

An experimental study of the semantic contribution of pro-text emoji

Typology of gesture/emoji: Schlenker (2018) [1] proposes a typology of *co-speech*, *pro-speech*, and *post-speech* gestures, distinguished by whether the gestures are *external* (can be eliminated without affecting the acceptability of the sentence) or *internal*, and whether the gestures occupy their own timeslot. Pierini (2021) [2] extends [1]’s typology to emoji: (I) *co-text emoji*, which immediately follow written text, trigger ‘cosuppositional’ inferences (conditionalized assertion-dependent presuppositions) that project from embedded environments (1); (II) *pro-text emoji*, which fully replace words, have an at-issue semantics and can trigger standard presuppositions (2); and (III) *post-text emoji*, separated from accompanying text by a pause, generate supplements (3a), which are degraded in negative environments (3b). Pasternak & Tieu (2022) [3] provide experimental evidence for inferences of the type in (I). In this study, we experimentally investigate the claim in (II), pertaining to pro-text emoji.

- (1) a. John didn’t train today 🏋️‍♂️ b. Did John train today? 🏋️‍♂️
 c. \leadsto *If John had trained today, it would have involved weight-lifting.*
- (2) The plane will soon ✈️ .
 \leadsto *The plane will soon take off.*
 \leadsto *The plane is currently on the ground.*
- (3) a. John trained today... 🏋️‍♂️ \leadsto *John trained today, which involved weightlifting.*
 b. #John didn’t train today... 🏋️‍♂️

Experiment: We used an inferential judgment task [4] to test the claim that pro-text emoji generate at-issue content and can trigger standard presuppositions. To test for potential presuppositions, we selected 9 emoji that could signify a change of state (🐣, 🌸, 🍌, 🏠, 🚗, 🌱, 🚗, 🍌, 🏠), potentially presupposing that *the pre-change state currently holds*. (The at-issue contribution of the emoji would be clear due to the iconic nature of the emoji.) Each emoji was presented in plain affirmative sentences and four environments from which presuppositions typically project: polar questions, and the scope of ‘might’, negation, and ‘none’. Each test sentence was associated with a target inference (the intended presupposition) (4a) and a baseline/control inference (4b).

- (4) a. Will the egg 🐣?
 b. Target inference: *The egg has not yet hatched.*
 c. Control inference: *The egg has already hatched.*

It was expected that if the pro-text emoji triggered presuppositions, the target presuppositional inferences would be more strongly endorsed than control inferences, across all tested environments.

30 native speakers of English recruited through Prolific completed the experiment, which was implemented using Gorilla. Participants used a slider scale to indicate how strongly the emoji sentence led them to infer the inference that appeared in text below the test sentence. Each participant saw a total of 90 items (9 emoji x 5 environments x 2 inferences) in randomized order. Linear regression models with Condition

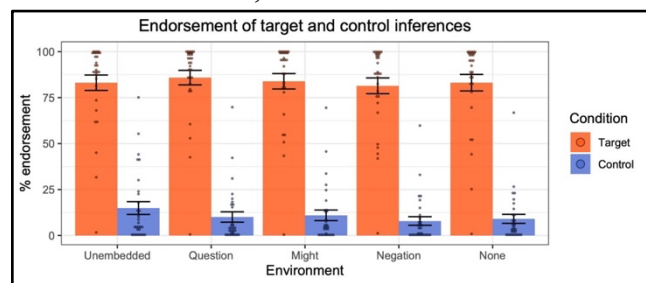


Figure 1 Results for pro-text emoji

(target vs. control) as a fixed effect and random by-participant slopes for Condition and random intercepts for emoji revealed a significant effect of Condition across all linguistic environments, with higher endorsement of target inferences than control inferences ($p < .001$ in all cases) (Fig.1).

Conclusion: The results provide experimental support for the *pro-text* part of [2]’s semantic typology of emoji: *pro-text* emoji trigger presuppositions that project from embedded environments. We have also replicated [3]’s results for *co-text* emoji and are currently investigating the (un)acceptability predictions for *post-text* emoji (III).

References: [1] **Schlenker, P. 2018.** Iconic pragmatics. *Natural Language & Linguistic Theory*. [2] **Pierini, F. 2021.** Emojis and gestures: a new typology. *Proceedings of Sinn und Bedeutung 25*. [3] **Pasternak, R. & L. Tieu. 2022.** Co-linguistic content inferences: From gestures to sound effects and emoji. *Quarterly Journal of Experimental Psychology*. [4] **Tieu, L., R. Pasternak, P. Schlenker & E. Chemla. 2018.** Co-speech gesture projection: Evidence from inferential judgments. *Glossa: A Journal of General Linguistics*.