Request #: 563 - PSY - Dissertation

Punishment Intensity and Response Allocation

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Background

. During baseline, all rats had two bars available in the chamber, and pressing either of them produced food. During the punishment phase, both bars remained available and continued to produce food, but one of them now also produced intermittent shocks. The goal was to see how responding one each bar would change during punishment. Variables were manipulated across groups to investigate the effects of repeated exposure to 1) escalating shock intensities and 2) re-exposure to shocks after a period in the absence of shocks on response suppression in rats Three groups of six rats were exposed to different conditions. The first group was repeatedly exposed to both escalating shock intensities and breaks from punishment (INT+VAC), the second group was repeatedly exposed to escalating shock intensities, without any breaks between the exposures (INT-Only), and the third group was repeatedly exposed to breaks between punishment exposure but no intensity escalation - for this group shock intensity was always constant (VAC-Only).

Sample

The experiment is done and the data set is complete. There were 18 rats total divided into 3 groups of 6. The main measures are: responses per minute on each bar, and responding as a proportion of baseline. For the proportion of baseline, responses during each punishment session were divided by the average of responses during the last three sessions of baseline. Proportion of baseline for each of the responses was separately calculated for each rat during each session of punishment.

Hypothesis

The important comparison is between the group that experienced both IVs (intensities and breaks) and each of the groups that experienced the Ivs separately (just intensity or just the break). I want to know if exposure to the combination of intensity and break impacts responding the same way as exposure to each variable separately.

Progress

The data is clean, organized and I have the relevant graphs done. I started fitting MLM to the data, and I have tried different ways to include the variables in the model. However, I had problems with conversion for the more complex models including all the variables. I am also having a hard time interpreting the output of the analysis.

Request

I need to know: 1) if MLM is the most appropriate analysis for my data; 2) if yes, what is the best model for my data (i.e., help to build the correct model and including the variables correctly); 3) help to interpret the results

Timeline

Since I have started the analyses and just need some guidance on what I have done and the interpretation, the ideal would be to have all the analyses done in a month or two.