Semantic Networks Analysis

Abhilasha Kumar
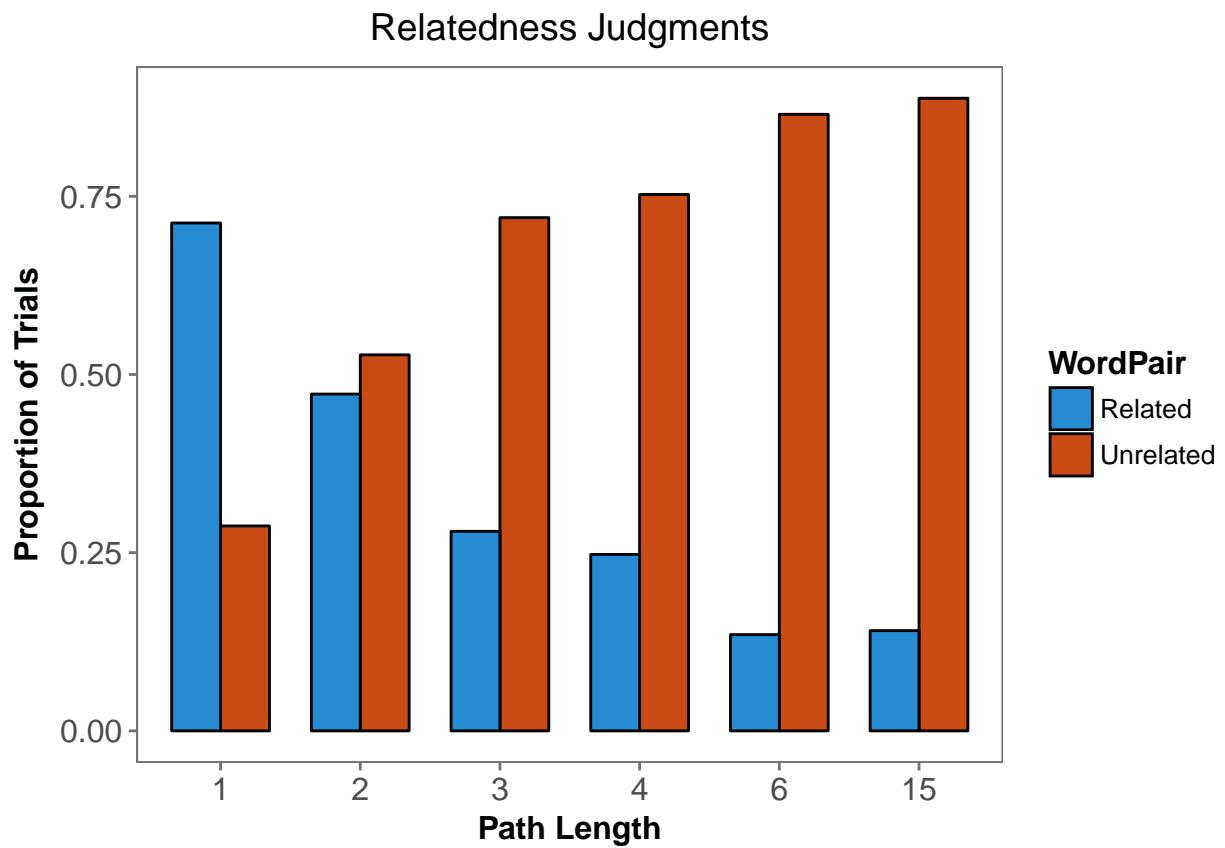
January 16, 2018
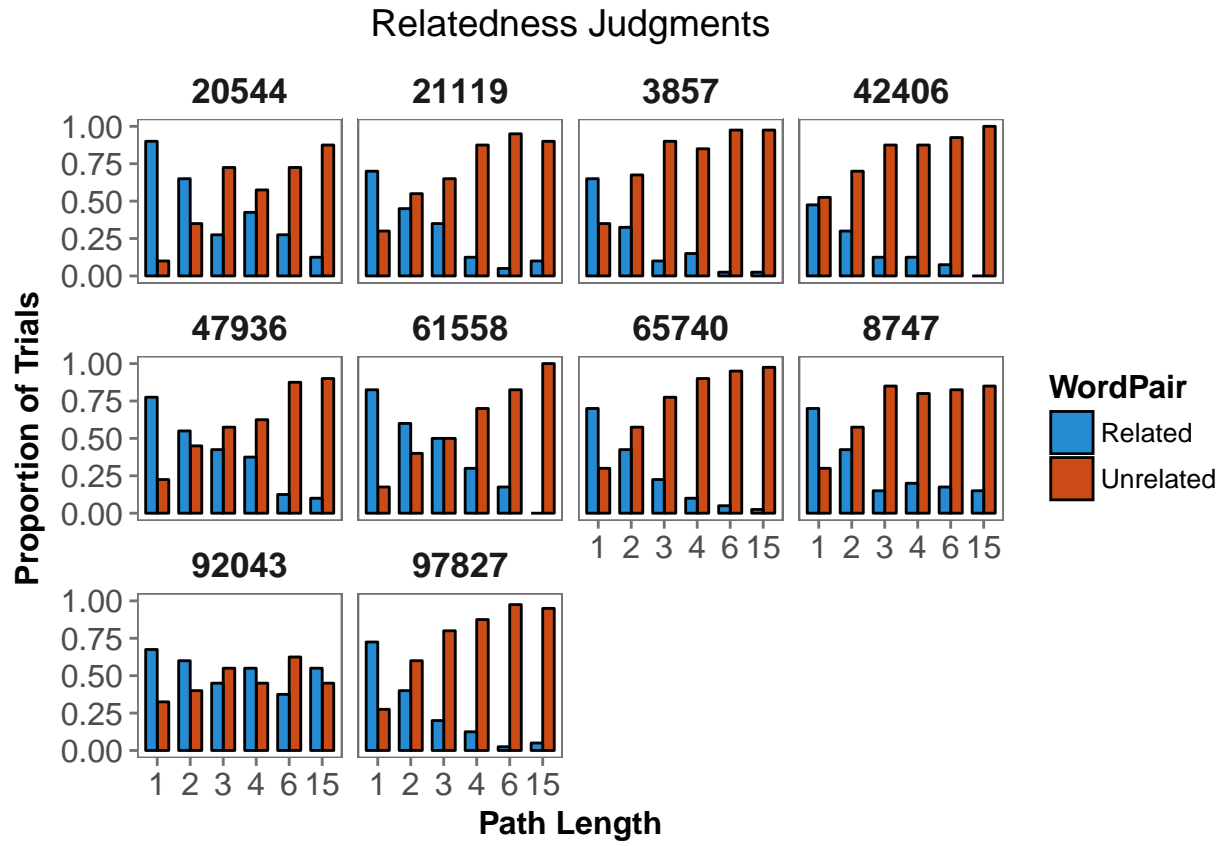
Reading the Data

Related-Unrelated Decisions

```
##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':
##
##     filter, lag

## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```
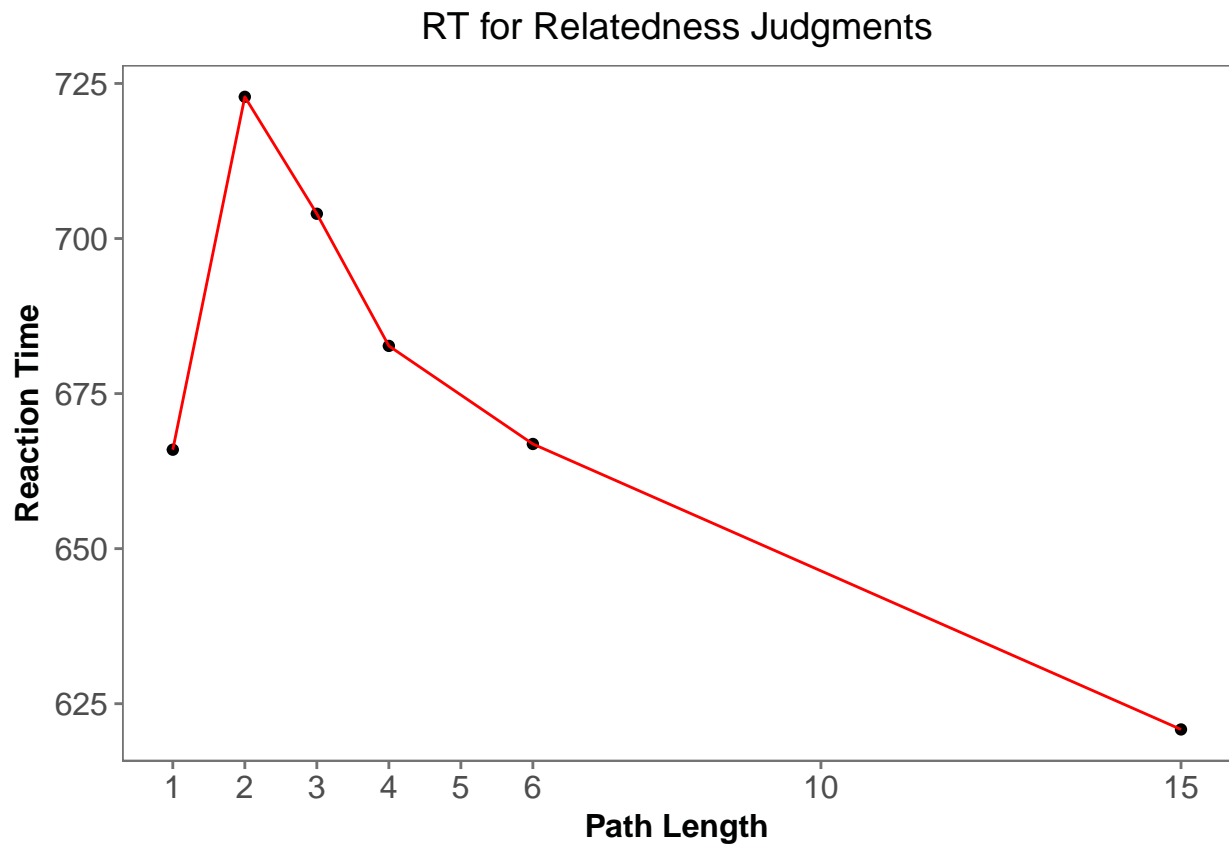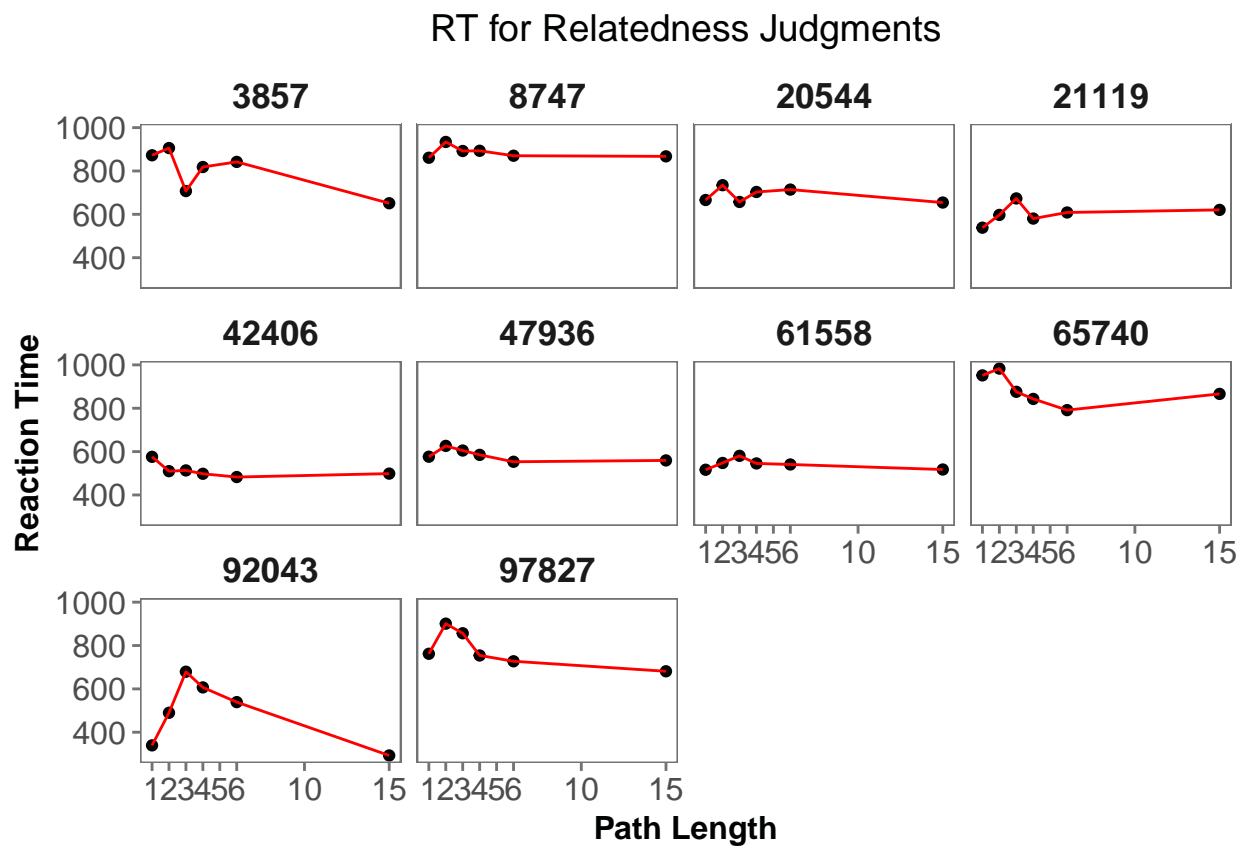
Plotting Proportions

Relatedness Judgments

Raw Reaction Time

Plotting RTs

RT for Relatedness Judgments

RT for Relatedness Judgments

z-scored Reaction Time

Histogram of RT

Raw RT Histogram for All Trials
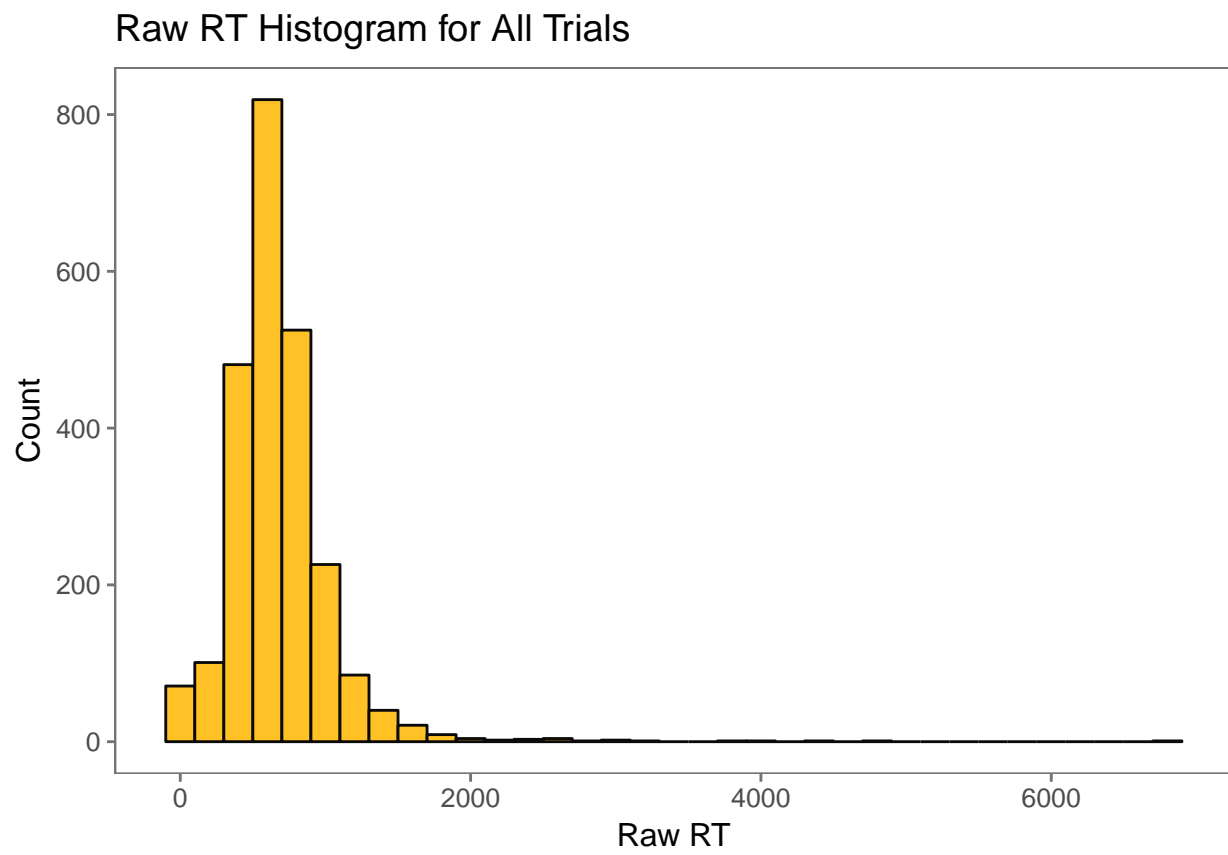
First Trim

Raw RT Histogram for Trials Above 250 ms and below 2000 ms

RT for Relatedness Judgments

Subject Raw RT again

RT for Relatedness Judgments
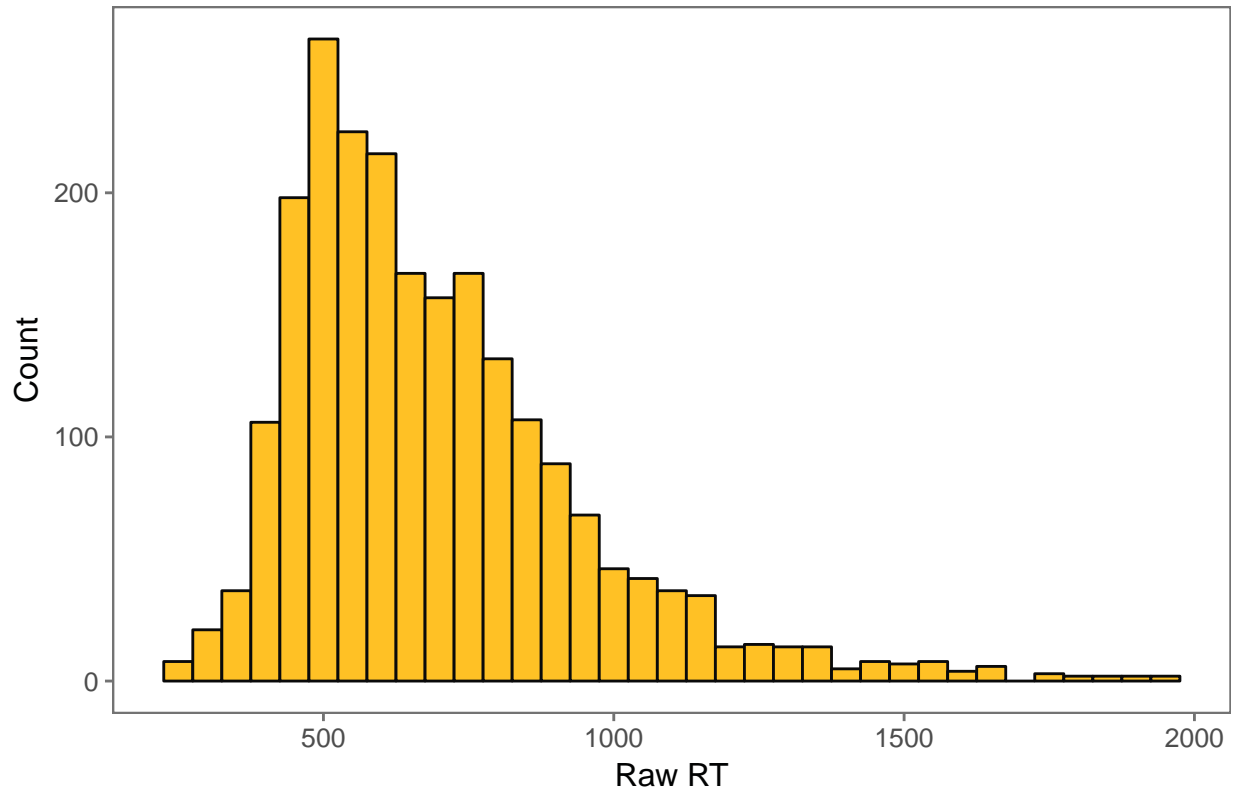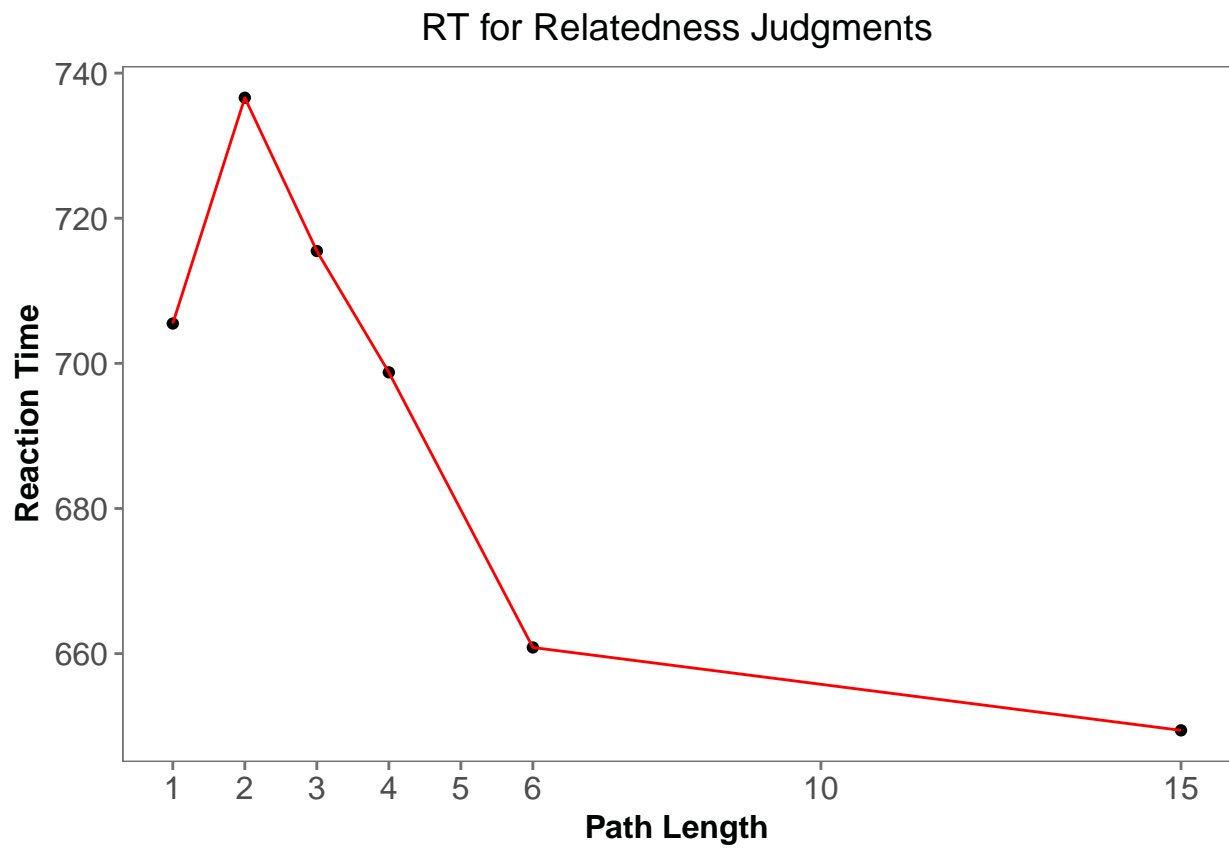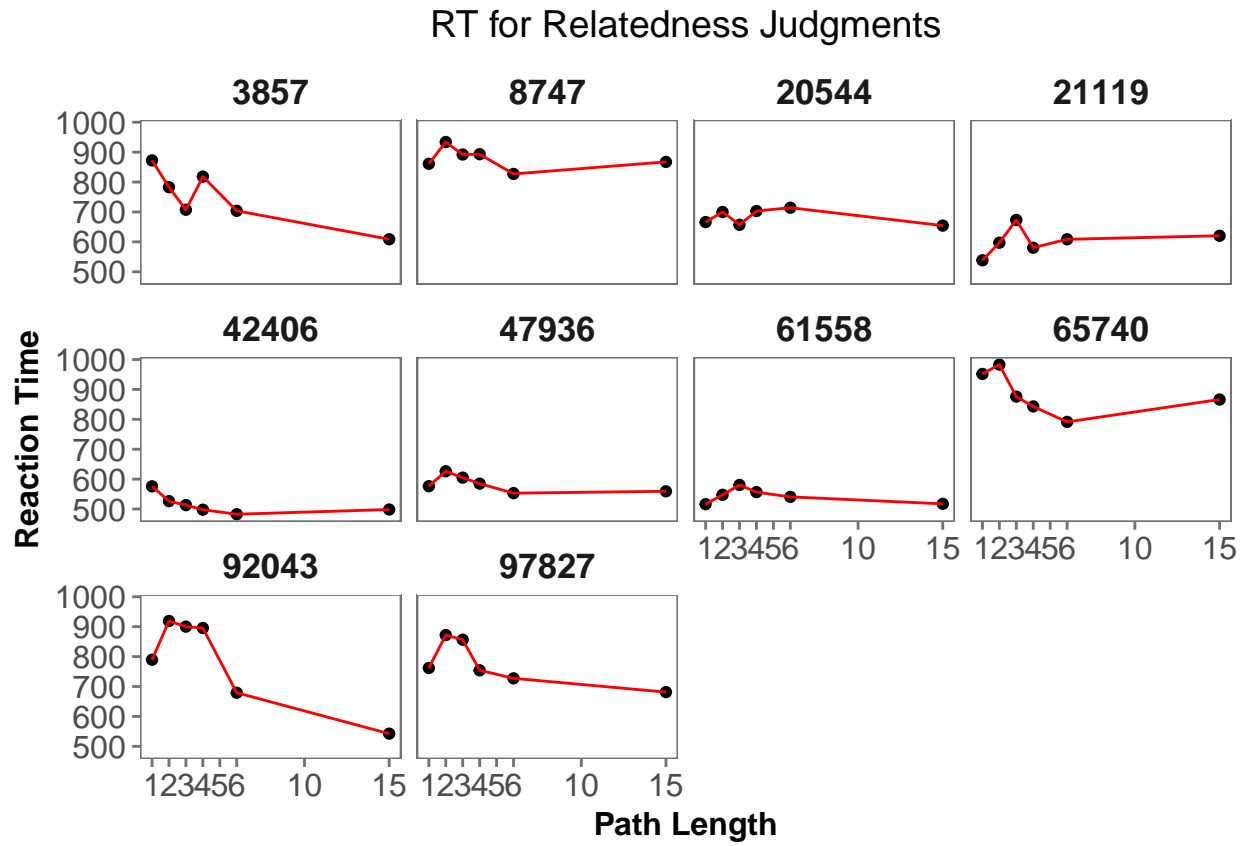
Making the z-scores

z-RT Distribution

z–RT Histogram for above 250 ms & <2s Trials
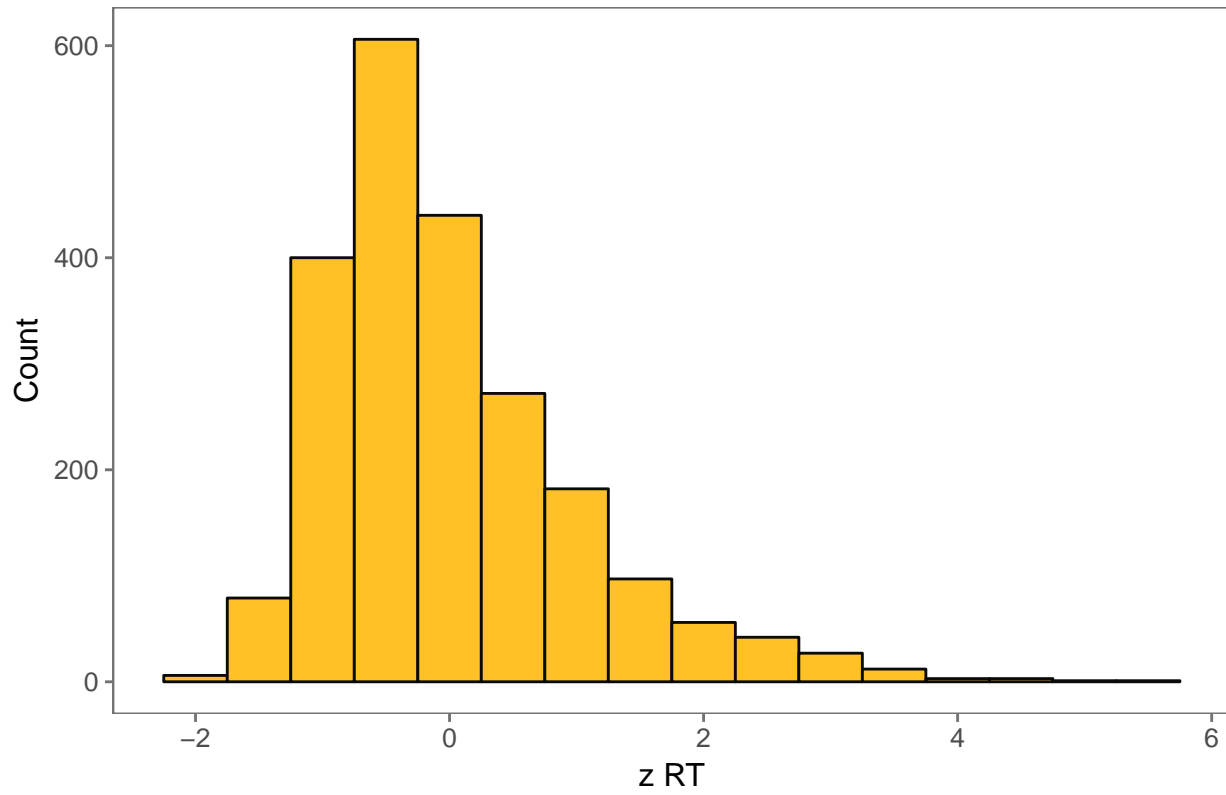
Trimming z-RT

Trimmed (3 SD) z−RT Histogram for above 250 ms & <2s Trials
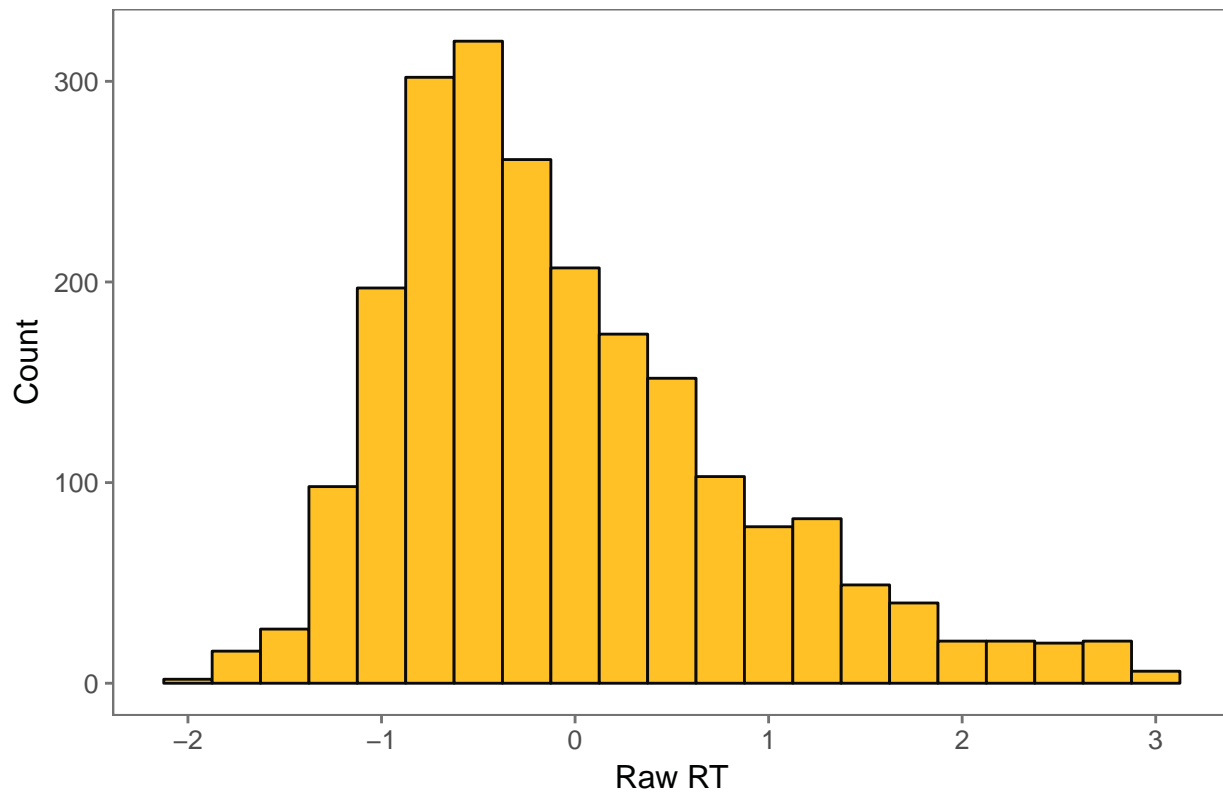
Repeating z-scoring

Aggregating zRT

Plotting RTs

z–RT for Relatedness Judgments

Subject-Wise

z–RT for Relatedness Judgments
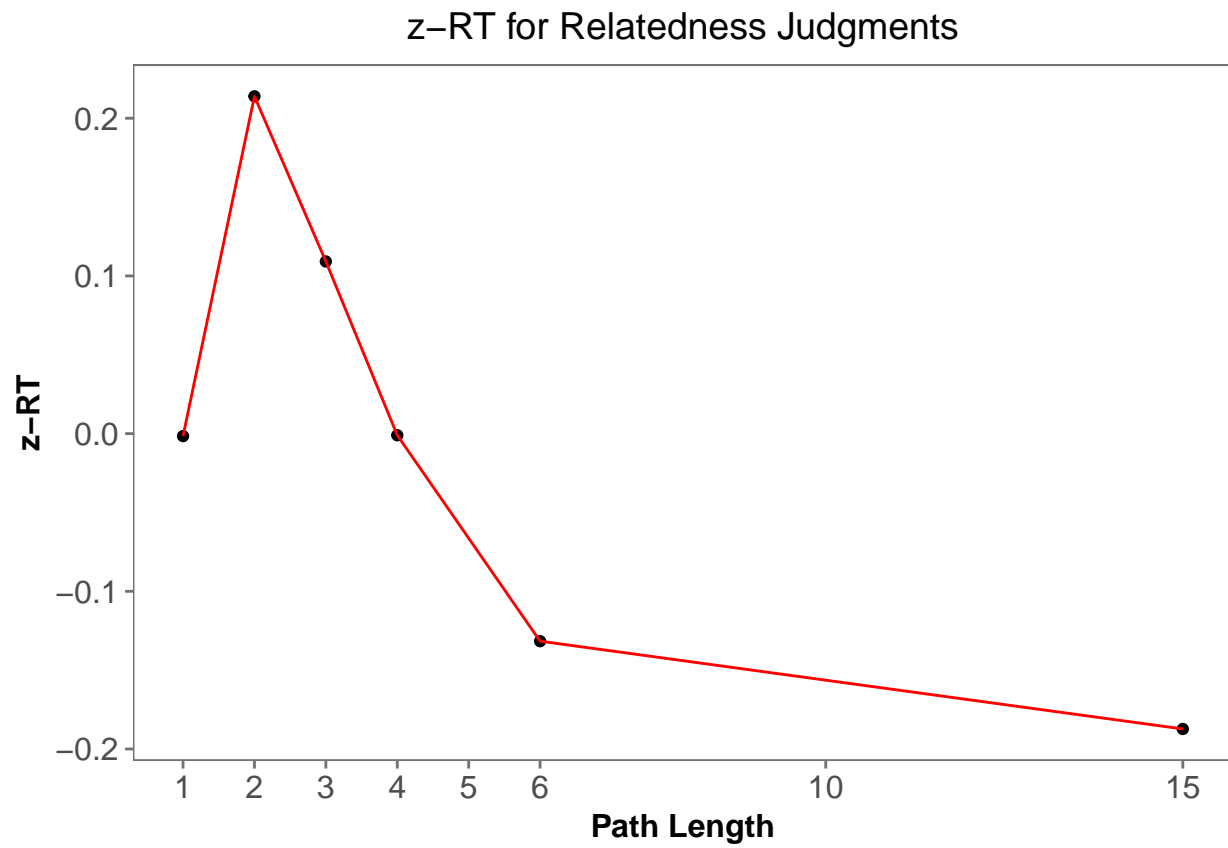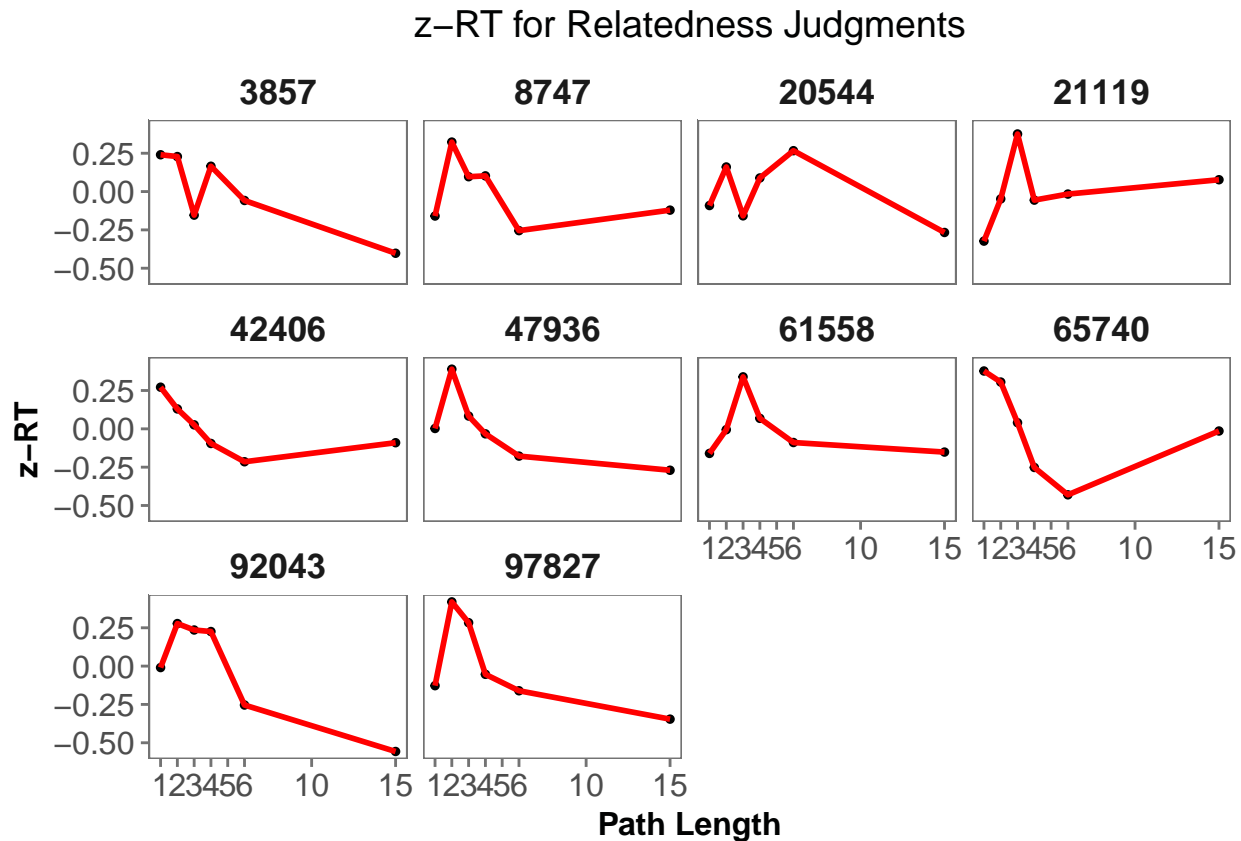
Regressions

```
## Loading required package: Matrix

## Linear mixed model fit by REML ['lmerMod']
## Formula: rt ~ 1 + (1 | subject)
##    Data: sem
##
## REML criterion at convergence: 34878.2
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -1.4351 -0.4437 -0.1623  0.2300 18.0935
##
## Random effects:
##  Groups   Name        Variance Std.Dev.
##  subject  (Intercept)  22498   150.0
##  Residual             118553   344.3
## Number of obs: 2400, groups:  subject, 10
##
## Fixed effects:
##             Estimate Std. Error t value
## (Intercept)   677.20      47.95   14.12
```

```
## [1] 0.1594997

## Linear mixed model fit by REML ['lmerMod']
## Formula: rt ~ pathlength + (1 | subject)
##    Data: sem
##
## REML criterion at convergence: 34862
##
## Scaled residuals:
##     Min     1Q  Median     3Q     Max
## -1.5031 -0.4453 -0.1590  0.2286 18.1063
##
## Random effects:
##  Groups   Name        Variance Std.Dev.
##  subject  (Intercept)  22500    150.0
##  Residual             117931    343.4
## Number of obs: 2400, groups:  subject, 10
##
## Fixed effects:
##              Estimate Std. Error t value
## (Intercept)  705.825     48.573  14.531
## pathlength    -5.540      1.501  -3.691
##
## Correlation of Fixed Effects:
##            (Intr)
## pathlength -0.160

## Linear mixed model fit by REML ['lmerMod']
## Formula: rt ~ pathlength + (pathlength | subject)
##    Data: sem
##
## REML criterion at convergence: 34861.1
##
## Scaled residuals:
##     Min     1Q  Median     3Q     Max
## -1.5275 -0.4426 -0.1595  0.2253 18.1084
##
## Random effects:
##  Groups   Name        Variance  Std.Dev. Corr
##  subject  (Intercept)  24100.94 155.245
##           pathlength      10.08   3.175  -0.37
##  Residual             117731.92 343.121
## Number of obs: 2400, groups:  subject, 10
##
## Fixed effects:
##              Estimate Std. Error t value
## (Intercept)  705.825     50.192  14.06
## pathlength    -5.540      1.805  -3.07
##
## Correlation of Fixed Effects:
##            (Intr)
## pathlength -0.328
```
"'