A note on conjoined binominal NPs

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Conjunct agreement has recently received a lot of attention, especially in Slavic linguistics (cf. Bošković 2009, Marušič *et al*. 2007, 2015, Willer Gold *et al*. 2016, 2018, Murphy & Puškar 2018 etc.). While there's mostly agreement about the data and the agreement patterns that are reported to exist in South Slavic (not surprising given the many experimental studies conducted on this topic), a number of questions remain open.

Recent approaches to conjunct agreement can be divided into two broad groups: those that model the observed patterns exclusively in narrow syntax (e.g. Bošković 2009, Murphy and Puškar 2018) and those that revert to PF to model the non-hierarchical nature of one of the observed patterns (e.g. Bhatt & Walkow 2013, Marušič *et al*. 2015, Willer Gold *et al*. 2016, 2018). The two groups of approaches mostly converge on the patterns they try to explain but given the many possible noun combinations inside coordinated subjects, there is still plenty of room for testing their predictions on novel empirical observations. The choice between these approaches is thus still an empirical question.

The two types of approaches make different predictions when it comes to the behavior of binominal noun phrases such as (1), where two nominative-cased nouns are combined, but where only one of the two, typically the first one, is the head of the noun phrase and acts as the goal of agreement. Syntactic approaches predict that the head-noun will always be the goal of agreement regardless of whether such noun phrases are part of a coordinated subject or not. Approaches that place some part of the agree process inside PF, on the other hand, predict that such noun phrases could behave differently when inside a coordinated subject as the closest noun to a verbal probe need not always be the head-noun of the closest noun phrase.

(1) *Hotel Slavia*; *mesto Jesenice*; *žirafa Rastko* (Slovenian)
hotel$_{M.SG}$ Slavia$_{F.SG}$ town$_{N.SG}$ Jesenice$_{F.PL}$ giraffe$_{F.SG}$ Rastko$_{M.SG}$

These noun phrases have both nouns in the nominative case when in subject position and in some of them both nouns decline, (2). But crucially, when noun phrases of the type 'town X' are in the subject position, they always trigger only agreement with what is understood to be the head-noun in Slovenian. So for example in (3), where the head-noun is understood to be the noun *mesto "town"*, verb can only agree in neuter singular, (3a). Plural agreement, that is agreement with the plural name *Jesenice,* is impossible in such cases (or at least very much degraded). When the plural name that is part of the complex noun phrase appears on its own, it must agree in plural, (3b).

(2) Žirafa Živa je brcnila žirafo Rastkota. (Slovenian)
giraffe$_{NOM}$ Živa$_{NOM}$ aux$_{SG}$ kicked$_{F.SG}$ giraffe$_{ACC}$ Rastko$_{ACC}$

(3) a. *Mesto Jesenice je dobilo / *so dobile novo bolnico.* (Slovenian)
town$_{N.SG.NOM}$ Jesenice$_{F.PL.NOM}$ aux$_{SG}$ got$_{N.SG}$ aux$_{PL}$ got$_{F.PL}$ new hospital
"The town Jesenice just got a new hospital."
   b. *Jesenice *je dobilo / so dobile novo bolnico.* (Slovenian)
Jesenice$_{F.PL}$ aux$_{SG}$ got$_{N.SG}$ aux$_{PL}$ got$_{F.PL}$ new hospital
"The town Jesenice just got a new hospital."

We prepared a grammaticality judgment test where we compared Slovenian sentences of the type given in (3) with sentences of the type given in (4), where three noun phrases of the same type were coordinated (three noun phrases were coordinated rather than two, in order to avoid the potential interference of dual). 34 high-school students participated in this study grading 68 sentences, half of which were fillers.

(4) *Mesto Ptuj, naselje Ig in mesto Jesenice so dobile/-i novo bolnico.*
town$_{N.SG}$ Ptuj$_{M.SG}$ town Ig$_{M.SG}$ and town$_{N.SG}$ Jesenice$_{F.PL}$ aux$_{PL}$ got$_{F.PL/M.PL}$ new hospital
"The town Ptuj, the town Ig, and the town Jesenice just got a new hospital."

Coordinating three nouns phrases with a neuter head-noun like *mesto X* "town X" should either trigger neuter plural or else masculine plural agreement (cf. Corbett 1983: 188). If agreement is strictly hierarchical, this combination of nouns should not trigger feminine plural agreement even if X is a noun carrying feminine plural features, as X is not the head-noun of the noun phrase and thus the noun phrase shouldn't pass these features to the probe. But if agreement (or just the copying of *phi-* features from the goal to the probe, as per Marušič *et al.* 2015) takes place at PF, where the syntactic structure is already linearized, and the structural distinction between the head-noun and its complement disappears, a verbal probe that comes after the subject should also see the second noun that actually ends up being closer to the verb and could easily copy the relevant features (feminine plural in (4)) directly from the second noun.

The results of our study show that agreement of such binominal noun phrases differs between coordinated and non-coordinated cases. Sentences such as (3a) with feminine plural agreement on the verb (town X PL) were graded as significantly worse than sentences such as (4) in which the coordinated with feminine plural agreement (town X and town Y FPL) as shown in Figure 1 ("town X PL" *vs.* "town X and town Y FPL": $t = 4.7072$, $df = 254.86$, p-value = 4.125e-06).

Figure 1: Comparison of the five most relevant conditions in the study. From left to right:
- town X and town Y FPL (goal = X/Y)
- town X PL (goal = X/Y)
- town X SG (goal = town/head)
- X and town Y FPL (goal = X/Y)
- X and town Y MPL (goal = &P/head)
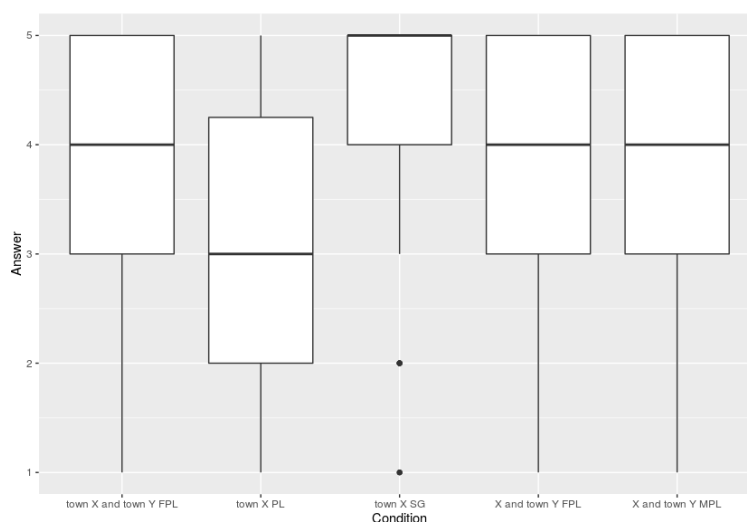
This result supports the approach presented in Marušič *et al.* (2015), assuming that feminine agreement in these cases comes from the non-head-noun of the "town X" complex and is not a result of some attraction error. This later point can be made comparing the two rightmost conditions in *Figure* 1, as masculine plural and feminine plural agreement in these kind of sentences were statistically indistinguishable.

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