

Intro

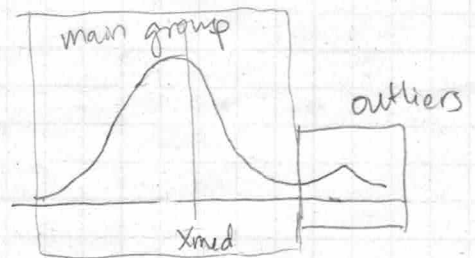
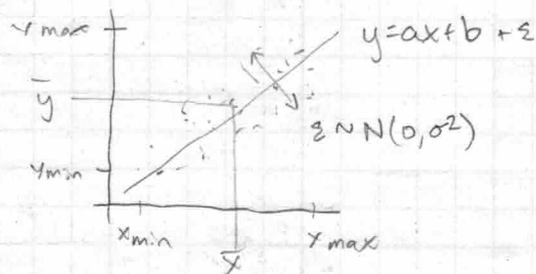
Chart } define, give examples,
Dashboard }

Section: Dashboard Construction

- How do charts fit within larger DB framework?
 - references of other views on the topic
- General Principles Tufte / Cairo

Section: Cognitive Principles

- Quick overview of visual perception - scene scanning, Gestalt grouping. Focus on DB examples.
- Attention
- Memory
- Ensemble Perception (higher order = later in section)
examples! Scatterplot + annotations showing summary stats



extend to multiple dims if you can find refs.
examples are key here!

Chapter 3

Dashboard Poetry

3.1 Abstract

This proposal considers an entire dashboard to be a well-orchestrated collection of charts in data visualization.

A chart is similar to a sentence in that it presents a straightforward piece of information and visually represents data to facilitate comprehension.

For example, a chart could be a bar graph depicting sales over a year, a pie chart illustrating the percentage distribution of a budget, or a scatter plot illustrating the correlation between two variables.

A chart conveys a single data narrative, like a sentence expressing a complete thought. A dashboard is a visual display of the essential information needed to achieve one or more objectives, consolidated and arranged on a single screen so the data can be monitored at a glance (Few, 2006a).

A dashboard is analogous to a paragraph.

It is a collection of charts (similar to sentences) that present a more comprehensive view of the data landscape.

Each chart on the dashboard contributes to the overall comprehension of the situation, similar to how each sentence in a paragraph contributes to the larger

it can be a paragraph too ☺

Same message

concept.

A dashboard may combine multiple graphs, tables, and metrics to provide an all-encompassing view of a company's performance, a project's development, or market trends. However, a counterexample to this analogy could be a poorly designed dashboard presenting overwhelming information without clear organization or hierarchy. In such a case, the charts may compete for attention and confuse the reader, similar to how a paragraph with too many disjointed sentences can lead to confusion and a lack of coherence. This counterexample highlights the importance of thoughtful design and effective communication in creating an informative and comprehensible dashboard. The research objective of this study is to investigate how changes in real-time data displayed on a dashboard affect ensemble perception and the user's ability to make accurate and rapid decisions based on summary statistics in a dynamic environment.

How do you define this?

3.2 Introduction

Research Question: How do individual charts function as syntactic and semantic sentences within the paragraph of a dashboard, and how can multidimensional ensemble theory be applied to optimize the coherence and interpretability of dashboards in a multi-stakeholder environment?

The research objective of this study is to investigate how changes in real-time data displayed on a dashboard affect ensemble perception and the user's ability to make accurate and rapid decisions based on summary statistics in a dynamic environment. The multidimensional ensemble theory framework could examine how various dimensions— data types, user roles, and organizational goals, interact to create a coherent and effective dashboard. It considers

I II III
all kind of talk
about the research
question/objective,
but they are
so which one? different.
II

how ensemble perception operates when data is static and adapts to fundamental changes, particularly on a dashboard where such fluctuations are common. The research aims to improve the design of dashboards by focusing on the user's decision-making capabilities.

The grammar of graphics is a framework that helps design and understand data visualizations (Wilkinson, 2012).

By decomposing graphics into components such as data, aesthetics, and geometry, the grammar of graphics provides a structured method for conceiving and creating visualizations.

It permits a high degree of customization and flexibility in creating visualizations. Static visualization is commonly used in the communication phase of data science workflows, and data scientists sometimes use it as part of the analysis.

John Tukey's Exploratory Data Analysis (EDA) methods are well-known and well-vetted.

However, Satyanarayan et al. addressed this by introducing a high-level grammar of graphics called "Vega-Lite," which presents a set of standardized linguistic rules for producing interactive information visualizations using a concise JSON format for data to be represented by the grammar (Satyanarayan et al., 2016).

Vega-Lite has been directly implemented in R via the ggvis package using the same, albeit at a slightly lower level. The principles of the grammar of graphics can be applied to dashboard design to create more effective and informative dashboards.

"Graphical Tests for Power Comparison of Competing Designs" by Hofmann et al. presents a graphical method for comparing the power of two or more

This doesn't fit here.

How is it connected?

I would not talk about an R package at this point.

? I don't understand

? what

what is this?