Experiment 4: summa with time pressure

Before Exclusions

Number of participants tested:

```
## [1] 1200
```

Participants in each condition:

```
##
## all_QUD any_QUD  no_QUD
##     400     400     400
```

Exclusions

Non-unique participants (remove all attempts):

```
## integer(0)
```

Participants whose native language is not english:

```
##    workerid  language
## 1        17        29
## 2        37 Cantonese
## 3        82 Hungarian
## 4        84
## 5       119   swahili
## 6       151   Spanish
## 7       220   Chinese
## 8       245   Spanish
## 9       390      Urdu
## 10      402  Filipino
## 11      420
## 12      430   Spanish
## 13      461   Russian
## 14      494   finnish
## 15      505   spanish
## 16      546
## 17      581   Spanish
## 18      590
## 19      602
## 20      672  Mandarin
## 21      691
## 22      695  romanian
## 23      715
## 24      776   Spansih
## 25      780   tagalog
## 26      793    Polish
## 27      860 bachelors
## 28      870    German
## 29      910
## 30      911
## 31      924   Spanish
```

```
## 32      971
## 33     1086   chinese
## 34     1160
## 35     1180
## 36     1182    Arabic
## 37     1187
```

Participants who got at least three practice trials wrong:

```
##
##  3  4
## 58 35
```

Participants who got the audio check wrong more than one once:

```
##
## 187 601 696 816 953
##   1   1   1   1   1
```

Participants who got the second comprehension question wrong more than twice:

```
## # A tibble: 15 x 2
## # Groups:   workerid [15]
##    workerid     n
##       <int> <int>
##  1       59     3
##  2      185     4
##  3      213     3
##  4      401     4
##  5      432     7
##  6      457     3
##  7      604     3
##  8      659     3
##  9      668     3
## 10      694     5
## 11      714     3
## 12      741     3
## 13      753     3
## 14      755     4
## 15      791     3
```

Participants with accuracy of lower than 85% on non-critical trials with "some","none","all" and numbers below 6:

```
##     workerid gaveRightAnswer  n answerNm  accuracy
## 1         15               1 14       38 36.842105
## 2         19               1 21       39 53.846154
## 3         24               1 38       46 82.608696
## 4         29               1  6       48 12.500000
## 5         31               1 35       46 76.086957
## 6         43               1 24       48 50.000000
## 7         47               1 19       46 41.304348
## 8         51               1 21       43 48.837209
## 9         61               1 26       48 54.166667
## 10        73               1  2       48  4.166667
## 11        77               1 37       48 77.083333
## 12        85               1 28       47 59.574468
## 13        87               1 19       41 46.341463
```

```
## 14        88                1 21       45 46.666667
## 15        91                1 22       48 45.833333
## 16        95                1 37       48 77.083333
## 17       121                1 21       40 52.500000
## 18       128                1 37       45 82.222222
## 19       138                1 14       34 41.176471
## 20       143                1 35       45 77.777778
## 21       152                1 29       46 63.043478
## 22       155                1  2       47  4.255319
## 23       157                1 18       41 43.902439
## 24       160                1 17       41 41.463415
## 25       161                1 18       41 43.902439
## 26       162                1 25       45 55.555556
## 27       188                1 22       48 45.833333
## 28       197                1 13       24 54.166667
## 29       214                1 26       47 55.319149
## 30       215                1 29       42 69.047619
## 31       233                1 27       48 56.250000
## 32       235                1 20       48 41.666667
## 33       236                1 21       44 47.727273
## 34       238                1 26       41 63.414634
## 35       247                1 24       48 50.000000
## 36       254                1 20       40 50.000000
## 37       258                1 29       48 60.416667
## 38       259                1 27       45 60.000000
## 39       263                1 40       48 83.333333
## 40       276                1  6       20 30.000000
## 41       282                1 25       47 53.191489
## 42       288                1 21       47 44.680851
## 43       293                1 20       46 43.478261
## 44       295                1 26       45 57.777778
## 45       296                1 27       48 56.250000
## 46       302                1 25       43 58.139535
## 47       303                1 21       39 53.846154
## 48       305                1 36       48 75.000000
## 49       306                1 23       43 53.488372
## 50       311                1 17       36 47.222222
## 51       316                1 23       42 54.761905
## 52       320                1 25       42 59.523810
## 53       322                1 23       46 50.000000
## 54       323                1 24       36 66.666667
## 55       325                1 24       48 50.000000
## 56       326                1 26       43 60.465116
## 57       329                1 26       48 54.166667
## 58       331                1 11       20 55.000000
## 59       342                1 17       40 42.500000
## 60       344                1 16       36 44.444444
## 61       351                1 20       44 45.454545
## 62       352                1 23       38 60.526316
## 63       357                1 22       47 46.808511
## 64       358                1 38       48 79.166667
## 65       361                1 24       43 55.813953
## 66       365                1 26       47 55.319149
## 67       366                1 19       38 50.000000
```

```
## 68       369              1 26       46 56.521739
## 69       370              1 20       48 41.666667
## 70       373              1 24       47 51.063830
## 71       378              1 27       45 60.000000
## 72       382              1  2       48  4.166667
## 73       385              1 21       41 51.219512
## 74       386              1 15       40 37.500000
## 75       392              1 37       45 82.222222
## 76       406              1 34       45 75.555556
## 77       410              1 18       46 39.130435
## 78       411              1 26       43 60.465116
## 79       415              1 25       46 54.347826
## 80       416              1 19       45 42.222222
## 81       425              1 19       41 46.341463
## 82       426              1 24       46 52.173913
## 83       439              1 26       45 57.777778
## 84       444              1 21       48 43.750000
## 85       471              1 34       45 75.555556
## 86       473              1 34       43 79.069767
## 87       482              1 17       46 36.956522
## 88       488              1 19       45 42.222222
## 89       501              1  1       47  2.127660
## 90       504              1 30       46 65.217391
## 91       506              1 24       44 54.545455
## 92       521              1 24       48 50.000000
## 93       523              1 20       40 50.000000
## 94       531              1 17       41 41.463415
## 95       533              1  9       14 64.285714
## 96       544              1 38       47 80.851064
## 97       547              1 39       47 82.978723
## 98       552              1 20       47 42.553191
## 99       555              1 17       38 44.736842
## 100      560              1  6       15 40.000000
## 101      564              1  2       46  4.347826
## 102      572              1 17       41 41.463415
## 103      584              1 23       44 52.272727
## 104      586              1 20       35 57.142857
## 105      588              1 20       42 47.619048
## 106      616              1 23       47 48.936170
## 107      618              1 10       44 22.727273
## 108      629              1 36       48 75.000000
## 109      631              1  4       48  8.333333
## 110      636              1 38       48 79.166667
## 111      644              1 15       37 40.540541
## 112      650              1 23       41 56.097561
## 113      657              1 23       39 58.974359
## 114      661              1 24       40 60.000000
## 115      663              1 28       46 60.869565
## 116      667              1 19       38 50.000000
## 117      669              1 23       45 51.111111
## 118      675              1 12       26 46.153846
## 119      682              1 27       46 58.695652
## 120      692              1 30       46 65.217391
## 121      704              1  5       47 10.638298
```

```
## 122      706              1  3       46  6.521739
## 123      716              1 22       46 47.826087
## 124      722              1 15       44 34.090909
## 125      723              1 23       47 48.936170
## 126      724              1  4       48  8.333333
## 127      726              1 25       48 52.083333
## 128      733              1 19       39 48.717949
## 129      737              1 27       45 60.000000
## 130      742              1 17       45 37.777778
## 131      748              1 21       42 50.000000
## 132      756              1 28       48 58.333333
## 133      764              1 19       44 43.181818
## 134      767              1 21       37 56.756757
## 135      770              1  7       48 14.583333
## 136      772              1 23       47 48.936170
## 137      773              1 19       41 46.341463
## 138      774              1 17       47 36.170213
## 139      781              1 22       33 66.666667
## 140      790              1 22       45 48.888889
## 141      796              1 19       46 41.304348
## 142      805              1 21       44 47.727273
## 143      808              1 19       48 39.583333
## 144      815              1 23       46 50.000000
## 145      822              1  2        6 33.333333
## 146      824              1 23       40 57.500000
## 147      825              1 39       47 82.978723
## 148      829              1 19       42 45.238095
## 149      832              1 22       48 45.833333
## 150      836              1 36       45 80.000000
## 151      842              1 17       42 40.476190
## 152      843              1 24       43 55.813953
## 153      846              1 22       41 53.658537
## 154      848              1 25       44 56.818182
## 155      850              1 20       36 55.555556
## 156      853              1 34       41 82.926829
## 157      857              1  7       17 41.176471
## 158      858              1 23       45 51.111111
## 159      865              1 24       44 54.545455
## 160      869              1  2        4 50.000000
## 161      878              1 33       40 82.500000
## 162      880              1 22       44 50.000000
## 163      888              1 26       42 61.904762
## 164      889              1 25       46 54.347826
## 165      902              1 23       39 58.974359
## 166      903              1 18       43 41.860465
## 167      907              1 34       45 75.555556
## 168      914              1 24       45 53.333333
## 169      920              1 32       42 76.190476
## 170      941              1 20       47 42.553191
## 171      943              1 15       28 53.571429
## 172      949              1 27       47 57.446809
## 173      956              1 22       44 50.000000
## 174      964              1 17       40 42.500000
## 175      966              1 26       47 55.319149
```

```
## 176      981              1 39       47 82.978723
## 177      983              1 19       41 46.341463
## 178     1006              1 25       40 62.500000
## 179     1010              1 17       43 39.534884
## 180     1013              1 33       46 71.739130
## 181     1015              1 39       46 84.782609
## 182     1019              1 18       47 38.297872
## 183     1040              1 21       43 48.837209
## 184     1071              1 23       44 52.272727
## 185     1075              1 23       35 65.714286
## 186     1085              1 18       39 46.153846
## 187     1097              1 22       41 53.658537
## 188     1099              1 20       38 52.631579
## 189     1101              1 16       38 42.105263
## 190     1112              1 36       44 81.818182
## 191     1113              1 30       47 63.829787
## 192     1116              1 22       41 53.658537
## 193     1130              1 23       43 53.488372
## 194     1131              1 18       41 43.902439
## 195     1139              1 40       48 83.333333
## 196     1156              1 24       46 52.173913
## 197     1172              1 37       46 80.434783
## 198     1175              1 23       38 60.526316
## 199     1176              1 16       46 34.782609
## 200     1181              1 16       42 38.095238
```

Additional Exclusions

Participants who gave more than 5 very slow (logRT>20) responses:

```
## # A tibble: 0 x 3
## # Groups:   workerid [0]
## # ... with 3 variables: workerid <int>, slowResponse <lgl>, n <int>
```

Responses that are faster than the onset of the quantifier (rawRT<600):

```
## [1] 411
```

Responses that are very slow (logRT>20):

```
## [1] 47
```

After Exclusions

Number of participants:

```
## [1] 850
```

Participants left in each condition:

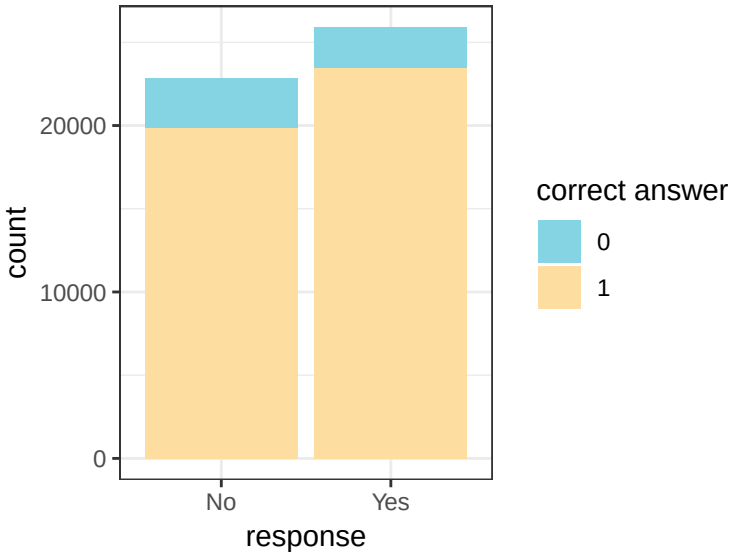
```
##
## all_QUD any_QUD  no_QUD
##     281     256     313
```

General

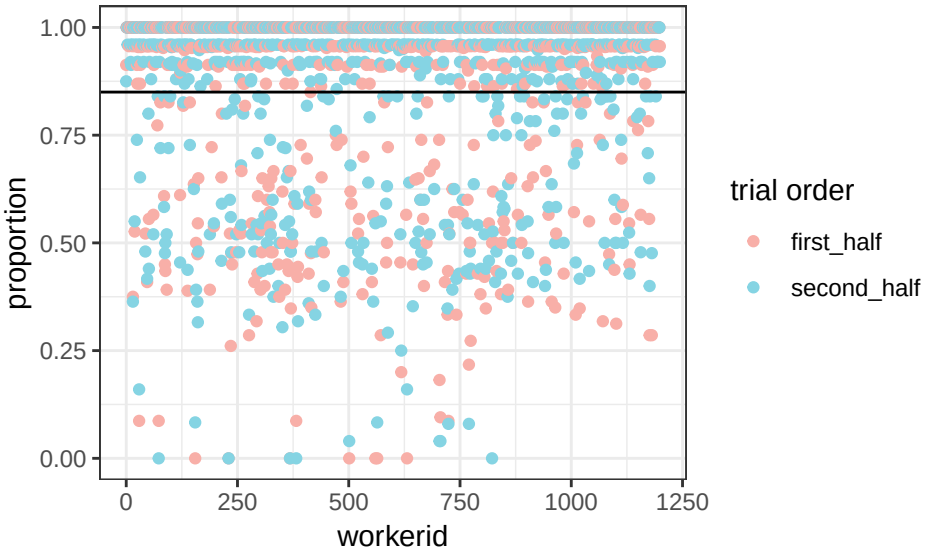
Expected number of yes and no answers:

```
##
##    No   Yes
## 22299 26447
```

Accuracy

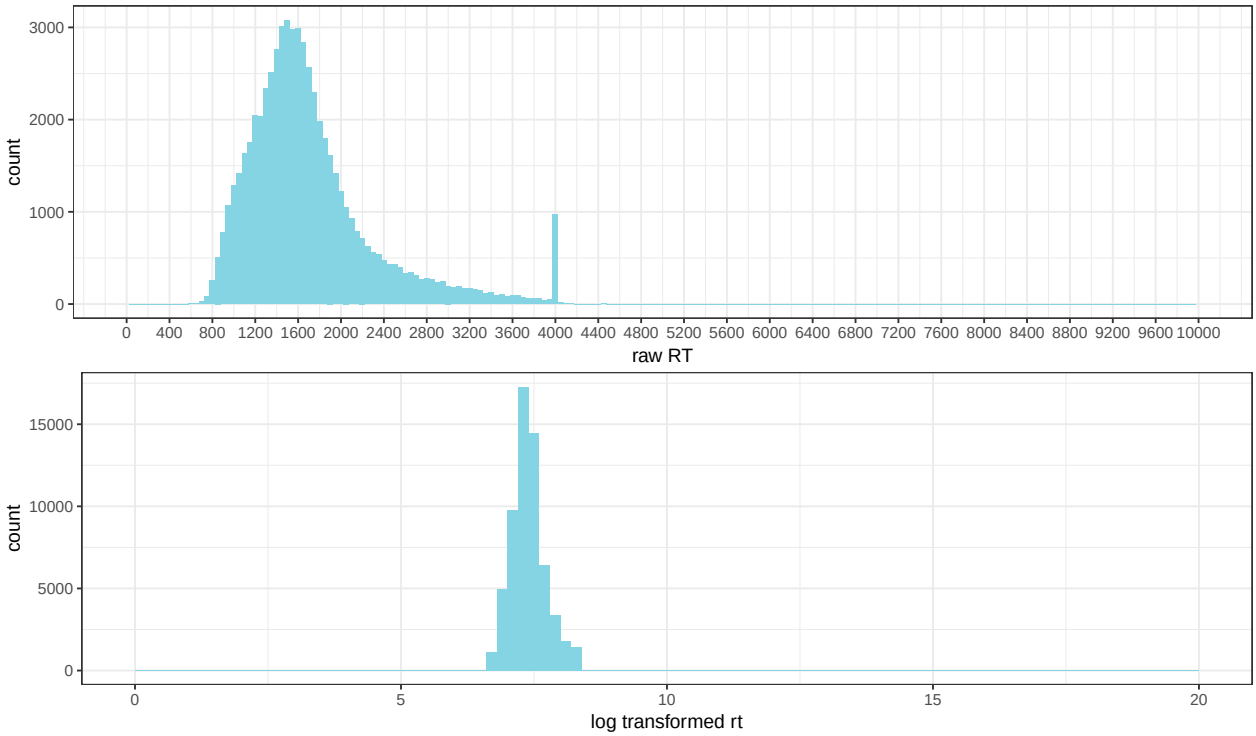


Accuracy and trial order



Distribution of RT and logRT

```
## Warning: Removed 2 rows containing missing values (geom_bar).
```



15 fastest responses (raw RT)

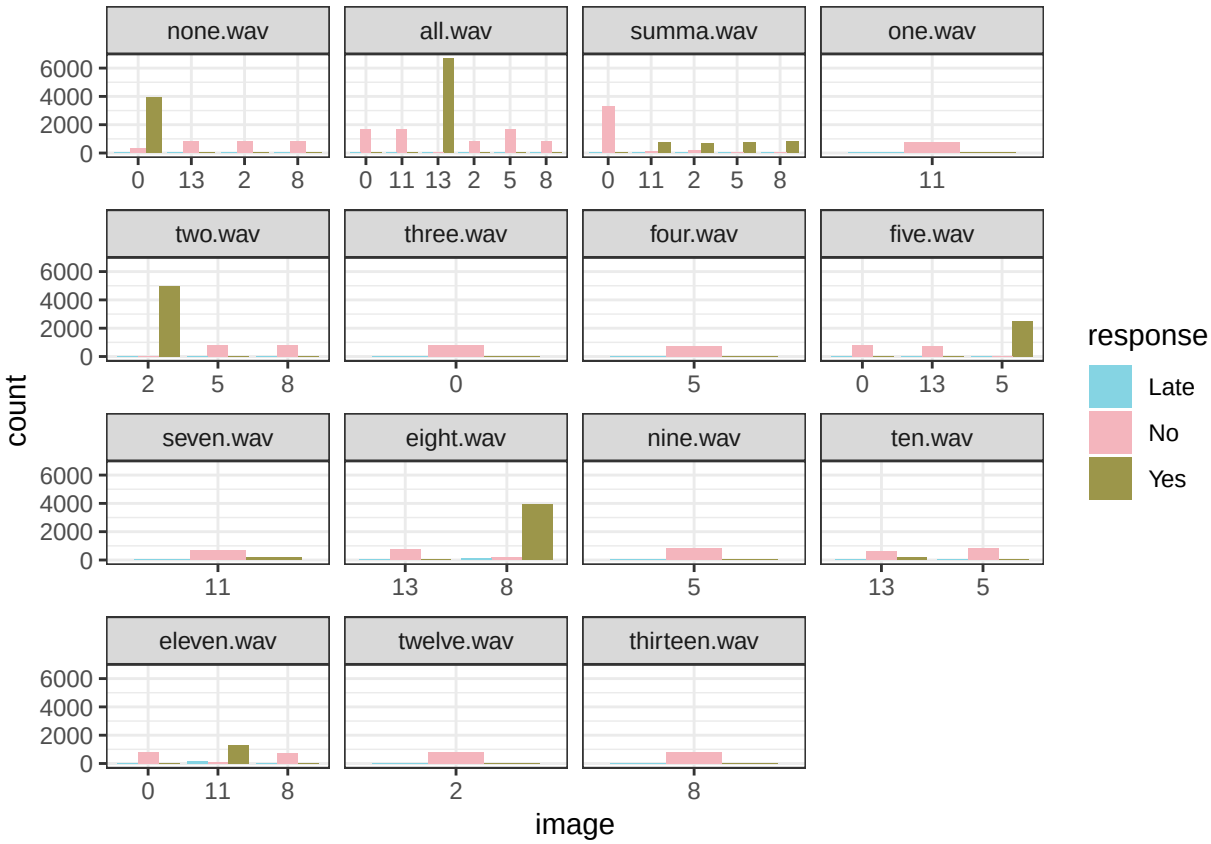
```
##  [1] 603 605 622 624 645 679 687 688 693 695 699 700 700 700 700
```

15 slowest responses (raw RT)

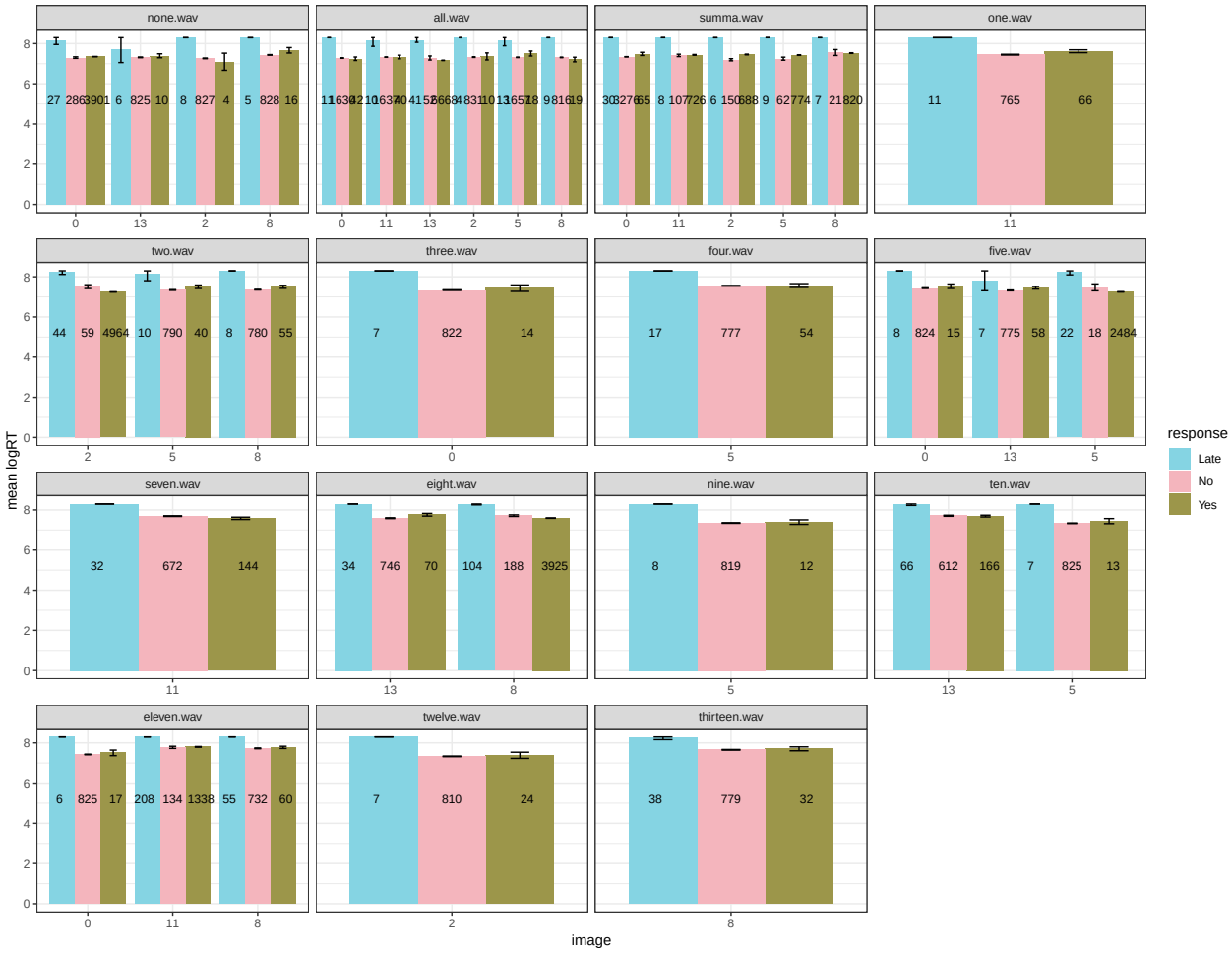
```
##  [1] 4029 4031 4031 4031 4032 4034 4042 4045 4047 4054 4064 4077 4137 4152
## [15] 4447
```

Non-critical Trials

Response type:



Response time:



Critical Trials

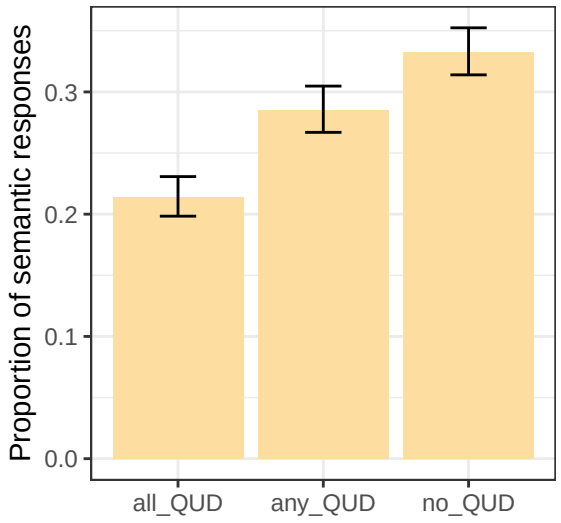
Total number of critical trials (8 per participant):

```
## [1] 6740
```

Total number of critical trials with late responses removed:

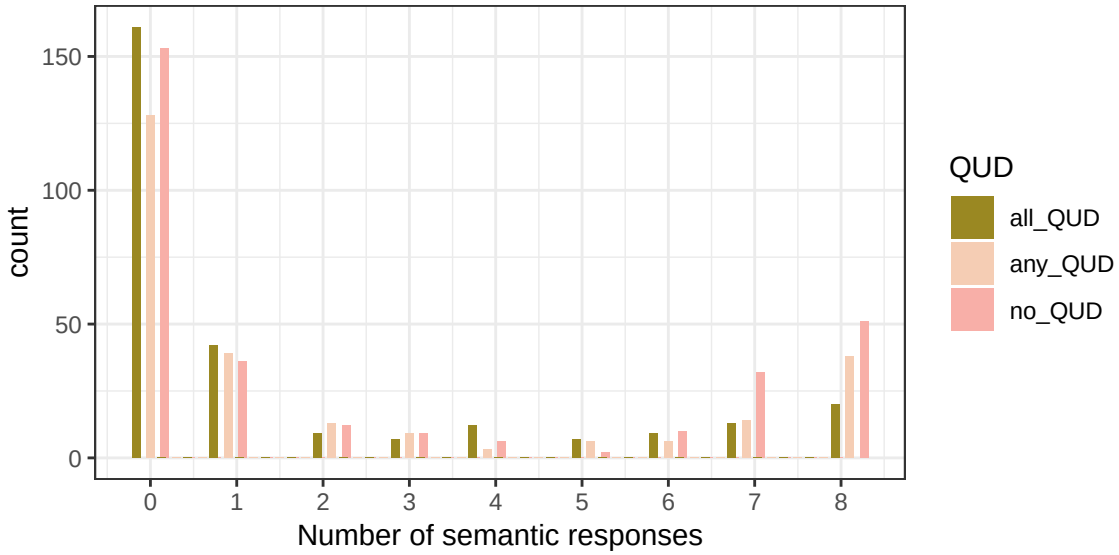
```
## [1] 6644
```

Response Type

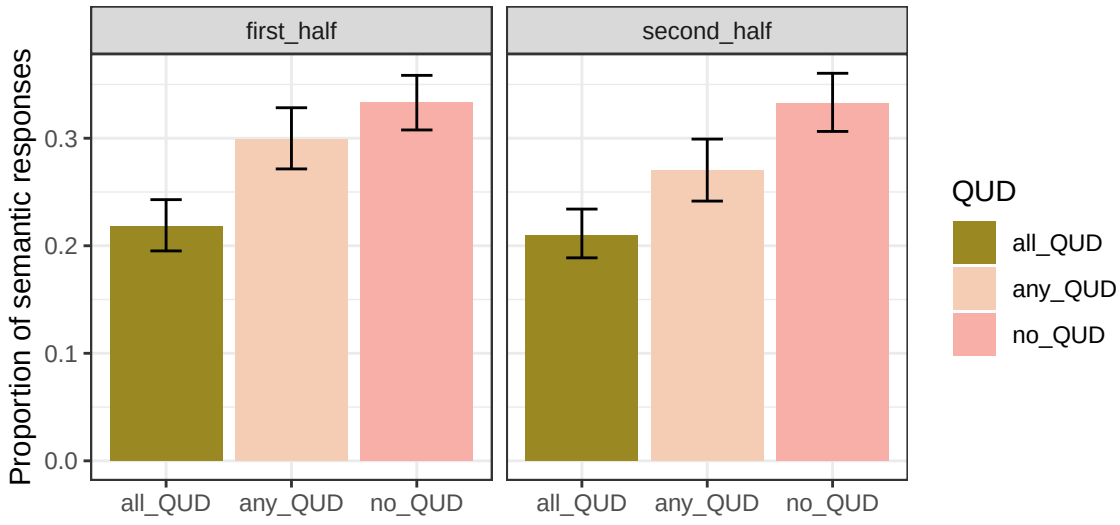


Distribution of participants over number of semantic responses

```
##
##              0   1   2   3   4   5   6   7   8
##   all_QUD  161  42   9   7  12   7   9  13  20
##   any_QUD  128  39  13   9   3   6   6  14  38
##   no_QUD   153  36  12   9   6   2  10  32  51
```



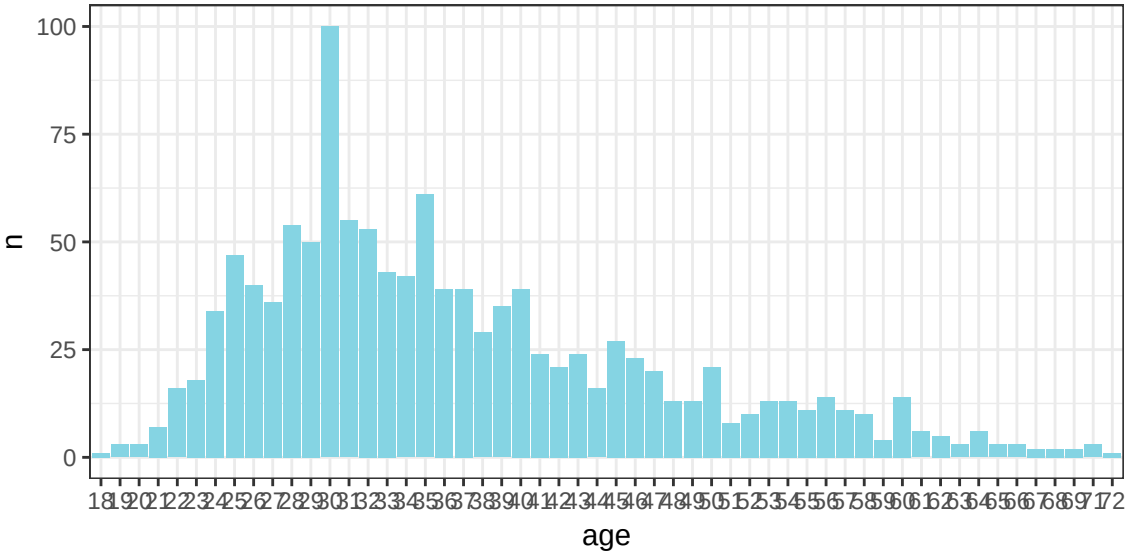
Response type and trial order



Age distribution of participants

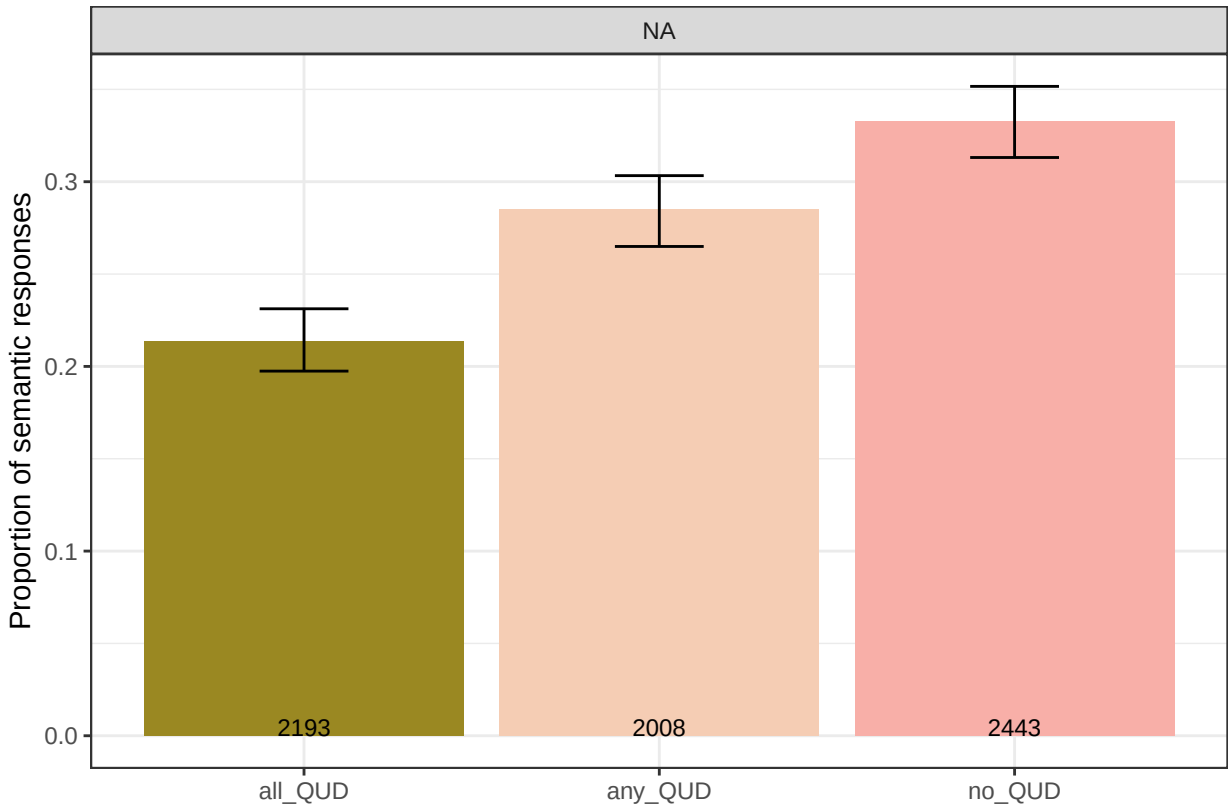
```
## Warning: Factor `age` contains implicit NA, consider using
## `forcats::fct_explicit_na`

## Warning: Factor `age` contains implicit NA, consider using
## `forcats::fct_explicit_na`
```



Response type and age

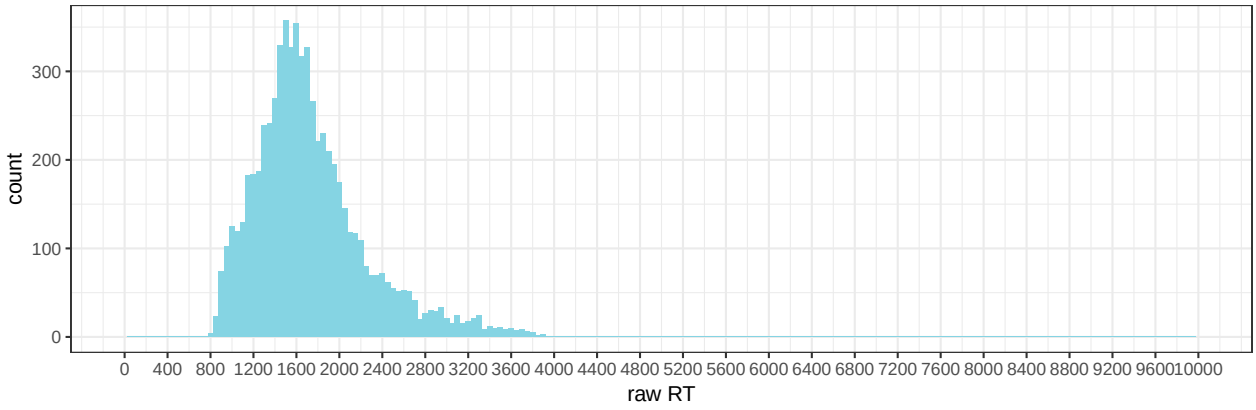
```
## Warning in Ops.factor(age, 25): '<=' not meaningful for factors
```



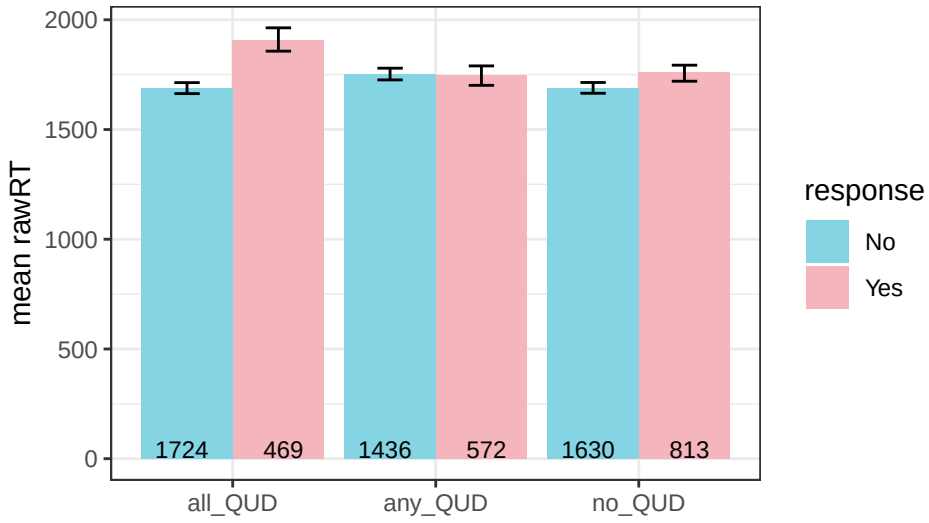
Response Time

Distribution of response times in critical trials

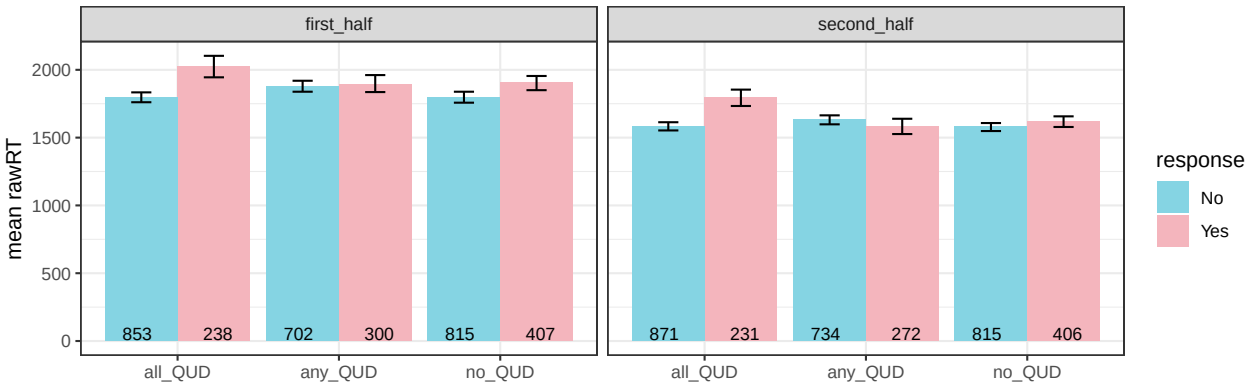
```
## Warning: Removed 2 rows containing missing values (geom_bar).
```



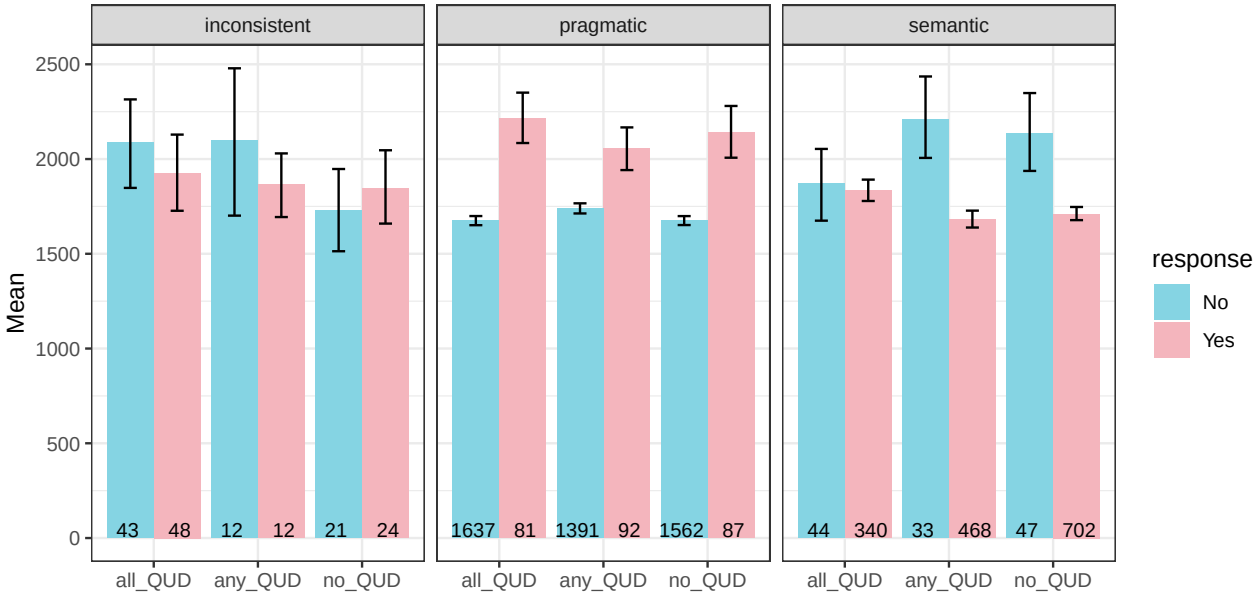
Response time and QUD



Response time, trial order and QUD

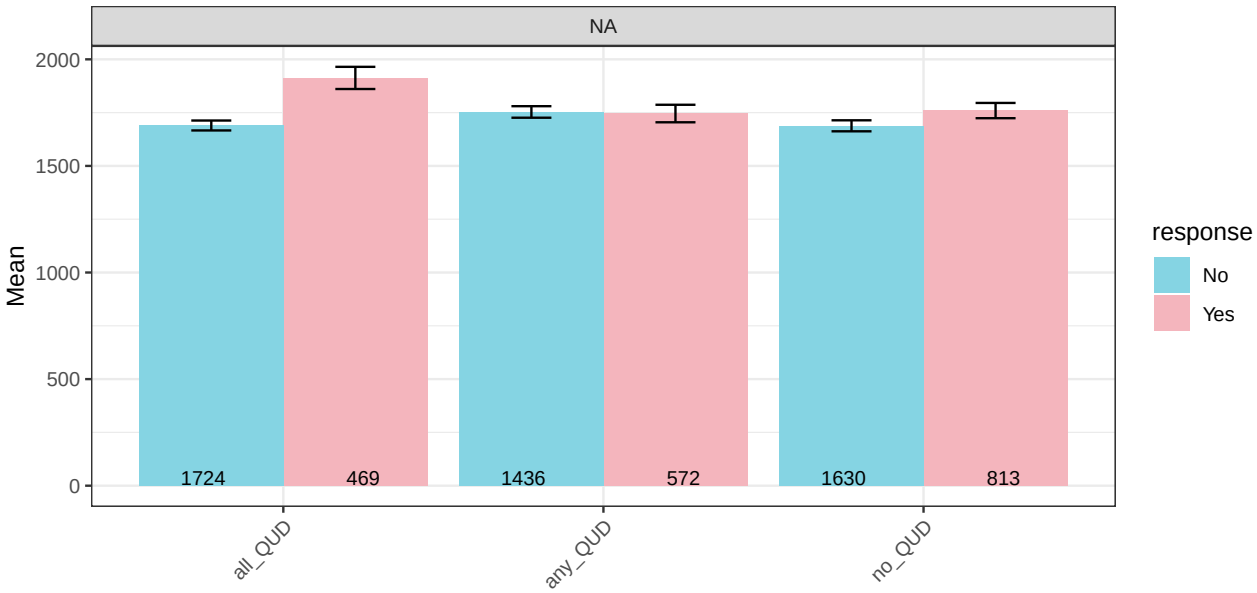


Response time, responder type and QUD



Response time, age and QUD

```
## Warning in Ops.factor(age, 25): '<=' not meaningful for factors
```



Response time, age, responder type and QUD

```
## Warning in Ops.factor(age, 25): '<=' not meaningful for factors
```