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:

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

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

```
## # A tibble: 21 x 2
## # Groups:   workerid [21]
##    workerid     n
##       <int> <int>
##  1       59     3
##  2      185     4
##  3      213     3
##  4      401     4
##  5      432     7
##  6      457     3
##  7      465     3
##  8      493     3
##  9      567     4
## 10      604     3
## # ... with 11 more rows
```

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 15       41 36.585366
## 2         19               1 23       43 53.488372
## 3         24               1 41       50 82.000000
## 4         29               1  9       52 17.307692
## 5         31               1 37       50 74.000000
## 6         43               1 25       52 48.076923
## 7         47               1 19       49 38.775510
## 8         51               1 23       47 48.936170
## 9         61               1 30       52 57.692308
## 10        69               1  4       49  8.163265
## 11        72               1 22       49 44.897959
## 12        73               1  2       52  3.846154
## 13        77               1 38       52 73.076923
## 14        85               1 32       51 62.745098
## 15        87               1 23       45 51.111111
## 16        88               1 24       49 48.979592
## 17        91               1 26       52 50.000000
## 18        95               1 39       52 75.000000
## 19       110               1  7       51 13.725490
## 20       118               1 43       52 82.692308
## 21       121               1 22       43 51.162791
## 22       128               1 40       48 83.333333
## 23       133               1 21       49 42.857143
## 24       138               1 18       38 47.368421
```

```
## 25       141              1  1       52  1.923077
## 26       143              1 37       48 77.083333
## 27       145              1 23       51 45.098039
## 28       152              1 33       50 66.000000
## 29       155              1  2       51  3.921569
## 30       157              1 19       45 42.222222
## 31       160              1 19       45 42.222222
## 32       161              1 19       43 44.186047
## 33       162              1 25       49 51.020408
## 34       187              1 29       51 56.862745
## 35       188              1 26       52 50.000000
## 36       191              1 19       52 36.538462
## 37       192              1 36       43 83.720930
## 38       197              1 14       27 51.851852
## 39       211              1 33       47 70.212766
## 40       214              1 30       51 58.823529
## 41       215              1 30       46 65.217391
## 42       219              1 27       51 52.941176
## 43       221              1 29       51 56.862745
## 44       225              1 44       52 84.615385
## 45       227              1  2       52  3.846154
## 46       233              1 30       51 58.823529
## 47       235              1 20       52 38.461538
## 48       236              1 25       48 52.083333
## 49       238              1 27       45 60.000000
## 50       241              1 19       41 46.341463
## 51       247              1 27       51 52.941176
## 52       254              1 20       44 45.454545
## 53       258              1 32       52 61.538462
## 54       259              1 27       49 55.102041
## 55       260              1 15       42 35.714286
## 56       263              1 43       52 82.692308
## 57       276              1  8       22 36.363636
## 58       282              1 28       50 56.000000
## 59       288              1 25       51 49.019608
## 60       293              1 23       50 46.000000
## 61       295              1 28       49 57.142857
## 62       296              1 29       52 55.769231
## 63       302              1 26       47 55.319149
## 64       303              1 21       42 50.000000
## 65       305              1 40       52 76.923077
## 66       306              1 23       46 50.000000
## 67       308              1 27       52 51.923077
## 68       309              1 27       50 54.000000
## 69       311              1 19       40 47.500000
## 70       316              1 25       46 54.347826
## 71       320              1 25       43 58.139535
## 72       321              1 41       52 78.846154
## 73       322              1 24       50 48.000000
## 74       323              1 26       40 65.000000
## 75       325              1 28       52 53.846154
## 76       326              1 29       46 63.043478
## 77       329              1 28       52 53.846154
## 78       331              1 11       20 55.000000
```

```
## 79       336              1 19       49 38.775510
## 80       342              1 17       44 38.636364
## 81       344              1 16       39 41.025641
## 82       346              1 18       41 43.902439
## 83       348              1 25       52 48.076923
## 84       351              1 23       48 47.916667
## 85       352              1 27       42 64.285714
## 86       356              1 25       46 54.347826
## 87       357              1 26       51 50.980392
## 88       358              1 42       52 80.769231
## 89       361              1 26       47 55.319149
## 90       362              1  6       52 11.538462
## 91       365              1 26       51 50.980392
## 92       366              1 22       41 53.658537
## 93       367              1  3       52  5.769231
## 94       369              1 26       50 52.000000
## 95       370              1 20       52 38.461538
## 96       373              1 27       51 52.941176
## 97       378              1 30       48 62.500000
## 98       382              1  2       52  3.846154
## 99       385              1 23       45 51.111111
## 100      386              1 15       42 35.714286
## 101      392              1 39       48 81.250000
## 102      406              1 37       49 75.510204
## 103      408              1 30       52 57.692308
## 104      410              1 20       50 40.000000
## 105      411              1 26       47 55.319149
## 106      415              1 28       50 56.000000
## 107      416              1 22       49 44.897959
## 108      425              1 23       45 51.111111
## 109      426              1 24       50 48.000000
## 110      439              1 27       48 56.250000
## 111      444              1 22       52 42.307692
## 112      467              1 22       40 55.000000
## 113      470              1 24       47 51.063830
## 114      471              1 35       49 71.428571
## 115      473              1 36       46 78.260870
## 116      482              1 19       50 38.000000
## 117      488              1 21       49 42.857143
## 118      501              1  1       51  1.960784
## 119      504              1 32       50 64.000000
## 120      506              1 27       48 56.250000
## 121      511              1 26       49 53.061224
## 122      516              1 38       52 73.076923
## 123      521              1 24       52 46.153846
## 124      522              1 22       47 46.808511
## 125      523              1 23       44 52.272727
## 126      531              1 20       44 45.454545
## 127      533              1 10       16 62.500000
## 128      544              1 42       51 82.352941
## 129      547              1 42       51 82.352941
## 130      552              1 23       51 45.098039
## 131      555              1 17       40 42.500000
## 132      557              1 19       34 55.882353
```

```
## 133      560              1  7       17 41.176471
## 134      561              1 23       48 47.916667
## 135      564              1  2       50  4.000000
## 136      572              1 19       44 43.181818
## 137      583              1 41       50 82.000000
## 138      584              1 26       47 55.319149
## 139      586              1 22       39 56.410256
## 140      588              1 22       44 50.000000
## 141      601              1 13       21 61.904762
## 142      608              1 39       48 81.250000
## 143      615              1  3       52  5.769231
## 144      616              1 27       51 52.941176
## 145      618              1 10       48 20.833333
## 146      629              1 39       52 75.000000
## 147      631              1  6       52 11.538462
## 148      636              1 39       52 75.000000
## 149      644              1 15       40 37.500000
## 150      649              1 29       50 58.000000
## 151      650              1 23       45 51.111111
## 152      657              1 23       42 54.761905
## 153      661              1 25       43 58.139535
## 154      663              1 29       50 58.000000
## 155      667              1 23       42 54.761905
## 156      669              1 24       49 48.979592
## 157      675              1 13       27 48.148148
## 158      682              1 28       50 56.000000
## 159      683              1 19       51 37.254902
## 160      686              1 27       50 54.000000
## 161      690              1 23       48 47.916667
## 162      692              1 30       49 61.224490
## 163      697              1  2       52  3.846154
## 164      704              1  5       51  9.803922
## 165      706              1  3       50  6.000000
## 166      716              1 25       50 50.000000
## 167      718              1 21       45 46.666667
## 168      722              1 17       48 35.416667
## 169      723              1 25       51 49.019608
## 170      724              1  4       52  7.692308
## 171      726              1 29       52 55.769231
## 172      732              1 15       52 28.846154
## 173      733              1 19       43 44.186047
## 174      737              1 27       49 55.102041
## 175      742              1 20       49 40.816327
## 176      748              1 22       45 48.888889
## 177      756              1 31       52 59.615385
## 178      757              1 23       49 46.938776
## 179      764              1 23       48 47.916667
## 180      767              1 21       40 52.500000
## 181      770              1  8       52 15.384615
## 182      772              1 25       51 49.019608
## 183      773              1 19       45 42.222222
## 184      774              1 20       51 39.215686
## 185      778              1 27       50 54.000000
## 186      781              1 24       36 66.666667
```

```
## 187      790                1 25       49 51.020408
## 188      796                1 22       50 44.000000
## 189      805                1 22       48 45.833333
## 190      808                1 19       52 36.538462
## 191      815                1 24       50 48.000000
## 192      816                1  1        6 16.666667
## 193      822                1  2        6 33.333333
## 194      824                1 23       44 52.272727
## 195      825                1 42       51 82.352941
## 196      827                1 23       41 56.097561
## 197      829                1 21       45 46.666667
## 198      832                1 26       52 50.000000
## 199      836                1 39       49 79.591837
## 200      842                1 20       46 43.478261
## 201      843                1 24       47 51.063830
## 202      846                1 23       43 53.488372
## 203      848                1 28       48 58.333333
## 204      849                1 26       46 56.521739
## 205      850                1 22       40 55.000000
## 206      853                1 37       44 84.090909
## 207      856                1 18       38 47.368421
## 208      857                1  9       19 47.368421
## 209      858                1 24       47 51.063830
## 210      865                1 24       48 50.000000
## 211      869                1  2        4 50.000000
## 212      878                1 37       44 84.090909
## 213      880                1 22       48 45.833333
## 214      884                1 11       42 26.190476
## 215      888                1 28       45 62.222222
## 216      889                1 29       50 58.000000
## 217      890                1 27       47 57.446809
## 218      902                1 25       43 58.139535
## 219      903                1 21       47 44.680851
## 220      907                1 37       49 75.510204
## 221      914                1 26       49 53.061224
## 222      920                1 36       46 78.260870
## 223      921                1 21       42 50.000000
## 224      941                1 23       51 45.098039
## 225      943                1 15       28 53.571429
## 226      949                1 28       51 54.901961
## 227      953                1 19       35 54.285714
## 228      956                1 25       47 53.191489
## 229      964                1 19       44 43.181818
## 230      966                1 29       51 56.862745
## 231      981                1 43       51 84.313725
## 232      983                1 21       44 47.727273
## 233     1006                1 28       43 65.116279
## 234     1010                1 20       47 42.553191
## 235     1013                1 35       50 70.000000
## 236     1015                1 42       50 84.000000
## 237     1019                1 20       51 39.215686
## 238     1020                1 19       46 41.304348
## 239     1022                1 43       51 84.313725
## 240     1034                1 25       49 51.020408
```

```
## 241     1040              1 25       47 53.191489
## 242     1071              1 24       47 51.063830
## 243     1075              1 27       39 69.230769
## 244     1085              1 19       43 44.186047
## 245     1090              1  3       52  5.769231
## 246     1094              1 30       44 68.181818
## 247     1097              1 24       45 53.333333
## 248     1099              1 21       42 50.000000
## 249     1101              1 18       42 42.857143
## 250     1111              1 27       51 52.941176
## 251     1112              1 40       48 83.333333
## 252     1113              1 33       51 64.705882
## 253     1116              1 25       44 56.818182
## 254     1130              1 24       45 53.333333
## 255     1131              1 19       43 44.186047
## 256     1139              1 44       52 84.615385
## 257     1156              1 26       50 52.000000
## 258     1167              1 41       51 80.392157
## 259     1172              1 40       50 80.000000
## 260     1175              1 24       41 58.536585
## 261     1176              1 18       50 36.000000
## 262     1181              1 18       45 40.000000
```

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] 45
```

After Exclusions

Number of participants:

```
## [1] 880
```

Participants left in each condition:

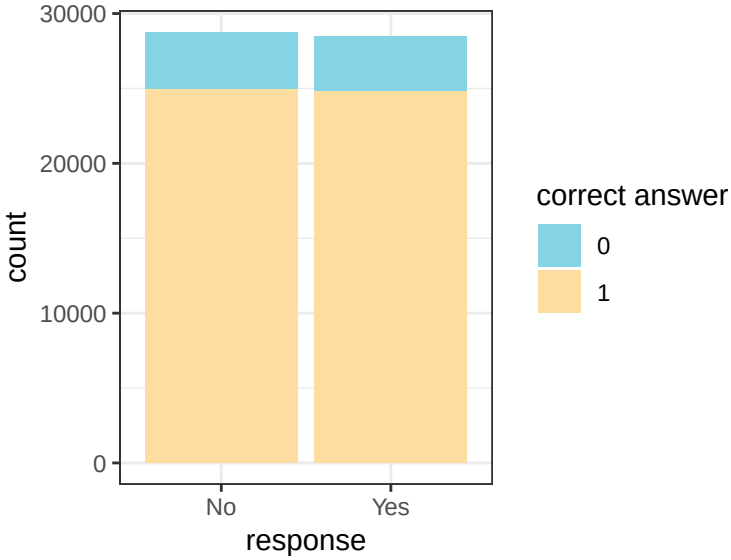
```
##
## all_QUD any_QUD  no_QUD
##     287     278     315
```

General

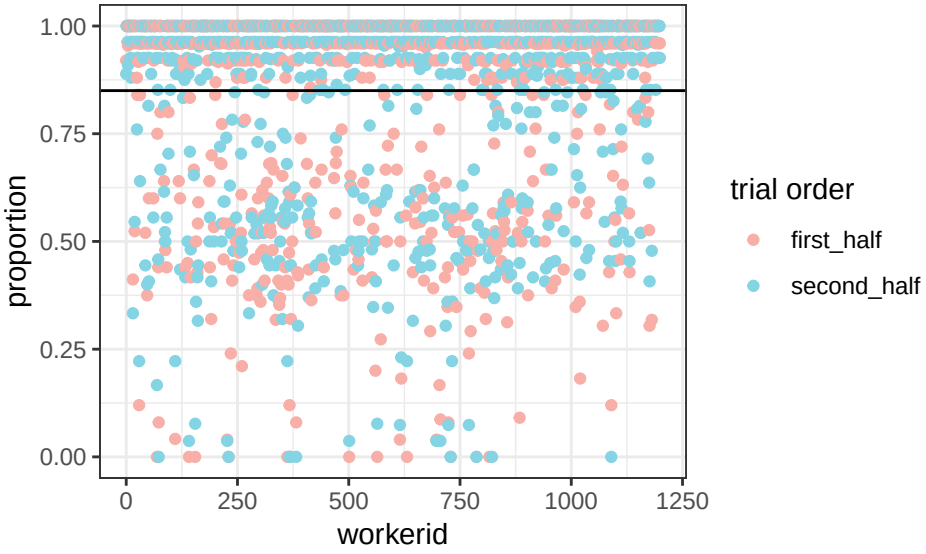
Expected number of yes and no answers:

```
##
##    No   Yes
## 28588 28682
```

Accuracy

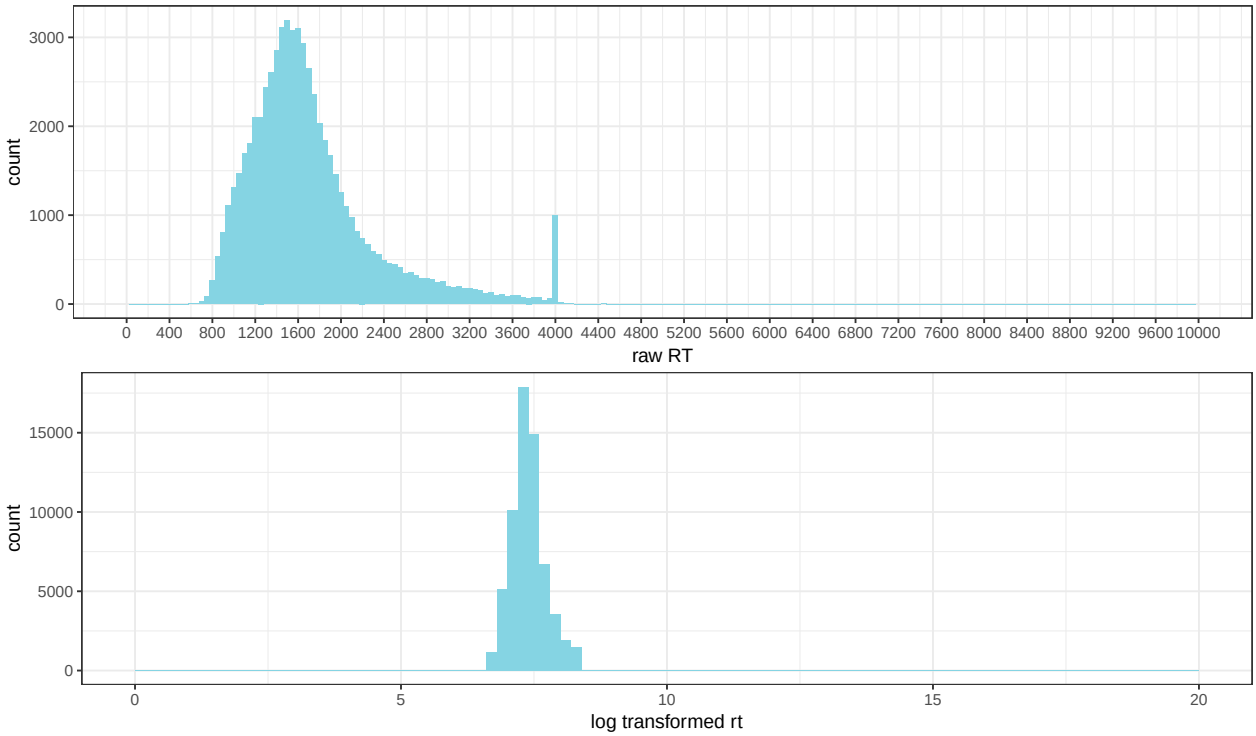


Accuracy and trial order



Distribution of RT and logRT

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



15 fastest responses (raw RT)

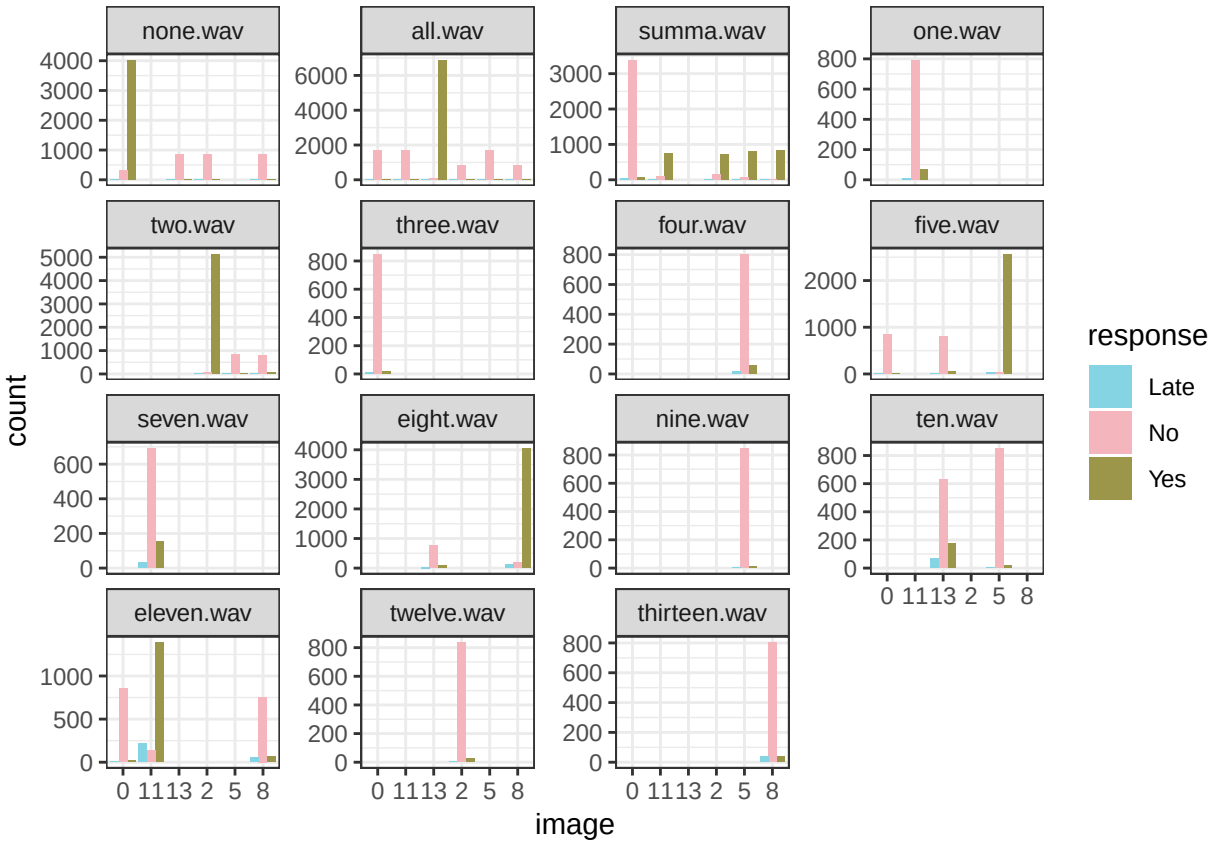
```
##  [1] 603 605 622 624 645 679 687 688 692 693 695 699 700 700 700
```

15 slowest responses (raw RT)

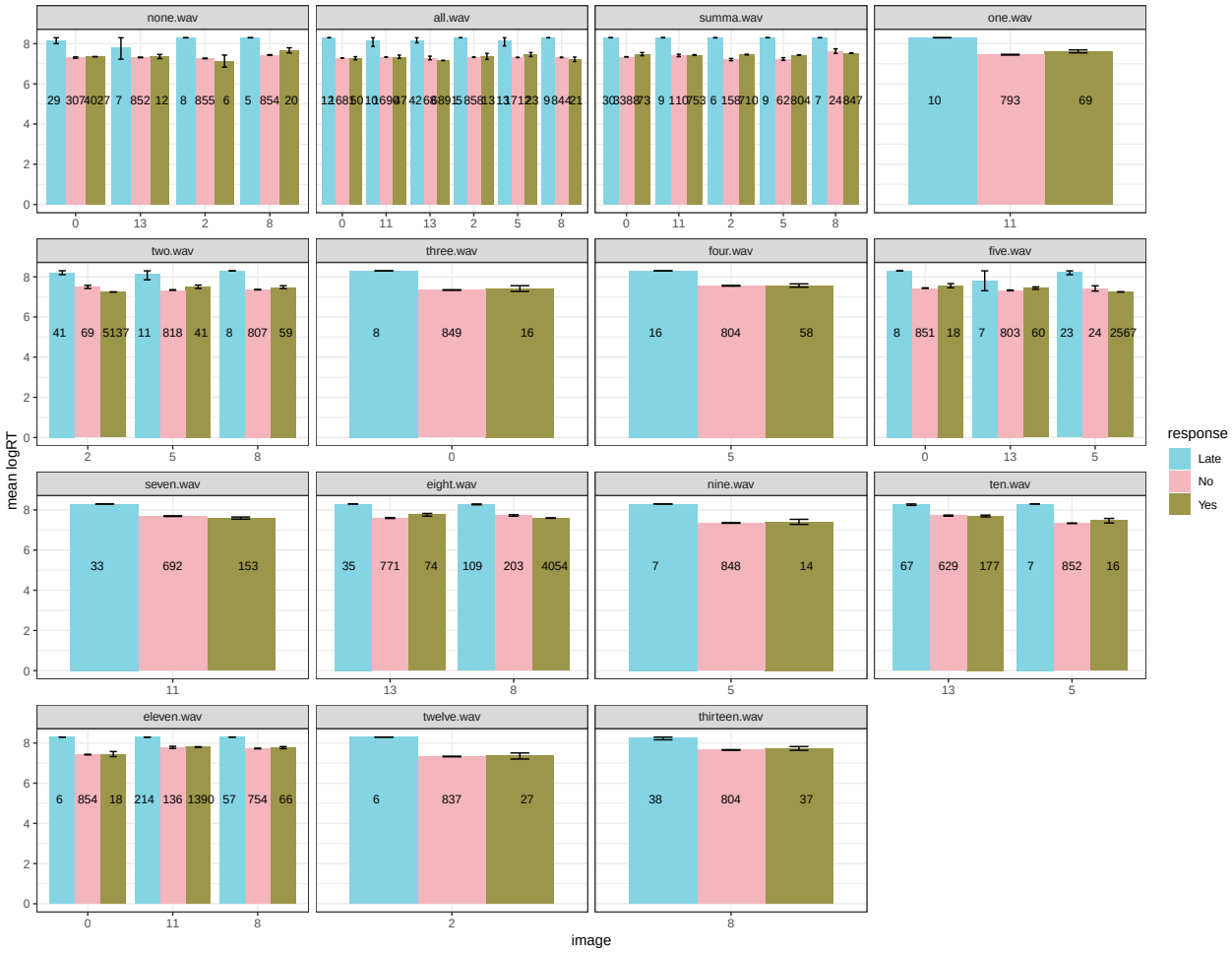
```
##  [1] 4031 4032 4034 4042 4045 4047 4052 4054 4064 4077 4101 4137 4142 4152
## [15] 4447
```

Non-critical Trials

Response type:



Response time:



Critical Trials

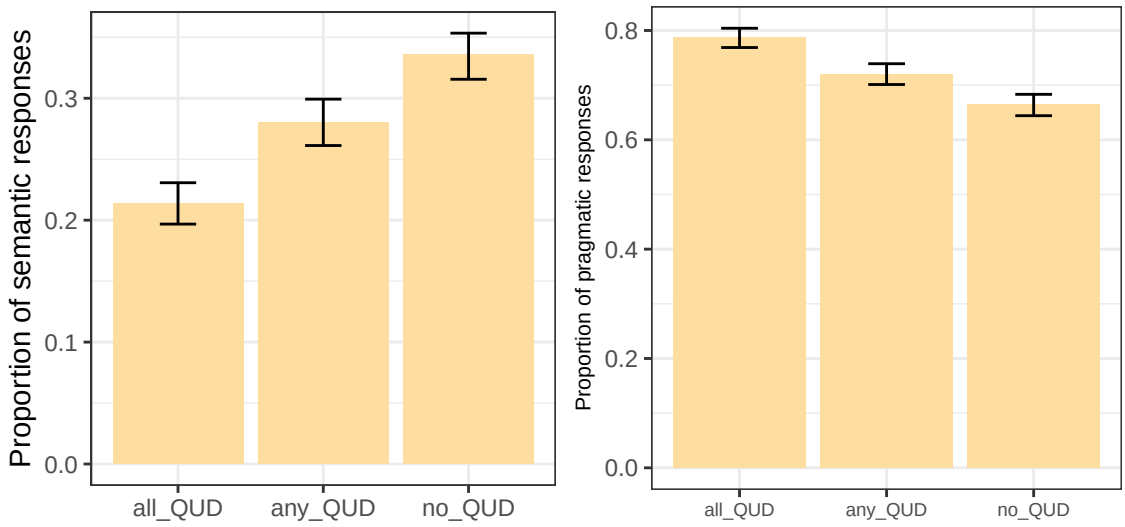
Total number of critical trials (8 per participant):

```
## [1] 6983
```

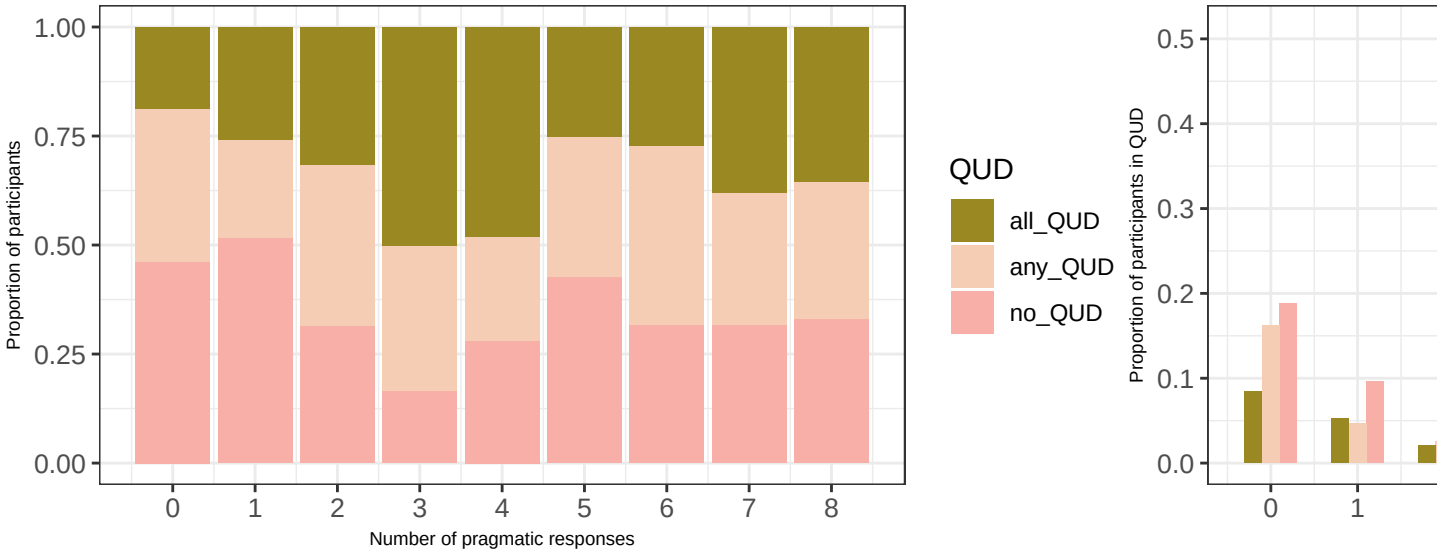
Total number of critical trials with late responses removed:

```
## [1] 6882
```

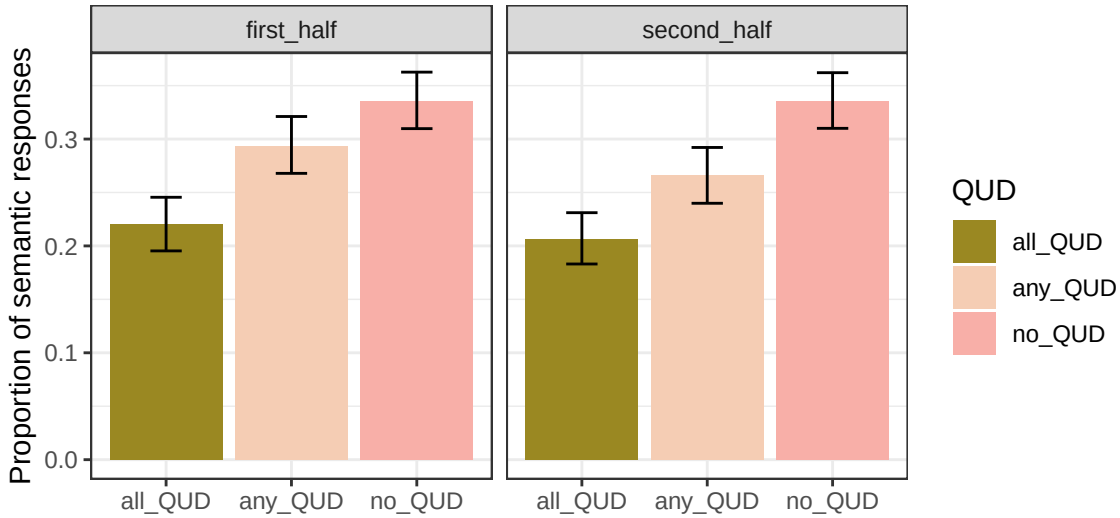
Response Type



Distribution of participants over number of semantic responses



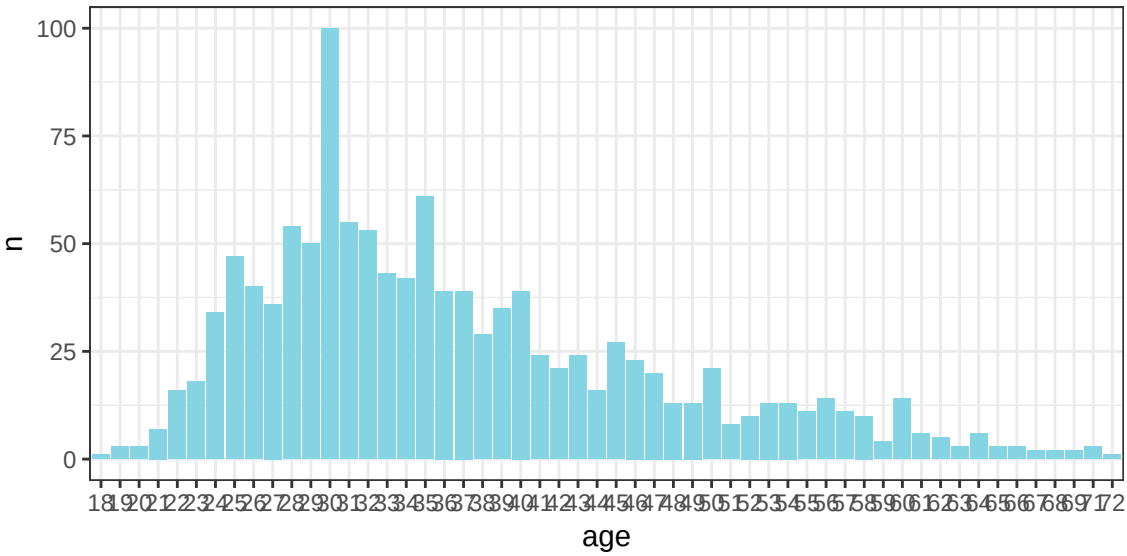
Response type and trial order



Age distribution of participants

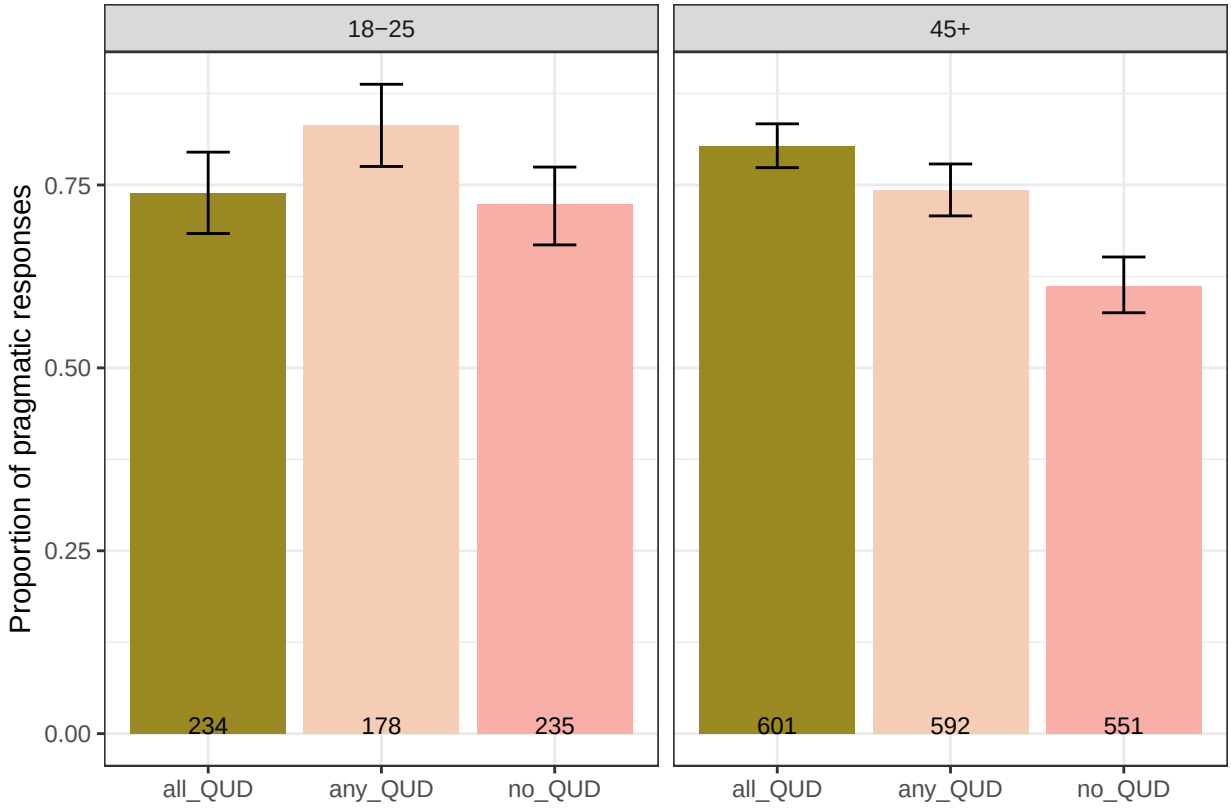
```
## Warning: Factor `age` contains implicit NA, consider using
## `forcats::fct_explicit_na`

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



Response type and age

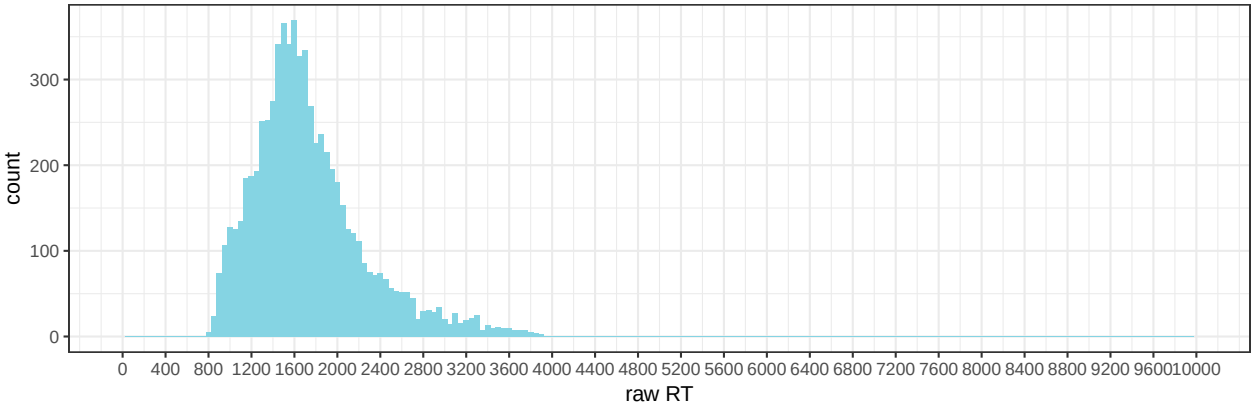
```
## Warning: NAs introduced by coercion
```



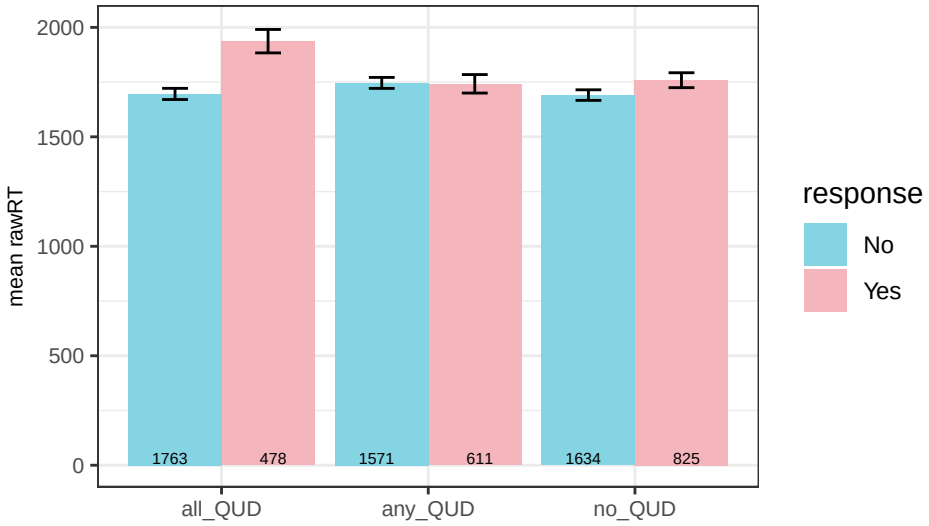
Response Time

Distribution of response times in critical trials

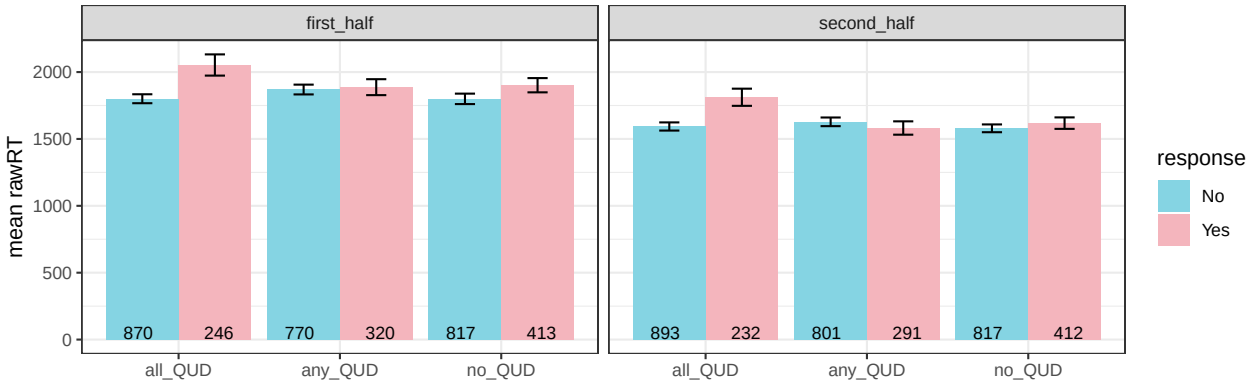
```
## Warning: Removed 2 rows containing missing values (geom_bar).
```



Response time and QUD



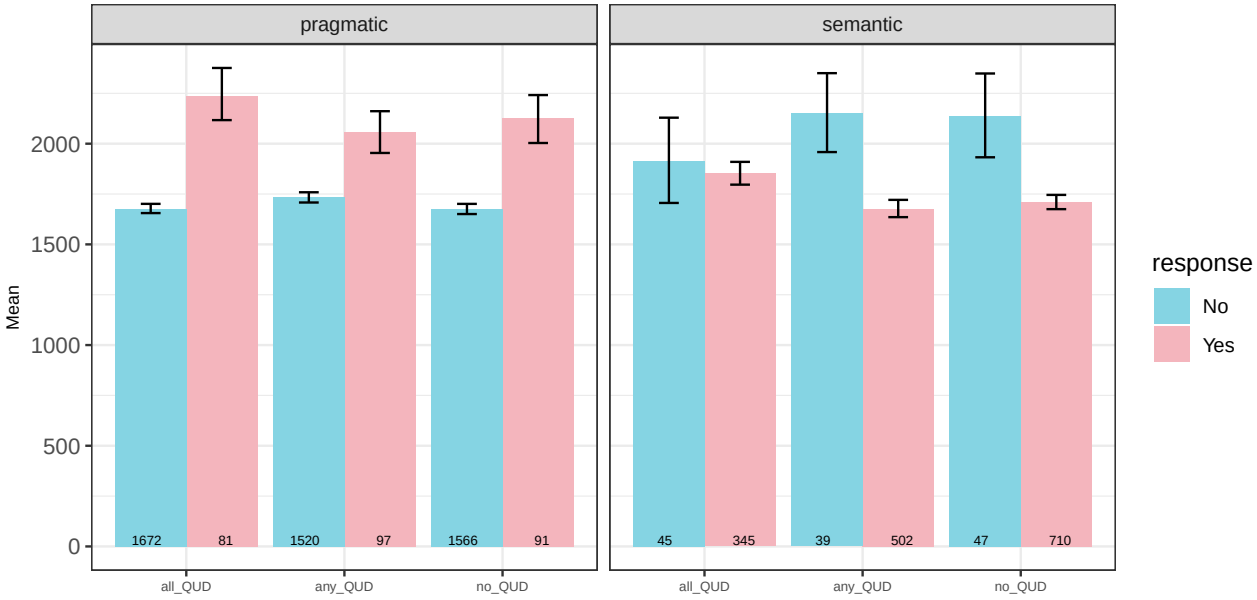
Response time, trial order and QUD



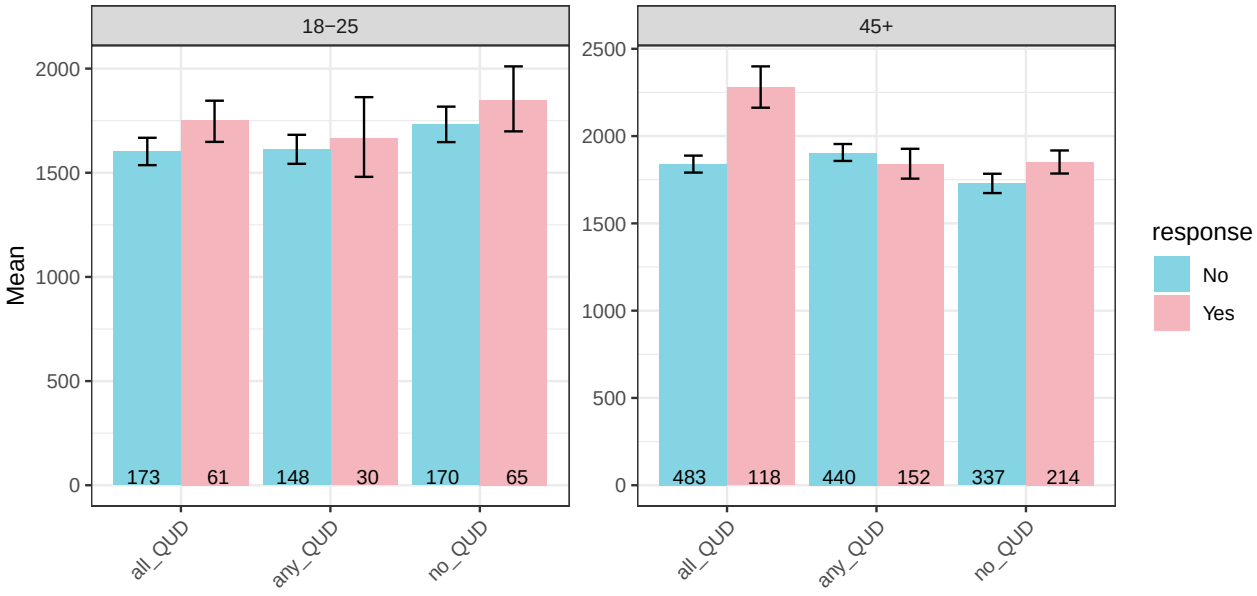
Response time, responder type and QUD

```
## <ScaleContinuousPosition>
##  Range:
```

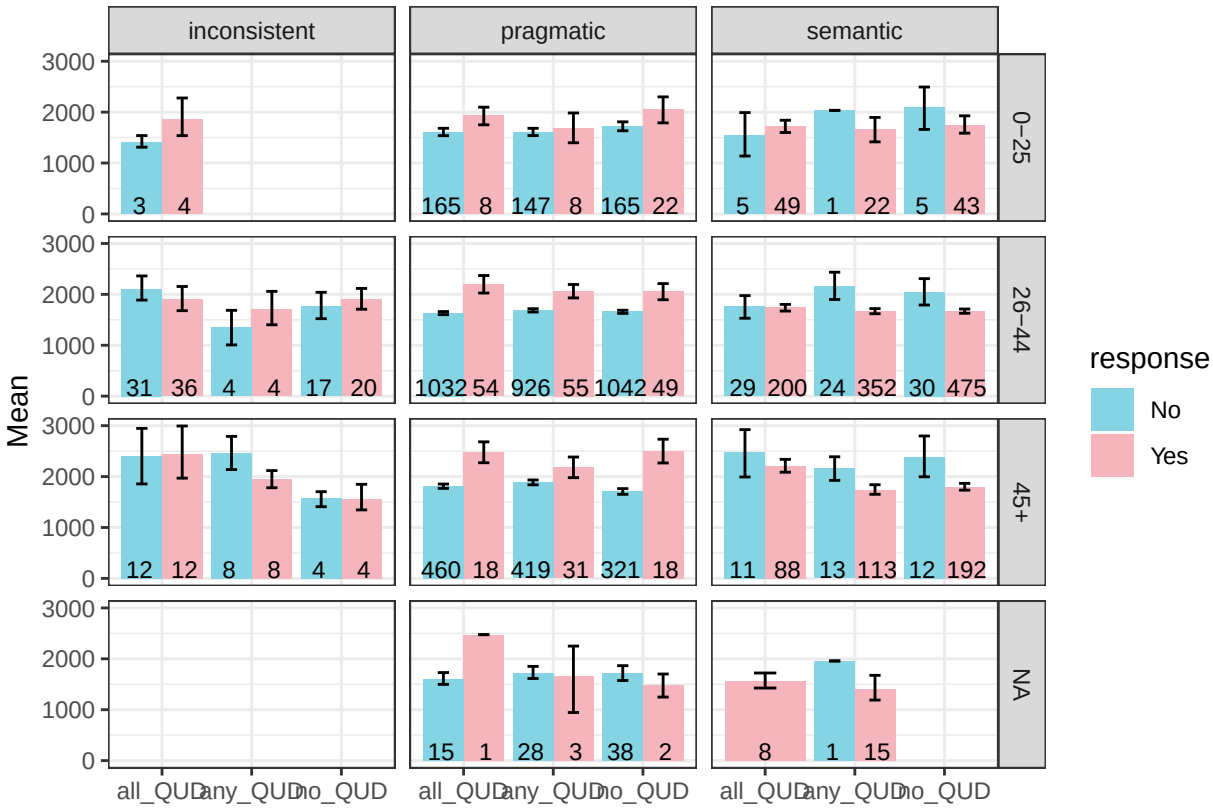
```
##  Limits:    0 -- 2.5e+03
```



Response time, age and QUD



Response time, age, responder type and QUD



EXTRA: Semanticity and response time

Models