Rebinding and derivational ellipsis licensing

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Introduction

- Ellipsis constructions involving bound variables allow two readings:

(1) John hits his friend.
Bill also does <hit his friend>.

Bill hits John's friend. strict identity reading
Bill hits Bill's friend. sloppy identity reading

John [$_{vp}$ hits his friend]. Bill also does <$_{EC}$ hit his friend>. *Free within EC*

Introduction

- Ellipsis constructions involving bound variables allow two readings (Sag 1976):

(1) John hits his friend.
Bill also does <hit his friend>.

Bill hits John's friend. — strict identity reading

Bill hits Bill's friend. — sloppy identity reading

John [λx. x hit x's friend]. — By Derived VP Rule (Partee 1975)
Bill also does <λy. y hit y's friend>.

Introduction

- However, there are ellipsis constructions that do not allow sloppy readings.

(2) Bill said Mary tricked him, and John also said she did <trick him>.

AC: Bill λx. x said Mary λy. y tricked x.

EC: John λx. x said she <λy. y tricked x>.

John said Mary tricked Bill.	strict identity reading
John said Mary tricked John.	*sloppy identity reading

→ *Rebinding configuration* (Sag 1976; named by Takahashi and Fox 2005)

Background (Sag 1976)

- Rebinding configuration (Sag 1976; Takahashi and Fox 2005)

  Variables are free inside Elided Constituent (EC) and Antecedent Clause (AC);

  Binders are outside EC and AC

Antecedent Clause : [. . . [XPx . . . [$_{AC}$ . . . x . . .]])

Ellipsis Clause: [. . . [YPy . . . <$_{EC}$ . . . y . . . >]]

Background(Sag 1976)

- Two representative rebinding configurations (Takahashi and Fox 2005)

i) Anaphors in a Sloppy reading

(3) a. Bill said Mary tricked him, and John also said she did <trick him>. *sloppy

b. Bill said Mary tricked him, and John also did <say she tricked him>. √sloppy

ii) A′-movement

(4) a. John knows which professor we invited, but he is not allowed to reveal which one <λx. we invited x>.

b. * John knows which professor we invited, but he is not allowed to reveal which one λx. we did <λy. y invite x>. (Takahashi and Fox 2005: 225)

Background(Takahashi and Fox 2005)

- However, Takahashi and Fox point out that if a focused item intervenes between the binder and the bindee in a re-binding, it becomes acceptable.

(5) Mary doesn't know who we can invite,

but she can tell you who λx. we can **NOT** <λy. y invite x>.

(Takahashi and Fox 2005: 226)

Takahashi and Fox' solution

MaxElide (p229):

Elide the biggest deletable constituent reflexively dominated by PD.

Parallelism Domain (PD) is a constituent that dominates the re-binder in a rebinding configurations.

Background(Takahashi and Fox 2005)

Parallelism (Takahashi and Fox 2005: 229)

PD satisfies the parallelism condition if PD is semantically identical to another constituent AC, modulo focus marked constituents.

PD is semantically identical to AC (Antecedent Clause) modulo focus marked constituents, if there is a focus alternative to PD, PD_{Alt} such that for every assignment function, g, $[[PD_{Alt}]]^g = [[AC]]^g$.

PD_{Alt} is an alternative to PD if PD_{Alt} can be derived from PD by replacing focus marked constituents with their alternatives.

I know who λx [JOHN will kiss x] and also who_i λy [MARY will [kiss y] .

Ordinary semantic value of α (roughly, ∃x. John will kiss x) is a member of the focus semantic value of β (roughly, {∃y. John will kiss y}).

Background(Takahashi and Fox 2005)

MaxElide can account for… (Takahashi and Fox 2005, p230)

(6) Non-rebinding configuration

John said Mary likes Peter. BILL also said she does [$_{PD}$ **<$_{EC}$ like Peter>**].

(7) Rebinding configuration without a focus element

a. * John knows which professor we invited, but he is not allowed to reveal [$_{PD}$ which one$_i$ we did **<$_{EC}$ invite t$_i$>**] .

b . John knows which professor we invited, but he is not allowed to reveal [$_{PD}$ which one$_i$ **<$_{EC}$ we invited t$_i$>**].

(8) Rebinding configuration with a focus element

Mary doesn 't know who we can invite,

but she can tell you [$_{PD}$ who$_i$ we can NOT **<$_{EC}$ invite t$_i$ >**].

Background (Griffiths 2019)

Griffiths (2019)

- MaxElide overgenerates….

(9) *MARY kissed a HIPSTER, but I don't know who$_i$ [$_{TP}$ **JOHN** did ~~[$_{VP}$ kiss t$_i$]~~].

(Griffiths 2019, 581)

- …. and undergenerates!

(10) I know who JO thinks he'll kiss and also who$_i$ BO thinks he will ~~[kiss t$_i$]~~ .

(Griffiths 2019, 583)

Background (Griffiths 2019)

Griffiths (2019)

- proposes an alternative analysis that revises the parallelism condition.

(11) Reflexive Roothian parallelism condition on ellipsis (Griffiths 2019: 590)
Modulo ∃-closure, β must contrast appropriately with an antecedent constituent (AC)
and AC must contrast appropriately with β.

(12) ∃-closure (Griffiths 2019: 590)
For the sake of determining whether β contrasts appropriately with α and vice versa,
∃-bind free variables in α and β.

(13) a. I know who JOHN will kiss and also who$_i$ MARY will [kiss t_i] .
b. I know who person λx [$_\alpha$ John$_F$ will kiss the person x]
and also who person λy [$_\beta$ Mary$_F$ will **[$_{VP}$ kiss the person y]**]

Background (Griffiths 2019)

Griffiths (2019)

(14) *Generalization over rebinding utterances* (Griffiths 2019: 587)

A prerequisite of ellipsis being permitted in rebinding utterances is that

a. the λ-binder of the rebound variable asymmetrically c-commands an F-marked item at LF, or

b. the rebound variable is contained in an elided clause.

(15) λ-intervention

λ-binders formed by Trace Conversion (i.e., λ-binders derived from syntactic movement) are interveners to Hamblin-style alternative semantic composition.

→ Alternative semantic composition is unable to proceed due to a λ-binder derived via syntactic movement.

Background (Griffiths 2019)

Griffiths (2019)

Can account for…

(7)a. * John knows which professor we invited, but he is not allowed to reveal
which one$_i$ we did **<$_{EC}$ invite t$_i$>**.

(8) Mary doesn 't know who we can invite,
but she can tell you who$_i$ we can NOT **<$_{EC}$ invite t$_i$ >** .

(9) *MARY kissed a HIPSTER, but I don't know who$_i$ [$_{TP}$ JOHN did [$_{VP}$ **kiss t$_i$**]].
(Griffiths 2019, 581)

(10) I know who JO thinks he'll kiss and also who$_i$ BO thinks he will [**kiss t$_i$**] .
(Griffiths 2019, 583)

→Unacceptable rebinding utterances are unrecoverable.

→We do not need "MaxElide"!

Research question

i) The timing of ellipsis licensing

(10) I know who JO thinks he'll kiss and also who$_i$ BO thinks [$_{CP}$ he will ~~[$_{VP}$ kiss t$_i$]~~] .

- The ellipsis licensing head is presumably T (or v) in the embedded clause.

→ Ellipsis licensing seems to occur within the embedded clause.

- The parallelism domain that ensures the recoverability of the elided phrase must include at least the matrix subject, which is *BO*, a focus element.

- Such a delayed operation is not usually assumed in recent syntactic theories once we adopt the Phase theory (Chomsky 2008).

Research question

i) The timing of ellipsis licensing

(10) I know who JO thinks he'll kiss and also who$_i$ BO thinks [$_{CP}$ he will ~~[$_{VP}$ kiss t$_i$]~~] .

(16) a.	[$_{VP}$ kiss t$_i$]]	
b. …	will [$_{VP}$ kiss t$_i$]]	Licensing head merged
c. …	[$_{CP}$ he will [$_{VP}$ kiss t$_i$]]	Spell-out
d. …	[$_{TP}$ BO thinks [$_{CP}$ he will [$_{VP}$ kiss t$_i$]]]	Focus merged
e. … also who$_i$ BO thinks [$_{CP}$ he will [$_{VP}$ kiss t$_i$]]		

If the parallelism condition is one of ellipsis licensing conditions, when does ellipsis licensing occur?

Research question

ii) No focus salvation effects in the sloppy reading-rebinding configurations

(17) John said that Mary hit him, and Bill said that she DIDN'T hit him.

$^{\surd}$strict/*sloppy

(Messick and Thoms 2016: 308)

(18) Bill_1 BELIEVES that Sally_2 will marry him_1, but everyone_3 KNOWS that she_2 WON'T marry him. $^{\surd}$strict/*sloppy (Hardt 2006: 145)

Idea

i) Reflexive Roothian parallelism condition on ellipsis (proposed by Griffiths) is NOT a licensing condition.

→ “Shan (2004) demonstrates that no tenable rule of Predicate Abstraction (Heim and Kratzer 1998) can be defined in Hamblin style Alternative Semantics..(Giffiths 2019; p591)”

→ Thus, re-binding variables cause issues with semantic compositionality, which is a prerequisite of the parallelism condition (i.e. The presence of a re-binding variable does not satisfy the parallelism condition, but it does not violate it either).

Idea

ii) Structural parallelism matters

- There are re-binding configurations created by an A´-movement that is still unacceptable even the configuration satisfies the parallelism condition by Griffiths.

(19) *ABBY heard a lecture about a Balkan language, but I don't know what kind of language$_i$ **BEN** did <~~hear a lecture about t$_i$~~>. (Lasnik and Park 2013:240)

(20) What did ABBY hear a lecture about, and what did BEN?

(Messick and Thoms 2016: 313)

(21) a. *John became very upset, but I don't know how upset BILL did.

b. ?I know how upset JOHN became, but I don't know how upset MARY did.

(Messick and Thoms 2016: 314)

Idea

ii) Structural parallelism matters

- Messick and Thoms (2016) propose the Scopal parallelism condition.

(22) *Scopal parallelism in ellipsis* (Messick and Thoms 2016: 316)

Variables in the antecedent and elided clause must be bound from parallel positions.

- Such a structural parallelism has been proposed in the literature.(Fox 1999a, 2000; Fox and Lasnik 2003; Griffiths and Lipták 2014)

(19) *ABBY heard a lecture about a Balkan language, but I don't know what kind of language$_i$ **BEN** did <~~hear a lecture about t$_i$~~>. (Lasnik and Park 2013:240)

(23) [$_{CP}$ what kind of language λx [$_{TP}$ BEN [$_{T'}$ did [$_{vP}$ x λx′ [$_{v'}$ heard about x′]]]]]]]]]

Proposal

Structural parallelism by phase

a. Variables in the to-be-elided constituent must be bound by its antecedent from parallel positions by the time of ellipsis licensing.

b. Ellipsis licensing must be done before the licensing head is spelled-out.

→ This is a consequence of the phase theory.

Analysis

(17) John said that Mary hit him, and Bill said that she DIDN'T <~~hit him~~>.

√strict/*sloppy

(24) John λx the person x said that [$_{\alpha}$ Mary hit x], and Bill λy the person y said that [$_{\beta}$ she DIDN'T hit y].

⟦ α ⟧o = ∃x. Mary hit x.

⟦ β ⟧o = ∃x. Mary didn't hit x.

⟦ α ⟧f = {∃x. Mary hit x, ∃x. Mary didn't hit x}

⟦ β ⟧f = {∃y. Mary didn't hit y, ∃y. Mary hit y}

⟦ α ⟧o ∈ ⟦ β ⟧f and ⟦ β ⟧o ∈ ⟦ α ⟧f

→ Reflexive Roothian parallelism condition, *satisfied*.

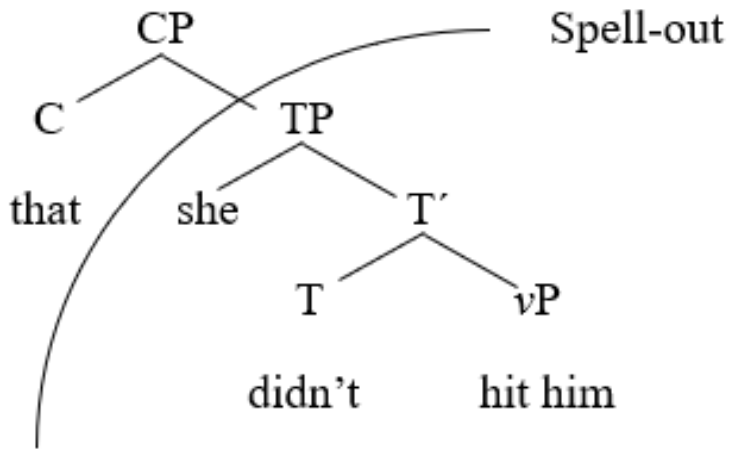
Analysis

(17) John said that Mary hit him, and Bill said that she DIDN'T hit him.

√strict/*sloppy

(25) Structural parallelism by phase is NOT satisfied.

→ Violates the structural parallelism



Analysis

1. **Re-bindings created by A´-movement with intervening focus**

   I know who JO thinks he'll kiss and also who$_i$ BO thinks he will <~~kiss t_i~~>.

   *John became very upset, but I don't know how upset$_i$ BILL did <~~became t_i~~>.

2. **Re-bindings created by A´-movement without intervening focus**

   * John knows which professor we invited, but he is not allowed to reveal which one$_i$ we did <~~invite t_i~~>.

3. **Re-binding in a sloppy reading**

   John said that Mary hit him, and Bill said that she DIDN'T <$_{VP}$ ~~hit him~~>. *sloppy

Analysis

1. **Re-bindings created by A´-movement with intervening focus**

I know who JO thinks he'll kiss and also who$_i$ BO thinks he will <~~kiss t$_i$~~>.

→ Reflexive Roothian parallelism condition, satisfied.

→ Structural parallelism by phase is satisfied.

AC: C [$_{TP}$ he will [$_{vP}$ x´´ λx´ [$_{VP}$ kiss x´]]

EC: C [$_{TP}$ he will [$_{vP}$ x´´ λx´ [$_{VP}$ kiss x´]]

*John became very upset, but I don't know how upset$_i$ BILL did <~~became t$_i$~~>.

→ Reflexive Roothian parallelism condition, satisfied.

→ Structural parallelism by phase is NOT satisfied.

AC: C [$_{TP}$ John [$_{vP}$ [$_{VP}$ became very upset]]

EC: C [$_{TP}$ BILL did [$_{vP}$ x´´ λx´ [$_{VP}$ become x´]]

Analysis

2. Re-bindings created by A´-movement without intervening focus

* John knows which professor we invited, but he is not allowed to reveal which one$_i$ we did <~~invite t$_i$~~>.

→ Reflexive Roothian parallelism condition is NOT satisfied.

Implications

1. **Re-binding configurations can be explained without MaxElide.**

This study proposes a unified approach for the two representative re-binding configurations, simply based on the parallelism condition.

By adopting phase theory, we can capture the intuition of *obligatory local binding of variables* within an elided clause.

Implications

2. Referential re-binding must be local.

There is a subject-object asymmetry in the acceptability of sloppy readings from Korean allows null arguments (Kang 2022).

(26) a. 철수가 자기 엄마를 밀었다. 민호도 <e> 밀었다. √sloppy

b. 철수가 자기 엄마가 달렸다고 말했다. 민호도 <e> 달렸다고 말했다. * sloppy

- Turkish (Şener and Takahashi 2010), Hindi, Bangla (Simpson et al. 2013), Chinese (Li 2014), Javanese (Sato 2015), Persian (Sato and Karimi 2016), and Hebrew (Landau 2018) have been reported as showing the subject-object asymmetry in argument ellipsis.

Implications

2. Referential re-binding must be local

(27) a. 모두가 자기 엄마가 쿠키를 구웠다고 주장했다. 영호도 <e> 주장했다.

b. *모두가 자기 엄마가 쿠키를 구웠다고 주장했다. 영호도 [<e> 쿠키를 구웠다고] 주장했다.

The sloppy reading is available from (27a), but not from (27b).

: (27a) = Local rebinding configuration → Structural parallelism by phase is satisfied.

(27b) = Long-distance rebinding configuration → Structural parallelism by phase is NOT satisfied.

Implications

3. Ellipsis licensing is derivational

→ Assuming the PF-deletion approach, deletion takes place within the syntax proper; syntactic items or operations introduced later cannot repair any violations of parallelism that occur earlier in the derivation. (Baltin 2007; Aelbrecht 2010; Sailor 2018; Murphy and Müller 2022, cf. Merchant 2001; van Craenenbroeck and Lipták 2006; Arregi 2010; Temmerman 2013).

Thank you!

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