Our research group, including Patrick Bissett, Emily Kessler, and Russell Poldrack from the Poldrack Lab at Stanford University will be attempting to replicate the findings from Experiment 2 of Wessel, O’Doherty, Berkebile, Linderman, & Aron, 2014. This work showed that if specific arbitrary stimuli are often associated with response inhibition, those stimuli are subsequently valued less than stimuli that were not associated with response inhibition.

We acquired the Matlab Psychophysics Toolbox code from Adam Aron on July 13th of 2015. The code is publicly available on Jan Wessel’s github:

[https://github.com/janwessel/stopdeva](https://github.com/janwessel/stopdeval)l

This code has a great deal of flexibility. We will ensure that the code matches the parameters from Experiment 2, which involved some small changes from Experiment 1 to increase the opportunity for the experimenter to encourage the subject to perform as instructed during the second, stopping phase of the study. The details of Experiment 2 are specified in Wessel et al., 2014. We will follow the experimental procedure from the manual within the github repository presented above.

In personal communication with Adam Aron on July 14th of 2015, he said that the average effect size for the stopping devaluation effect across all of the studies that they ran has been a Cohen’s d of .3. Therefore, in order to find an inhibition induced devaluation effect with power of .8, we completed a power analysis with an a priori effect size of .3 (with the help of our local statistical expert, Joke Durnez). We focus on having sufficient power (.8) to show the main effect of stopping in the 2 (stopping) x 4 (value) repeated-measures ANOVA, which is achieved with 24 subjects. We have included the code for the power analysis as well as a power table showing the observed power to see a significant main effect of stopping given an effect side d = .3.

Wessel et al. (2014) in Experiment 2 excluded any subject whose stopping devaluation effect (measured by a difference of the mean bidding level for all nonstopping-shapes and the mean bidding level for all stopping-shapes) was > 1.5\*interquartile range. We will use the same outlier exclusion criterion. Wessel et al. (2014) excluded 4 out of 27 subjects in Experiment 2 (~15%). In order to ensure that we will have a final sample of 24 usable subjects, we will run 30 subjects, allowing a potential exclusion rate of up to 20% while still recruiting the necessary sample of 24 subjects.

In subsequent personal communication with Jan Wessel on August 13th, he said that the combined effect sizes for Wessel et al. (2014) Experiments 1 and 2, as well as a subsequent sample with an N of 59, is a partial eta squared of .128. Conversions of partial eta squared to Cohen’s D suggest that this is a larger effect size than the .3 given by Adam Aron on July 14th 2015. In order to be conservative in our estimate of observed power, we decided to continue with the plan to run 30 subjects based upon the power calculation with the smaller Cohen’s D of .3.

At the completion of this registered replication, we will post all raw data in a publicly available OSF project folder.