UDACITY

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Test a Perceptual Phenomenon

REVIEW

HISTORY

Requires Changes

1 SPECIFICATION REQUIRES CHANGES

Responses to Project Questions

Q1: Question response correctly identifies the independent and dependent variables in the experiment.

Good!

A better definition for the independent variable should be the condition, since this is what we have control over the experiment and that will influence the time to perform the task 😃

Q2a: Null and alternative hypotheses are clearly stated in words and mathematically. Symbols in the mathematical statement are defined.

Good job!

Your hypotheses are on the right track, but to confirm that you understood the objective and scenario of this experiment we must add some more information to the hypothesis.

Considering that the main idea of this test is that we are using a sample to make inferences about the population, that is unknown, to find whether there is a difference between congruent mean response time and

population, that is unknown, to find whether there is a difference between congruent mean response time and the incongruent mean response time for the population.

Then, for the hypothesis, we must address this, as

> H0: There is no significant difference in the average population amount of time it takes to state the colors of the words of the congruent and incongruent conditions.

which is equivalent to your math definition for the null hypothesis.

So, we need to make it explicit that the hypotheses are related to the population and not the sample data that we have.

Q2b: A statistical test is proposed which will distinguish the proposed hypotheses. Any assumptions made by the statistical test are addressed.

Perfect!

A Paired t-test is an appropriate statistical test for this project since the population parameters are unknown, and we just have a small sample(<30) and it is paired because each participant completes each of the conditions.

👏👏

Q3: Descriptive statistics, including at least one measure of centrality and one measure of variability, have been computed for the dataset's groups.

Good!

I would also include in this section the sample standard deviation under each condition 👍

Q4: One or two visualizations have been created that show off the data, including comments on what can be observed in the plot or plots.

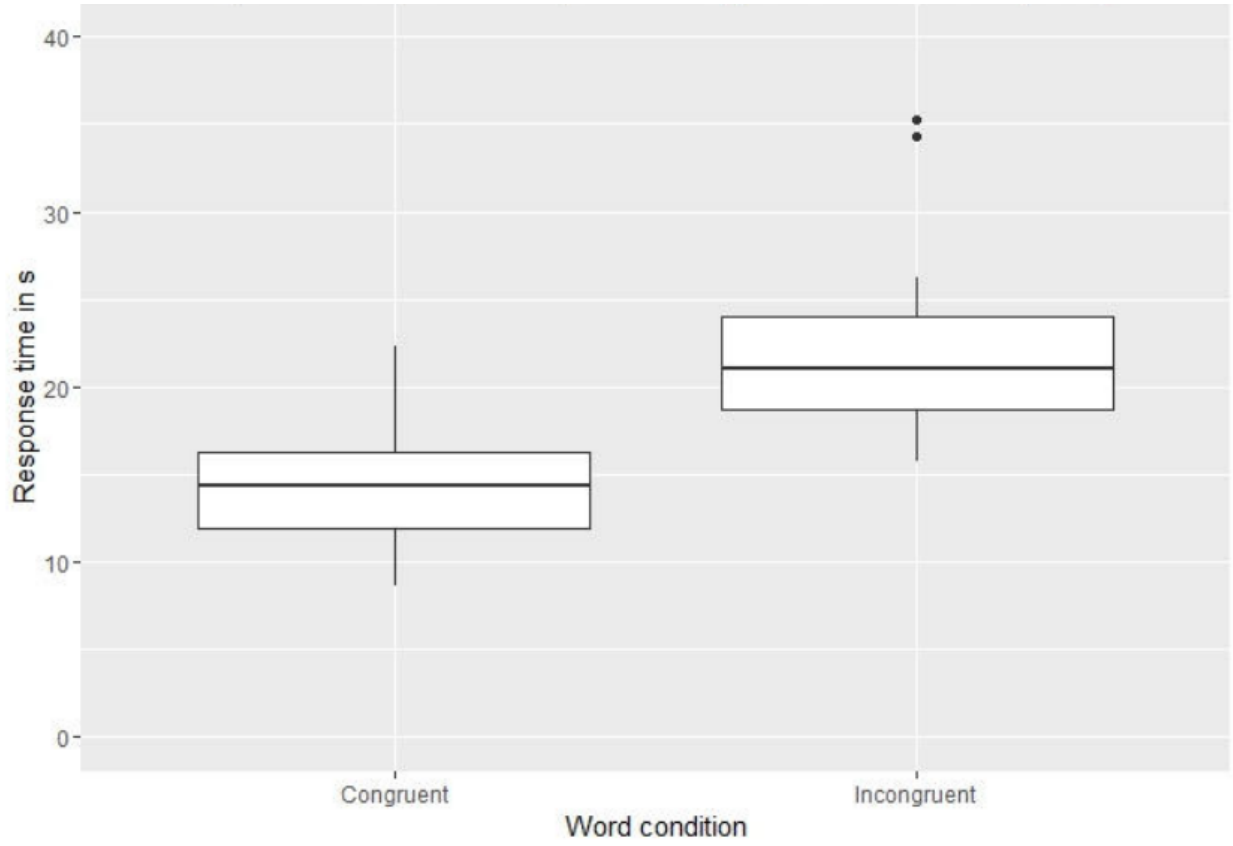
Good!

You have an interesting plot and comments on what can be observed.

If you are interested, please have a look at this link to see what possible charts you can use in everyday situations 😀

Alternatively, if you want some suggestion, I would say that a box-plot

Figure 1: Boxplots of response time per word condition (n=24)



is another interesting plot to help us have a big picture of the data we are working on.

Q5: A statistical test has been correctly performed and reported, including test statistic, p-value, and test result. The test results are interpreted in terms of the experimental task performed. Alternatively, students may use a bootstrapping approach to simulate the results of a traditional hypothesis test.

Good job!

All your calculations are correct and you are right to reject the null hypothesis! So we can say that there is a significant difference in the mean task completion time between both conditions.

Q6: Hypotheses regarding the reasons for the effect observed are presented. An extension or related experiment to the performed Stroop task is provided, that may produce similar effects.

GOOD!

We appreciate that you took your time and researched to answer the optional question!

We can say that differences in processing speed of different modes of information may cause interference in the task being performed

task being performed.

There are some theories that you can look at and have a broader vision of the problems and possible reasons

- Speed of processing theory
- Selective attention theory
- Automation of reading theory/Automaticity Hypothesis
- Bottleneck theory
- Parallel distributed processing theory:

And then we can say that some problem extensions should probably deal with those congruences and incongruences in multiple types and cause influence in tasks related to associations between groups of objects. 😀

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