

Adjectival escapades*

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I examine a number of syntactic and semantic issues regarding adjectives, including Slavic adjective-like elements like demonstratives and possessors, which include word order in the traditional NP (TNP), adjective-stranding ellipsis, adjectival complements, and the effect of agreement on left-branch extraction. While I focus on Slavic, other languages (e.g. Chinese, Turkish, Japanese, German) are also discussed.

1 Word order

I first discuss TNP word order. Based on a number of syntactic and semantic generalizations that divide languages into two groups, those with and those without articles, Bošković (2012c) argues there is a difference in the TNP of English and article-less languages, where the latter lack DP. An additional argument for this analysis concerns an observation hinted at in Bošković (2009a) that word order within TNP is freer in NP than in DP languages. The reason for this is that the richer structure of DP languages imposes restrictions on word order in DP languages that are not found in NP languages due to the lack of the syntactic structure in question. Thus, in English demonstratives and possessives must precede adjectives because they are located in DP, which is higher than the phrase where adjectives are located. In SC, due to the lack of DP all these elements are treated as NP adjuncts (Bošković 2012c). As a result,

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syntax does not impose any restrictions on the order of the elements in question: the only restrictions we may find come from the semantics. Chinese strongly confirms this approach. In contrast to English, any order of adjectives, demonstratives, and possessives is allowed in Chinese (also Japanese and Korean), which follows if they are all NP adjoined.

- (1) Zhangsan-de hongse de chenshan vs. hongse de Zhangsan-de chenshan
 Zhangsan-GEN red shirt red Zhangsan-poss shirt
- (2) a. na-bu hongse de paoche vs. hongse de na-bu paoche
 that-CL red sport-car red that-CL sport-car
 b. na-bu Zhangsan-de paoche vs. Zhangsan-de na-bu paoche

The analysis is strongly confirmed by binding.¹ Despić (2011) notes (4) contrasts with (3) in that the pronoun and the name cannot corefer. Given that the possessor is NP-adjoined and that SC lacks DP, the possessor c-commands out of the TNP, which results in Condition B/C violations in (4). Bošković (2012c) shows Chinese and Japanese pattern with SC (5).²

- (3) a. His_i latest movie really disappointed Tarantino_i.
 b. Tarantino_i's latest movie really disappointed him_i.
- (4) a. *[_{NP} Kusturicin_i [_{NP} najnoviji film]] ga_i je zaista razočarao. (SC)
 Kusturica's latest movie him is really disappointed
 'Kusturica_i's latest movie really disappointed him_i.'
 b. *[_{NP} Njegov_i [_{NP} najnoviji film]] je zaista razočarao Kusturicu_i.
 his latest movie is really disappointed Kusturica
- (5) a. *[_{NP} Ta_i-de [_{NP} zuixinde dianying]] ciji le Li-An_i (Chinese)
 he-GEN newest movie provoke PERF Li-An
 'His_i latest movie provoked Li-An_i.'
 b. *[_{NP} Li-An_i-de [_{NP} zuixinde dianying]] ciji le ta_i
 Li-An-GEN newest movie provoke PERF he

Demonstratives and adjectives that precede a possessor do not confine its c-command domain, which follows if they are also NP-adjoined (see Bošković 2012c, Bošković & Hsieh 2012, Despić 2011 for Condition B).

¹A multiple Spec analysis actually suffices to account for word order, but not for binding.

²Turkish patterns similarly (Bošković & Şener 2012). It is possible possessors are in Spec NP in some NP languages, in which case they would not c-command out (see Bošković 2012c and Takahashi 2011 for prosodic/semantic factors that need to be controlled for).

- (6) a. *_[NP zaoqide/daduoshude]_[NP ta_i-de]<sub>[NP dianying]]] ciji le Li-An_i
 early-time/most he-GEN movie provoke PERF Li-An
 ‘Most/the early movies of his_i provoked Li-An_i.’
 b. *_[NP Zhe-bu]_[NP ta_i-de]<sub>[NP dianying]]] ciji le Li-An_i.
 this-CL he-GEN movie provoke PERF Li-An
 ‘This movie of his provoked Li-An_i.’ (Chinese)</sub></sub>
- (7) a. *_[NP Brojni]_[NP njegov_i]_[NP filmovi]] su razočarali Kusturicu_i
 numerous his movies are disappointed Kusturica
 b. *_[NP Ovaj]_[NP njegov_i]_[NP najnoviji film]] je zaista razočarao Kusturicu_i.
 this his latest movie is really disappointed Kusturica

SC and Chinese, however, differ regarding word order. In SC, adjectives and possessives are freely ordered, but demonstratives must come first.

- (8) Jovanova skupa slika vs. Skupa Jovanova slika
 John’s expensive picture *expensive John’s picture
- (9) a. ova skupa slika vs. ?*skupa ova slika
 this expensive picture expensive this picture
 b. ova Jovanova slika vs. ?*Jovanova ova slika

Semantically, possessives and adjectives are freely ordered. Possessives have modificational semantics (Partee & Borschev 1998: [[Mary’s]] = λx . [R_i(Mary)(x)], R_i is a free variable)). Under standard assumptions that adjectives are also of type $\langle e, t \rangle$ and that there is a rule of intersective Predicate Modification, semantics imposes no restrictions on the order in which possessives and adjectives are composed. Demonstrative NPs pick out an individual of type e : demonstrative *that* is of type $\langle \langle e, t \rangle, e \rangle$. Once *that* maps a nominal to an individual, further modification by $\langle e, t \rangle$ predicates is impossible. Hence, while straightforward semantics allows possessives and adjectives to be composed in either order, demonstratives must be composed after both adjectives and possessives.³ This perfectly matches the actual ordering of the elements in question in SC.

³ This also holds for adjectives like ‘former’, which is of type $\langle \langle e, t \rangle, \langle e, t \rangle \rangle$. Note that the above account can be extended to non-restrictive adjectives under Morzycki (2008), where non-restrictive adjectives are also required to be interpreted inside determiners.

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Why are even demonstratives freely ordered in Chinese? Bošković and Hsieh (2012) note that the fact that relative clauses can also precede a demonstrative in Chinese provides a clue for resolving the puzzle.

- (10) **dai yanjing de** na-ge xuesheng
 wear glasses REL that-CL student
 ‘that student who wears glasses’

Partee (1976) shows the head noun of restrictive relatives and the relative must combine before a determiner, serving together as its restrictor. However, there are languages where relatives precede determiners. Regarding Chinese, Lin (2003) posits a free variable in demonstratives, with the relative clause specifying the value of this variable. (10) is analyzed as in (11). The free variable h in the demonstrative’s denotation carries the same function as that of a contextual pronominal variable. $H_{\langle e, t \rangle}$ receives its value from the relative clause, whose type is also $\langle e, t \rangle$.

- (11) [_Z [_{CP} dai yanjing de] [_Y [_{Dem} na-ge] [_{NP} xuesheng]]]
 [[NP]] = λx . x is a student
 [[Dem]] = $\lambda f_{\langle e, t \rangle} \lambda g_{\langle e, t \rangle}$. THAT x s.t. $f(x)$ and $\mathbf{h}(x)$ and $g(x)$
 [[Y]] = $\lambda g_{\langle e, t \rangle}$. THAT x s.t. x is a student and $\mathbf{h}(x)$ and $g(x)$
 [[CP]] = λx . x wears glasses
 [[Z]] = $\lambda g_{\langle e, t \rangle}$. THAT x s.t. x is a student and x wears glasses and $g(x)$

Bošković and Hsieh (2012) extend this to (2): Since both possessives and intersective adjectives are of type $\langle e, t \rangle$, they can also provide a value for the contextual pronominal variable that further restricts the domain of quantification. This accounts for the fact that possessors, intersective adjectives, and relatives can all precede demonstratives in Chinese.⁴

⁴ Spelling this out, the demonstrative is of type $\langle \langle e, t \rangle, e \rangle$ and bears an index. Further restriction from the pre-dem. modifier is specified via the assignment function g applying on the demonstrative’s index. Through the variable assignment $g(1)$ that is built into the denotation of the demonstrative, the modifier in (2a) can restrict the demonstrative.

- (i) [_{NP1} [_{AP} hongse] [_{NP2} [_{Dem} na-bu1 [_{NP3} paoche]]]]]
 [[NP3]] = λx . x is a sports car
 [[na-bu1]] = $\lambda f_{\langle e, t \rangle}$. THAT individual x such that $g(1)(x)=f(x)=1$
 [[hongse]] = λx . x is red
 [[NP2]] = THAT individual x such that $g(1)(x)=1$ and x is a sports car

Interestingly, it is harder for non-intersective adjectives to precede a demonstrative. This can be captured under Morzicky (2008) (see fn. 3), where such elements are also interpreted inside determiners, since the contextual pronominal variable option, which “licenses” adjunction of adjectives outside of determiners, does not affect such adjectives.

- (12) a. na-ge keyide xuesheng b. ?*keyide na-ge xuesheng
 that-CL questionable student

The above analysis relies on the contextual pronominal variable in the semantics of demonstratives. Such a variable should not be available in SC demonstratives. A modifier outside of a demonstrative then cannot be interpreted as part of its restrictor and has to adjoin under the demonstrative. The different behavior of Chinese and SC demonstratives may be related to the presence of a classifier on Chinese demonstratives, the classifier being a realization of the contextual restriction.

To sum up, radically different behavior of article-less languages like SC and Chinese and article languages like English regarding word order and binding within TNPs provides strong evidence for the NP/DP analysis and shows quite conclusively that a uniform analysis for all these languages is simply not empirically warranted. The NP analysis also accounts for the remaining difference between Chinese and SC with respect to word order, tying it to an independent factor.

2.1 Ellipsis with adjectives/possessors: NP languages

I now turn to adjective/poss-stranding ellipsis. Bošković & Şener (2012) (BS) note Turkish does not allow it. (I only gloss case separately below.)

- (13) *Pelin eski kitap sattı, Suzan-sa [yeni ~~kitab~~] sattı.
 P. old book sold S.-however new sold
 ‘Pelin sold old books, while Susan sold new ones.’
- (14) *Pamuk-un kitabı-nı okudum, ama [Oe-nin ~~kitabı-nı~~] okumadım.
 P.-gen book-acc read but O.-gen not.read
 ‘I read Pamuk’s book, but I didn’t read Oe’s.’

[[NP₃]]^g = THAT individual x such that x is red and x is a sports car
 (where g^[1→λx. x is red]; Assignment Modification)

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This follows under the NP analysis: since in Turkish possessors and adjectives are not outside of the NP, the NP cannot be elided without these elements. Stark contrast between Turkish (14) and its English counterpart provides strong evidence against applying the DP analysis of English possessors, which are located in SpecDP, to Turkish.

- (15) a. Turkish: [NP POSS [NP N b. English: [DP POSS [D' ~~NP~~N

Significantly, BS note ellipsis is possible with additional structure. BS, Bošković (2012a), Despić (2011), Takahashi (2011) show numerals introduce additional structure in Turkish, SC, Japanese, and Chinese.⁵ Importantly, in this context possessors can survive ellipsis in Turkish. This is expected: in contrast to (14), where the possessor is NP-adjoined (see (15a)), due to the presence of the additional structure the possessor is CLIP rather than NP-adjoined in (16) (see (17)). Hence, in contrast to (14), the full NP can be elided in (16) and still strand the possessor.

- (16) ?Pelin Chomsky-nin üç tane kitabı-nı okumuş,
P C.-gen three classifier book-acc read
ama [Foucault-nun iki tane ~~kitabı-nı~~] okumuş.
but F.-gen two classifier read
‘S/he read 3 books of Chomsky’s, but s/he read 2 of Foucault’s.’
(17) [CLLP POSS [CLLP Num [CLL' CLL⁰ ~~NP~~NP] ~~books~~

Ellipsis is also possible with adjectives in the context in question, as expected. Furthermore, in both cases the reduced NP requires a linguistic antecedent, which shows we are indeed dealing with ellipsis here.

- (18) Pelin kalın üç tane kitap okudu, Pınar-sa [ince üç
P. thick three CLL book read P.-however thin three
tane ~~kitap~~] okudu.
CLL read
‘Pelin read three long books, but Pinar read three short ones.’
(19) *A and B are in a bookstore. Pointing to Foucault’s books, A says:*

⁵This is illustrated by the lack of a binding violation in SC (i).
(i) [QP Pet [NP Dejanovih_i [NP prijatelja]]] dolazi na njegov_i venčanje.
five Dejan’s_{GEN} friends_{GEN} is-coming to his wedding

- a. *Pelin Foucault-nun iki tane okumuş.
 P. F-gen two CLL read
We are in a bookstore. Pointing to the books on the shelves, I say:
 b. *Pınar ince üç tane okudu.
 P thin three CLL read

Japanese allows poss-stranding ellipsis even in simple cases. However, topic/case particles survive ellipsis in Japanese. Takahashi (2011) argues this provides evidence for additional structure in Japanese, the stranded particle occurring in the head position of this additional structure, NP being its complement (the possessor is then KP, not NP adjoined).⁶ What is elided in (20) is NP (21), stranding the possessor and the particle. Such ellipsis is also possible without a possessor, with a stranded particle.

- (20) Taroo-no taido-wa yoi ga, [Hanako-no [_{NP} ~~taido~~]-wa] yokunai
 T.-gen attitude-top good though H-gen -top not.good
 ‘Though Taro’s attitude is good, Hanako’s isn’t.’
 (21) [_{KP} possessor [_{KP} [_K ~~NP~~ K (wa)]]]
 (22) Taroo-mo moo tsukimasita ka? ~~Taroo~~-Ga mada tsukimasen
 T-also already arrived Q -nom yet not.arrived
 ‘Has Taro already arrived? He has not arrived yet.’

Turning to SC, SC also productively allows poss-stranding ellipsis.

- (23) Ja kupujem Ivanova kola a ti kupuješ Petrova ~~kola~~
 I am-buying Ivan’s car and you are-buying Peter’s car

What is going on here? I will argue SC should not be analyzed on a par with Japanese. Rather, a different Turkish construction is relevant here.

There are two other ways of improving partial TNP ellipsis in Turkish: pronominal *-ki* with possessors (24) and accusative with adjectives (27).

- (24) Pamuk-un kitabı-nı okudum, ama [Oe-nin-*ki*-ni] okumadım.
 P.-gen book-acc read but O.-gen-ki-acc not.read
 ‘I read Pamuk’s book, but didn’t read the one by Oe.’

⁶It is actually not out of question that we are dealing here with a pro, which is available in Japanese. Notice also that (19a), without a linguistic antecedent, is possible in Japanese.

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Adopting the pronominal treatment of *ki*, BS argue *ki*-NPs do not involve ellipsis. Note in this respect they do not require a linguistic antecedent.

- (25) *My friends are sending me presents for my birthday. I come home, find a number of presents on the table, open one of them and say;*
Bu (hediye) Pelin-in-ki ol-malı.
this (present) P.-gen-ki be-must
'This (present) must be Pelin's.'

SC poss-stranding also does not require an antecedent: (26) is acceptable in the above context. BS's analysis of *-ki* may then be extended to SC (below we will see a pronominal element accompanies SC possessors).

- (26) Ovaj poklon mora da je Ivanov.
this present must that is Ivan's

Regarding adjectives, Turkish allows adjective-stranding ellipsis with adjectives marked for accusative: compare (27) with (13).

- (27) Pelin eski kitab-ı sattı, Suzan-sa yeni-yi sattı.
P. old book-acc sold S.-however new-acc sold

BS argue the reduced NP is a nominalized adjective: (27) doesn't involve ellipsis. Such reduced NPs do not require a linguistic antecedent. Thus, (28) can be used in this context: *John and Mary are planning to buy a table. They go into a shop, with a number of tables of different shapes and colors, one old, others new. Pointing to one of them, John says:*

- (28) Eski-yi/Yuvarlağ-ı/Yeşil-i istiyorum.
old-acc/round-acc/green-acc want
'I want the old/round/green one.'

BS argue overt manifestation of substantivization is required (if possible). The job in the above cases is performed by accusative *-i* (this is why bare objects disallow adj-stranding). In fact, English also allows such substantivization of adjectives. Again, overt manifestation of the substantivization is required, cf. the article in (29), and a linguistic antecedent is not needed, confirming we are not dealing with ellipsis here.

(29) *(The) rich are selfish.

Concluding that the Turkish and English cases of stranded adjectives discussed in this section involve substantivized adjectives, I turn to SC.

Adjective-stranding ellipsis is fully productive in SC with long-form adjectives (Aljović 2002); the same holds for poss-stranding ellipsis. A linguistic antecedent is not required (cf. (26) for possessives).

(30) Daj mi okrugli/zeleni.
give me round/green

The suggestion is that we are dealing here with substantivized forms. Despić (2011) in fact argues the long-form ending is a pronominal element, which can then be taken to be the overt manifestation of substantivization. The pronominal nature of the long-form adjective/possessor ending is illustrated by (31), where *ga* is a pronominal clitic form.

(31)	<u>Pronominal declension</u> (gen. sg)		<u>Nominal declension</u>
	Long form adjective/possessor	Pronoun	Clitic Short form adjective
	Loš-e- g(a) /Ivan-ov- g(a) dečak-a	nje- ga	ga loš-a dečak-a
	bad Ivan's boy	him	him

We have now identified an overt pronominal element (in fact a clitic) with SC possessors, which makes a unified analysis for Turkish poss+*ki*-stranding and SC poss-stranding even more appealing.

Now, why is English more restrictive than SC/Turkish regarding substantivization of adjectives, as illustrated by the unacceptability of (32)?

(32) *He will buy the round table, and she will buy the small.

Based on English and Greek, Giannakidou and Stavrou (1999) note substantivization has fixed semantics, i.e. kind-denoting, generic semantics. Interestingly, this means substantivization is possible exactly where English nominals allow type shift in Chierchia (1998). Chierchia argues predicates can be type-shifted to kinds in English (λ), which maps properties to corresponding kinds and is defined only for plurals). This kind of type shift is in fact needed for (29). However, Chierchia also argues English disallows ι type-shifting, which would be needed for (32) (the job ι does

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in article-less languages like SC is performed by *the* in English, see below). In fact, since \exists -type shifting is also blocked by the availability of the article *a*, only \cap is available in English (to be more concrete, the generic (33)a involves type shifting; type shifting is not available in (33)b on the intended readings, hence the need for the articles), which is precisely the only context where English allows substantivization.

- (33) a. I like cars. b. *I bought *the/a car.

The proposal is then that substantivization is quite generally licensed by type shift. (I will in fact use the term semantic substantivization below.)

The semantic requirement does not subsume the above morphological requirement: there is still the requirement/tendency for a morphological reflex; to what extent it holds and how it is satisfied vary across languages. *The* is in fact needed in (29) for this reason. Under the current analysis, *the* is not a type-shifter here, as in Longobardi (1994) but contra Giannakidou and Stavrou (1999). Note that for Chierchia (1998), *the* is also needed here for a formal reason. (In fact, *the* does not occur with plural kinds in English, cf. the lack of this interpretation in (34) with *the*.)

- (34) I like cars/the cars

To conclude, there is no null N in (29), which involves (semantic) substantivization licensed through type shifting, the article being present for a formal reason (i.e. due to a morphological requirement).

Turning to SC, for Chierchia (1998), all NPs are of type $\langle e, t \rangle$ in SC. They are turned into type $\langle e \rangle$ by a general type shifting operation that does the job of *the* and which is freely available in the language due to the absence of *the*. As discussed above, this type-shifting operation is not freely available in English and article languages in general.

SC thus turns all $\langle e, t \rangle$ predicates into arguments by type-shifting— \cap , t , and \exists are in fact all available in SC (see Chierchia 1998). As a result, substantivization is fully productive in SC (the same holds for Turkish).

Under the above analysis, the lack of articles leads to more productive type-shifting, which in turn leads to more productive substantivization, giving the appearance of more productive adjective-stranding ellipsis.

Turning to short-form As, Aljović (2002) claims they disallow ellipsis:

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- (35) *Marija je kupila 5 zelenih kišobrana i 2 siva.
Marija is bought 5 green(sh) umbrellas and 2 gray(sh)
'Marija bought five green umbrellas and two gray ones.'

Ellipsis is disallowed here for the same reason as in Turkish: since adjectives are NP-adjoined, full NP cannot be elided while stranding the adjective. Substantivization is also not an option due to the lack of appropriate morphological marking (the overt manifestation of substantivization found with long-form adjectives is missing with short-form adjectives).

Another possibility is that (35) simply does not involve appropriate type-shifting, which would mean that \exists , which operates in (35), cannot license substantivization. In this respect it is worth noting that Despić (2011) gives one acceptable case of ellipsis with a short-form adjective:

- (36) Što trijezan čovjek misli, pijan govori.
what sober(short) man thinks drunk(short) says
'What a sober man thinks, a drunk one says.'

What is going on here? (36) is a generic statement. It appears that ellipsis with short-forms is in fact easier with generic/kinds interpretation.

- (37) Na suncu crn kišobran nikom ne pomaže, a žut pomaže.
on sun black(short) umbrella no-one neg helps and yellow helps
'In the sun black umbrellas don't help anyone, and yellow ones do.'

- (38) *Ana će kupiti crn kišobran, a neće (kupiti) žut.
Ana will buy black(sh) umbrella, and won't buy yellow(sh)
'Ana will buy a black umbrella, but won't buy a yellow one.'

It may then be that \cap type shift in (37) licenses substantivization, which would in turn indicate that \exists cannot do it, hence the contrast between (35)/(38) and (36)/(37). The morphological realization requirement may be the reason why substantivization with short-forms is in general more marginal. Alternatively (ignoring its limited productivity), it is possible that the requirement can be satisfied by the presence of the noun in the antecedent; an overt antecedent in fact generally seems to be required for stranded short forms, though the facts are not completely clear.

- (39) Two people are standing in the street, with umbrellas, on a hot day

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*Na suncu crn nikom ne pomaže, a žut pomaže.
on sun black(sh) no-one neg helps and yellow(sh) helps

It is also possible that we are dealing with a phenomenon that is different from the cases discussed so far. In this respect, Cinque's (2010) proposal that SC short form adjectives are reduced relatives may be relevant, in which case we would not even be dealing with true adjectives here. That another option is needed is confirmed by the fact that there are cases that appear to involve stranded adjectives in other languages that should not be treated in the same way as the above SC/English cases.

2.2 Adjective stranding in DP languages

Consider stranded-adjectives in Spanish from this perspective. Spanish allows adjective stranding, such adjectives do not require a linguistic antecedent, and are not limited to generic contexts ((42) is also possible).

- (40) Juan quiere la mesa nueva y Pedro quiere la *e* vieja.
Juan wants the table new and Pedro wants the old
- (41) John is lying on the ground. There is a green and a red car in the middle of the street. Pointing to the green car I tell the policeman:
El *e* verde lo golpeó.
the green him hit.past
- (42) Yo compraré el libro de Faulkner.
I will.buy the book of Faulkner

However, such stranding is not as productive as in Turkish/SC. It is allowed only with postnominal adjectives; it is disallowed with prenominal adjectives. Interestingly, Cinque (2010) argues the former, but not the latter, have the reduced relative option, which could be taken as indicating that stranded adjectives in fact involve reduced relatives.

- (43) *Juan investiga la probable estafa y Pedro investiga la
Juan investigates the probable fraud and Pedro investigates the
presunta *e*.
supposed

There is extensive literature on such examples and (42); there are in fact

a number of options for analyzing them: agreement-licensed *pro*, PRO, \emptyset_N (null N), reduced relatives, N-gapping (differences regarding semantic substantivization licensing could also be at work here; see also fn. 7). At any rate, I will not attempt to tease these options apart here.

There are other differences between Spanish and Turkish/SC adj-stranding constructions. Thus, while multiple adjective stranding is acceptable (productively) in Turkish/SC (44)/(45), it is often degraded in Spanish (46). Interestingly, it is also degraded with SC short forms (47).

- (44) Pelin büyük yuvarlak masa-yı aldı, Mete-yse küçük
P. big round table-acc bought M-however small
yuvarlağ-ı aldı.
round-acc bought
‘P. bought the big round table, but M. bought the small round one.’
- (45) Ivan je kupio veliki četvrtasti sto, a Petar je kupio mali okrugli.
Ivan is bought big square table and Peter is bought small round
- (46) *Juan compró la mesa negra rectangular y Pedro
Juan bought the table black rectangular and Peter
vendió/compró la marrón cuadrada.
sold/bought the brown square
- (47) ??Na suncu mali crn kišobran nikom ne pomaže,
on sun small black umbrella no-one neg helps
a velik žut pomaže.
but big(sh) yellow(sh) helps
‘In the sun, small black umbrellas don’t help anyone, but big yellow ones do help.’

Cinque (2010) argues Greek articulated adjectives (which co-occur with *the* even in multiple adjective examples) involve ellipsis and observes multiple articulated adjectives are disallowed. This could be taken to suggest that we are dealing with true ellipsis in the Spanish case too.⁷

Finally, consider Bulgarian. Bulgarian is similar to Spanish regarding such stranding: it is possible without a linguistic antecedent and in non-generic contexts, but it is degraded with multiple stranded adjectives.

⁷The fact that a linguistic antecedent is not always required would not militate against an ellipsis analysis; there are other cases where true ellipsis is possible without such a linguistic antecedent, see Elbourne (2005). Note that Riqueros (in preparation) analyzes (40) as involving AP movement to a TNP-internal FocP followed by NP ellipsis.

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- (48) a. Iskam krūglata.
want-1sg round-the
'I want the round one.' (same context as (28))
- b. ??Ivan kupi goljamata kvadratna masa, a Petūr (kupi)
Ivan bought big-def square table and Peter bought
malkata krūgla.
small-def round
'I. bought the big square table and P. bought the small round.'

The above discussion of SC short-form adj-stranding and adj-stranding in DP languages was rather speculative. What is important for us is that more productive type shifting found in article-less languages (due to the lack of articles) leads to more productive substantivization of adjectives. The discussion also reveals that a single analysis of adj-stranding is unlikely to work for all languages. The discussion has only scratched the surface of crosslinguistic variation in this respect, which calls for more in-depth research given that most investigations so far have focused either on a single language or closely related languages.

3 Adjectival complements

I will now discuss the possibility of adjectives taking complements. In many languages modifying adjectives cannot take complements.

- (49) *I met a proud of his son man.

The ban is not universal. Languages allowing such adjectives to take complements can be divided into two groups (Cinque 2010, Siewierska and Uhlirová 1998), depending on whether the complement precedes or follows the adjective. SC, Slovene, Czech, Slovak, Sorbian, German belong to the first group, which disallows (49) but allows (52a); Bulgarian, Greek, and Macedonian belong to the second group, which allows (49).⁸

⁸ Siewierska and Uhlirová list Polish as belonging to the second group, by my informant (K. Migdalski) finds (i) degraded.

(i) a. *dumny z Jana mężczyzna b. ??wierny studentom professor
proud of John man loyal student-dat professor

Russian appears to allow the word order of the second group (Cinque 2010, Bailyn 1994), though one informant (N. Fitzgibbons) finds (ii) degraded.

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- (50) [gordiyat sūs svoeto dete] bašta
proud.the with SELF.the child father
'the father proud of his child'
- (51) a. die [dem Mann treue] Frau
the the-DAT man faithful woman
'the woman faithful to her husband'
b. *die treue dem Mann Frau (German, Fanselow 1986)
- (52) a. na Jovana ponosan čovjek
of Jovan proud man
b. *ponosan na Jovana čovjek (SC)

I will argue that we are actually dealing here with three distinct types, German vs. SC vs. Bulgarian, and not German/SC vs. Bulgarian. German will in fact be argued to be more similar to Bulgarian than SC.

Under the standard account, German (51) has the constituency shown. This will not work for SC. The complement and the adjective do not form a constituent in SC, as shown by (53)–(55), with both PP and NP complements; (54a–b)/(55a–b) give the base-line data for the latter.

- (53) a. Na Jovana je Ana ponosna.
of Jovan is Ana proud
b. Na Jovana je vidio ponosne ljude.
of Jovan is seen proud men
'He saw men proud of Jovan.'
c. ?*Na Jovana ponosne je vidio ljude.
- (54) a. *Predstavio mu je vjernu mužu ženu.
introduced him is faithful husband(dat) wife
'He introduced to him a wife faithful to the husband.'
b. Predstavio mu je mužu vjernu ženu.

-
- (ii) ??Ja videl vernyx Marii studentov.
I saw loyal Mary-dat students

If this pattern is indeed fully OK in Russian this will be somewhat surprising given what I say below. Perhaps this can be connected to the possibility of the N-A order in Russian (it is not fully productive, but it is not at all available in SC), or maybe in the good cases we are dealing with reduced relatives (Cinque 2010), or PF may be relevant to A-N concord in Russian (see below regarding the relevance of PF to crosslinguistic variation in A-N concord). A functional projection other than D above NP in Russian (cf. the discussion of Japanese) could also make (ii) acceptable in Russian under the analysis below.

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- c. ?*Mužu vjernu mu je predstavio ženu.
 (55) a. *Vidio sam lojalnog Mariji studenta.
 seen am loyal Maria-dat student
 b. Vidio sam Mariji lojalnog studenta.
 c. ?*Mariji lojalnog sam vidio studenta.
 (56) Ponosnog_i sam vidio t_i oca.
 proud am seen father

SC allows AP left-branch extraction (LB). Although A-complements alone can extract (53a–b) and adjectives alone can extract (56), they cannot extract together (53c)/(54c)/(55c).⁹ Moreover, even the examples where the complement and adjective are adjacent are best if the complement is focalized, which can be interpreted as indicating the complement undergoes string vacuous focus-related movement even in such cases.

I conclude that, in contrast to German, a complement+adjective sequence is not a constituent in SC. A prenominal adjective can have a complement in SC only if the complement is extracted out of the AP; the complement precedes the adjective because it has undergone movement.

(57) provides a confirmation of this analysis.

- (57) a. *Vidio sam Jovanovog [na mene] ponosnog oca.
 seen am Jovan's of me proud father
 'I saw Jovan's father who is proud of me.'
 b. Vidio sam [na mene] ponosnog Jovanovog oca.
 c. *Vidio sam tog [na mene] ponosnog oca.
 seen am that of me proud father

Recall a modifying AP can follow possessors and demonstratives in SC; it can also precede possessors. From this perspective, the unacceptability of (57a, c) is significant: if the A-complement could stay in the AP, (57a, c) should be acceptable. (57) indicates that the A-complement must move out of the AP, and there is simply no room for such movement in (57a, c). Note SC differs sharply from German here: (58) is grammatical, which confirms the need for a different analysis of German and SC.

⁹ See also the following Polish examples in light of footnote 8:

- (i) a. ?wierną widział kobietę b. *wierną mężowi widział kobietę
 faithful he-saw woman faithful husband-dat he-saw woman

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- (58) Peters_i ihm_i treue Frau
Peter's him faithful wife (German, Fanselow 1986:345)

Consider now (59), which has interesting theoretical consequences.

- (59) a. *Vidio sam na mene_i [_{NP} Jovanovog [_{NP} [ponosnog t_i] [_{NP} oca]]]
seen am of me Jovan's proud father
b. *Vidio sam na mene_i [_{NP} tog [_{NP} [ponosnog t_i] [_{NP} oca]]]
seen am of me that proud father
c. Vidio sam na mene ponosnog oca.

Recall (57a, c) are unacceptable as there is no room for A-complement movement due to the presence of the poss/dem (the poss/dem and the AP where the complement originates are all NP-adjoined). The problem apparently does not arise in (54b)/(55b)/(59c). This then cannot be the culprit for the unacceptability of (59a–b). The obvious conclusion is that we are dealing with a locality of movement violation. An intriguing possibility, further explored in Bošković (2012d), presents itself here. Bošković (2012a) argues TNP is a phase in SC, just as in English, i.e., the highest projection in TNP is the phase in both languages: in English this is DP, and in SC NP (since DP is missing). APs can undergo LB in SC since they are located at the TNP-phase edge: they are NP adjoined and NP is a phase. In English, they must move to the phasal edge, SpecDP, from the NP-adjoined position, which I argue leads to an anti-locality violation. What is important here is that extraction is possible only from the TNP phase-edge. Returning to (59), (59a–b) can be accounted for if only the highest edge is the edge; the AP, which means the adjectival complement too, is then not located in the phasal edge in (59a–b), hence movement out of it is disallowed. I conclude therefore that when more than one element is located at a phasal edge, only the highest is the edge (for additional evidence see Bošković 2012d).

Above, we have seen adjectival complements cannot stay in AP in SC. SC does allow modifying adjectives to take a complement. However, the complement has to vacate the AP, in contrast to Bulgarian and German. The superficial patterning together of German and SC, as opposed to Bulgarian, in (50)/(51)/(52) is thus misleading. I will now address the issue why adjectival complements cannot stay in AP in SC.

(60) gives the abstract structure for the relevant cases in SC.

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(60) $[_{NP2} [_{AP} A [_{NP1} N-1]] [_{NP2} \dots N-2]]$

NP2 here is modified by AP, which is adjoined to it, and A, the head of AP, takes NP1 as its complement. Following Bošković (2009b, 2011) and Pesetsky and Torrego (2007), I assume that the ϕ -features of adjectives are unvalued, while the ϕ -features of nouns are valued. The adjective therefore needs to probe the noun for ϕ -features.

The adjective in (60) works as a probe after merger with NP2 (the NP it modifies).¹⁰ Under Chomsky's (1995) proposal that the label of a phrase is the head of the phrase, the maximal projection of the probing head P is in effect P hence should also be able to work as a probe. Given the way labelling and feature projection work, both AP and A then work as probes at this point—they are both “activated”, I assume it is not possible to pick one of them. The head noun (N2) is closer to AP (AP does not c-command NP1 in its complement, so cannot probe it), but NP1 is closer to A (A does not c-command the head noun N2). I assume that due to the conflict, i.e., the presence of two different goals (note I assume incidental agreement between the NPs would not help), no valuation then occurs.

At this point NP1 moves. Bejar (2003), Rezac (2004), Bošković (2009b) argue a head X can probe more than once for feature Y. In particular, when the primary Agree relation fails to result in valuation, X can initiate secondary Agree to value F. After NP1 moves, the adjective then initiates a second probing operation. What is important here is that traces do not participate in Agree relations (see Chomsky 2001, Boeckx 2009, Bošković 2012b; they also don't count as intervenors for Agree). Since NP1 has been turned into a trace, hence cannot function as a goal, N-2 is the only possible goal after NP1 movement. The adjective can then successfully value its ϕ -features, without the conflict that arose before NP1 movement. We thus have an explanation for why the adjectival complement has to move outside of the modifying AP in SC—the movement is necessary so that the adjective can successfully value its ϕ -features.

¹⁰This can be assured by assuming probing at a phasal level, the relevant phase after A-merger being NP2 given that NP is a phase in SC, or by adopting a filter that rules out cases where A does not agree with the noun it modifies. This will prevent agreement of the adjective only with the adjectival complement NP right after the two are merged.

Consider now Bulgarian, where the adjectival complement need not move. The above derivation is also available in Bulgarian and has the same effect as in SC : it does not allow A-complements to stay in situ. However, another derivation is available in Bulgarian which is not an option in SC. What is important here is that, in contrast to SC, Bulgarian is a DP language. The relevant structure in Bulgarian is then (61).

(61) [DP [NP2 [AP A [NP1 N-1]] [NP2 ...N-2]]

(61) differs from (60) in the presence of DP. Following Pesetsky & Torrego (2007), Bošković (2009b, 2011), D has unvalued ϕ -features, just like the adjective. As soon as the D is merged with NP2 in (61), D probes. D will in fact probe both AP and NP2, given that the two are equidistant (Agree Closest prevents D from reaching NP1). Frampton & Gutmann (2000), Pesetsky & Torrego (2007) argue agreement results in feature sharing. This model allows Agree between two instances of an unvalued feature with interesting consequences. In particular, when X with an unvalued feature F probes goal Y which also has unvalued F, feature-sharing between X and Y occurs: the F on X and Y becomes the same feature (i.e. two instances of the same feature), as a result of which valuation of F on either X or Y triggers automatic valuation of the second instance of F. ϕ -probing of A by D then results in feature-sharing between D and A; the shared feature is valued by NP2, given that D also probes, in fact successfully probes, NP2. NP2 values the ϕ -features of D, as well as A, given feature-sharing between D and A. A thus ends up agreeing with N-2, but the feature conflict problem noted above regarding SC does not arise in the Bulgarian derivation since A never directly agrees (i.e. probes) (see Schoorlemmer 2009 for a similar account of Germanic). What is also important here is that the reason for the different behavior of SC and Bulgarian regarding the option of leaving the adjectival complement in situ is the presence/lack of DP.

The problem that arose in SC should not arise in German, a DP language. Why does the complement then have to precede the adjective in German? Recall, however, that the superficial patterning of German and SC, as opposed to Bulgarian, regarding the order of adjectives and their complements is indeed only superficial. SC differs from both German and Bulgarian in that the latter allow, but SC disallows, A-complements to stay within AP. This is in fact expected under the current analysis,

To sum up, German, Swedish, and SC pattern together, as opposed to Bulgarian, regarding the order of adjectives and their complements. However, word order is deceiving here in that it does not faithfully reflect structure. There is actually a structural difference regarding adjectives and their complements between SC and German/Swedish, but not between Bulgarian and German/Swedish. In the latter three the adjectival complement is an adjectival complement; there is no significant syntactic difference between them, the only difference being PF related, regarding word order. In SC, on the other hand, the adjectival complement is not an adjectival complement in the final syntactic representation; it must move out of the AP in the syntax (so as not to disrupt agreement relations).

4 Left-branch extraction and adjectival agreement

I now turn to LB. Bošković (2012c) establishes a correlation whereby only article-less languages may allow LB (56). The correlation states DP languages cannot have LB, but it does not say anything about NP languages. There are NP languages that disallow it, like Japanese, Korean, Chinese. This indicates lacking DP is not the only prerequisite for LB. Bošković (2009c) suggests agreement between the split parts is also needed. In fact, while in Japanese, Chinese, and Korean adjectives and nouns do not agree, in typical LB languages like Russian and SC they do agree.

SC (63) provides strong confirmation of the agreement requirement.

- (63) a. **Braon/bež_i* je on kupio *t_i* kola b. *Smedja_i* je on kupio *t_i* kola
 Brown/beige is he bought car brown is he bought car
 ‘He bought a brown/beige car.’

Both *braon* and *smedja* mean ‘brown’. While *braon* does not decline, hence does not agree with the noun it modifies, *smedja* does agree. *Bež* patterns with the former. Significantly, the non-agreeing adjectives cannot undergo LB, while the agreeing adjective can. These data provide a rather dramatic confirmation of the agreement requirement.

How can these facts be analyzed? I will suggest here an account of SC that is not necessarily intended to extend to other languages. The proposal is that non-agreeing adjectives are incorporated (head-adjoined) into the noun (the incorporation then blocks agreement). This is not the case with agreeing adjectives, which are NP-adjoined. The analysis

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provides a principled account of the different behavior of these adjectives regarding LB: since non-agreeing adjectives are incorporated into the noun they obviously cannot undergo LB, which is a phrasal movement.

Independent evidence for this analysis is provided by (64).

- (64) a. ?*braon/bež plastična kola b. plastična braun/bež kola
 brown/beige plastic car
 c. smeđja plastična kola
 brown plastic car

(64a–b) show a non-agreeing adjective must be adjacent to the noun it modifies, in contrast to agreeing adjectives (64c). This immediately follows if non-agreeing adjectives are adjoined, i.e. incorporated, into the noun. They then have to follow agreeing, NP-adjoined adjectives.

Consider now (65) ((65a–b) are due to Nataša Todorović (p.c.)):

- (65) a. ?*plavo-braon b. plavo-smeđja
 blue brown blue brown
 c. bež-braon d. ?*bež-smeđja
 beige brown beige brown

Agreeing and non-agreeing adjectives cannot be combined in color combinations. (*Plavo* is an agreeing adjective. The combination refers to a color that is in between blue and brown in (65a, b), the first color does not simply modify the second color.) (65) can also be easily captured given a natural assumption that only adjectives in the same structural position can be combined in this manner. The incorporation analysis then allows the combination in (65b, c), but not in (65a, d).

Finally, non-agreeing adjectives cannot be stranded, as expected under the incorporation analysis, where they must be head-adjoined.¹¹

- (66) *On nam je pokazao plavu kuću, a ona nam je pokazala bež.
 he us.dat is shown blue house and she us.dat is shown beige

¹¹There are actually speakers who accept (63), which can be taken to indicate that for these speakers non-agreeing adjectives are not N-adjoined. Significantly, they also allow (64a), (65a, d), and (66), as expected under this analysis.

References

- Aljović, Nadira. 2002. Long adjectival inflection and specificity in Serbo-Croatian. *Recherches Linguistiques de Vincennes* 31: 27-42.
- Bailyn, John F. 1994. The syntax and semantics of Russian long and short adjectives. *Proceedings of FASL* 2, 1-30.
- Bejar, Susana. 2003. *φ-syntax*. Doctoral dissertation, University of Toronto.
- Bhatt, Rajesh, and Martin Walkow. in press. Locating agreement in grammar. *Natural Language and Linguistic Theory*.
- Bobaljik, Jonathan. 2008. Where's ϕ ? In *φ-theory*, ed. David Adger, Susana Béjar, and Daniel Harbour, 295-328. Oxford University Press.
- Boeckx, Cedric. 2009. *Aspects of the Syntax of Agreement*. Routledge.
- Bošković, Željko. 2009a. More on the No-DP analysis of article-less languages. *Studia Linguistica* 63:187-203.
- Bošković, Željko. 2009b. Unifying first and last conjunct agreement. *Natural Language and Linguistic Theory* 27:455-496.
- Bošković, Željko. 2009c. On Leo Tolstoy, its structure, Case, left-branch extraction, and prosodic inversion. In *Studies in South Slavic Linguistics in Honor of E. Wayles Browne*, 99-122. Slavica.
- Bošković, Željko. 2011. On unvalued uninterpretable features. *Proceedings of NELS* 39, 109-120.
- Bošković, Željko. 2012a. Now I'm a phase, now I'm not a phase. To appear in *Linguistic Inquiry*.
- Bošković, Željko. 2012b. Traces do not head islands: What can PF deletion rescue? Ms., University of Connecticut.
- Bošković, Željko. 2012c. On NPs and clauses. In *Discourse and grammar: From sentence types to lexical categories*. De Gruyter.
- Bošković, Željko. 2012d. On the edge. Ms., University of Connecticut.
- Bošković, Željko, and I-Ta Chris Hsieh. 2012. On word order, binding relations, and plurality within Chinese NPs. Ms., UConn.
- Bošković, Željko, and Serkan Şener. 2012. Turkish NP. Ms., University of Connecticut and Yeditepe University, Istanbul.
- Chierchia, Gennaro. 1998. Reference to kinds across languages. *Natural Language Semantics* 6:339-405.
- Chomsky, N. 1995. *The minimalist program*. MIT Press.
- Chomsky, Noam. 2001. Derivation by phase. In *Ken Hale: A life in language*, ed. by Michael Kenstowicz, 1-52. MIT Press.

ADJECTIVAL ESCAPADES

- Cinque, Guglielmo. 2010. *The syntax of adjectives. A comparative study*. Cambridge University Press.
- Despić, Miloje. 2011. *Syntax in the absence of determiner phrase*. Doctoral dissertation, University of Connecticut.
- Elbourne, Paul. 2005. The semantics of ellipsis. *Structure* 3: 63-109.
- Fanselow, Gisbert. 1986. On the sentential nature of prenominal adjectives in German. *Folia Linguistica* 20:341-380.
- Frampton, John, and Sam Gutmann. 2000. Agreement is feature sharing. Ms., Northeastern University.
- Giannakidou, Anastasia, and Melita, Stavrou. 1999. Nominalization and ellipsis in the Greek DP. *The Linguistic Review* 16: 295-331.
- Lin, Jo-Wang. 2003. On restrictive and non-restrictive relative clauses in Mandarin Chinese. *Tsinghua Journal of Chinese Studies* 33:199-240.
- Longobardi, Giuseppe. 1994. Reference and proper names. *Linguistic Inquiry* 25:609-665.
- Morzycki, Marcin. 2008. Nonrestrictive modifiers in nonparenthetical positions. In *Adjectives and adverbs: Syntax, semantics and discourse*, ed. by C. Kennedy and L. McNally, 101-122. Oxford University Press.
- Partee, Barbara. 1976. *Montague Grammar*. Academic Press.
- Partee, Barbara, and Vladimir Borshev. 1998. Integrating lexical and formal semantics: *Proceedings of Tbilisi Symposium 2*, 229-241.
- Pesetsky, David, and Esther Torrego. 2007. The syntax of valuation and the interpretability of features. In *Phrasal and Clausal Architecture: Syntactic derivation and interpretation*, 262-294. John Benjamins.
- Platzack, Christer. 1982. Transitive adjectives in Swedish. *Linguistic Review* 2:39-56.
- Rezac, Milan. 2004. *Elements of cyclic Agree*. Doctoral dissertation, University of Toronto.
- Riqueros, José. in preparation. *Spanish nomina(lization) patterns*. Doctoral dissertation, University of Connecticut.
- Schoorlemmer, Erik. 2009. *Agreement, dominance, and doubling: The morphosyntax of DP*. Doctoral dissertation, University of Leiden.
- Siewierska, Anna, and Ludmila Uhlířová. 1998. *Constituent order in the languages of Europe*. In *An overview of word order in Slavic languages*, ed. by Anna Siewierska. Moyton de Grouter.
- Takahashi, Masahiko. 2011. *Some consequences of Case-marking in Japanese*. Doctoral dissertation, University of Connecticut.

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Vikner, Sten. 2001. Predicative adjective agreement: where German may be “easy”. In *Sprachkontakt, Sprachvergleich, Sprachvariation*: ed. Kirsten Adamzik & Helen Christen, 399-414. Max Niemeyer Verlag.