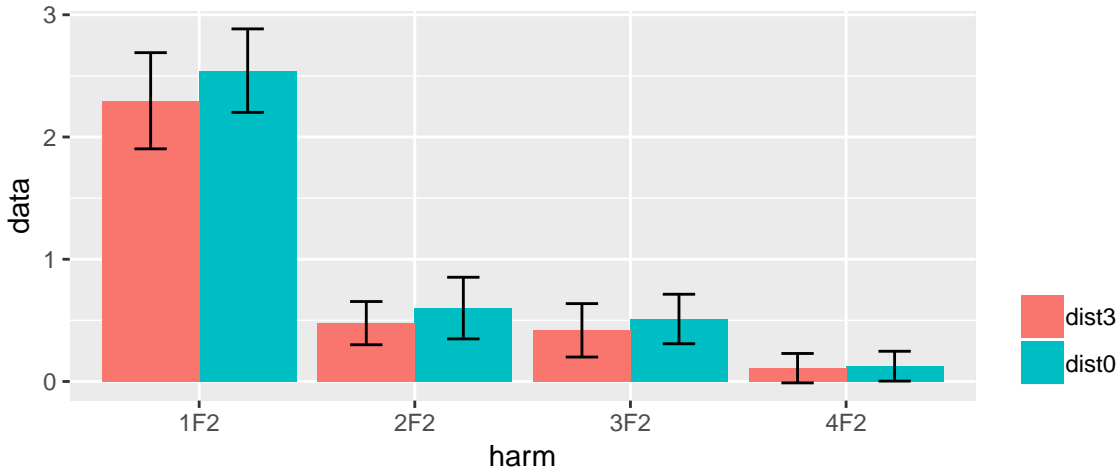


NUMEROSITY ANALYSIS RESULTS

```
top_folder = '/Users/kohler/Google Drive/Dropbox/WRITING/Articles/2019_KohlerNumerositySSVEP/figures/results/exp
counter = 0
for (q in c(1,2,3,4)) {
  for (c in c(5,6,8,9)) {
    cur_file = switch(q, "RLS_carrier_rc1_carr", "RLS_oddball_rc1_carr", "RLS_carrier_rc2_carr", "RLS_oddball_rc2_carr")
    cur_csv <- sprintf('%s/%s%d_full_projected_all_trials.csv', top_folder, cur_file, c)
    cur_data <- data.frame( read.csv(file = cur_csv) )
    cur_data$cond <- factor(cur_data$condition, levels(cur_data$condition)[c(2,1)])
    cur_data$harm <- cur_data$harmonic
    cur_data$harm_alt <- factor(cur_data$harmonic, levels(cur_data$harmonic)[c(2,1,3,4)])
    g <- ggplot(cur_data, aes(harm, data, fill = cond)) +
      stat_summary(geom = "bar", fun.y = mean, position=position_dodge()) +
      stat_summary(geom = "errorbar", fun.data = mean_se, width=.3, position=position_dodge(.9))
    g <- g + theme(legend.title=element_blank(),
      legend.justification=c(1,0),
      legend.background = element_blank()) +
      ggtitle(toupper(sprintf('%s%d\n', cur_file, c)))
    if (q == 1 && c == 6) {
      cat("RESULTS BELOW\n ")
      cat("\n ")
    }
    print(g)
    m1 <- lmer(data ~ cond * harm + (1|subject), cur_data)
    emm = emmeans(m1, ~ cond * harm, lmer.df = "satterthwaite")
    m2 <- lmer(data ~ cond + harm + (1|subject), cur_data)
    if (isSingular(m1)) {
      if (isSingular(m2)) {
        cat("WARNING: BOTH MODELS ARE SINGULAR! ")
      } else {
        cat("WARNING: MODEL1 IS SINGULAR, BUT MODEL2 IS NOT! ")
      }
    } else {
      cat("LOVELY: NONE OF THE MODELS ARE SINGULAR! ")
    }
    if (!converge_ok(m1)) {
      if (!converge_ok(m2)) {
        cat("WARNING: BOTH MODELS DID NOT CONVERGE!\n\n")
      } else {
        cat("WARNING: MODEL1 DID NOT CONVERGE, BUT MODEL2 DID!\n\n")
      }
    } else {
      cat("LOVELY: BOTH MODELS CONVERGED!\n\n")
    }

    cat("ANOVA TEST FOR MAIN EFFECTS AND INTERACTIONS\n")
    print(anova(m1), type='pdf')
    cat("\nSUMMARY AND POST-HOC TESTS, harm1 baseline \n")
    print(prettify(summary(m1)), type='pdf')
    cat("\nESTIMATED MARGINAL MEANS, SIMPLE MAIN EFFECTS OF CONDITION WITHOUT CORRECTION\n")
    print(prettify(summary(pairs(emm, simple = "cond", adjust = "none"))))
    cat("\nTEST OF WHETHER OR NOT THE INTERACTION PROVIDES A BETTER FIT\n")
    print(anova(m1, m2))
  }
}
```

RLS_CARRIER_RC1_CARR5

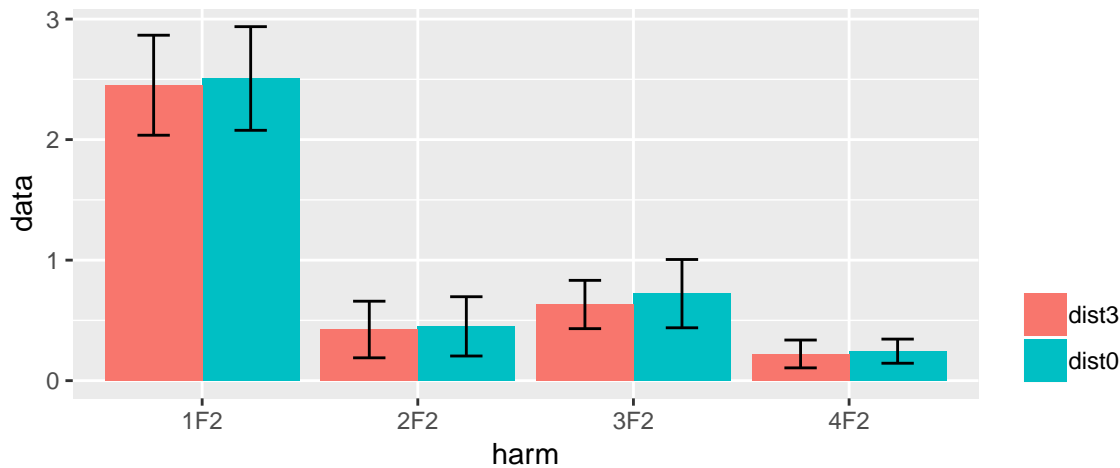


```
## LOVELY: NONE OF THE MODELS ARE SINGULAR!    LOVELY: BOTH MODELS CONVERGED!
##
## ANOVA TEST FOR MAIN EFFECTS AND INTERACTIONS
## Type III Analysis of Variance Table with Satterthwaite's method
##           Sum Sq Mean Sq NumDF DenDF F value Pr(>F)
## cond           0.430   0.430     1    98  0.5831 0.4469
## harm          97.269  32.423     3    98 43.9723 <2e-16 ***
## cond:harm    0.206   0.069     3    98  0.0933 0.9636
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## SUMMARY AND POST-HOC TESTS, harm1 baseline
##           Estimate CI (lower) CI (upper) Std. Error      df    t value Pr(>|t|)
## 1 (Intercept)  2.2966516  1.8259510  2.7673522  0.2460657  89.75956  9.3334892 <0.001 ***
## 2 cond: dist0  0.2465222 -0.3526576  0.8457019  0.3135498  98.00000  0.7862297  0.434
## 3 harm: 2F2 -1.8194244 -2.4186041 -1.2202446  0.3135498  98.00000 -5.8026646 <0.001 ***
## 4 harm: 3F2 -1.8782279 -2.4774076 -1.2790482  0.3135498  98.00000 -5.9902058 <0.001 ***
## 5 harm: 4F2 -2.1879118 -2.7870916 -1.5887321  0.3135498  98.00000 -6.9778765 <0.001 ***
## 6 conddist0:harm2F2 -0.1232866 -0.9706547  0.7240816  0.4434264  98.00000 -0.2780316  0.782
## 7 conddist0:harm3F2 -0.1537696 -1.0011377  0.6935985  0.4434264  98.00000 -0.3467759  0.73
## 8 conddist0:harm4F2 -0.2301696 -1.0775377  0.6171985  0.4434264  98.00000 -0.5190705  0.605
##
## ESTIMATED MARGINAL MEANS, SIMPLE MAIN EFFECTS OF CONDITION WITHOUT CORRECTION
##           contrast harm estimate      SE df    t.ratio  p.value
## 1 1 dist3 - dist0 1F2 -0.24652218 0.3135498 98 -0.78622973 0.4336299
## 2 2 dist3 - dist0 2F2 -0.12323562 0.3135498 98 -0.39303363 0.6951483
## 3 3 dist3 - dist0 3F2 -0.09275258 0.3135498 98 -0.29581449 0.7679977
## 4 4 dist3 - dist0 4F2 -0.01635261 0.3135498 98 -0.05215314 0.9585128
##
## TEST OF WHETHER OR NOT THE INTERACTION PROVIDES A BETTER FIT
## Data: cur_data
## Models:
## m2: data ~ cond + harm + (1 | subject)
## m1: data ~ cond * harm + (1 | subject)
##    Df    AIC    BIC logLik deviance Chisq Chi Df Pr(>Chisq)
## m2  7 325.73 345.25 -155.87  311.73
## m1 10 331.43 359.31 -155.72  311.43 0.2993    3    0.9602
```

```
## RESULTS BELOW
```

```
##
##
```

RLS_CARRIER_RC1_CARR6



```
## LOVELY: NONE OF THE MODELS ARE SINGULAR! LOVELY: BOTH MODELS CONVERGED!
```

```
##
```

```
## ANOVA TEST FOR MAIN EFFECTS AND INTERACTIONS
```

```
## Type III Analysis of Variance Table with Satterthwaite's method
```

```
##      Sum Sq Mean Sq NumDF DenDF F value    Pr(>F)
## cond      0.071   0.071     1    98  0.0794    0.7787
## harm     95.684  31.895     3    98 35.4270 1.355e-15 ***
## cond:harm   0.022   0.007     3    98  0.0081    0.9990
```

```
## ---
```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##
```

```
## SUMMARY AND POST-HOC TESTS, harm1 baseline
```

| | | Estimate | CI (lower) | CI (upper) | Std. Error | df | t value | Pr(> t) |
|---|--------------------|-------------|------------|------------|------------|----------|-------------|------------|
| 1 | (Intercept) | 2.45118955 | 1.9197088 | 2.9826703 | 0.2776046 | 83.43014 | 8.82978807 | <0.001 *** |
| 2 | cond: dist0 | 0.05585770 | -0.6062233 | 0.7179387 | 0.3464659 | 98.00000 | 0.16122133 | 0.872 |
| 3 | harm: 2F2 | -2.02694495 | -2.6890259 | -1.3648640 | 0.3464659 | 98.00000 | -5.85034447 | <0.001 *** |
| 4 | harm: 3F2 | -1.81929616 | -2.4813771 | -1.1572152 | 0.3464659 | 98.00000 | -5.25101052 | <0.001 *** |
| 5 | harm: 4F2 | -2.22973040 | -2.8918114 | -1.5676494 | 0.3464659 | 98.00000 | -6.43564147 | <0.001 *** |
| 6 | cond:dist0:harm2F2 | -0.02971119 | -0.9660351 | 0.9066127 | 0.4899768 | 98.00000 | -0.06063794 | 0.952 |
| 7 | cond:dist0:harm3F2 | 0.03414791 | -0.9021760 | 0.9704718 | 0.4899768 | 98.00000 | 0.06969292 | 0.945 |
| 8 | cond:dist0:harm4F2 | -0.03265164 | -0.9689755 | 0.9036722 | 0.4899768 | 98.00000 | -0.06663916 | 0.947 |

```
##
```

```
## ESTIMATED MARGINAL MEANS, SIMPLE MAIN EFFECTS OF CONDITION WITHOUT CORRECTION
```

| | contrast | harm | estimate | SE | df | t.ratio | p.value |
|---|-----------------|------|-------------|-----------|----|-------------|-----------|
| 1 | 1 dist3 - dist0 | 1F2 | -0.05585770 | 0.3464659 | 98 | -0.16122133 | 0.8722510 |
| 2 | 2 dist3 - dist0 | 2F2 | -0.02614651 | 0.3464659 | 98 | -0.07546633 | 0.9399975 |
| 3 | 3 dist3 - dist0 | 3F2 | -0.09000561 | 0.3464659 | 98 | -0.25978201 | 0.7955769 |
| 4 | 4 dist3 - dist0 | 4F2 | -0.02320605 | 0.3464659 | 98 | -0.06697933 | 0.9467346 |

```
##
```

```
## TEST OF WHETHER OR NOT THE INTERACTION PROVIDES A BETTER FIT
```

```
## Data: cur_data
```

```
## Models:
```

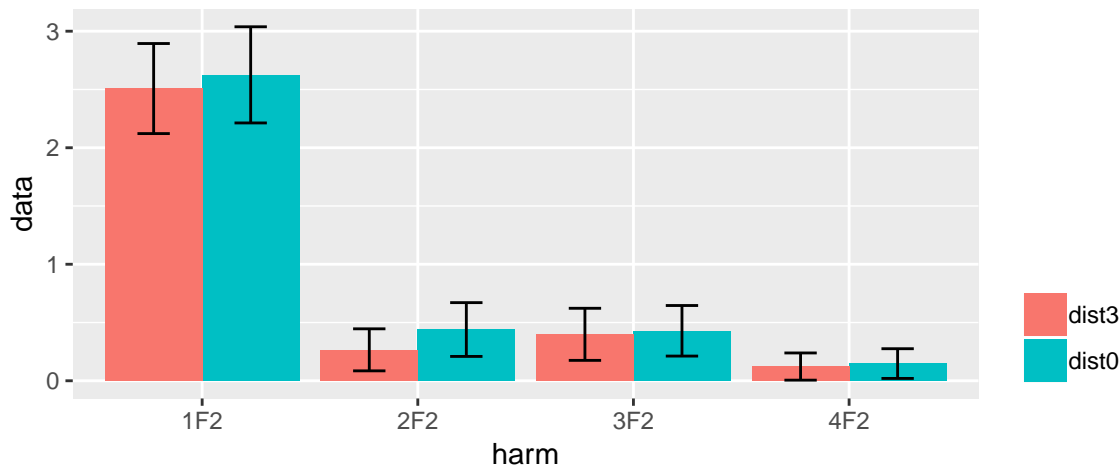
```
## m2: data ~ cond + harm + (1 | subject)
```

```
## m1: data ~ cond * harm + (1 | subject)
```

```
##      Df      AIC      BIC logLik deviance Chisq Chi Df Pr(>Chisq)
```

```
## m2 7 351.47 370.98 -168.73 337.47
## m1 10 357.44 385.32 -168.72 337.44 0.026 3 0.9989
```

RLS_CARRIER_RC1_CARR8



```
## LOVELY: NONE OF THE MODELS ARE SINGULAR! LOVELY: BOTH MODELS CONVERGED!
```

```
##
## ANOVA TEST FOR MAIN EFFECTS AND INTERACTIONS
## Type III Analysis of Variance Table with Satterthwaite's method
##
##      Sum Sq Mean Sq NumDF DenDF F value Pr(>F)
## cond      0.227   0.227     1    98  0.2900 0.5914
## harm     116.846  38.949     3    98 49.7334 <2e-16 ***
## cond:harm   0.116   0.039     3    98  0.0496 0.9853
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

SUMMARY AND POST-HOC TESTS, harm1 baseline

| | | Estimate | CI (lower) | CI (upper) | Std. Error | df | t value | Pr(> t) |
|---|--------------------|-------------|------------|------------|------------|----------|------------|------------|
| 1 | (Intercept) | 2.50775597 | 2.0139532 | 3.0015588 | 0.2579652 | 84.53558 | 9.7212968 | <0.001 *** |
| 2 | cond: dist0 | 0.11772272 | -0.4997836 | 0.7352291 | 0.3231400 | 98.00003 | 0.3643087 | 0.716 |
| 3 | harm: 2F2 | -2.24223087 | -2.8597372 | -1.6247245 | 0.3231400 | 98.00003 | -6.9388832 | <0.001 *** |
| 4 | harm: 3F2 | -2.10923279 | -2.7267391 | -1.4917264 | 0.3231400 | 98.00003 | -6.5273028 | <0.001 *** |
| 5 | harm: 4F2 | -2.38580591 | -3.0033123 | -1.7682996 | 0.3231400 | 98.00003 | -7.3831953 | <0.001 *** |
| 6 | cond:dist0:harm2F2 | 0.05654073 | -0.8167451 | 0.9298266 | 0.4569890 | 98.00003 | 0.1237245 | 0.902 |
| 7 | cond:dist0:harm3F2 | -0.08731422 | -0.9606001 | 0.7859716 | 0.4569890 | 98.00003 | -0.1910642 | 0.849 |
| 8 | cond:dist0:harm4F2 | -0.09206288 | -0.9653487 | 0.7812230 | 0.4569890 | 98.00003 | -0.2014553 | 0.841 |

ESTIMATED MARGINAL MEANS, SIMPLE MAIN EFFECTS OF CONDITION WITHOUT CORRECTION

| | contrast | harm | estimate | SE | df | t.ratio | p.value |
|---|-----------------|------|-------------|---------|----------|-------------|-----------|
| 1 | 1 dist3 - dist0 | 1F2 | -0.11772272 | 0.32314 | 98.00003 | -0.36430869 | 0.7164124 |
| 2 | 2 dist3 - dist0 | 2F2 | -0.17426345 | 0.32314 | 98.00003 | -0.53928155 | 0.5909157 |
| 3 | 3 dist3 - dist0 | 3F2 | -0.03040850 | 0.32314 | 98.00003 | -0.09410316 | 0.9252193 |
| 4 | 4 dist3 - dist0 | 4F2 | -0.02565984 | 0.32314 | 98.00003 | -0.07940781 | 0.9368702 |

TEST OF WHETHER OR NOT THE INTERACTION PROVIDES A BETTER FIT

```
## Data: cur_data
```

```
## Models:
```

```
## m2: data ~ cond + harm + (1 | subject)
```

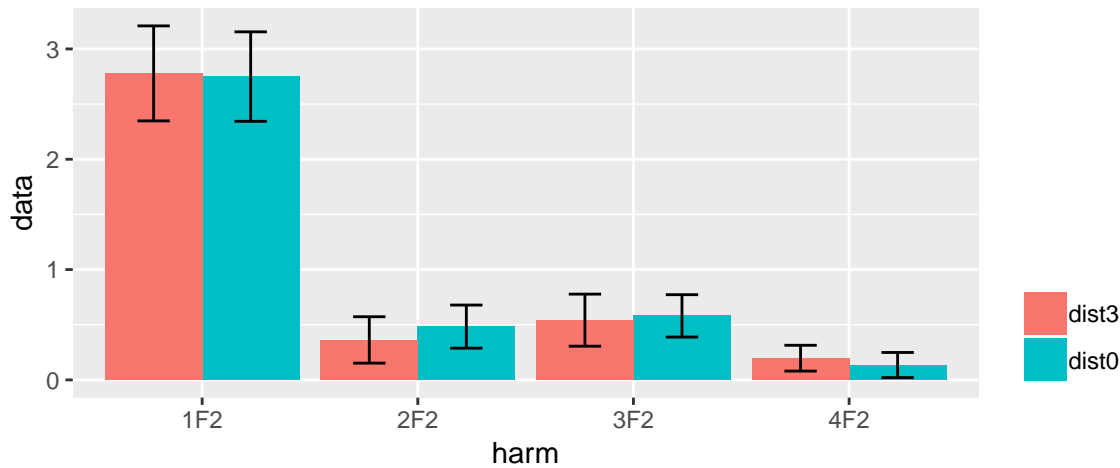
```
## m1: data ~ cond * harm + (1 | subject)
```

```
##      Df      AIC      BIC logLik deviance Chisq Chi Df Pr(>Chisq)
```

```
## m2 7 334.52 354.04 -160.26 320.52
```

```
## m1 10 340.37 368.24 -160.18 320.37 0.1592 3 0.9839
```

RLS_CARRIER_RC1_CARR9



```
## LOVELY: NONE OF THE MODELS ARE SINGULAR! LOVELY: BOTH MODELS CONVERGED!
```

```
##
```

```
## ANOVA TEST FOR MAIN EFFECTS AND INTERACTIONS
```

```
## Type III Analysis of Variance Table with Satterthwaite's method
```

```
##          Sum Sq Mean Sq NumDF DenDF F value Pr(>F)
## cond           0.009   0.009     1    98  0.0107 0.9178
## harm          129.937  43.312     3    98 52.6147 <2e-16 ***
## cond:harm     0.147   0.049     3    98  0.0595 0.9809
```

```
## ---
```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##
```

```
## SUMMARY AND POST-HOC TESTS, harm1 baseline
```

| | | Estimate | CI (lower) | CI (upper) | Std. Error | df | t value | Pr(> t) |
|------|--------------------|-------------|------------|------------|------------|----------|-------------|------------|
| ## 1 | (Intercept) | 2.77833463 | 2.2759144 | 3.2807549 | 0.2625467 | 86.76387 | 10.58224861 | <0.001 *** |
| ## 2 | cond: dist0 | -0.02895553 | -0.6620549 | 0.6041439 | 0.3312999 | 98.00000 | -0.08739974 | 0.931 |
| ## 3 | harm: 2F2 | -2.41604218 | -3.0491416 | -1.7829428 | 0.3312999 | 98.00000 | -7.29261337 | <0.001 *** |
| ## 4 | harm: 3F2 | -2.23677736 | -2.8698768 | -1.6036780 | 0.3312999 | 98.00000 | -6.75151811 | <0.001 *** |
| ## 5 | harm: 4F2 | -2.58150232 | -3.2146017 | -1.9484029 | 0.3312999 | 98.00000 | -7.79204043 | <0.001 *** |
| ## 6 | cond:dist0:harm2F2 | 0.14970162 | -0.7456361 | 1.0450394 | 0.4685288 | 98.00000 | 0.31951421 | 0.75 |
| ## 7 | cond:dist0:harm3F2 | 0.06769406 | -0.8276437 | 0.9630318 | 0.4685288 | 98.00000 | 0.14448216 | 0.885 |
| ## 8 | cond:dist0:harm4F2 | -0.03301692 | -0.9283547 | 0.8623208 | 0.4685288 | 98.00000 | -0.07046934 | 0.944 |

```
##
```

```
## ESTIMATED MARGINAL MEANS, SIMPLE MAIN EFFECTS OF CONDITION WITHOUT CORRECTION
```

| | contrast | harm | estimate | SE | df | t.ratio | p.value |
|------|-----------------|------|-------------|-----------|----|-------------|-----------|
| ## 1 | 1 dist3 - dist0 | 1F2 | 0.02895553 | 0.3312999 | 98 | 0.08739974 | 0.9305321 |
| ## 2 | 2 dist3 - dist0 | 2F2 | -0.12074609 | 0.3312999 | 98 | -0.36446159 | 0.7162986 |
| ## 3 | 3 dist3 - dist0 | 3F2 | -0.03873853 | 0.3312999 | 98 | -0.11692889 | 0.9071557 |
| ## 4 | 4 dist3 - dist0 | 4F2 | 0.06197244 | 0.3312999 | 98 | 0.18705844 | 0.8520015 |

```
##
```

```
## TEST OF WHETHER OR NOT THE INTERACTION PROVIDES A BETTER FIT
```

```
## Data: cur_data
```

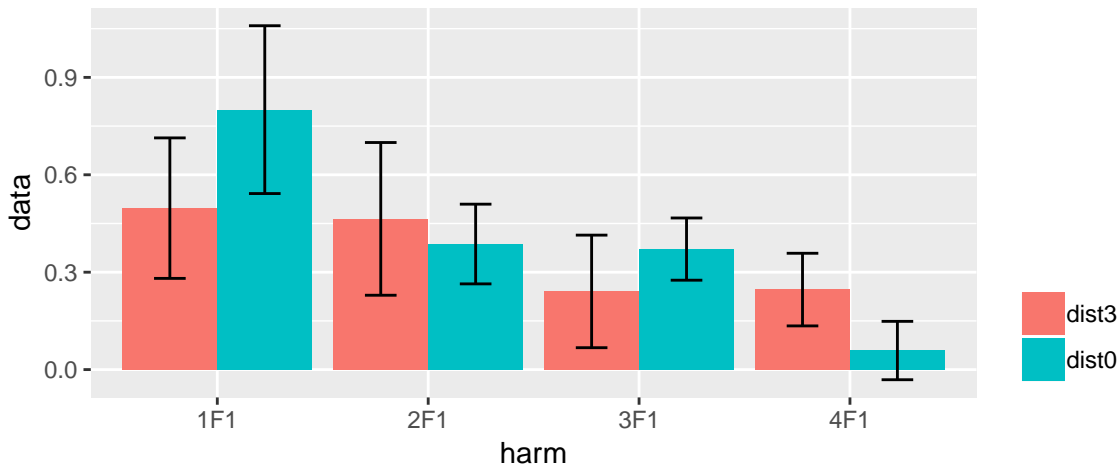
```
## Models:
```

```
## m2: data ~ cond + harm + (1 | subject)
```

```
## m1: data ~ cond * harm + (1 | subject)
```

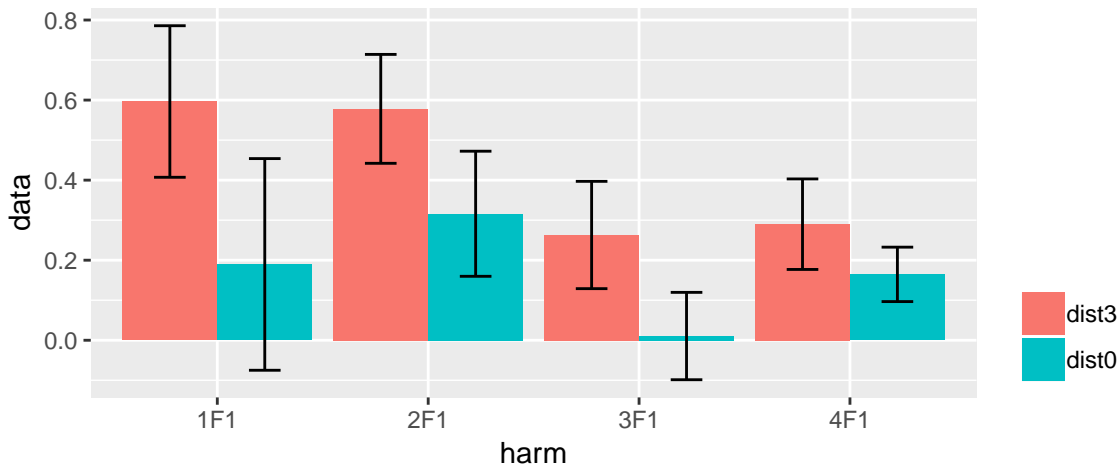
| | Df | AIC | BIC | logLik | deviance | Chisq | Chi | Df | Pr(>Chisq) |
|-------|----|--------|--------|---------|----------|-------|-----|----|------------|
| ## m2 | 7 | 339.83 | 359.34 | -162.91 | 325.83 | | | | |
| ## m1 | 10 | 345.64 | 373.51 | -162.82 | 325.64 | 0.191 | 3 | | 0.979 |

RLS_ODDBALL_RC1_CARR5



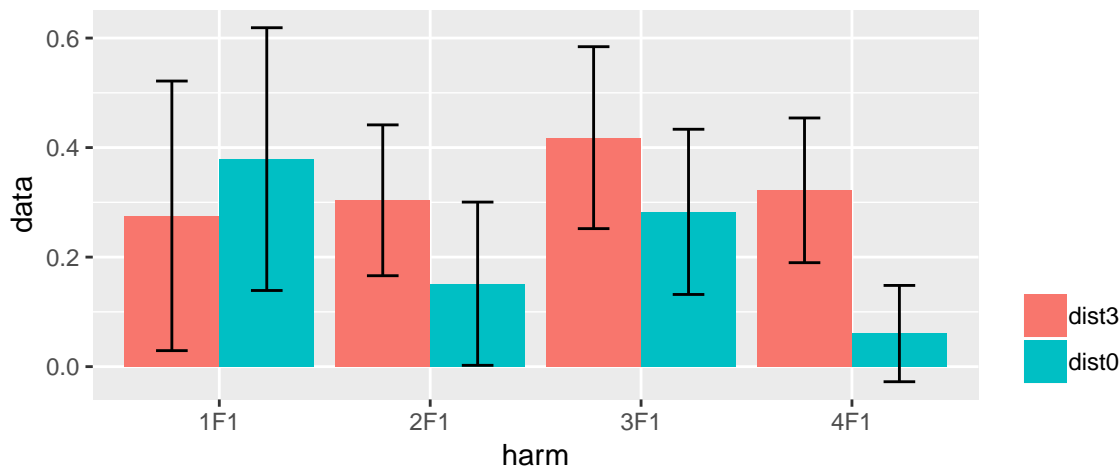
```
## LOVELY: NONE OF THE MODELS ARE SINGULAR!    LOVELY: BOTH MODELS CONVERGED!
##
## ANOVA TEST FOR MAIN EFFECTS AND INTERACTIONS
## Type III Analysis of Variance Table with Satterthwaite's method
##      Sum Sq Mean Sq NumDF DenDF F value Pr(>F)
## cond      0.0533  0.05326      1    98  0.1309  0.7183
## harm      3.9468  1.31561      3    98  3.2333  0.0256 *
## cond:harm  1.0736  0.35788      3    98  0.8795  0.4545
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## SUMMARY AND POST-HOC TESTS, harm1 baseline
##      Estimate CI (lower) CI (upper) Std. Error    df    t value Pr(>|t|)
## 1 (Intercept)  0.49727395  0.1638106  0.8307373  0.1745742 103.267  2.8484965  0.005 **
## 2 cond: dist0  0.30337351 -0.1417306  0.7484776  0.2329223  98.000  1.3024666  0.196
## 3 harm: 2F1 -0.03303884 -0.4781430  0.4120653  0.2329223  98.000 -0.1418449  0.887
## 4 harm: 3F1 -0.25642463 -0.7015288  0.1886795  0.2329223  98.000 -1.1009020  0.274
## 5 harm: 4F1 -0.25083792 -0.6959421  0.1942662  0.2329223  98.000 -1.0769168  0.284
## 6 conddist0:harm2F1 -0.38082179 -1.0102941  0.2486505  0.3294019  98.000 -1.1561009  0.25
## 7 conddist0:harm3F1 -0.17304849 -0.8025208  0.4564238  0.3294019  98.000 -0.5253415  0.601
## 8 conddist0:harm4F1 -0.49108048 -1.1205528  0.1383918  0.3294019  98.000 -1.4908248  0.139
##
## ESTIMATED MARGINAL MEANS, SIMPLE MAIN EFFECTS OF CONDITION WITHOUT CORRECTION
##      contrast harm estimate      SE df    t.ratio    p.value
## 1 1 dist3 - dist0  1F1 -0.30337351  0.2329223  98 -1.3024666  0.1958095
## 2 2 dist3 - dist0  2F1  0.07744829  0.2329223  98  0.3325070  0.7402167
## 3 3 dist3 - dist0  3F1 -0.13032502  0.2329223  98 -0.5595215  0.5770825
## 4 4 dist3 - dist0  4F1  0.18770698  0.2329223  98  0.8058781  0.4222643
##
## TEST OF WHETHER OR NOT THE INTERACTION PROVIDES A BETTER FIT
## Data: cur_data
## Models:
## m2: data ~ cond + harm + (1 | subject)
## m1: data ~ cond * harm + (1 | subject)
##      Df      AIC      BIC logLik deviance Chisq Chi Df Pr(>Chisq)
## m2  7 251.46 270.97 -118.73  237.46
## m1 10 254.67 282.54 -117.33  234.67 2.7897    3    0.4252
```

RLS_ODDBALL_RC1_CARR6



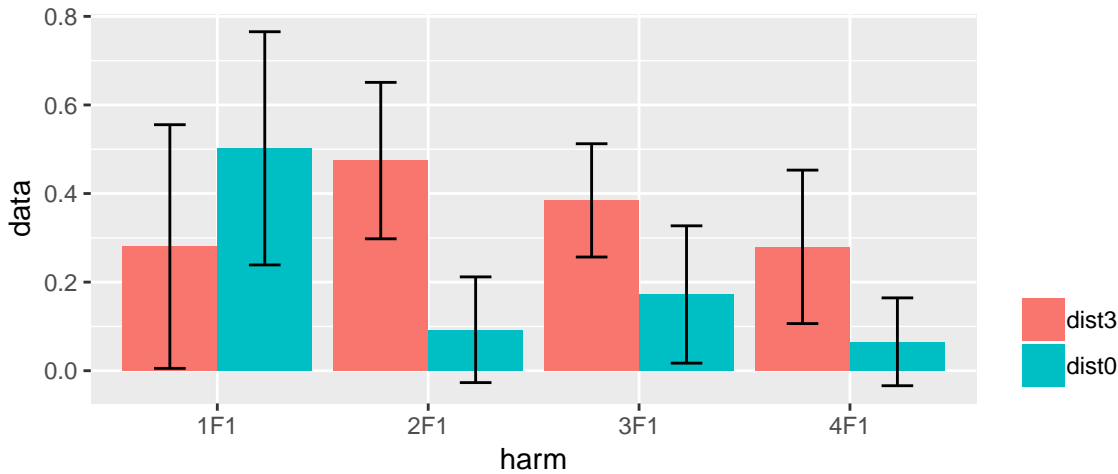
```
## WARNING: BOTH MODELS ARE SINGULAR!   LOVELY: BOTH MODELS CONVERGED!
##
## ANOVA TEST FOR MAIN EFFECTS AND INTERACTIONS
## Type III Analysis of Variance Table with Satterthwaite's method
##      Sum Sq Mean Sq NumDF DenDF F value  Pr(>F)
## cond      2.05459  2.05459      1    112   5.5921 0.01976 *
## harm      1.86597  0.62199      3    112   1.6929 0.17260
## cond:harm  0.29843  0.09948      3    112   0.2708 0.84637
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## SUMMARY AND POST-HOC TESTS, harm1 baseline
##      Estimate CI (lower) CI (upper) Std. Error df      t value Pr(>|t|)
## 1      (Intercept)  0.59641175  0.2976819  0.89514161  0.1565047 112   3.81082325 <0.001 ***
## 2      cond: dist0 -0.40698910 -0.8294569  0.01547872  0.2213311 112  -1.83882496  0.069 .
## 3      harm: 2F1  -0.01835591 -0.4408237  0.40411190  0.2213311 112  -0.08293417  0.934
## 4      harm: 3F1  -0.33347156 -0.7559394  0.08899626  0.2213311 112  -1.50666399  0.135
## 5      harm: 4F1  -0.30650999 -0.7289778  0.11595782  0.2213311 112  -1.38484846  0.169
## 6 cond:dist0:harm2F1  0.14493591 -0.4525238  0.74239562  0.3130094 112   0.46304011  0.644
## 7 cond:dist0:harm3F1  0.15456912 -0.4428906  0.75202883  0.3130094 112   0.49381623  0.622
## 8 cond:dist0:harm4F1  0.28165651 -0.3158032  0.87911622  0.3130094 112   0.89983403  0.37
##
## ESTIMATED MARGINAL MEANS, SIMPLE MAIN EFFECTS OF CONDITION WITHOUT CORRECTION
##      contrast harm estimate      SE df  t.ratio  p.value
## 1 1 dist3 - dist0 1F1 0.4069891 0.2213311 112 1.8388250 0.0685902
## 2 2 dist3 - dist0 2F1 0.2620532 0.2213311 112 1.1839874 0.2389248
## 3 3 dist3 - dist0 3F1 0.2524200 0.2213311 112 1.1404634 0.2565262
## 4 4 dist3 - dist0 4F1 0.1253326 0.2213311 112 0.5662675 0.5723449
##
## TEST OF WHETHER OR NOT THE INTERACTION PROVIDES A BETTER FIT
## Data: cur_data
## Models:
## m2: data ~ cond + harm + (1 | subject)
## m1: data ~ cond * harm + (1 | subject)
##      Df      AIC      BIC logLik deviance Chisq Chi Df Pr(>Chisq)
## m2  7 226.98 246.49 -106.49 212.98
## m1 10 232.11 259.99 -106.06 212.11 0.8672 3 0.8333
```

RLS_ODDBALL_RC1_CARR8



```
## WARNING: BOTH MODELS ARE SINGULAR!    LOVELY: BOTH MODELS CONVERGED!
##
## ANOVA TEST FOR MAIN EFFECTS AND INTERACTIONS
## Type III Analysis of Variance Table with Satterthwaite's method
##           Sum Sq Mean Sq NumDF DenDF F value Pr(>F)
## cond      0.37264  0.37264     1   112   0.8461  0.3596
## harm      0.53040  0.17680     3   112   0.4014  0.7522
## cond:harm 0.53280  0.17760     3   112   0.4033  0.7509
##
## SUMMARY AND POST-HOC TESTS, harm1 baseline
##           Estimate CI (lower) CI (upper) Std. Error df    t value Pr(>|t|)
## 1 (Intercept)  0.27535773 -0.05170841  0.6024239  0.1713501 112   1.6069891  0.111
## 2 cond: dist0  0.10359957 -0.35894180  0.5661409  0.2423256 112   0.4275221  0.67
## 3 harm: 2F1    0.02834508 -0.43419629  0.4908864  0.2423256 112   0.1169710  0.907
## 4 harm: 3F1    0.14276922 -0.31977214  0.6053106  0.2423256 112   0.5891627  0.557
## 5 harm: 4F1    0.04658726 -0.41595411  0.5091286  0.2423256 112   0.1922507  0.848
## 6 conddist0:harm2F1 -0.25588779 -0.91002006  0.3982445  0.3427002 112  -0.7466812  0.457
## 7 conddist0:harm3F1 -0.23911388 -0.89324616  0.4150184  0.3427002 112  -0.6977349  0.487
## 8 conddist0:harm4F1 -0.36520342 -1.01933569  0.2889289  0.3427002 112  -1.0656645  0.289
##
## ESTIMATED MARGINAL MEANS, SIMPLE MAIN EFFECTS OF CONDITION WITHOUT CORRECTION
##           contrast harm estimate      SE df    t.ratio    p.value
## 1 1 dist3 - dist0  1F1 -0.1035996 0.2423256 112  -0.4275221 0.6698199
## 2 2 dist3 - dist0  2F1  0.1522882 0.2423256 112   0.6284446 0.5309923
## 3 3 dist3 - dist0  3F1  0.1355143 0.2423256 112   0.5592240 0.5771254
## 4 4 dist3 - dist0  4F1  0.2616038 0.2423256 112   1.0795550 0.2826597
##
## TEST OF WHETHER OR NOT THE INTERACTION PROVIDES A BETTER FIT
## Data: cur_data
## Models:
## m2: data ~ cond + harm + (1 | subject)
## m1: data ~ cond * harm + (1 | subject)
##      Df    AIC    BIC logLik deviance Chisq Chi Df Pr(>Chisq)
## m2   7 249.15 268.66 -117.58  235.15
## m1  10 253.86 281.74 -116.93  233.86 1.2892    3    0.7317
```


RLS_ODDBALL_RC1_CARR9



```
## WARNING: BOTH MODELS ARE SINGULAR!   LOVELY: BOTH MODELS CONVERGED!
##
## ANOVA TEST FOR MAIN EFFECTS AND INTERACTIONS
## Type III Analysis of Variance Table with Satterthwaite's method
##
```

| | Sum Sq | Mean Sq | NumDF | DenDF | F value | Pr(>F) |
|-----------|---------|---------|-------|-------|---------|--------|
| cond | 0.64600 | 0.64600 | 1 | 112 | 1.2730 | 0.2616 |
| harm | 0.71837 | 0.23946 | 3 | 112 | 0.4719 | 0.7025 |
| cond:harm | 1.49970 | 0.49990 | 3 | 112 | 0.9851 | 0.4025 |

```
##
## SUMMARY AND POST-HOC TESTS, harm1 baseline
##
```

| | Estimate | CI (lower) | CI (upper) | Std. Error | df | t value | Pr(> t) |
|---------------------|---------------|-------------|------------|------------|-----|-------------|----------|
| 1 (Intercept) | 0.2803709624 | -0.07070649 | 0.63144841 | 0.1839296 | 112 | 1.52433823 | 0.13 |
| 2 cond: dist0 | 0.2217288114 | -0.27476968 | 0.71822730 | 0.2601158 | 112 | 0.85242355 | 0.396 |
| 3 harm: 2F1 | 0.1940217465 | -0.30247674 | 0.69052023 | 0.2601158 | 112 | 0.74590535 | 0.457 |
| 4 harm: 3F1 | 0.1041681354 | -0.39233035 | 0.60066662 | 0.2601158 | 112 | 0.40046835 | 0.69 |
| 5 harm: 4F1 | -0.0007255279 | -0.49722402 | 0.49577296 | 0.2601158 | 112 | -0.00278925 | 0.998 |
| 6 conddist0:harm2F1 | -0.6036343331 | -1.30578923 | 0.09852056 | 0.3678593 | 112 | -1.64093828 | 0.104 |
| 7 conddist0:harm3F1 | -0.4341487748 | -1.13630367 | 0.26800612 | 0.3678593 | 112 | -1.18020349 | 0.24 |
| 8 conddist0:harm4F1 | -0.4361014528 | -1.13825635 | 0.26605344 | 0.3678593 | 112 | -1.18551171 | 0.238 |

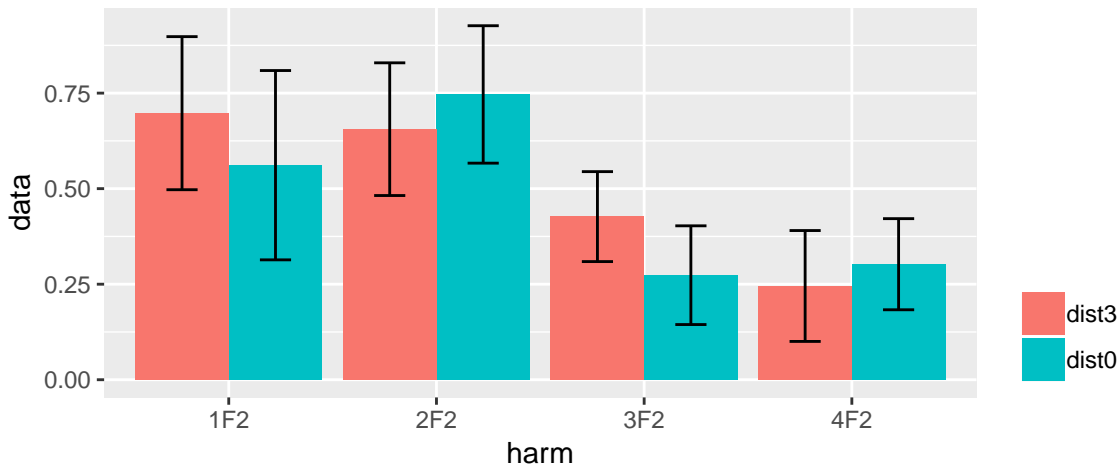
```
##
## ESTIMATED MARGINAL MEANS, SIMPLE MAIN EFFECTS OF CONDITION WITHOUT CORRECTION
##
```

| | contrast | harm | estimate | SE | df | t.ratio | p.value |
|-----|---------------|------|------------|-----------|-----|------------|-----------|
| 1 1 | dist3 - dist0 | 1F1 | -0.2217288 | 0.2601158 | 112 | -0.8524236 | 0.3957982 |
| 2 2 | dist3 - dist0 | 2F1 | 0.3819055 | 0.2601158 | 112 | 1.4682136 | 0.1448491 |
| 3 3 | dist3 - dist0 | 3F1 | 0.2124200 | 0.2601158 | 112 | 0.8166362 | 0.4158700 |
| 4 4 | dist3 - dist0 | 4F1 | 0.2143726 | 0.2601158 | 112 | 0.8241432 | 0.4116098 |

```
##
## TEST OF WHETHER OR NOT THE INTERACTION PROVIDES A BETTER FIT
## Data: cur_data
## Models:
## m2: data ~ cond + harm + (1 | subject)
## m1: data ~ cond * harm + (1 | subject)
##
```

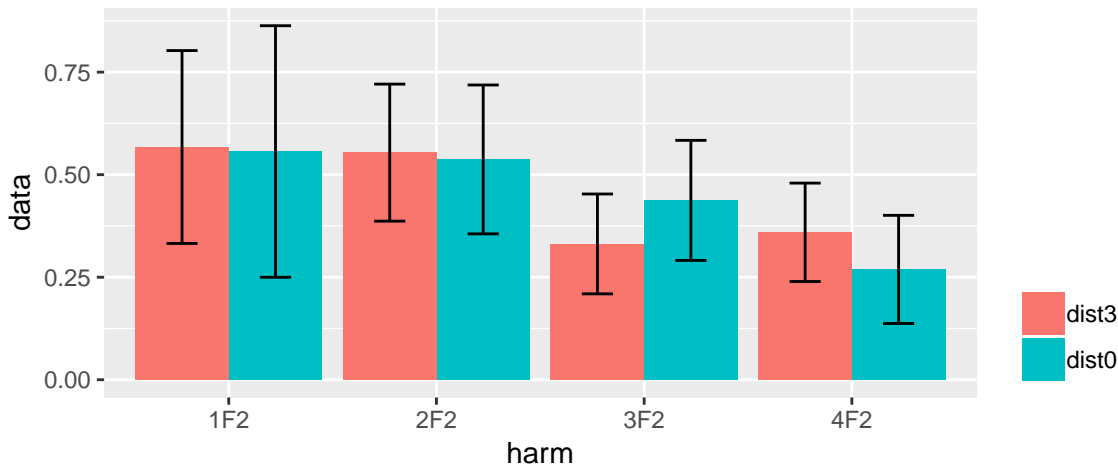
| | Df | AIC | BIC | logLik | deviance | Chisq | Chi Df | Pr(>Chisq) |
|----|----|--------|--------|---------|----------|--------|--------|------------|
| m2 | 7 | 267.99 | 287.50 | -127.00 | 253.99 | | | |
| m1 | 10 | 270.86 | 298.74 | -125.43 | 250.86 | 3.1254 | 3 | 0.3727 |

RLS_CARRIER_RC2_CARR5



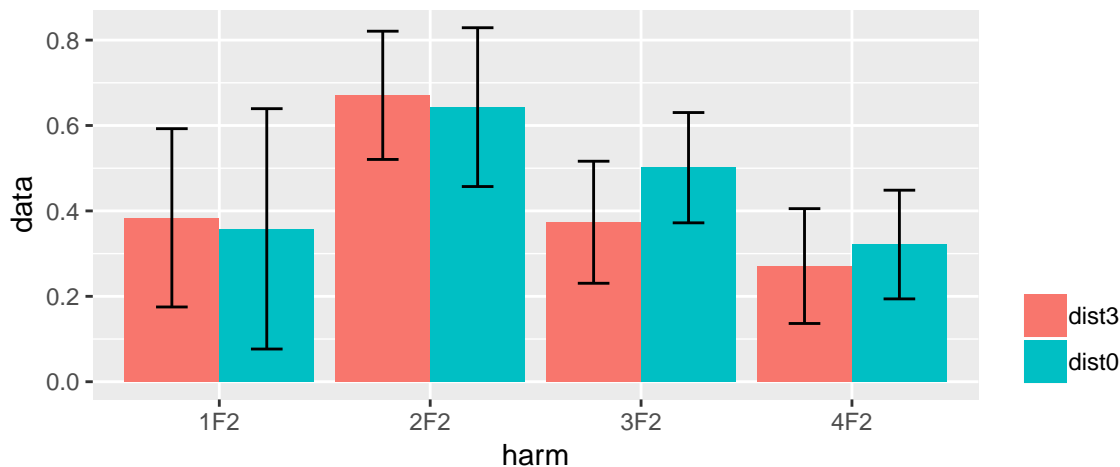
```
## LOVELY: NONE OF THE MODELS ARE SINGULAR!    LOVELY: BOTH MODELS CONVERGED!
##
## ANOVA TEST FOR MAIN EFFECTS AND INTERACTIONS
## Type III Analysis of Variance Table with Satterthwaite's method
##      Sum Sq Mean Sq NumDF DenDF F value    Pr(>F)
## cond      0.0376  0.03755      1     98  0.1386  0.710455
## harm      3.9083  1.30277      3     98  4.8092  0.003625 **
## cond:harm 0.3640  0.12133      3     98  0.4479  0.719337
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## SUMMARY AND POST-HOC TESTS, harm1 baseline
##      Estimate CI (lower) CI (upper) Std. Error    df    t value Pr(>|t|)
## 1 (Intercept)  0.69752469  0.3712555  1.02379385  0.1694655 57.01678  4.11602743 <0.001 ***
## 2 cond: dist0 -0.13614598 -0.4993210  0.22702904  0.1900489 98.00000 -0.71637339  0.475
## 3 harm: 2F2 -0.04191521 -0.4050902  0.32125982  0.1900489 98.00000 -0.22054960  0.826
## 4 harm: 3F2 -0.27067596 -0.6338510  0.09249907  0.1900489 98.00000 -1.42424365  0.158
## 5 harm: 4F2 -0.45219143 -0.8153665 -0.08901640  0.1900489 98.00000 -2.37934236  0.019 *
## 6 conddist0:harm2F2  0.22709782 -0.2865092  0.74070487  0.2687698 98.00000  0.84495304  0.4
## 7 conddist0:harm3F2 -0.01711847 -0.5307255  0.49648858  0.2687698 98.00000 -0.06369196  0.949
## 8 conddist0:harm4F2  0.19308483 -0.3205222  0.70669188  0.2687698 98.00000  0.71840240  0.474
##
## ESTIMATED MARGINAL MEANS, SIMPLE MAIN EFFECTS OF CONDITION WITHOUT CORRECTION
##      contrast harm estimate      SE df    t.ratio    p.value
## 1 1 dist3 - dist0 1F2  0.13614598 0.1900489 98  0.7163734 0.4754645
## 2 2 dist3 - dist0 2F2 -0.09095183 0.1900489 98 -0.4785707 0.6333101
## 3 3 dist3 - dist0 3F2  0.15326446 0.1900489 98  0.8064474 0.4219376
## 4 4 dist3 - dist0 4F2 -0.05693885 0.1900489 98 -0.2996010 0.7651160
##
## TEST OF WHETHER OR NOT THE INTERACTION PROVIDES A BETTER FIT
## Data: cur_data
## Models:
## m2: data ~ cond + harm + (1 | subject)
## m1: data ~ cond * harm + (1 | subject)
##      Df    AIC    BIC logLik deviance Chisq Chi Df Pr(>Chisq)
## m2  7 217.13 236.65 -101.57  203.13
## m1 10 221.71 249.58 -100.85  201.71 1.4299    3    0.6985
```

RLS_CARRIER_RC2_CARR6



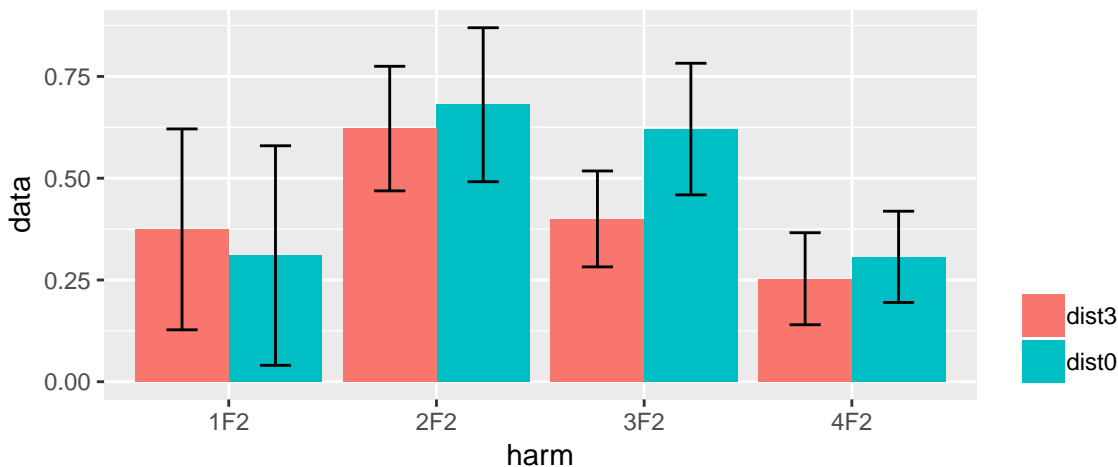
```
## LOVELY: NONE OF THE MODELS ARE SINGULAR!    LOVELY: BOTH MODELS CONVERGED!
##
## ANOVA TEST FOR MAIN EFFECTS AND INTERACTIONS
## Type III Analysis of Variance Table with Satterthwaite's method
##           Sum Sq Mean Sq NumDF DenDF F value Pr(>F)
## cond           0.00026  0.00026      1    98  0.0007  0.9797
## harm           1.33219  0.44406      3    98  1.1150  0.3468
## cond:harm      0.14865  0.04955      3    98  0.1244  0.9455
##
## SUMMARY AND POST-HOC TESTS, harm1 baseline
##           Estimate CI (lower) CI (upper) Std. Error      df      t value Pr(>|t|)
## 1 (Intercept)  0.567451912  0.2102642  0.9246396  0.1864852  80.48625  3.04287908  0.003 **
## 2 cond: dist0 -0.010950873 -0.4513161  0.4294144  0.2304425  98.00000 -0.04752108  0.962
## 3 harm: 2F2   -0.013733982 -0.4540993  0.4266313  0.2304425  98.00000 -0.05959831  0.953
## 4 harm: 3F2   -0.236341629 -0.6767069  0.2040236  0.2304425  98.00000 -1.02559935  0.308
## 5 harm: 4F2   -0.207990933 -0.6483562  0.2323743  0.2304425  98.00000 -0.90257212  0.369
## 6 conddist0:harm2F2 -0.005574668 -0.6283452  0.6171959  0.3258948  98.00000 -0.01710573  0.986
## 7 conddist0:harm3F2  0.117139069 -0.5056315  0.7399096  0.3258948  98.00000  0.35943824  0.72
## 8 conddist0:harm4F2 -0.079525442 -0.7022960  0.5432451  0.3258948  98.00000 -0.24402179  0.808
##
## ESTIMATED MARGINAL MEANS, SIMPLE MAIN EFFECTS OF CONDITION WITHOUT CORRECTION
##           contrast harm estimate      SE df      t.ratio  p.value
## 1 1 dist3 - dist0 1F2  0.01095087 0.2304425 98  0.04752108 0.9621946
## 2 2 dist3 - dist0 2F2  0.01652554 0.2304425 98  0.07171223 0.9429771
## 3 3 dist3 - dist0 3F2 -0.10618820 0.2304425 98 -0.46080136 0.6459621
## 4 4 dist3 - dist0 4F2  0.09047632 0.2304425 98  0.39262000 0.6954528
##
## TEST OF WHETHER OR NOT THE INTERACTION PROVIDES A BETTER FIT
## Data: cur_data
## Models:
## m2: data ~ cond + harm + (1 | subject)
## m1: data ~ cond * harm + (1 | subject)
##      Df      AIC      BIC logLik deviance Chisq Chi Df Pr(>Chisq)
## m2   7 254.89 274.40 -120.44 240.89
## m1  10 260.49 288.37 -120.25 240.49 0.3991      3      0.9404
```

RLS_CARRIER_RC2_CARR8



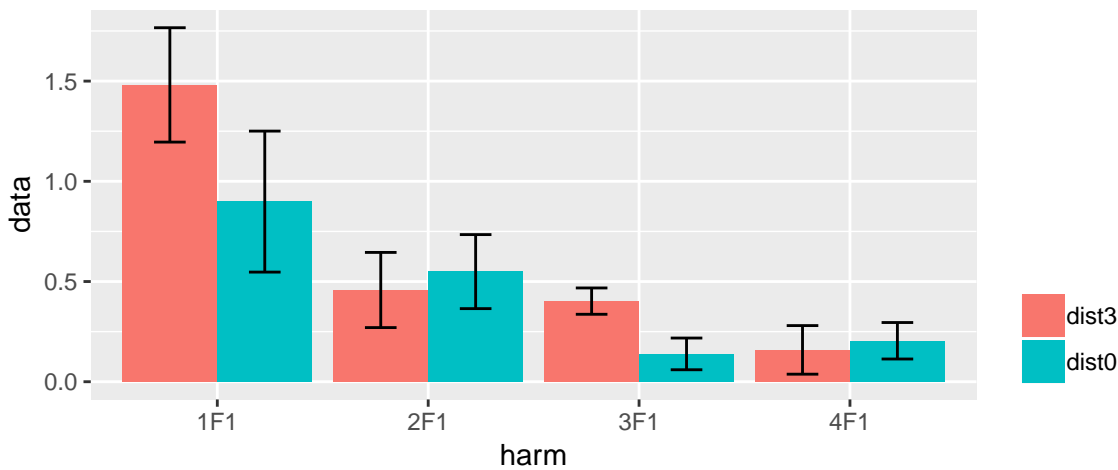
```
## LOVELY: NONE OF THE MODELS ARE SINGULAR!    LOVELY: BOTH MODELS CONVERGED!
##
## ANOVA TEST FOR MAIN EFFECTS AND INTERACTIONS
## Type III Analysis of Variance Table with Satterthwaite's method
##           Sum Sq Mean Sq NumDF DenDF F value Pr(>F)
## cond           0.02917  0.02917      1    98  0.1006 0.7518
## harm           2.17587  0.72529      3    98  2.5020 0.0638 .
## cond:harm    0.12309  0.04103      3    98  0.1415 0.9349
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## SUMMARY AND POST-HOC TESTS, harm1 baseline
##           Estimate CI (lower) CI (upper) Std. Error      df      t value Pr(>|t|)
## 1 (Intercept)  0.383805732  0.04238367  0.7252278  0.1772219 55.01433  2.165679106  0.035 *
## 2 cond: dist0 -0.025805359 -0.40150022  0.3498895  0.1966005 98.00003 -0.131257871  0.896
## 3 harm: 2F2    0.286865439 -0.08882942  0.6625603  0.1966005 98.00003  1.459128942  0.148
## 4 harm: 3F2   -0.010377108 -0.38607196  0.3653177  0.1966005 98.00003 -0.052782722  0.958
## 5 harm: 4F2   -0.112966102 -0.48866096  0.2627288  0.1966005 98.00003 -0.574597309  0.567
## 6 conddist0:harm2F2 -0.001848825 -0.53316159  0.5294639  0.2780351 98.00003 -0.006649611  0.995
## 7 conddist0:harm3F2  0.153600826 -0.37771194  0.6849136  0.2780351 98.00003  0.552451295  0.582
## 8 conddist0:harm4F2  0.076191607 -0.45512115  0.6075044  0.2780351 98.00003  0.274035977  0.785
##
## ESTIMATED MARGINAL MEANS, SIMPLE MAIN EFFECTS OF CONDITION WITHOUT CORRECTION
##           contrast harm estimate      SE      df  t.ratio  p.value
## 1 1 dist3 - dist0  1F2  0.02580536 0.1966005 98.00003  0.1312579 0.8958404
## 2 2 dist3 - dist0  2F2  0.02765418 0.1966005 98.00003  0.1406618 0.8884258
## 3 3 dist3 - dist0  3F2 -0.12779547 0.1966005 98.00003 -0.6500262 0.5171961
## 4 4 dist3 - dist0  4F2 -0.05038625 0.1966005 98.00003 -0.2562875 0.7982661
##
## TEST OF WHETHER OR NOT THE INTERACTION PROVIDES A BETTER FIT
## Data: cur_data
## Models:
## m2: data ~ cond + harm + (1 | subject)
## m1: data ~ cond * harm + (1 | subject)
##      Df      AIC      BIC logLik deviance Chisq Chi Df Pr(>Chisq)
## m2  7 225.01 244.52 -105.50  211.01
## m1 10 230.55 258.43 -105.28  210.55 0.454      3      0.9289
```

RLS_CARRIER_RC2_CARR9



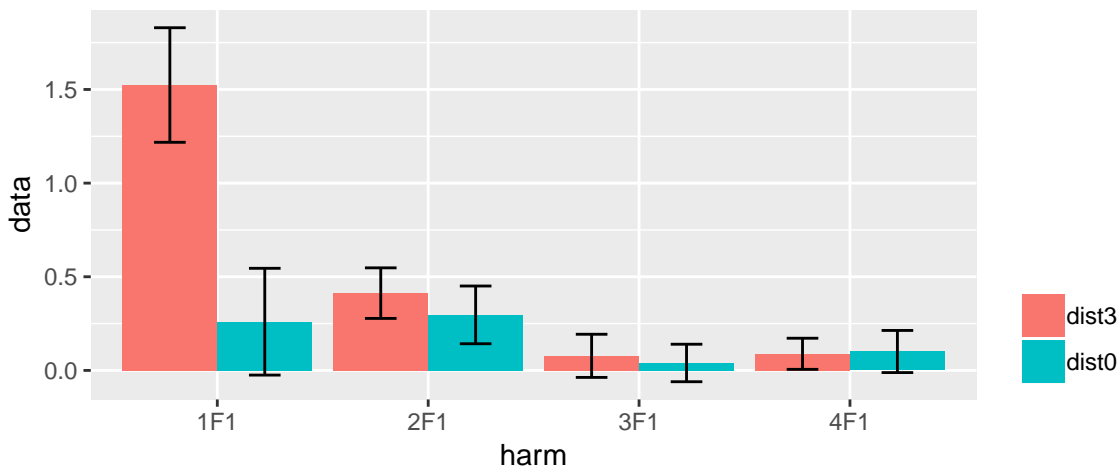
```
## LOVELY: NONE OF THE MODELS ARE SINGULAR!    LOVELY: BOTH MODELS CONVERGED!
##
## ANOVA TEST FOR MAIN EFFECTS AND INTERACTIONS
## Type III Analysis of Variance Table with Satterthwaite's method
##           Sum Sq Mean Sq NumDF DenDF F value  Pr(>F)
## cond           0.13544  0.13544     1    98   0.5185  0.47318
## harm           2.53914  0.84638     3    98   3.2404  0.02538 *
## cond:harm    0.30853  0.10284     3    98   0.3937  0.75777
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## SUMMARY AND POST-HOC TESTS, harm1 baseline
##           Estimate CI (lower) CI (upper) Std. Error    df    t value Pr(>|t|)
## 1 (Intercept)  0.37435852  0.02685786  0.7218592  0.1796528 45.08253  2.0837889  0.043 *
## 2 cond: dist0 -0.06431504 -0.42093126  0.2923012  0.1866167 98.00001 -0.3446371  0.731
## 3 harm: 2F2   0.24761017 -0.10900605  0.6042264  0.1866167 98.00001  1.3268383  0.188
## 4 harm: 3F2   0.02563784 -0.33097837  0.3822541  0.1866167 98.00001  0.1373824  0.891
## 5 harm: 4F2  -0.12130628 -0.47792250  0.2353099  0.1866167 98.00001 -0.6500291  0.517
## 6 conddist0:harm2F2 0.12290292 -0.38142858  0.6272344  0.2639159 98.00001  0.4656898  0.642
## 7 conddist0:harm3F2 0.28508936 -0.21924214  0.7894209  0.2639159 98.00001  1.0802282  0.283
## 8 conddist0:harm4F2 0.11803200 -0.38629949  0.6223635  0.2639159 98.00001  0.4472335  0.656
##
## ESTIMATED MARGINAL MEANS, SIMPLE MAIN EFFECTS OF CONDITION WITHOUT CORRECTION
##           contrast harm estimate      SE    df  t.ratio  p.value
## 1 1 dist3 - dist0 1F2  0.06431504 0.1866167 98.00001  0.3446371 0.7311057
## 2 2 dist3 - dist0 2F2 -0.05858788 0.1866167 98.00001 -0.3139477 0.7542281
## 3 3 dist3 - dist0 3F2 -0.22077432 0.1866167 98.00001 -1.1830363 0.2396568
## 4 4 dist3 - dist0 4F2 -0.05371696 0.1866167 98.00001 -0.2878465 0.7740721
##
## TEST OF WHETHER OR NOT THE INTERACTION PROVIDES A BETTER FIT
## Data: cur_data
## Models:
## m2: data ~ cond + harm + (1 | subject)
## m1: data ~ cond * harm + (1 | subject)
##      Df    AIC    BIC logLik deviance Chisq Chi Df Pr(>Chisq)
## m2   7 217.29 236.80 -101.64  203.29
## m1  10 222.03 249.91 -101.02  202.03 1.258    3    0.7391
```

RLS_ODDBALL_RC2_CARR5



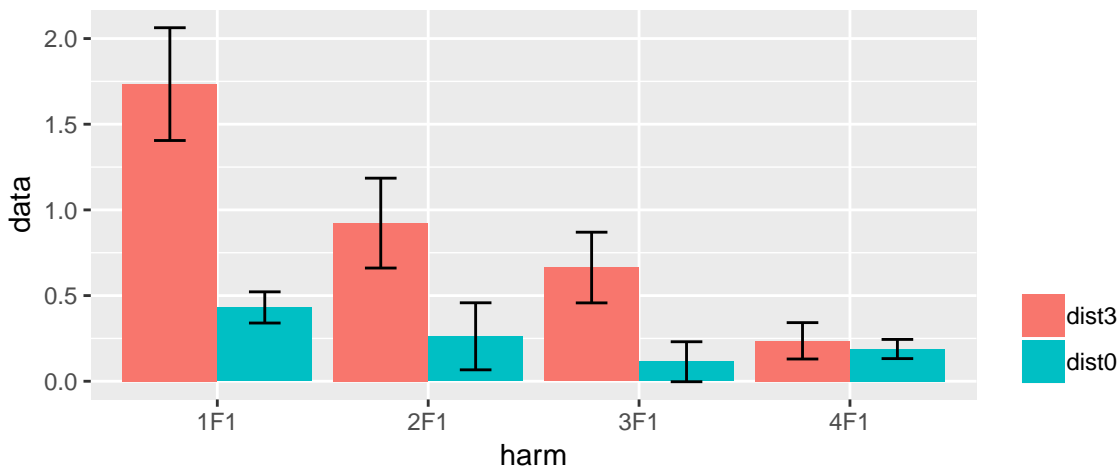
```
## LOVELY: NONE OF THE MODELS ARE SINGULAR!    LOVELY: BOTH MODELS CONVERGED!
##
## ANOVA TEST FOR MAIN EFFECTS AND INTERACTIONS
## Type III Analysis of Variance Table with Satterthwaite's method
##      Sum Sq Mean Sq NumDF DenDF F value    Pr(>F)
## cond      0.9407  0.9407     1    98   2.1590   0.1449
## harm     18.7394  6.2465     3    98  14.3362 8.122e-08 ***
## cond:harm  2.2007  0.7336     3    98   1.6836   0.1755
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## SUMMARY AND POST-HOC TESTS, harm1 baseline
##      Estimate CI (lower) CI (upper) Std. Error    df    t value Pr(>|t|)
## 1      (Intercept)  1.4810029  1.10510456  1.8569011  0.1962009 78.78431  7.5483980 <0.001 ***
## 2      cond: dist0 -0.5822496 -1.04284619 -0.1216530  0.2410294 98.00002 -2.4156782   0.018  *
## 3      harm: 2F1 -1.0233181 -1.48391473 -0.5627215  0.2410294 98.00002 -4.2456146 <0.001 ***
## 4      harm: 3F1 -1.0787972 -1.53939382 -0.6182006  0.2410294 98.00002 -4.4757902 <0.001 ***
## 5      harm: 4F1 -1.3221266 -1.78272321 -0.8615300  0.2410294 98.00002 -5.4853324 <0.001 ***
## 6 conddist0:harm2F1  0.6739846  0.02260258  1.3253665  0.3408671 98.00002  1.9772649   0.051  .
## 7 conddist0:harm3F1  0.3189150 -0.33246693  0.9702970  0.3408671 98.00002  0.9355994   0.352
## 8 conddist0:harm4F1  0.6277833 -0.02359870  1.2791653  0.3408671 98.00002  1.8417244   0.069  .
##
## ESTIMATED MARGINAL MEANS, SIMPLE MAIN EFFECTS OF CONDITION WITHOUT CORRECTION
##      contrast harm estimate      SE    df    t.ratio    p.value
## 1 1 dist3 - dist0 1F1  0.58224957 0.2410294 98.00002  2.4156782 0.01755864
## 2 2 dist3 - dist0 2F1 -0.09173498 0.2410294 98.00002 -0.3805966 0.70432635
## 3 3 dist3 - dist0 3F1  0.26333453 0.2410294 98.00002  1.0925409 0.27727392
## 4 4 dist3 - dist0 4F1 -0.04553371 0.2410294 98.00002 -0.1889135 0.85055131
##
## TEST OF WHETHER OR NOT THE INTERACTION PROVIDES A BETTER FIT
## Data: cur_data
## Models:
## m2: data ~ cond + harm + (1 | subject)
## m1: data ~ cond * harm + (1 | subject)
##      Df      AIC      BIC logLik deviance Chisq Chi Df Pr(>Chisq)
## m2   7 271.07 290.58 -128.54  257.07
## m1  10 271.80 299.67 -125.90  251.80 5.2766    3    0.1526
```

RLS_ODDBALL_RC2_CARR6



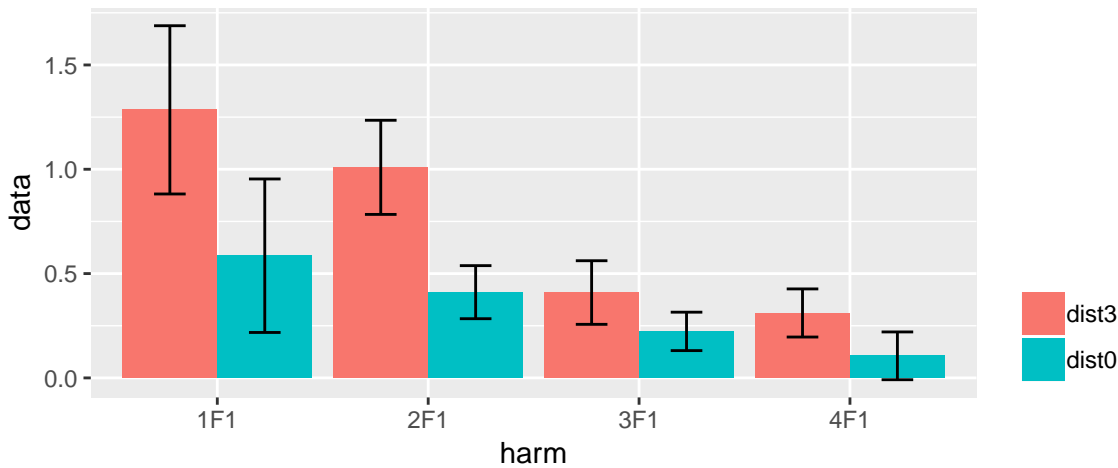
```
## LOVELY: NONE OF THE MODELS ARE SINGULAR!    LOVELY: BOTH MODELS CONVERGED!
##
## ANOVA TEST FOR MAIN EFFECTS AND INTERACTIONS
## Type III Analysis of Variance Table with Satterthwaite's method
##           Sum Sq Mean Sq NumDF DenDF F value    Pr(>F)
## cond           3.7043   3.7043     1    98   7.8819 0.0060257 **
## harm          13.3084   4.4361     3    98   9.4390 1.545e-05 ***
## cond:harm      8.3835   2.7945     3    98   5.9460 0.0009081 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## SUMMARY AND POST-HOC TESTS, harm1 baseline
##           Estimate CI (lower) CI (upper) Std. Error    df    t value Pr(>|t|)
## 1 (Intercept)  1.523762  1.1798626  1.8676622  0.1801564 111.067   8.457996 <0.001 ***
## 2 cond: dist0 -1.263576 -1.7419413 -0.7852108  0.2503278  98.000  -5.047686 <0.001 ***
## 3 harm: 2F1 -1.111118 -1.5894835 -0.6327529  0.2503278  98.000  -4.438653 <0.001 ***
## 4 harm: 3F1 -1.445904 -1.9242689 -0.9675383  0.2503278  98.000  -5.776041 <0.001 ***
## 5 harm: 4F1 -1.434947 -1.9133128 -0.9565822  0.2503278  98.000  -5.732274 <0.001 ***
## 6 conddist0:harm2F1  1.147468  0.4709571  1.8239785  0.3540170  98.000   3.241279  0.002 **
## 7 conddist0:harm3F1  1.225476  0.5489651  1.9019864  0.3540170  98.000   3.461630  0.001 ***
## 8 conddist0:harm4F1  1.275788  0.5992775  1.9522988  0.3540170  98.000   3.603749 <0.001 ***
##
## ESTIMATED MARGINAL MEANS, SIMPLE MAIN EFFECTS OF CONDITION WITHOUT CORRECTION
##           contrast harm estimate      SE df    t.ratio    p.value
## 1 1 dist3 - dist0 1F1  1.26357605 0.2503278 98   5.04768576 2.063251e-06
## 2 2 dist3 - dist0 2F1  0.11610827 0.2503278 98   0.46382492 6.438018e-01
## 3 3 dist3 - dist0 3F1  0.03810032 0.2503278 98   0.15220173 8.793407e-01
## 4 4 dist3 - dist0 4F1 -0.01221210 0.2503278 98  -0.04878444 9.611904e-01
##
## TEST OF WHETHER OR NOT THE INTERACTION PROVIDES A BETTER FIT
## Data: cur_data
## Models:
## m2: data ~ cond + harm + (1 | subject)
## m1: data ~ cond * harm + (1 | subject)
##      Df    AIC    BIC logLik deviance Chisq Chi Df Pr(>Chisq)
## m2   7 277.00 296.51 -131.50  263.00
## m1  10 265.44 293.32 -122.72  245.44 17.559     3 0.0005424 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

RLS_ODDBALL_RC2_CARR8



```
## LOVELY: NONE OF THE MODELS ARE SINGULAR!    LOVELY: BOTH MODELS CONVERGED!
##
## ANOVA TEST FOR MAIN EFFECTS AND INTERACTIONS
## Type III Analysis of Variance Table with Satterthwaite's method
##      Sum Sq Mean Sq NumDF DenDF F value    Pr(>F)
## cond      12.3031  12.3031     1    98  26.5426 1.335e-06 ***
## harm      12.7236   4.2412     3    98   9.1499 2.141e-05 ***
## cond:harm   5.9929   1.9976     3    98   4.3097 0.006711 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## SUMMARY AND POST-HOC TESTS, harm1 baseline
##      Estimate CI (lower) CI (upper) Std. Error    df    t value Pr(>|t|)
## 1      (Intercept)  1.7341271  1.36754272  2.1007114  0.1917556 95.05046  9.043423 <0.001 ***
## 2      cond: dist0 -1.3032447 -1.77831153 -0.8281778  0.2486017 98.00000 -5.242299 <0.001 ***
## 3      harm: 2F1 -0.8111254 -1.28619232 -0.3360586  0.2486017 98.00000 -3.262750  0.002 **
## 4      harm: 3F1 -1.0705177 -1.54558460 -0.5954508  0.2486017 98.00000 -4.306155 <0.001 ***
## 5      harm: 4F1 -1.4980863 -1.97315317 -1.0230194  0.2486017 98.00000 -6.026049 <0.001 ***
## 6 conddist0:harm2F1  0.6425213 -0.02932475  1.3143673  0.3515760 98.00000  1.827546  0.071 .
## 7 conddist0:harm3F1  0.7535531  0.08170711  1.4253991  0.3515760 98.00000  2.143358  0.035 *
## 8 conddist0:harm4F1  1.2553356  0.58348961  1.9271816  0.3515760 98.00000  3.570596  0.001 ***
##
## ESTIMATED MARGINAL MEANS, SIMPLE MAIN EFFECTS OF CONDITION WITHOUT CORRECTION
##      contrast harm estimate      SE df  t.ratio    p.value
## 1 1 dist3 - dist0 1F1 1.30324466 0.2486017 98 5.242299 9.126465e-07
## 2 2 dist3 - dist0 2F1 0.66072339 0.2486017 98 2.657758 9.186476e-03
## 3 3 dist3 - dist0 3F1 0.54969153 0.2486017 98 2.211133 2.935142e-02
## 4 4 dist3 - dist0 4F1 0.04790903 0.2486017 98 0.192714 8.475818e-01
##
## TEST OF WHETHER OR NOT THE INTERACTION PROVIDES A BETTER FIT
## Data: cur_data
## Models:
## m2: data ~ cond + harm + (1 | subject)
## m1: data ~ cond * harm + (1 | subject)
##      Df      AIC      BIC logLik deviance Chisq Chi Df Pr(>Chisq)
## m2   7 280.87 300.38 -133.44  266.87
## m1  10 273.86 301.73 -126.93  253.86 13.012      3  0.004611 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```


RLS_ODDBALL_RC2_CARR9



```
## LOVELY: NONE OF THE MODELS ARE SINGULAR!    LOVELY: BOTH MODELS CONVERGED!
##
## ANOVA TEST FOR MAIN EFFECTS AND INTERACTIONS
## Type III Analysis of Variance Table with Satterthwaite's method
##           Sum Sq Mean Sq NumDF DenDF F value    Pr(>F)
## cond           5.3501   5.3501     1    98   8.3706 0.004699 **
## harm          10.3552   3.4517     3    98   5.4005 0.001759 **
## cond:harm       1.5780   0.5260     3    98   0.8230 0.484275
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## SUMMARY AND POST-HOC TESTS, harm1 baseline
##           Estimate CI (lower) CI (upper) Std. Error    df    t value Pr(>|t|)
## 1 (Intercept)  1.2848253  0.8448368  1.7248138  0.2299765 88.57985   5.5867688 <0.001 ***
## 2 cond: dist0 -0.6991613 -1.2570184 -0.1413043  0.2919257 98.00000  -2.3949975  0.019  *
## 3 harm: 2F1   -0.2755610 -0.8334181  0.2822960  0.2919257 98.00000  -0.9439424  0.348
## 4 harm: 3F1   -0.8756477 -1.4335047 -0.3177907  0.2919257 98.00000  -2.9995567  0.003  **
## 5 harm: 4F1   -0.9736213 -1.5314783 -0.4157642  0.2919257 98.00000  -3.3351680  0.001  **
## 6 conddist0:harm2F1  0.1008081 -0.6881208  0.8897371  0.4128453 98.00000   0.2441790  0.808
## 7 conddist0:harm3F1  0.5129034 -0.2760256  1.3018323  0.4128453 98.00000   1.2423621  0.217
## 8 conddist0:harm4F1  0.4937404 -0.2951886  1.2826694  0.4128453 98.00000   1.1959454  0.235
##
## ESTIMATED MARGINAL MEANS, SIMPLE MAIN EFFECTS OF CONDITION WITHOUT CORRECTION
##           contrast harm estimate      SE df  t.ratio    p.value
## 1 1 dist3 - dist0  1F1 0.6991613 0.2919257 98 2.3949975 0.01852097
## 2 2 dist3 - dist0  2F1 0.5983532 0.2919257 98 2.0496763 0.04306738
## 3 3 dist3 - dist0  3F1 0.1862580 0.2919257 98 0.6380321 0.52494087
## 4 4 dist3 - dist0  4F1 0.2054209 0.2919257 98 0.7036753 0.48330354
##
## TEST OF WHETHER OR NOT THE INTERACTION PROVIDES A BETTER FIT
## Data: cur_data
## Models:
## m2: data ~ cond + harm + (1 | subject)
## m1: data ~ cond * harm + (1 | subject)
##      Df      AIC      BIC logLik deviance Chisq Chi Df Pr(>Chisq)
## m2   7 311.29 330.80 -148.65  297.29
## m1  10 314.68 342.55 -147.34  294.68 2.6125     3    0.4553
```