Full_data_quick_report

Gabe Strain

14/03/2022

Descriptive Statistics for Conditions (All Data)

```
  size  present   mean
  <fct> <fct>    <dbl>
1 L     N       0.115
2 L     Y       0.0945
3 M     N       0.115
4 M     Y       0.116
5 S     N       0.135
6 S     Y       0.121
```

When all data are included, there is a consistent underestimation of correlation.

ANOVA of all data

There are significant effects of size, presence of the encoding, and an interaction.

```
Univariate Type III Repeated-Measures ANOVA Assuming Sphericity

              Sum Sq num Df Error SS den Df F value    Pr(>F)
(Intercept)  21.5072      1  19.7568    266 289.568 < 2.2e-16 ***
size          0.1388      2   0.9057    532  40.769 < 2.2e-16 ***
present       0.0529      1   0.6876    266  20.477 9.107e-06 ***
size:present  0.0335      2   0.3559    532  25.041 4.045e-11 ***
```

Descriptives of only the participants who passed the attention check questions

```
size  present   mean
  <fct> <fct>    <dbl>
1 L     N       0.120
2 L     Y       0.0996
3 M     N       0.120
4 M     Y       0.109
5 S     N       0.129
6 S     Y       0.116
```

Descriptives change very little when only those passed are included.

#ANOVA of only those who passed

```
Univariate Type III Repeated-Measures ANOVA Assuming Sphericity

             Sum Sq num Df Error SS den Df  F value    Pr(>F)
(Intercept)  8.9791      1   8.4636    111 117.7604 < 2.2e-16 ***
size         0.0179      2   0.2870    222   6.9396  0.001193 **
present      0.0386      1   0.4668    111   9.1851  0.003036 **
size:present 0.0024      2   0.1245    222   2.1062  0.124119
```

The interaction effect is no longer significant, F values are much smaller, but size and presence of encoding are still significant

Pairwise comparisons

```
contrast  estimate      SE  df t.ratio p.value
 L N - M N -0.00025 0.00405 111  -0.062  1.0000
 L N - S N -0.00895 0.00475 111  -1.883  0.4178
 L N - L Y  0.02040 0.00563 111   3.622  0.0058 **SIG**
 L N - M Y  0.01156 0.00594 111   1.945  0.3806
 L N - S Y  0.00434 0.00649 111   0.668  0.9850
 M N - S N -0.00870 0.00341 111  -2.548  0.1194
 M N - L Y  0.02065 0.00618 111   3.343  0.0141 **SIG**
 M N - M Y  0.01181 0.00563 111   2.096  0.2972
 M N - S Y  0.00459 0.00563 111   0.815  0.9643
 S N - L Y  0.02935 0.00680 111   4.315  0.0005 **SIG**
 S N - M Y  0.02050 0.00599 111   3.421  0.0110 **SIG**
 S N - S Y  0.01328 0.00563 111   2.360  0.1795
 L Y - M Y -0.00884 0.00406 111  -2.179  0.2561
 L Y - S Y -0.01606 0.00452 111  -3.557  0.0071 **SIG**
 M Y - S Y -0.00722 0.00345 111  -2.095  0.2974
```

From pairwise comparisons, 2 conclusions can be drawn

1. For large plots, there is a significant difference between encoding presence and absence.
2. When the encoding is present, there is a significant difference in perception between Large and Small plots, but no such difference when the encoding is absent. Could it be here, the encoding is driving the difference seen with regards to size?

Visualising the difference