Anything can be elided if you know how: clausal ellipsis without identity

Till Poppels and Andy Kehler

June 27, 2019

(slides available at http://tiny.cc/poppels)
What is ellipsis?

Natural languages allow us to elide material that is provided contextually:

(1) NP ellipsis: John's sister criticized him and Bill's (sister) did the same thing.

(2) VP ellipsis: Did you know that Verb Phrases can be elided as well?

(3) Sluicing: Joe was murdered but we don't know how (he was murdered).

• There are many other types of ellipsis.
• This talk focuses on sluicing: ellipsis of clauses that are embedded under interrogative wh-phrases, as shown in (3).
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- This talk focuses on **sluicing**: ellipsis of clauses that are embedded under interrogative wh-phrases, as shown in (3).
Theories of ellipsis

A running example

Someone murdered Joe but we don't know who (murdered him).

Joe was murdered but we don't know who (he was murdered by).

a. #(murdered him) Voice mismatch explanation
b. #(he was murdered by) No New Words explanation

IDENTITY theories of ellipsis

Central claim: Material can only be elided if it is identical to its antecedent.
(e.g. Chung, 2006, 2013; Merchant, 2001; Rudin, 2018; Sag, 1976)

Referential theories of ellipsis

Central claim: Ellipsis involves a null pronoun that presupposes that its referent is topical and uniquely identifiable in common ground.
(e.g. Hardt, 1993; Kehler, 2019; Poppe & Kehler, 2017; Wehberg, 1978)
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Evidence that ellipsis involves discourse reference

**Table: Diagnosing anaphoricity in ellipsis**

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(6) Someone murdered Joe but we don’t know who (murdered him).

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Summary of theoretical backdrop
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Summary of theoretical backdrop

- 2 theories of ellipsis: **IDENTITY** and Discourse Reference
- (7) appears to favor **IDENTITY** theories
- However: independent reasons to hold on to referential theory
- **Goal for today**: re-evaluate both ID-based explanations of (7)
  - Expts 1-3 test the **No New Words** explanation
  - Expt 4 tests the **Voice Mismatch** explanation
The "No New Words" Generalization

Chung (2006):

*Every lexical item in the numeration of the sluice that ends up (only) in the elided IP must be identical to an item in the numeration of the antecedent CP.*
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(8) a. **Joe** was murdered but we don’t know who *(he was murdered by).*
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- Ironically, Chung (2013) provides a counterexample in the title:

(10) Syntactic identity in sluicing: how much and why
Expt 1: Stimuli

(11) a. Joe is jealous. Do we know who? [Classic Bad]

(12) Do you mind if I put on some music? What kind of music?

(13) Can I borrow your textbook? Why?

⇒ NNW prediction: unacceptable if they involve ellipsis of New Words

(14) a. The jug broke. Any idea who? [Bad filler]

b. You didn't answer my question. Which question? [Good filler]
Expt 1: Stimuli

10 classic minimal pairs from the literature

(11) a. Joe is jealous. —Do we know who? [Classic Bad]
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20 unrelated fillers (distraction from manipulation)

(14) a. The jug broke. —Any idea who? [Bad filler]
    b. You didn’t answer my question. —Which question? [Good filler]
Expt 1: Acceptability task

A: Do you mind if I put on some music?
B: What kind of music?

(Consider what the second speaker says. Is this an acceptable English sentence/question in this context?)

(unacceptable) 1 2 3 4 5 (fully acceptable)

Use number keys or click boxes to answer.
Expt 1: Paraphrase task

A: Do you mind if I put on some music?
B: What kind of music?

(What exactly does the second speaker mean?)

B: "What kind of music ?"

→ Click here to continue
Results: acceptability

Mean acceptability

classic (bad)

classic (good)

inference items
Results: acceptability

![Graph showing mean acceptability of classic (bad), classic (good), and inference items.]

- Classic (bad)
- Classic (good)
- Inference items
Results (cont’d): # of “New Words”
Results (cont’d): # of “New Words”

Mean number of "New Words" vs Mean acceptability

Item type:
- classic (bad)
- classic (good)
- inference items
### Discussion (Expt 1)

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Expts 2 and 3: Sluices with nominal antecedents

Did you not tell your friends about the game today? —— I did, but I forgot to tell them where.

Mean acceptability
Expts 2 and 3: Sluices with nominal antecedents

(15) Did you not tell your friends about the game today? —I did, but I forgot to tell them where (the game would be; it would take place; . . . ).
Expts 2 and 3: Sluices with nominal antecedents

(15) Did you not tell your friends about the game today? —I did, but I forgot to tell them where (the game would be; it would take place; ...).

- Nominal-antecedent sluices are problematic for IDENTITY theories.
Expt 2: Stimuli

(16) A: I can’t see your parents in the audience. Did you not tell them about your performance today?
B: I did, but I forgot to tell them {when|where|what about|how long|why}.

• 30 sluices with nominal antecedents like (16):
  • 6 contexts
  • 5 wh-phrases
• 12 fillers
• 63 participants
Results (Expt 2)

Mean acceptability
lower-bound fillers
nominal–antecedent sluices
upper-bound fillers
Expt 3

- **Question**: can we explain this gradability?
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Challenging for IDENTITY theories
Expt 3

- **Question**: can we explain this gradability?
- Challenging for IDENTITY theories
- QUD theories: sluicing depends on the availability of a relevant Question under Discussion (QUD) (AnderBois, 2014; Barros, 2014; Roberts, 2012)
Expt 3

- **Question**: can we explain this gradability?
- Challenging for IDENTITY theories
- QUD theories: sluicing depends on the availability of a relevant Question under Discussion (QUD) (AnderBois, 2014; Barros, 2014; Roberts, 2012)
- Plan for Expt 3:
  - Measure predictability of sluiced question (QUD)
  - Check if this 'QUD availability' measure predicts acceptability
Expt 3: passage-completion task

(Instructions: carefully read the passage below, carefully read all continuations, and then choose the continuation you find most likely.)

"A: I can't see your parents in the audience. Did you not tell them about your performance today? B: I did, but I forgot to tell them...

1. ...where I was performing."
2. ...how long it would last."
3. ...when it was going to start."
4. ...why they should be in the audience."
5. ...what it was about."

• Answer choices: established in separate norming experiment (paraphrase task analogous to Expt 1)
Results: QUD availability

Mean acceptability vs. QUD availability
Results: QUD availability

- Frequentist analysis: $\beta = 1.826, p = 0.037$
- Bayesian analysis: $P(\beta > 0) = 0.983$
Discussion (Expts 2 and 3)

- Sluices with nominal antecedents are possible.
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- Sluices with nominal antecedents are possible.
- Some are impeccable, some are terrible.
• Sluices with nominal antecedents are possible.
• Some are impeccable, some are terrible.
• Some of the variance can be explained by ’QUD availability’.
Discussion (Expts 2 and 3)

- Sluices with nominal antecedents are possible.
- Some are impeccable, some are terrible.
- Some of the variance can be explained by 'QUD availability'.
- Caveat: most of the variance remains unexplained.
- Another caveat: haven’t yet tested unelided controls.
Sluicing and Voice Mismatches

Joe was murdered but we don't know who.

- a. #(murdered him). Voice mismatch explanation
- b. #(he was murdered by). No New Words explanation

Voice mismatches matter beyond this example (anonymous CLS53 reviewer):

As Merchant 2013 (LI) showed, the major explicandum in the area of mismatches is the fact that VPE, but not sluicing, allows for voice mismatches.

From Merchant (2013, p. 78):
The generalization that emerges is that when the target of ellipsis is a small amount of structure, such as a VP, mismatches in voice appear to be possible, but when more structure is targeted, as in sluicing and the like, no voice mismatch is allowed.
Sluicing and Voice Mismatches

(17) Joe was murdered but we don’t know who... 
   a. #(murdered him). Voice mismatch explanation
   b. #(he was murdered by). “No New Words” explanation
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Merchant (2013, Fig. 1):

\[
\text{XP} \quad \Rightarrow \emptyset: \text{voice mismatch disallowed}
\]

\[
\text{VoiceP} \quad \Rightarrow \emptyset: \text{voice mismatch allowed}
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Expt 4: Stimuli

Following Kertz (2013), we first focus on “tough alternation:”
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(18) a. Brake fluid is pretty easy to replace if you know how. [Mismatch]
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(18) a. Brake fluid is pretty easy to replace if you know how. [Mismatch]
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    d. It’s pretty easy to replace brake fluid if you know how to replace it.

- 24 items like (18)
- 2x2x3 design:
  - mismatch vs. no mismatch
  - ellipsis vs. no ellipsis
  - how vs. when vs. where
Results (Expt 4)

- How sluices at ceiling.
- When and where items degraded, more so under ellipsis.
- Main result: No mismatch penalty anywhere.
From tough alternation to voice mismatch

Tough alternation:

(19) Brake fluid is pretty easy to replace if you know how (to replace it).
From tough alternation to voice mismatch

Tough alternation:

(19) Brake fluid is pretty easy to replace if you know how (to replace it).

Voice mismatches:

(20) Anything can be elided if you know how (???).
From tough alternation to voice mismatch

Tough alternation:

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Voice mismatches:

(20) Anything can be elided if you know how (???).
   a. (to elide it) 
   \[\text{Mismatch!}\]
From tough alternation to voice mismatch

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(20) Anything can be elided if you know how (???).

  a. (to elide it) ← Mismatch!
  b. (it can be elided) ← No mismatch!

Caveat: no experimental data yet!
From tough alternation to voice mismatch

Tough alternation:

(19) Brake fluid is pretty easy to replace if you know how (to replace it).

Voice mismatches:

(20) Anything can be elided if you know how (???).
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(21) Republicans need to be persuaded but nobody really knows how (???).
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Voice mismatches:

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   b. (it can be elided) \(\Leftarrow\) No mismatch!

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   a. (to persuade them) \(\Leftarrow\) Mismatch!
   b. (Republicans need to be persuaded) \(\Leftarrow\) Match unavailable!

Caveat: no experimental data yet!
From tough alternation to voice mismatch

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Voice mismatches:

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Caveat: no experimental data yet!
Conclusion

Motivating puzzle:

Joe was murdered but we don’t know who.

a. (murdered him) Voice mismatch explanation
b. (he was murdered by) No New Words explanation

⇒ both explanations derived from IDENTITY theory of ellipsis

Eliding New Words can be OK:

(23) Can I borrow your textbook. Why?

Eliding voice-mismatched questions can be OK:

(24) Republicans need to be persuaded but nobody really knows how.
Conclusion

Motivating puzzle:

(22) Joe was murdered but we don’t know who #(???).
    a. #(murdered him) Voice mismatch explanation
    b. #(he was murdered by) “No New Words” explanation

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Motivating puzzle:

(22) Joe was murdered but we don’t know who #(???).
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Eliding “New Words” can be OK:

(23) Can I borrow your textbook. —Why?
Conclusion

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Partee’s marbles

On a referential theory:

(25) Joe was murdered but we don’t know who $\phi$. 
Partee’s marbles

On a referential theory:

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Other pro-forms show similar behavior ("Partee’s marbles"): 
On a referential theory:

(25) Joe was murdered but we don’t know who \( \phi \).

Other pro-forms show similar behavior (”Partee’s marbles”):

(26) a. I dropped 10 marbles and I found all but 1 of them. It has to be under the sofa.
   b. I dropped 10 marbles and I only found 9 of them. \#It has to be under the sofa.
Partee’s marbles

On a referential theory:

(25) Joe was murdered but we don’t know who $\phi$.

Other pro-forms show similar behavior (“Partee’s marbles”):

(26) a. I dropped 10 marbles and I found all but 1 of them. It has to be under the sofa.
   b. I dropped 10 marbles and I only found 9 of them. #It has to be under the sofa.

But:

(27) When Joe was kidnapped, they kept him in the dark for days.
Results (Expt 1): examples of “New Words” in paraphrases

- Classic cases
  1. Joe is jealous. Do we know who?
     - a. Joe is jealous of
     - b. he is jealous of
     - c. Why is Joe jealous
     - d. Joe is specifically jealous of

- Inference items
  1. Can I borrow your textbook over the weekend? Why?
     - a. do you want to borrow it
     - b. do you need it
     - c. do you want my textbook next weekend
     - d. Why would A like to borrow the textbook over the weekend?
Results (Expt 1): examples of “New Words” in paraphrases

<table>
<thead>
<tr>
<th>Classic cases</th>
</tr>
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<tbody>
<tr>
<td>(28) Joe is jealous. —Do we know who?</td>
</tr>
<tr>
<td>a. Joe is jealous of</td>
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Results (Expt 1): examples of “New Words” in paraphrases

Classic cases

(28) Joe is jealous. —Do we know who?
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“Inference” items

(29) Can I borrow your textbook over the weekend? —Why?
   a. do you want to borrow it
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   c. do you want my textbook next weekend
   d. Why would A like to borrow the textbook over the weekend?


References II


References III

Poppels, T., & Kehler, A. (2019b). *Sluicing inferred propositions*. Poster to be presented at a workshop entitled 'Sluicing and Ellipsis at 50' at the University of Chicago.


