The “mismatch asymmetry”

An example

Consider (1), adapted from Arregui et al. (2006).

\[\begin{array}{ll}
\text{antecedent clause} & \text{ellipsis clause} \\
an. \text{The judge read the report first, and then the lawyer did too.} & \text{[A -> A]} \\
b. \text{The report was first read by the judge, and then the confession was too.} & \text{[P -> P]} \\
c. \text{The report was first read by the judge, and then the lawyer did too.} & \text{[P -> A]} \\
d. \text{The judge read the report first, and then the confession was too.} & \text{[A -> P]} \\
\end{array}\]

Two empirical findings

- **Mismatch penalty**: (c-d) are less acceptable than (a-b) 
  (Sag, 1976; Kehler, 2002; Kim et al., 2011; SanPietro et al., 2012; Kertz, 2013; note that the theoretical status of this fact, which is irrelevant for our purposes, remains controversial: Merchant, 2013; Kim & Runner, 2018; and many others)

- **Mismatch asymmetry**: [A -> P] less acceptable than [P -> A] 
  (Arregui et al., 2006; Kim & Runner, 2018; Parker, 2017; but note null effect in Kim et al., 2011)

A memory-based account: the Recycling Hypothesis

- Two explanatory components:
  - **Grammar**: simple syntactic identity ⇒ rules out mismatches as ungrammatical
  - **Processing**: Recycling of non-ID antecedents ⇒ “acceptable ungrammaticality”

- **Memory asymmetry**: passive antecedents are more likely to be misremembered as active than vice versa (Mehler, 1963).

- memory asymmetry ⇒ asymmetric illusion of grammaticality 
  ⇒ mismatch asymmetry: [P -> A] mismatches more likely to be misremembered as [PA -> A] matches.

\[\begin{array}{ll}
(2) a. \text{The report was first read by the judge, and then the lawyer did too.} & \text{[PA -> A]} \\
b. \text{The judge read the report first, and then the confession was too.} & \text{[A -> P]} \\
\end{array}\]
1.3 The remainder of this talk

- **Thesis**: mismatch asymmetry can’t be explained in terms of Recycling
- **Support**: evidence from 2 acceptability judgment experiments (Expts 1 and 2)
- **Next directions**: towards an alternative explanation (Expts 3 and 4)

2 Experiment 1

- **Goals**:
  - Replicate the mismatch asymmetry
  - Test voice-matched controls

- **Methods**: 2x2 design; 30 participants; 24 items like (3), 40 fillers; 5-point acceptability judgment task

2.1 Stimuli (Expt 1)

Expt 1 tested items like (1), repeated in (3). ³

(3) a. The judge read the report first, and then the lawyer did. [A -> A] ³
b. The report was first read by the judge, and then the confession was too. [P -> P]
c. The report was first read by the judge, and then the lawyer did too. [P -> A]
d. The judge read the report first, and then the confession was too. [A -> P]

(4) a. The thief was arrested and his brother was as well. Acceptable filler
b. A proof that God exists doesn’t. Unacceptable filler

2.2 Predictions from Recycling (Expt 1)

- **Mismatch penalty**: [P -> A] and [A -> P] less acceptable than [A -> A] and [P -> P]
- **Mismatch asymmetry**: [P -> A] more acceptable than [A -> P]
- **No “match asymmetry”**: [A -> A] and [P -> P] should be equally acceptable

2.3 Results (Expt 1)

Figure 1: Results from Expt 1. There was a mismatch penalty (β = −0.41, p < 0.001), and a passive penalty (β = −0.22, p = 0.001), but no interaction between the two (β = −0.02, p = 0.67). Statistical results here and throughout are based on linear mixed-effects regression analyses with maximal random effect structure (Barr et al., 2013), and all p-values are derived from likelihood-ratio model comparisons. Dashed lines indicate mean ratings of (un)acceptable elliptical fillers.
• As predicted: mismatch penalty and mismatch asymmetry
• Contrary to Recycling: “match asymmetry”
• Mismatch asymmetry due to penalty for passive ellipsis clauses

### 3. Experiment 2

**Goal:** Distinguish passive-penalty and Recycling explanations by manipulating clause order

**Methods** (same as in Expt 1): 2x2 design; 30 participants; 24 items like (5), 40 fillers; 5-point acceptability judgment task

### 3.1 Stimuli (Expt 2)

(5)  
- a. Before the lawyer did, the judge read the report first. \([A <- A]\)
- b. Before the confession was, the report was first read by the judge. \([P <- P]\)
- c. Before the lawyer did, the report was first read by the judge. \([A <- P]\)
- d. Before the confession was, the judge read the report first. \([P <- A]\)

### 3.2 Predictions (Expt 2)

- **Passive penalty explanation:** if mismatch asymmetry is driven by passive penalty, \([P <- A]\) should be more acceptable than \([A <- P]\)
- **Recycling explanation:** if asymmetry is due to asymmetrically noisy memory for past material, \([P <- A]\) should be more acceptable than \([A <- P]\) (cf. (6) and (7))

**Logic behind Recycling prediction:**
Without cataphora, repeated from (2):

(6)  
- a. The report was first read by the judge before the lawyer did too. \([P A -> A]\)
- b. The judge read the report first before the confession was too. \([A -> P]\)

Under cataphora, the predictions flip:

(7)  
- a. Before the lawyer did, the report was first read by the judge. \([A <- P]\)
- b. Before the confession was, the judge read the report first. \([P A <- A]\)

### 3.3 Results (Expt 2)

- As in Expts 1: mismatch penalty and passive penalty
- Contrary to Recycling: mismatch asymmetry did not flip
3.4 Discussion (Expt 2)

- Passive ellipsis clauses remain degraded even when they precede the antecedent (despite being subject to misremembering), which is inconsistent with Recycling account.

- Both Expts 1 and 2 found two independent main effects:
  - mismatch penalty
  - passive penalty

- Expt 3: are these effects ellipsis-specific?
- Expt 4: what about gapping and sluicing?

4 Experiment 3

- Goals:
  - Replicate Expt 1
  - Test for passive penalty in non-elliptical items

- Methods: 2x2x2 design; 60 participants; 24 items like (8), 40 fillers; 5-point acceptability judgment task

4.1 Stimuli (Expt 3)

In addition to the VP-ellipsis variants in (3), Expt 3 tested their non-elliptical counterparts:

(8)  a. The judge read the report first, and then the lawyer read it. [A - A]
    b. The report was first read by the judge, and then the confession was read too. [P - P]
    c. The report was first read by the judge, and then the lawyer read it too. [P - A]
    d. The judge read the report first, and then the confession was read too. [A - P]
4.2 Predictions (Expt 3)

- Replicate results from Expt 1: mismatch and passive penalties
- If mismatch penalty and passive penalty are ellipsis-specific effects, they should disappear in non-elliptical variants.

4.3 Results (Expt 3)

![Graph showing results](image)

- Full replication of Expt 1
- No mismatch penalty without ellipsis
- No (or much reduced) passive penalty without ellipsis

5 Experiment 4

5.1 Stimuli (Expt 4)

### Excerpt from Stimuli (Expt 4)

(9)  
- a. Someone read the report, but I don’t know who.  
- elliptical [A -> A]
- b. The report was read by someone, but I don’t know by whom.  
- elliptical [P -> P]
- c. Someone read the report, but I don’t know who read it.  
- non-elliptical [A -> A]
- d. The report was read by someone, but I don’t know by whom it was read.  
- non-elliptical [P -> P]

(10)  
- a. Mary scolded Wilma, and Susan, Nancy.  
- elliptical [A -> A]
- b. Wilma was scolded by Mary, and Nancy, by Susan.  
- elliptical [P -> P]
- c. Mary scolded Wilma, and Susan scolded Nancy.  
- non-elliptical [A -> A]
- d. Wilma was scolded by Mary, and Nancy was scolded by Susan.  
- non-elliptical [P -> P]
5.2 Results (Expt 4)

Figure 4: Results from Expt 4. Right: passive sluices were not significantly worse than active sluices ($\beta = -0.16, p = 0.17$), but ellipsis had a positive effect ($\beta = 0.19, p = 0.003$). Left: By contrast, acceptability suffered under gapping ($\beta = -0.65, p < 0.001$), which revealed an active penalty ($\beta = -0.2, p < 0.059$). Dashed lines indicate mean ratings of (un)acceptable elliptical fillers.

- No passive penalty for gapping or sluicing
- Improvement for sluicing under ellipsis could reflect “repeated-clause penalty”
- Open question: why the “active penalty” under gapping?

6 Conclusion

- Main take-away: mismatch asymmetry can’t be explained in terms of Recycling
- Mismatch asymmetry is driven by passive penalty that also applies to voice-matched ellipsis
- Passive penalty is specific to VP-ellipsis: it doesn’t affect non-elliptical utterances, gapping, or sluicing

References