Prospectus

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We will do a presentation.

## a. A brief description of your research question(s) and relevant background

Research Question: When given the choice of two individuals from which to seek help (mastery vs outcome), does age influence the decision? Does species type (human or chimpanzee) affect this choice?

It has been established that by age three, children seek help selectively from competent agents (Cluver, 2013; Paulus, 2011; Rowles, 2018). Further research has found that children as young two-years-old will seek help in problem-solving contexts in which they are unfamiliar, but not familiar, with the problem presented. Additionally, two-year-old children are selective in who they seek help from and will seek help more frequently from a knowledgeable over an ignorant helper. This research will determine if as children age, they become more selective and efficient in their help-seeking and social learning ability.

Chimpanzees don’t directly ask for help, and will rarely provide help to others (Yamamoto et al., 2012), but they will tolerate others observing them and learning from them. Chimpanzees become quite behaviorally conservative as they age, and whilst infants will seek help and learn from their mother, willingness to learn from others generally decreases with age (Tomasello et al., 1987; Lamon et al., 2017). This study will determine whether the decision to copy based on mastery or payoff differs in different age groups.

So, we want to see whether age impacts the model selection in these two species and whether there is a significant difference between the species, adding to an established history of chimpanzee-child comparisons (Vale et al., 2017).

## b. Design and structure of your data

Cross-level interaction model with repeated measures

Individuals will be given the option to seek help with a task from either a master model or a preferred outcome model. There will be several iterations of the experiment which provides repeated measures. This will take place in both chimpanzees and children. Data will be structured with columns for the outcome of each repeated measure, then the individual\_ID for that response measure, then their age, and their species

Level 1: Response (repeated measure) Level 2: Individuals

Level 1 predictors: none. Level 2 predictors: age group; species type

Outcome: individual helper selected (Bernoulli) 0 = outcome/payoff; 1 = mastery / rank

## c. A preliminary plan for statistical analysis

1. Power analysis
   1. Expected n of 80 individual children and 50 individual chimpanzees
   2. Simulate extra data
2. ICCs and unconditional model
3. Random Slopes
4. Run the models for a) humans b) chimps c) the combined dataset
   1. Look for the effect of age group on demonstrator chosen
   2. Look for the effect of species type on demonstrator chosen
5. Make a nice graph and table / visualize the data

## d. github

<https://github.com/eloiseandalex/chimphumanhelp>

## e. References

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