Sentential and possibly subsentential modification: the ambiguity of Collins conjunctions*

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1 Introduction

We consider the structure and meaning of *Collins Conjunctions* like (1)–(3), first discussed in detail by Collins 1988.

- In each, the final conjunct is 'interrupted' by an attitude verb or an epistemic adverb, which we call *interrupting category* (IC) after Vicente 2013.

- The IC is not set off by prosodic breaks (Collins 1988).

(1)   A doctor, a surgeon, and {**possibly / John suspects**} a nurse are in the office.

(2)   John ate tiramisu and **I think** the best pizza in town.

(3)   Los judíos no   pueden llevar   ropa   hecha de lana y
       the Jews NEG they.able wear.INF clothes made of wool and
       creo   que   lino.
       I.think COMP linen
       'Jews cannot wear clothes made of wool and **I think** linen.'
                                                    (Vicente 2013: (26))

Puzzle: ICs seem to be in subclausal position in CCs, but are expressions that are generally taken to be clause-level.

- ICs also exhibit properties suggesting hidden clausal structure, e.g. the obligatory presence of Spanish complementizer *que* (3).

However, previous analyses have argued that despite this, CCs do **not** necessarily involve ellipsis of full clausal structure (Schein 1992, Vicente 2013).

- E.g. (3) is argued not to derive from the structure in (4).

(4)   [CP Jews cannot wear clothes made of wool] and [CP **I think** [CP Jews cannot wear clothes made of linen]]

By contrast, we argue that structures like (4) are available for CCs, but we add that this is not the only syntactic parse available.

Proposal: All CC strings are ambiguous between two structures:

- A structure in which the IC takes **sentential scope**.

  – Surface string derived by Right Node Raising followed by ellipsis within second clause.

- A structure in which the IC takes **subsentential scope**.

  – Composition with IC mediated by reduced relative clause structure (Bogal-Allbritten 2013, 2014).

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*Thanks to three NELS reviewers. All errors are ours.

Recognition of this ambiguity allows us to:

- Defuse arguments made against ellipsis-based accounts of CCs.

- Capture parallels between CCs and **(embedded) fragment answers**, where clausal ellipsis has also been invoked (Merchant 2004, Temmerman 2013, Weir 2014).

Roadmap:
  §2: Motivating two parses for Collins Conjunctions
  §3: The subsentential parse: reduced relative clause structure
  §4: The sentential parse: clausal ellipsis
  §5: Conclusion

2 Motivating two parses for Collins Conjunctions

Collins 1988, Schein 1992, and Vicente 2013 observe that sentences like (5) can be paraphrased as shown:

(5)   John ate tiramisu and I think the best pizza in town.
    Possible paraphrase: John ate tiramisu. I think he also ate the best pizza in town.

This paraphrase suggests underlying structure clausal coordination, where *I think* has **sentential scope**, over *ate* and conjunction:

(6)   [CP John ate tiramisu] and [CP I think [CP John ate the best pizza in town]]

However, Schein and Vicente present arguments that clausal coordination structure in (6) is unsatisfactory for certain CCs, like (7).

(7)   Los judíos no   pueden llevar   ropa   hecha de lana y
    the Jews   NEG 3plS.able wear.INF clothes made of wool and
    creo   que   lino.
    1S.think COMP linen
    'Jews cannot wear clothes made of wool and I think linen.'

Vicente 2013 observes that (7) can be judged true in the actual world, where clothing combining wool and linen is prohibited.

- This suggests that (7) permits a parse where *I think* takes **subsentential scope**, only over *linen.*

The truth of (7) is mysterious if it is assigned a clausal conjunction structure like (8), where *I think* takes sentential scope over conjunction, negation, and modality.

(8)   [CP Jews cannot wear clothes made of wool] and [CP I think [CP Jews cannot wear clothes made of linen]]

- Given the structure in (8), we expect (7) to be true only if single fiber (wool **or**, perhaps, linen) clothes are banned.

We propose:

Both (5) and (7) are ambiguous between the following parses:

1: Sentential parse: IC scopes over one conjoined clause.

(5): John ate tiramisu. He may have also eaten the best pizza in town.

(7): Wool clothes prohibited. Linen clothes may also be prohibited.

2: Subsentential parse: IC only scopes over adjacent material.

(5): John ate two things: tiramisu and something else which may be the best pizza in town.

(7): Prohibition against clothes that combine two fibers: wool and some other fiber, which may be linen.

⇒ Our recognition of subsentential parses for CCs in general is a departure from previous work.

We relate the subsentential parse of CCs to sentences like (9):

(9)   a.   John ate {I think / possibly} the best pizza in town.
    b.   Jews can't wear clothes made of I think linen.

As in CCs, ICs in (9) are prosodically integrated (Ernst 1984).

The truth conditions of sentences like (9a) contrast with those of (10).

(10)   Possibly / I think, John ate the best pizza in town.

The context in (11) illustrates the contrast in truth conditions.

(11)   John went to Amherst yesterday. He planned to eat pizza at Antonio's, which indisputably makes the best pizza in town. He was busy, though, and may not have had time to eat, so it's possible he didn't eat anything at all.
   a.   Possibly / I think [$_{CP}$ John ate the best pizza in town].
   b. #John ate possibly / I think [$_{DP}$ the best pizza in town].

In context (11), it is uncertain whether John ate anything at all.

- (11b) is infelicitous in the context because it has existential import. Uncertainty restricted to identity of what was eaten.

⇒ The existential import exhibited by such sentences recalls the subsentential parse of the CC in (7).

3   Analysis of the subsentential parse

Bogal-Allbritten (2013, 2014) gives a syntax for sentences like (9).

- IC forms a syntactic constituent with adjacent DP. IC does not originate from a clause-adjoined position.[1]

(12)   *possibly the best pizza in town* ⤳
          λy [possibly [$_{SC}$ PRO$_y$ IDENTIFY *the best pizza in town*]]

The structure above recalls Grosu's (2003, 2007) analysis of (intuitively similar) Transparent Free Relatives (TFRs) (13).

- TFRs have intensional operators and reduced clausal structure.

(13)   a.   John ate [$_{TFR}$ what is possibly that best pizza in town].
          b.   Jews can't wear clothes made of wool and [$_{TFR}$ what I think is linen].

Material overt in TFRs (*what*, copula)) is covert in sentences like (9) and in CCs with a subsentential parse.

Key pieces of the analysis (Bogal-Allbritten 2013, 2014):

- The IC (*possibly*) is of type ⟨st,st⟩. DP initially of type ⟨se⟩ (14).

(14)   a.   ⟦*possibly*⟧ = λp$_{st}\lambda$w[∃w'∈ EPI-MB(w)[p(w')]]   ⟨st,st⟩
          b.   ⟦*the best pizza in town*⟧ = λw' ιy[*best pizza*(y,w')]   ⟨se⟩

- The DP is shifted to an expression of type ⟨e,st⟩ by IDENTIFY, an intensional relative of Partee 1986's IDENT.[2]

(15)   a.   ⟦IDENTIFY⟧ = $\lambda\mathcal{X}_{se}\lambda$z$_e\lambda$w'[z = $\mathcal{X}$(w')]   ⟨se,est⟩
          b.   ⟦IDENTIFY *the best pizza in town*⟧
              = λz$_e\lambda$w'[z = ιy[*best pizza*(y,w')]]   ⟨e,st⟩

Composition between type ⟨st,st⟩ *possibly* and shifted DP is mediated by reduced relative structure (Bhatt 2006):

(16)   ⟦[λz [possibly [$_{SC}$ PRO$_z$ IDENTIFY the best pizza in town]]]⟧
          = λzλw[∃w'∈ EPI-MB(w)[z = ιy[*best pizza*(y,w')]]]   ⟨e,st⟩

There are several possible ways for the type ⟨e,st⟩ in (16) to compose with the rest of the clause (Bogal-Allbritten 2013, 2014).

- One option is to assume a covert choice function as in (17), which returns some member of the set in (16).

- The choice function is existentially quantified over (as in (17); Reinhart 1997) or given by the context (Kratzer 1998).

(17)   ∃*f* [John ate
          f(λzλw[∃w'∈ EPI-MB(w)[z = ιy[*best pizza*(y,w')]]])]

   ⤳   John ate something which is in the set of things which, for all the speaker knows, might be the best pizza in town.

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[1]See Bogal-Allbritten (2013, 2014) and Ernst (1984) for motivation for this constituency.

[2]Further precedent for IDENTIFY comes from analyses of Concealed Questions (e.g. *I know the capital of Italy*) by Frana 2006, 2010, Schwager 2008.

The subsentential parse for CCs arises when such structures are conjoined with other DPs:

(18)   John ate some tiramisu and possibly the best pizza in town.
        Subsentential parse: John ate two things: tiramisu and something which is in the set of things which, for all the speaker knows, might be the best pizza in town.

(19)   John ate tiramisu and
        $[\lambda z$ [possibly [$_{SC}$ PRO$_z$ IDENTIFY the best pizza in town]]]

4   Analysis of the sentential parse

4.1   Sentential ICs as clausal ellipsis

How does the IC in the CC (20) come to have sentential scope?

(20)   John ate some tiramisu and possibly the best pizza in town.
        Sentential parse: John definitely ate some tiramisu. He may also have eaten the best pizza in town (but he might have just had tiramisu).

We argue that sentential scope of the IC arises from clausal conjunction plus ellipsis, a variant on classic 'conjunction reduction' analyses.

(21)   John ate some tiramisu and possibly ~~John ate~~ the best pizza in town.

In support of this, we note that there are many parallels between CCs and fragment answers (22)– argued by Merchant 2004 to be derived from clausal ellipsis (for motivation we refer to Merchant 2004, Weir 2014 and refs therein).

(22)   What did John eat? — Salad. ← ~~John ate~~ salad.

Argument 1: Verbal ICs can only be those verbs that also allow independently show the embedding of fragments (Vicente 2013); roughly, bridge verbs (de Cuba & MacDonald 2013, Temmerman 2013, Weir 2014).

(23)   A: Who left?
        B: I {think/suspect/believe/hope/
              ??found out/??know/*am surprised} John.

(24)   John and I {think/believe/suspect/hope/
              ??found out/??know/*am surprised} Mary left early.

Argument 2: Vicente 2013 observes a correlation between languages that require a complementizer in embedded fragments, and those that require it in CCs.

- Spanish, Polish and Hungarian require complementizers both in fragment answers and in CCs (only first two shown here):

(25)   Spanish:
        a.   A: ¿Quién salió?
             B: Creo *(que) Juan.
             Lit. Who left? – I think that Juan.
        b.   Ana y   creo   *(que) Blas han salido de   casa.
             Ana and I.think that   Blas have left   from house
             'Ana and I think Blas have left home.'

(26)   Polish (Barbara Tomaszewicz p.c. after exx. in Vicente 2013):
        a.   A: Kto jadł czekoladę?
             B: Myślę, że Beata.
             Lit. Who ate chocolate? – I think that Beata.
        b.   Alicja, i   myślę,   że   też Beata jadły
             Alicja and think.1sg that also Beata ate.3pl.fem
             czekoladę.
             chocolate
             'Alicja and I think Beata ate chocolate.'

- English, by contrast (as well as languages like German and Dutch), bans complementizers in both positions.

(27)   a.   Who left? – I think (*that) John.
        b.   Alice and I think (*that) Bob left.

Argument 3: Merchant 2004 proposes that fragments move first to a left-peripheral position, followed by ellipsis.

(28)   What did John eat? — [Salad [~~CP~~ ~~he ate t~~]]

Elements which cannot undergo this movement step in (28) cannot be fragments – and also cannot be the 'second conjuncts' in CCs.

- For example, NPs cannot be moved out of their DPs, leading to the ungrammaticality of the NP fragment answer in (29).

- And, even though NPs can be conjoined below determiners in general (30a), such 'bare' NPs cannot be 'conjuncts' in CCs (30b).

(29)   A: Did he meet a MAN on the train?
    B: No, I think a woman.
    B': *No, I think woman.
        (because *[woman [I think he met [$_{DP}$ a t]]])

(30)   a.   He met a man and woman. (i.e. he met two people)
    b. #He met a man and possibly woman.[3]

Argument 4: Only elements that allow for clausal conjunction – i.e. *and* or *or* – allow for CCs with sentential scope for the modal. For example, comitative *with* – which only connects DPs, not clauses – only allows for subsentential scope for the modal.

(31)   John likes tea with I think honey.
    a.   **Can mean:** There's something John likes with his tea: I think it's honey.
    b.   **Can't mean:** John likes tea, and I think he likes honey with it.

Argument 5: Binding from the first conjunct into the second of a CC is grammatical as such – but it is only compatible with the subsentential reading of the IC, not the sentential one.[4]

(32)   (after examples in Vicente 2013)
    Every professor$_i$ and perhaps his$_i$ best student received an award.
    a.   **Can mean:** For every professor *x*, both *x* and someone who might be *x*'s best student received an award.
    b.   **Can't mean:** For every professor *x*, *x* received an award and it is possible that *x*'s best student received an award.

This is expected if the sentential reading of CCs arises from clausal conjunction: binding cannot take place between clausal conjuncts.

(33) #Every professor$_i$ received an award and his$_i$ best student received a grant.

4.2 Sentential scope: the analysis

A clausal ellipsis analysis gives us a simple treatment of utterance-final CCs (34); these simply involve ellipsis of a clause (i.e. they are simple cases of stripping).

- We assume Merchant 2004's treatment of fragments/stripping: a phrase moves to a left-peripheral position (below a sentential adverb), followed by clausal ellipsis.

(34)   a.   John gave Mary some flowers and possibly some chocolates.
    b.   [$_{CP}$ John gave Mary some flowers] and
        [$_{CP}$ possibly [some chocolates [~~John gave Mary t~~]]]

- For verbal ICs, the syntax is the same, but movement takes place to the specifier of the CP embedded under the matrix verb, here *think* (Temmerman 2013, Weir 2014).

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[3]Thanks to Patrick Elliott for this example.
[4]Vicente 2013 cites examples like (32) as grammatical in Spanish, but doesn't discuss the distinction between the readings in (32a) and (32b).

(35) a. John gave Mary some flowers and I think some chocolates.
     b. [$_{CP}$ John gave Mary some flowers] and
         [$_{CP}$ I think [$_{CP}$ some chocolates ~~John gave Mary t~~]]]

To accommodate initial or medial examples of CCs, e.g. (36), a more complicated treatment is necessary.

(36) John gave Mary and I think Sue some flowers.

- Rightmost material shared between the two conjuncts (underlined in (37a)) undergoes Right Node Raising (37b)

- Movement and ellipsis then takes place within the second clausal conjunct (37c)

(37) a. **Underlying clausal conjunction:**
       [$_{CP}$ John gave Mary <u>some flowers</u>] and [$_{CP}$ I think [$_{CP}$ John gave Sue <u>some flowers</u>]]
     b. **Right Node Raising:**
       [$_{CP}$ John gave Mary ___] and [$_{CP}$ I think [$_{CP}$ John gave Sue ___]] some flowers
     c. **Movement of *Sue* and ellipsis in second conjunct:**
       [$_{CP}$ John gave Mary ___] and [$_{CP}$ I think [$_{CP}$ Sue ~~John gave t ___~~]] some flowers

4.3 A remaining wrinkle: collective predicates

Clausal conjunction analyses of CCs (and conjunction reduction generally) have previously been resisted in the literature due to the existence of collective predicates such as *gather* or *be a mix of* (see e.g. discussion in Schein 1992):

(38) This stew is a mix of cabbage, sausage and possibly ham.

(39) John, Bill, and possibly Mary gathered to discuss the matter.

- These have 'sentential scope' readings for the IC.

  - In (38) the stew might only consist of cabbage and sausage, and in (39), John and Bill might have been the only participants.

- But (the most obvious source for) their putative sentential sources is not well formed, because these predicates require plural arguments.

(40) a. #This stew is a mix of cabbage and it's a mix of sausage and it's possibly a mix of ham.
     b. #John gathered, Bill gathered and Mary gathered.

Our tack: Examples like (38), (39) *do* in fact result from ellipsis – it's just that the ellipsis site might not contain what we think it does.[5]

- Observation: Clausal ellipsis (sluicing, fragments) seems to somehow 'circumvent' the requirement to have a plural argument with collective predicates.

(41) a. This stew is a mix of cabbage and sausage. Ham, too, if you have it.
     b. This stew is a mix of cabbage and sausage. I don't know what else, though.

(42) a. John and Mary gathered. Possibly Bill, too.
     b. John and Mary gathered, but I don't know who else.

Proposal: There is a certain degree of flexibility in what a clausal ellipsis site can contain, which allows the derivation of sentences like (38), (39).

- The ellipsis site has to be semantically 'close enough' to the antecedent, but not necessarily a perfect match, syntactically or semantically.

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[5]We are not proposing here that *all* uses of DP-connecting *and* result from clausal ellipsis/conjunction reduction; only that the cases discussed here can receive such a parse.

- Not a new idea; viz. Merchant 2004's proposal that clausal ellipsis sites can contain 'simple' structures such as *it is* or *do it* (see also van Craenenbroeck 2010, Barros 2014 a.o.)

- We can thereby derive (38) as (something like) the following:

(43) [CP This stew is a mix of cabbage and sausage] and [CP possibly ham ~~this stew contains t~~]

It's a little trickier to derive sentences like (39), but note that sources like (44) are possible:

(44) John and Mary – and possibly Bill did this too – gathered to discuss it.

We remain agnostic on the precise syntax that should be given to (44), but given its availability we can derive (39) elliptically from such a parse:[6]

(45) John and Mary and possibly Bill ~~did this~~ gathered to discuss it.

⇒ Collective predicates therefore do not pose a challenge for a clausal-ellipsis account of (the sentential parse of) CCs.

5 Conclusion

We have argued that Collins Conjunctions like (46) are always in principle ambiguous between the two parses shown, distinguished by the scope of the IC (bolded).

(46) Los judíos no   pueden llevar   ropa   hecha de lana y
      the Jews NEG they.able wear.INF clothes made of wool and
      creo que lino.
      I.think COMP linen
      'Jews cannot wear clothes made of wool and **I think** linen.'
                                                  (Vicente 2013: (26))

a. *Subsentential parse:* Jews cannot wear clothing made of a mixture of wool and some second fiber, which I think is linen.

b. *Sentential parse:* Jews cannot wear clothing made of wool. I also think that Jews cannot wear clothing made of linen.

We analyzed the *subsentential parse* using proposals from Bogal-Allbritten (2013, 2014) for sentences with DP-adjacent modals that take scope only over the DP.

By contrast, we argued that the *sentential parse* involves clausal ellipsis, parallel to that which happens in fragment answers (Merchant 2004 a.o.), a variant on conjunction reduction.

- Previous challenges to conjunction reduction analyses were not incorrect as such – but these challenges are met by recognizing the systematic ambiguity shown by Collins Conjunctions between the two parses shown above.

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[6]Questions remain about where conjunction can be realized as 'comma' (i.e. silence) and where it must be realized as *and*. In (45) the first *and* can be silent, while in (44) it cannot. We have nothing to say about this except that the rules governing the realization of conjunction seem independently mysterious and may be quite low-level morphophonological rules.

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