Study 1: Reinforcement-Punishment Analysis

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Study 1: Punishment Effects of Monetary and Liquid Incentives

This is an analysis of the subject performance of study 1 of reinforcement and punishment effects of liquid feedback with monetary gains and losses. In the study, subjects perform the cued task-switching paradigm, where they have classify a letter (vowel/consonant) or digit (odd/even). During the baseline runs, they don't receive any feedback and are told to respond "as quickly and accurate as possible." During the incentive runs, they receive a drop of liquid (1 or 2 mL) to indicate successful attainment of monetary reward in a single trial. Each subject performs 3 incentive runs in which they must respond accurately and faster than a criterion RT to earn monetary reward. Liquid feedback (blocked) signaled failure to attain monetary reward (opportunity cost). Criterion RT is calculated on subject performance during the baseline run (25%) (CHECK THIS), and is the same for both reinforcement and punishment conditions.

Loading relevant packages

```
library(ggplot2)
library(gridExtra)
library(dplyr)
library(tidyr)
library(lme4)
library(lmerTest)
library(sjPlot)
source("/Users/debbieyee/Dropbox/CCPLabProjects/Liquid_Feedback/OAYA_Combined/Analysis/Yee/summarySEwith
```

Path Directories of Data Input/Output

```
# data directories
data.path<-paste0("/Users/debbieyee/Dropbox/CCPLabProjects/Liquid_Feedback/",
                  "Reinforce-Punish_Combined/Study1/Data/SubjectData/NewCT/TrimmedData/",
                  "Pilot10_ConsolidatedRewardData.csv")
runkey.path<-paste0("/Users/debbieyee/Dropbox/CCPLabProjects/Liquid_Feedback/",
                    "Reinforce-Punish_Combined/Study2/Data/SubjectData/TrimmedData/",
                    "Pilot9_ConsolidateRunKey.csv")
figure.path<-paste0("/Users/debbieyee/Dropbox/CCPLabProjects/Liquid_Feedback/",
                    "Reinforce-Punish_Combined/Study2/Analysis/Figures/")
```

Format the Data For Analysis