To interpret this 3-way, we should examine the Word x Image interaction separately for Young and Old people...

We can do this by filtering our dataset:

```
> young_filter <- filter(data, Age == "Young")
> model_young <- aov_4(RT ~ Word * Image + (1 + Word * Image | Participant),
young_filter)
> anova(model_young)
Anova Table (Type 3 tests)

Response: RT
           num Df den Df    MSE          F      ges      Pr(>F)
Word             1     15 681.87   25.1197 0.29236 0.0001547 ***
Image            1     15 918.44    0.7574 0.01650 0.3978527
Word:Image       1     15 560.77 138.1887 0.65146 5.725e-09 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Significant interaction

We need to follow this up with pairwise comparisons.

```
> emmeans(model_young, pairwise ~ Word * Image, adjust = "Bonferroni")
$emmeans
 Word Image    emmean        SE     df lower.CL upper.CL
 Pos  Pos     741.3750 6.571636 57.69 728.2189 754.5311
 Neg  Pos     843.6875 6.571636 57.69 830.5314 856.8436
 Pos  Neg     804.3750 6.571636 57.69 791.2189 817.5311
 Neg  Neg     767.5000 6.571636 57.69 754.3439 780.6561

Confidence level used: 0.95

$contrasts
 contrast              estimate        SE     df t.ratio p.value
 Pos,Pos - Neg,Pos   -102.3125  8.812773 29.72 -11.610  <.0001
 Pos,Pos - Pos,Neg    -63.0000  9.615140 28.34  -6.552  <.0001
 Pos,Pos - Neg,Neg    -26.1250 10.000957 29.36  -2.612  0.0842
 Neg,Pos - Pos,Neg     39.3125 10.000957 29.36   3.931  0.0028
 Neg,Pos - Neg,Neg     76.1875  9.615140 28.34   7.924  <.0001
 Pos,Neg - Neg,Neg     36.8750  8.812773 29.72   4.184  0.0014

P value adjustment: bonferroni method for 6 tests
```

Key pairwise comparisons are significant