On the Variability of Phases

Željko Bošković
University of Connecticut
zeljko.boskovic@uconn.edu
http://web.uconn.edu/boskovic/papers.html

(1) Kamen je razbio prozor.
stone is broken window (SC)

Bošković (2008, 2010a): There is a fundamental syntactic difference in the traditional Noun Phrase (TNP) of English and languages like SC, which can be captured if DP is not even present in the TNPs in (1). Despić’s (2011, in press) binding test

(2) a. His father considers Johni highly intelligent.
b. Johni’s father considers himi highly intelligent.

(3) a. * Kusturicini najnoviji film ga je zaista razočarao.
Kusturica’s latest movie him is really disappointed
‘Kusturica’s latest movie really disappointed himi.’
b. * Njegov najnoviji film je zaista razočarao Kusturicu.
His latest movie is really disappointed Kusturica

Demonstratives and adjectives that precede a possessor do not confine the possessor’s c-command domain, which follows if demonstratives and adjectives that precede a possessor are also NP-adjoined

(4) a. *[NP Ovaj [NP njegovi [NP najnoviji [N’ film]]] je zaista razočarao Kusturicu.
this his latest movie is really disappointed Kusturica
‘This latest movie of his really disappointed Kusturica i.’
b. *[NP Brojni [NP njegovi [NP filmovi ]] su razočarali Kusturicu.
numerous his movies are disappointed Kusturica

(5) a. *[NP Ovaj [NP Kusturicini [NP najnoviji [N’ film]]] ga je zaista razočarao.’
This Kusturica’s latest movie him is really disappointed
‘This latest movie of Kusturica really disappointed himi.’
b. *[NP Brojni [NP Kusturicini [NP filmovi ]] su ga razočarali
numerous Kusturica’s movies are him disappointed

Non-adjectival numerals and quantifiers which assign genitive of quantification

(6) [QP Pet [NP Dejanovihi [NP prijatelja ]]] je došlo na njgovo venčanje
five Dejan’s friendsGEN is came to his wedding
‘Five of Dejan’s friends came to his wedding.’

DP as a phase in English
Making it general: NP is a phase in SC

Abels’s (2003) generalization: the complement of a phase head is immobile. An IP that is dominated by a CP, a phase, cannot undergo movement .This follows from PIC/anti-locality, the PIC requiring IP movement through SpecCP, and anti-locality blocking it.

---

1 This material is based upon work supported by the National Science Foundation under Grant BCS-0920888.
(7) *His mother likes Mary, everone, believes that

(8) *[CP IPi [C: C ti]

(9) *IPi [CP [C: D ti]

If NP is a phase in NP languages an NP complement of a noun cannot undergo movement.

(10) a. *Tog studenta sam pronašla [sliku ti]
that student(gen) am found book
‘Of that student I found the picture’

b. *Tog grad a sam pronašla [sliku ti]
that bwn am found picture
‘Of that town I found the picture’

c. Pronašla sam sliku ovog studenta/gra da.

VP/vP

(11) This student, I [vp ti [vp teach ti]]
Ovog studenta ja učim

English

(12) a. Of which city did you witness the destruction? (Huang 1982, Chomsky 1986b)

b. Of whom do government employees see pictures every day (Bach and Horn 1976)

c. Of which car were the hoods of damaged by the explosion. (Kuno 1987)

English vs SC

Greek

(13) a. tu vivliu, mu ipes pos dhiavases [tin kritiki ti]
the-gen book-gen me said-2s that read-2s the review
‘You told me you read the review of the book.’ (Horrocks and Stavrou 1987)

b. Piu vrik es [tis fotografies ti]?
who-gen found-2s the pictures
‘Of whom did you find the pictures?’ (Arhonto Terzi, p.c.)

QP, additional structure: Nominal complement extraction improves in this context.

(14) a. *Ovog studenta sam pronašla [mnogo knjiga ti]
this student(gen) am found many books
‘Of this student I found many books.’

b. *Ovog studenta sam pronašla knjige ti
this student an found books

The highest phrase in a TNP domain counts as a phase

If the highest projection in a TNP counts as a phase, NP1 is a phase in (16); the complement of books then cannot move. However, QP, not NP1, is as a phase in (15), hence the complement of books can move.
Evidence against the rigid, once a phase, always a phase approach (NP1 would always be a phase here)

SC vs English; SC vs SC

**PPs**

(17) a. *Sobu on uđe u (juče).
   room he entered in yesterday
b. *Njoj on hoda prema.
   her he walks toward
c. On hoda prema njoj.

SC vs English
Turkish: P-stranding correlates with richer structure (Şener 2006)

   weNOM PelinGEN friendPOSS yesterday for money collectPAST.1PL
   ‘Yesterday, we collected money for Pelin’s friend.’
   IINOM carGEN yesterday in.front.of3SG.POSS.LOC standPAST.1SG
   ‘Yesterday, I stood in front of the car (not behind it).’

(19) a. [PP NPı [P' tı]] b. [CplocP NPı [AgrP [PP tı]]]

The phasehood of XP changes with an addition of YP on top of it. Given that in both the Turkish and the SC case XP and YP belong to the same extended projection, the data under consideration receive a unified account if the highest phrase in the extended projection of a major category (PP and NP in the examples under consideration) counts as a phase.

Turkish gives us a clue regarding what may be behind the crosslinguistic variation with respect to the availability of P-stranding: it’s the richness of PP structure.

The patterns from Turkish are the sole patterns in SC and English: P-stranding languages have a richer PP structure than non-stranding languages (see Drummond, Hornstein, and Lasnik (2010) for evidence that the traditional PP (TPP) is indeed a phase in English)

**PP complements of Ps**

(20) a. They took a shot at him from behind that car.
   b. *[Behind which car], did they take a shot at him from tı (Cinque 1990)
   c. Which car did they take a shot at him from behind?

Additional PP structure is case/agreement related, it is not present when a P takes a PP complement.

(21) [PPı [PP2 Behind which car], [P'1 from tı]]
(22) [PPı [NP Which car], [P' from [XP tı [PP2 [P' behind tı]]]

**Ellipsis**

Only phases and phasal complement can elide
You like Jane’s book, and I like [DP Peter’s [NP book]].

They arrested someone, but I don’t know [CP who? C [NP they arrested t]].

**Argument ellipsis**

(25)  
(a) Taro-o-wa sannin-no sensei-o sonkeisiteiru.  
Taro-Top three-Gen teacher-Acc respects  
‘Taro respects three teachers.’

(b) Hanako-mo e sonkeisiteiru.  
Hanako-also respects  
‘(Lit.) Hanako respects e, too.’  
(Japanese, Şener and Takahashi 2009:3)

(26)  
a. John respects three teachers.  
b. Mary respects them, too.  
c. Mary does, too.  
d. Mary respects three teachers.

Japanese allows ellipsis of all arguments, TNPs, CPs, and PPs (Saito 2007, D. Takahashi 2010).

(27) Extraction from an ellipsis site is possible only if it takes place from an elided phasal complement.

Sluicing and possessor-stranding

No extraction out of argument ellipsis (Shinohara 2006, Saito 2007)

(28) Hanako-o-[CP zibun-no teian-ga saiyouosareru to] omotteiru ga, Taro-o-omotte inai  
-TOP self-GEN proposal-NOM accepted-be that think though -TOP think not  
‘Hanako thinks that her proposal will be accepted, but Taro does not think that her/his proposal will be accepted.’

book-ACC -TOP -NOM bought that said though magazine-ACC -TOP said  
‘Taroo said that Hanako bought a book, but Ziroo said that she bought a magazine.’

b. *Sono hon-o, Taro-o-[CP Hanako-ga t i katta to] tta si, sono hon-o, Ziroo-mo itta  
that book-ACC -TOP -NOM bought that said and that book-ACC -also said  
‘Taroo said that Hanako bought that book, and Ziroo also said that she bought that book.’

c. *Taroo-o-[CP Hanako-ga sono hon-o katta to] itta si, sono hon-o, Ziroo-mo itta  
-TOP -NOM that book-ACC bought that said and that book-ACC -also said

(30) X …[LP [YP αi [ZP [KP … t i …]]]

**Implementation**

**NP ellipsis in Japanese**

(31) [Taroo-no [NP taido]]-wa yo-i ga, [DP Hanako-no  
Taro-Gen attitude-Top good-pres though Hanako-Gen  
[NP taido]-wa yoku-na-i.  
attitude-Top good-not-Pres  
‘Though Taro’s attitude is good, Hanako’s isn’t.’  
(Saito, Lin, and Murasugi: 253)

Argument/adjunct asymmetry (Saito, Lin, and Murasugi 2008)

(32) *[Hare-no hi]-wa yo-i ga, [ame-no hi]-wa otikom-u.  
clear-Gen day-Top good-Pres though rain-Gen day-Top feel.depressed-Pres  
‘Clear days are OK, but I feel depressed on rainy days.’  
(Saito, Lin, and Murasugi: 253)
Takahashi (2011): the remnants are adjuncts (see Takahashi 2011 for an account of (32))

*Taroo-no in (31) is an adjunct.*

(33)  
a. *Kare-i-no saisin-no eega-wa hontooni Kurosawa-i o rakutans-ase-ta.*

Him-GEN latest-GEN movie-Top really Kurosawa-ACC disappoint-cause-past

‘His latest movie really disappointed Kurosawa.’

b. Itu-tu-no kare-i-no saisin-no eega-ga hontooni Kurosawa-i o rakutans-ase-ta.

five-CL-GEN he-GEN latest-GEN movie-NOM really Kurosawa-ACC disappoint-cause-past

‘Five of his latest movies really disappointed Kurosawa.’

(34)  
Sin-no sinnen-wa kawar-ai-ga, nise-no sinnen-wa sugu kawaru

true-Gen conviction-Top change-not-though fake-Gen conviction-Top easily change-Pres

‘The true conviction never changes, but the fake (one) easily changes.’ (Kadowaki 2005: 194)

Relative clauses

(35)  
[[Aisatu-suru]-dake-no] kankei-wa yo-i-ga

greeting-do-only-Gen
top
good-Pres-though

[[okane-o kasikari-su-ru]-dake-no] kankei-wa yoku-na-i.

money-Acc borrowing.and.lending-do-Pres-only-Gen
top
good-not-Pres

‘the relation in which they only greet is good, but the relation in which they only borrow and lend money is not good.’

(36)  
Yoshio-wa [[musume-ga itizitekini mise-ta]-dake-no]

Yoshio-Top daughters-Nom temporarily show-Past-only-Gen

amae]-nara yurus-e-ta. Taroo-mo [musume-ga

emotional.dependency-if allow-can-Past. Taro-also daughter-Nom

itizitekini mise-ta]-dake-no amae]-nara yurus-e-ta.

temporarily show-Past-only-Gen emotional.dependency-if allow-can-Past

‘Yoshio could allow the emotional dependency that daughters temporarily showed. Taro could also allow emotional dependency that daughters temporarily showed.

(37)  
[John-ga su-ru-tumori]-no kougeki-wa seikousu-ru-darou-ga

John-Nom do-Pres-intend-Cop attack-Top succeed-Pres-probably-though

[Mary-ga su-ru-tumori]-no kougeki-wa seikousi-na-i-darou.

Mary-Nom do-Pres-intend-Cop attack-Top succeed-Neg-Pres-probably

An attack John intends to do will probably succeed, but an attack that Mary intends to do probably will not succeed.

Measure numerals license ellipsis

(38)  
Amerikagun-wa nizyu-pun-no kougeki-o keikakusuri-ta-ga

U.S. Army-Top 20-minute-Gen attack-Acc plan-Past-though

nihongun-wa rokuzyu-pun-no kougeki-o keikakusi-ta.

Japan Army-Top 60-minutes-Gen attack-Acc plan-Past

‘lit. the U.S. army planned attack of 20 minutes, but the Japanese army planned attack of 60 minutes.’

Numerals without *no* in general license ellipsis

(39)  
Taroo-wa [yon-satsu-no hon]-o kat-ta ga, sono-uti

Taro-Top four-CL-Gen book-Acc buy-Past though that-out.of

ni-satu-o sudeni yomi-oe-ta.

two-CL-Acc already read-finish-Past

‘Taro bought four books, but he already finished reading two of them.’

Structure for adjunct cases
(40)  
\[ \text{NP} \]
\[ \text{adjunct} \text{NP} \]
\[ \text{pronoun} \text{NP} \]

(41)  Case particles are located in K, adjuncts are KP adjoined (Takahashi 2011)

(42)  
\[ \text{KP} = \text{phase} \]
\[ \text{adjuncts} \]
\[ \text{KP} \]
\[ \text{NP} \text{K} \]

(43)  Numerals  
\[ \text{QP} = \text{phase} \]
\[ \text{CLP} \text{Q'} \]
\[ \text{KP} \text{K-Q} \]
\[ \text{NP} \text{t}_K \]

Additional data

(44)  A sensei-wa subete-no Taroo-no tikoku-o yurusi-ta. (ANTECEDENT)  
\[ \text{Pro. A-Top all-Gen Taro-Gen tardiness-Acc forgive-Past} \]
\[ \text{‘lit. Prof. A forgave all tario’s tardiness.’} \]

(45)  *B sensei-wa hotondo-no Ziroo-no tikoku-o yurus-anakat-ta.  
\[ \text{Prof.B-Top most-Gen Ziro-Gen tardiness-Acc forgive-Neg-Pat} \]
\[ \text{‘lit. Prof. B didn’t forgive most of Ziro’s tardiness.’} \]

(46)  B sensei-wa hotondo Taro-no tikoku-o yurus-anakat-ta.  
\[ \text{Prof.B-Top most Taro-Gen tardiness-Acc forgive-Neg-Past} \]
\[ \text{‘lit. Prof. B didn’t forgave most of Taro’s tardiness.’} \]

(47)  
\[ \text{QP} = \text{phase} \]
\[ \text{most} \text{Q'} \]
\[ \text{KP} \text{K-Q} \]
\[ \text{Ziro} \text{KP} \]
\[ \text{NP} \text{t}_K \]
Converging evidence from two very different domains: Japanese ellipsis replicates the paradigm from extraction out of TNP's in SC: adding the same elements that change the possibilities for extraction out of SC TNP's changes the possibilities for ellipsis within Japanese TNP's, in the same way. The highest-projection-as-a-phase analysis explains the SC extraction paradigm and the Japanese ellipsis paradigm in exactly the same way, unifying the two phenomena.

Japanese vs Turkish  (cf. Bošković and Sener 2012 for Turkish)

(49) *[Pamuk-un kitab-i-ni] oku-du-m, ama [Oe-nin kitab-i-ni] oku-ma-di-m.
P.-gen book-3sg. poss-acc read-past-1sg but O.-gen read-neg-past-1sg
‘I read Pamuk’s book, but I didn’t read Oe’s.’

(50) a. Turkish:  [NP Poss [NP N
b. English:  [DP Poss [D' [NP N

When there is additional structure, as with numerals, ellipsis is possible in Turkish.

(51) ?Pelin [Chomsky-nin üç tane kitab-i-ni] oku-muş,
P.-nom C.-gen three CLL book-3s. poss-acc read-evidential.past
ama [Foucault-nun iki tane kitab-i-ni] oku-muş.
but F.-gen two CLL read-evidential.past
‘S/he read three books of Chomsky’s, but s/he read 2 books of Foucault’s.’

(52) [CLLP Poss [CLL Num [CLL’ CLL0 
    books
    Foulcault-nun iki tane kitab-i-ni

The reduced NP requires a linguistic antecedent, which shows we are dealing with ellipsis here.

(53) *Betsy must have been being hassled by the police, and Peter must have been being hassled. 

On the structure of the aspectual field: what you see is what you get

Only morphologically motivated projections for the middle/aspectual field, no null AspectPs: the modal is generated under T, the auxiliaries, being verbal-like elements, are generated under VP. (VPf is used to indicate their functional nature.) The only other projections are those headed by –en and –ing (for ease of exposition I am omitting the internal structure of the projection(s) where the main verb is located).
(58)  \([TP \text{ must} [VP_1 \text{ have} [\text{AspectP}_1 \text{ en} [VP_{2} \text{ be} [\text{AspectP}_2 \text{ ing} [VP_{3} \text{ be} [VP]

The alternative will also work

(i)  \([TP \text{ must} [VP_1 \text{ have} [\text{AspectP}_1 \text{ en} [VP_{2} \text{ be} [\text{AspectP}_2 \text{ ing} [VP_{3} \text{ be} [VP

**Phases in the middle field**

CP/clausal phasal domain

VP phasal domain: AspectP belongs to the VP domain (see also Wurmbrand 2011). Temporal-related information/structure is split into two domains, with tense belonging to the clausal domain and aspect to the verbal domain (aspectual projections are often interspersed with various verbal projections, in many languages aspect is expressed through derivational verbal morphology (e.g. in Slavic) or through free standing particles in the VP domain (e.g. English particles like *up*) and in many languages aspect affects case assignment)

The highest projection within the extended domain of VP works as a phase

(59)  \([TP \text{ must} [VP_1 \text{ have} [\text{AspectP}_1 \text{ en} [VP_{2} \text{ be} [\text{AspectP}_2 \text{ ing} [VP_{3} \text{ be} [VP

**Be shift**

Akmajian and Wasow (1975), Iwakura (1977), Lobeck (1987), Bošković (2004a), and Thoms (2010): *be in been* undergoes movement while *be in being* does not.

(60)  *The students are being all arrested by the police.
(61)  *The students are being all+ti arrested ti by the police.
(62)  ??The students have been all arrested by the police.

Given that quantifier float in the main verb domain is not possible here, it must be the case that the quantifier is floated in a higher Spec in (62). This requires movement of *be*.

(63)  The students have beenj [VP_{1} \text{ all+ti t}_{j} [VP_{2} \text{ arrested t}_{j} by the police.
(64)  a. They have been often terrorized by prejudice.
   b. ??*They are being often terrorized by prejudice.
   c. ??Updates have been often released for this.
   d. *Updates are being often released for this.

**Accounting for the distribution of VP ellipsis**

(65)  \([TP \text{ Peter}_{i} \text{ must} [VP_1 \text{ have} [\text{AspectP}_1 \text{ en} [VP_{2} \text{ be} [\text{AspectP}_2 \text{ ing} [VP_{3} \text{ be} [VP \text{ hassled t}_{i} by the police

*be* moves to –en, affix hopping for *be* and *-ing*

(66)  \([TP \text{ Peter}_{i} \text{ must} [VP_1 \text{ have} [\text{AspectP}_1 \text{ be}+en [VP_{2} \text{ t}_{j} [\text{AspectP}_2 \text{ ing} [VP_{3} \text{ be} [VP \text{ hassled t}_{i} by the police

Ellipsis possibilities: account of the full paradigm in (54)-(57).

Gerunds
"I recall Morgan having been thinking about it, but I don’t recall Peter having been."

"…" + "I recall Morgan having been thinking about it, but I don’t recall Peter having been.

If finite *have* is the initial element in the middle field, ellipsis after the first element is possible.

Betsy has been being hassled by the police, and Peter

a. has too.
b. has been too.
c. *has been being too.

(Sag 1976)

When only the -*ing* inflected auxiliary verb is present:

Jane is being hassled by the police and Sue

a. *must too.
b. must have too.
c. must have been too.

The active VP in (76) projects its own phasal domain, which functions as the complement of the auxiliary *be*, and undergoes deletion in (76).

Ellipsis is also possible in (77); the complement of *be* in (77) must be a phasal domain.

Under the current approach, the highest projection in the extended domain of a verb functions as a phase. Passive verbs are expected to project phases. Not having vP with passive verbs has no effect here. Whatever the highest projection is in the extended domain of the verb is still a phase a here.

Adjectives also project phases

John must be tired, and Peter must be too.

Finally, basics:

John lives in London, and Peter does too.

Issue: is an AspectP present here, given that there is no overt aspectual morphology?
No AspectP analysis

(82) John lives in London, and Peter does [\textit{vP live in London}]

Blocking the option of eliding the VP complement of the v phasal head, as in \textit{*John lives in London, and Peter lives in London too}: the verb does not move to v hence it cannot survive ellipsis of the VP complement of the phasal head v (quite generally or only in ellipsis, see Lasnik 1999, Gengel 2007, 2009).

An alternative with null AspectP

(83) John lives in London, and Peter does [\textit{AspectP [vP live in London]}]

Teasing apart the analyses: voice mismatches with VP ellipsis

Merchant (2008): VP ellipsis tolerates voice mismatches. Voice is specified in the v head (i.e. vP). Since the two conjuncts in (84) have different voice specifications, the v head in the second conjunct must be outside of the ellipsis site (otherwise there would be a voice mismatch between the antecedent and the elided structure), which means that the example should involve VP, not vP ellipsis.

(84) The problem was to have been looked into, but obviously nobody did [\textit{vP-active [vP look into]}]  

Perhaps there is simply no problem with Recoverability of Deletion if an elided active verb has a passive verb as its antecedent.

This does not work: in contrast to VP ellipsis, pseudogapping does not tolerate voice mismatches.

(85) *Roses were brought by some, and others did lilies.
(86) Cf. Some brought roses and others lilies.  

Merchant (2008): VP ellipsis and pseudogapping target different phrases. Pseudogapping must involve deletion of vP; (85) is then unacceptable because the antecedent and the elided constituent have different voice specifications.

(87) *Roses were brought by some, and others did lilies [\textit{vP-active [vP bring]}]


In addition to the high, clausal focus position, a number of languages have a low focus position within the VP domain (see Bošković 1997, Stjepanović 1999, Belletti 2004, Belletti and Shlonsky 1995, Drubig 2003, Kuo 2009, Bastos 2011, among many others). This low focus position belongs to the VP phasal domain. Under the no-null-aspect-head analysis, (85) then has the structure in (88) (prior to ellipsis), while (84) has the structure in (89), with phases indicated in bold.

(88) …others did \textit{FocP lilies [vP-active [vP bring]]}
(89) …obviously nobody did [\textit{vP-active [vP look into]}]

(89) allows VP deletion, given that VP is a complement of a phasal head, (88) does not since Foc is the relevant phasal head here.
The current system explains why pseudogapping and VP ellipsis differ with respect to the level of the structure that is elided, but only if the above constructions do not contain a null aspect head. If a null aspect head is present even (89) can only involve vP ellipsis.

(90) …obviously nobody did [AspectP [vP-active [VP look into]]]

The status of VP regarding phasehood must be different in (88) and (89): VP is a phase head complement in (89) (hence can be elided) but not in (88) (hence cannot be elided), which means that vP works as a phase in (89) but not in (88). The variable status of vP with respect to phasehood falls out straightforwardly under the current system. In both (88) and (89) the highest phrase in the VP domain functions as a phase: while vP is the highest head in this domain in (89) it is not in (88), where pseudogapping introduces an additional projection into the VP domain.

**Conclusion for VP ellipsis**
- only the structure that is morphologically manifested is present in the middle field, with the auxiliary undergoing movement to the –en affix, but not to the –ing affix.
- ellipsis is phase-constrained: only phases and complements of phasal heads can be elided (in principle). This approach disallows, e.g., ellipsis of complements of non-phasal heads.
- the highest projection in the extended domain of a phasal head counts as a phase. Aspect belongs to the verbal, not clausal, phasal domain, it delineates the verbal phasal domain. The highest projection that works as a phase in the verbal domain is AspectP (when present; otherwise the highest projection in the absence of AspectP is the phase), with the highest AspectP working as a phase in verbal domains with more than one AspectP (as a result, the –ing AspectP sometimes works as a phase, and sometimes it does not, depending on whether the –en AspectP is present above it).
- Adjectives and passive verbs also project phases, as expected under the highest-phrase-is-a-phase approach.
- Pseudogapping involves an additional projection that affects the phasehood of vP, which provides an explanation for the different behavior of pseudogapping ellipsis and simple VP ellipsis regarding ellipsis.

**References**
Bošković, Ž. 2008. What will you have, DP or NP? In *Proceedings of the North East Linguistic Society* 37, ed. by Emily Elfner and Martin Walkow, 101-114. Amherst, MA: GLSA, University of Massachusetts.


