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 [$_{PredP}$ 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. * … [$_{PredP}$ London [$_{vP}$ ***wh-many people*** ~~***wh-many people***~~ visit ~~London~~]] **ANTI-LOCALITY**
b. ??/* … [$_{PredP}$ London [$_{vP}$ ***wh-many*** ~~***wh-many***~~ ***people*** visit ~~London~~]] **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 (??/*)** – 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.**

General conclusions:

Move (internal *Merge*) is not unrestricted. *Anti-Locality*, at least of the type in (1), constrains it.

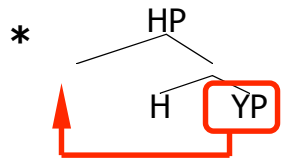
2. Anti-Locality of Movement & Specifiers

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).

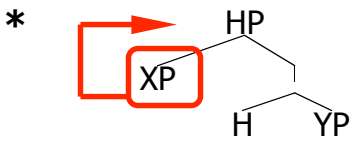
- **Within a single projection**, anti-locality has been typically discussed w.r.t. **complements** (see (4)) as in the particular case of complements to phase heads (Abels 2003), or more generally for any head (Pesetsky and Torrego 2001).

(4) ***Anti-Locality Constraint on Complements***
The Complement of a head H cannot move to a Spec of H



- 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)



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 [$_{IP}$ himself$_i$ [$_{IP}$ Mary likes t$_i$]] topicalization allows anaphor binding
b. * John thinks that [$_{IP}$ himself$_i$ [$_{IP}$ t$_i$ 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 [$_{IP}$ OP$_i$ [$_{IP}$ t$_i$ likes Mary]]
b. the man [$_{IP}$ OP$_i$ [$_{IP}$ 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-Locality 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, *v*P** are concerned. Let us try to defend the general case in (1)/(5), rather than a narrower constraint about Spec, *v*P.

- 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.

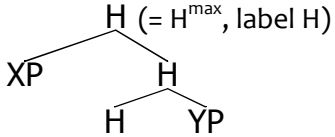
(8) <{X, A}, {X, B}>

  - 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**.

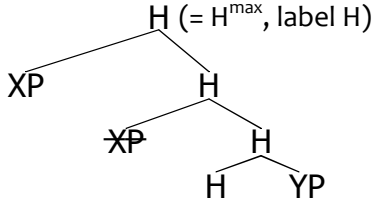
  - The movement of XP **from Spec, HP to an adjunct of HP** (mapping (10a) to (10c)) also results in the chain in (9). The two-segment category created by adjunction is distinguished only by its label (Chomsky 1995: 402).

(9) <{*XP*, H}, {*XP*, H}>

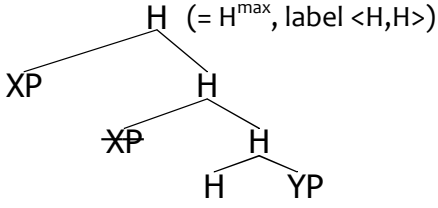
(10) a.



b.



c.



Conclusion:

The *Anti-Locality 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$_{\text{-NOM}}$ (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$_{\text{-GEN}}$
'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 [$_{\text{CP}}$ ***wh*** she did [$_{\text{VP}}$ 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 [$_{\text{CP}}$ ***wh*** she [$_{\text{TP}}$ PAST visit **d**-many places]] reduction analysis
b. … than [$_{\text{DP}}$ her] direct analysis
c. … than [$_{\text{PredP}}$ she [$_{\text{vP}}$ ***wh*** [$_{\text{vP}}$ visit **d**-many places]]] small clause analysis

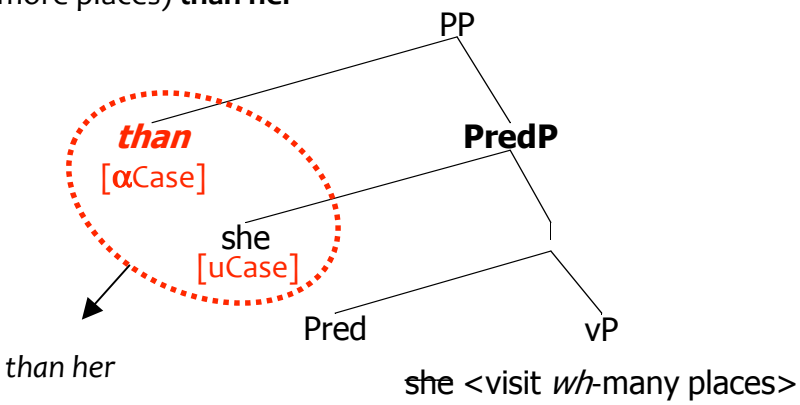
Ross (1967), Bresnan (1973), Hankamer (1973), Heim (1985, 2000), Kennedy (1999, 2007), Lechner (2001, 2004), Bhatt and Takahashi (2007), Merchant (2009), Pancheva (2006, 2009), a.o.

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)

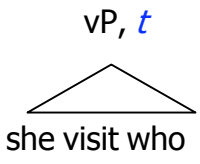
(16) (He visited more places) **than her**



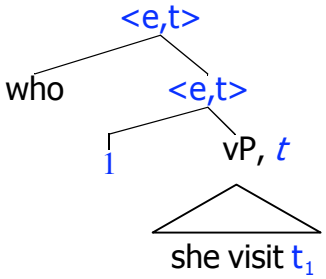
- **Most importantly** for our concerns here:
  - There is ***wh*-movement** in the small clause from a position parallel to that of *more* in the matrix.
  - The movement is **not feature-driven** – there is no *wh*-probe in the small clause (unlike C_{wh} in clausal complements to *than*)
  - The movement 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.



b.

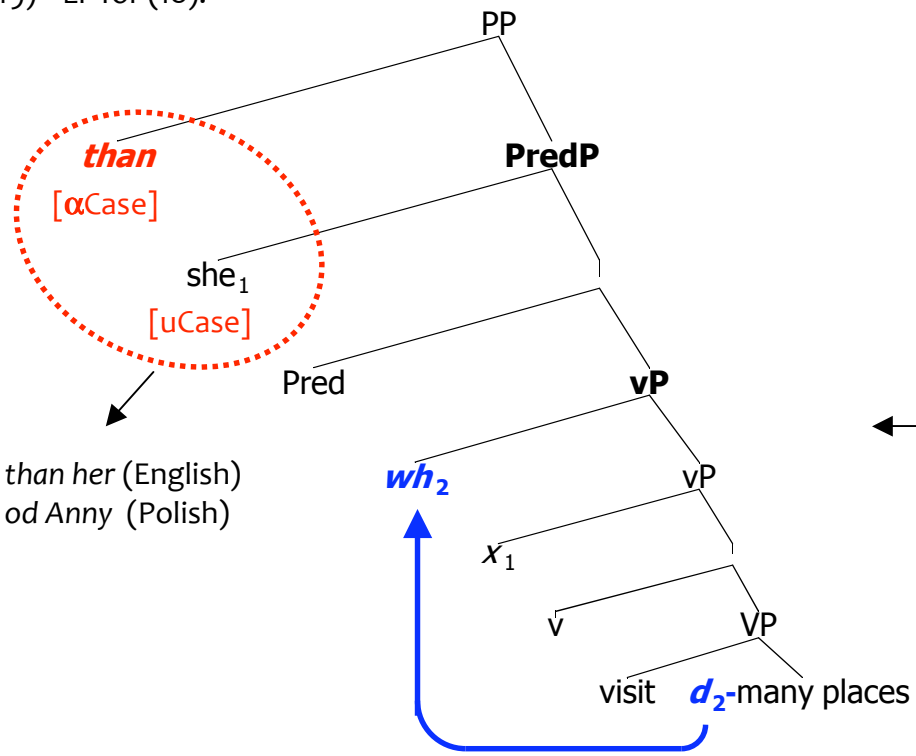


3.3.1 Illustrating the small clause analysis of phrasal comparatives

(18) a. (He visited more places) **than her**

b. (Marek zwiedził więcej miejsc) **od** **Anny.** (Polish)
Marek visited more places from Anna$_{-GEN}$
'Marek visited more places than Anna.'

(19) LF for (18):



than her (English)
od Anny (Polish)

***Wh*-movement is to *v*P; there is no further movement as there is no C probe in the small clause**

(ignoring for now the issue of whether the whole *wh-many places* phrase moves or the degree *wh-* is sub-extracted)

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.

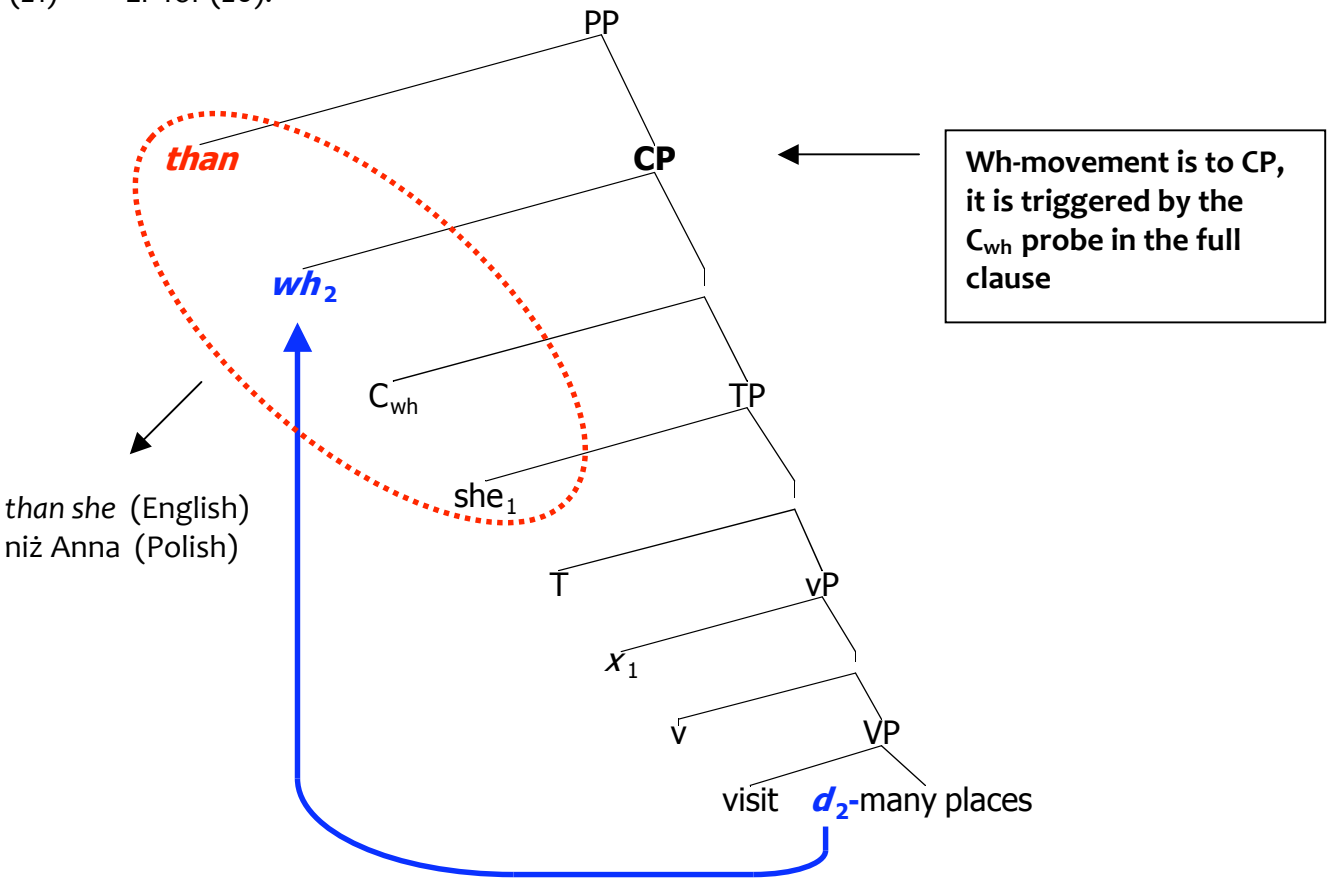
3.3.2 A comparison with clausal comparatives

- 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$_{\text{-NOM}}$
'Marek visited more places than Anna did.'

(21) LF for (20):



3.3.3 An aside: the compositional semantics

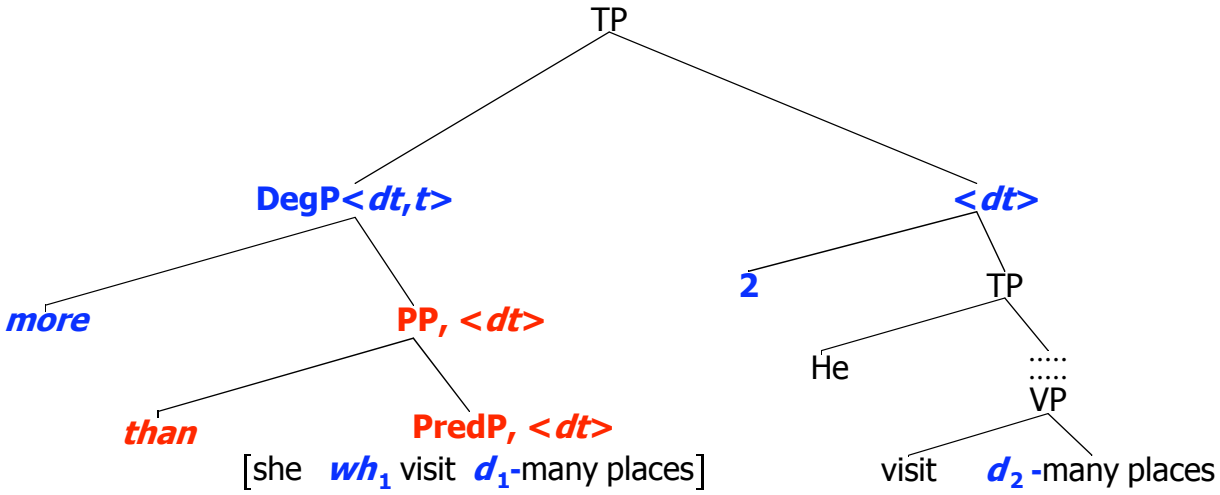
- *More* is a degree quantifier; its first argument is the *than*-PP, which, thanks to the *wh*-movement inside, denotes a degree predicate

(22) $[\![more]\!] = \lambda P_{dt}\, \lambda Q_{dt}\, \exists d_d\, [Q(d) \wedge \neg P(d)]$

- 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**

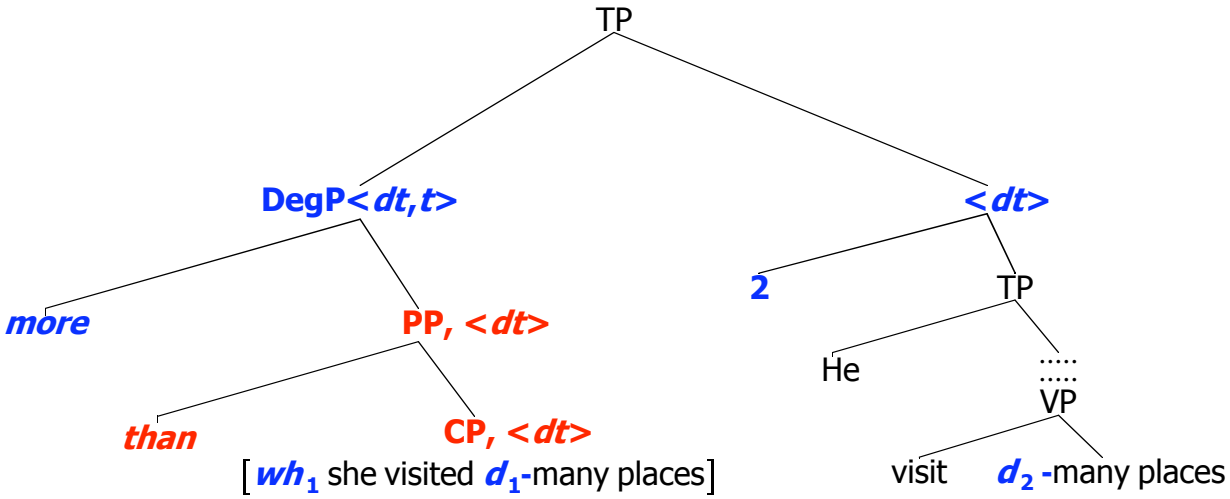
- The LF of a phrasal comparative:

(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, *v*P to *v*P is precluded as **too local** by the **Anti-Locality Constraint on Specifiers**

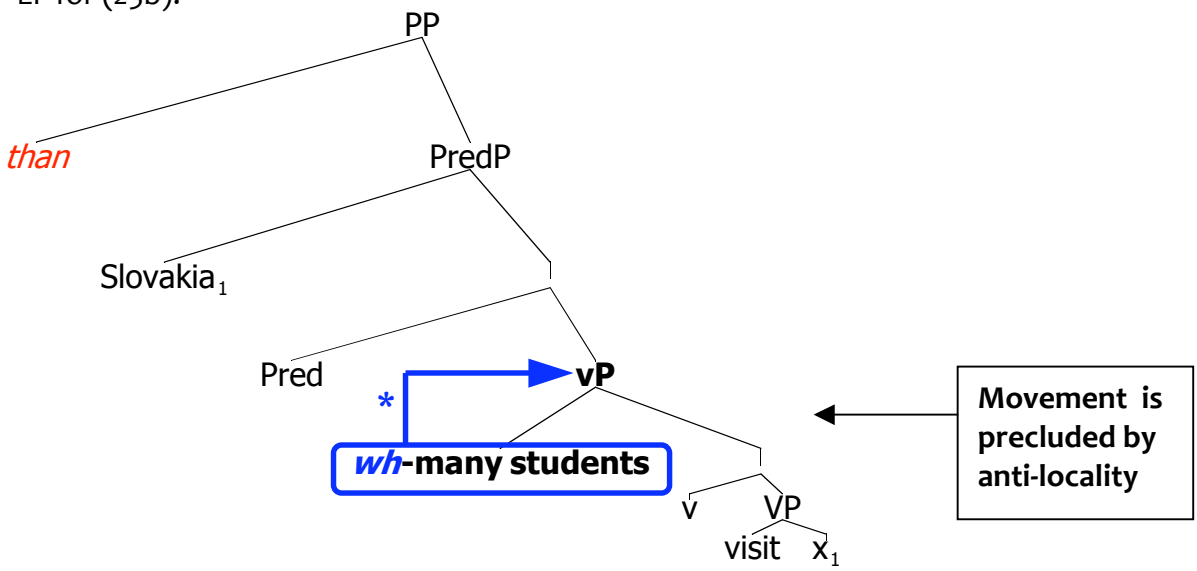
Prediction:

When the *wh-many* DP is an external argument, in Spec, *v*P (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]

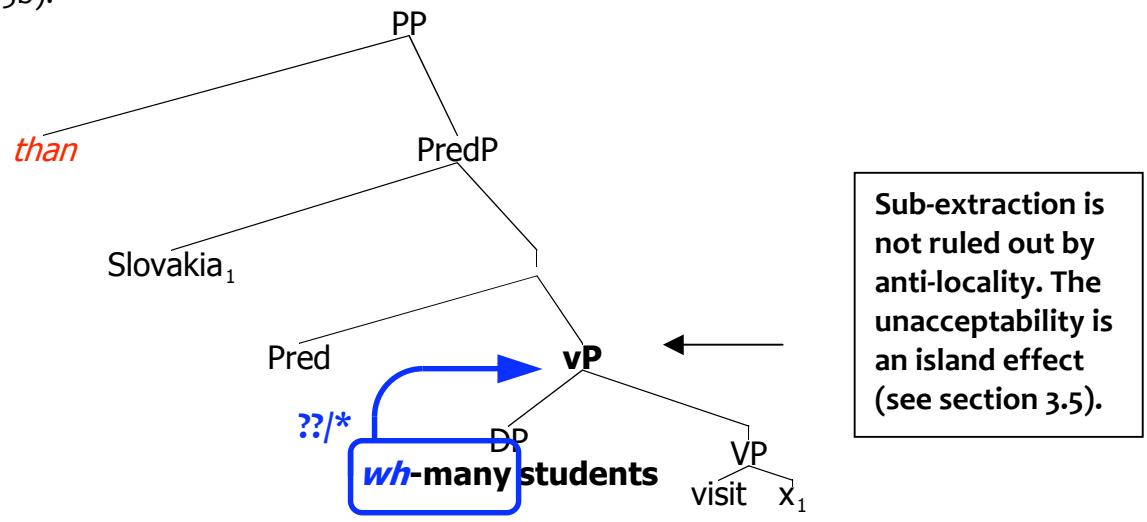
b. ??/* **Więcej uczniów** zwiedziło Czechy **od** **Słowacji.** (Polish)
more students visited Czech R. from Slovakia$_{-GEN}$
'More students visited the Czech Republic than Slovakia.'

(26) LF for (25b):



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

(27) LF for (25b):



Confirmed prediction:

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

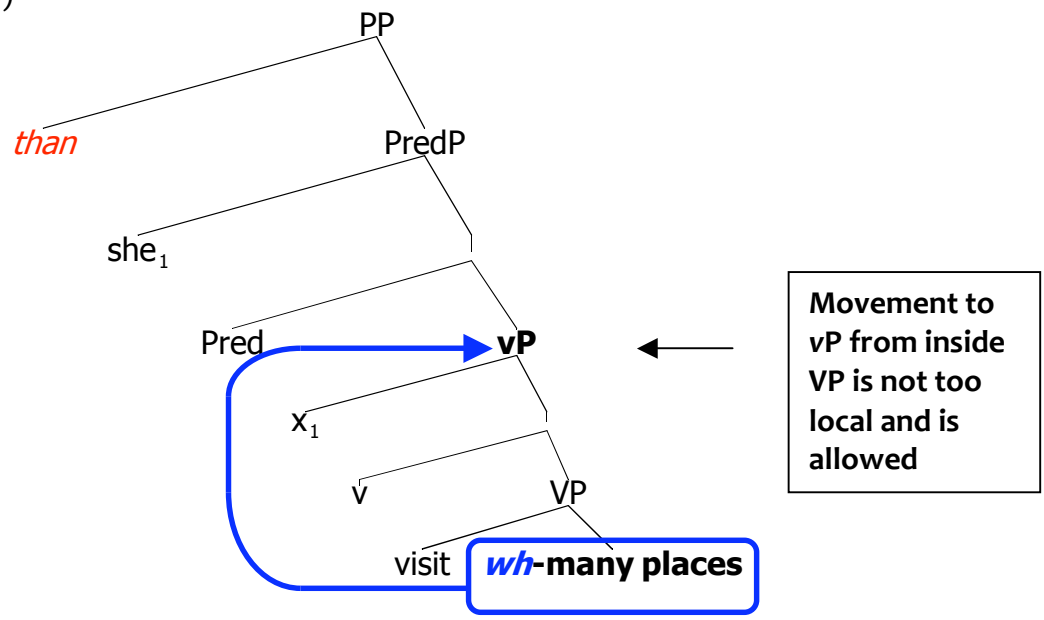
[1] The English sentence is acceptable because the reduction analysis is always available for *than*.

- Movement from within VP to *v*P is not too local and is allowed.

(28) a. (He visited more places) **than her**

b. Marek zwiedził **więcej miejsc** **od** **Anny.** (Polish)
Marek visited more places from Anna$_{-GEN}$
'Marek visited more places than Anna.'

(29) LF for (28)

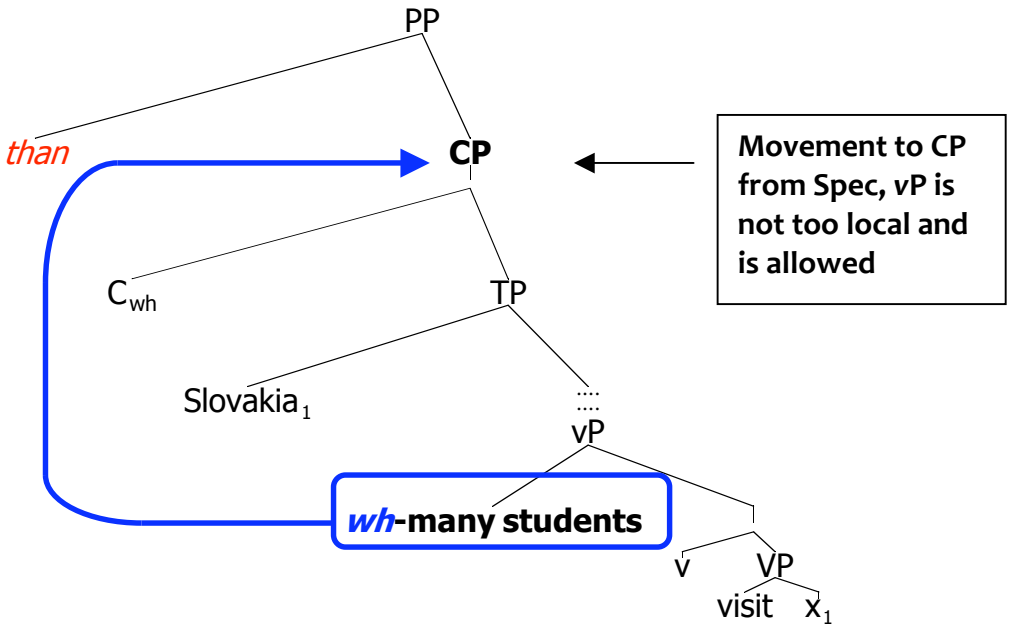


- Movement from Spec,*v*P to Spec, CP in CCs is not too local. No sub-extraction is needed.

(30) a. (More students visited the Czech Republic) **than (did) Slovakia**.

b. **Więcej uczniów** zwiedziło Czechy **niż** **Słowację.** (Polish)
more students visited Czech R. than Slovakia$_{-ACC}$
'More students visited the Czech Republic than visited Slovakia.'

(31) LF for (28)



3.5 *v*P-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 positions[2].

(33) a. * **Of which car** did [**the driver ~~of which car~~**] cause a scandal? (Chomsky 2008)
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. *v*P subjects) and the unacceptability is gradient, not categorical.

3.5.1 TP (raised) vs. *v*P (in-situ) subjects

3.5.1.1 The claim that *v*P 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 *v*P 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, *v*P), 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 *v*P-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 *v*P-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 (*v*P-internal) subjects.

(35) ??/***Którzy** chciałbyś żeby [**~~którzy~~ studenci** zagłosowali w wyborach]?
which you-wish that$_{-SUBJ}$ which students voted in elections
'Which students do you wish would vote in the elections?'

- 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 *v*P 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

(36) *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

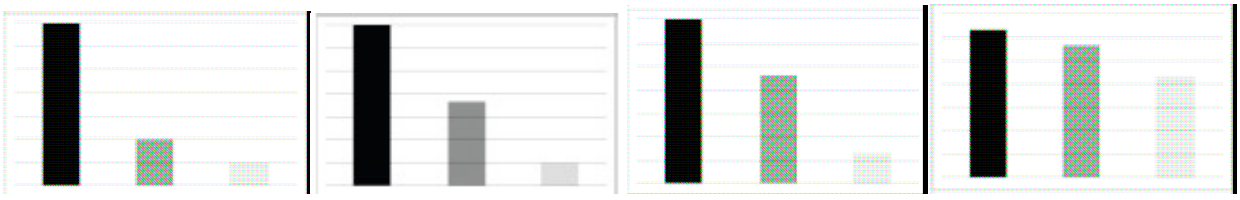
(37) *Phase Edge Condition* (Chomsky 2008)
Syntactic objects in phase edges become internally opaque.

- 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. ***v*P 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)

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



black: VP-objects **dark grey: *v*P 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)

[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. [5] PC
more students visited Czech R. from Slovakia$_{-GEN}$
'More students visited the Czech Republic than Slovakia.'

b. **Więcej uczniów** zwiedziło Czechy **niż** Słowację. CC
more students visited Czech R. than Slovakia$_{-ACC}$
'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$_{-GEN}$
'The Czech Republic is bigger than Slovakia.'

b. Czechy są **większe** **niż** Słowacja. CC
Czech R. are bigger than Slovakia$_{-NOM}$
'The Czech Republic is bigger than Slovakia is.'

- *More* is part of an attributive adjective:

(41) a. Jan kupił **wiekszy** **dom** **od** Agnieszki. PC
Jan bought bigger house from Agnieszka$_{-GEN}$
'Jan bought a bigger house than Agnieszka.'

b. Jan kupił **wiekszy** **dom** **niż** Agnieszka. CC
Jan bought bigger house than Agnieszka$_{-NOM}$
'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$_{-GEN}$
'Marek visited the Czech Republic earlier than Slovakia.'

b. Marek zwiedził Czechy **wcześniej** **niż** Słowację. CC
Marek visited Czech R. earlier than Slovakia$_{-ACC}$
'Marek visited the Czech Republic earlier than he visited Slovakia.'

[5] ??/* 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$_{-GEN}$
'Marek visited more places than Anna.'

b. Marek zwiedził **więcej miejsc** **niż** Anna. CC
Marek visited more places than Anna$_{-NOM}$
'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 *v*P subjects

(45) a. ??/* *more*-NP$_{\text{vP-subject}}$ … **od** … PC
b. √ *more*-NP$_{\text{vP-subject}}$ … **niż** … CC
c. √ *more*-XP $_{\text{VP-subject/object/adj/adv}}$ … **od** … PC
d. √ *more*-XP $_{\text{VP-subject/object/adj/adv}}$ … **niż** … CC

Confirmed prediction:

When the *wh-many* DP is an external argument, in Spec, *v*P (matching the grammatical role of the *more* DP in the matrix), the phrasal comparative is not grammatical – resulting in gradient unacceptability (??/*) – 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** x type of comparative: ***niż*** vs. ***od***
- transitive predicates, perfective aspect; 24 items & 48 fillers
- A sample item from Experiment 1

(46) ***subject niż – subject od***

a. Jak dotąd **więcej moich kolegów** przeczytało Trylogię **niż** Lalkę.
b. Jak dotąd **więcej moich kolegów** przeczytało Trylogię **od** Lalki.
as till-now more my friends read Trilogy than Lalka
'So far, more of my friends have read the Trilogy than the novel Lalka.'

object niż – object od

c. Jak dotąd Justyna przeczytała **więcej obowiązkowych lektur** **niż** Iwona.
d. Jak dotąd Justyna przeczytała **więcej obowiązkowych lektur** **od** Iwony.
as till-now Justina read more obligatory readings than Ivona
'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** x type of comparative: ***niż*** vs. ***od***
- transitive predicates, perfective aspect; 24 items & 48 fillers
- A sample item from Experiment 2:

(47) ***subject niż – subject od***

a. Jak dotąd **więcej moich kolegów** przeczytało Trylogię **niż** Lalkę.
b. Jak dotąd **więcej moich kolegów** przeczytało Trylogię **od** Lalki.
as till-now more my friends read Trilogy than Lalka
'So far, more of my friends have read the Trilogy than the novel Lalka.'

object niż – object od

c. Jak dotąd Justyna przeczytała **więcej obowiązkowych lektur** **niż** Iwona.
d. Jak dotąd Justyna przeczytała **więcej obowiązkowych lektur** **od** Iwony.
as till-now Justina read more obligatory readings than Ivona
'So far, Justina has read more of the obligatory readings than Ivona.'

adverbial niż – adverbial od

e. Jak dotąd Justyna przeczytała Władcę Pierścieni **więcej razy** **niż** Lalkę.
f. Jak dotąd Justyna przeczytała Władcę Pierścieni **więcej razy** **od** Lalki.
as till-now Justina read Lord of-Rings more times than Lalka
'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, *v*P (*subject od* conditions) should be degraded relative to CCs whose *wh-many* DP originates in Spec, *v*P (*subject niż* conditions) and relative to PCs whose *wh-many* DP originates in other positions (*object od, adverbial od*).

- The other conditions (*subject niż, object niż, adverbial niż, 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[6]; 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:[7]

(48)

subject *niż* (46a)	**subject *od*** (46b)	object *niż* (46c)	object *od* (46d)	type of *than*	position of *more*	type of *than* × position of *more* **interaction**
5.48	4.38	5.78	5.18	sign.	sign.	**sign.**

- Summary of results for Experiment 2:[8]

(49)

subject *niż* (47a)	**subject *od*** (47b)	object *niż* (47c)	object *od* (47d)	adverb *niż* (47e)	adverb *od* (47f)	type of *than*	position of *more*	*than* × pos. of *more* **interaction**
5.53	3.93	6.34	5.38	5.73	5.09	sign.	sign.	**sign.**

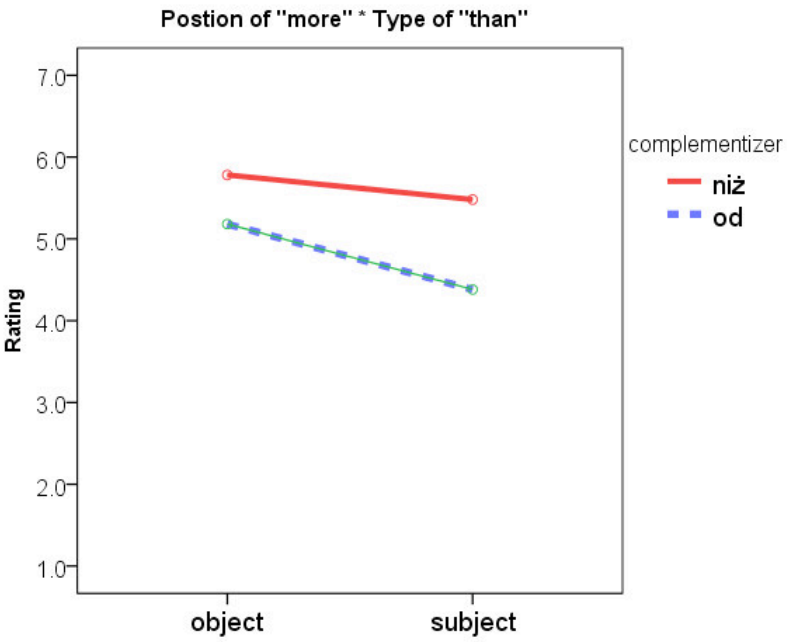
[6] We note that in Czech phrasal comparatives with *od* are not productive anymore. We hope to be able to explain this in future work as related to a loss in *od*'s ability to license ECM.

[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: $F(1,34) = 6.32$, $p = 0.017$.**

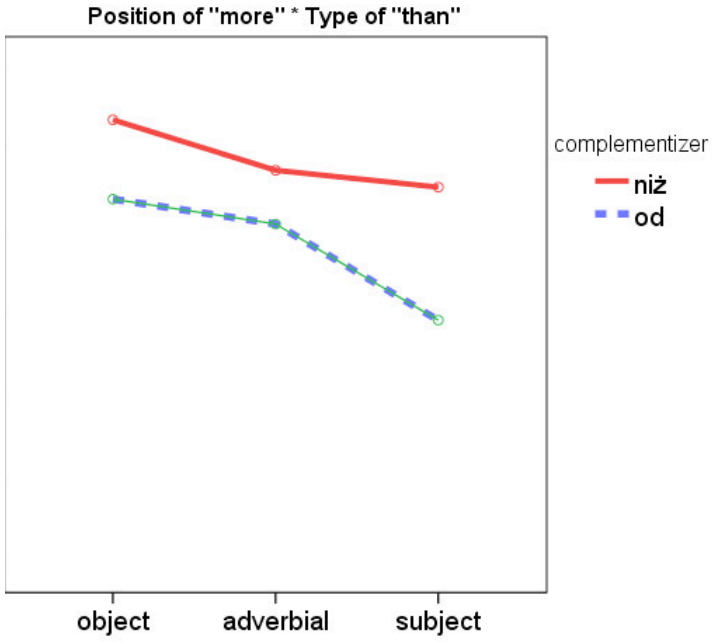
[8] Experiment 2: Type of *than:* $F(1,25) = 54.17$, $p < 0.0001$; position of *more*: $F(2,50) = 26.8$, $p < 0.0001$; **interaction $F(2,50) = 3.99$, $p = 0.025$**

- Plots of the interaction

(50) a. Experiment 1



b. Experiment 2

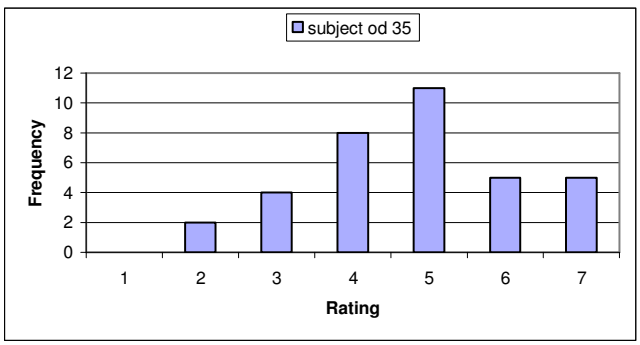


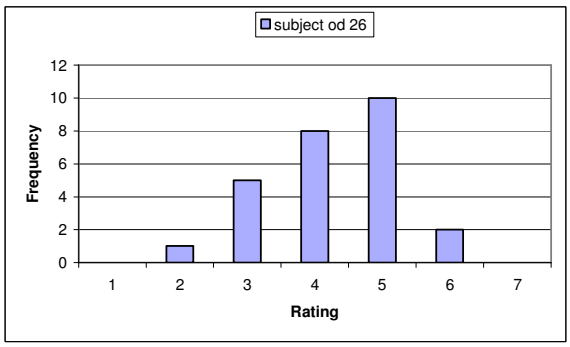
Confirmed predictions:

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

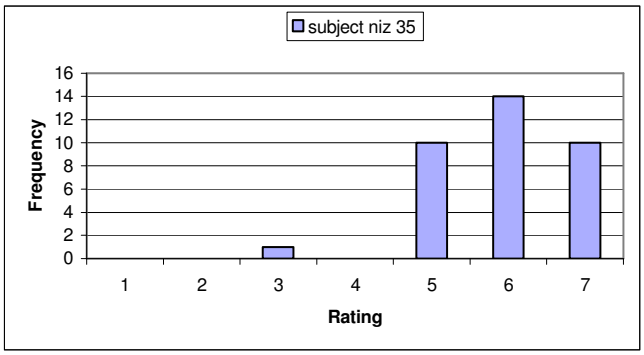
(51) *Subject-od* conditions, Experiment 1 & 2

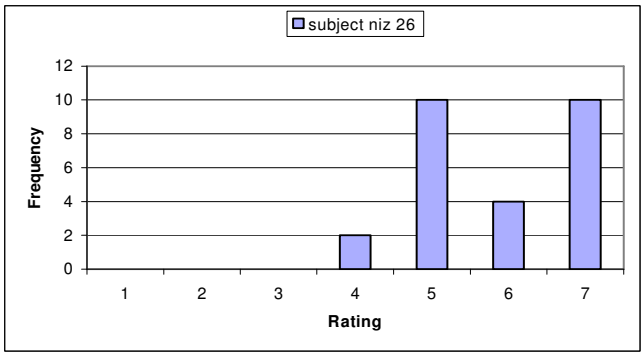




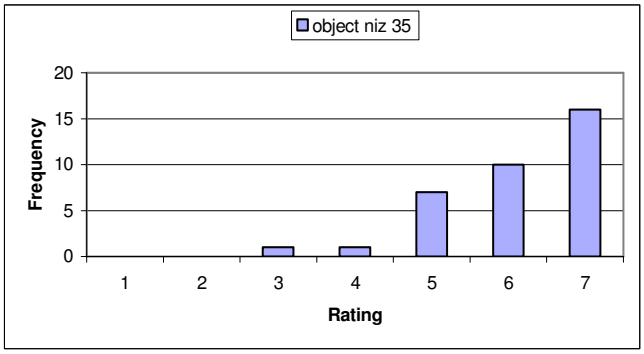
- Histograms for the fully acceptable conditions

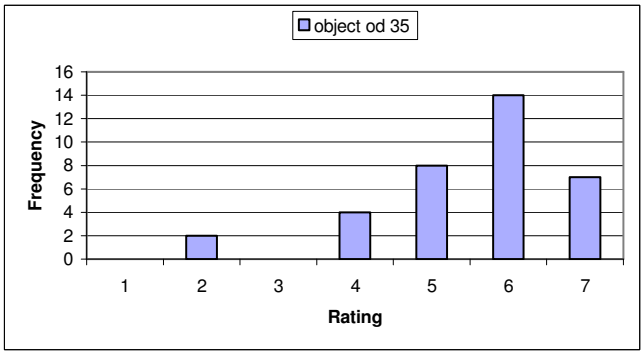
(52) *Subject- niż* conditions, Experiment 1 & 2

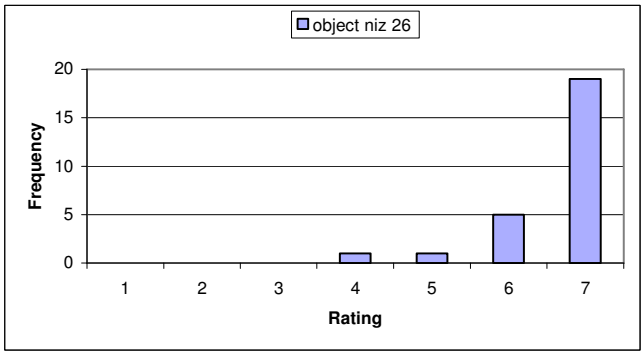


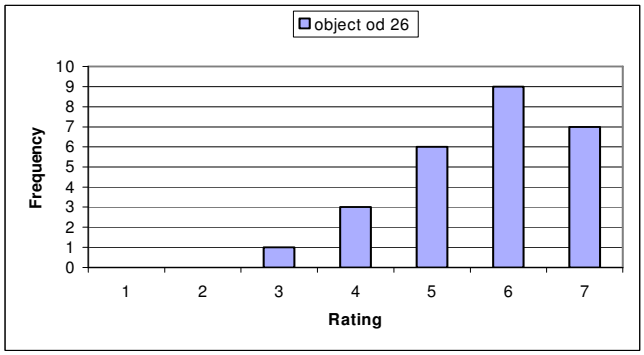


(53) *Object-niż* and object-*od* conditions, Experiment 1 & 2

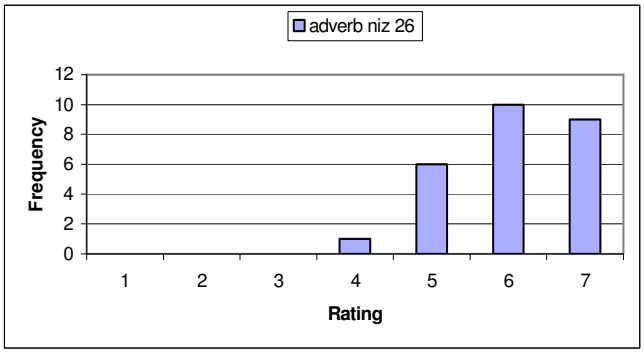


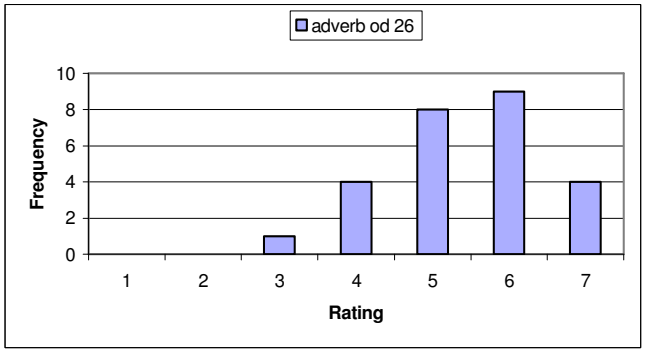






(54) *Adverbial-niż* and adverbial-*od* conditions, Experiment 2





- There is **significant variability among speakers** in rating **violations of *v*P-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 1-2.44 (Experiment 2)

Summary of experimental results (Experiment 1 & 2):

The *subject od* conditions (PCs with *wh-many* DPs in Spec, *v*P) 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.

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 namiotami **więcej turystów niż** ubiegłego roku.
b. Tego roku spało pod namiotami **więcej turystów od** ubiegłego roku.
this year slept under tents more tourists than last year
'More tourists slept under tent this year 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.
this year grew more strawberries than last year
'More strawberries grew this year than last year.'

- Summary of results for Experiment 3:[9]

(57)

unergative subject *niż* (55a)	**unergative subject *od*** (55b)	unaccusatives ubject *niż* (56a)	unaccus. subject *od* (56b)	type of *than*	type of predicate	*than* × type of predicate **interaction**
5.08	**3.70**	5.04	4.31	sign.	non-sign.	**sign.**

[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* x 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** **sprzątaczek** umyło klatkę schodową **niż** windę.
b. Wczoraj **więcej** **sprzątaczek** umyło klatkę schodową **od** windy.
yesterday more cleaners washed case stair than elevator
'Yesterday more cleaners washed the staircase than the elevator.'

subject question full extraction – subject question sub-extraction

c. **Ile** **sprzątaczek** wczoraj umyło klatkę schodową?
d. **Ile** wczoraj **sprzątaczek** umyło klatkę schodową?
how-many (yesterday) cleaners (yesterday) washed case stairs
'How many cleaners washed the staircase yesterday?'

4.2.3.2 Predictions and results

- Given that subjects are islands for extraction, degree questions with sub-extraction should be degraded. Given that *v*P 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:[10]

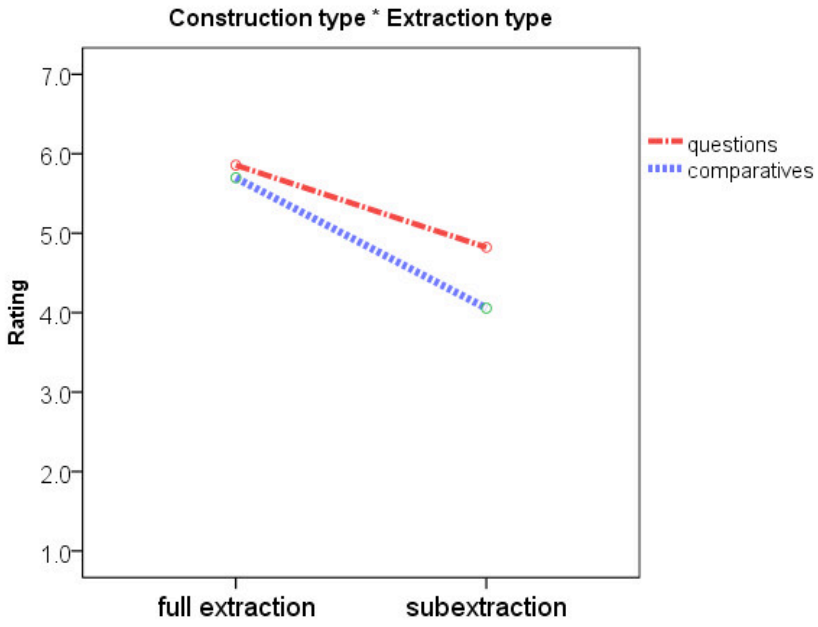
(59)

subject *niż* full extraction (58a)	**subject *od*** sub-extraction (58b)	subject question full extract. (58c)	subject question sub-extract. (58d)	full vs. sub-extract.	comparative vs. question	interaction
5.70	**4.06**	5.86	4.82	**sign.**	sign.	**Sign.**

  - **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

(60)



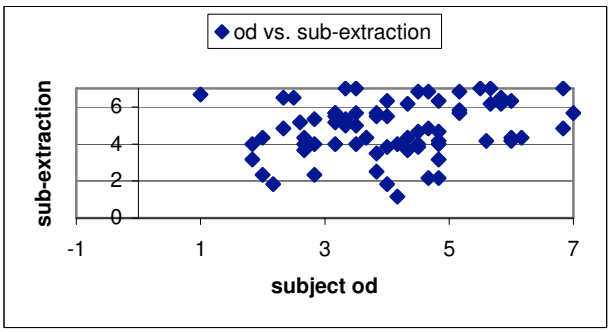
- **Correlations:** The correlation between *subject od* and *sub-extraction in subject questions* approaches significance, whereas *subject od* and *full extraction in subject questions* are not correlated.[11]

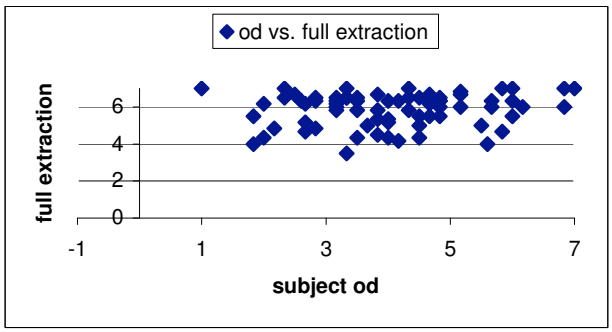
[10] **Type of extraction (full vs. sub-extraction): F(1,71) = 169.6, p < 0.0001**; type of construction (question vs. comparative) F(1,71)= 13.81, p < 0.001; **type of extraction × type of construction interaction: F(1,71)= 8.16 p = 0.006.**

[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



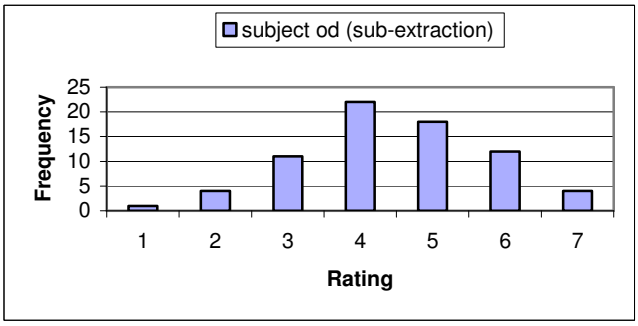


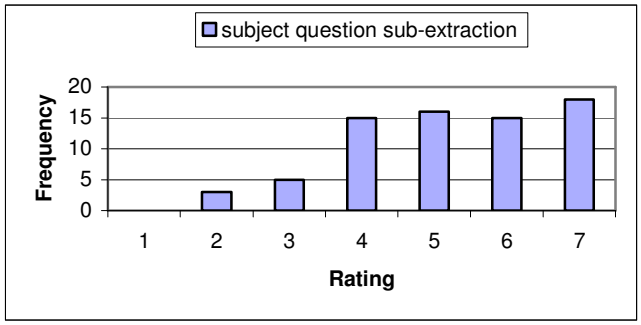
Confirmed predictions:

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)).

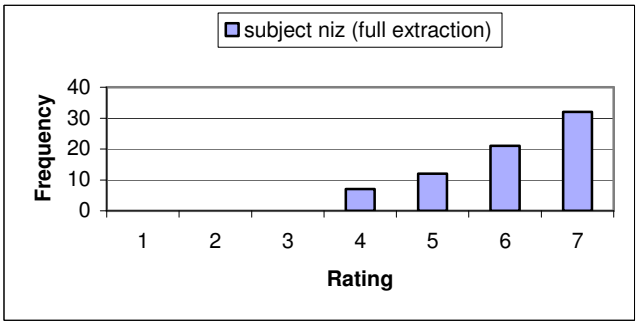
(62) *Sub-extraction conditions: subject-od* and *subject question*, Experiment 4

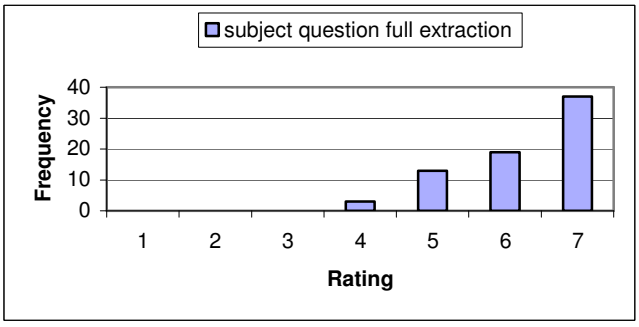




- Histograms for the fully acceptable conditions

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





- 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 *v*P 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 *v*P and TP subjects
  - There is significant individual variation in sub-extraction from subjects

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