Rethinking relations: Limitations of pre-training in relational rule learning

Julia J. Conti, Kenneth R. Koedinger, & Paulo F. Carvalho
Carnegie Mellon University

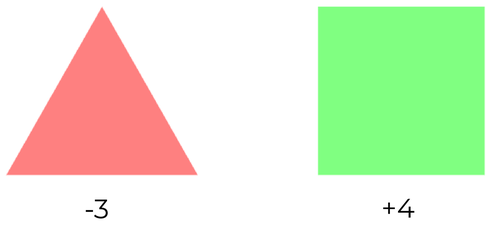
Relational problems are hard

$$3 > -4$$

And they only get harder...

$$-3 + 5 > 3 - 4$$

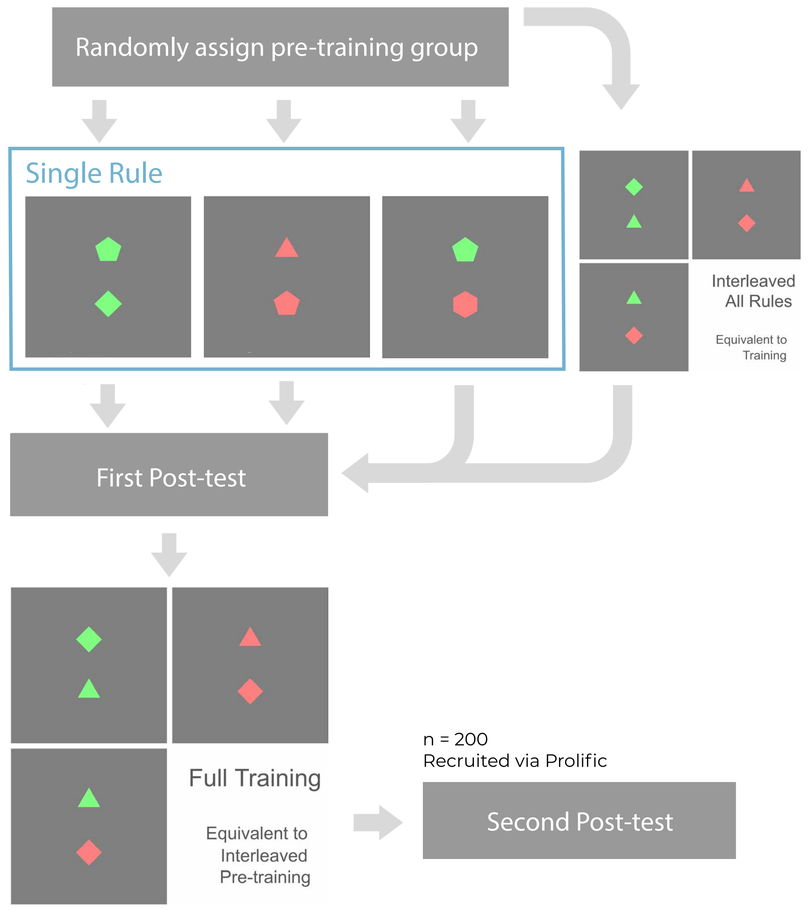
Tackling relational complexity is integral to making real-world inferences and core to early education



In this task, no. of sides represents the integer and color represents the integers' sign

Does introducing these complex problems incrementally help us get the bigger picture?

Participants completed an analog of an inequality task

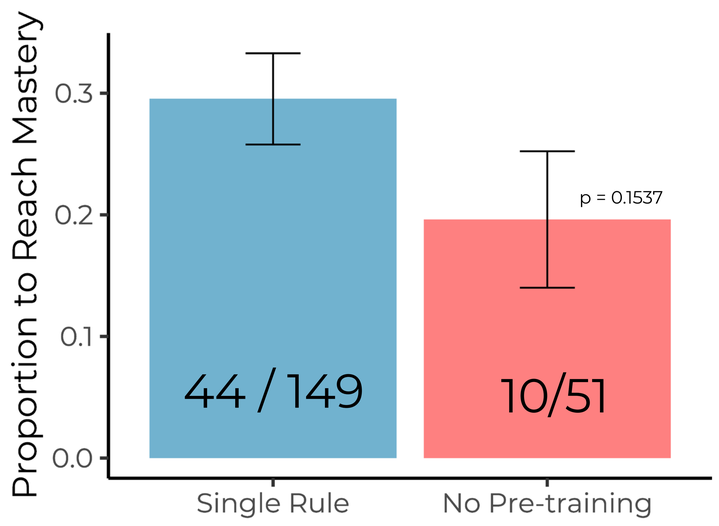


Single rule pre-training leads to early gains, but additional interleaved training is best

We hypothesize:

- Pre-training on single sub-rules for a given task will increase rates of mastery
- Pre-training on single sub-rules will improve post-test performance on all rules compared to no pre-training

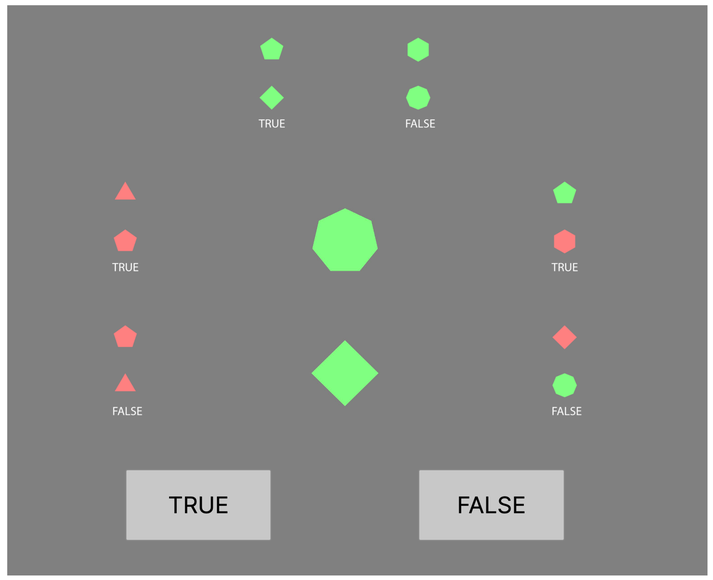
Single rule pre-training leads to similar full task mastery rates compared to no pre-training



Moving forward:

Are additional blocks of single rule pre-training needed?

How do we alleviate memory constraints?



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