Objectives

- Use the flexible word order of Hungarian to tease apart Expectation- vs. Memory- vs. Thematic role-based accounts of relative clause (RC) processing.

Background

- Important case study in testing syntactic complexity: RCs.
- Symmetry between the English subject-extracted RC (1a) and object-extracted RC (1b): ORC is harder to process than SRC.

1. The player who berated the coach surprised the team.
2. The player who berated the coach surprised the team.
3. The team surprised the player who berated the coach following the match.

Competing classes of accounts, with converging predictions for English:

- Memory: predict general locality preference—shorter filler-gap (or verb-argument) dependencies are preferred (Gibson, 1988; Lewis & Vatish, 2005).
- SRCs instantiate a shorter filler-gap dependency than ORCs.

Expectation: attribute greater processing cost to less expected structures (e.g., surprisal, Hale, 2001; Levy, 2008).

- ORCs are more frequent than SRCs.

Thematic: attribute cost to switching the sentential subject’s thematic role in the RC vs. main clause (Staub, et al., 2017; cf. MacWhinney & Pléh, 1988).
- In a subject-modifying ORC (1b)—“player”—first assigned a subject role in the main clause, but then an object role in the RC, whereas SRCs require no switch.

Experiment: RC type × locality × modification

In Hungarian, extraction site (SRC vs. ORC) and locality (i.e., the distance between the verb and the extracted argument) can be varied independently.

Self-paced reading: RC type × locality × modification

- RC type: SRC (2,4) vs. ORC (3,5).
- Locality: local (WO, VS) vs. non-local (OV, SV), indicated by {}.
- Modification: subject- (2,3) vs. object-modifying (4,5).

- RCs—syntactically constrained context: additional pre-V material helps sharpen expectations about the location and identity of V to facilitate processing of V.
- Incremental counts and probabilities (based on Oravecz, et al., 2014).
- Predicted locations of effects indicated by “—>”; RT = reaction time.

Main findings:

1. Main clause verb (“surprised”): ORCs don’t have longer RT than SRCs in subject-modifying RCs (RC TYPE, p=.88), despite the predictions of the Thematic account.

2. RC verb (“berated”): shorter RT for local sentences (LOCALITY, p<.01).
3. RePr (“who”): SRCs don’t have shorter RT than ORCs (RC TYPE, p=.35).

- The above (2-3) replicate Ronai & Xiang (2019) for subject-modifying RCs, and are in line with the Russian data of Levy et al. (2013); Price & Witzel (2017), and...