Semantic Roles and Binding as an Argument for Late Merge
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Maura O'Leary
University of California, Los Angeles
mauraoleary@ucla.edu

1. Data[1]

- Minkoff (2000) presents data that suggests that not all antecedents are equal in binding.[2] Consider the following sentences:

    (1)   a. That generous woman$_i$ persuaded us to accept her$_i$.
            b. *Her generous gift$_i$ persuaded us to accept it$_i$.

    (2)   a. Mary$_i$ caused herself$_i$ to become notorious.
            b. *The plutonium$_i$ caused itself$_i$ to become notorious.

    (3)   a. Mary$_i$ frightened me away from her$_i$.
            b. *The loud noise$_i$ frightened me away from it$_i$.

    (4)   a. That magnet$_i$ causes paper clips to move towards itself$_i$.
            b. *That history$_i$ causes attention to focus on itself$_i$.

- In each of these pairs, the primary difference is the exact antecedent that is used.

2. Can we use any previous theories?

- Condition A does not explain the pronouns in (1) and (3).
- Condition B does not explain the reflexives in (2) and (4).
- Condition C is not relevant.
- Each of the subject-verb pairs is possible, when binding is out of the picture:

    (5)   Her generous gift persuaded us to accept her.
    (6)   The plutonium caused Mary to become notorious.
    (7)   The loud noise frightened me away from the house.
    (8)   That history causes attention to focus on women's rights.

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[1] This data has been replicated and confirmed in Greek, Korean, and French. However, only English is discussed in this presentation.

[2] I have looked into the separation between binding and coreference within the data given here and have not found the distinction between them relevant at any turn. Therefore, I generalize to "binding" throughout for the sake of simplicity, even though both binding and coreference can be seen in the data. This also rules out rules I (Grodzinsky and Reinhart 1993) and H (Fox 2000) as potential explanations, as they deal with the difference between binding and coreference.

- Explanations for logophoricity (Sells 1987, Charnavel & Zlogar 2015, Charnavel & Sportiche 2016) seem relevant, because there seem to be requirements being placed on the antecedents. However, there is no clear, unifying requirement across the board for (1)-(4) which would allow the antecedents in the (a) sentences, but not those in the (b) sentences.

- Minkoff's original account:
    - Verbs "select" their subjects, based on different properties. For instance:
        - cause, as in (4): *physical/concrete*
        - persuade, (1): *alive*
        - cause, (2); frighten, (3): *sentient*
    - Only selected subjects can grammatically be antecedents.

    - This theory cannot explain why *cause* in (2) and *cause* in (4) "select" different subject types.

    - Nor can it explain sentences where both the subject and the verb are the same:

(9)   a. That big nasty-looking man persuaded us to walk away from him.
            (He told us to walk away or suffer the consequences.)

        b. *That big nasty-looking man persuaded us to walk away from him.
            (We walked away because the man frightened us, but he hadn't even known we were there.)
                                                                (modified from Minkoff 2004:137)

    - Note that either interpretation is available when there is no binding:

(10)   a. That big nasty-looking man persuaded us to walk away.
            (He told us to walk away or suffer the consequences.)

        b. That big nasty-looking man persuaded us to walk away.
            (We walked away because the man frightened us, but he hadn't even known we were there.)

    - For more information on Minkoff's (2000) theory, see appendix 1.

- No previous theory can fully account for the data presented here.

3. Description

3.1 Semantic Roles

- Forget subject-verb "selection" and focus on the specific semantic roles of the antecedents.

- Each of our subjects has been a "causer" of some sort, but some cause the main event *directly* and some cause the main event *indirectly* (Minkoff 2004)

- Terminology:
  - **Causer**: the entity responsible for an event
    - **Active Causer**: an entity that acted in such a way as to cause an event
    - **Passive Causer**: an entity that causes the event either unintentionally or through no action of their own

- Consider:

  (11) a. The plutonium caused itself to become something else.
                  Plutonium = active causer (The plutonium physically transformed itself
                  through radioactive decay.)
         b. *The plutonium caused itself to become notorious.
                  Plutonium = passive causer (People came to fear it as a result of its
                  dangerous properties.)

                                                                        (Minkoff 2004:150)

- It seems that passive causers cannot be grammatical antecedents, while active causers can.
- This holds for all of the examples in (1)-(4).

- This distinction also works to explain the difference between (9a) and (9b):

  (9)   a. That big nasty-looking man persuaded us to walk away from him.
                  Man = active causer (The big nasty-looking man told us to walk away
                  or suffer the consequences.)
         b. *That big nasty-looking man persuaded us to walk away from him.
                  Man = passive causer (We walked away because the man frightened
                  us, but he hadn't even known we were there.)

We can therefore arrive at the following descriptive generalization:

> (12) Passive causers may not bind.

3.2 Adjunction

- Minkoff (2000) notes that otherwise unacceptable antecedents may bind into adjuncts:

  (13) The loud noise$_i$ frightened the people [$_{Adjunct}$ who made <u>it</u>$_i$].
  (14) The loud noise$_i$ frightened the people [$_{Adjunct}$ who persuaded me [$_{Complement}$ to make <u>it</u>$_i$]].
  (15) The loud noise$_i$ frightened me [$_{Adjunct}$ after I heard <u>it</u>$_i$].

  (16) The generous gift$_i$ persuaded me [$_{Complement}$ to accept the people [$_{Adjunct}$ who brought <u>it</u>$_i$ to the party]].
  (17) The generous gift$_i$ persuaded John [$_{Complement}$ to accept the people [$_{Adjunct}$ who persuaded me [$_{Complement}$ to bring <u>it</u>$_i$ to the party]]].
  (18) The generous gift$_i$ persuaded John to come [$_{Adjunct}$ although he knew who brought <u>it</u>$_i$ to the party].

- Note, however, that no number of complement layers can change the previous judgements:

  (19) a. [That generous woman]$_i$ persuaded me [$_{Complement}$ to tell Mary [$_{Complement}$ to tell John [$_{Complement}$ to ask Sally [$_{Complement}$ to accept her$_i$.]]]]
        b. *[Her generous gift]$_i$ persuaded me [$_{Complement}$ to tell Mary [$_{Complement}$ to tell John [$_{Complement}$ to ask Sally [$_{Complement}$ to accept it$_i$.]]]]

  (Minkoff 2000:584)

- Note that this data rules out analyses based on c-command.

- New descriptive generalization:

(20) Passive causers may only bind into an adjunct.

4. Theory

4.1 Why passive causers?

- This is not the only occurrence of passive causers behaving in a unique manner.

- Schäfer (2008) discusses anticausatives and dative causers[3]
  - Whether the causer in (anti)causative constructions is active or passive drastically changes the syntactic structure and/or case markings
  - Happens in many languages

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[3] Schäfer uses the term *dative causer* rather than *passive causer*, as unexpected case marking in (anti)causative constructions is the focus of his book. He describes the dative causer as "an unintentional causer, an involuntary and indirect facilitator, or… an unexpected causer" (2008: 109).

- For example, in Tsez (a Caucasian language), the syntactic structure changes based on whether the causer is active or passive (data from Kittilä 2005, Comrie 2000):

(21)   a.   už-ā   č'ikay   y-exu-r-si
              boy.ERG glass.ABS   II-break-CAUS-PAST.WIT
              'The boy broke the glass.'

         b.   č'ikay   y-exu-s
              glass.ABS   II-break-PAST.WIT
              'The glass broke.'

         c.   uži-q   č'ikay   y-exu-s
              boy.POSS   glass.ABS   II-break-PAST.WIT
              'The boy accidentally broke the glass.'
              [Lit. The boy's glass broke.]

                                          (Schäfer 2008: 112)

- In (21c) the causative morpheme is not even present when the event is caused indirectly

- In German, the case marking varies between dative for passive causers and nominative for active causers

(22)   a.   Dem   Hans zerbrach die Vase
              the.DAT John broke   the vase
              'The vase broke and John caused this unintentionally.'

         b.   *Dem   Hans zerbrach die Vase
              the.DAT John broke   the vase
              'The vase broke and John caused this on purpose.'

         c.   Der   Hans zerbrach die Vase
              the.NOM John broke   the vase
              'John broke the vase (intentionally).'

   (Schäfer 2008)

- Schäfer (2008) concludes that passive causers cannot be in a canonical subject position

- Instead, he accepts the theory that they are introduced by a high applicative head (Cuervo 2003)
  - Applicative heads are verb-like and are used to introduce additional arguments that are associated with the verb, but are not directly arguments of the verb
  - "High applicative heads attach above the root and low applicative heads below it" (Pylkkänen 2001: 3)
  - Many theories claim that indirect objects are introduced by low applicative heads[4] (Cuervo 2003; Schäfer 2008; Pylkkänen 2001, 2008; among many others)

(23) Location of an *active causer*[5]
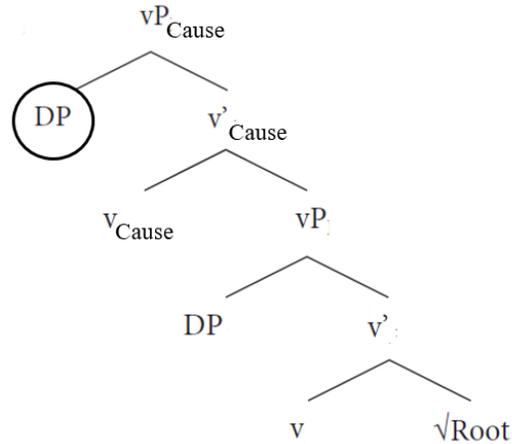
(24) Location of a *passive causer*

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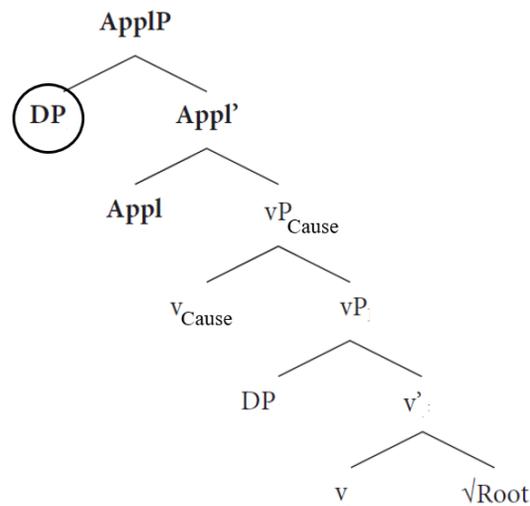
[4] For instance, (i) would have no applicative phrase, but (ii) would, with *John* as its specifier.
   i. I baked a cake.
   ii. I baked John a cake.

[5] Note that there are two *vP*s in this tree and the following one. The lower of the two merges with a root to create a verb. The higher one, which is sometimes called *voiceP*, is equivalent to the more classical *vP*, which is verbal in its own right and generally carries a meaning of *cause, become,* etc. As an example, with a verb such as *kill,* which is considered to be composed of *cause [to] die*, the higher *v* would be *cause*, and the lower *v* would combine with the lexical root *die* to make the verb *die*.

- English has not previously been considered to have high applicative heads (Pylkkänen 2001, 2008)

- However, since the passive causers here behave so distinctly, I argue that we should capitalize on the similarity to the distinction made in similar languages like German

- I propose that, in English:

> (25) Binding is not acceptable from the specifier position of a high ApplP[6]

4.2 Why adjuncts?

- The generalization in (25) does not, of course, account for the ability of passive causers to bind into adjuncts

- To explain this, I propose to use the concept of late merge (Lebeaux 1991)
  - Adjuncts are added to the sentence after certain movements occur
  - It explains why elements in "moved" adjuncts are not affected by binding conditions that would apply to their unmoved positions (which is where they are at LF)

  (26) a. [Which book [that John$_i$ likes]]$_j$ did he$_i$ sell t_j?
        b. Did he$_i$ sell [which book [that John$_i$ likes]] **LF/before movement**
            → **Condition C violation**

  (27) a. Did he sell [which book]?
        b. [Which book] did he sell? **wh-movement**
        c. [Which book [that John$_i$ likes]] did he$_i$ sell? **late merge**

- I propose that the binding rule in (25) is checked at a point before adjuncts are (late) merged. It is not checked again after late merge, thus allowing DPs in the specifier position of high ApplPs to grammatically bind into adjuncts, but nowhere else.

- Recently, there have been some arguments against the existence of late merge (Sportiche 2016)
  - Sportiche (2016) posits a mechanism called NEGLECT, which allows (with some restraints) the interpretation at LF of either the original copy or the moved copy of a phrase
  - This allows (26a) to be derived grammatically without late merge:

  (28) [Which book [that John$_i$ likes]] did he$_i$ sell ~~[which book [that John$_i$ likes]]~~?

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[6] If other high applicative phrases are ever found in English, it is possible that this definition may need to be modified to specify that binding is not allowed from the type of high ApplP which has a passive causer as a specifier

- However, the causative sentences seen here do not involve movement. Thus, NEGLECT cannot provide an explanation for the data seen here, but late merge can.

- We therefore arrive at the following conclusion:

> (29) At a point in the derivation before late merge occurs, binding is checked and binding relationships with an antecedent in the specifier position of a high applicative phrase are marked ungrammatical.

5. Conclusion

- Surprising data showed a discrepancy in behavior between subjects that actively or passively cause the event at hand.

- These subjects could not behave as antecedents in binding relationships, except when binding into adjuncts.

- The difference in behavior between active and passive causers mirrors the same divide in anticausative constructions in other languages, which is explained by passive causers originating as the specifier of a high applicative phrase.

- The issue that elements within adjuncts may be grammatically bound can be avoided by positing that any relevant binding constraint is checked prior to late merge.

- Thus, we concluded that binding from the specifier position of a high applicative phrase prior to late merge results in ungrammaticality.

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