Ellipsis of relative clauses is Move-and-Delete

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Claims

- The deletion of relative clauses (RCs) provides an argument for movement-based approaches to ellipsis.
- Empirical evidence:
  - RCs can only be deleted in the context of another ellipsis.
  - Post-nominal modifiers are more easily deletable than pre-nominal modifiers.

Relative clause deletion

(1)   a.   At the party, I saw three boys [$_{CP}$ who I know] and one girl.
                                                    (Collins 2015, 57f.)

  b.   Auf der Party hab ich drei Jungs [$_{CP}$ die ich kannte]
       at   the party have I   three boys   who I   knew
       gesehen und ein Mädchen.
       seen   and one girl

- Collins (2015, 2022) observes that English allows deletion of a relative clause. German shows the parallel structure.
- (1) is ambiguous:
     non-elliptical reading: *... and one girl*
     elliptical reading: *... and one girl who I know*

Previous analysis: Collins (2015)

- Collins (2015) suggests that a relative clause can optionally be deleted by itself, (2)

(2)   ... [head$_1$ [relative clause]]... and ... [head$_2$ ~~[relative clause]~~] ...

- Problems for Collins' analysis: disappearance of elliptical reading when no verbal ellipsis occurs; difference with deletion of pre- vs. post-nominal modifiers

- Instead, I argue that the ellipsis site is larger than just the RC. It contains a whole verbal/clausal projection, out of which the modified noun must move, leaving the RC behind.

Analysis

- I propose that RC deletion sentences should be analyzed along the same lines as **bare argument ellipsis/stripping**, (3).

  (3) a. Peter saw three boys [that he knew] yesterday and two girls.

  Relative Clause Deletion

  b. Peter wanted to compliment the secretary yesterday but not his boss/ and his boss, too.

  Stripping

Evidence for RC deletion = stripping

1. RCD cannot occur in adjuncts, neither can stripping, (4) (Depiante 2000).

   (4) a. *I saw three boys who I know after a girl.
        b. *I saw three boys at the party after a girl too.

2. Stripping shows case connectivity, so do RCDs. (e.g., Depiante 2000; Kolokonte 2008)

   (5) a. Ich habe den   Hund gefüttert und den/
           I   have the.ACC dog   fed   and the.ACC
           *der   Kater auch.
           the.NOM cat   too
        b. Ich hab damals den   Jungs geholfen [die ich
           I   have then   the.DAT boys helped   who I
           gar   nicht kannte] und den/*die   Mädchen
           PARTCL not   knew   and the.DAT/the.NOM girls

Evidence for RC deletion = stripping II

③   P-stranding generalization (Depiante 2000)

(6)   a.   Sie hat mit Chomsky geredet und *(mit) Jackendoff
           she has with Chomsky talked and with   Jackendoff
           auch.
           too
           "She talked to Chomsky and to Jackendoff too."

       b.   Ich bin auf das Boot das gewackelt hat gesprungen
           I   was on the boat that swaying   was jumped
           und ?(auf) das Floß.
           and on   the raft
           "I jumped on the boat that swayed and the raft."

(4) Voice mismatches

(7)   a.   *Der Kater hat die Tante gebissen und vom   Hund
        the cat   has the aunt   bitten   and by.the dog
        auch.
        too

      b.   *Max hat den   Hund dem ein Bein fehlt   gesehen
        Max has the.ACC dog   who a   leg   misses seen
        und der   Wellensittich.
        and the.NOM budgie

Evidence for RC deletion = stripping IV

$\left(5\right)$ To the extent that *"but (not) NP"* is parallel to *"except NP"* (Reinhart 1991, see also Potsdam 2018), evidence for a covert clausal structure comes from subsequent *why*-sprouting (Stockwell and Wong 2020).

- Sentences like (8) are ambiguous: crucially, they allow the reading in (8-b).

  (8)   Nobody liked the movie, except John, but I don't know why.
  - a.   why nobody liked the movie (People usually like trashy movies.)
  - b.   why John liked the movie (He usually only watches thrillers.)

Evidence for RC deletion = stripping V

- *why*-sprouting can clearly take an antecedent that contains both *John* and *liked the movie*, suggesting that the underlying structure for (8) is (9) (Stockwell and Wong 2020):

 (9)   Nobody liked the movie except John liked the movie.

(6) German has obligatory relative clauses with *derjenig-* "the one". RCDs are possible with *derjenig-*, (10). This suggests there is covert structure in which it has selected a RC.

(10)   a.   Ich hab diejenigen Männer [über den ich nicht
               I   have the.one men   about who I   no
              mehr reden will] gesehen und diejenigen Frauen.
              longer talk want seen   and the.one   women
    b.   *Ich hab diejenigen Frauen gesehen.
           I   have the.one   women seen

Clausal Ellipsis analysis

- The standard analysis for stripping is clausal ellipsis (e.g., Hankamer and Sag 1976; Depiante 2000; Kim 1997; Kratzer and Heim 1998; Kolokonte 2008; Wurmbrand 2017, contra Reinhart 1991; Fiengo and May 1994).
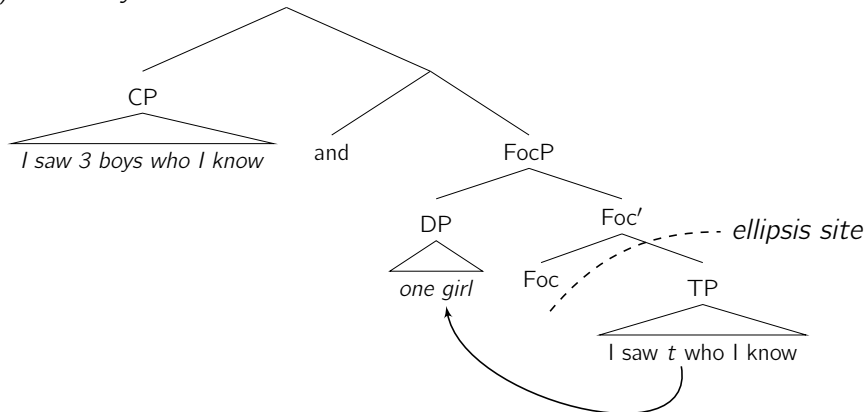
(11)   *Stripping* (Depiante 2000, Merchant 2003)
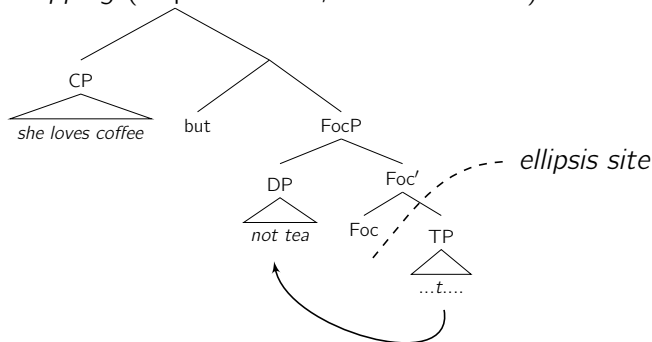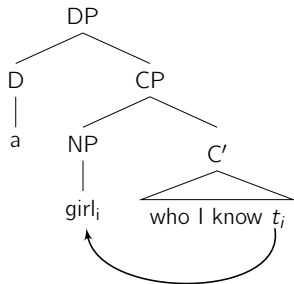
Clausal Ellipsis analysis

- If this analysis is right for RCDs, the head of a RC must be able to
  move out of the ellipsis site, leaving its RC behind, (12).
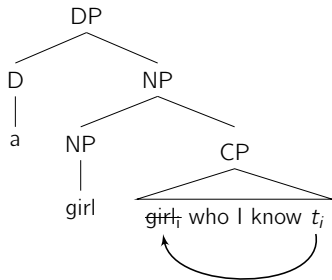
(12)   *Analysis of RCDs*

- This requires remnant movement of DP. The RC evacuates the DP (e.g. via extraposition), then the DP can move. This analysis is only compatible with a matching analysis of RCs, in which the head of the relative is outside of CP, (13) vs. (14).

(13) *Raising* (Vergnaud 1974; Kayne 1994; Bianchi 2000)

(14) *Matching* (Sauerland 1998, 2000)

Predictions

1. The RC cannot be deleted by itself. Instead, it is part of a larger ellipsis site that stems from stripping or gapping. This analysis accounts for the lack of the elliptical reading when all verbal elements are overt, (15).

   (15)   Ich hab drei Jungs gesehen [die ich kannte] und ich
          I   have three boys seen   that I   knew   and I
          hab ein Mädchen gesehen.   #I have seen three boys that
          have one girl   seen
          I know and I have seen one girl that I know.

- An in-situ approach or Collins' (2015) analysis cannot trivially account for the disappearance of the RC interpretation in (15). Collins particularly does not constrain when RCs can and cannot be deleted.

Predictions

2. Pre-nominal modifiers cannot be deleted. An analysis in which the surfacing NP moves predicts that. The head noun cannot move while stranding an attributive adjective, but it can move stranding a RC, (16).

   (16) #Ich habe drei inkompetente Professoren gesehen und
          I   have three incompetent professors   seen   and
          einen Studenten ~~hab~~ ~~ich~~ *t* ~~inkompetenten~~ *t* ~~gesehen~~.
          one   student   have I   incompetent seen
          *one incompetent student

- In in-situ approaches, where deletion can happen *around* focused XPs, this contrast does not fall out immediately.

Conclusion

- The ellipsis of relative clauses is a relatively new empirical domain.
- It is suitable to test the prediction of in situ and Move-and-Delete approaches.
- I argue, based on novel empirical observations, that the predictions of a Move-and-Delete approach are borne out in this domain.

Appendix

Is there ellipsis and how much? – Extraction

- If an element in an elliptical constituent can be part of a movement dependency, as in (17), this suggests that the ellipsis site contains syntactic structure that hosts the tail of the dependency (e.g. Johnson 2001; Merchant 2013).

  (17)   Which films did he refuse to see and [which films]$_1$ did he agree to [$_{VP}$ ~~see t_1~~]?

- Relative clauses are islands for movement, (18).

  (18)   *What$_1$ did you see [a boy [who had t_1]]

Extraction

- *Certain* relative clauses allow movement out of them (Kush et al. 2013; Lindahl 2017; Sichel 2018; Vincent 2021 a.o.), (19).
    - RC must be in base position
    - RC has to be in the object of a perception verb, '*know*', or an existential
- Attested in English, Mainland Scandinavian, Hebrew, Romance, but not German, (19-a) vs. (19-b).

(19)   a.   Then you look at what happens in languages that you know
              and languages$_1$ [that you have a friend [who knows t_1]].
       b.   *Diese Blumen kenne ich einen Mann [der t verkauft].
             these flowers know I   a   man   who   sells

Extraction

- Testing extraction out of a supposedly deleted relative clause:

  (20)   a.   I saw three students [who I know a girl [who loves *t*]]
                yesterday and two professors ~~[who I know a girl who loves]~~.
          b.   Guido is either a dog [that I know someone [who is
                allergic to t]] or a cat ~~[that I know someone [who is allergic to t]]~~.

- Interpretation of a deleted relative clause in (20) is possible $\Rightarrow$
  movement test: there is covert structure

Extraction

- **However**, it is not the case that **only** the RC is deleted, (21).

  (21)   a.   ✗ Guido is a dog [that I know someone [who is
                  allergic to t]] and Myrna is a cat.
          b.   ✓ Guido is a dog [that I know someone [who is
                  allergic to t]] and Myrna, a cat.

                                                    (M.Frazier, p.c.)

- RC can only be interpreted in a gapping environment, (21-b). If the
  ellipsis site contains only the RC, it cannot be interpreted, (21-a).

⇒ against Collins (2015)

⇒ ellipsis site **larger than just RC**

Inverse scope

- If a deleted quantifier can take scope over an overt one, the deleted quantifier must be present in the structure.

  (22)   A doctor examined every patient and then a nurse did [~~VP examine every patient~~].
         ✓ for every patient, a different nurse examined them

- Relative clauses are scope islands (Rodman 1976).

  (23)   John has dated a woman who loves every man.   *∀ > ∃

- BUT: there are a lot of counterexamples (e.g. Hulsey and Sauerland 2006; Barker 2021), (24).

(24)   a.   A book [which every prisoner left] surprised the warden.
            (May 1977, 223)
       b.   The woman [that every man hugged] pinched him.
                                              (Sharvit 1999, 449)

Inverse scope

- Specifically "each" seems to be a strong island escaper (Szabolcsi 2010; Barker 2021), (25).

  (25)   a.   There is a role [that each person is uniquely designed by God to fulfill].
         b.   The data set represents the number of snails [that each person counted on a walk after a rainstorm]. (Barker 2021)

- For deleted relative clauses:

(26)   a.   I like the vase [that stands on each table] and the jug ___.
            ✗ *different jugs of the same type*
       b.   ✗ At the party, I met the nurse [who examined each patient] and the doctor ___.
       c.   ✗ At karaoke, there was a ballad [that each guy scream-sang] and a rap ___.   (M. Frazier, p.c.)

Inverse scope

- Inverse scope is also impossible with covert material that is not in the RC, (27).

  (27)   Three doctors [who love the opera] examined every patient more carefully than two nurses.
  ✓ *three > every*
  #*every > three*   (A. Murphy, p.c.)

⇒ Inverse scope: **no covert structure**

- German is a scope-rigid language, i.e., in the general case, only surface scope is available (Frey 1993; Büring 1997; Krifka 1998; Bobaljik and Wurmbrand 2012).

- The possibility of inverse scope depends on movement, focus, definiteness, D-linking ... (e.g., Pafel 2006)

Inverse scope

Pafel (2006): Relative clauses can be scope-ambiguous, (28).

(28)   die Stücke, die jeder   bei der Abschlussprüfung
        the pieces   that everyone.NOM at   the finals
        gespielt hat   *surface scope:* the pieces X and Y such that
        played   has
        everyone played both X and Y
        inverse scope: all the pieces that were played, not necessarily by
        everyone   (Pafel 2006, 132)

Inverse scope

In deleted relative clauses:

(29)　　a.　Mir haben die Klavierstücke gefallen [$_{CP}$ die jeder　　bei der
　　　　　　 I　 have　 the piano.pieces likes　　　　 that everyone at the
　　　　　　 Abschlussprüfung gespielt hat] und die Bratschenstücke ＿.
　　　　　　 finals　　　　　　　 played　 has and the viola.pieces
　　　　　　 ✓ *(all) the viola pieces which were played at the final exam, not*
　　　　　　 necessarily by every single musician

　　　　b.　Ich hab　die zwei Patienten angerufen [$_{CP}$ mit　denen jeder
　　　　　　 I　have the two　 patients　 called　　　　 with who　 every
　　　　　　 Arzt　 morgen　 reden wird] und die zwei Pfleger ＿.
　　　　　　 doctor tomorrow talk　 will　 and the two　 nurses
　　　　　　 ✓ *for each doctor, I called two different nurses* (based on Bianchi
　　　　　　 1999)

⇒ Inverse scope indicates **covert structure** in German.

Reconstruction (Collins 2015)

- Collins (2015) gives (30) as evidence that there is covert syntactic structure which can bind the reflexive in the head of the RC

  (30)   The picture of himself$_1$ in the woods [that John$_1$ took __]
          is prettier than the picture of himself$_1$ on the boat [that
          John took __]

- However, the example involves a *picture*-NP, which is known to be exempt from the Binding Conditions (Pollard and Sag 1992; Reinhart and Reuland 1993; Cecchetto 2005). Anaphors in *picture*-NPs can be bound in the absence of c-command, as in (31).

  (31)   [This aspect of herself$_1$] was tough for [Sarah Palin's$_1$
          autobiography] to present in a good light.   (Bruening
          2012, ex. (11))

Reconstruction (Collins 2015)

- To test if the head of the RC can reconstruct into an ellipsis site, we need to test variable binding (but see Barker 2012).

    (32)   The relative of his$_i$ [that every boy$_i$ likes] lives far away.
    (Cecchetto 2005, 14)

- No variable binding in supposed ellipsis sites:

    (33)   a. #The relative of his$_i$ that every boy$_i$ likes lives further
          away than the teacher of his$_i$.
          b. #The student of his$_i$ that every professor$_i$ adores lives
          further away than the colleague of his$_i$.

Reconstruction (Collins 2015)

- Variable binding outside of RC ✓:

  (34)   Every$_i$ linguist adores his$_i$ professor [who loves the opera]
          and/ more than his$_i$ colleague.

- German: the test is not applicable, since there is no reconstruction
  in the baseline, (35).

  (35)   #Seine Tante$_i$ [die   jeder Junge$_i$ liebt] wohnt weit weg.
          his   aunt   that every boy   loves lives far   away

- If the quantifier is outside of the RC, but inside a presumably bigger
  ellipsis site, reconstruction is more possible, (36), (37).

Reconstruction (Collins 2015)

(36)   a.   ?Seinen Professor   [der Opern liebt] verehrt jeder
            their   professor.ACC who opera loves admires every
            Linguist   und seinen Kollegen
            linguist.NOM and their   colleague.ACC
            [der Opern liebt] verehrt jeder Linguist.

            "Every linguist admired their professor who loves opera and their
            colleague who loves opera."

    b.   Seinen Professor   [der Opern liebt] verehrt jeder
            their professor.ACC who opera loves admires every
            Linguist   mehr als   seinen Kollegen   [der Opern liebt]
            linguist.NOM more than their   colleague.ACC

⇒ reconstruction seems to be **possible into covert structure that is not a RC**

Strict/ sloppy identity (Collins 2015)

Pronouns in an ellipsis site can receive ambiguous interpretations, (37).

(37)   John loves his mother and Bill does ~~love his mother~~ too.

    a.   strict: Bill loves John's mother.

    b.   sloppy: Bill loves Bill's mother.

Collins (2015): RCD sentences can receive either a sloppy or a strict reading:

(38)   a.   I met three freshmen who liked their professors and three
           sophomores.   *sloppy*

      b.   I like the picture of John that was on his mother's fridge,
           but not the picture of Bill.   *strict*

      c.   I met three boys who love their mom and two girls. *sloppy*

Strict/ sloppy identity (Collins 2015)

- Two problems:
    1. I couldn't come up with sentences that are truly ambiguous.
    2. It is debated whether sloppy identity is really an indication of ellipsis
       (e.g., Hoji 1998; Culicover and Jackendoff 2005; Frazier 2013).
       Sloppy interpretations are possible without any ellipsis, as in (39).

    (39)   Betty cleaned her living room and Jane did the same thing.
                                                                (Frazier 2013)

Summary

(40)   *Summary of ellipsis diagnostics*

	Covert RC	Larger covert structure	No covert structure
Extraction		$\times_{\text{Engl}}$	
Inverse scope	$\times_{\text{Ger}}$		$\times_{\text{Engl}}$
Reconstruction		$\times_{\text{Ger,Engl}}$	

$\Rightarrow$ The tests indicate that Collins (2015) is wrong: there is no ellipsis operation that targets relative clauses specifically. Instead, his RCD sentences seem to be instances of ordinary coordinate ellipsis.

Identity

The RC interpretation is *optional*.

- Two structures are available: one with the RC in the ellipsis site and one without.

- This suggests that for the purposes of calculating **identity** between antecedent and ellipsis site, it is sufficient if the ellipsis site contains a **subset** of the information expressed in the antecedent.

- This is not captured by mutual entailment conditions like Merchant (2001), but predicted by approaches to identity that rely on the eventive core of the extended projection, e.g. Rudin (2019), and by approaches in which missing structure in one conjunct doesn't count (Ranero 2021).

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