

Dissertation TOC

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I. Introduction

Introduce main components of thesis (bdots, saccade curve, other) in context of VWP. What is the state of things, what have we contributed, etc., etc.,.). It is generally understood that each of the sections of this thesis will be stand alone documents.

II. bdots

Overview of bdots package, use cases, extensions, and examples

1. Fitting

Review of major changes to fitting process, a mathematical description of the internal code, demonstration of use cases and extensions to generic functions

- i. User-created curves
- ii. Grouping
- iii. Generics

2. Bootstrap

Review of major changes to bootstrapping process, a mathematical description of the internal code, demonstration of use cases and extensions to generic functions. Extra attention given to analysis of results

- i. Formula syntax
- ii. Bootstrap process
- iii. Generics

3. Extensions

Here we consider major extensions made to the bdots package not mentioned above. This includes ancillary functions for analysis of vwp data, as well as demonstrated extensions to non-vwp data

- i. Correlation function
- ii. Refitting step
- iii. Non-vwp data

III. Saccade Curve

This section introduces the bulk of the theoretical contributions made to the VWP paradigm, namely the focus on the data generating mechanism producing saccades as well as the recovery of this underlying curve. A comparison will be made with existing methods, with enumerated advantages for the proposed method

1. VWP Overview

overview

- i. Competition and activation
- ii. History, “looking” curve

- iii. Review of current methods

2. Saccade Curve

- i. Definitions

- ii. Mathematical description

- iii. Discussion

3. Simulations (logistic and dg)

With the simulations here, we are wanting to highlight three things: First, in a situation in which there is no oculomotor delay, we are able to recover the data-generating curve. Second, in a situation in which there is known oculomotor delay, we are able to recover the underlying data-generating curve with a horizontal shift in the observations. Lastly, we consider cases in which there is random oculomotor delay. We consider the implications of this, along with various methods to mitigate our uncertainty in recovering the data-generating curve.

- i. Recovery, no delay

- ii. Recovery, fixed delay

- iii. Recovery, random delay

4. Discussion

Review implications of what was found. Leave space for further inquiries

IV. Other

tbd

- 1. Real-world data/validation (ask bob) (?)

- 2. Time window sensitivity (?)

V. Discussion

Here, we investigate the perennial question of our existence: what's the point?