Experimental evidence against clausal reduction as the only source of closest conjunct agreement

We developed an experiment involving interpretational sentence-picture matching to test the hypothesis that closest conjunct agreement [CCA] results from reduced clausal conjunction, as schematized in (1) (cf. Aoun et al. 1994; also Wilder 1997). Clausal coordination is appealing as it straightforwardly explains CCA as agreement of the verb with a non-conjoined subject in the clause whose content survives ellipsis and avoids various theoretically non-standard solutions, e.g. agreement occurring after syntax proper (e.g. Marušič et al 2015, Willer Gold et al 2016), or agreement as part of strictly ordered processes in the derivation (Murphy and Puškar 2018). Our experiments reject the clausal reduction hypothesis as far as South Slavic languages are concerned, thereby upholding the relevance of models developed to account for CCA within theories of agreement.

(1) Oglasile su se trube i oglasila se zvona.
  sounded_{F,PL} aux_{PL} refl trumpet_{F,PL} and sounded_{N,PL} aux_{PL} refl bell_{N,PL}
  ‘Trumpets and bells resounded.’

In Slovenian and B/C/S preverbal subjects trigger both types of single conjunct agreement. Preverbal coordinated subjects trigger both First Conjunct Agreement [FCA] and Last Conjunct agreement, postverbal subjects typically only trigger FCA. FCA with postverbal subjects and Last conjunct agreement are both instances of CCA (cf Marušič et al 2015, Willer-Gold et al 2016).

Marušič et al (2015) argue against the clausal reduction analysis of Slovenian preverbal CCA. Following Munn (1999), they show CCA is available also with collective predicates as in (2). The idea is that if the underlying structure of the sentences with single conjunct agreement involved clausal conjunction, a violation should emerge when their predicate is collective (e.g. ‘grazed together’; (6b)).

(2) a. Krava in teleta so se pasla skupaj.
   Cow_{F,SG} and calves_{N,PL} AUX_{PL} REFL grazed_{N,PL} together
   ‘A cow and her calves were grazing together.’ (Slovenian)

b. *Krava se je pasla skupaj in teleta so se pasla skupaj.

Robust cases of CCA in South Slavic are reported for gender agreement with two plural conjuncts. Diagnostics with a collective predicate are not ideal for such contexts as potential individual clauses are still grammatical when their subject is plural. Thus, it seems necessary to demonstrate that within the presence of two conjoined plurals (e.g. sailboats and ships), a predicate like passing by is interpreted as applying to the conjunct (ships passing by sailboats; a mixed-event reading) as opposed to each conjunct separately (ships passing by ships and sailboats passing by sailboats).

Following this logic that biclusal sentences involve crucially different semantics from monoclusal sentences (i.e. 1-event vs 2-event readings), we designed an experiment and performed them in three sites testing 90 participants (30 undergraduate students per site, mean age = 20). Participants were shown two pictures and a sentence and were asked to pick the better-matching picture for a given sentence. Sentences were either monoclusal sentences with a coordinated subject and CCA, (3a), or else overtly biclusal sentences as in (3b) (with both conditions embedded under a matrix verb). A further variable was the type of predicate with the values collective or non-collective. The experiment consisted of 64 randomly ordered experimental items 32 of which were fillers.

(3) a. Znamo da su se po nekom kanalu mimoilazile lade i
   know_{1,PL} that AUX_{PL} REFL over some canal passed_by_{F,PL} ship_{F,PL} and
   other vessel_{N,PL}
   ‘We know that some ships and other vessels passed each other in some canal’

b. Znamo da su se po nekom kanalu mimoilazile lade
   know_{1,PL} that AUX_{PL} REFL over some canal pass_by_{N,PL} ship_{F,PL}
   i da su se po nekom kanalu mimoilazila druga plovila.
   and that AUX_{PL} REFL over some canal passed_by_{N,PL} other vessel_{N,PL}
   ‘We know that some ships passed each other in some canal and that some other vessels passed each other in some other canal.’
This, however, requires more than a mere acceptability judgement along the lines of (6). Sentences like (6b), with a singular NP within the conjunction and a collective predicate, immediately trigger a reaction of unacceptability, even without context provided. Sentences with two conjoined plurals, however, ‘sound acceptable’ unless a context is provided, and as such require a richer context in order to determine whether speakers are allowing or ruling out the mixed-event or split-event reading in the presence of CCA, and precisely this context is better furnished in an experimental picture-matching task of the kind we report on below.

As shown in figure 2, monoclausal sentences with CCA yield exactly the inverse patterns of the biclausal ones. For the biclausal conditions, the participants chose the two-event picture in over 90% of cases, and for the surface-monoclausal conditions in less than 10% of cases. The results thus reject the clausal reduction analysis. The fact that we found no effect for the *predicate-type* variable might be a consequence of the observed strong contrast between the monoclausal and the biclausal condition as there was simply no room for strengthening by the variable *predicate type*.

We will discuss further reasons to reject the clausal reduction analysis, to which we can only point here: (a) some languages that display CCA have different coordination heads for phrasal vs. clausal coordination (e.g. Xhosa, cf. Mitchley 2015); (b) the availability of clausal reduction analysis in a language is in principle dependent on the existence of an ellipsis operation that deletes everything but the subject; as shown in (4), such an operation is not otherwise found in South Slavic (c) Mendes and Ruda (2019) discuss verb-echo answers to structures with CCA, the fragment result of which cannot be straightforwardly analyzed if one derives CCA from clausal coordination, as it would mean non-constituent ellipsis, (5b), or else a CSC violation, (5c).

(4) *Mislim, da so se tušaj pasle krave in ovce. (Slo.)

Intended: ‘I think that cows grazed here, and I know that sheep.’


Q aux bought_f,pl erasers_f,pl and rulers_{n,pl bought_f,pl}.

‘A: Were erasers and rulers bought?’ ‘B: Yes, they were bought.’

b. \([\text{Kupljene so radirke]} \text{ in } [\text{kupljena so ravnila}].\) Non-constituent ellipsis bought_{f,pl} aux erasers_{f,pl} and bought_{n,pl} aux rulers_{n,pl}.

c. Kupljene \([\text{so radirke]} \text{ in } [\text{kupljena so ravnila}].\) CSC violation bought_{f,pl} aux erasers_{f,pl} and bought_{n,pl} aux rulers_{n,pl}.


Murphy, A. & Z. Puškar. 2018. Closest conjunct agreement is an illusion. *NLLT*.
