

# Simulation Results

Shiny App developed by Daniël Lakens and Aaron Caldwell

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Below are the results from the ANOVA simulation app. If you encounter any problems please visit our GitHub page ([https://github.com/Lakens/ANOVA\\_power\\_simulation](https://github.com/Lakens/ANOVA_power_simulation)) to raise the issue.

## Study Design

2b\*2b

## Model Formula

$y \sim \text{CONDITION} * \text{VOICE} + \text{Error}(1 \mid \text{subject})$

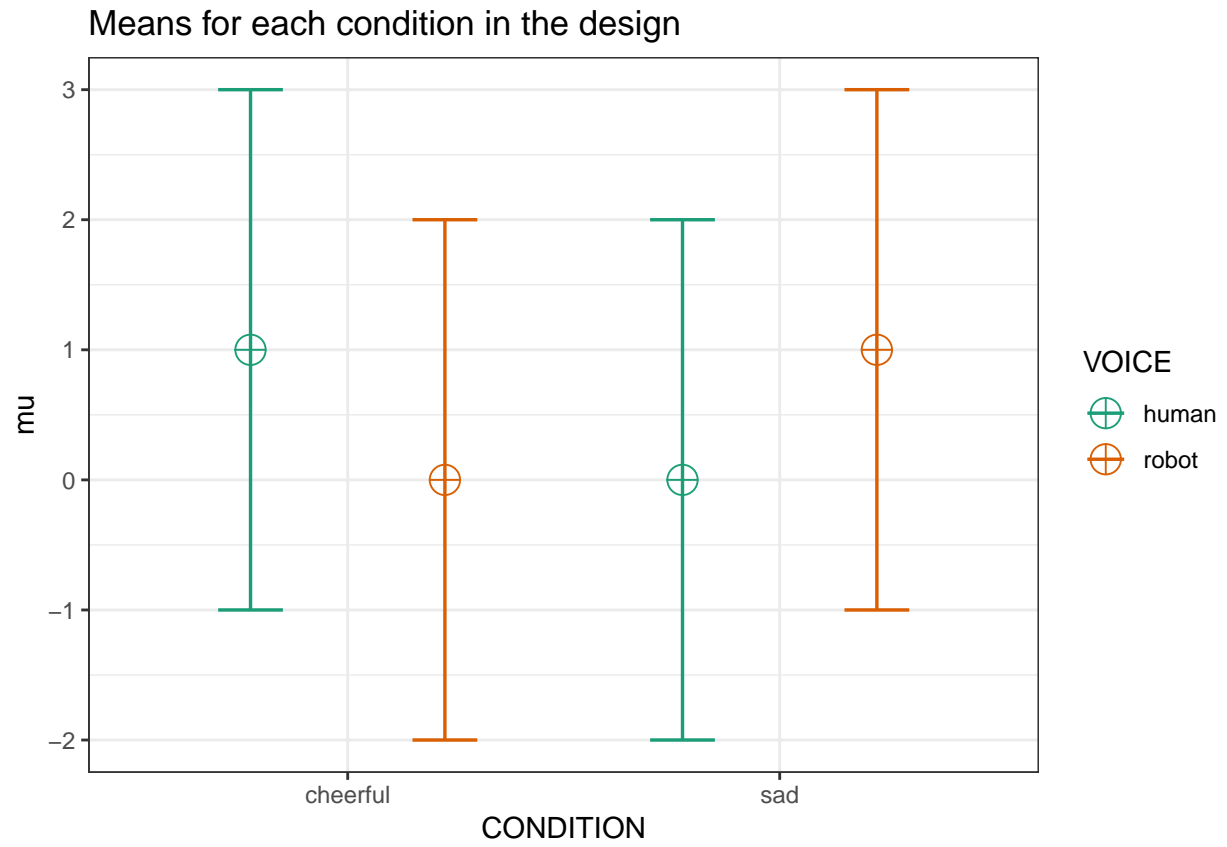
The sample size was **40** per cell with the following adjustment for multiple comparisons: **none**.

## Correlation Matrix

	cheerful_human	cheerful_robot	sad_human	sad_robot
cheerful_human	1	0	0	0
cheerful_robot	0	1	0	0
sad_human	0	0	1	0
sad_robot	0	0	0	1

## Variance-Covariance Matrix

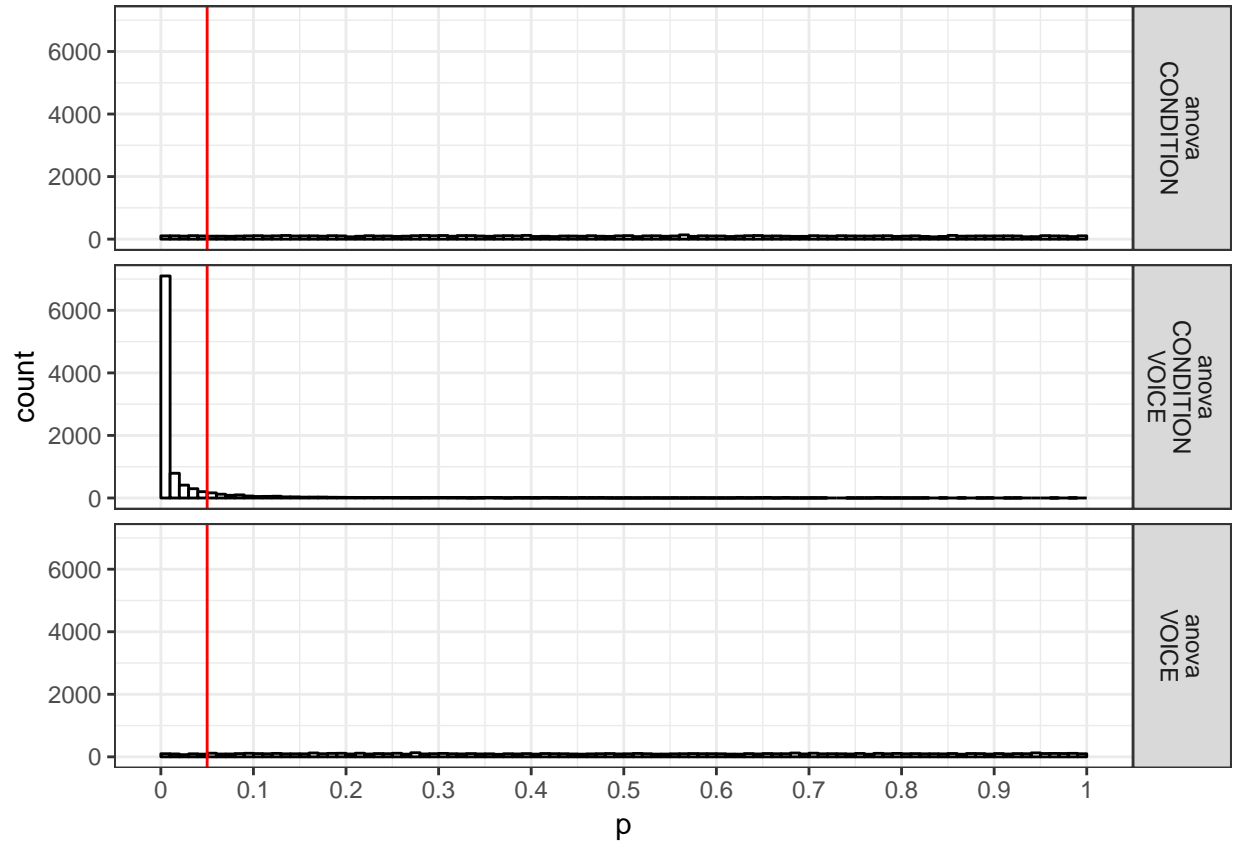
	cheerful_human	cheerful_robot	sad_human	sad_robot
cheerful_human	4	0	0	0
cheerful_robot	0	4	0	0
sad_human	0	0	4	0
sad_robot	0	0	0	4



The seed number for this simulation was set at 2019. A total number of 10000 simulations with an alpha level of 0.05. Please re-use this input to replicate the results below.

### ANOVA Power (%) and Effect Sizes (Partial Eta Squared)

	power	effect_size
anova_CONDITION	5.20	0.0030
anova_VOICE	4.47	0.0029
anova_CONDITION:VOICE	88.02	0.0605



### Multiple Comparisons Power (%) and Effect Sizes (Cohen's $d_z$ )

	power	effect_size
p_CONDITION_cheerful_VOICE_human_CONDITION_cheerful_VOICE_robot	59.99	-0.5044
p_CONDITION_cheerful_VOICE_human_CONDITION_sad_VOICE_human	60.06	-0.5067
p_CONDITION_cheerful_VOICE_human_CONDITION_sad_VOICE_robot	4.76	-0.0036
p_CONDITION_cheerful_VOICE_robot_CONDITION_sad_VOICE_human	4.93	-0.0025
p_CONDITION_cheerful_VOICE_robot_CONDITION_sad_VOICE_robot	58.81	0.5012
p_CONDITION_sad_VOICE_human_CONDITION_sad_VOICE_robot	59.59	0.5033

