MP-Game-5: Multiplayer Boolean Concept Learning (Summurization Format)

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Intro

Our goal is to ollect cheaper data for cultural ratchet experiment. In the spring, we ran a pilot experiment, with a "round-by-round" format, where players only learned a single concept. In fall, we ran a pilot experiment with a "summurization" format, where palyers played multiple concepts. For spring pilot (round-by-round), we had 5 concepts, each with two different lists of stimuli. For fall pilot (summurization), we had the same 5 concepts and selected one of two lists of stimuli, from spring.

Cost Comparison

Spring Pilot Cost Per Round (Round-By-Round-Format):

$122.40 / 36 = $3.40 / round

Fall Pilot Cost Per Round (Summurization-Format):

($(1.25 * 20 + .50 * 20) + $11.60)) / 40 = $1.165 / round

If we were maximally efficient, the Fall Pilot would be $.892 / round. We had two games crash midway because of players disconnecting; so our cost for the pilot was slightly higher than expected according to the data we collected.

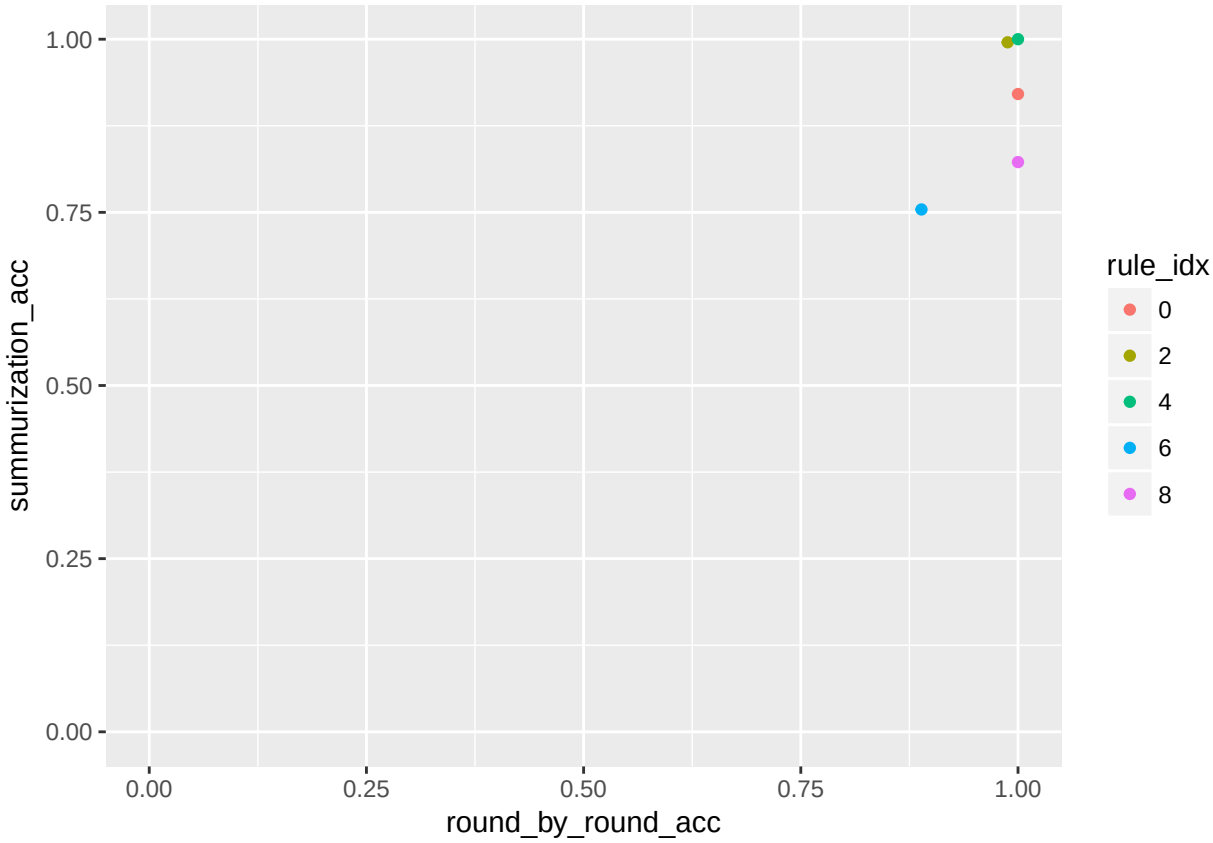
Experiment Details (Critters)

- 81 total possible critters: ~50 training, ~31 test
- 4 axes of variability:
  - Critter Type (Bug, Fish, Bird)
  - Primary Color (Blue, Green, Orange)
  - Secondary Color (Red, Yellow, Purple)
  - Size (Small, Medium, Large)

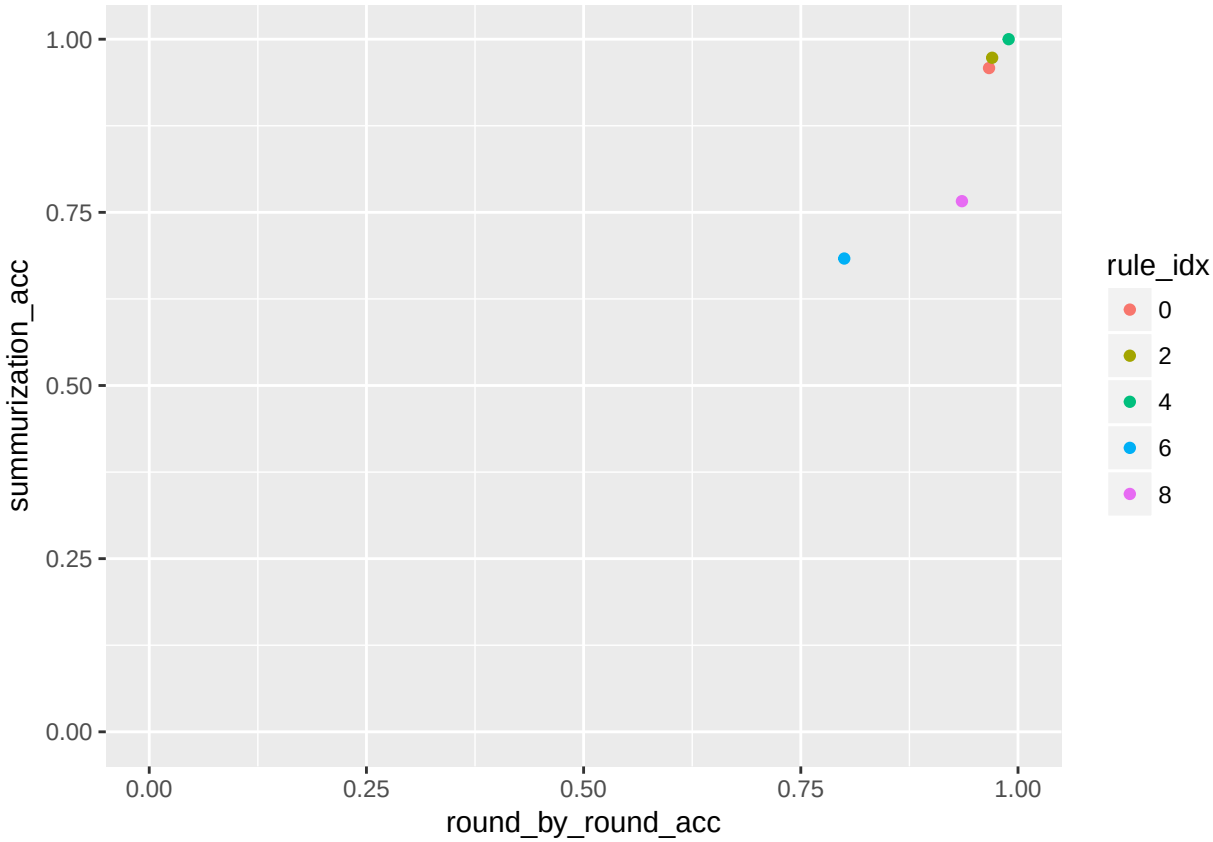
Experiment Details (Concepts)

- Rule Idx 0: Primary Color == Orange ("Orange things")
- Rule Idx 2: Critter Type == Fish && Primary Color == Blue ("Blue fish")
- Rule Idx 4: Primary Color == Orange && Secondary Color == Purple ("Purple and orange things")
- Rule Idx 6: Critter Type == Bug || Secondary Color == Yellow ("Bugs, or yellow things")
- Rule Idx 8: Critter Type == Bird || Primary Color == Green ("Birds, or green things")

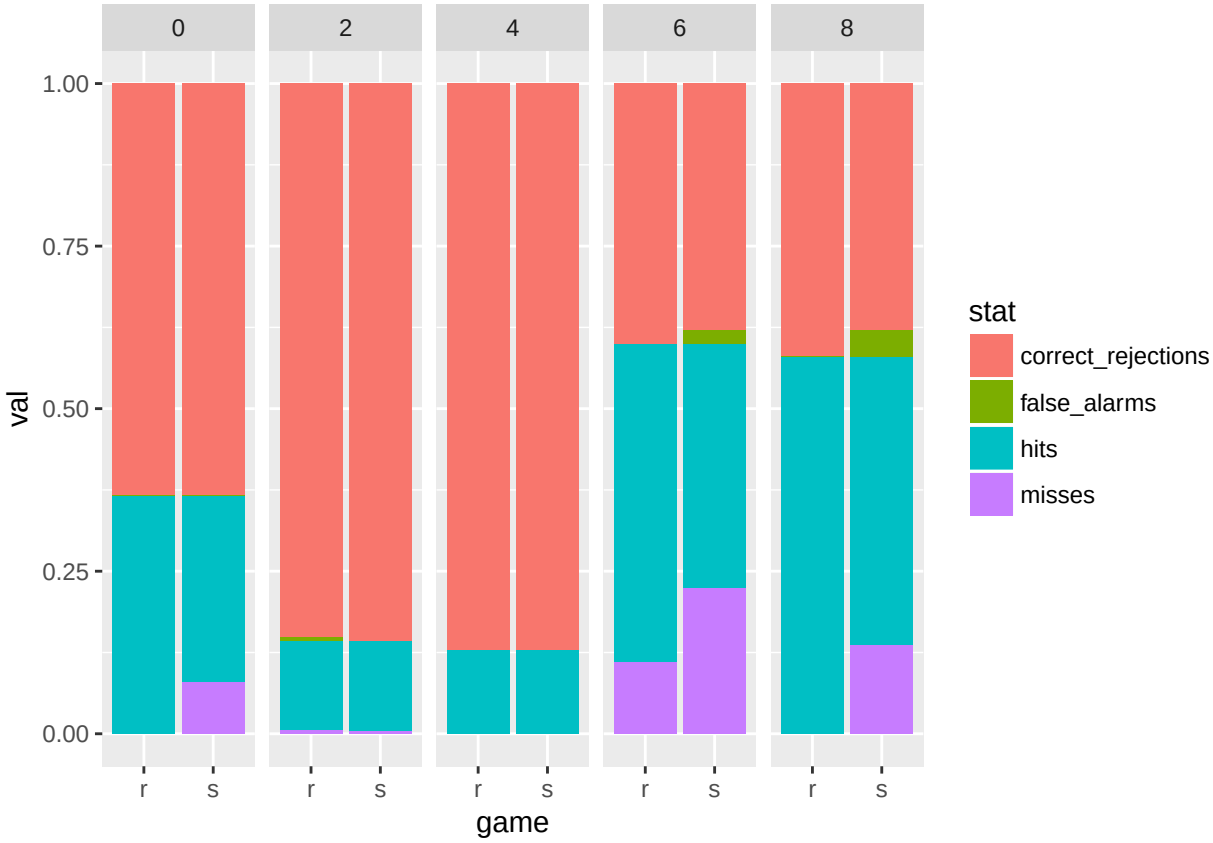
Teacher Performance (Round vs. Summurization Acc.)



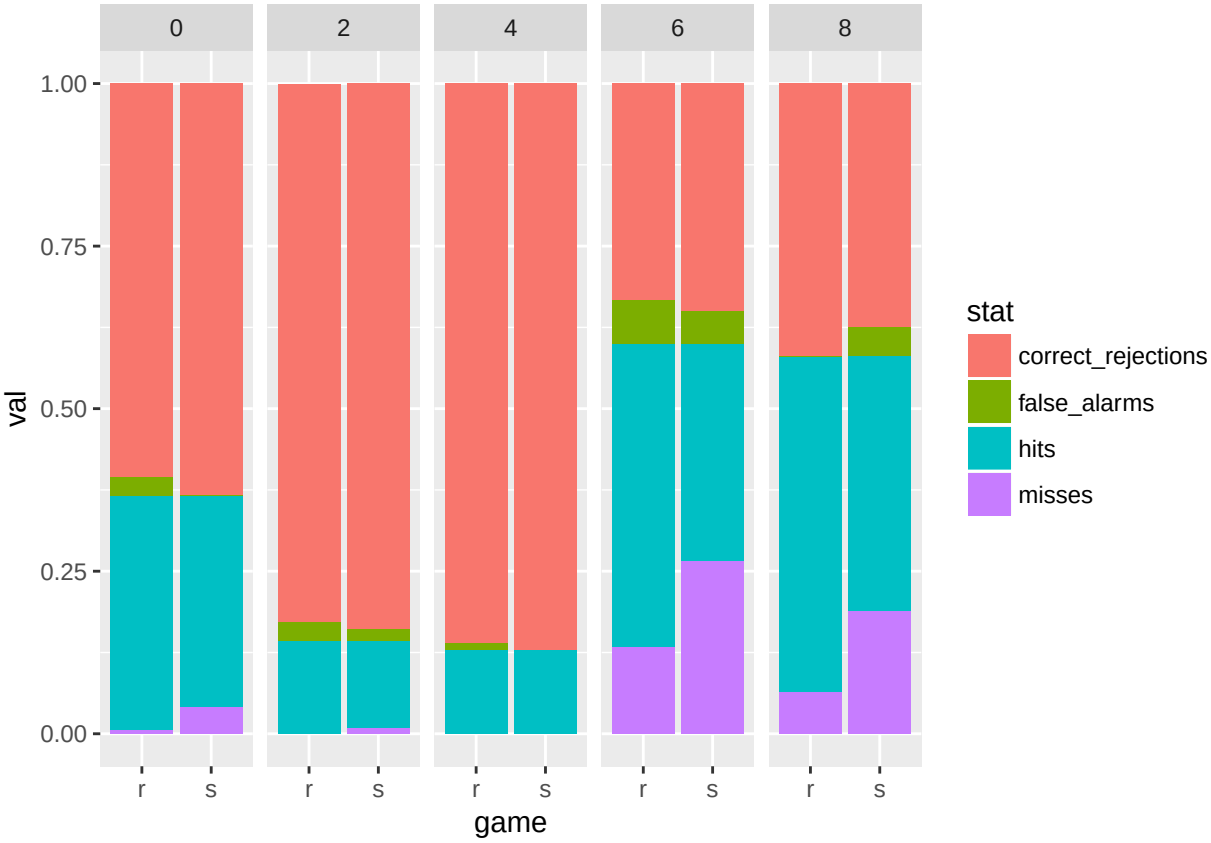
Student Performance (Round vs. Summurization Acc.)



Teacher Performance



Student Performance



Next Steps

- Language Analysis