**eyetrackingR manuscript Outline**

1. Introduction
   1. Analyzing subjects’ eye gaze has long been a valuable tool in psychology
   2. The recent implementation of eyetrackers has not dramatically changed the inference from DV to cognitive processes. However, it has changed the way gaze data is being recorded. Now, it is common to have tens of thousands of datapoints recorded for a given subject, timelocked to some sequence of visual stimuli.
   3. From this dataset, the psychologist can choose any number of analysis options, clean their data with numerious criteria, and be generally overwhelmed.
   4. Moreover, I will introduce an open source R library that significantly reduces the time and technical knowledge required to analyse eyetracking data.
      1. In part 1, we will review its methods that will help prepare and clean an eyetracking dataset (i.e., in regards to trackloss), visualize your data, and summarize your data in a way that can help validate it and make informed decisions about the proper analysis.
      2. In part 2, I will review 4 analysis types and the methods that will produce new analysis-ready datasets that can be analysed using standard linear mixed-effects models or ANOVAs.
2. Overview of R
   1. eyetrackingR is an R library
   2. R is a statistical programming language, often accessed via a GUI.
      1. Commands are entered at a command line and access various objects in the workspace
      2. Objects can be dataframes, lists, vectors, characters, integers, etc.
   3. Data is imported usually from CSV files.
3. eyetrackingR Requirements
   1. General:
      1. R
      2. Aggregated (master) data with the required columns
      3. Basic knowledge of how to start R, enter commands, call functions, save data with write.csv(), etc.
   2. To begin:
      1. Load R
      2. source(‘analyze-eyetracking.R’)
      3. read.csv() your data
4. Summarize Your Data
   1. summarize\_data()
   2. validate\_data()
   3. etc.
   4. May want to be used throughout the analysis to make sure things are in order
5. Data Preparation
   1. Subset data to focus in on a particular window of interest
   2. Clean for trackloss
   3. Conclusion: May want to look at data again
6. Visualization
   1. Using plot\_data()
   2. Credit to Jaeger lab for spaghetti plot code
7. Analysis Methods
   1. Window / Total LT
   2. Sequential Bins
   3. Linear Time
   4. Non-linear / Growth Curve
   5. Ranked Looks Analysis
   6. First/Second Looks Switch
8. Conclusion
   1. Eyetracking data is powerful
   2. This document gives you the tools and overview you need to make sense of it