Multi-party communication games

Veronica Boyce

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Some of this is conventionalized, but some is dynamic.

Partner-specific adaptation

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How is alignment achieved?
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- Mental modelling (ex. RSA) (Clark & Wilkes-Gibbs 1986, Goodman & Frank 2016)
- Interactive Alignment Account – bottom up priming (Garrod & Pickering 2009)
- Audience Design (Yoon & Brown Schmidt 2019)

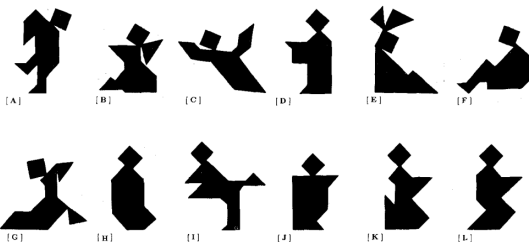Clark & Wilkes-Gibbs 1986
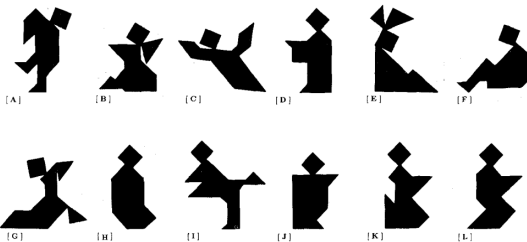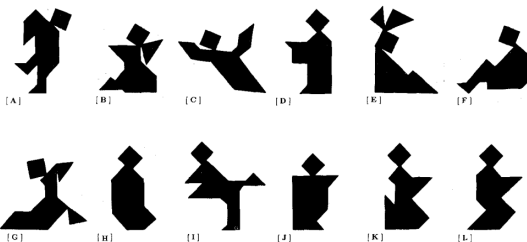
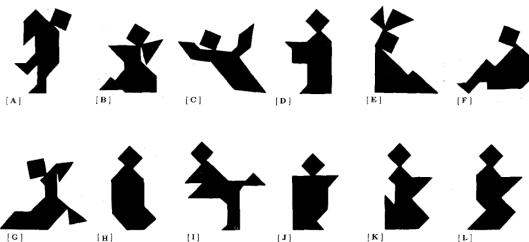# Clark & Wilkes-Gibbs 1986

Clark & Wilkes-Gibbs 1986

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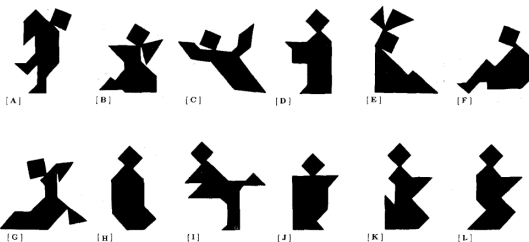
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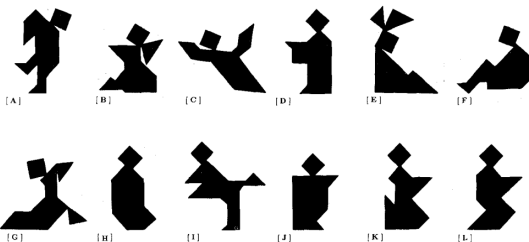
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3. The fourth one is the person ice skating, with two arms.
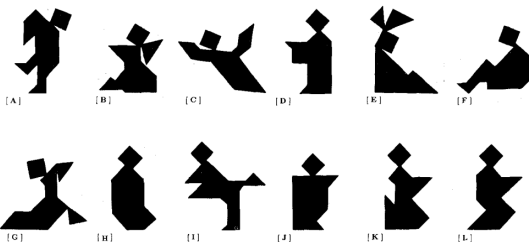
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5. The fourth one's the ice skater.
6. The ice skater.
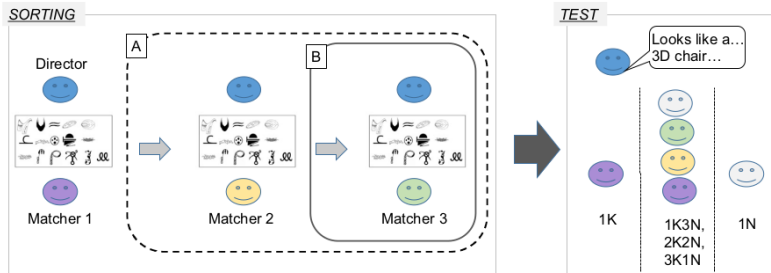
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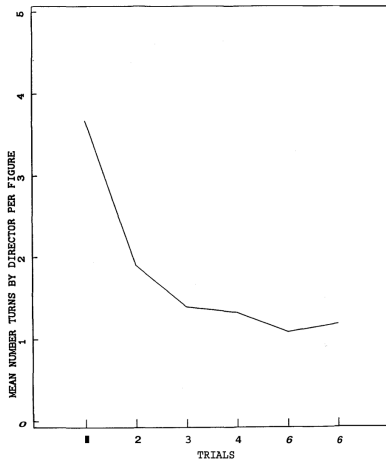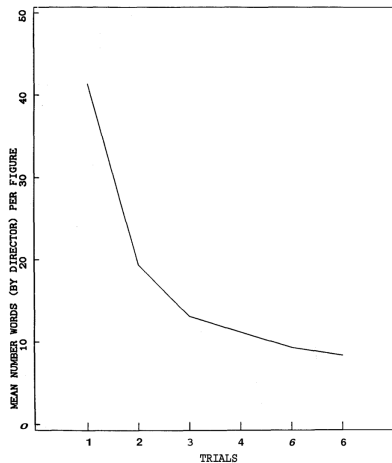
Yoon & Brown-Schmidt 2019

Speaker talks to multiple matchers of different knowledge levels
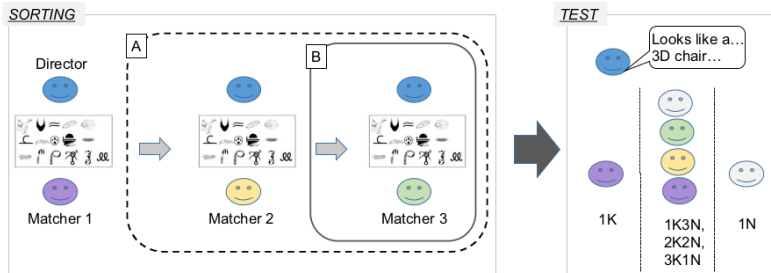
Yoon & Brown-Schmidt 2019

Speaker talks to multiple matchers of different knowledge levels

Examine speaker's utterances for length, elaborations, disfluencies

Hawkins, Frank, & Goodman 2020

Scaling up with web-based experiments
- Cued version with feedback on each trial

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- Message with a chat box

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- After all exclusions, 83 dyads

Hawkins, Frank, & Goodman 2020
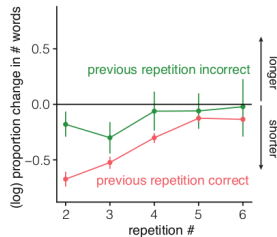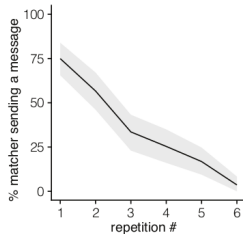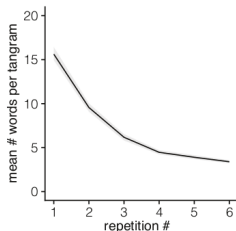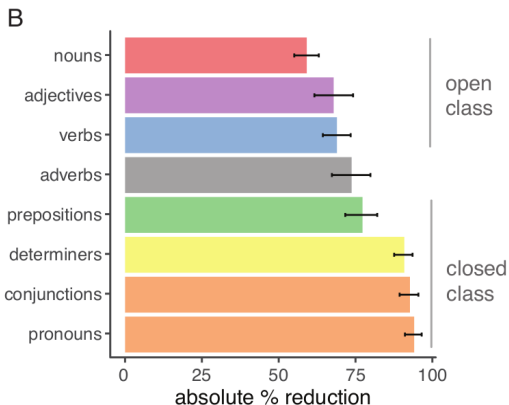
Scaling up with web-based experiments
- Cued version with feedback on each trial
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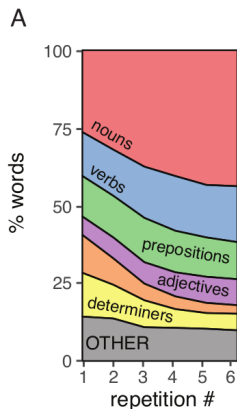# Hawkins, Frank, & Goodman 2020

Words tend to drop out in syntactic units

Hawkins, Frank, & Goodman 2020
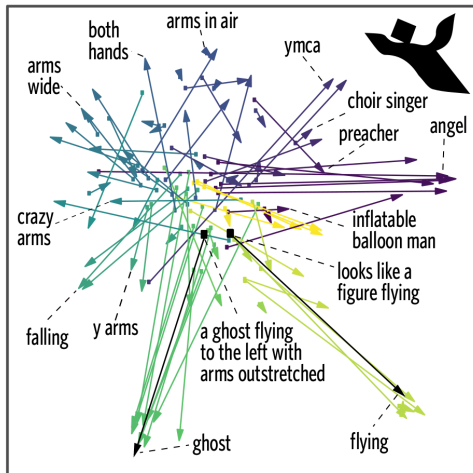
Semantics converge within and diverge between groups

FYP Proposal

What are the dynamics of pact formation between groups?

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- Replicate Hawkins et al for multiple listeners

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FYP Proposal

What are the dynamics of pact formation between groups?

- Replicate Hawkins et al for multiple listeners
- Bridges towards Yoon & Brown-Schmidt work
- Use Empirica (Almaatouq et al 2020) for implementation

FYP Framework

Pilot results

Number of words
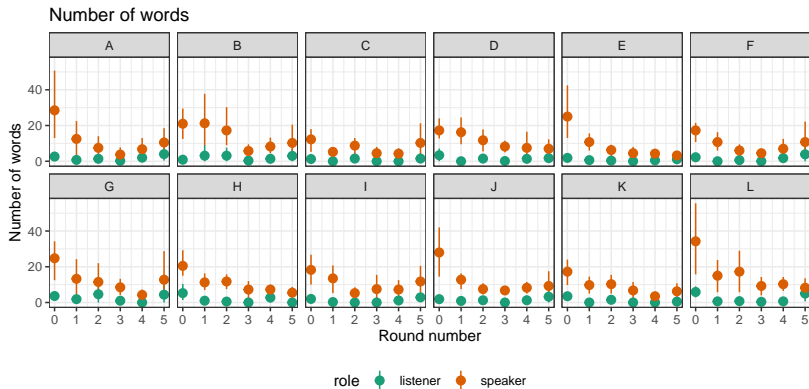
Utterances get shorter
Tangrams vary in difficulty

Pilot results

People choose faster in later rounds
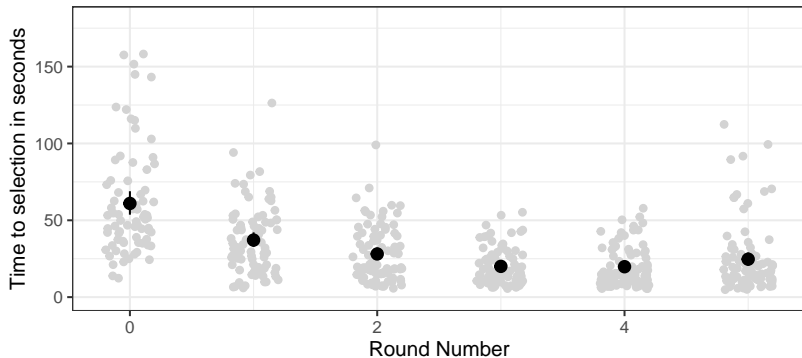
Listeners choose faster in later rounds

Pilot results

Overall accuracy increases over repetitions
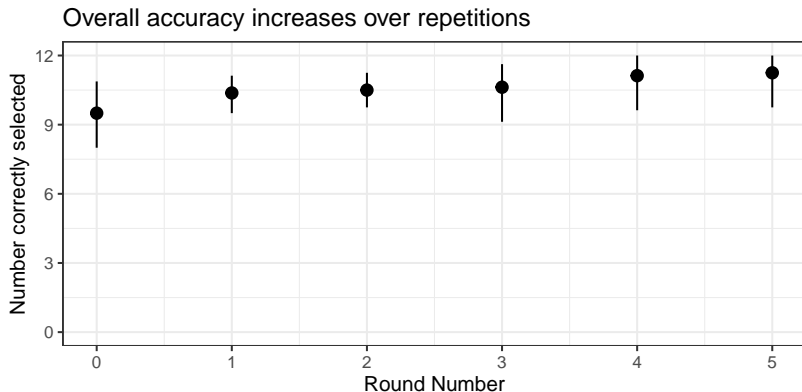
Accuracy is uniformly high, but seems to increase

FYP Plans

Future analyses

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- Textual analyses

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- Listener to listener interactions

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Full experiment

- Test groups of 2-4 (1-3 listeners/speaker)
- Aim for 20 groups in each group size

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  - Rotating speaker role
  - Curriculum learning

Bigger picture

- Connections to teaching

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- Tie this into modelling work

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- Dataset for training AI agents for conversation

Comments, Questions?

Looking for feedback on

- What analyses would be interesting?
- What variants/extensions would be interesting?