Structural priming across the lifespan

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1. Introduction

- **Structural priming** (SP): repetition of syntactic or semantic structure (Bock, 1986; Chang et al., 2003)
- **Lexical boost**: lexical overlap b/t prime and target increases size of effect (Pickering & Branigan, 1998)
- **Dual-Path Model**: two distinct mechanisms proposed to underlie SP (Chang et al., 2006)
  1. **Implicit learning** (=abstract priming)
  2. **Explicit memory** (=lexical boost)
- **Memory systems dissociate w/ age**: explicit memory declines, while implicit memory stays intact (for reviews, see Fleischman, 2007; Mitchell, 1989)

? Does SP change across the lifespan, and can this inform us about the mechanisms behind it?

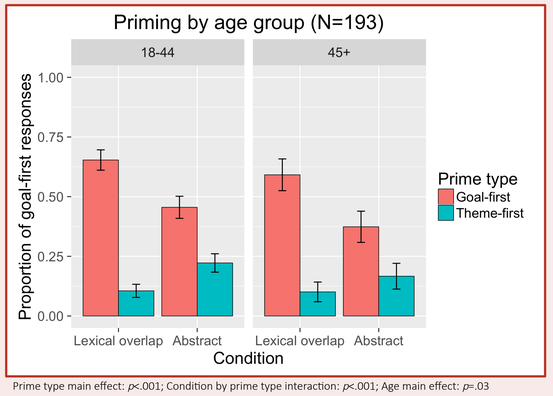
- **Prediction**: decline in size of lexical boost in older adults, but stable abstract priming

2. Methods / Results

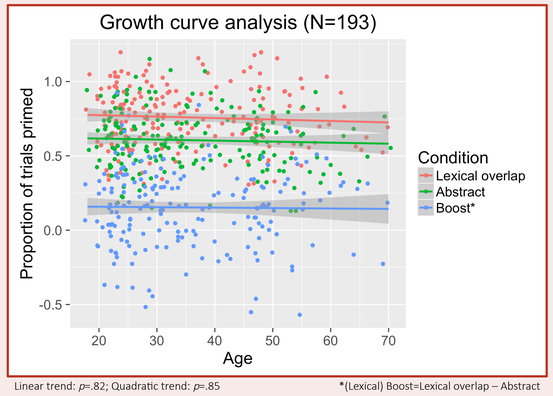
- **Animation description task** on MTurk (N=193; age range=18-70)
- Stimuli (interspersed):

	Goal-first	**Theme**-first
1. Datives:	*boy brings **camel** **keys***	*… **keys** to **camel***
2. Locatives:	*girl loads **van** with **boxes***	*… **boxes** in **van***

✧ **No dissociation b/t abstract priming and lexical boost w/ age** (cf. Sung, 2015, for lexically-specific priming in Korean)



Prime type main effect: $p<.001$; Condition by prime type interaction: $p<.001$; Age main effect: $p=.03$



Linear trend: $p=.82$; Quadratic trend: $p=.85$ *(Lexical) Boost=Lexical overlap – Abstract

3. Implications

- Stable **abstract priming** w/ age: in line with predictions
- Lack of decline in **lexical boost**:
  - ? Lexical boost ≠ explicit memory
  - ? Explicit memory decline in older adults too subtle to lead to differences in priming
- Concrete contributions:
  1. **Two primary effects (abstract priming/lexical boost) observed in college samples are robustly present across the lifespan** (supplementing prior findings on SP in aphasics and amnesiacs; for review, see Pickering & Ferreira, 2008; also Alvarez et al., 2006, for abstract priming)
  2. **Online task well-suited for more rigorous, large-scale work on individual differences in SP**

4. Proposal

- **Goal**: more directly assess predictions of Dual-Path Model
- **Approach**: explore correlation of SP w/ measures of implicit and explicit memory
- **Task battery**:
  1. Current animation description task (=SP)
  2. Explicit (working) memory measure(s):
     - [1] **Serial recall**: digit span (forwards/backwards), other; [2] **verbal recognition**
  3. Implicit (procedural) memory measure(s):
     - [1] **Lexical decision**; [2] **word stem/fragment completion**; [3] **sequence learning**: motor, other
  4. Control for g? – [1] **vocabulary**, [2] **matrices** (Chabris, 2007)
- Potential confounds:
  1. Differences in browser RTs
  2. Slower RTs overall in older populations

Feedback appreciated!

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