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Honors Thesis Proposal

1 Proposal

Information visualization concerns itself with presenting data so as to facilitate interpretation of it. This still leaves open how one should evaluate such a visualization. Should it be usability, but if so for what purpose? Does attractiveness or memorability play a role? Thus, the question of how aesthetics influences usability and user interaction with a visualization is a core question in this field.

A basic assumption of that question is that it is known what it means for something to be aesthetically pleasing. In fact, this is the topic of much research in the area of gestalt psychology. There, many principles have been identified and untersuched that help something to be perceived as a unified whole, or gestalt, more than the simple sum of its parts. For example, the principle of similarity states that people tend to perceive similar objects as parts of a whole (see Fig. **??**). It makes sense to build upon this research in asking how the individual gestalt principles contribute to a "better" graph visualization.

To that end, we have developed a series of hypotheses:

H1: If the picture looks like a map is will be more appealing

H2: If the picture exhibits clear gestalt (closure, continuation, proximity) principles it will be more appealing

H3: If the picture has a high degree of familiarity (is more familiar) it enhances the pipeline

H4: Curved edges increase the attractiveness

H5: Data from studies of appeal can be analysed to determine underlying display properties (dimensions)

H6: Faces as circles (local measure of Aspect Ratio) means this will be more attractive

The goal:
To figure out links between how well a graph visualization corresponds to gestalt principles of psychology and its attractiveness/usability/what have you.

Important because:
Big Data! Woo. (Note, this is a name drop, not a point)
Well, information is useless unless you know what it is (can visualize it), and if it's a "bad" visualization, that's bad, so you'd prefer a "better" visualization. Only what's that?
What's out there?: well...

Information visualization concerns itself with presenting data so as to facilitate interpretation of it. Thus the question of whether or not a visualization is "pretty" at first seems only tangentially related. However, the question of how "prettiness," or aesthetics, influences usability and user interaction with a visualization is a core question.

Form:
Research paper(, framework for generating graphs as for survey?)

The plan:
Survey of lit, survey of people, analysis of results

In final form, include:
questions/hypotheses, methods, theoretical/methodological framework, resources (e.g. library, archival, survey, interview...)