

**Final Report for Woodcock Institute Research Grant:
Outcome Processing in Social Interactions in Individuals with Traumatic Brain Injury: An
Investigation Using Pupillometry**

This report covers activity from 09/01/2017 through 08/31/2018.

Study aim: The current study hypothesized that individuals with TBI would show impairments in processing of immediate outcomes but not delayed outcomes, as reflected by pupil dilation.

Data analysis:

Preliminary data has been analyzed and showed that participants receiving delayed outcomes in the form of reciprocation during social interaction showed greater pupil dilation to non-reciprocation than to reciprocation, indicating successful outcome processing. Meanwhile, participants receiving immediate reciprocation did not show such differential pupil response, indicating unsuccessful outcome processing. **Thus, preliminary results are in line with our original hypothesis that individuals with TBI are more successful at processing delayed outcomes rather than immediate outcomes during social interactions.** The study team used the preliminary data collected during the funding period for grant applications submitted to both federal and private funding agencies. Dr. Liu submitted a Mary Switzer Research Fellowship in February 2018 under the title, “Outcome Processing in Social Interactions in Individuals with Traumatic Brain Injury: An Investigation Using Pupillometry and fMRI” (not funded) and Dr. Dobryakova (mentor) submitted a Pilot application in May 2018 to the National MS Society, “Outcome Processing in Social Interactions in Individuals with Multiple Sclerosis: An Investigation using Pupillometry” which was funded to conduct this research project in another clinical population. Data and/or results from this research project have not yet been presented or published in any format.

Problems encountered during the grant period:

Minimal problems have been encountered. There was a delay in identifying a qualified research assistant and some problems with recruitment of the sample that meets exclusion/inclusion criteria.

The following tasks have been addressed during the grant period

- The study protocol and related materials were submitted to the Institutional Review Board (IRB) at Kessler Foundation and approval was granted.
- We have recruited for and hired a research assistant to screen and recruit individuals with TBI.
- Research Assistant has been trained on the study protocol and was approved through our 3 step approval process to begin recruitment.
- All neuropsychological test stimuli and record forms have been purchased.

- The study team has met multiple times to discuss recruitment strategies beyond internal resources.
- The research assistant called 36 potential participants. 6 participants did not meet exclusion/inclusion criteria. 5 participants were not interested in participation. 15 potential participants did not respond to recruitment efforts.
- 10 potential participants have been scheduled for participation.
- Data from 9 participants have been collected