Pre-registered analysis

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Intro

This analysis closely folloiws the analysis that I prespecified before collecting data on `https://osf.io/8te4b/` . At that location, it is embargoed, but it is also available at `https://osf.io/uhgwn/` for our team internally.

Deviation from pre-registration

The SmallerSooner amount in the FixedAmount condition changed from $0.50 to $0.40, after the first round, in which it seemed like subjects in that condition were too strongly biased toward SmallerSooner.

Due to a technical error, one group of subjects were incorrectly told rewards were real when they were actually hypothetical. These have been excluded from the current analysis.

We introduced an extra between-subjects variable, Hypothetical vs. Real, that was not described on the uploaded pre-registration (I'd intended to upload this, but uploaded the older version of the pre-registration by mistake). To maintain a 3x2x2 between-subjects design, SalienceCondition was moved to be a within-subjects, between-trials variable.

Aims/hypotheses

Construal level

For this study, we want to test this predictions relevant to construal level:

1. A Construal Level manipulation has an effect on temporal discounting, such that more abstract construal level manipulations predict lower rates of temporal discounting

1. This relationship will be observable with random construal order
2. This relationship will be observable with the abstract to concrete and the concrete to abstract construal order conditions, OR
3. This relationship will only be observable in the direction observed by Yi et al. (2017), i.e., only among participants who view the concrete condition prior to the abstract prediction
4. This relationship will be observable in the interleaved conditions
5. This relationship will be observable in the blocked conditions

Sugar manipulation

We also want to test these predictions relevant to sugar manipulation:

2. Across other manipulations, participants will exhibit steeper delay discounting in test blocks in which Amount is fixed compared to blocks in which Delay is fixed ("block type").
3. There will be an interaction between block type and fatigue/appetite, such that high appetite/fatigue scores will be associated with the larger block type differential in discounting

Supplementary predictions:

1. (as above)

6. This relationship will be observable when displaying hypothetical rewards
7. This relationship will be observable when displaying real rewards

Measures

We can characterize subject's choice in each trial in two ways:

1. the absolute choice of LargerLater vs. SmallerSooner
2. the deviation of each choice from the expected present value, estimated the expected present value using the estimate for the subject's k value obtained at the end of each run of the task.

Results

Descriptive

There were 15 subjects who were excluded for not meeting the pre-specified exclusion criteria. In hindsight, I could think of better criteria, but these criteria were OK. Threw out: - where they choose less than 16.7% of LEFT or RIGHT or 1 or 2 responses, for ITC (7 subjects) - . . . or for construal (an error prevented me from collecting construal responses from a few subjects so I did not apply this criteria) - k-values below 0.0001 (8 subjects) - low response rates (0 subjects)

We were left with:

RewardReality	Group	TaskArrangement	N
Hypothetical	BlockDesign_abstract_first	TasksBlocked	21
Hypothetical	BlockDesign_abstract_first	TasksInterleaved	21
Hypothetical	BlockDesign_concrete_first	TasksBlocked	16
Hypothetical	BlockDesign_concrete_first	TasksInterleaved	17
Hypothetical	randomized_counterbalanced	TasksBlocked	15

Possible thing to try out in the scanner.

This is what I would like to try in the scanner. Does Interleaved work where we've got a concrete to abstract design?

```
t.test(AbstractionLevel~Choice,data.to.analyze[TaskArranger
```

```
##
##  Welch Two Sample t-test
##
## data:  AbstractionLevel by Choice
## t = -0.6952, df = 2695.3, p-value = 0.487
## alternative hypothesis: true difference in means is not
## 95 percent confidence interval:
##  -0.11223759  0.05348319
## sample estimates:
## mean in group LL mean in group SS
##         2.475397         2.504774
```

```
t.test(AbstractionLevel~Choice,data.to.analyze[TaskArranger
```