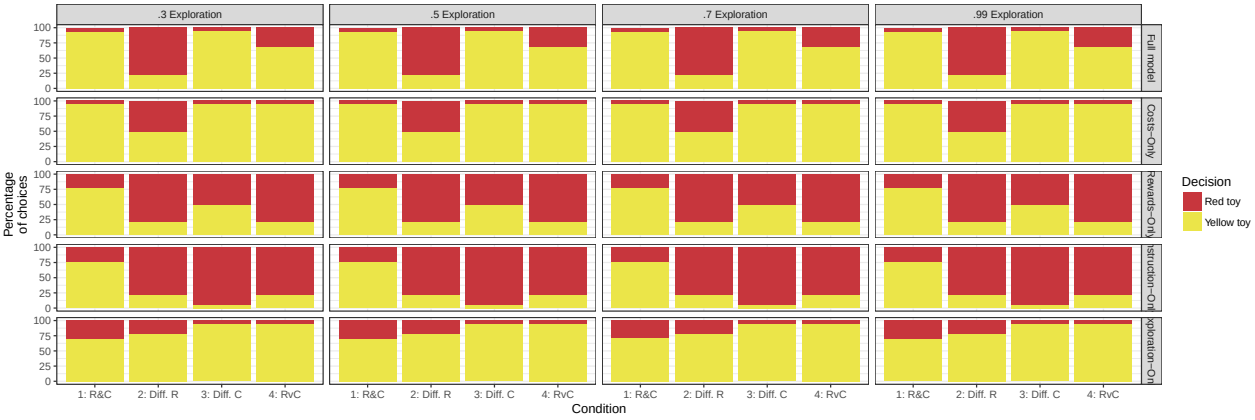
Pedagogy model

Contents

Full model predictions

Model predictions as a function of exploration certainty. Values 0.25, and 0.75 indicate the probability that the learner will explore the untaught toy.

```
## Warning: Column `Model` joining character vector and factor, coercing into
## character vector
```

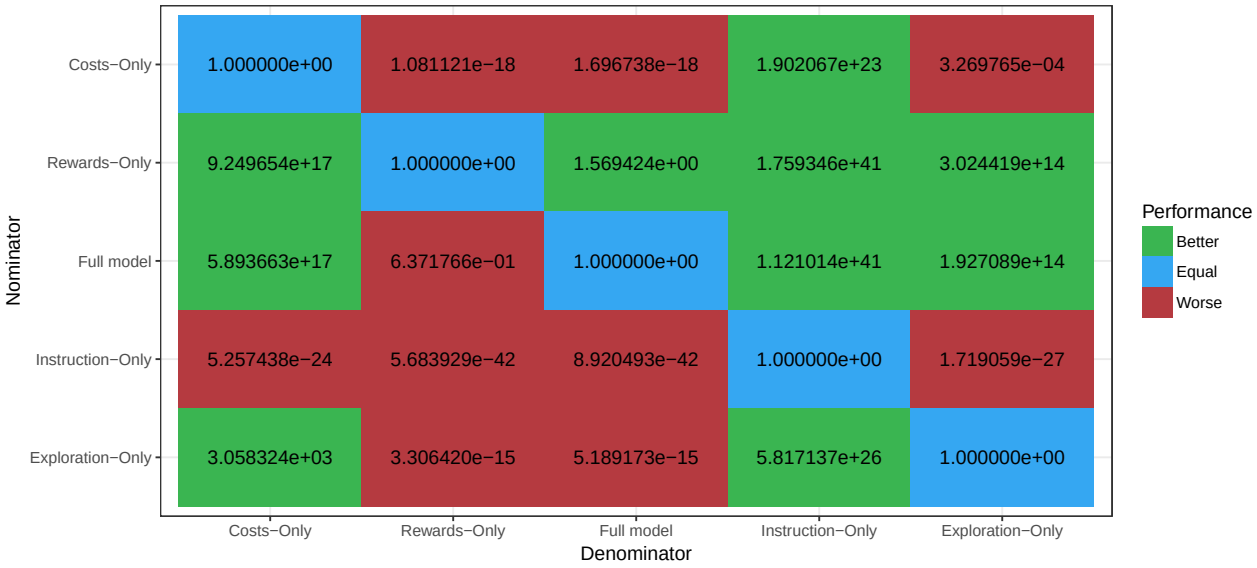


Model fits. Using 50% exploration chance.

In each plot, entry i,j (row i, column j) shows the likelihood of model i generating the empirical data divided by the likelihood of model j generating the empirical data. Thus, values above 1 (green color-coded) indicate that the row model has a higher likelihood of generating the empirical data than the column model. Conversely, values below 1 (red color-coded) indicate that the row model has a lower likelihood of generating the empirical data than the column model. Values equal to 1 (blue color-coded) indicate both models are equally likely to have generated the data. For each section, alpha indicates the probability that participants get distracted and respond at chance.

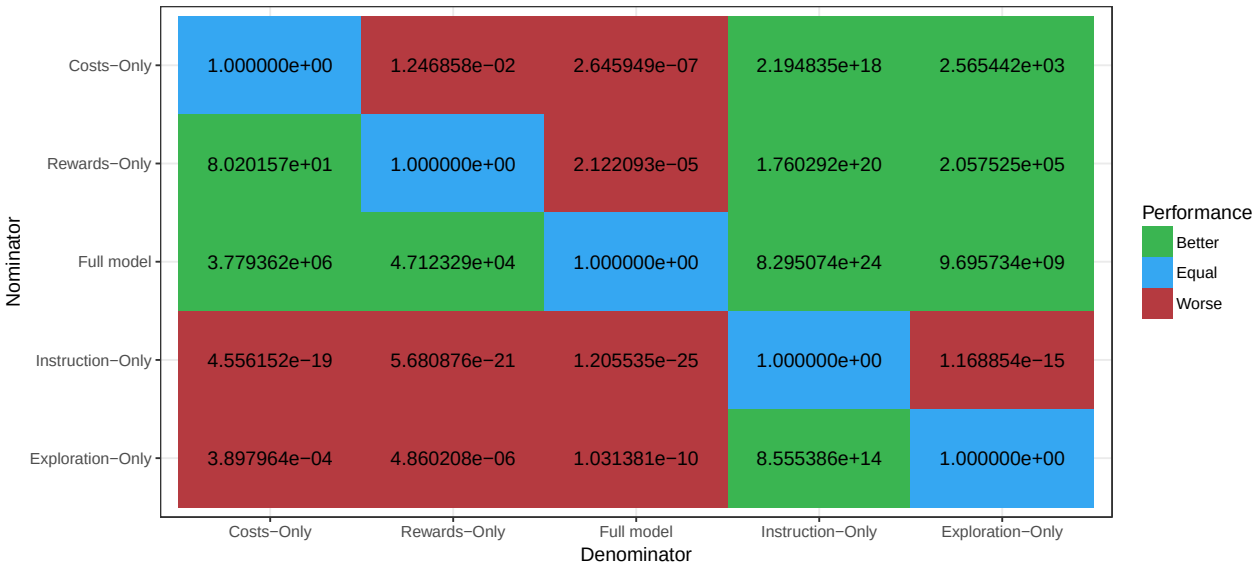
As the plots above show, the full model outperforms all other alternative models for a wide range of noise parameters.

Alpha = 0.01



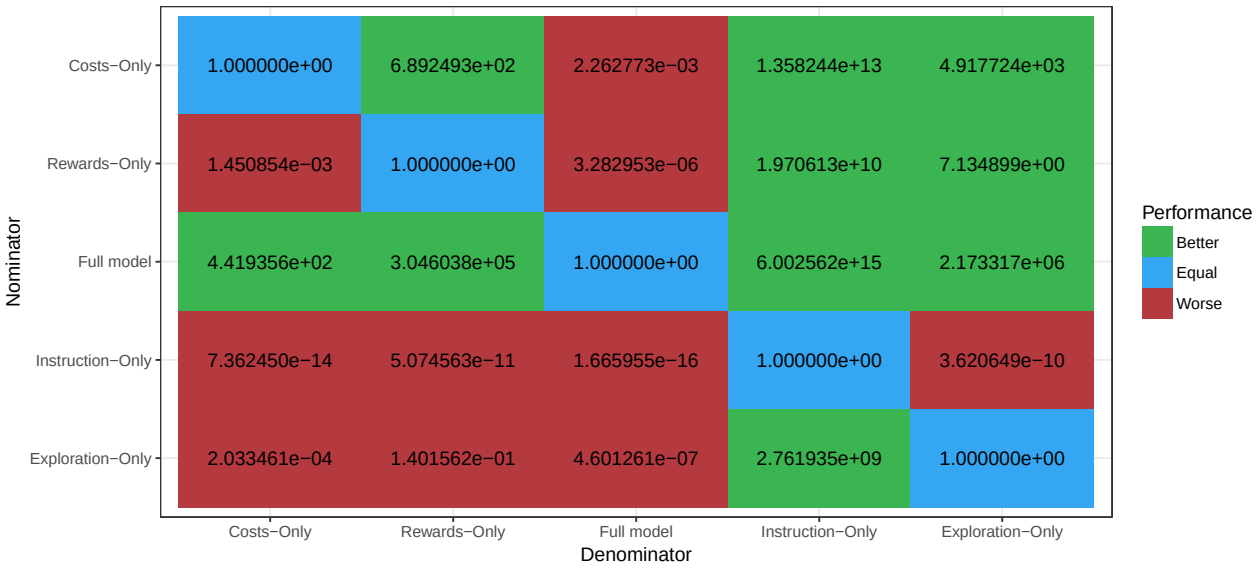
Alpha = 0.05

Alpha = 0.1

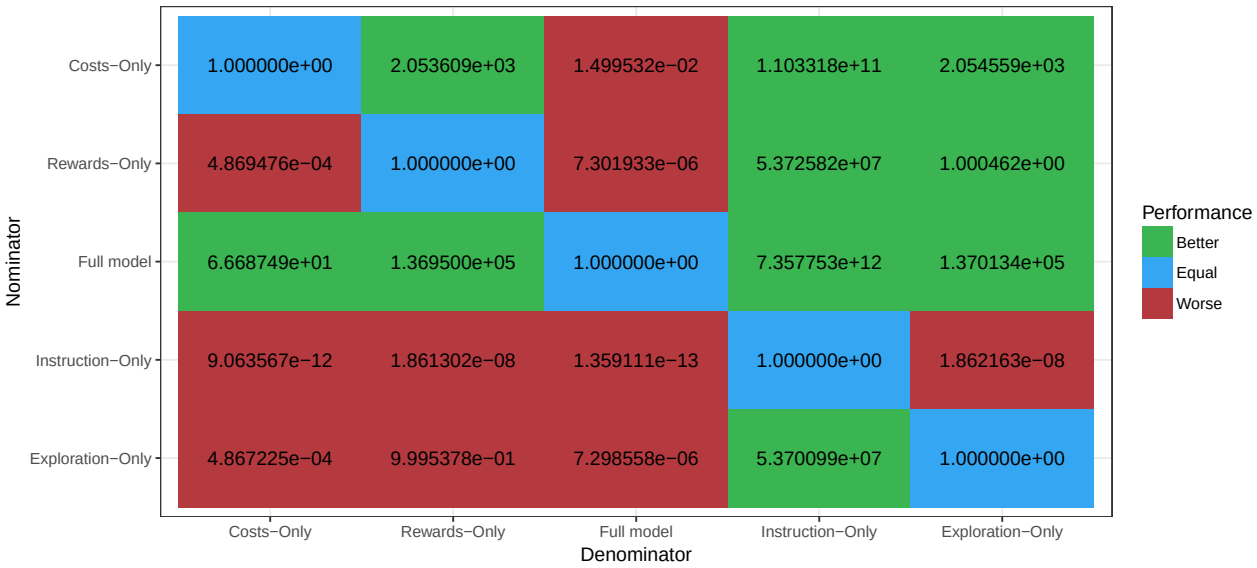


Alpha = 0.2

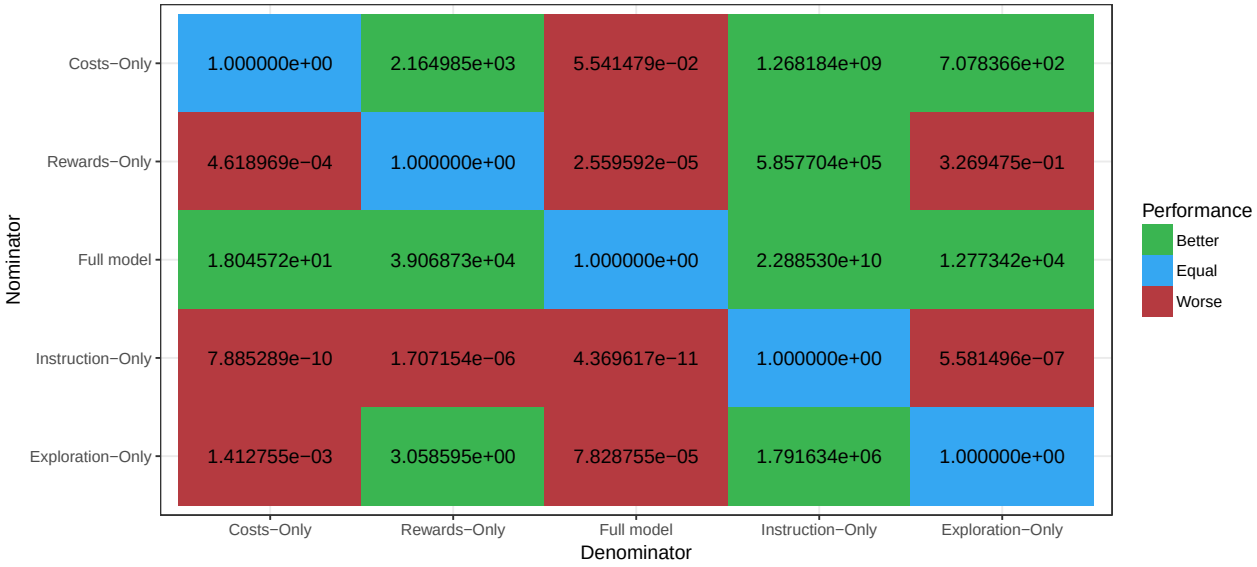
Alpha = 0.3



Alpha = 0.4

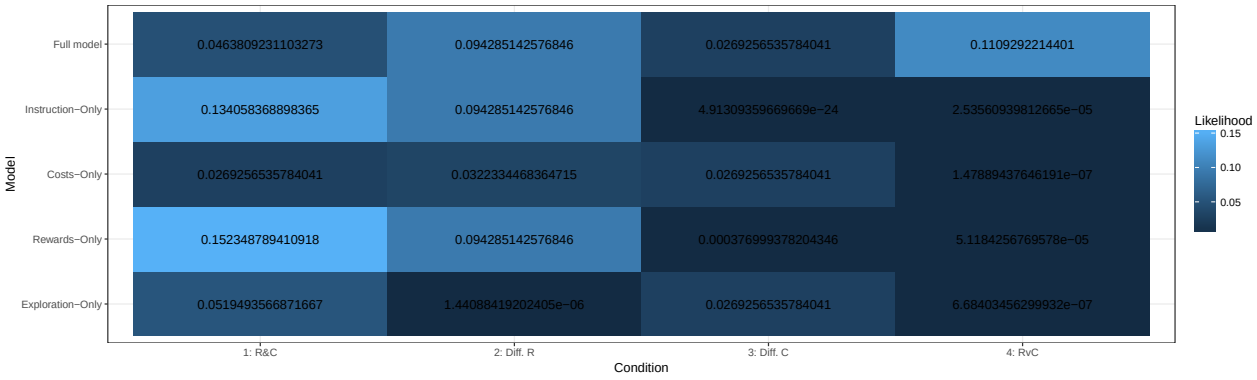


Alpha = 0.5



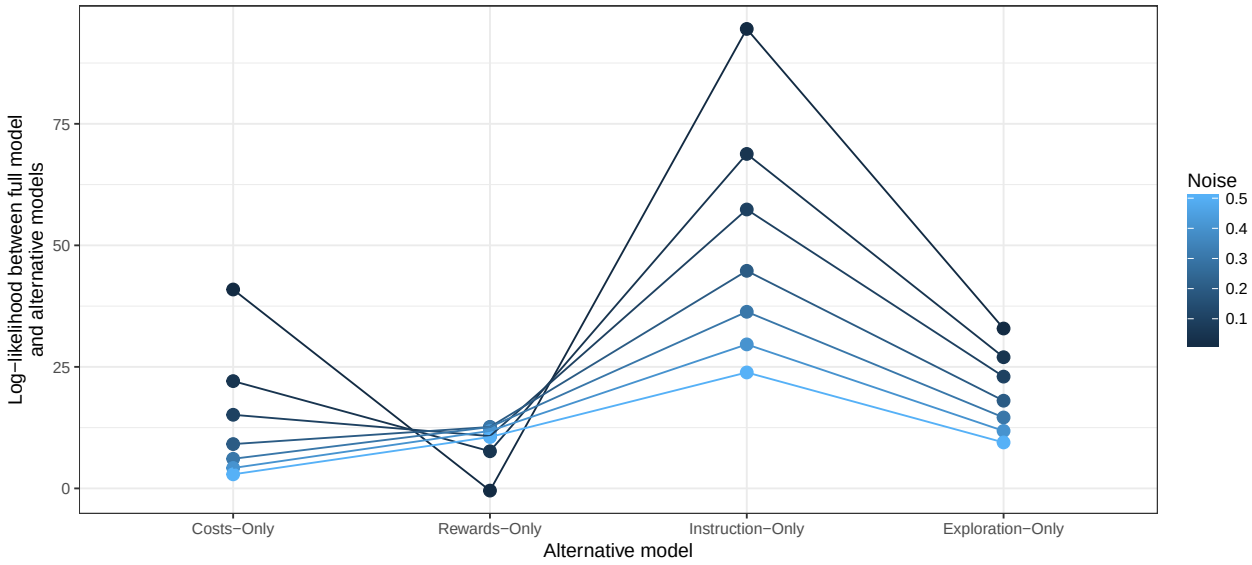
Likelihood per condition

Likelihood of each model generating the data of each individual condition when exploration uncertainty = 0.5 and noise = 0.1



Noise summary

log(L(Data|FullModel)/L(Data|AlternativeModel)) as a function of different noise parameters. All values are above 0 (meaning that the likelihood ratio is greater than 1), showing that the full model explains the data better than all alternative models, independent of the noise parameter.


Log−likelihood between full model and alternative models
75
50
25
0
Costs−Only
Rewards−Only
Instruction−Only
Exploration−Only
Alternative model
Noise
0.5
0.4
0.3
0.2
0.1