ELLIPSIS AND MINIMAL INFERENCE

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1 Background

Ellipsis and Identity

- (Hankamer and Sag, 1976; Sag and Hankamer, 1984) posed this question: is the identity condition in ellipsis Deep or Surface?
  - In other words, are elliptical forms resolved by a process applying to Surface Syntax or to underlying semantic representations?

- **Hankamer and Sag's answer:** VP ellipsis and other elliptical forms are **Surface** – the elided material must be a surface syntactic copy of the antecedent (also followed by many subsequent authors, such as (Kitagawa, 1991; Lappin, 1993; Fiengo and May, 1994))

- **The other answer:** VP ellipsis and other forms are resolved semantically: the elided material must be semantically identified with the antecedent (Dalrymple et al., 1991; Hardt, 1992; Jacobson, 1992)

- Which answer is right? Neither – it’s the wrong question.

Ellipsis and Inference

**VP Ellipsis**

- (Webber, 1978): Inference allows VP ellipsis without identity.

  1. Irv and Martha wanted to **dance together**, but Martha couldn’t, because her husband was there.
  2. a. *Martha couldn’t. * uuid:0f90f9ae
    - dance together
  3. b. Martha couldn’t. *uuid:263b4717
dance with Irv

- Required inference:
  *Martha and Irv wanted to dance together ⇒ Martha wanted to dance with Irv

**Sluicing**

- (Merchant, 2001): Inference allows Sluicing (interrogative ellipsis) without identity.

  3. Bob ate dinner and saw a movie that night, but he didn’t say which. *uuid:283b6f9c
   
   (Merchant, 2001)[p 223]

- Required inference:
  *Bob ate dinner and saw a movie ⇒ Bob saw a movie

**In General**

- Ellipsis of constituent **E** is permitted with antecedent **A**, iff **E** can be inferred from **A**.

  (Webber, 1978; Rooth, 1992; Merchant, 2001)
2 The Plan

- **The Problem: Missing Inferences**
  - Sluicing and Case Matching
- **Proposal: Triggered Minimal Inference**
  - **Minimality:** Conjunct Elimination
  - **Triggering:** Constraint Violation
- **Minimality:**
  - Sluicing and Case Matching: Blocking Inference
  - Sluicing and Island Violations: Permitting Inference
- **Triggering:** VP Ellipsis and Missing Sloppy Readings
  - A New Generalization
  - Lambda Abstraction as Inference
  - Sloppy Readings and the LinguistGRID surveys
- **Conclusions**

3 The Problem: Missing Inferences

*Inference: the Dog that didn’t Bark*

"Is there any point to which you would wish to draw my attention?"
"To the curious incident of the dog in the night-time."
"The dog did nothing in the night-time."
"That was the curious incident," remarked Sherlock Holmes.

**Sluicing and Case Matching**

\[
\begin{array}{c}
\text{Antecedent} \quad \Rightarrow \quad \text{Remnant} \\
\text{Correspondent} \quad \uparrow \\
\text{Ellipsis} \\
\hline
\text{John traf jemanden} \quad \text{aber ich weiss nicht wen} \\
\text{John met someone} \quad \text{but I know not who.ACC John met x}
\end{array}
\]

\[(4) \quad \text{John traf jemanden, aber ich weiss nicht wen (John traf x) */wer (traf John)}\]
\[\text{John met someone, but I know not who.ACC. (John met x) / who.NOM (met John)}\]

- The sluiced wh-phrase must bear the case that its correlate bears. (Ross, 1967; Merchant, 2001)
- The sluiced wh-phrase must bear the case it would have if ellipsis had not occurred.
- (4) is unacceptable if the wh-remnant is NOM rather than ACC, since the correlate is ACC. But a simple inference ought to permit this: \textit{John met someone ⇒ someone met John}
- Since case matching is obligatory, this simple inference must be unavailable. Why?
4 Proposal: Triggered Minimal Inference

- Inference must be **triggered** by violations
- Inference must be **minimal**: simplest inference that can remedy violation is the only one permitted
- General requirement for *reduction* (deaccenting or ellipsis): reduced material must be identical to antecedent (Hardt, 2005; Fox, 2000)

Minimality: Conjunct Elimination

- Ellipsis of constituent E is permitted with antecedent A, iff E can be constructed from A by a sequence of (zero or more) applications of *conjunct elimination*
  - Conjunct elimination: A AND B ⇒ A
- Assume neo-Davidsonian LF’s, in which each thematic argument is expressed as a separate conjunct.

Sluicing and Case Matching: Blocking Inference

Inferences that change thematic roles are ruled out, since they require something other than conjunct elimination.

5 a. Someone met John
   Meet(e) AND Agent(x,e) AND Patient(John,e)

b. John met someone
   Meet(e) AND Agent(John,e) AND Patient(x,e)

Sluicing and Island Violations: Permitting Inference

- Sluicing is known to avoid a wide range of island constraints
- (Merchant, 2001) appeals to inference to account for this for a wide variety of island constraints
- While Merchant doesn’t propose any constraints on inference, all of the inferences he appeals to are examples of conjunct elimination
- Below, we see how conjunct-elimination inference allows sluicing to avoid Coordinate Structure Constraint (CSC) violations and Derived Position island violations

CSC - Extraction out of a conjunct

6 a. Bob ate dinner and saw a movie that night, but he didn’t say which. ([Bob saw x] / * [Bob ate dinner and saw x])
   (Merchant, 2001)[p 223]

b. Bob saw a movie
   Dinner(e) AND Agent(Bob,e) AND See(e1) AND Agent(Bob,e1) AND Movie(x) AND Patient(x,e1)

Derived Position Islands

7 a. A biography of one of the Marx brothers, she refused to read. Which one? (*[A biography of x, she refused to read] / [did she refuse to read a biography of x]*)
   (Merchant, 2001)[p 185]

- **A biography of one of the Marx brothers**, she refused to read. ⇒ She refused to read a **biography of one of the Marx brothers**.
- Inference is permitted, because it changes nothing in neo-Davidsonian representation
- Read(e) AND Agent(x,e) AND Patient(y,e) AND Biography-of(z,m) AND Marx-brother(m)
5 Triggering: VP Ellipsis and Missing Sloppy Readings

Local Parallelism

(9) John said Mary hit him. Harry did too. (said Mary hit John/Harry)
(10) John said Mary hit him. Harry said she did too. (hit John/?Harry)
(11) John told MARY that I was bad-mouthing her. But he didn’t tell SUSAN that I was. (bad-mouthing Mary/?Susan)

- **Observation**: Sloppy reading is perfect in (9); bad (degraded) in (10) and (11)
- Sag/Williams: controller must be local subject for VPE (Local Parallelism)
  - VPE is represented as a lambda abstract

(12) John$_1$ said Mary$_2$ hit him. Harry$_3$ did too. ($\lambda x. x$ said Mary$_1$ hit him$_1$)
(13) John$_1$ said Mary$_2$ hit him. Harry$_3$ said she$_2$ did too. ($\lambda x. x$ hit him$_1$/?him$_3$)

Non-Local Parallelism

(14) Nearly EVERY student felt I ought to tutor her. But SUSAN didn’t feel I should (tutor Susan)
(15) SOME of my students might admit that the criminals had been in contact with them, but SUSAN wouldn’t admit that they had. (been in contact with Susan)

- **Observation**: Sloppy reading is possible in (14) and (15), in the absence of Local Parallelism
- (Dalrymple et al., 1991; Rooth, 1992; Fiengo and May, 1994): Parallelism doesn’t need to be local for sloppy identity.

Blocking and Strict-Sloppy

**Proposed Generalization:**
Strict reading blocks sloppy reading, except in the case of Local Parallelism

- In (14) and (15), strict reading is ruled out because of binding – in (14), *her* must switch, because it cannot remain bound by *EVERY student* in ellipsis clause.
- **Prediction**: Sloppy reading is acceptable under two conditions:
  - Local Parallelism
    (Example (9))
  - Non-local Parallelism, where strict reading is unavailable
    (Examples (14), (15))

- Otherwise, sloppy reading is unacceptable (degraded)
  (Examples (10), (11))

Web-Based Survey

- Linguist-GRID.org: web-based tool for interactive linguistic surveys
- Survey advertised on LINGUIST and elsewhere in Nov/Dec 2004
- 29 subjects rated 30 examples of VP ellipsis on a 4 element scale

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<th>Fully Acceptable</th>
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<th>Closer to Unacceptable</th>
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Survey Results

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<th>Mean Judgement</th>
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<td>.66</td>
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<td>John said Mary hit him. Harry did too. <em>(said Mary hit John)</em></td>
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<tr>
<td>Local Sloppy</td>
<td>.61</td>
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<td>John said Mary hit him. Harry did too. <em>(said Mary hit Harry)</em></td>
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<td>Non Local Sloppy</td>
<td>1.16</td>
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<td>First John told MARY I was bad-mouthing her. Then he told SUE I was. <em>(bad-mouthing Sue)</em></td>
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<td>Non Local Sloppy (Strict Blocked)</td>
<td>.39</td>
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<td>I wouldn’t expect John to tell ANY student that I was bad-mouthing her. I certainly don’t think he’d tell SUSAN that I was. <em>(bad-mouthing Susan)</em></td>
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Accounting for the Blocking Effect

- Lambda abstraction is required for Sloppy Identity
- Take (10) – to satisfy parallelism, need to lambda abstract over MARY and SUSAN

(16) John told MARY that I was bad-mouthing her. But he didn’t tell SUSAN that I was. *(bad-mouthing Susan)*

- SUSAN, λ x.Not (John told x I was bad-mouthing her)

Now the pronoun her can be bound by the lambda operator, so that we have exact identity of the parallel A and E clauses (modulo focus and negation)

- MARY, λ x.John told x I was bad-mouthing x
- SUSAN, λ x.Not (John told x I was bad-mouthing x)

Lambda abstraction is a meaning-preserving inference

- According to the proposed approach:
  - Lambda abstraction only permitted when required to satisfy Parallel or some other constraint
  - This explains why non-local Sloppy is normally degraded, but is fine when strict is blocked

- Local Sloppy is always acceptable, because VPE has a lambda binder, just as in the Sag/Williams accounts
6 Conclusions

- Ellipsis gives rise to an identity constraint
- Inference is permitted when triggered by a violation of some constraint
- Inference is minimal – in ellipsis, it is restricted to conjunct elimination
- What’s interesting about inference in ellipsis is that if often is not available
- Case matching in sluicing cannot be captured without a strong constraint on inference
- Lambda abstraction can be viewed as an inference. The triggering constraint on inference captures a new generalization concerning blocking effects in the strict/sloppy ambiguity

References


