, 1981.
32. Schutze, C. PP attachment and argumenthood. *MIT Work. Pap. Linguist.* **1995**, *26*, 95–152.
33. Epstein, D.S.; Groat, E.; Kawashima, R.; Kitahara, H. *A Derivational Approach to Syntactic Relations*; Oxford University Press: Oxford, UK, 1998.
34. Heycock, C. Asymmetries in reconstruction. *Linguist. Inq.* **1995**, *26*, 547–570.
35. Pesetsky, D. Wh in situ: Movement and unselective binding. In *The Representation of (In)definiteness*; Reuland, E., Meulen, A., Eds.; MIT Press: Cambridge, MA, USA, 1987; pp. 98–129.
36. Willim, E. *On Word-Order: A Government-Binding Study of English and Polish*; Wydawnictwo Uniwersytetu Jagiellońskiego: Kraków, Poland, 1989.
37. Reinders-Machowska, E. Binding in Polish. In *Long-Distance Anaphora*; Koster, J., Reuland, E., Eds.; Cambridge University Press: Cambridge, MA, USA, 1991; pp. 137–150.
38. Stepanov, A. Late adjunction and minimalist phrase structure. *Syntax* **2001**, *4*, 94–125. [[CrossRef](#)]