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 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        69               1  4       45  8.888889
## 11        72               1 22       45 48.888889
## 12        73               1  2       48  4.166667
## 13        77               1 37       48 77.083333
## 14        85               1 28       47 59.574468
## 15        87               1 19       41 46.341463
## 16        88               1 21       45 46.666667
## 17        91               1 22       48 45.833333
## 18        95               1 37       48 77.083333
## 19       110               1  6       47 12.765957
## 20       118               1 39       48 81.250000
## 21       121               1 21       40 52.500000
## 22       128               1 37       45 82.222222
## 23       133               1 21       45 46.666667
## 24       138               1 14       34 41.176471
```

```
## 25       141              1  1       48  2.083333
## 26       143              1 35       45 77.777778
## 27       145              1 21       48 43.750000
## 28       152              1 29       46 63.043478
## 29       155              1  2       47  4.255319
## 30       157              1 18       41 43.902439
## 31       160              1 17       41 41.463415
## 32       161              1 18       41 43.902439
## 33       162              1 25       45 55.555556
## 34       187              1 27       47 57.446809
## 35       188              1 22       48 45.833333
## 36       191              1 17       48 35.416667
## 37       197              1 13       24 54.166667
## 38       211              1 31       43 72.093023
## 39       214              1 26       47 55.319149
## 40       215              1 29       42 69.047619
## 41       219              1 23       47 48.936170
## 42       221              1 28       48 58.333333
## 43       227              1  2       48  4.166667
## 44       233              1 27       48 56.250000
## 45       235              1 20       48 41.666667
## 46       236              1 21       44 47.727273
## 47       238              1 26       41 63.414634
## 48       241              1 17       37 45.945946
## 49       247              1 24       48 50.000000
## 50       254              1 20       40 50.000000
## 51       258              1 29       48 60.416667
## 52       259              1 27       45 60.000000
## 53       260              1 15       38 39.473684
## 54       263              1 40       48 83.333333
## 55       276              1  6       20 30.000000
## 56       282              1 25       47 53.191489
## 57       288              1 21       47 44.680851
## 58       293              1 20       46 43.478261
## 59       295              1 26       45 57.777778
## 60       296              1 27       48 56.250000
## 61       302              1 25       43 58.139535
## 62       303              1 21       39 53.846154
## 63       305              1 36       48 75.000000
## 64       306              1 23       43 53.488372
## 65       308              1 26       48 54.166667
## 66       309              1 24       46 52.173913
## 67       311              1 17       36 47.222222
## 68       316              1 23       42 54.761905
## 69       320              1 25       42 59.523810
## 70       321              1 38       48 79.166667
## 71       322              1 23       46 50.000000
## 72       323              1 24       36 66.666667
## 73       325              1 24       48 50.000000
## 74       326              1 26       43 60.465116
## 75       329              1 26       48 54.166667
## 76       331              1 11       20 55.000000
## 77       336              1 19       45 42.222222
## 78       342              1 17       40 42.500000
```

```
## 79       344              1 16       36 44.444444
## 80       346              1 17       39 43.589744
## 81       348              1 24       48 50.000000
## 82       351              1 20       44 45.454545
## 83       352              1 23       38 60.526316
## 84       356              1 23       43 53.488372
## 85       357              1 22       47 46.808511
## 86       358              1 38       48 79.166667
## 87       361              1 24       43 55.813953
## 88       362              1  6       48 12.500000
## 89       365              1 26       47 55.319149
## 90       366              1 19       38 50.000000
## 91       367              1  3       48  6.250000
## 92       369              1 26       46 56.521739
## 93       370              1 20       48 41.666667
## 94       373              1 24       47 51.063830
## 95       378              1 27       45 60.000000
## 96       382              1  2       48  4.166667
## 97       385              1 21       41 51.219512
## 98       386              1 15       40 37.500000
## 99       392              1 37       45 82.222222
## 100      406              1 34       45 75.555556
## 101      408              1 27       48 56.250000
## 102      410              1 18       46 39.130435
## 103      411              1 26       43 60.465116
## 104      415              1 25       46 54.347826
## 105      416              1 19       45 42.222222
## 106      425              1 19       41 46.341463
## 107      426              1 24       46 52.173913
## 108      439              1 26       45 57.777778
## 109      444              1 21       48 43.750000
## 110      467              1 20       36 55.555556
## 111      470              1 23       43 53.488372
## 112      471              1 34       45 75.555556
## 113      473              1 34       43 79.069767
## 114      482              1 17       46 36.956522
## 115      488              1 19       45 42.222222
## 116      501              1  1       47  2.127660
## 117      504              1 30       46 65.217391
## 118      506              1 24       44 54.545455
## 119      511              1 25       46 54.347826
## 120      516              1 36       48 75.000000
## 121      521              1 24       48 50.000000
## 122      522              1 22       43 51.162791
## 123      523              1 20       40 50.000000
## 124      531              1 17       41 41.463415
## 125      533              1  9       14 64.285714
## 126      544              1 38       47 80.851064
## 127      547              1 39       47 82.978723
## 128      552              1 20       47 42.553191
## 129      555              1 17       38 44.736842
## 130      557              1 18       32 56.250000
## 131      560              1  6       15 40.000000
## 132      561              1 22       44 50.000000
```

```
## 133      564              1  2       46  4.347826
## 134      572              1 17       41 41.463415
## 135      583              1 37       46 80.434783
## 136      584              1 23       44 52.272727
## 137      586              1 20       35 57.142857
## 138      588              1 20       42 47.619048
## 139      601              1 12       20 60.000000
## 140      608              1 36       45 80.000000
## 141      615              1  3       48  6.250000
## 142      616              1 23       47 48.936170
## 143      618              1 10       44 22.727273
## 144      629              1 36       48 75.000000
## 145      631              1  4       48  8.333333
## 146      636              1 38       48 79.166667
## 147      644              1 15       37 40.540541
## 148      649              1 26       46 56.521739
## 149      650              1 23       41 56.097561
## 150      657              1 23       39 58.974359
## 151      661              1 24       40 60.000000
## 152      663              1 28       46 60.869565
## 153      667              1 19       38 50.000000
## 154      669              1 23       45 51.111111
## 155      675              1 12       26 46.153846
## 156      682              1 27       46 58.695652
## 157      683              1 18       48 37.500000
## 158      686              1 25       46 54.347826
## 159      690              1 20       44 45.454545
## 160      692              1 30       46 65.217391
## 161      697              1  2       48  4.166667
## 162      704              1  5       47 10.638298
## 163      706              1  3       46  6.521739
## 164      716              1 22       46 47.826087
## 165      718              1 19       41 46.341463
## 166      722              1 15       44 34.090909
## 167      723              1 23       47 48.936170
## 168      724              1  4       48  8.333333
## 169      726              1 25       48 52.083333
## 170      732              1 14       48 29.166667
## 171      733              1 19       39 48.717949
## 172      737              1 27       45 60.000000
## 173      742              1 17       45 37.777778
## 174      748              1 21       42 50.000000
## 175      756              1 28       48 58.333333
## 176      757              1 22       45 48.888889
## 177      764              1 19       44 43.181818
## 178      767              1 21       37 56.756757
## 179      770              1  7       48 14.583333
## 180      772              1 23       47 48.936170
## 181      773              1 19       41 46.341463
## 182      774              1 17       47 36.170213
## 183      778              1 25       46 54.347826
## 184      781              1 22       33 66.666667
## 185      790              1 22       45 48.888889
## 186      796              1 19       46 41.304348
```

```
## 187      805              1 21       44 47.727273
## 188      808              1 19       48 39.583333
## 189      815              1 23       46 50.000000
## 190      816              1  1        6 16.666667
## 191      822              1  2        6 33.333333
## 192      824              1 23       40 57.500000
## 193      825              1 39       47 82.978723
## 194      827              1 22       38 57.894737
## 195      829              1 19       42 45.238095
## 196      832              1 22       48 45.833333
## 197      836              1 36       45 80.000000
## 198      842              1 17       42 40.476190
## 199      843              1 24       43 55.813953
## 200      846              1 22       41 53.658537
## 201      848              1 25       44 56.818182
## 202      849              1 24       42 57.142857
## 203      850              1 20       36 55.555556
## 204      853              1 34       41 82.926829
## 205      856              1 16       36 44.444444
## 206      857              1  7       17 41.176471
## 207      858              1 23       45 51.111111
## 208      865              1 24       44 54.545455
## 209      869              1  2        4 50.000000
## 210      878              1 33       40 82.500000
## 211      880              1 22       44 50.000000
## 212      884              1 11       38 28.947368
## 213      888              1 26       42 61.904762
## 214      889              1 25       46 54.347826
## 215      890              1 25       44 56.818182
## 216      902              1 23       39 58.974359
## 217      903              1 18       43 41.860465
## 218      907              1 34       45 75.555556
## 219      914              1 24       45 53.333333
## 220      920              1 32       42 76.190476
## 221      921              1 19       39 48.717949
## 222      941              1 20       47 42.553191
## 223      943              1 15       28 53.571429
## 224      949              1 27       47 57.446809
## 225      953              1 19       32 59.375000
## 226      956              1 22       44 50.000000
## 227      964              1 17       40 42.500000
## 228      966              1 26       47 55.319149
## 229      981              1 39       47 82.978723
## 230      983              1 19       41 46.341463
## 231     1006              1 25       40 62.500000
## 232     1010              1 17       43 39.534884
## 233     1013              1 33       46 71.739130
## 234     1015              1 39       46 84.782609
## 235     1019              1 18       47 38.297872
## 236     1020              1 18       42 42.857143
## 237     1034              1 23       45 51.111111
## 238     1040              1 21       43 48.837209
## 239     1071              1 23       44 52.272727
## 240     1075              1 23       35 65.714286
```

```
## 241     1085              1 18       39 46.153846
## 242     1090              1  3       48  6.250000
## 243     1094              1 28       41 68.292683
## 244     1097              1 22       41 53.658537
## 245     1099              1 20       38 52.631579
## 246     1101              1 16       38 42.105263
## 247     1111              1 24       47 51.063830
## 248     1112              1 36       44 81.818182
## 249     1113              1 30       47 63.829787
## 250     1116              1 22       41 53.658537
## 251     1130              1 23       43 53.488372
## 252     1131              1 18       41 43.902439
## 253     1139              1 40       48 83.333333
## 254     1156              1 24       46 52.173913
## 255     1167              1 38       47 80.851064
## 256     1172              1 37       46 80.434783
## 257     1175              1 23       38 60.526316
## 258     1176              1 16       46 34.782609
## 259     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] 416
```

Responses that are very slow (logRT>20):

```
## [1] 49
```

After Exclusions

Number of participants:

```
## [1] 883
```

Participants left in each condition:

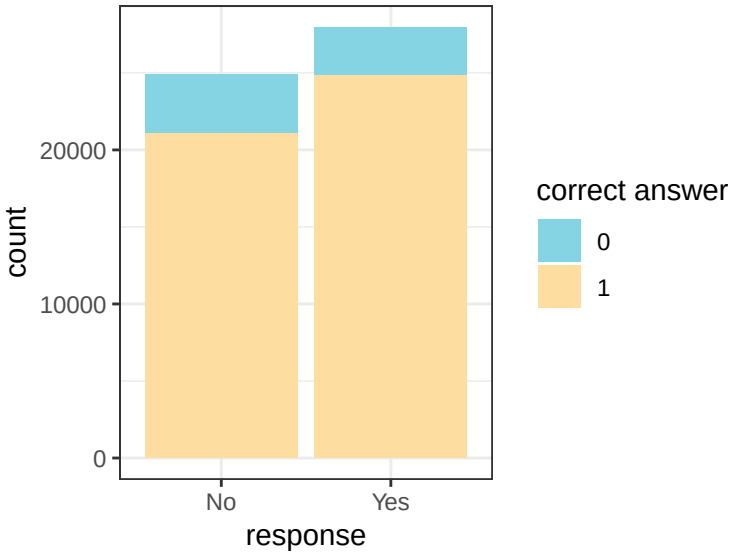
```
##
## all_QUD any_QUD  no_QUD
##     289     278     316
```

General

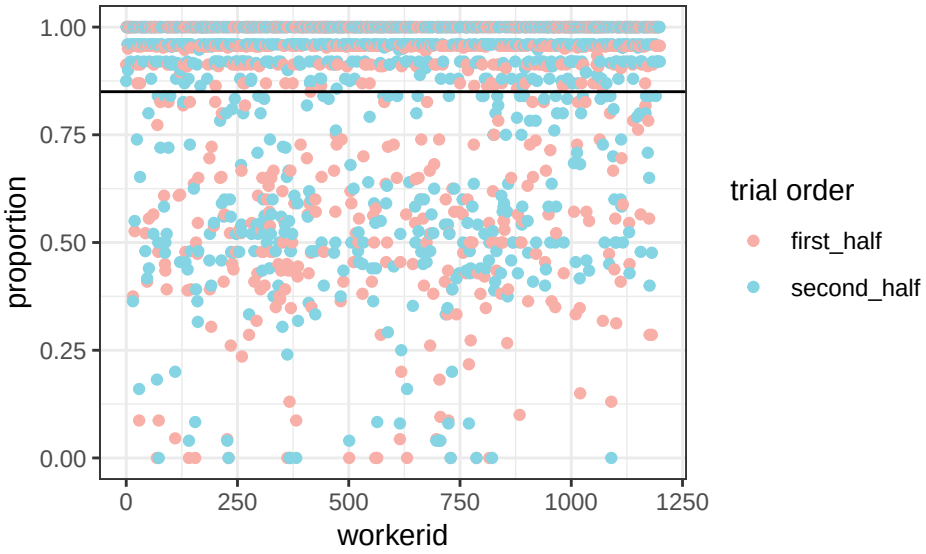
Expected number of yes and no answers:

```
##
##    No   Yes
## 24183 28682
```

Accuracy

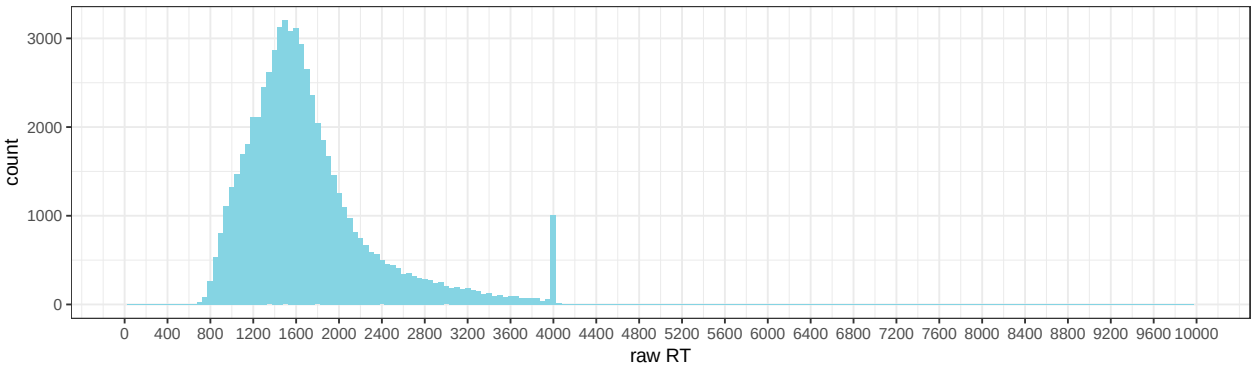


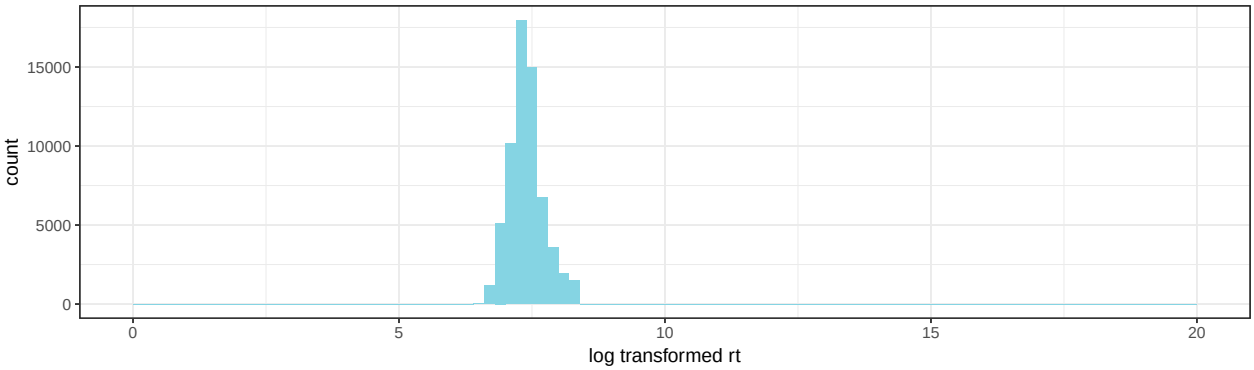
Accuracy and trial order



Distribution of RT and logRT

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





15 fastest responses (raw RT)

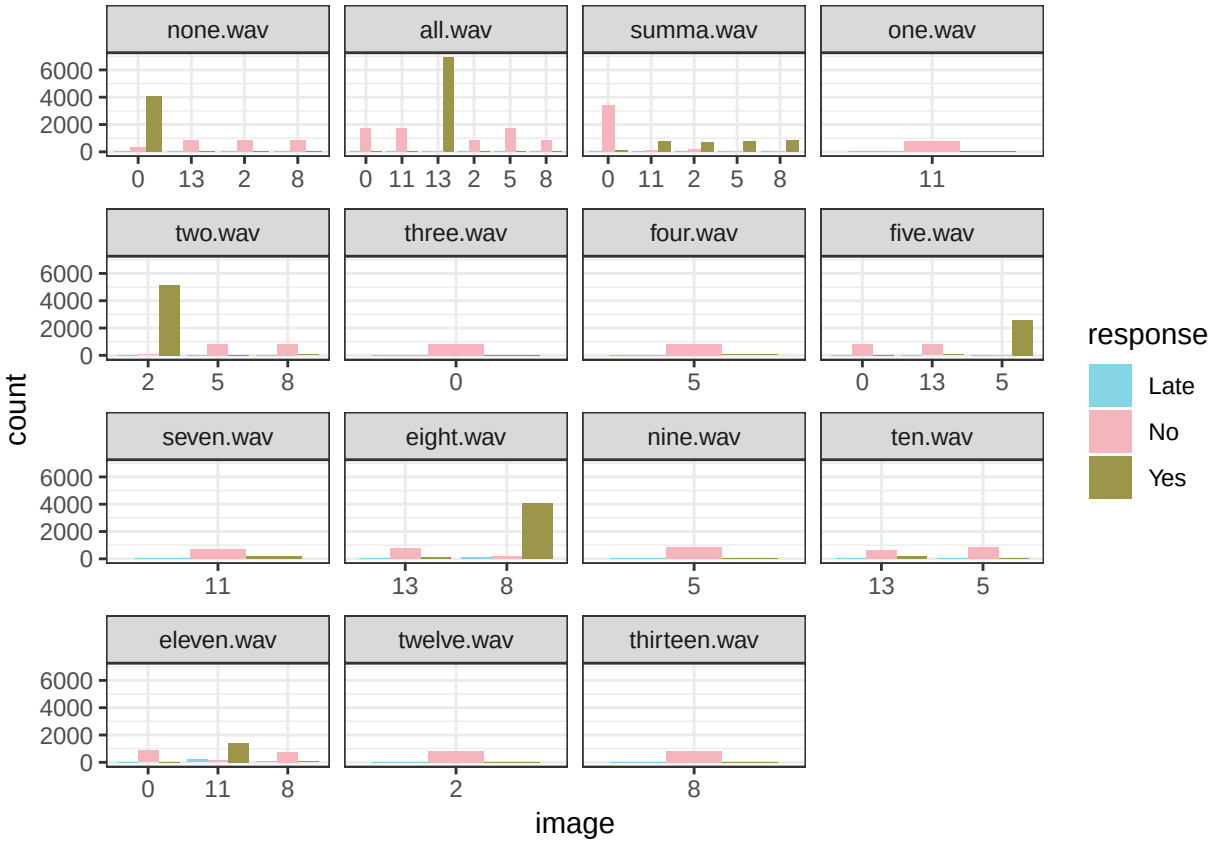
```
##  [1] 603 605 622 624 645 679 687 688 692 693 695 699 700 700 700
```

15 slowest responses (raw RT)

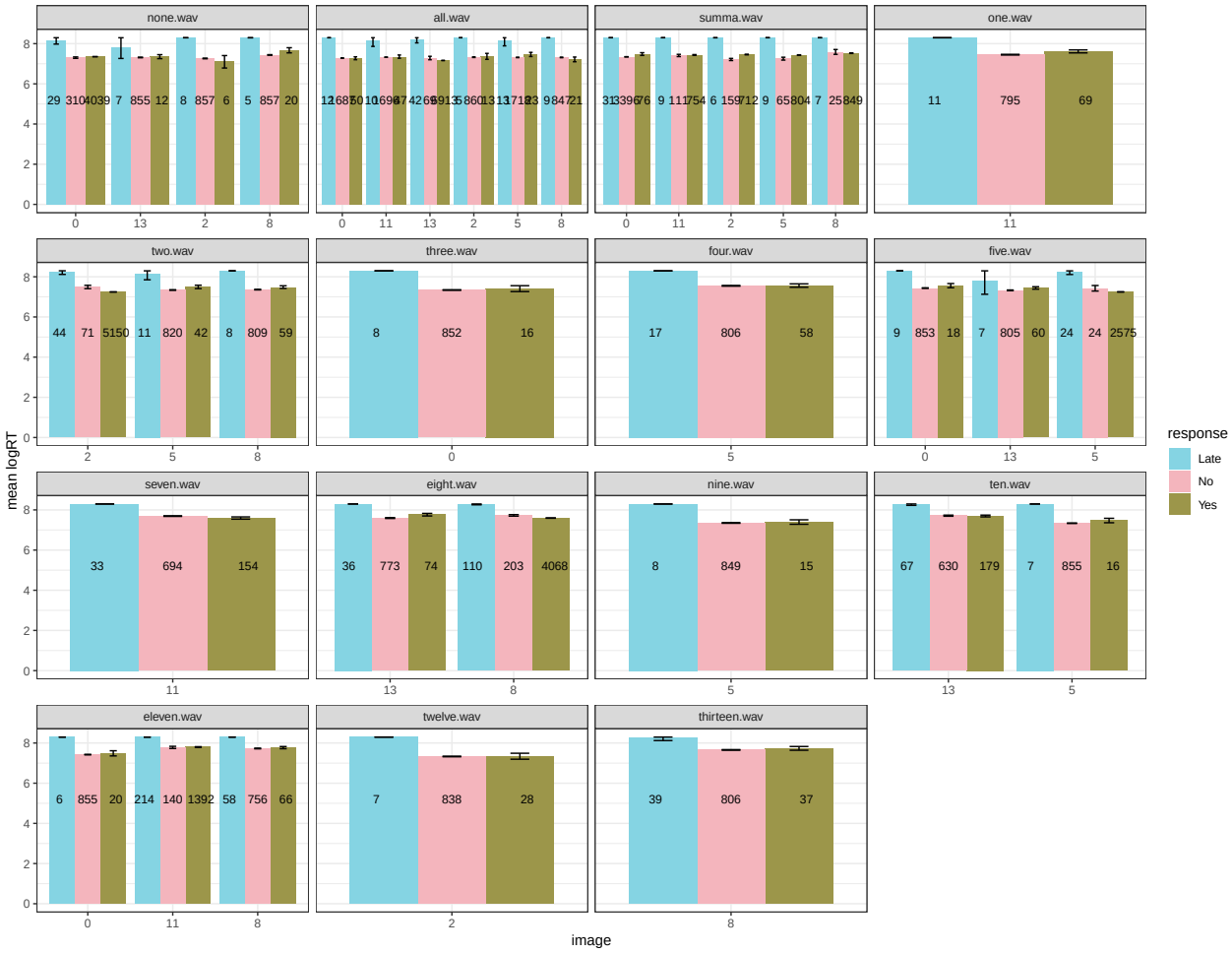
```
##  [1] 4031 4032 4034 4042 4045 4047 4052 4054 4064 4077 4101 4137 4142 4152
## [15] 4447
```

Non-critical Trials

Response type:



Response time:



Critical Trials

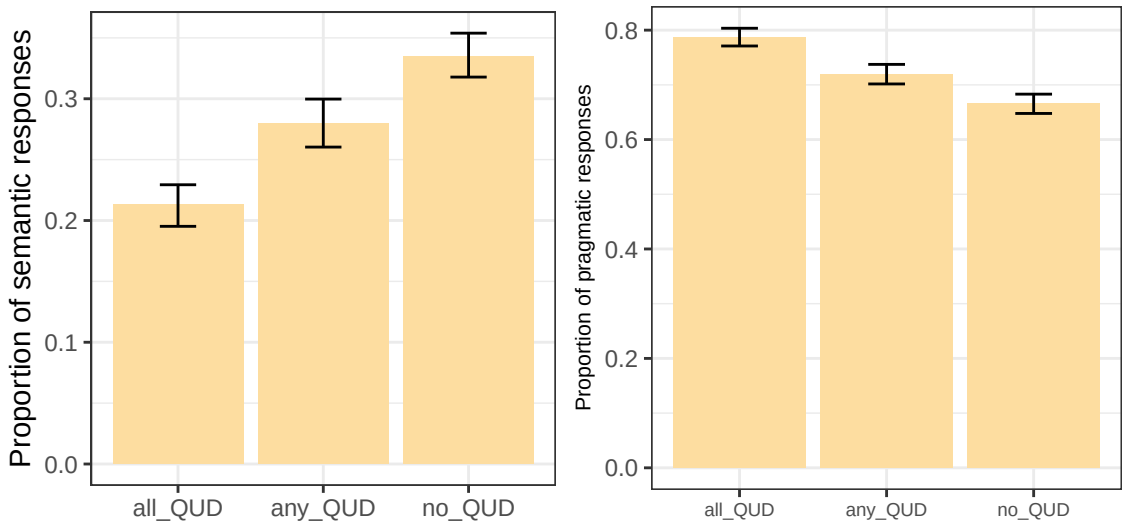
Total number of critical trials (8 per participant):

```
## [1] 7004
```

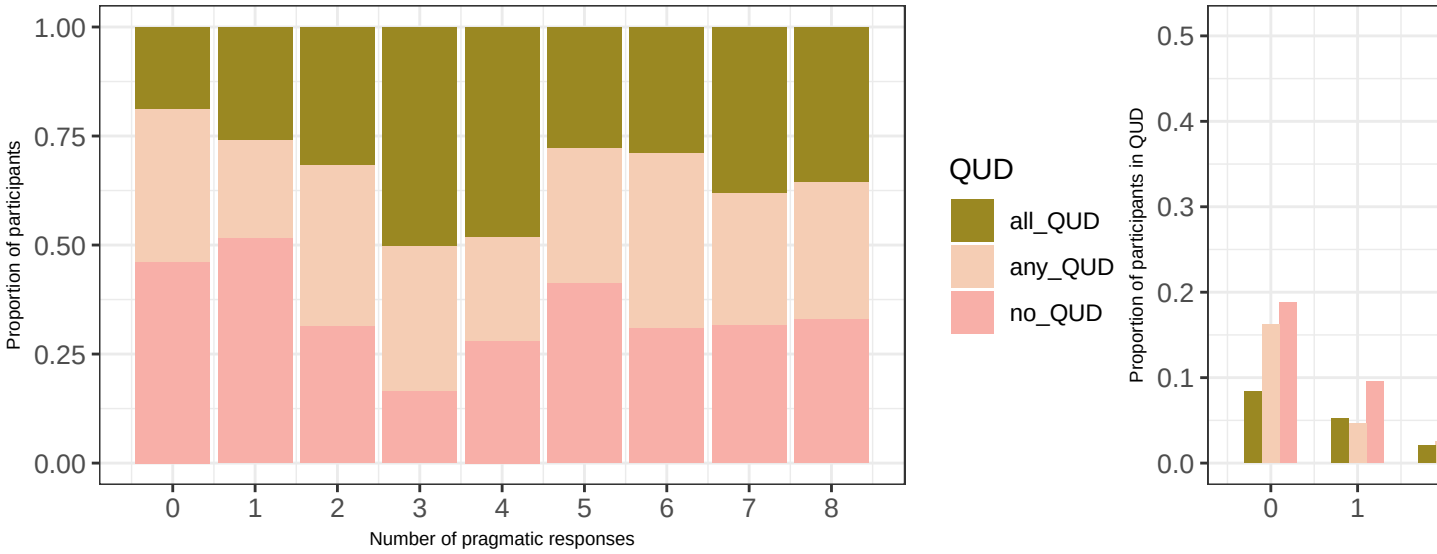
Total number of critical trials with late responses removed:

```
## [1] 6903
```

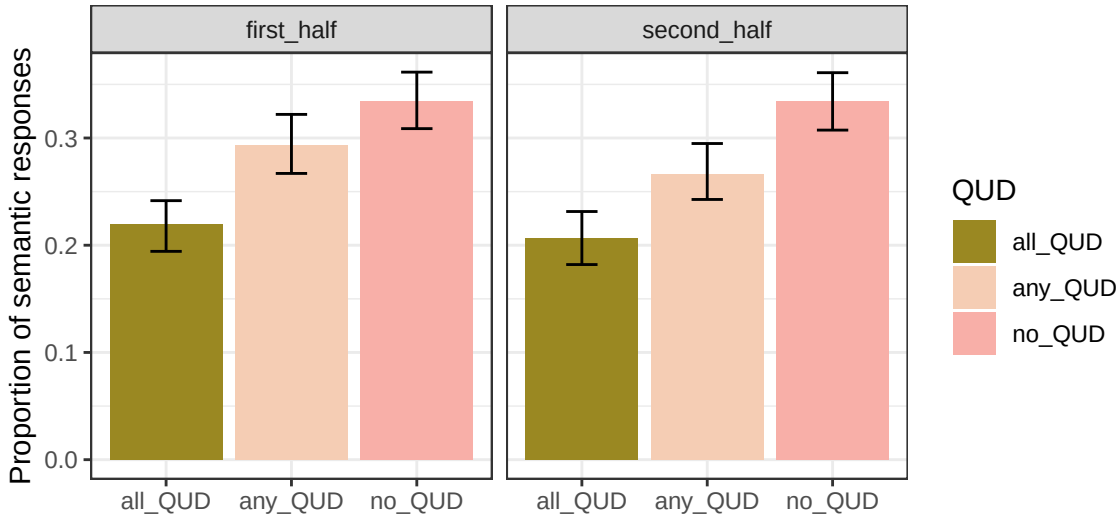
Response Type



Distribution of participants over number of semantic responses



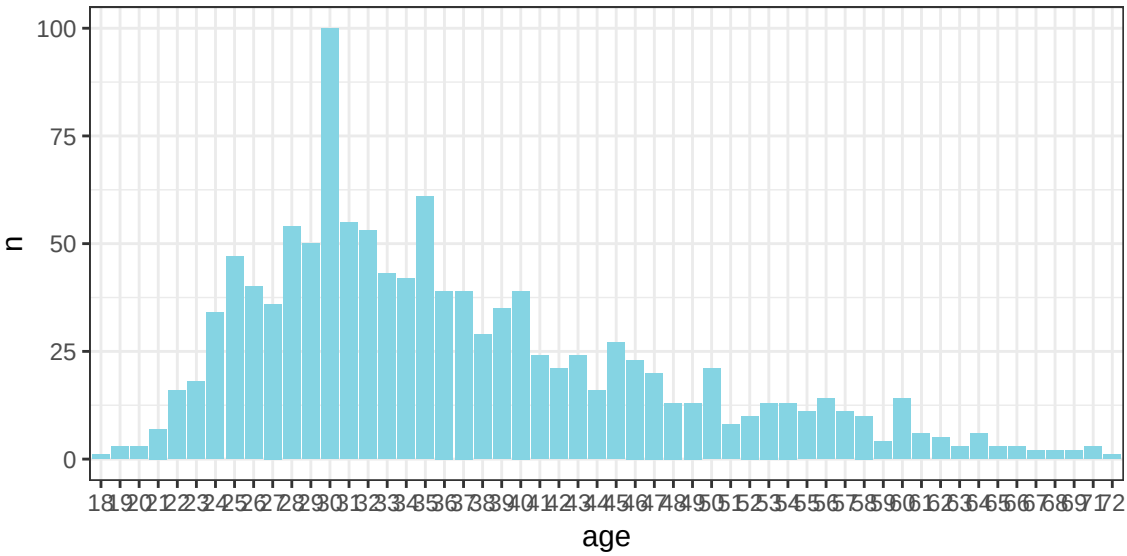
Response type and trial order



Age distribution of participants

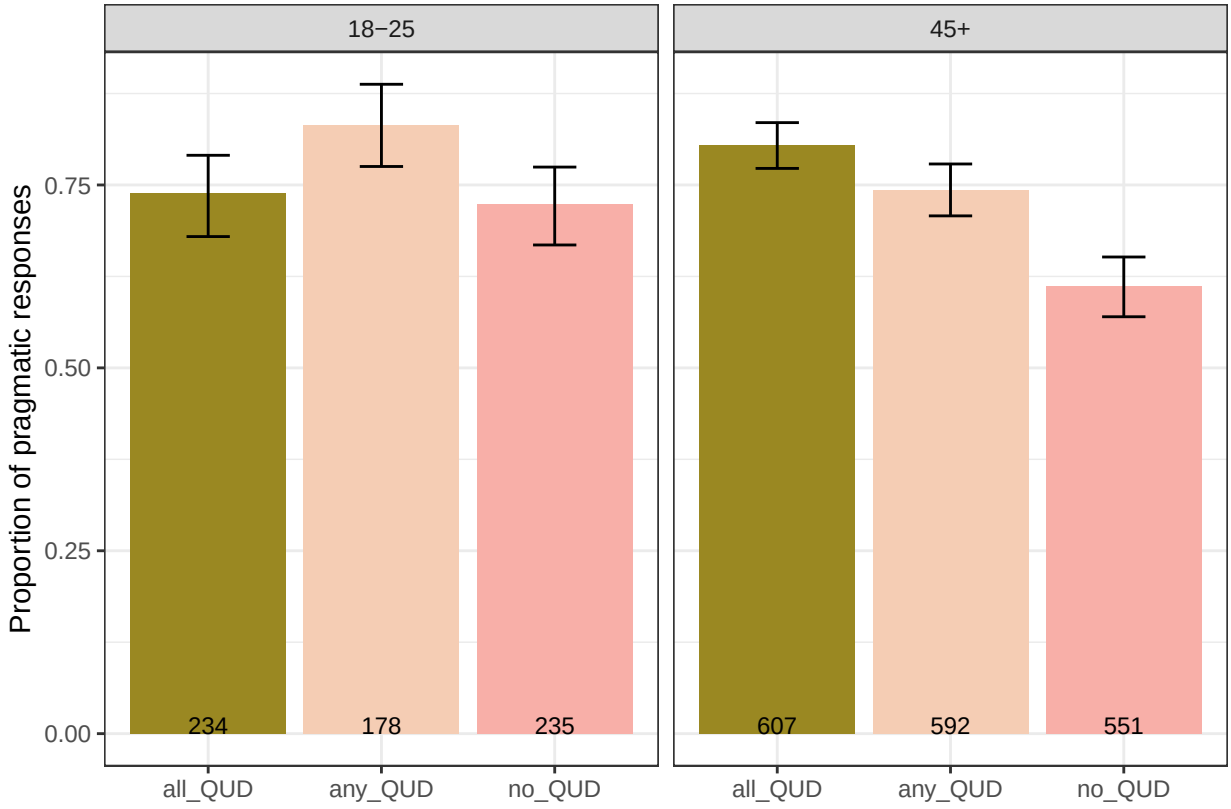
```
## Warning: Factor `age` contains implicit NA, consider using
## `forcats::fct_explicit_na`

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



Response type and age

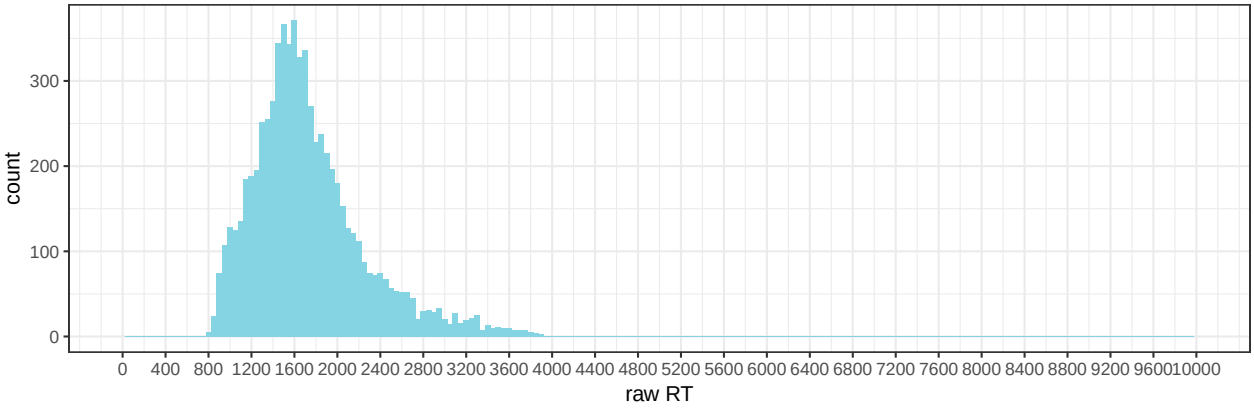
```
## Warning: NAs introduced by coercion
```



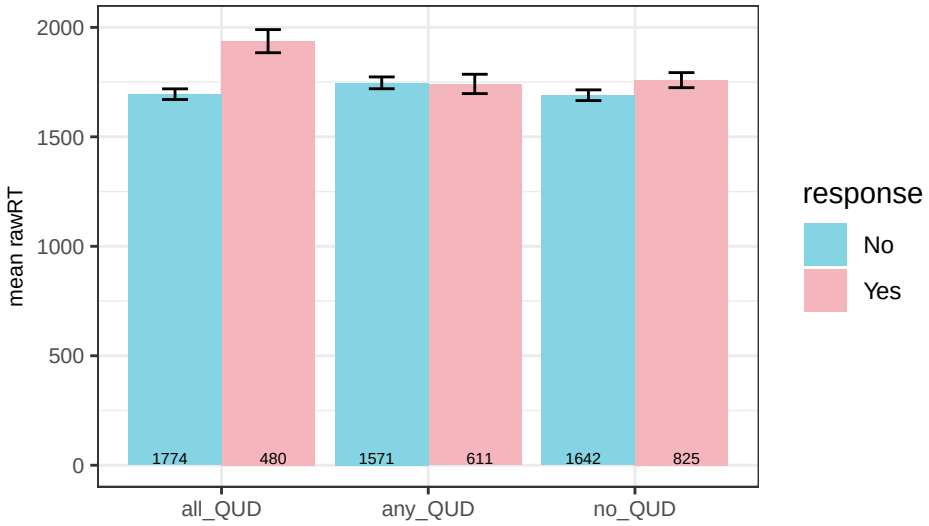
Response Time

Distribution of response times in critical trials

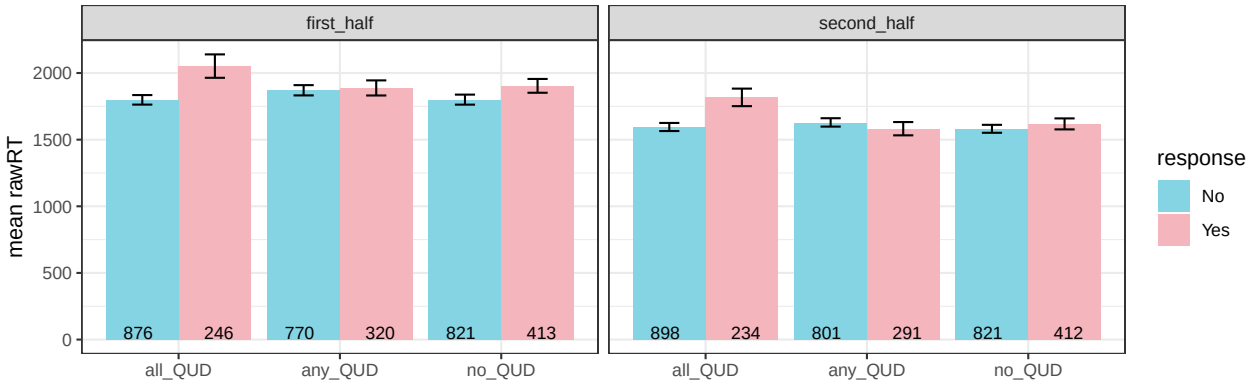
```
## Warning: Removed 2 rows containing missing values (geom_bar).
```



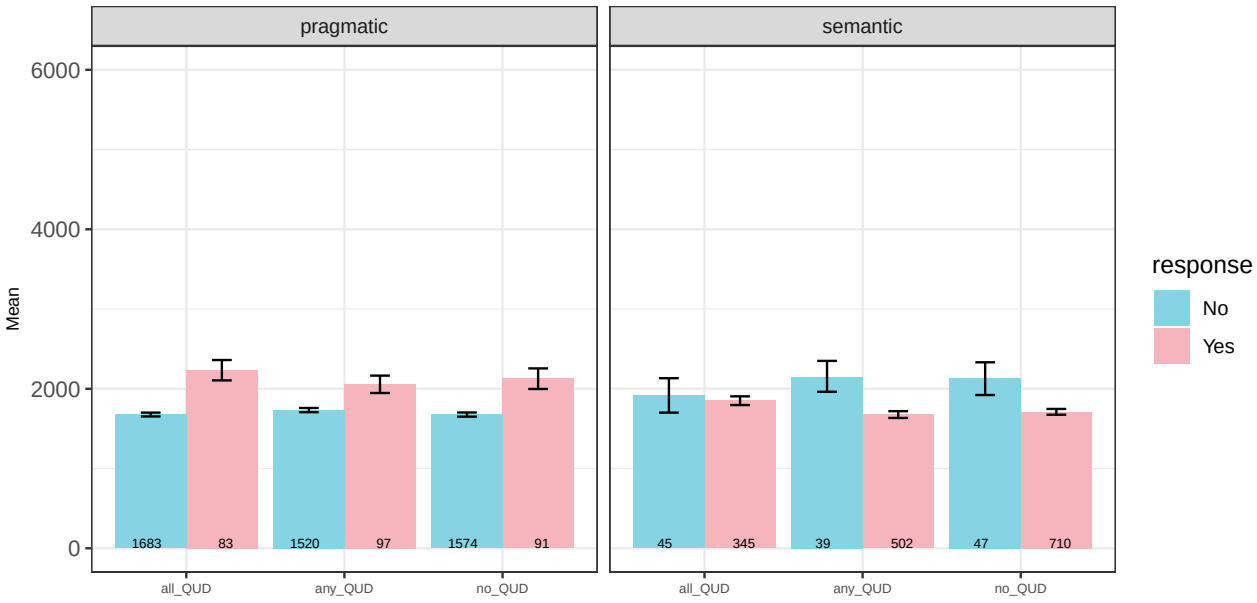
Response time and QUD



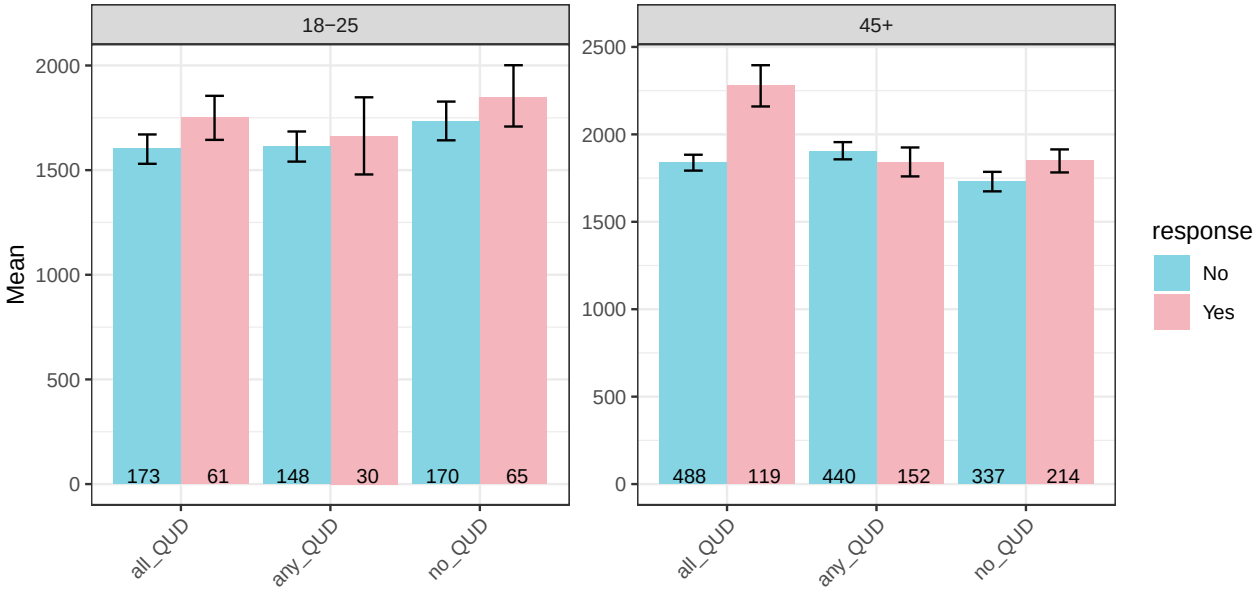
Response time, trial order and QUD



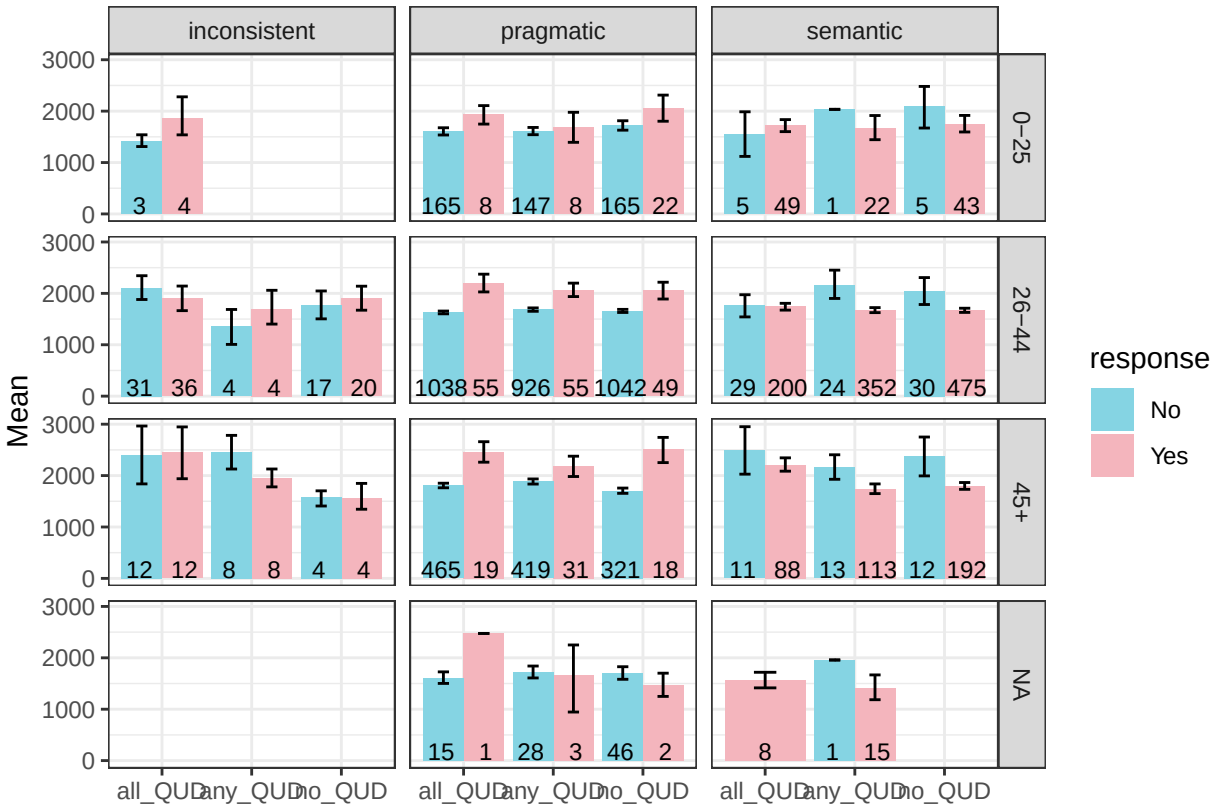
Response time, responder type and QUD



Response time, age and QUD



Response time, age, responder type and QUD



EXTRA: Semanticity and response time

Models