Production Experiment

Number of participants tested:

Posted for 1 extra person because realized one person got disconnected while in the waiting room

```
## [1] 101
```

```
##
## listener  speaker
##      50       51
```

Number of gameids in the server vs mturk data:

TODO: fix this using unique.R

```
## [1] 53
```

```
## [1] 55
```

Exclusions

Remove games with non-native speakers:

```
##   gameID
## 1 7754-6
```

Number of rounds for each game

```
## `summarise()` ungrouping output (override with `.groups` argument)
```

```
##
##  2  3  4 13 14 17 22 28 31 32
##  1  1  1  1  1  1  1  1  1 43
```

Critical trials

```
##
## high_difficulty  low_difficulty
##               8               8
```

Was a color mentioned?

```
##
##   0   1
##  90 668
```

Was a material mentioned?

```
##
##   0   1
## 546 212
```

Was both a color and material mentioned?

```
## 
##   0   1
## 578 180
```

Was an object name mentioned?

```
## 
##   0   1
## 275 483
```

Was a bleached noun used?

```
## 
##   0   1
## 739  19
```

Was an article used?

```
## 
##   0   1
## 227 531
```
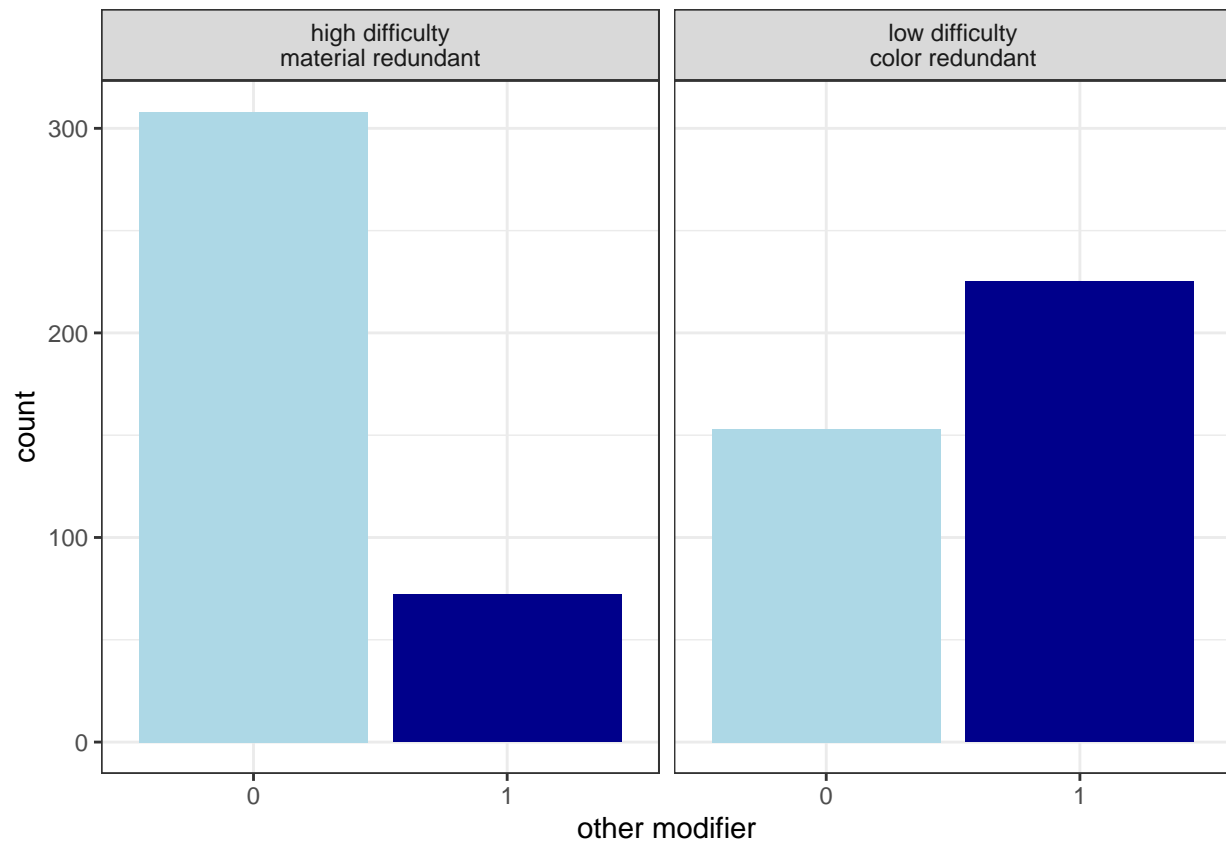
How often were articles omitted

```
## [1] "percentage trials where articles were omitted:  36.2796833773087"
```

How often were nouns omitted

```
## [1] "percentage of trials where nouns were omitted:  29.6833773087071"
```
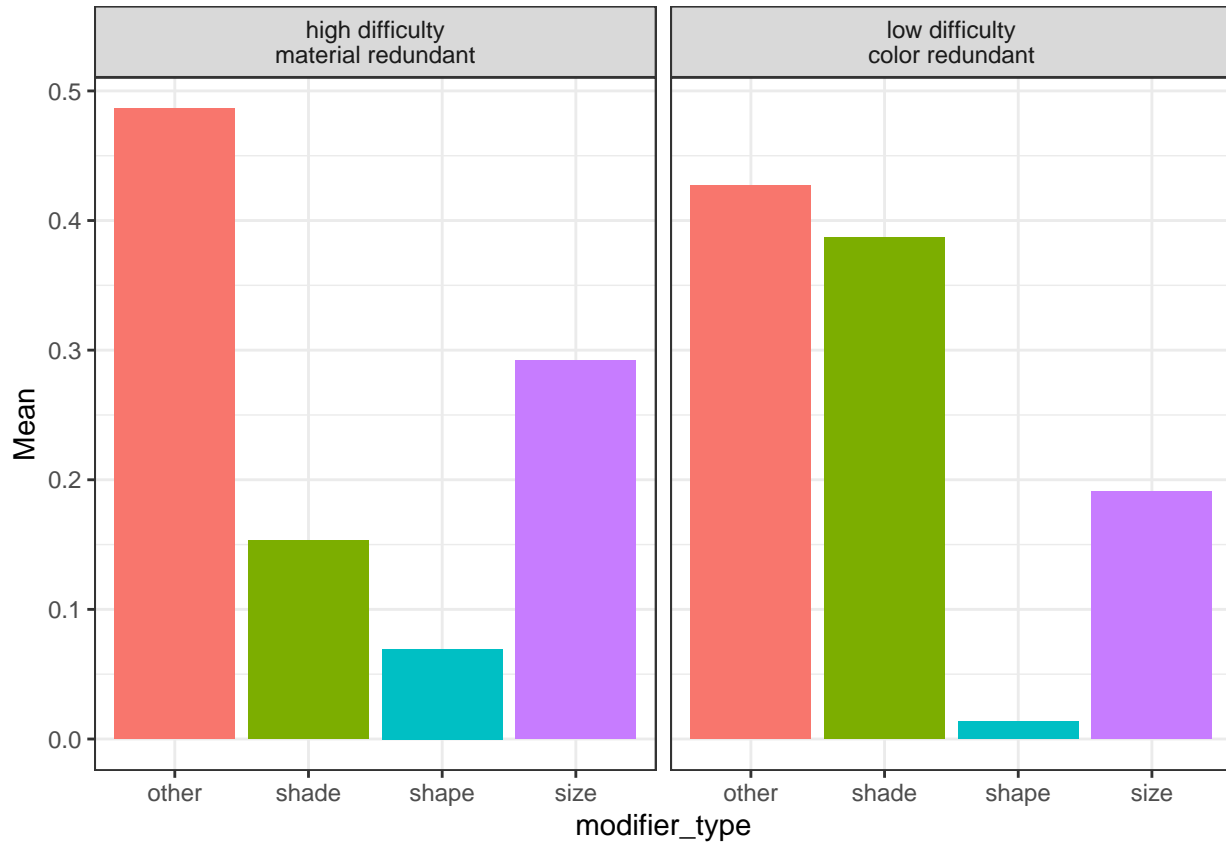
Reading corrected dataset for typos and mention of other modifiers

```
## [1] "percentage of trials where other modifiers were used:  39.1820580474934"
```

Types of modifiers used

```
## `summarise()` regrouping output by 'modifier_type' (override with `.groups` argument)
```


In how many trials did the listener choose the right object?

```
##
##   0   1
##  29 729
```

```
## [1] "percentage of trials where non-target was chosen:  3.82585751978892"
```

```
##
##                   0   1
##   high_difficulty  11 369
##   low_difficulty   18 360
```
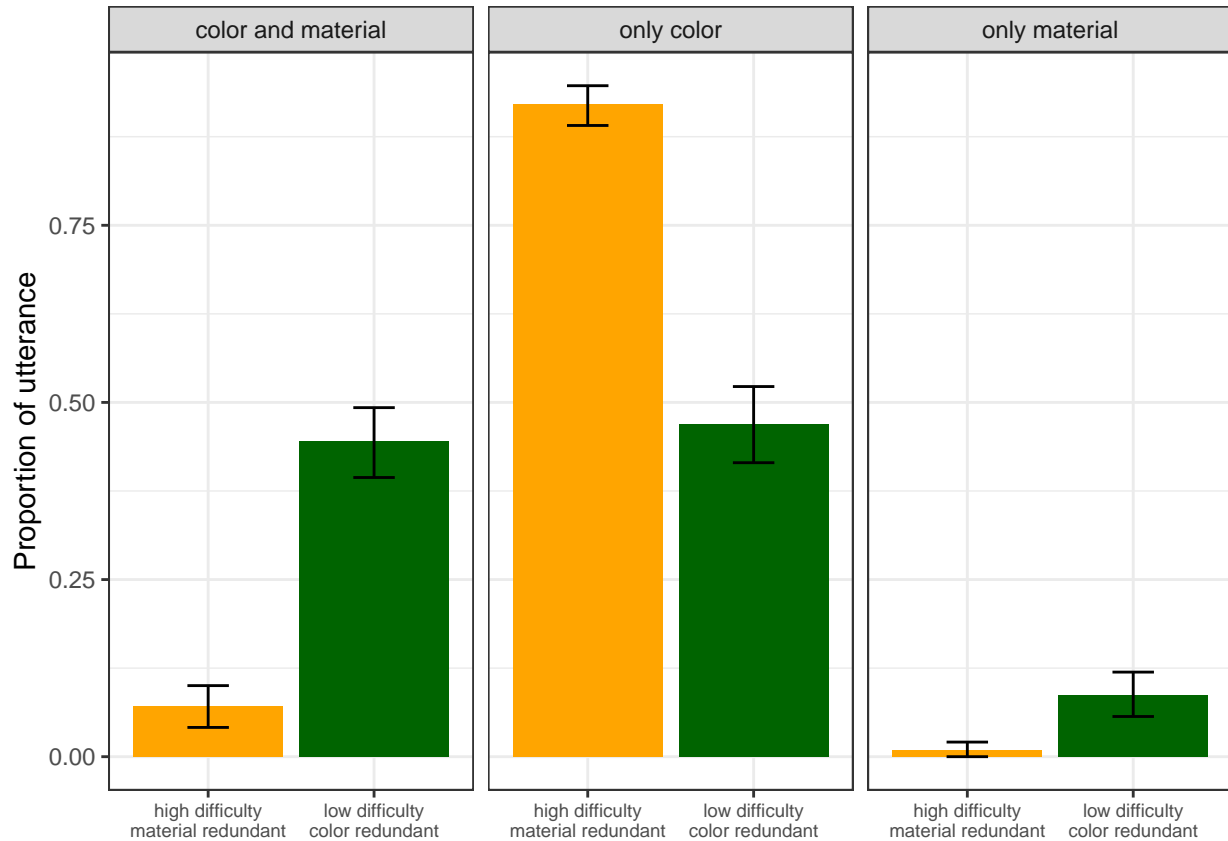
Exclude trials where target wasn't selected

Number of rows:

```
## [1] 729
```

Proportion of utterance by utterance type and trial type

```
## `summarise()` regrouping output by 'RedundantProperty', 'trialType' (override with `.groups` argument
```

Mixed effects logistic regression predicting redundant adjective use from fixed effects of redundant property, with random by-subject and by-item intercepts and slopes for redundant property

```
## Warning in checkConv(attr(opt, "derivs"), opt$par, ctrl = control$checkConv, :
## Model failed to converge with max|grad| = 0.0535335 (tol = 0.002, component 1)

## Warning in checkConv(attr(opt, "derivs"), opt$par, ctrl = control$checkConv, : Model is nearly uniden
##  - Rescale variables?

## Generalized linear mixed model fit by maximum likelihood (Laplace
##   Approximation) [glmerMod]
##  Family: binomial  ( logit )
## Formula: redundant ~ trialType + (1 | gameid) + (1 | clickedobject)
##    Data: targets
##
##      AIC      BIC   logLik deviance df.resid
##    514.8    532.9   -253.4    506.8      670
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -2.8846 -0.3473 -0.1320  0.2195  5.0779
##
## Random effects:
##  Groups        Name        Variance Std.Dev.
##  gameid        (Intercept) 2.536    1.592
##  clickedobject (Intercept) 2.705    1.645
## Number of obs: 674, groups:  gameid, 51; clickedobject, 9
```

```
## 
## Fixed effects:
##                       Estimate Std. Error z value Pr(>|z|)
## (Intercept)          -2.775824   0.001321   -2101   <2e-16 ***
## trialTypelow_difficulty 1.751708   0.001322    1326   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
## 
## Correlation of Fixed Effects:
##            (Intr)
## trlTyplw_df 0.000
## convergence code: 0
## Model failed to converge with max|grad| = 0.0535335 (tol = 0.002, component 1)
## Model is nearly unidentifiable: very large eigenvalue
##  - Rescale variables?
```

Fillers

16 filler trials

4 filler_color: competitor shares the color with the target

4 filler_material: competitor shares the material with the target

4 filler_both: competitor shares both color and material with the target

4 filler_none: competitor doesn't share any feature with the target

```
## [1] 752
```

Was a color mentioned?

```
## 
##   0   1
## 423 329
```

Was a material mentioned?

```
## 
##   0   1
## 633 119
```

Was both a color and material mentioned?

```
## 
##   0   1
## 707  45
```

Was an object name mentioned?

```
## 
##   0   1
## 176 576
```

In how many trials did the listener choose the right object?

```
## 
##   0   1
##  14 738
```

```
## [1] "percentage of trials where non-target was chosen:  1.86170212765957"
```

```
##
##                        0    1
##   high_difficulty  11 369
##   low_difficulty   18 360
```

Exclude filler trials where target wasn't selected

Number of rows:

```
## [1] 738
```

```
## `summarise()` regrouping output by 'clickedObjCondition' (override with `.groups` argument)
```