

Anything can be elided if you know how: sluicing, voice mismatch, and tough movement

Till Poppels & Andrew Kehler (UC San Diego)

tillpoppels@gmail.com

Background: Some contemporary theories of sluicing (clausal ellipsis) predict ungrammaticality for cases in which a syntactic mismatch exists between the antecedent clause (underlined) and the ellipsis clause (Merchant, 2013; Rudin, 2019, *inter alia*). This “mismatch generalization” is based on a highly constrained set of examples, such as active/passive voice mismatches in which the sluice targets an internal argument of the antecedent verb, as in (1a). To test the validity of this generalization against a broader set of mismatches, we conducted two acceptability judgment experiments examining mismatches due to tough movement (1b), and voice-mismatch cases in which the sluice targets an adjunct of the antecedent verb (1c). All results reported below have been confirmed in ordinal mixed-effects regression analyses with maximal random effects (Barr et al., 2013).

- (1) a. * Someone murdered Joe but we don't know by who ~~he was murdered~~.
 b. [Brake fluid], is easy to replace t, if you know how ~~to replace it~~.
 c. The problem has never been solved because no one knows how ~~to solve it~~.

Experiment 1: in a 2x2x3 design, 41 Mechanical Turk participants rated the acceptability of 24 items like (2) on a 5-point Likert scale, along with 48 fillers sampled from the ellipsis literature. Each item included variants involving *when*- and *where*-sluicing, syntactically-matched variants of each, and their unelided counterparts. Contrary to the mismatch generalization, the results (Fig. 1) reveal that *how*-sluices were at ceiling across all conditions, demonstrating (to our knowledge) the first known class of acceptable sluices involving a full syntactic constructional mismatch. The results also reveal an across-the-board degradation for *when*- and *where*-sluices, which is magnified in the ellipsis condition, but with no significant effect of mismatch. To accommodate the acceptability of tough mismatches while maintaining the mismatch generalization to rule out voice mismatches, one could follow Merchant (2001) and selectively permit mismatches between elided proforms (e.g. *it* in 1b) and co-indexed traces in the antecedent clause (e.g., the one caused by fronting *brake fluid*). This analysis still predicts that voice mismatches should be categorically ungrammatical, which we tested in Expt 2.

Experiment 2: in a 2x2 design, 52 Mechanical Turk participants rated the acceptability of 12 *when*, *where*, and *how* sluices, exemplified in (3), along with 48 fillers. The mismatch variants were designed to render any voice-matched interpretations implausible (e.g. “The problem has never been solved because no one knows how the problem has never been solved.”), and a separate comprehension experiment confirmed that participants overwhelmingly adopt voice-*mismatched* interpretations (“...how to solve it”). The results (Fig. 2) confirm that there was no penalty associated with voice mismatch, which further undermines the mismatch generalization. Sluiced variants were slightly degraded compared to their unelided counterparts, but, crucially, that degradation affected both match and mismatch variants.

Discussion: We found no evidence for a mismatch penalty associated with tough movement or passivization in *when*, *where*, and *how* sluices. This result suggests that argument-structure mismatches under ellipsis are acceptable unless they affect verb-internal arguments, as in (1a), adding an important new adequacy criterion for theories of sluicing.

Example item from Experiment 1:

- (2) a. Brake fluid is pretty easy to replace if you know how (when|where). [Mismatch, +ellipsis]
- b. It is pretty easy to replace brake fluid if you know how (when|where). [Match, +ellipsis]
- c. Brake fluid is pretty easy to replace if you know how (when|where) to replace it. [Mism., -ell.]
- d. It is pretty easy to replace brake fluid if you know how (when|where) to replace it. [Match, -ell.]

Example item from Experiment 2:

- (3) a. The problem has never been solved because no one knows how. [Mismatch, +ellipsis]
- b. Nobody ever solved the problem because no one knows how. [Match, +ellipsis]
- c. The problem has never been solved because no one knows how to solve it. [Mism., -ell.]
- d. Nobody ever solved the problem because no one knows how to solve it. [Match, -ell.]

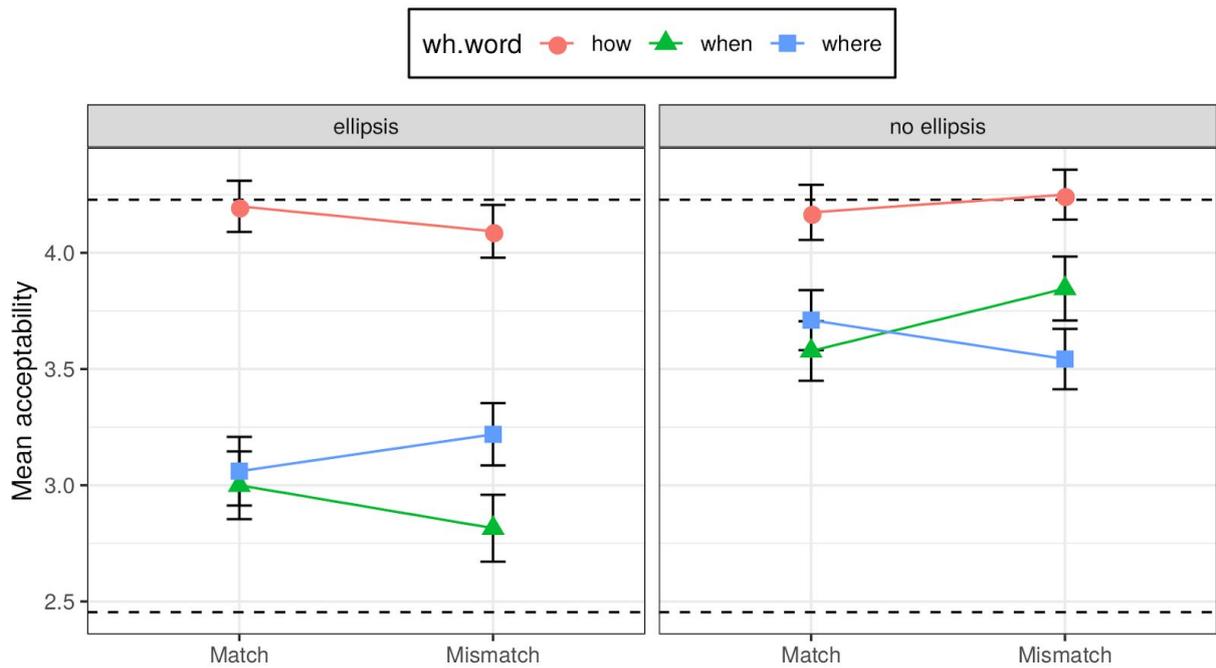


Figure 1. Results from experiment 1: mean acceptability of sentences across wh-words (color/shape) as a function of whether or not they involved ellipsis (facets) and mismatch (x). Error bars show Standard Errors, and dashed lines show average acceptability of acceptable and unacceptable filler items sampled from the ellipsis literature.

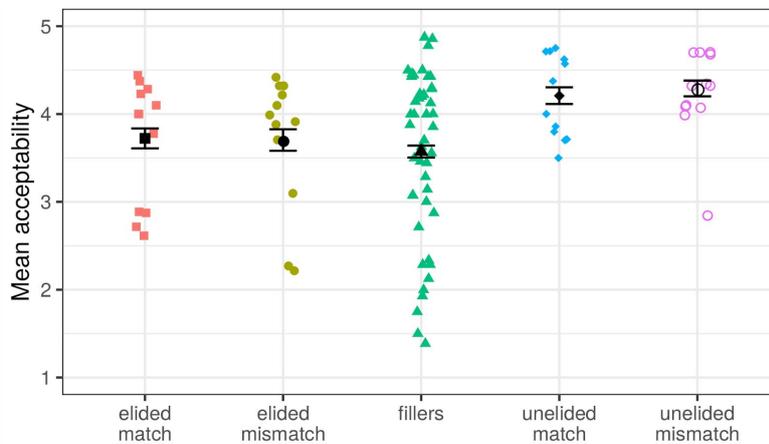


Figure 2. Results from expt 2 reveal no mismatch penalty. Sluices were slightly degraded compared to their unelided counterparts. Error bars show Standard Errors.