Dyadic games: An approach to learning from language

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Social learning makes us smart

We learn things without experience.

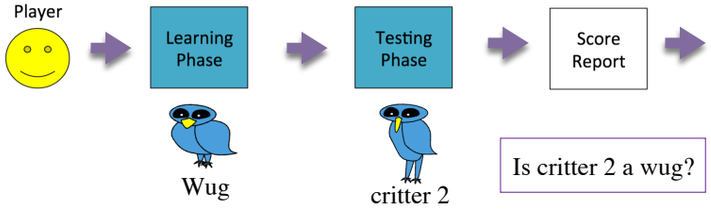
"Mosquitos carry malaria"

"Staring at the sun makes you go blind"

Generics convey generalizations about categories

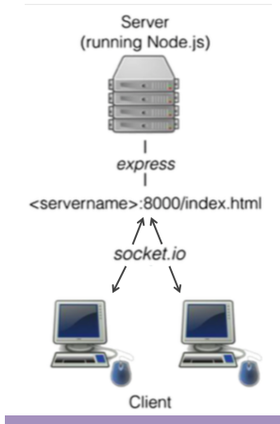
Boyd, Richerson, & Henrich (2011) Gelman (2009)

Learning from Observations



- Boolean category learning (e.g., Goodman et al., 2008)
  - Categories defined by combinations of features
  - Different combinations are more or less easy to learn

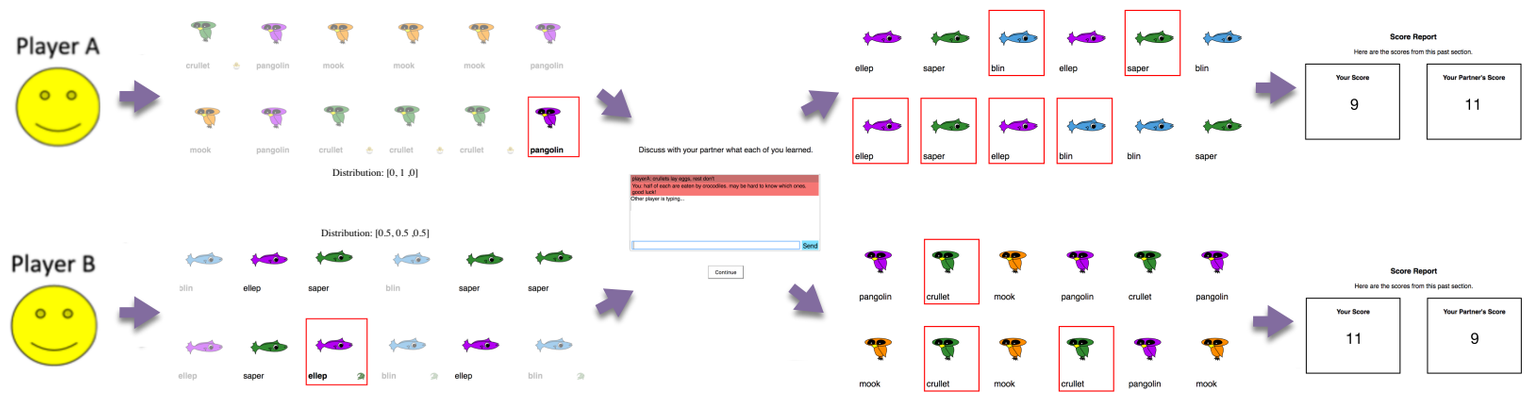
Node.js/Socket.IO Serve Experiment



- Participants recruited through Amazon's Mechanical Turk
- Players' positions in the game were dependent on one another

Modified from Hawkins (2015)

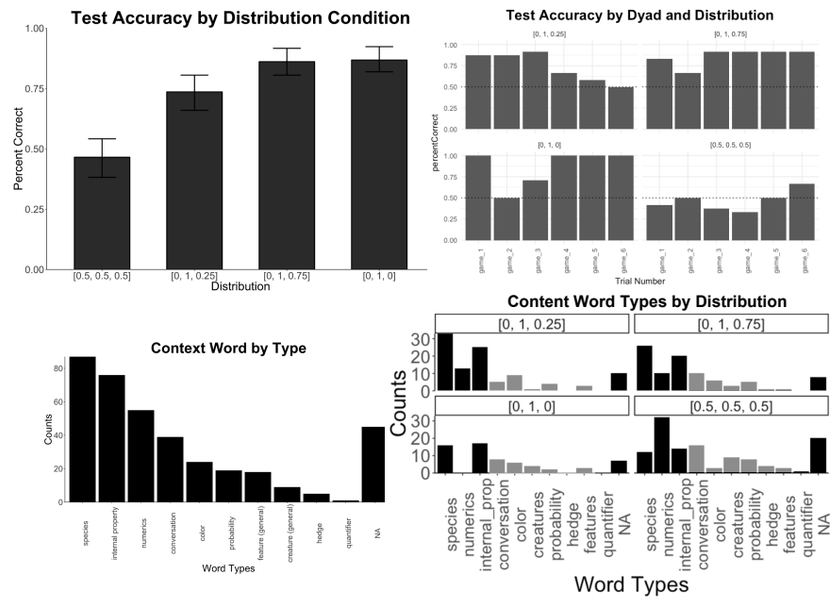
Learning from Language



Preliminary Results (n = 6 dyads)

Sample transcript

Round 1	playerA: a zoov lives near crocodiles playerB: kaz and jav colelct leaves
Round 2	playerB: cheeba and fram have eggs. thup don't playerA: at least two members of each creature are poisonous; it will be difficult to determine which ones are the poison ones
Round 3	playerA: only the truts grow leaves in this case playerB: Only the orange ones this time for me playerA: oh ok cool playerB: here we go!
Round 4	playerB: only daith are posionous playerA: all eleps and most sapers grow eggs playerB: ok



Future Directions

- Learning after teaching / explanation (cf., Williams & Lombrozo 2009)
- Learning over generations - the cultural ratchet
- Compilation: combining our similar knowledge

Preliminary Conclusions

- Participants learn from language produced by other participants who just learned the concepts
- Generics are common when all members have property (rather than numerical terms or quantifier "all")
- Dyadic games elicit interesting language and can be used to compare the relative efficacy of learning from observations vs. from language

References

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