



# Memory for what was said in conversation: Speakers and Listeners differ

Si On Yoon<sup>1</sup> & Sarah Brown-Schmidt  
University of Illinois, Urbana-Champaign  
[syoon10@illinois.edu](mailto:syoon10@illinois.edu)<sup>1</sup>



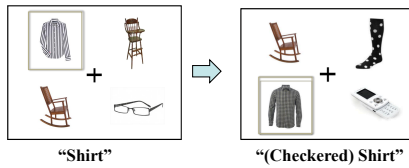
## INTRODUCTION

### Speaking = Listening ?

- Same core representation (Pickering & Garrod, 2004)
- Research in the memory tradition shows speakers and listeners form distinct memories:
  - Free-recall of conversation elements better for what was heard than what was said (Stafford & Daly, 1984)
  - Generation effect: memory better for spoken items than received items (Marsh, et al., 2001)
- Why the inconsistencies across these literatures?

**OUR GOAL: Link memory for language in conversation (referents), with language use (how those referents are described).**

## EXPERIMENTS 1 and 2: PROCEDURE



**NAMING PHASE:** Speakers describe 1 of 4 objects for their partner; the partner clicks.

- Baseline/Contrast trials (left): unique referent
- Target trials (right): referent contrasts with PAST referent = lexical differentiation (Van Der Wege, 2009)



**MEMORY TEST:** Speakers and listeners (separately) see two pictures on each trial (one old, one new) and must select the OLD picture. Memory for targets in both BASELINE and TARGET trials is measured.

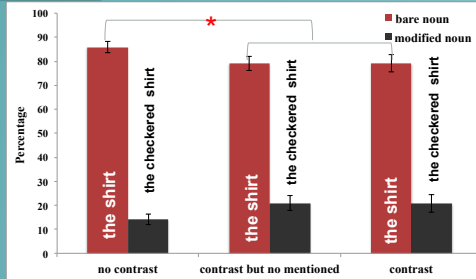
## EXPERIMENT 1 (n=36 pairs of participants)

### Naming-PHASE Design: (Within-subjects)

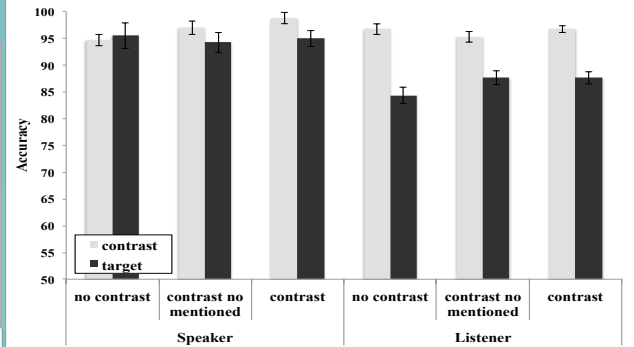
- Entrainment manipulation (x6 trials per item)
  - No contrast (NC): unrelated item described (not the contrast), such as a *ball* instead of shirt.
  - Contrast but no mentioned (CNM): contrast (shirt) previously described w/locative phrase (e.g., *top left*)
  - Contrast (C): contrast prev. described (e.g., *shirt*)

### RESULTS

- NAMING:** Speakers differentiate more in C (21.9%) and CNM (20.8%) than NC (14.1%)
- MEMORY:** Significant interaction between role (listener vs. speaker) and object type (contrast vs. target).
  - High memory for contrast object for both S and L (>95%).
  - Better target memory for speaker (S: 94.9% vs. L: 86.5%)



Experiment 1: Naming results, % of TARGET trials with bare (*shirt*) and modified (*checked shirt*) NPs



Experiment 1: Memory accuracy for contrast (striped shirt) and target (checked shirt) by Entrainment condition for speakers and listeners.

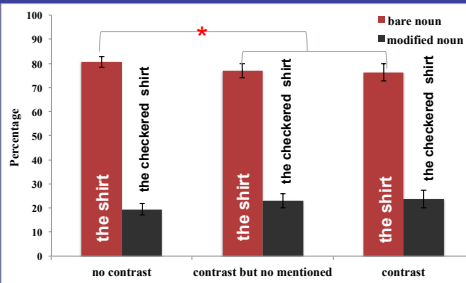
## EXPERIMENT 2 (n=48 pairs)

**GOAL:** Replicate in more interactive setting; do speakers still outperform?

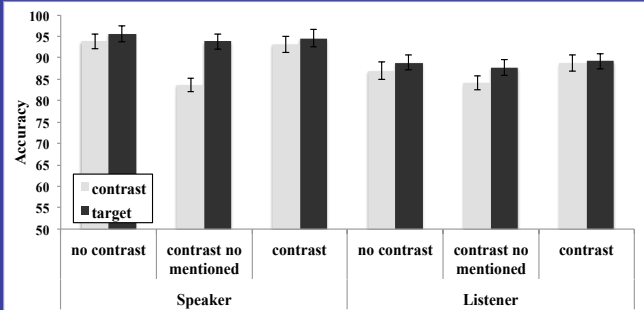
**DESIGN: Like Exp1, but...** Alternating speaking and listening; single entrainment trial. Lag bet. entrainment and test (1 vs. 10 trials)

### RESULTS

- NAMING:** Speakers differentiate more in C and CNM than NC (23% vs. 19%,  $p < .05$ ).
- MEMORY:** Speakers remembered objects better than Listeners.
  - Speaker memory more strongly influenced by naming: Contrast items were better remembered when they named vs. when identified with locatives (C vs. CNM,  $p < .05$ )



Experiment 2: Naming results, % of TARGET trials with bare (*shirt*) and modified (*checked shirt*) NPs



Experiment 2: Memory accuracy for contrast (striped shirt) and target (checked shirt) by Entrainment condition for speakers and listeners.

**CONCLUSIONS** (1) Speakers differentiate to distinguish current from past referents. (2) Low differentiation rate (~5%) NOT due to forgetting previous contrast items. (3) Memory findings consistent with generation effect: Speakers remember referents better than listeners. (3) While naming was not necessary for lexical differentiation, it was helpful for future memory. **The MEMORY BOOST for SPEAKING and naming suggests discourse memory varies by conversation role. We posit that memory processes limit the potential for representational alignment in conversation.**

This research was supported by NSF 12-57029 to S. Brown-Schmidt.