The curious case of the two-headed phrase: The symmetrical syntax of co-compounds

Lena Borise (LLF, CNRS & Université Paris Cité)
Tamás Halm (HUN-REN Hungarian Research Centre for Linguistics)

Background. Co-compounds (CCs), available e.g. in Hungarian and Khanty (Uralic), are pairs of morphosyntactically parallel and semantically related elements (Wälchli 2005) (1-3, Hungarian):

(1) *János adta-vette a használt autókat.*
John sold-bought the used cars.
'John was trading used cars.'

(2) *Anti fel-alá-sétált.*
Tony up-down-walked.
'T. was walking around.'

(3) *János megosztotta velem ügyét-baját.*
John shared me.with affair.3SG.ACC-problem.3SG.ACC
'John shared all his goings-on with me.'

CCs have mostly been analysed as (asyndetic) coordination or a subtype of exocentric compounds (Scalise, Fábregas & Forza 2019). Building on Borise and É. Kiss (2022), we argue instead that co-compounding is a syntactic operation, with two heads undergoing Merge and being dominated by a shared layer of functional projections. While endocentricity (Chomsky 1970) and the projection principle (Chomsky 1981) have been taken to mean that *exactly* one X^0 projects and heads a phrase (Lichte 2021), we argue that, as long as certain conditions (that CCs are subject to) are met, a two-headed phrase is unproblematic for the standard theoretical assumptions.

Data. CCs consist of juxtaposed lexical elements (1-3). The two CC-components are obligatorily adjacent and closely related semantically: e.g., as synonyms, taxonomic sisters (3), antonyms (2), or reverses (1). 'Accidental' CCs, licensed by context (e.g. the two main protagonists of a story), are possible in Khanty (though not in Hungarian), but here, too, the elements need to be related semantically, albeit more loosely (5). Bound inflectional morphemes appear on both elements in Modern Khanty and Hungarian, with strict morphological parallelism enforced (4, Hungarian; cf. 3). In the presence of possessive marking, the possessor must be the same for both elements (5, Khanty). An overt coordinator is prohibited (5):

(4) **ügy-é-t - baj-a-i-t*
affair-3SG-ACC – problem-3SG-PL-ACC
'his goings-on'

(5) *iːmp-əɬ (*pɐːnə) keːʃkɐ-ɣəɬ*
dog-3SG and cat-3SG
'his/her$_i$ dog and his/her$_{i/*j}$ cat'

Analysis. We propose that a CC is formed by two syntactic heads undergoing Merge, and the morphological properties of CCs are a by-product of agreement of both CC-components with a c-commanding head. The parallel morphology results from M(orphological)-Merger (Halle & Marantz 1993), with the affixes lowering to the heads post-syntactically. We support this analysis by demonstrating that (i) if a complement is present, the two CC-components necessarily share it and (ii) any higher functional projections necessarily apply to/modify both CC-components. We also address the (iii) issue of labelling and we provide arguments against treating CCs as (iv) exocentric compounds or (v) asyndetic coordination.

(i) In Hungarian, verbal particles act as phrasal complements to the verb (Piñón 1995, É. Kiss 2002, Den Dikken 2004 a.o.). A verbal CC selects for a single verbal particle, which shows that the CC-components cannot have independent complements:

(6) *Jánosel-tett-(*el-)vett a konyhában.*
John PRT-put.down-PRT-pick.up the kitchen.in
'John whiled away the time by moving stuff around in the kitchen.'

(ii) A nominal CC can only associate with a single possessor; an adjectival CC can only be modified by a single adverbial; and a modifying adjective necessarily applies to both CC-components (7, Khanty):

(7) *Mɐ: ənəɬ sɒ:rt-ɣən ɐ:ɣər-ɣən qɒ:tɬ-əm.*
1SG big pike-DU ide-DU catch-PST.1SG
'I caught a big pike and [a big] ide.'

(iii) We propose that the two CC-components are separate in the numeration, and are combined in syntax via symmetric Head-Head Merge ($[_{\alpha}\ H_1\ H_2]$. The two heads are equidistant from α, but, since they contribute the same category, this is not problematic. This is in line with Chomsky (2013: 43), who shows that the labelling problem does not arise if the two heads are (non-accidentally) identical in the relevant respect, providing the same label. If the two heads have identical subcategorization properties and theta-grids, they, together, project the (extended) phrase. Otherwise, the derivation crashes. The (in)visibility of both heads for post-syntactic suffixation is a matter of parametric variation: suffixation of both elements goes hand-in-hand with them having independent stress (8a, Modern Hungarian), whereas suffixation of only the last element correlates with the CC being a single prosodic word (8b, archaic Hungarian):

(8) a. *'ügy-e-'baj-a*
affair-3SG-problem-3SG
'his/her goings-on'

b. †*'ügy-baj-a*
affair-problem-3SG
'his/her goings-on'

(iv) *Pace* (Scalise et al. 2009), we argue that CCs pattern with endocentric compounds in three crucial ways: categorically (the CC-components impose their categorial features on the whole CC); morphologically (the morphological features of the CC are identical to those of the CC-components), and semantically (the semantic type of the CC compositionally derives from that of the CC-components).

(v) Finally, we argue against approaching CCs as asyndetic coordination. Overt coordinators are prohibited in CCs, and, crucially, the semantic interpretation of non-accidental CCs does not involve coordination (either conjunction or disjunction); rather, CCs denote the superordinate term of the two elements (9, Khanty) – i.e., *ńoł-səm* covers chin, forehead, ears etc. in addition to nose and/or eyes. Accidental CCs receive a conjunctive interpretation (10):

(9) *ńoł-səm*
nose-eye
'face'

(10) *ɐ:tji-ɣən tje:tji-ɣən*
father-DU grandmother-DU
'father and grandmother'

We argue that the availability of accidental co-compounding is correlated with the functional load of co-compounding. If phrasal coordination is unavailable (Old Khanty) or a recent development (Modern Khanty), accidental co-compounding (while costlier in terms of cognitive load than non-accidental co-compounding) is favourable to the alternative (coordination of whole sentences).

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