PP coordination and interrupting adverbials

Nir Segal *UMass Amherst*

1. We contribute to the ellipsis literature with novel observations–primarily from Hebrew–on PP coordination and coordination-interrupting adverbials ('CIA'). Consider first the simple DP coordination (1a), before the CIA case (1b).

(1) a. They demolished the house {or/and} the well.
   b. They demolished the house {or/and}, ⟨*yesterday*⟩, the well.

Traditionally, two main approaches have been proposed for coordinated sentences like (1a). The coordination reduction ('CR') approach (Ross, 1967; Schein, 2017; Hirsch, 2017) derives sub-clausal coordination via syntactic deletion mechanisms (2a), whereas the flexibility approach (Partee & Rooth, 1983; Link, 1983, a.m.o) treats coordinators as *semantically* flexible, combining coordinands of various types without *necessarily* invoking syntactic mechanisms (2b).

(2) a. [[They demolished the house] [{or/and}$_{CR}$ [~~They demolished~~ the well]]]
   b. They demolished [[the house] [{or/and}$_{FL}$ [the well]]].

Turning to the CIA in (1b), such examples have often served to adjudicate between the mentioned approaches (see Hirsch 2017 and Schein 2017 in favor of CR, and Condoravdi et al. 2019 for a counterpoint). Instead, this work adopts the widely accepted view that when a language independently allows ellipsis mechanisms, these can also operate in coordinated constructions. The following data offer new observations and constraints on how such mechanisms apply.

2. Simple Coordination in Hebrew: Hebrew offers two ways to express the object coordination in (1a): either with a single preposition *et* preceding the entire coordination (3a), or with separate *et*s for each coordinand (3b). While *et*'s theoretical status is debated (see review in Hacohen et al. 2021), all the following facts hold for other prepositions (*on*, *in*, *with*, etc.); we thus treat *et* as a preposition. Flexibility then provides an intuitive account: (2a) involves a [DP & DP] configuration which the preposition takes as an argument, whereas (2b) involves [PP & PP].

(3) a. hem harasu   [$_{PP}$ **et** [[$_{DP}$ ha-bayit] {o/ve-}   [$_{DP}$ ha-be'er]]]   [DP & DP]
       they demolished   ET   the-house {or/and-}   the-well

   b. hem harsu   [[$_{PP}$ **et** ha-bayit] {o/ve-}   [$_{PP}$ **et** ha-be'er]]   [PP & PP]
       they demolished   ET the-house {or/and-}   ET the-well

2.1. What happens when CIA intervenes: Interestingly, only one option is available for Hebrew when an adverbial appears post-coordinator as in (1b)—both prepositions become obligatory:

(4) a. *hem harasu   **et** ha-bayit {o/ve-} ⟨*etmol*⟩ ha-be'er
       they demolished ET the-house {or/and-} yesterday the-well
   b. hem harasu   **et** ha-bayit {o/ve-} ⟨*etmol*⟩ **et** ha-be'er
       they demolished ET the-house {or/and-} yesterday ET the-well

The occurrence of CIA precludes the two configurations in (3): [DP & DP] and [PP & PP]. Instead, we propose, the pattern in (4) admits a parsimonious explanation in terms of ellipsis.

3. The Account: The ungrammaticality in (4a), where the adverbial lacks a corresponding preposition, follows naturally under CR, by invoking properties observed in ellipsis. Consider *stripping* (/*bare-argument ellipsis*) cases where multiple remnants survive ellipsis, as in (5a). Hebrew shows here the same obligatory preposition doubling (5b), as in the CIA cases (4).

(5) a. Alan played volleyball, but not basketball.
   b. Mika dibra al   šalom aval lo *(al) ṣedek
       Mika talked about peace but not about justice
       'Mika talked about peace but not about justice'

As Hirsch's (2017) CR account employs machinery also used in stripping analyses (Johnson,

2018), this CIA generalization follows: <u>A language allows omission of the second preposition ('P-omission') in adverbially-separated PP coordination iff it allows P-omission in stripping</u>. Returning to the Hebrew grammatical conjunction in (4b), repeated in (6a), Hirsch's version of CR assigns it the underlying LF in (6b), where the subject moves Across-The-Board out of both underlyingly clausal coordinands. To derive the pronounced string, VP-ellipsis targets the right conjunct (6d), so the objects must first evacuate the VP (6c) to escape the ellipsis domain.

(6) a. *hem harasu **et** ha-bayit ve-*$\boxed{etmol}$* **et** ha-be'er*

  b. [they$_1$ [[t$_1$ demolished [**et** house]] [*ve-* [yesterday [t$_1$ [[demolished [**et** well]]]]]]]]]

  c. [they$_1$ [[t$_1$ [[demolished t$_2$] [**et** house]$_2$]] [*ve-*[yesterday [t$_1$ [[demolished t$_2$] [**et** well]$_2$]]]]]]]

  d. [they$_1$ [[t$_1$ [[demolished t$_2$] [**et** house]$_2$]] [*ve-*[yesterday [t$_1$ [[~~demolished t$_2$~~] [**et** well]$_2$]]]]]]]

The object "evacuation", required for VP-ellipsis, is what causes the ungrammaticality of (4a), where the second preposition is absent. The pronounced string requires a P-omission configuration, shown in (7), unavailable in Hebrew, aligning with the prediction of the CIA generalization.

(7) [they$_1$[[t$_1$[[demolished *et* t$_2$] [the house]$_2$]][*ve-*[yesterday[t$_1$ [[~~demolished *et* t$_2$~~] [the well]$_2$]]]]]]]

4. <u>P-stranding and Crosslinguistic variation:</u> By now, the reader may have wondered whether this relates to *P-stranding* in *wh*-movement. Depiante (2000) proposes that a language allows P-omission in stripping iff it allows P-stranding. It is tempting, *prima facie*, to extend our CIA generalization to P-stranding, but a short survey of 7 languages (Hebrew, Palestinian Arabic, English, Brazilian Portuguese, Romanian, Slovenian, and Bulgarian) shows that Depiante's generalization faces some crosslinguistic challenges, whereas ours is more robust. In Slovenian, for example, some prepositions cannot be stranded, but can be omitted in stripping and CIA cases:

(8) a. **✗Wh-movement**

  ??česa je Janez stal **poleg**?
  what aux John stand next.to
  'What was John standing next to?'

  b. **✓Stripping**

  Janez je stal **poleg** hiše ne pa avta
  John aux stand next.to house but not car
  'John was standing next to the building but not the car.'

  c. **✓PP conjunction interrupted by an adverbial**

  Janez je stal **poleg** hiše in $\boxed{\textit{včeraj}}$ avta
  John aux stand next.to house and yesterday car
  'John was standing next to the building and yesterday the car.'

This prediction aligns with our theoretical analysis in (6). Since the final step of movement to escape the ellipsis domain is assumed to occur post-cyclically at PF (Weir, 2015), uncontrovertially, some PF constraints on the spellout of functional heads (which are beyond the scope of this abstract) can yield this systematic cross-linguistic variation.

5. <u>Complex Conjunction:</u> Another case of obligatory double *et* has already been noted by Winter (2001, 170) in structures with Hebrew's complex conjunction:

(9) hem harasu   **gam** et ha-bayit **ve-**$\boxed{gam}$ *(et) ha-be'er
  they demolished **also** ET the-house and-also ET   the-well
  'They demolished both the house and the well'

Winter's account faces several issues. But, his observation aligns with the current account since the pattern in (9) also extends to other Hebrew prepositions. First, as the gloss shows, Hebrew's complex conjunction includes the additive adverb *gam* ('also'), so it can qualify as yet another CIA case (see Hirsch & Sauerland 2019 on 'also' as a diagnostic of clausal structure). Second, Hebrew allows stacking adverbials, for example, *yesterday* alongside *also*, unlike English: **They demolished both the house and yesterday the well*. Finally, like all other CIA cases, these examples are bad with collective predicates in Hebrew, as predicted by the ellipsis analysis.

References

Condoravdi, Cleo, Mary Dalrymple, Dag Haug & Adam Przepiórkowski. 2019. Modification of DPs by epistemic adverbs. In Proceedings of SALT, vol. 29, 477–495.

Hacohen, Aviya, Olga Kagan & Dana Plaut. 2021. Differential object marking in Modern Hebrew: Definiteness and partitivity. Glossa: a journal of general linguistics 6(1).

Hirsch, Aron. 2017. An inflexible semantics for cross-categorial operators: MIT dissertation.

Hirsch, Aron & Uli Sauerland. 2019. Adverbs in collective conjunction. URL: https://drive.google.com/file/d/1NzvwlELJoFQ7bbjmWNJ1Nd9IhIPj59jK/view. Linguistics Society of America Annual Meeting, New York.

Johnson, Kyle. 2018. Gapping and stripping. In The Oxford Handbook of Ellipsis, Oxford University Press. doi:10.1093/oxfordhb/9780198712398.013.24.

Link, Godehard. 1983. The logical analysis of plurals and mass terms: A lattice-theoretical approach. In Meaning, use, and interpretation of language, 302–323. De Gruyter.

Partee, Barbara & Mats Rooth. 1983. Generalized conjunction and type ambiguity. In Meaning, use, and interpretation of language, 361–383. De Gruyter.

Ross, John Robert. 1967. Constraints on variables in syntax: MIT dissertation.

Schein, Barry. 2017. 'And': Conjunction reduction redux. MIT Press.

Weir, Andrew. 2015. Fragment answers and exceptional movement under ellipsis: A PF-movement account. In Proceedings of nels 45, 175–188.

Winter, Yoad. 2001. Flexibility principles in boolean semantics. MIT press.