

Tracing optionality to alignment in Hebrew RPs

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Main goal and hypotheses

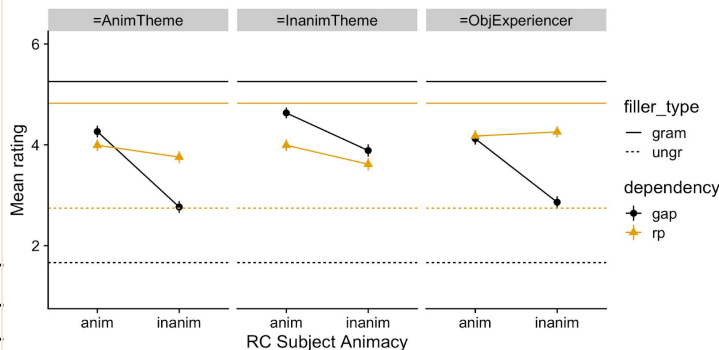
- In Hebrew direct object RCs (ORCs), resumptive pronouns (RPs) are claimed to be optional.
 - We explored the idea that the **animacy** of the RC head noun and RC subject is an important determinant of **RP acceptability**.
- We tested three hypotheses about when ORC RPs are more acceptable:
- Just Animacy**, when the RC head noun is animate
 - Similarity**, when the head and the RC subject match in animacy.
 - Mis-alignment**, when the head outranks the RC subject in animacy.

Subj	Sentence	Anim	Sim	Align
Verb Type: Requires Animate Theme, e.g., <i>lehardim</i> 'to put to sleep'.				
<i>Anim</i>	That's the old lady that the nurse is supposed to put (her) to sleep	✓	✓	
<i>Inanim</i>	That's the old lady that the shot is supposed to put (her) to sleep	✓		✓
Verb Type: Requires Inanimate Theme, e.g., <i>lišbor</i> 'to break'.				
<i>Anim</i>	That's the mug that the baby might break (it) tomorrow			
<i>Inanim</i>	That's the mug that the dishwasher might break (it) tomorrow		✓	
Verb Type: Requires Animate Experiencer, e.g., <i>lesakren</i> 'to intrigue'.				
<i>Anim</i>	That's the doctor that the patient might intrigue (him) especially	✓	✓	
<i>Inanim</i>	That's the doctor that the x-ray might intrigue (him) especially	✓		✓

Design and analysis

- We created ORC sentences in a 2x2x3 design (n=48), crossing 2 within-items factors: Dependency {Gap, RP}; RC Subject {Animate, Inanimate}; and 1 between-items factor, Verb Type {AnimTheme, InanimTheme, ObjExp}.
- Sentences were combined with 32 fillers, balanced for for grammaticality and structure.
- 60 Hebrew speakers judged sentences on a 6-pt scale, in an online experiment.
- Responses were analyzed using mixed-effects ordinal regression (cumulative link/logit) in brms [1].

Results



- RPs were less acceptable on average than gaps in ORCs, replicating [2] (Dependency: -0.18, 95% CredInt [-0.43, 0.06]).
- RPs attained higher ratings when the RC Subject was inanimate but the RC head was animate (VerbType: AnimTheme, ObjExp; DependencyxSubjectxVerb Type: -1.0, [-1.72, -0.30]).
- Additionally we find that RPs occupied a narrower range along the acceptability scale. Instead, the main locus of variability was the Gap conditions, which parallels findings in English [3].

Discussion

The results support the **mis-alignment** hypothesis:

- So-called optional RPs in Hebrew were preferred to gaps only when the RC head was animate and argument alignment was non-canonical, i.e., the subject is inanimate.
 - When the alignment was canonical, gaps were preferred.
- These observations broadly match the view that RPs occur in **difficult-to-process** sentences, but exactly how mis-alignment triggers this "difficulty" or how RPs could relieve it [cf. 4,5] - remains undetermined.

Reanalysis to ORC

One possible explanation for the general difficulty in ORCs is that they require **reanalysis**.

ORCs are probably initially parsed as subject RCs, and must be reanalyzed [6]. When the RC head is animate, the SRC analysis is strongly preferred.

We conjecture that an inanimate subject isn't a strong enough signal for reanalysis, because it is an atypical subject. In this case, an RP may be necessary to signal reanalysis. Thus, misaligned sentences with gaps are harder to comprehend and judged poorly. This idea will be further explored in a reading time experiment.

Syntax of object experiencers

These results can also shed light on the relationship between ObjExp verbs and RPs. ORCs with ObjExp verbs have been previously claimed to require RPs, in Hebrew [7] and Greek [8]. Previous accounts were based on the **argument structure** of ObjExp verbs, which have been claimed to correlate with a unique set of syntactic behaviours ('psych-effects'). These effects seem limited to non-agentive or stative interpretations of ObjExp verbs [9,10], which often correlate with animacy.

However, we found the same effect of mis-alignment for both ObjExp verbs and non-ObjExp AnimTheme verbs. This seems to point to a more general issue with mis-aligned structures which renders RPs obligatory, regardless of verb type.