

Summary

Question: how do co-speech gestures, such as in (1), project?



(1) Stephanie might bring her dog_{LARGE}.
→ Stephanie's dog is large.

Answer: how a given piece of content, spoken or gestural, projects is determined by how it composes in the syntax/semantics.

Case study: NP-adjoining co-speech gestures compose as modifiers, but are preferably non-restricting and, thus, project. DP-adjoining co-speech gestures compose as supplements and always project.

Modifiers vs. supplements

Modifiers	Supplements
Compose with α , yield β such that $\beta \Rightarrow \alpha$:	Compose with α , yield a proposition about α ; e.g., Potts 2005:
<p>(2) $\lambda x.\text{stuntwoman}(x) \wedge \text{blond}(x)$</p> <p><i>blond stuntwoman_{NP}</i> $\lambda x.\text{blond}(x) \lambda x.\text{stuntwoman}(x)$</p>	<p>(3) $z \text{ (at-issue) } \bullet \text{stuntwoman}(z) \text{ (CI)}$</p> <p><i>Zoe_{DP} (who is) a stuntwoman</i> $z \lambda x.\text{stuntwoman}(x)$</p>
Can be restricting or non-restricting (truth-conditionally vacuous; NRMs); Leffel 2014:	Don't have a compositional potential to be restricting:
<p>(4) I'll remove every harmful chemical. \nrightarrow I'll remove every chemical. \nrightarrow All chemicals are harmful.</p> <p>(5) I'll remove every harmful toxin. \rightarrow I'll remove every toxin. \rightarrow All toxins are harmful.</p>	<p>(6) I'll remove the chemicals, which are harmful. $\checkmark \rightarrow$ I'll remove the chemicals. \rightarrow The chemicals are harmful. $\times \nrightarrow$ I'll remove the chemicals. \nrightarrow The chemicals are harmful.</p>
Esipova 2019: NRMs pragmatically trigger inferences that $\alpha \Rightarrow \beta$, which project relative to a local context (refined cosuppositions from Schlenker 2018):	(Almost) always project; many analyses on the market (e.g., Potts 2005, Koev 2013, etc.):
<p>(7) Maybe processed meat causes cancer and I shouldn't eat so many deadly sausages. \rightarrow If processed meat causes cancer, all sausages are deadly.</p> <p>(8) IDK if all sausages are deadly, but if you eat too many deadly sausages, you might get cancer. \times '...if (all sausages are deadly and you eat too many)...'</p>	<p>(9) If you invite Zoe, a stuntwoman, show her your muscle car. \rightarrow Zoe is a stuntwoman.</p> <p>(10) IDK if Zoe's a stuntwoman, but #if you invite Zoe, a stuntwoman, show her your car. \times '...if (you invite Zoe and she is a stuntwoman)...'</p>

How do gestures fit into this picture?

Methods

Participants: 122 (33 female, 89 male), recruited on Amazon MTurk.

Task: read contexts, watch videos of sentences uttered in those contexts, rate those sentences on a scale from 'Totally unnatural' to 'Totally natural' (mapped to 0–100).

Within subject design: each participant saw 11 items (1 randomly selected item per cell and 2 additional check items).

Sample paradigm:

(11) Context: We are going on a group tour. Anna and Maria are responsible for renting a van. Maria just told Anna that...

a. PNR ...Stephanie, who has two pets, a small cat and a large dog, is planning to bring along one of her pets. Anna, who has seen both Stephanie's pets before, says:

Do you know which one of Stephanie's pets is coming with us? 'Cause if she's bringing...

- (i) her small cat
- (ii) her cat, a small animal



(iii) her cat_{SMALL}
..., we'll be fine, but if she's bringing...

- (i) her large dog
- (ii) her dog, a large animal



(iii) her dog_{LARGE}
..., we should get a bigger van.

b. R ...Stephanie, who has two dogs, a small Pug and a large Great Dane, is planning to bring along one of her dogs. Anna, who has seen both Stephanie's dogs before, says:

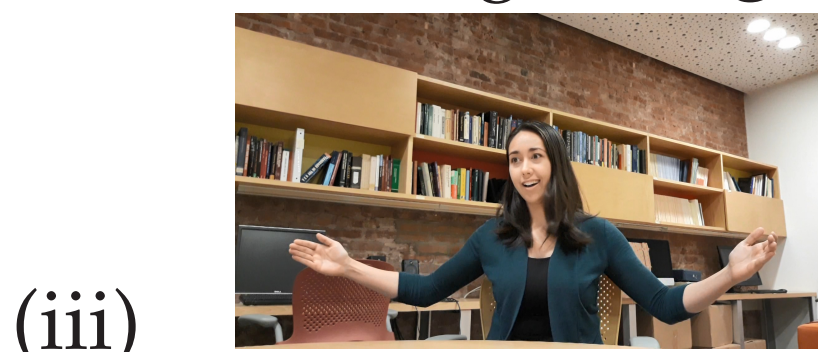
Do you know which one of Stephanie's dogs is coming with us? 'Cause if she's bringing...

- (i) her small dog
- (ii) her dog, a small animal



(iii) her dog_{SMALL}
..., we'll be fine, but if she's bringing...

- (i) her large dog
- (ii) her dog, a large animal

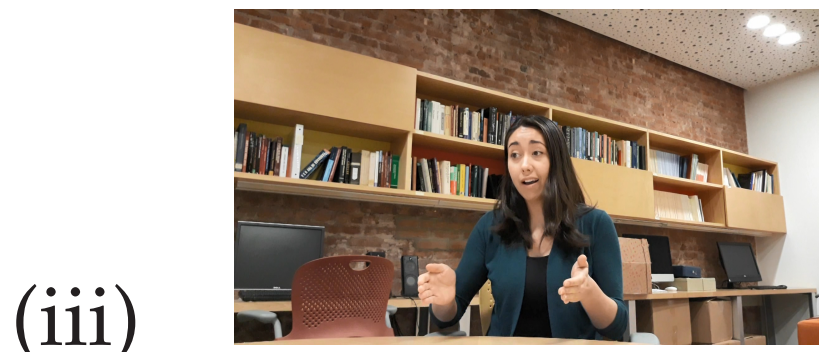


(iii) her dog_{LARGE}
..., we should get a bigger van.

c. NPNR ...Stephanie is planning to bring along her dog. Anna knows that Stephanie only has one dog, but has never seen it. She says:

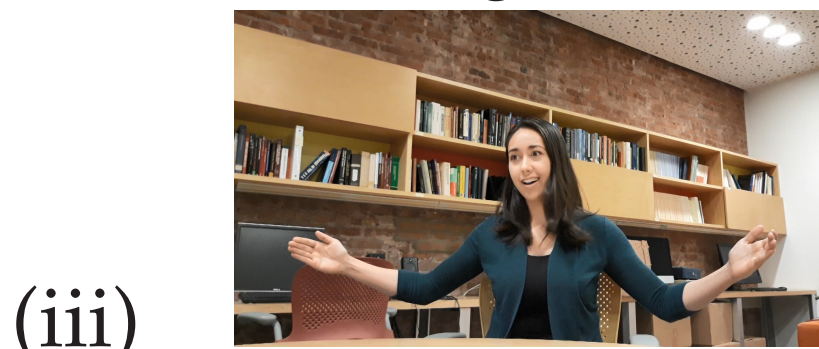
Do you know how big Stephanie's dog is? 'Cause if she's bringing...

- (i) her small dog
- (ii) her dog, a small animal



(iii) her dog_{SMALL}
..., we'll be fine, but if she's bringing...

- (i) her large dog
- (ii) her dog, a large animal



(iii) her dog_{LARGE}
..., we should get a bigger van.

Predictions for co-nominal gestures

Ebert & Ebert 2014 (co-speech gestures are supplements across the board): gestures should pattern with appositives.

Schlenker 2018 (co-speech gestures compose conjunctively with spoken expressions and trigger cosuppositions across the board): $\text{PNR} > (\text{R} = \text{NPNR})$ (or completely unattested readings, e.g., $[[\text{her dog}]_{\text{LARGE}}] \approx \text{her dog and a large object}$).

Esipova 2018, 2019 (projection of co-speech gestures is determined by their composition, but they prefer to be truth-conditionally vacuous; co-nominal gestures compose as NP-level modifiers or DP-level supplements): $\text{PNR} > \text{R} > \text{NPNR}$.

Conclusion

Take-home points:

- Composition determines projection in speech and gesture.
- If we approach gestures (and other secondary-modality content) as linguistic objects, we must do so at all levels of representation.

Next: sentence-level vs. degree modifier facial expressions.

Content Type		Projecting non-restricting	Interpretation	
			Restricting	Non-projecting non-restricting
	Adjective	4	4	4
	Appositive	4	4	4
	Gesture	4	4	4

Results

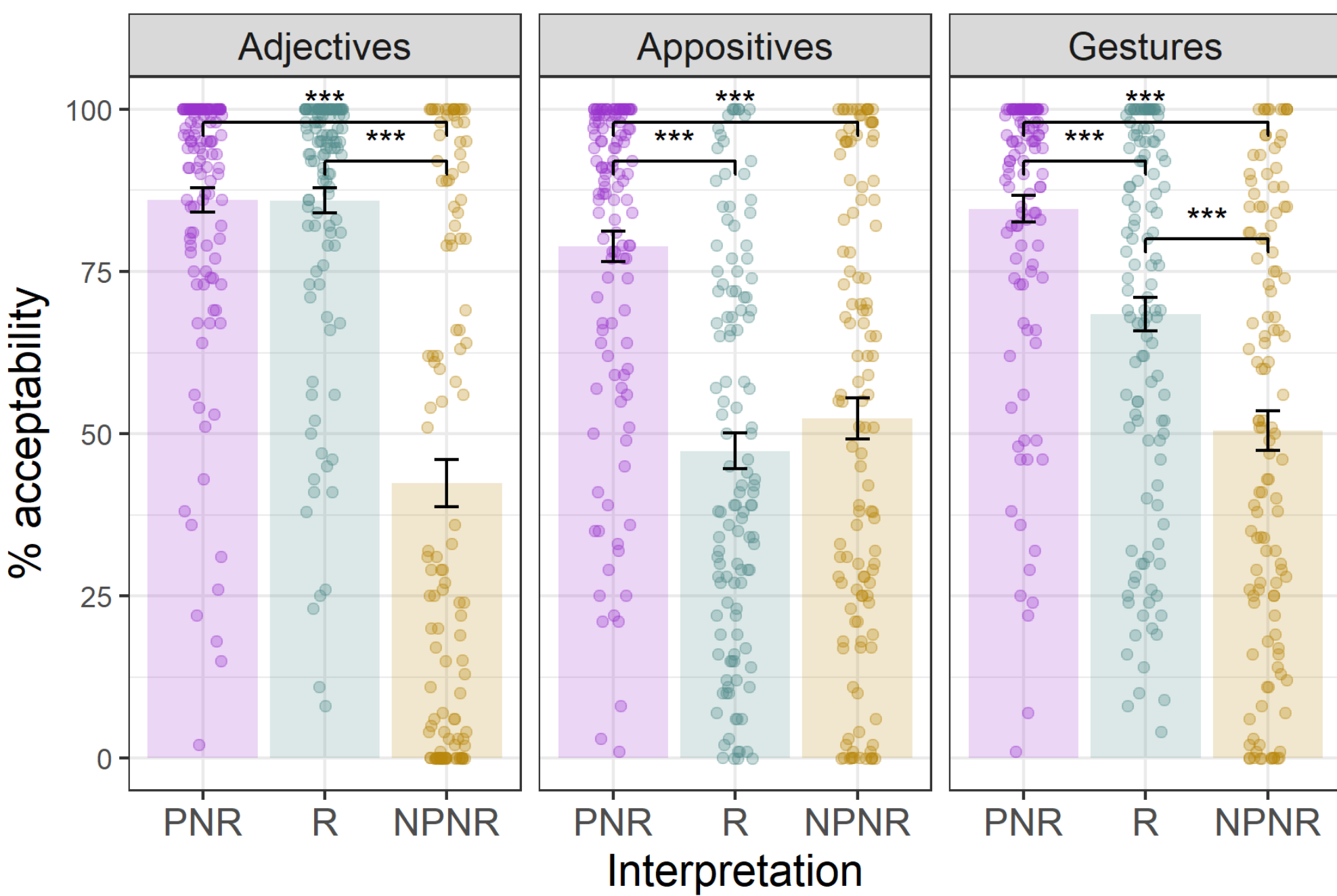


Figure 1: % acceptability of different interpretations for each content type. Error bars show standard error. Dots represent individual responses (with minor jitter added).

Selected references

Ebert & Ebert. 2014. *SPE* 7. Leffel. 2014. PhD thesis. Esipova. 2018. *SuB* 22. Esipova. 2019. PhD thesis. Koev. 2013. PhD thesis. Potts. 2005. OUP. Schlenker. 2018. *L&P*.