Binary Choice Analysis

Robert Hickman

22 February 2018

```
monkey <- "Ulysses"
today <- "23-Feb-2018"
look_back <- NA
```

p1

Monkey Choice Distance From Bundle on Binary Choice Task
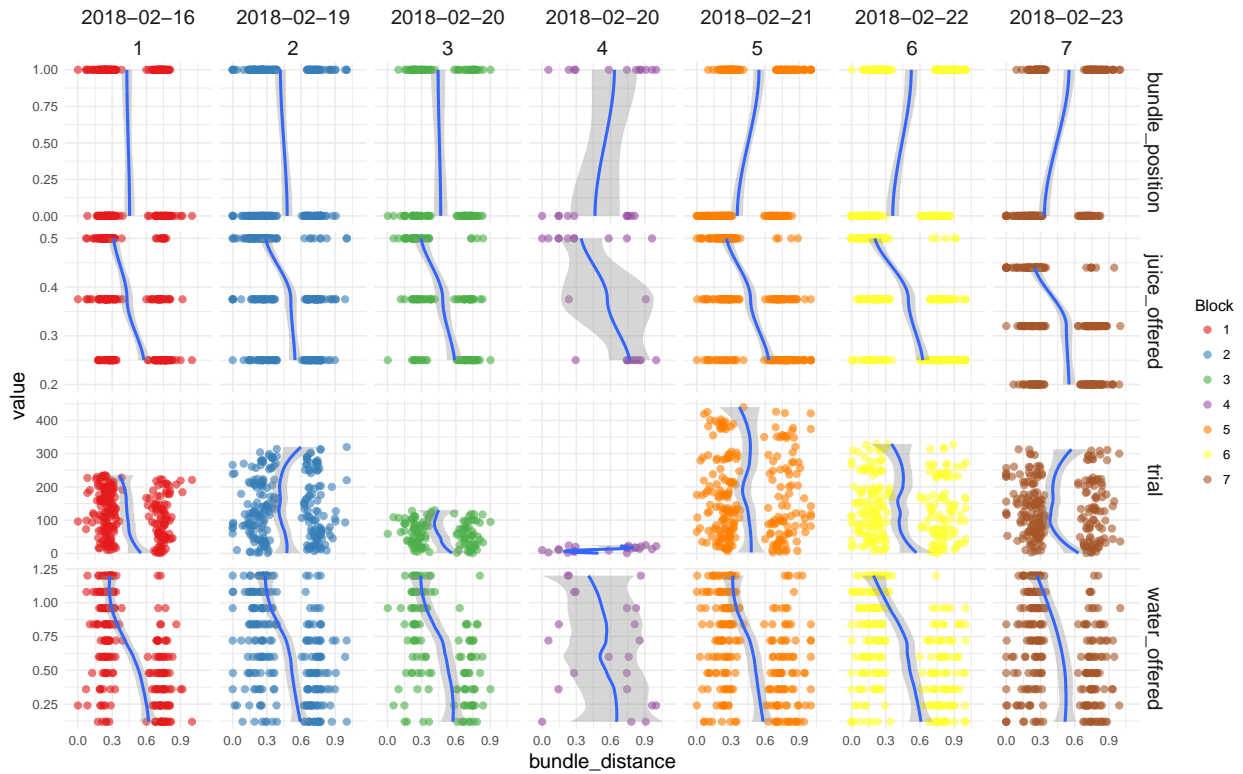Ulysses : NA – 23–Feb–2018
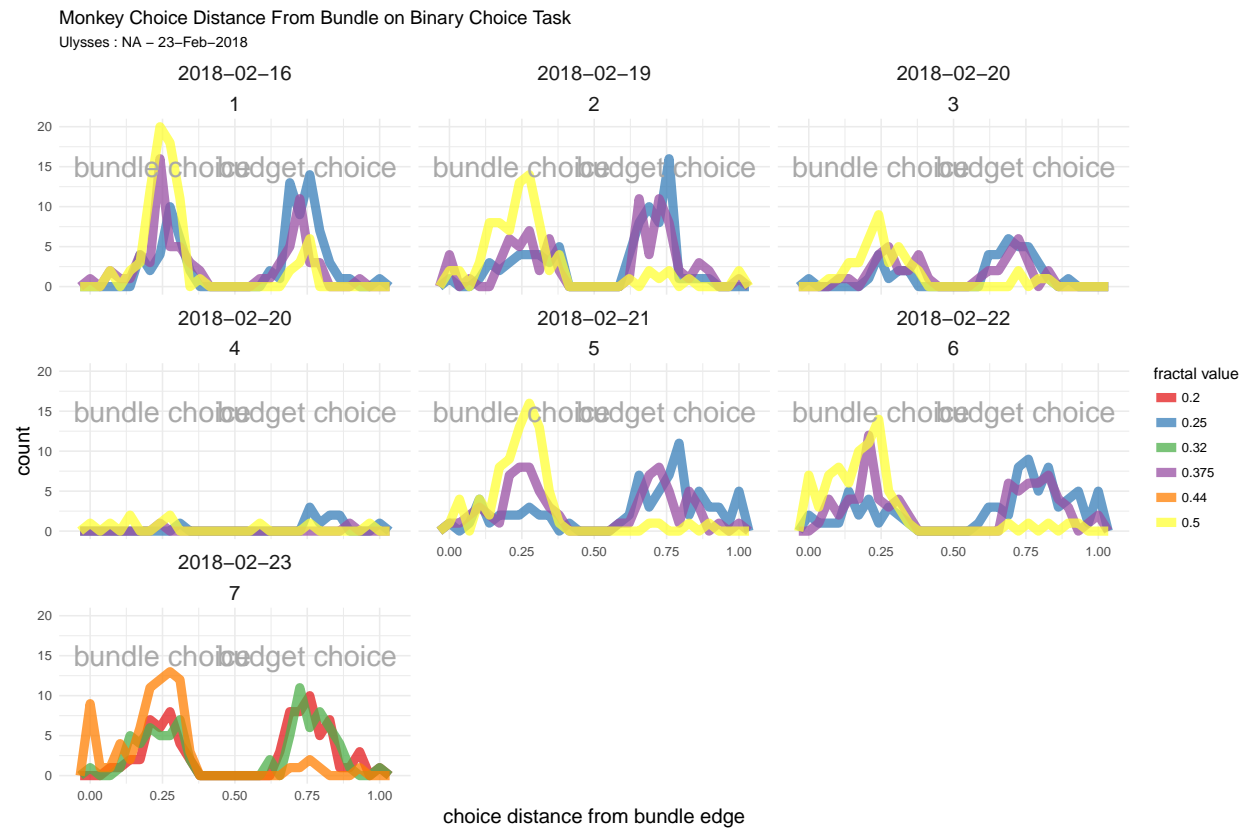
p2

Monkey Choice Distance From Bundle on Binary Choice Task
Ulysses : NA – 23–Feb–2018

```
#generate a model of likelihood to choice for the fractal dependent on it's position,
#value and associated water
model <- glm(data = task_data,
             fractal_choice ~ bundle_position + water_offered + juice_offered + trial + date,
             family = "binomial")

#summarise the parameters
summary(model)
```

```
##
## Call:
## glm(formula = fractal_choice ~ bundle_position + water_offered +
##     juice_offered + trial + date, family = "binomial", data = task_data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -3.4322  -0.5972   0.2023   0.6380   2.8555
##
## Coefficients:
##                   Estimate Std. Error z value Pr(>|z|)
## (Intercept)     -1.084e+03  5.755e+02  -1.884  0.05961 .
## bundle_position -4.819e-01  1.530e-01  -3.149  0.00164 **
## water_offered    4.607e+00  2.887e-01  15.957  < 2e-16 ***
## juice_offered    1.577e+01  9.587e-01  16.453  < 2e-16 ***
## trial            2.686e-03  8.227e-04   3.265  0.00109 **
## date             6.118e-02  3.273e-02   1.869  0.06157 .
## ---
```

2

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 1808.3  on 1330  degrees of freedom
## Residual deviance: 1082.5  on 1325  degrees of freedom
##   (495 observations deleted due to missingness)
## AIC: 1094.5
##
## Number of Fisher Scoring iterations: 5
```

p3

Monkey Choice Failures
Ulysses : NA – 23–Feb–2018

p4

3
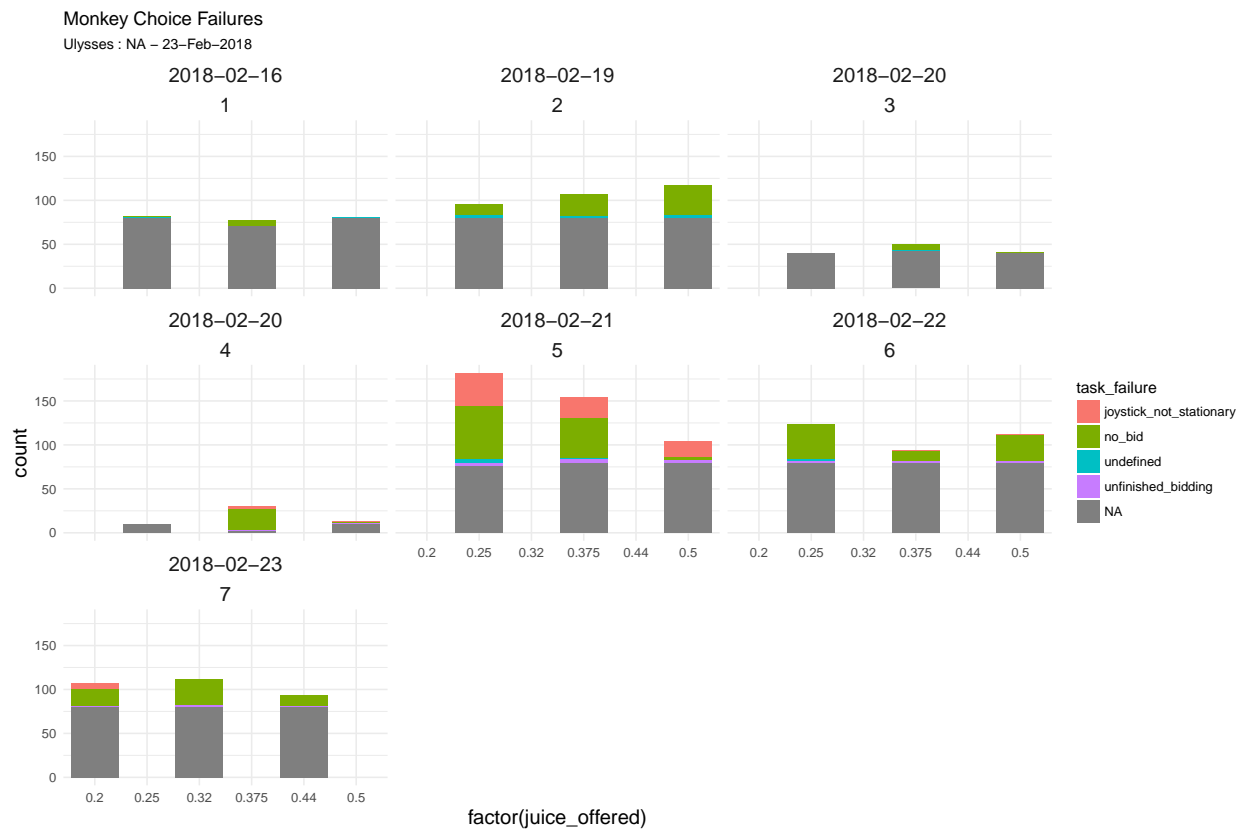
Monkey Bundle Choice Binoimial Curves
Ulysses : NA – 23–Feb–2018

p5

Today's Monkey Bundle Choice Binoimial Curves

Ulysses : 23−Feb−2018