An Anti-Locality Constraint on Specifiers

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1. Overview

- We provide empirical evidence for the generalization in (1):

(1) **Anti-Locality Constraint on Specifiers:**
The Spec of a head \( H \) cannot move to a Spec of \( H \) or adjunct to HP

- The evidence comes from nominal phrasal comparatives (e.g., *He visited more places than her*).
  
  - We present a theory of such comparatives that posits **degree wh-movement to the edge of vP** in a small-clause complement to than (Pancheva 2009), as illustrated in (2).

(2) *He visited more places than* \[ \text{PRED} \text{She [vP wh-many places [vP she visit wh-many places.]]} \]

  - The theory, in conjunction with the anti-locality generalization in (1), predicts that when the wh-phrase is a vP subject, the phrasal comparative will **not be fully acceptable**, see (3). **Full extraction** is precluded by anti-locality (3a), and **sub-extraction** results in a subject-island violation (3b).

(3) More people visited Paris than London

  a. * ... \[ \text{PRED} \text{London [vP wh-many people wh-many people visit London]]} \text{ ANTI-LOCALITY} \]

  b. \( ^{m} \ast * ... \[ \text{PRED} \text{London [vP wh-many wh-many people visit London]]} \text{ SUBJECT ISLAND} \]

- We present the results of 4 acceptability-judgment experiments in Polish, which confirm the predictions – phrasal comparatives as in (3) result in gradient unacceptability \( (^{m} \ast *) \) – and thus provide support for the small clause theory and the anti-locality constraint on specifiers.

- Incidentally, our findings also shed light on the status of subject islands, which have been the topic of some recent discussion: **vP subjects are islands**, though **not categorical** ones.

- Further consequences for anti-locality:

  - Our theory of phrasal comparatives specifically posits that the wh-movement is **not feature-driven**; therefore, the anti-locality constraint on specifiers **cannot be due to a restriction on movement in the absence of feature-checking**.

  - Rather, the anti-locality constraint must be derived **configurationally**.

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**General conclusions:**

*MV (internal Merge) is not unrestricted. Anti-Locality, at least of the type in (1), constrains it.*
2. **Anti-Locality of Movement & Specifiers**

2.1 **How local is too local?**

- An anti-locality constraint on movement has been defined across projections, e.g., within “prolific domains” (= extended VP, TP, CP) (Grohmann 2000), or within a sequence of two projections in the absence of a full phrasal boundary (e.g., adjunct of NP – Spec, DP) (Bošković 2005).

- **Within a single projection**, anti-locality has been typically discussed w.r.t. complements (see (4)) as in the particular case of complements to phase heads (Abels 2003), or more generally for any head (Pesetsky and Torrego 2001).

(4) **Anti-Localiry Constraint on Compléments**

The Complement of a head H cannot move to a Spec of H

![Diagram](#)

- Here we focus on movement of specifiers, as in (1)/(5) – which, as far as we know, has been discussed only w.r.t. subject movement from Spec, IP to an adjunct of IP.

(5)

![Diagram](#)

2.2 **Some previous appeals to anti-locality w.r.t. specifiers**

- An observation along the lines of (5) goes back to at least Lasnik and Saito (1992: 110-111, ex. 19, 21, 23), who suggest that (vacuous) subject topicalization from Spec, IP to an adjunct of IP is not available (see (6)). This is also the position of Saito and Murasugi (1999: 182).

(6)  

a. John thinks that $[[_{IP} \text{ himself,}_{IP} \text{ Mary likes } t_i]]$ topicalization allows anaphor binding

b. * John thinks that $[[_{IP} \text{ himself,}_{IP} t_i \text{ likes Mary}]]$ topicalization is not available

- Bošković (1997: 26, ex. 33) rules out A’-movement from Spec, IP to an adjunct of IP, as in (7a).

(7)  

a. * the man $[[_{IP} \text{ OP,}_{IP} t_i \text{ likes Mary}]]$

b. the man $[[_{IP} \text{ OP,}_{IP} \text{ Mary likes } t_i]]$

- We don’t necessarily agree with the above evidence in favor of anti-locality of subject movement. Nevertheless, we argue that **anti-locality constrains movement from specifier positions.**
### 2.3 Deriving the Anti-Localiry Constraint on Specifiers

- In sections 3 & 4 we offer **empirical evidence** in favor of precluding movement as in (1)/(5) – at least as far as **subjects in Spec, vP** are concerned. Let us try to defend the general case in (1)/(5), rather than a narrower constraint about Spec, vP.

- Assuming that an anti-locality constraint as in (1)/(5) is needed, it is preferable to derive it from other grammatical principles, rather than state it as an independent constraint. One obvious way is to implicate **failure of feature-checking**; another is to appeal to **structure-building** (see also discussion in Gallego 2010)

- If movement is triggered only for feature-checking (e.g., Chomsky 1995: 400), the constraint in (1)/(5) would follow. Clearly, any feature on XP that is not already checked by H, will not be checked after movement of XP as in (1)/(5). This is essentially the reasoning in Pesetsky and Torrego (2001), Abels (2003).

- The phenomenon that we examine, however, involves movement that **plays a semantic role but does not check features**. Thus, the above explanation for (1)/(5) is not available.

- If movement is freed from the requirement that it be accompanied by feature-checking (e.g., Chomsky 2008), then (1)/(5) has to be derived in structural terms. A **Bare-Phrase-Structure** (BPS) approach (Chomsky 1995) – in which projections are relational properties of categories – allows us to do so, for movement from Spec, HP to both **Spec, HP** and to **adjunct of HP**:
  - In set-theoretic terms, movement of an element X can be defined as the ordered set in (8), where B and A are X’s sisters before and after movement.

\[(8) \quad \langle X, A \rangle, \langle X, B \rangle \]

- The movement of XP from **Spec, HP to another Spec, HP** (mapping (10a) to (10b)) results in a movement chain as in (9) – since each specifier has as its sister a non-maximal projection of H. The chain in (9) is **non-distinguishable from a trivial, non-movement chain**.

- The movement of XP from **Spec, HP to an adjunct of HP** (mapping (10a) to (10c)) also results in the chain in (9). The two-segment category created by adjunction is distinguished only by its label (Chomsky 1995: 402).

\[(9) \quad \langle X, H \rangle, \langle X, H \rangle \]

\[(10) \quad \text{a.} \quad \text{b.} \quad \text{c.} \]

\[\text{XP} \quad \text{XP} \quad \text{XP} \]

\[\text{H} (= H^{\text{max}}, \text{label H}) \quad \text{H} (= H^{\text{max}}, \text{label H}) \quad \text{H} (= H^{\text{max}}, \text{label } <H,H>) \]

\[\text{Y} \quad \text{H} \quad \text{H} \]

\[\text{Conclusion:} \]

The **Anti-Localiry Constraint on Specifiers** follows from the mechanism of projection in a **Bare-Phrase-Structure** theoretic model.
3. The Syntax of Phrasal Comparatives

3.1 Phrasal & clausal comparatives, in English & Polish

- Descriptively, clausal comparatives (CCs) have a CP complement to than (as in (11a)); phrasal comparatives (PCs) seemingly have a DP-complement to than (as in (11b)).

(11) a. He visited more places than she did. CC
    b. He visited more places than her. PC

- Polish clearly distinguishes between the two comparatives in the form of than – niż vs. od.

  ♦ In clausal comparatives, the counterpart of than is niż. Its complement is a clause that may be partially or maximally elided up to a single remnant. There is no case-dependency between niż and any DP remnant. (Juzwa 2006, Pancheva 2006)

(12) Jan waży więcej niż Agnieszka (waży). CC
    Jan weighs more than Agnieszka (weighs)
    ‘Jan weighs more than Agnieszka does.’

  ♦ In phrasal comparatives, the counterpart to than is od, the preposition from. At most one DP may follow od, and this DP is case-marked genitive by od. (Pancheva 2006)

(13) Jan waży więcej od Agnieszki. PC
    Jan weighs more from Agnieszka
    ‘Jan weighs more than Agnieszka.’

3.2 Approaches to the grammar of phrasal & clausal comparatives

- There is consensus on the LF & PF of the complement to than in CCs – a degree wh-operator binds a degree variable in the than-clause; parts of the CP are elided (in (14) there is vP-ellipsis)

(14) He visited more places than she did. CC
    ... than [CP wh she [VP visit d-many places]]

- The syntax of the complement to than in PCs remains controversial.

(15) He visited more places than her. PC
    a. ... than [CP wh she [TP PAST visit d-many places]] reduction analysis
    b. ... than [DP her] direct analysis
    c. ... than [Prep she [VP wh [VP visit d-many places]]] small clause analysis

3.3 The small clause analysis of phrasal comparatives

- We adopt the small clause analysis (Pancheva 2009), as it is the only one that can explain the empirical facts we discuss here – a combination of island effects and anti-locality effects constraining wh-movement.

- The basics of the analysis (see (16)):
  - than has a small clause (PredP) complement
  - the compared constituent raises to Spec of PredP (focus position, essentially as in CCs)
  - the compared constituent (the subject of the small clause) is then ECM-ed by than
  - the small clause predicate is elided under identity with the matrix (as in CCs)

(16) (He visited more places) than her

![Diagram](image)

- Most importantly for our concerns here:
  - There is wh-movement in the small clause from a position parallel to that of more in the matrix.
  - The movement is not feature-driven – there is no wh-probe in the small clause (unlike $C_{wh}$ in clausal complements to than)
  - The movement is needed to create a degree predicate (as in Heim and Kratzer 1998). By linking predicate creation to syntactic movement we constrain the syntax-semantics mapping (e.g., by locality, islands)

- Illustrating semantically-driven wh-movement (e.g., Heim and Kratzer 1998: 96, 186)

(17) a. vP, $t$
    she visit who

    ![Diagram](image)

b. $<$e,t$>$

    who
    $<$e,t$>$
    vP, $t$
    she visit $t_1$

![Diagram](image)
3.3.1 Illustrating the small clause analysis of phrasal comparatives

(18) a. (He visited more places) than her
   b. (Marek zwiedził więcej miejsc) od Anny. (Polish)
      ‘Marek visited more places from Anna.’

(19) LF for (18):

Phrasal comparatives as a test case for the Anti-locality Constraint on Specifiers:

PCs have the ingredients needed to empirically test (1)/(5): obligatory wh-movement that
is very local and that is not driven by feature-checking.
3.3.2 A comparison with clausal comparatives

- Compare (19) with the structure of the than-PP in clausal comparatives, in (21).

(20) a. (He visited more places) than she did

b. Marek zwiedził więcej miejsc niż Anna. (Polish)
   Marek visited more places than Anna.
   ‘Marek visited more places than Anna did.’

(21) LF for (20):

3.3.3 An aside: the compositional semantics

- More is a degree quantifier; its first argument is the than-PP, which, thanks to the wh-movement inside, denotes a degree predicate

(22) [[more]] = \( \lambda P_{dt} \lambda Q_{dt} \exists d_{dt} [Q(d) \land \neg P(d)] \)

- The than PP denotes a degree predicate – which is what more wants as its first argument – in both phrasal and clausal comparatives. In both, the degree predicate is created by wh-movement
The LF of a phrasal comparative:

(23) He visited more places than her.

The LF of clausal comparatives is identical, except for the structure of the than-PP

(24) He visited more places than she did.

3.4 Anti-locality of wh-movement in phrasal comparatives

- Movement of the whole wh-many DP (Chomsky 1977, Vergnaud 1974, Kennedy 1999)
- Movement of wh-many DP from Spec, vP to vP is precluded as too local by the Anti-Locality Constraint on Specifiers

**Prediction:**

When the wh-many DP is an external argument, in Spec, vP (matching the grammatical role of the more DP in the matrix), its movement will be ruled out by the Anti-Locality Constraint on Specifiers, and the phrasal comparative will not be grammatical, while the corresponding clausal comparative will be.
(25) a. (More students visited the Czech Republic) than Slovakia.¹
   b. Więcej uczniów zwiedziło Czechy od Słowacji. (Polish)
       more students visited Czech R. from Slovakia
       ‘More students visited the Czech Republic than Slovakia.’

(26) LF for (25b):

- Sub-extraction is the only alternative, and is the source of the gradient unacceptability

(27) LF for (25b):

- Sub-extraction is not ruled out by anti-locality. The unacceptability is an island effect (see section 3.5).

**Confirmed prediction:**

When the wh-many DP originates in Spec, vP, the phrasal comparative is not acceptable – one derivation is ruled out by an anti-locality violation, and another, by a subject-island violation.

¹ The English sentence is acceptable because the reduction analysis is always available for than.
 Movement from within VP to vP is not too local and is allowed.

(28)  
  a. (He visited more places) \textbf{than her}
  b. Marek zwiedził \textbf{więcej miejsc od} Ann.
     \[\text{Marek visited more places from Anna.}\]  
     \[\text{‘Marek visited more places than Anna.’}\]

(29) LF for (28)

 Movement from Spec,vP to Spec, CP in CCs is not too local. No sub-extraction is needed.

(30)  
  a. (More students visited the Czech Republic) \textbf{than (did) Slovakia.}
  b. Więcej uczniów zwiedziło Czechy \textbf{niż Slovenię.}  
     \[\text{more students visited Czech R. than Slovakia.}\]
     \[\text{‘More students visited the Czech Republic than visited Slovakia.’}\]

(31) LF for (28)
3.5 vP-subjects are (gradient) islands for extraction

- As is well known, subjects are islands for extraction (Chomsky 1973, Huang 1982, a.o.)

(32)  
  a. * Who did [a story about who] cause a sensation?  
  b. Who did you read [a story about who]?

- Derived subjects (internal arguments) pattern with objects, so the generalization is about specifier positions².

(33)  
  a. * Of which car did [the driver of which car] cause a scandal?  
  b. Of which car was [the driver of which car] awarded a prize?  

- Categorical prohibitions against sub-extraction from subjects

(34) Condition on Extraction Domains (CED) (Huang 1982):  
  A phrase A may be extracted out of a domain B only if B is properly governed.

- The subject part of the CED is too strong – there is positional variability in sub-extraction from subjects (TP vs. vP subjects) and the unacceptability is gradient, not categorical.

3.5.1 TP (raised) vs. vP (in-situ) subjects

3.5.1.1 The claim that vP subjects are not islands

- The subject part of CED has been claimed to not be language universal: Languages that can leave the subject inside the vP have been claimed to allow sub-extraction from such in-situ subjects, but to prohibit it from TP subjects (Stepanov 2007; cf. Ross 1967, a.o.).

- Stepanov’s proposal: subjects are not islands per se; their island-hood is a freezing effect; see e.g., Corver (2006) for a recent discussion of freezing effects. (cf. also Takahashi 1994, Boeckx 2003, Gallego and Uriagereka 2007 – for the latter accounts not movement alone, but movement with agreement is responsible for the freezing effect)³

3.5.1.2 The claim that vP subjects are islands

- Stepanov (2007) argues that Russian does not exhibit subject-island violations. Polish should be like Russian in the relevant respects (being able to leave its subject in Spec, vP), yet intuitive judgments suggest that subjects are islands (see also our Experiment 4).

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² Experimental evidence confirms the relevance of the external/internal argument distinction for sub-extraction from vP-internal subjects. Extraction from subjects of unaccusatives in Czech, Russian and English is judged more felicitous and has a lower processing cost than extraction from subjects of unergatives and transitives (Sturgeon et al 2010, Kravtchenko et al 2009).

³ Experimental results support the reality of freezing effects. Jurka (2009) shows that in German, extraction is worse from moved objects than from VP-internal objects, and from TP subjects than from vP-subjects. Sturgeon et al (2010) argues that in Czech and Russian, extraction from pre-verbal subjects (A’-topics) is worse than extraction from post-verbal (vP-internal) subjects.
Furthermore, many of Stepanov’s examples involve subjects that are likely internal arguments: subjects of unaccusatives like turn up, themes of psych verbs like sadden, and themes of propositional unaccusative predicates like obvious. Thus the empirical basis of his proposal is not very strong.

Jurka (2009): sub-extraction from vP subjects is degraded: 3.55 on a 1-7 scale (vs. 6.17 for extraction out of VP-internal objects)4

Alternative explanations for the subject-island effects – structure-building accounts

Parallel Derivations (Nunes and Uriagereka 2000)
If a phrase X is built in parallel with a phrase Y, and then, when X and Y merge Y projects, no extraction is possible from X

Phase Edge Condition (Chomsky 2008)
Syntactic objects in phase edges become internally opaque.

Given the empirical evidence – including our own, presented in section 4.2.3 (Experiment 4) – we conclude that there is an independent subject island effect, i.e. vP subjects are islands for structural reasons.

3.5.2 Gradient unacceptability in sub-extraction from subjects

Within-language speaker variability in sub-extraction from subjects, vP and TP (Kravtchenko et al 2009, Jurka 2009)

Some examples of individual subject sub-extraction data from Jurka (2009)

black: VP-objects  dark grey: vP subjects  light grey: TP subjects

We find similar individual subject variability in sub-extraction of how-many from subjects in Polish (Experiment 4, section 4.2.3)

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4 Experimental evidence suggests that sub-extraction from transitive subjects is not fully acceptable in Russian either (Kravtchenko et al 2009).
4. Testing the Predictions of the Small Clause Analysis & the Anti-Locality Constraint on Specifiers

4.1 The paradigm for Polish comparatives (informal judgments)

- More is part of an external argument subject:

(39) a. Więcej uczniów zwiedziło Czechy od Słowacji. PC
    more students visited Czech R. from Slovakia\textsubscript{GEN}
    ‘More students visited the Czech Republic than Slovakia.’

  b. Więcej uczniów zwiedziło Czechy niż Słowację. CC
    more students visited Czech R. than Slovakia\textsubscript{ACC}
    ‘More students visited the Czech Republic than visited Slovakia.’

- More is part of a predicative adjective:

(40) a. Czechy są większe od Słowacji. PC
    Czech R. are bigger from Slovakia\textsubscript{GEN}
    ‘The Czech Republic is bigger than Slovakia.’

  b. Czechy są większe niż Słowacja. CC
    Czech R. are bigger than Slovakia\textsubscript{NOM}
    ‘The Czech Republic is bigger than Slovakia is.’

- More is part of an attributive adjective:

(41) a. Jan kupił większy dom od Agnieszki. PC
    Jan bought bigger house from Agnieszka\textsubscript{GEN}
    ‘Jan bought a bigger house than Agnieszka.’

  b. Jan kupił większy dom niż Agnieszka. CC
    Jan bought bigger house than Agnieszka\textsubscript{NOM}
    ‘Jan bought a bigger house than Agnieszka did.’

- More is part of an adverb:

(42) a. Marek zwiedził Czechy wcześniej od Słowacji. PC
    Marek visited Czech R. earlier from Slovakia\textsubscript{GEN}
    ‘Marek visited the Czech Republic earlier than Slovakia.’

  b. Marek zwiedził Czechy wcześniej niż Słowację. CC
    Marek visited Czech R. earlier than Slovakia\textsubscript{ACC}
    ‘Marek visited the Czech Republic earlier than he visited Slovakia.’

\footnote{\(^{\text{m*}}\) indicates variability between and within speakers (b/n different sentences)}
More is part of an object:

(43) a. Marek zwiedził więcej miejsc od Anny. PC
   Marek visited more places from Anna. 
   ‘Marek visited more places than Anna.’

   b. Marek zwiedził więcej miejsc niż Anna. CC
   Marek visited more places than Anna.
   ‘Marek visited more places than Anna did.’

More is part of an internal argument subject:

(44) a. Tego roku wyrosło więcej truskawek od ubiegłego roku. PC
   this year grew more strawberries from last year
   ‘More strawberries grew this year than last year.’

   b. Tego roku wyrosło więcej truskawek niż ubiegłego roku. CC
   this year grew more strawberries than last year
   ‘More strawberries grew this year than last year.’

In sum: a subject restriction in phrasal comparatives in Polish. A contrast in acceptability between phrasal and clausal comparatives exists only for vP subjects

(45) a. \( m^* \) more-NP\_vP-subject ... od ... PC
   b. \( \sqrt{} \) more-NP\_vP-subject ... niż ... CC
   c. \( \sqrt{} \) more-XP\_vP-subject/object/adj/adv ... od ... PC
   d. \( \sqrt{} \) more-XP\_vP-subject/object/adj/adv ... niż ... CC

Confirmed prediction:

When the *wh*-many DP is an external argument, in Spec, vP (matching the grammatical role of the more DP in the matrix), the phrasal comparative is not grammatical – resulting in gradient unacceptability (\( m^* \)) – while the corresponding clausal comparative is grammatical.

4.2 Experimental studies of Polish comparatives

Because the observed effect is gradient, a controlled quantitative study is needed

4 acceptability-rating experiments in Polish

* written questionnaires
* scale 1 (bad) – 7 (good)
* run in Wrocław, Poland
4.2.1 Experiments 1 & 2

4.2.1.1 Design of Experiment 1

- 2x2 repeated measures design
  - position of more: subject vs. object
  - type of comparative: niż vs. od

- transitive predicates, perfective aspect; 24 items & 48 fillers

- A sample item from Experiment 1:

  (46) subject nije – subject od
  a. Jak dotąd więcej moich kolegów przeczytało Trylogię niż Lalkę.
  b. Jak dotąd więcej moich kolegów przeczytało Trylogię od Lalki.
  
  ‘So far, more of my friends have read the Trilogy than the novel Lalka.’

  object nije – object od
  c. Jak dotąd Justyna przeczytała więcej obowiązkowych lektur niż Ivona.
  d. Jak dotąd Justyna przeczytała więcej obowiązkowych lektur od Ivony.
  
  ‘So far, Justina has read more of the obligatory readings than Ivona.’

4.2.1.2 Design of Experiment 2

- 3x2 repeated measures design
  - position of more: subject vs. object vs. adverbial
  - type of comparative: niż vs. od

- transitive predicates, perfective aspect; 24 items & 48 fillers

- A sample item from Experiment 2:

  (47) subject nije – subject od
  a. Jak dotąd więcej moich kolegów przeczytało Trylogię niż Lalkę.
  b. Jak dotąd więcej moich kolegów przeczytało Trylogię od Lalki.
  
  ‘So far, more of my friends have read the Trilogy than the novel Lalka.’

  object nije – object od
  c. Jak dotąd Justyna przeczytała więcej obowiązkowych lektur niż Ivona.
  d. Jak dotąd Justyna przeczytała więcej obowiązkowych lektur od Ivony.
  
  ‘So far, Justina has read more of the obligatory readings than Ivona.’

  adverbial nije – adverbial od
  e. Jak dotąd Justyna przeczytała Władzę Pierścieni więcej razy niż Lalkę.
  
  ‘So far, Justina has read Lord of the Rings more times than the novel Lalka.’
4.2.1.3 Predictions and results

- PCs whose *wh-many* DP is in Spec, vP (*subject od* conditions) should be degraded relative to CCs whose *wh-many* DP originates in Spec, vP (*subject niz* conditions) and relative to PCs whose *wh-many* DP originates in other positions (*object od, adverbial od*).

- The other conditions (*subject niz, object niz, adverbial niz, object od, adverbial od*) may differ from one another for independent reasons.

**Predictions:**

We expect that (i) the *subject od* condition will be rated the lowest, and (ii) there will be an interaction between the two factors – “position of more” (which corresponds to the grammatical role of the *wh-many* DP) and “type of than” (phrasal or clausal comparative).

**Results:** In both Experiment 1 and Experiment 2:

- **Lowest mean for subject od** ((46b) and (47b))
- Main effects for both variables: PCs overall are less acceptable than CCs; movement of *more* and *wh-operator* is less acceptable from subject than from object or adverb position
- **Interaction:** the lowest mean for *subject od* ((46b) and (47b)) is not entirely cumulative, i.e., the result of combining the two main effects. We take this as evidence for the subject restriction in phrasal comparatives.

**Summary of results for Experiment 1:**

<table>
<thead>
<tr>
<th></th>
<th>subject niz (46a)</th>
<th>subject od (46b)</th>
<th>object niz (46c)</th>
<th>object od (46d)</th>
<th>type of than</th>
<th>position of more</th>
<th>type of than × position of more interaction</th>
</tr>
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<tr>
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<td><strong>4.38</strong></td>
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<td>5.18</td>
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**Summary of results for Experiment 2:**

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<th>subject niz (47a)</th>
<th>subject od (47b)</th>
<th>object niz (47c)</th>
<th>object od (47d)</th>
<th>adverb niz (47e)</th>
<th>adverb od (47f)</th>
<th>type of than</th>
<th>position of more</th>
<th>than × pos. of more interaction</th>
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<td><strong>3.93</strong></td>
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<td>5.09</td>
<td>sign.</td>
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</tbody>
</table>

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6 We note that in Czech phrasal comparatives with *od* are not productive anymore. We hope to be able to explain this in future work as related to a loss in *od*’s ability to license ECM.

7 Experiment 1: Type of than: F(1,34) = 16.46, p < 0.001; position of more: F(1,34) = 25.58, p < 0.0001; interaction: F(1,34) = 6.32, p = 0.017.

8 Experiment 2: Type of than: F(1,25) = 54.17, p < 0.0001; position of more: F(2,50) = 26.8, p < 0.0001; interaction F(2,50) = 3.99, p = 0.025
Plots of the interaction

(50) a. Experiment 1

Position of "more" * Type of "than"

![Graph showing the interaction between position of more and type of than for Experiment 1.]

b. Experiment 2

Position of "more" * Type of "than"

![Graph showing the interaction between position of more and type of than for Experiment 2.]

Confirmed predictions:
The mean rating for the subject od conditions are the lowest, and we obtain an interaction between the two factors – “position of more” (which corresponds to the grammatical role of the wh-many DP) and “type of than” (phrasal or clausal comparative)

The lower means for the subject-od conditions in the two experiments is not the result of 2 populations with categorical judgments, as revealed by the histograms

(51) Subject-od conditions, Experiment 1 & 2

![Histograms showing the frequency distribution of ratings for subject-od conditions in Experiments 1 and 2.]
- Histograms for the fully acceptable conditions

(52) Subject-níž conditions, Experiment 1 & 2

(53) Object-níž and object-od conditions, Experiment 1 & 2

(54) Adverbial-níž and adverbial-od conditions, Experiment 2
There is **significant variability among speakers** in rating violations of vP-subject islands (phrasal comparatives with od), with individual mean averages **ranging 1.17 – 7** (Experiment 1) and **1.5 – 5.75** (Experiment 2).

In contrast, the ungrammatical fillers are rated uniformly low: e.g., mean 2.4, range **1.4-4.75** (Experiment 1) and mean 1.4, range **1.244** (Experiment 2)

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**Summary of experimental results (Experiment 1 & 2):**

The **subject od** conditions (PCs with *wh-many* DPs in Spec, vP) are the least acceptable, in a way that cannot be explained as a simple cumulative effect of two independent factors.

The degraded acceptability of the **subject od** conditions is not the result of 2 populations with categorical judgments (clearly acceptable vs. clearly unacceptable); rather the effect is gradient, spanning a wide range.

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**4.2.2 Experiment 3 (supporting evidence)**

- Design: 2x2 repeated measures on one factor verb type: **unergative** vs. **unaccusative** x type of subject comparative: **niż** vs. **od**
- 10 unergative items and 20 unaccusative items, 60 fillers
- Sample unergative and unaccusative items from Experiment 3:

  (55) **unergative subject niż - unergative subject od**
  a. Tego roku spało pod napotami **więcej turystów niż** ubiegłego roku.
  b. Tego roku spało pod napotami **więcej turystów od** ubiegłego roku.
  ‘More tourists slept under tents more tourists than last year

  (56) **unaccusative subject niż - unaccusative subject od**
  a. Tego roku wyrosło **więcej truskawek niż** ubiegłego roku.
  b. Tego roku wyrosło **więcej truskawek od** ubiegłego roku.
  ‘More strawberries grew this year than last year.’

- **Summary of results for Experiment 3.**

  (57)  
<table>
<thead>
<tr>
<th>unergative subject niż (55a)</th>
<th>unergative subject od (55b)</th>
<th>unaccusatives subject niż (56a)</th>
<th>unaccus. subject od (56b)</th>
<th>type of than</th>
<th>type of predicate</th>
<th>than × type of predicate interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.08</td>
<td>3.70</td>
<td>5.04</td>
<td>4.31</td>
<td>sign.</td>
<td>non-sign.</td>
<td>sign.</td>
</tr>
</tbody>
</table>

---

9 Type of than: F(1,50) = 30.6, p < 0.0001; type of predicate: F(1,50)= 2.21, p = 0.143; type of than × type of predicate interaction F(1,50)= 5.65, p = 0.021.
♦ Lowest mean for unergative subject *od* (55b)

♦ Main effect of type of *than* (as in Experiment 1 & 2)

♦ **Interaction:** the lowest mean for unergative subject *od* (55b) is not due solely to the main effect of type of *than*. We take this as evidence for the subject restriction in phrasal comparatives.

### 4.2.3 Experiment 4

#### 4.2.3.1 Design

- 2 x 2 repeated measures design
  - subject comparative: *niż* (full extraction, i.e. pied piping) vs. *od* (sub-extraction) x subject degree question: full vs. sub-extraction
- transitive predicates, perfective aspect; 24 items, 48 fillers
- A sample item from Experiment 4

(58) **subject *niż* – subject *od***

a. Wczoraj więcej *sprzątacze* umyło klatkę schodową *niż* windę.
b. Wczoraj więcej *sprzątacze* umyło klatkę schodową *od* windy.

‘Yesterday more cleaners washed case stair than elevator’

**subject question full extraction – subject question sub-extraction**

c. *Ile* *sprzątacze* wczoraj umyło klatkę schodową?
d. *Ile* wczoraj *sprzątacze* umyło klatkę schodową?

‘How-many (yesterday) cleaners (yesterday) washed case stairs’

#### 4.2.3.2 Predictions and results

- Given that subjects are islands for extraction, degree questions with sub-extraction should be degraded. Given that vP subjects are islands too, and given that, as theorized, subject *od* comparatives can only be derived through sub-extraction, since anti-locality prohibits full extraction, PCs too should be degraded.

**Predictions:**

We expect (i) a main effect of “type of extraction”, (ii) an interaction between the two factors – “type of extraction” and “type of construction”, and (iii) a correlation between subject *od* and sub-extraction from subjects in questions.
Summary of results for Experiment 4:

<table>
<thead>
<tr>
<th></th>
<th>subject <em>ż</em></th>
<th>subject <em>od</em></th>
<th>subject question full extract.</th>
<th>subject question sub-extract.</th>
<th>full vs. sub-extract.</th>
<th>comparative vs. question</th>
<th>interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>full extraction (58a)</td>
<td>5.70</td>
<td>4.06</td>
<td>5.86</td>
<td>4.82</td>
<td>sign.</td>
<td>sign.</td>
<td>Sign.</td>
</tr>
</tbody>
</table>

- **Main effect of type of extraction**: sub-extraction from subjects is less acceptable than full extraction, in both questions and comparatives – this is the subject-island effect.

- **Main effect of type of construction**: comparatives are apparently harder to process than questions

- **Interaction**: the lowest mean for subject *od* (58b) is explained by the combined effect of sub-extraction and the independently established reduced acceptability for *od* (a main effect in Exp. 1, 2, and 3)

Plot of the interaction

Correlations: The correlation between subject *od* and sub-extraction in subject questions approaches significance, whereas subject *od* and full extraction in subject questions are not correlated.

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10 **Type of extraction** (full vs. sub-extraction): $F(1,71) = 169.6, p < 0.0001$; **type of construction** (question vs. comparative) $F(1,71) = 13.81, p < 0.001$; **type of extraction x type of construction interaction**: $F(1,71) = 8.16 p = 0.006$.

11 **Subject *od** vs. **sub-extraction**: $r(72) = 0.213, p = 0.07$; **subject *od** vs. **full extraction**: $r(72) = 0.148, p = 0.22$
- Scatterplots

(61) Subject-od vs. subject questions, Experiment 4

![Graphs showing scatterplots for subject-od vs. subject questions.]

**Confirmed predictions:**

We found (i) a main effect of “type of extraction”, (ii) an interaction between the two factors – “type of extraction” and “type of construction”, and (iii) a correlation between subject od and sub-extraction from subjects in questions approaching significance.

- The lower means for the subject od and subject question sub-extraction conditions are not the result of 2 populations with categorical judgments (compare (62a) to (51)).

(62) Sub-extraction conditions: subject-od and subject question, Experiment 4

![Graphs showing histograms for sub-extraction conditions.]

- Histograms for the fully acceptable conditions

(63) Full extraction conditions: subject- niż and subject question, Experiment 4

![Graphs showing histograms for full extraction conditions.]

- Histograms for the fully acceptable conditions
Significant variability among speakers in rating violations of subject islands in PCs, with individual mean averages ranging 1-7, and in questions, with individual means ranging 1.17-7.

In contrast, the ungrammatical fillers are rated uniformly low: e.g., mean 1.17, range 1-2

Summary of experimental results (Experiment 4):

There is a main effect of “type of extraction”, confirming the subject-island effect for phrasal comparatives and degree questions. There is an interaction between “type of extraction” and “type of construction”, and the correlation between subject od and sub-extraction from subjects in questions approaches significance.

The degraded acceptability of the subject od condition and the subject question sub-extractions is not the result of 2 populations with categorical judgments (clearly acceptable vs. clearly unacceptable); rather the effect is gradient, spanning a wide range.

5. Conclusion

Experimental evidence for an Anti-Locality constraint that restricts movement from specifiers

- The constraint is best explained on configurational grounds, in a Bare Phrase Structure approach to building syntactic structure
- Move (internal Merge) is not completely free

Experimental evidence that vP subjects are islands for extraction

- The island-hood of subject is an independent phenomenon and cannot be entirely reduced to a freezing effect
- The cross-linguistic difference in acceptability of subject sub-extraction is likely real, and is due to the difference in acceptability of sub-extraction from vP and TP subjects
- There is significant individual variation in sub-extraction from subjects

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