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) to the raise the issue.

Study Design

2b*2b

Model Formula

y ~ CONDITION * VOICE + Error(1 | subject)

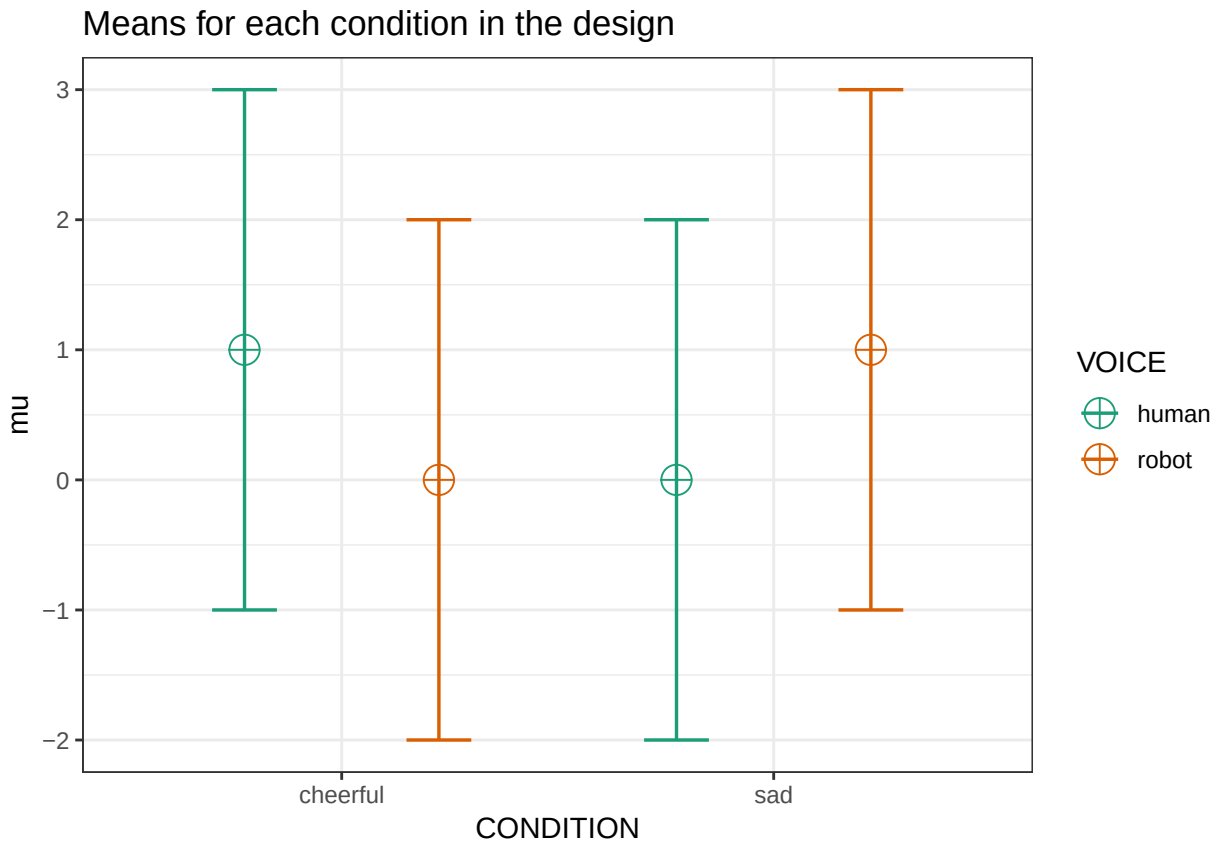
The sample size was **40** per cell with the following adjustment for multiple comparisons: **holm**.

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

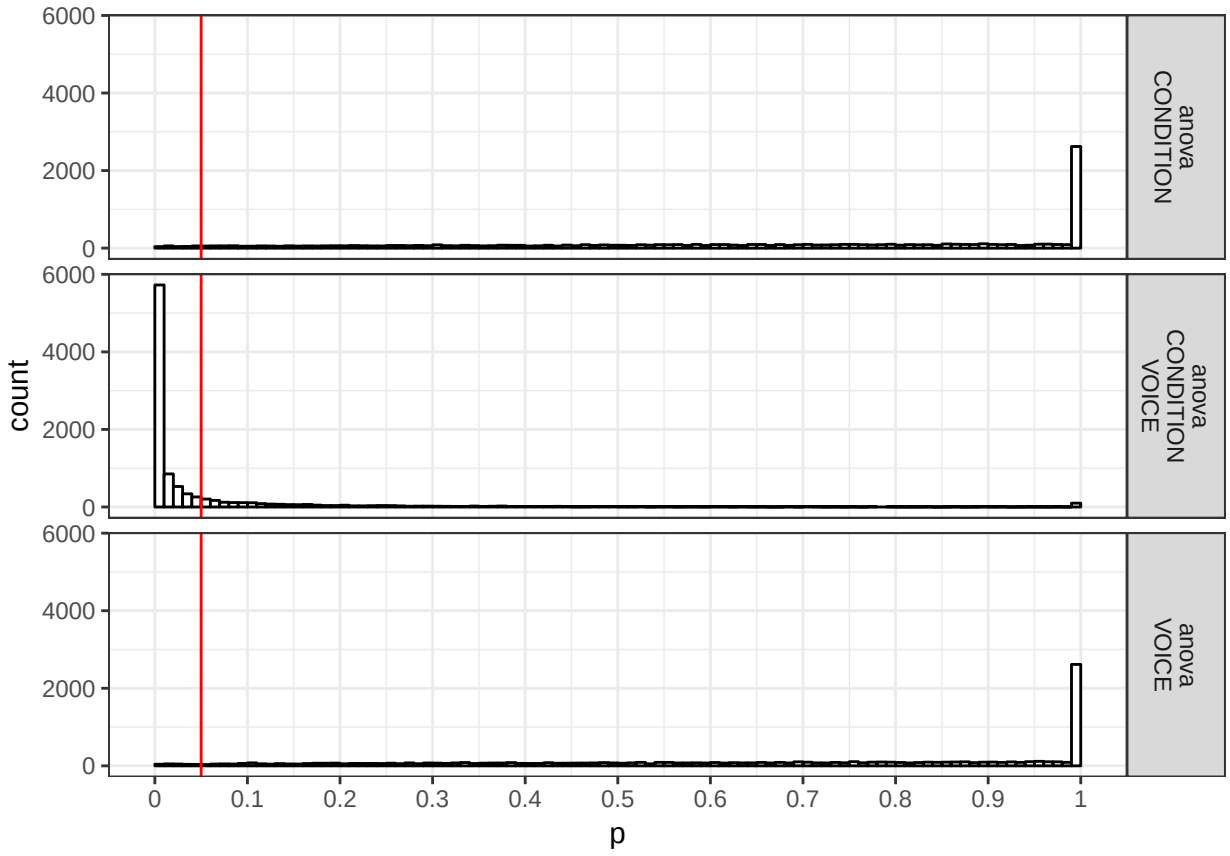
	cheerful_human	cheerful_robot	sad_human	sad_robot
cheerful_human	4	0	0	0
cheerful_robot	0	4	0	0
sad_human	0	0	4	0
sad_robot	0	0	0	4


Means for each condition in the design
3
2
1
0
−1
−2
mu
cheerful
sad
CONDITION
VOICE
human
robot

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.

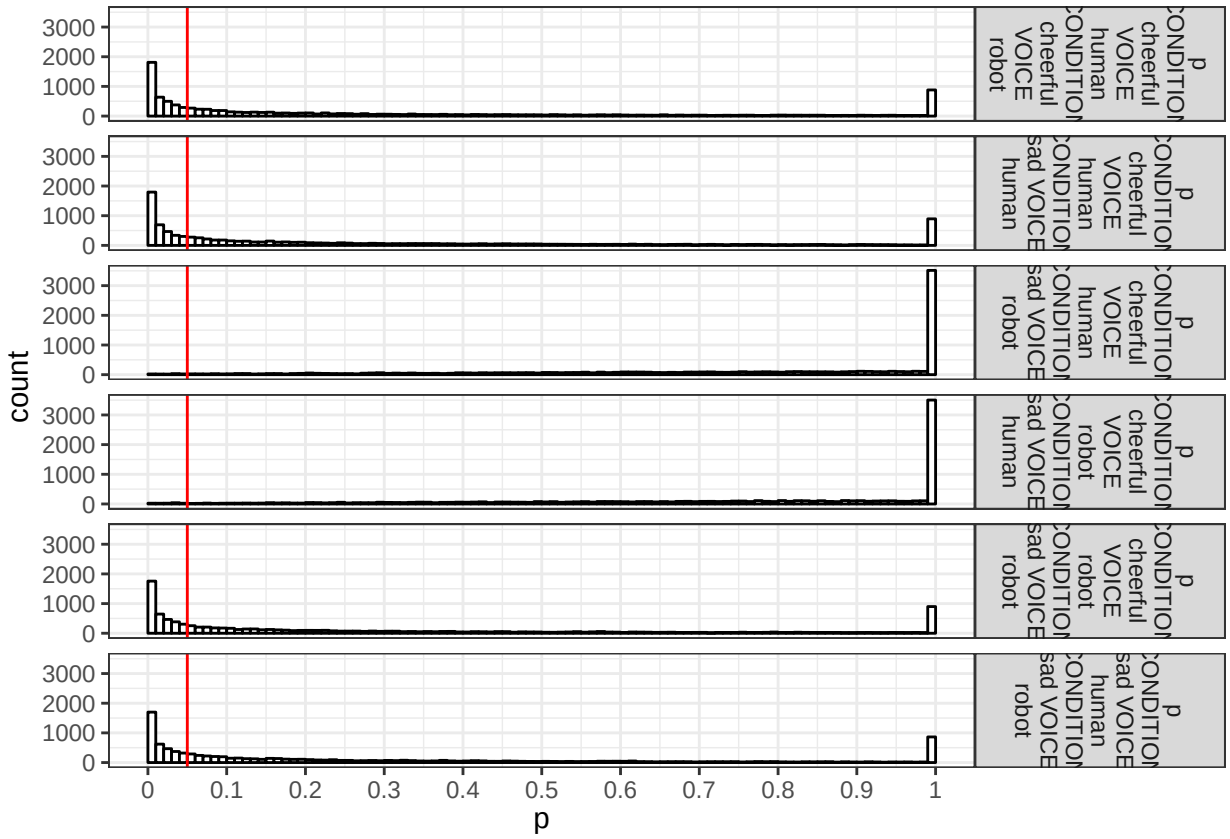
ANOVA Power (%) and Effect Sizes (Partial Eta Squared)

	power	effect_size
anova_CONDITION	2.38	0.0030
anova_VOICE	2.14	0.0029
anova_CONDITION:VOICE	77.07	0.0605



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

	power	effect_size
p_CONDITION_cheerful_VOICE_human_CONDITION_cheerful_VOICE_robot	36.12	-0.5044
p_CONDITION_cheerful_VOICE_human_CONDITION_sad_VOICE_human	35.98	-0.5067
p_CONDITION_cheerful_VOICE_human_CONDITION_sad_VOICE_robot	1.21	-0.0036
p_CONDITION_cheerful_VOICE_robot_CONDITION_sad_VOICE_human	1.40	-0.0025
p_CONDITION_cheerful_VOICE_robot_CONDITION_sad_VOICE_robot	35.60	0.5012
p_CONDITION_sad_VOICE_human_CONDITION_sad_VOICE_robot	34.81	0.5033


count
p
0
1000
2000
3000
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
CONDITION
cheerful VOICE
human
CONDITION
cheerful VOICE
robot
CONDITION
sad VOICE
human
CONDITION
sad VOICE
robot