Negotiated Iconicity in Interactive Silent Gesture Communication

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Background

Hearing non-signers' silent gestures and pantomimes have been shown to exhibit **ACTION-BASED iconic strategies**. In fact, humans have strong action biases for representing both actions and objects.

**Manipulable object are particularly susceptible** to this bias.

Most studies of silent gesture and pantomime have participants produce manual representation **in isolation**.

What happens to these gestural representations if they are negotiated between two interacting individuals?

Methods: Silent Gesture

Referential communication task requiring the disambiguation of noun-verb pairs using silent gesture.

Iterated over simulated generations:

Generation 1   Generation 2   Generation 3   Generation 4
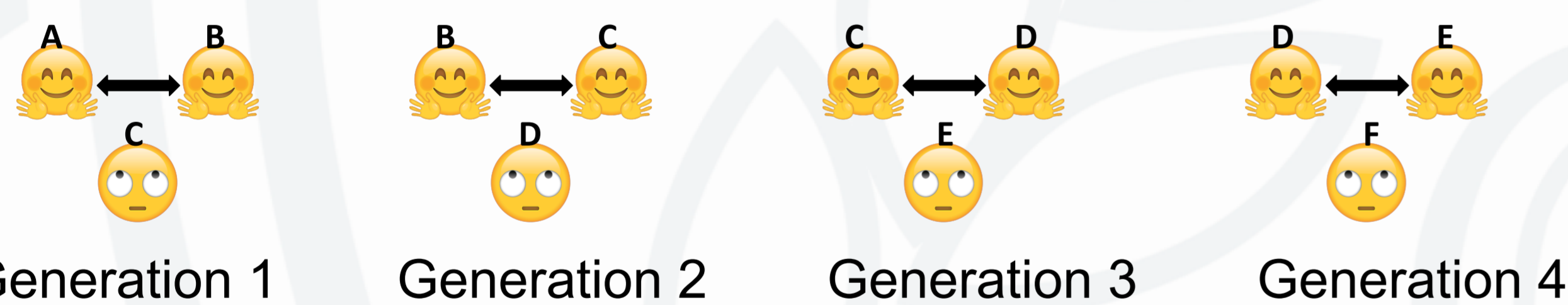
Methods: Iconicity Judgments

Naïve participants either (1) guessed the meaning of a single gesture or (2)rated Gen 1 and Gen 4 gestures:
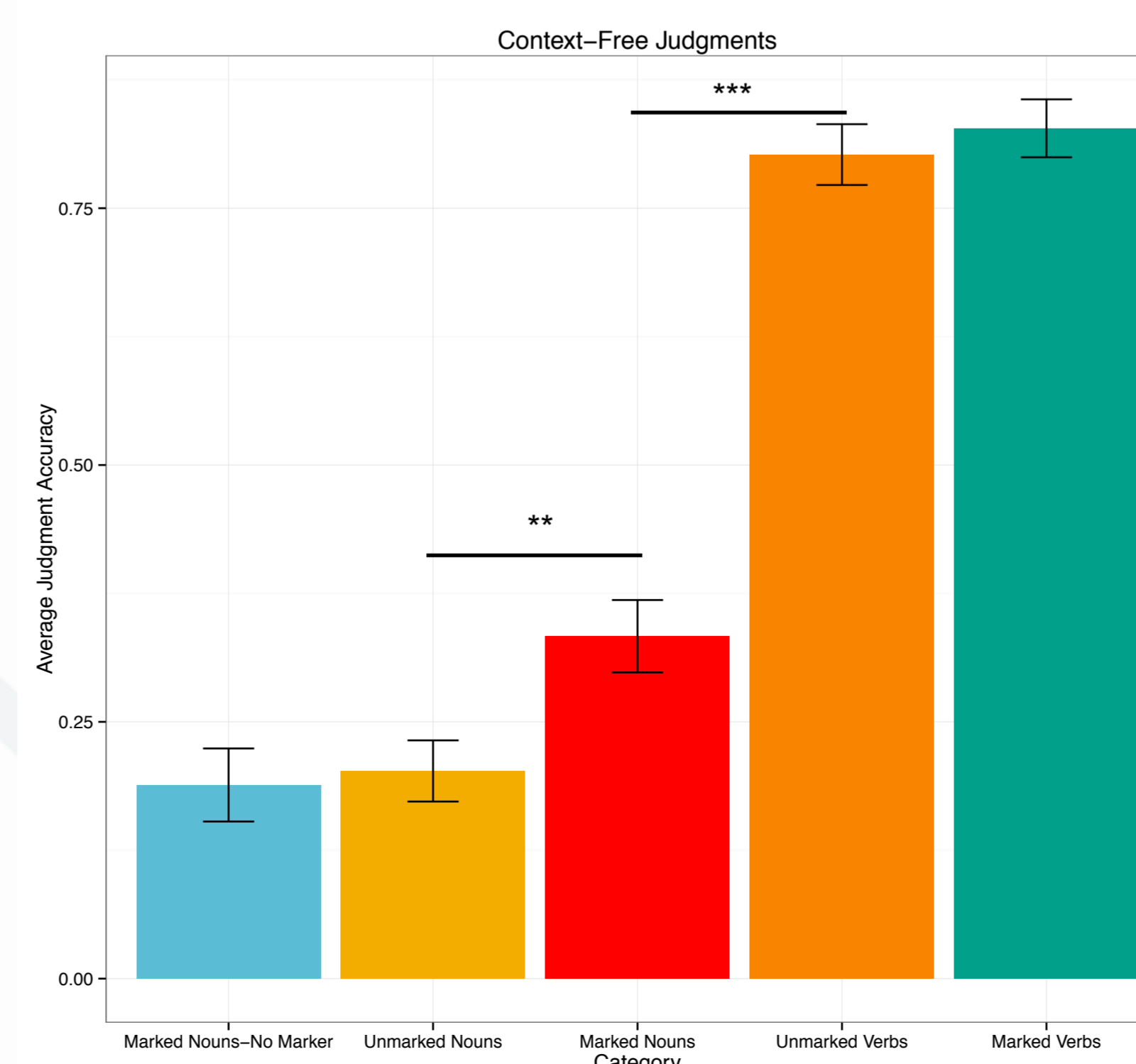

Gestural Representations

One action-based iconicity was maintained over generations for noun-verb pairs, regardless of affordance for manipulability.

A BRUSH

BRUSHING

A GUARD

GUARDING

A **noun marking system emerged** in interaction to disambiguate nouns and verbs; naïve participants were more likely to guess noun gestures accurately when marked.

Iconicity Ratings
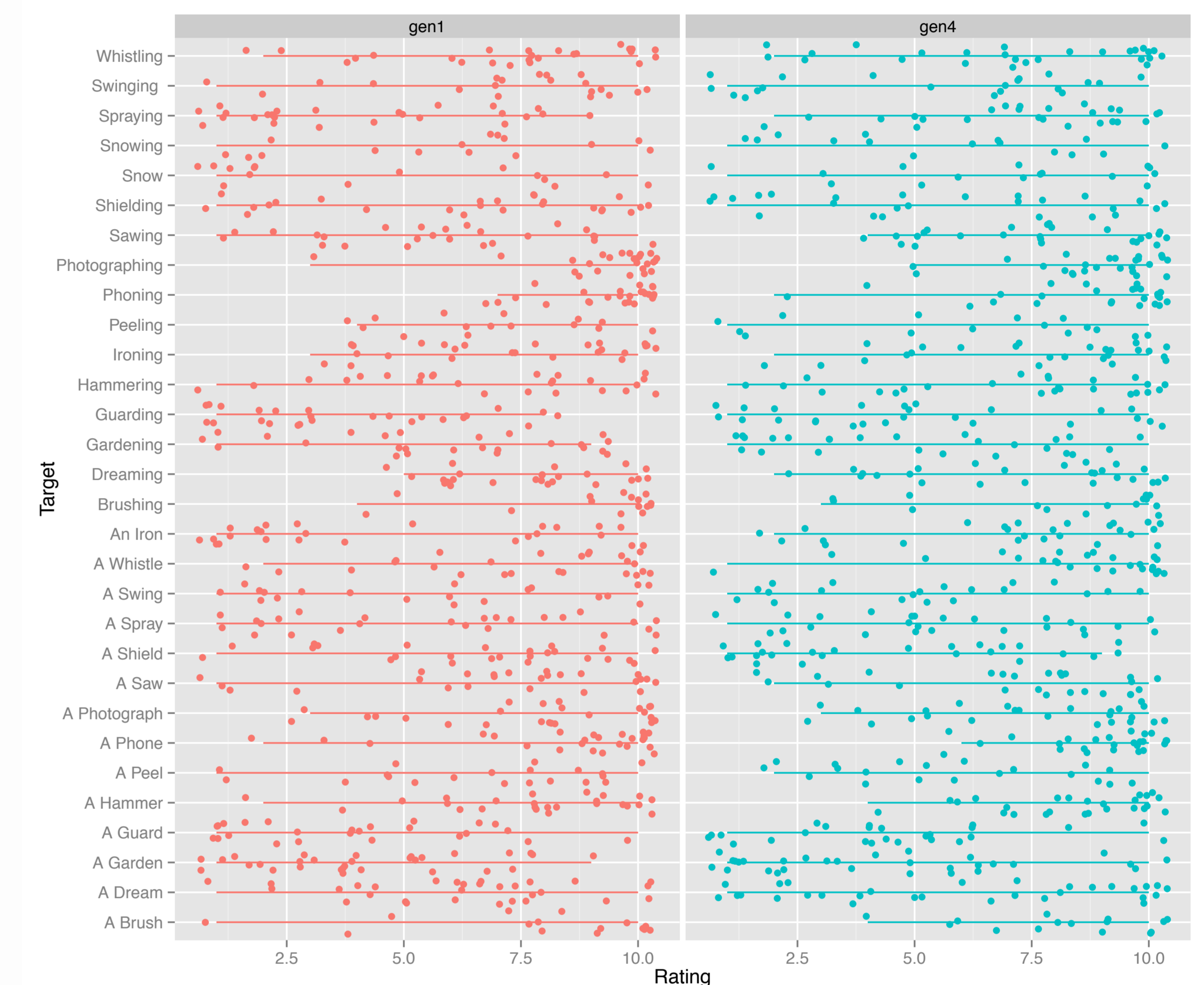
Iconicity does not change as determined by naïve raters of gestures from generations 1 and 4; Difference in means = -0.13 (bootstrapped 95% CI [-0.434, 0.179]).

The action-bias may promote slightly higher ratings for verbs than nouns, and for nouns with higher manipulability affordances than those with lower affordance.

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