# ASCR ECX Evaluation Toolkit

This code is licensed under a BSD 3-Clause License.

Copyright (c) 2016, University of Texas at Austin, Los Alamos National Laboratory.  
All rights reserved.

Contributor: Terry Turton

# README for ETK Method of Adjustment Module

## File List:

* ETK-MethodOfAdjustmentQualtrics.html
* ETK-MethodOfAdjustmentQualtrics.css
* ETK-MethodOfAdjustmentQualtrics.js
* ETK-MethodOfAdjustmentREADME.docx
* ETK-MethodOfAdjustmentSurveyFlow.png
* Image00.png
* Image01.png
* Image02.png
* Image03.png
* Image04.png

## Overview

This module is intended to be run within a Qualtrics survey. Qualtrics survey software can be found at www.qualtrics.com.

The Method of Adjustment is a psychophysical technique to find a threshold or a change point. In this image-based implementation, a participant (study subject) can rotate through a "carousel" containing a list of images and select the image where the stimuli of interest undergoes a change or reaches some threshold. A generic study within Qualtrics might consist of:

1. An IRB consent block/question.
2. An introduction block/question to explain the task and the threshold or change point of interest.
3. A study block with one or more Method of Adjustment carousel questions.
4. A demographic block containing any relevant demographic questions.

## Instructions for implementation of the Method of Adjustment Module

There are three files that work together for the implementation, an HTML, a CSS and a JavaScript file. The CSS file is added in the Look and Feel part of the survey options. Choose the Advanced tab and click on Add Custom CSS. Cut and paste the CSS sheet as directed. The HTML and JS files are added in the individual question. Choose a Descriptive Text question type. Click on the question text and an HTML View tab will appear. Click on the HTML tab and insert the HTML file. The list of images will need to be updated as will the phrasing of the specific question under study. Lastly, to the left of the question is the settings icon. Click on the settings icon and choose Add JavaScript. The custom JavaScript code should be added there.

Detailed information on developing surveys and using the Qualtrics JavaScript API can be found on the Qualtrics website.

A set of five example images are included so the user can explore the functionality. An imgURL variable is used to point to the URL host for the images and must be modified by the user. Implementing the above files should produce a Qualtrics question that allows the participant to rotate the carousel back and forth between a set of numbered images (00 to 04).

## Study Output: Embedded Data Variables

The study participant “chooses” the threshold or change point by clicking the Qualtrics >> (forward to next question) button to record their choice. The Qualtrics JavaScript API allows the user to write out information via the setEmbeddedData method. The embedded data variable MUST be created within the Survey Flow in order to save this information. A screenshot from an example Survey Flow is shown in the accompanying image file. The JavaScript file must be edited so that the embedded data variable names match. More information on creating embedded data variables and the survey flow can be found on the Qualtrics website.

An alternate way of saving the participant choice would be to embed the carousel in a multiple choice question and have the participant select one or more image numbers. There is a flag, doImageNumber, which implement code to add a title over each image as “Image Number: XX”. Setting this flag to true will allow the participant to identify and choose multiple images.

A timing variable, timeDelay and its flag, doTimeDelay, is used to set a slight delay before each image appears. For images with high levels of similarity, this can make it easier for subjects to realize that there is a new set of images. The default is 250ms and doTimeDelay=false.

Note that the Qualtrics go-to-next-question (>>) button text can be changed via the General tab of the Look and Feel section. One could change this to SUBMIT CHOICE or another option based on the user’s particular study.

## Amazon Mechanical Turk

Amazon Mechanical Turk, <https://www.mturk.com/mturk/welcome>, is a crowdsourcing site that can provide a convenient source of study participants for online studies. A URL link to a Qualtrics study can be input into an Mturk HIT to launch a study. More information can be found on the Mechanical Turk website.

Copyright (c) 2016, University of Texas at Austin, Los Alamos National Laboratory.  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

3. Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.