

Ross-Chernoff Glyphs

Or: How Do We Kill A Bad Idea In Visualization

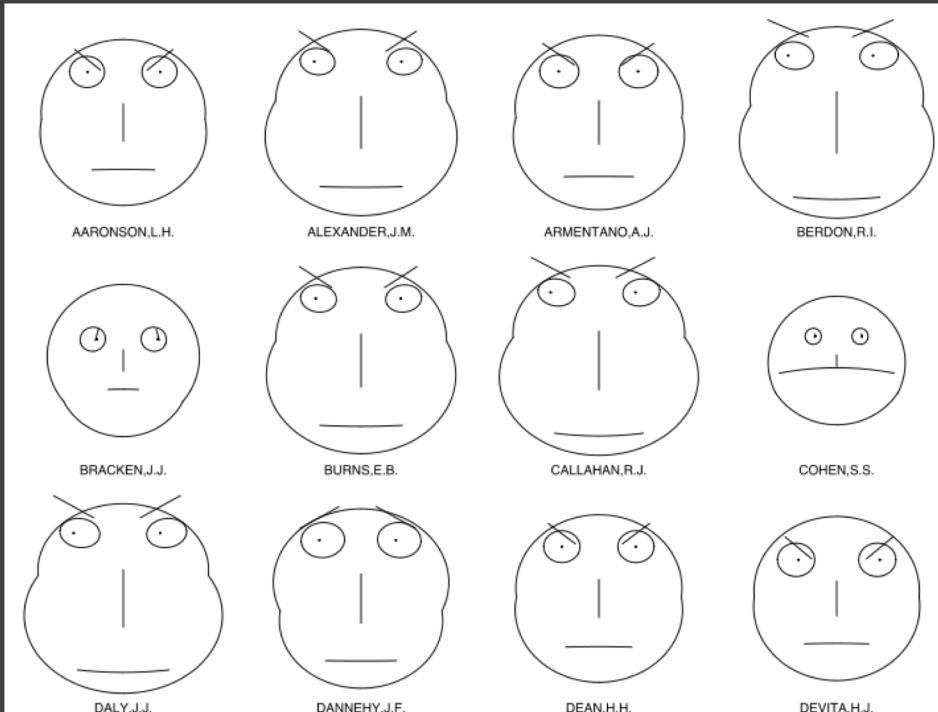
Michael Correll
Tableau Research

Bob Ross

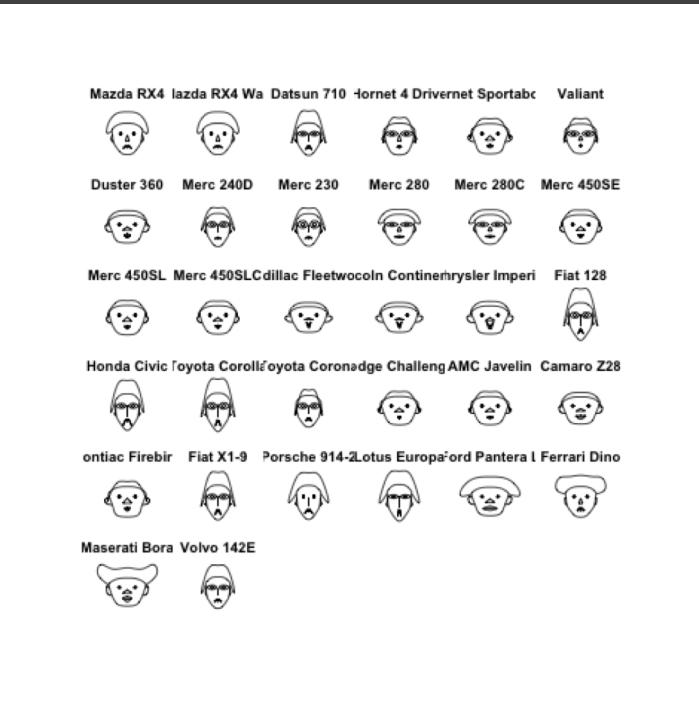


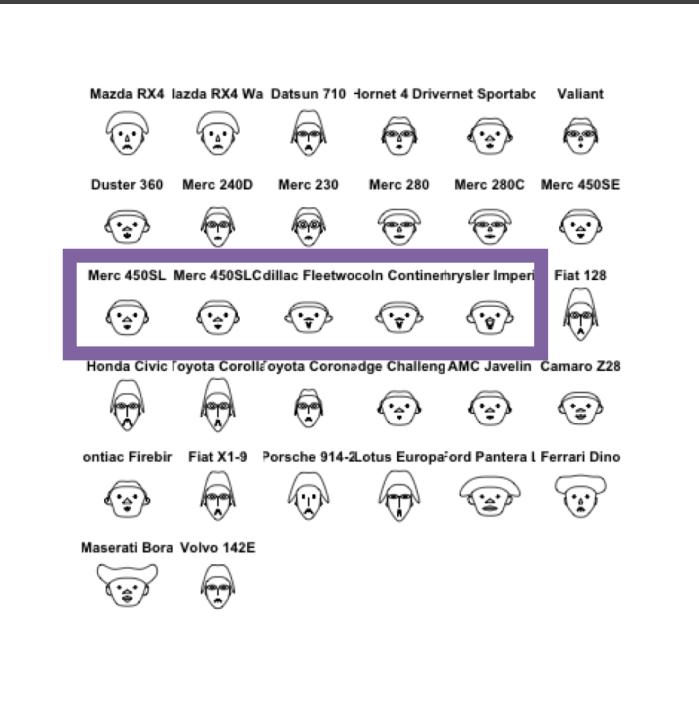


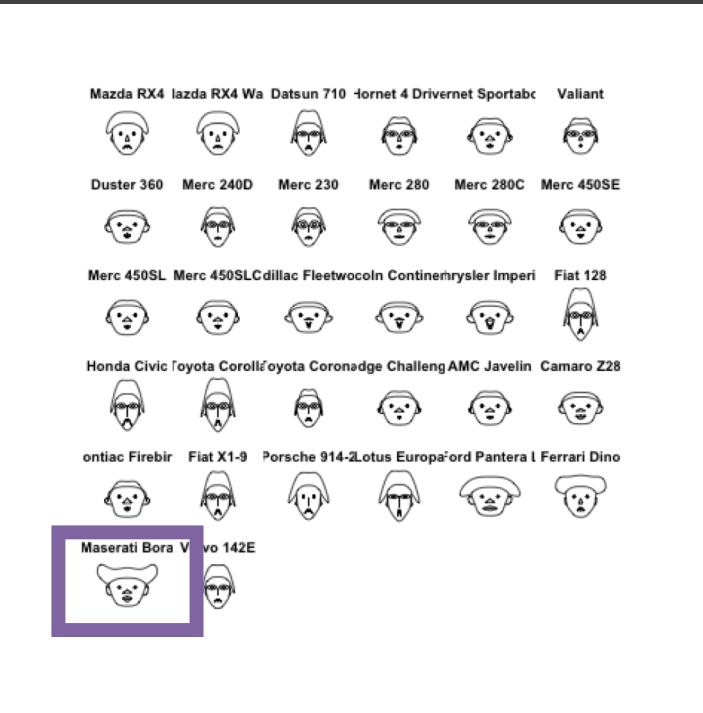
Chernoff Faces



Chernoff. The use of faces to represent points in k-dimensional space graphically. JASA, 1973.



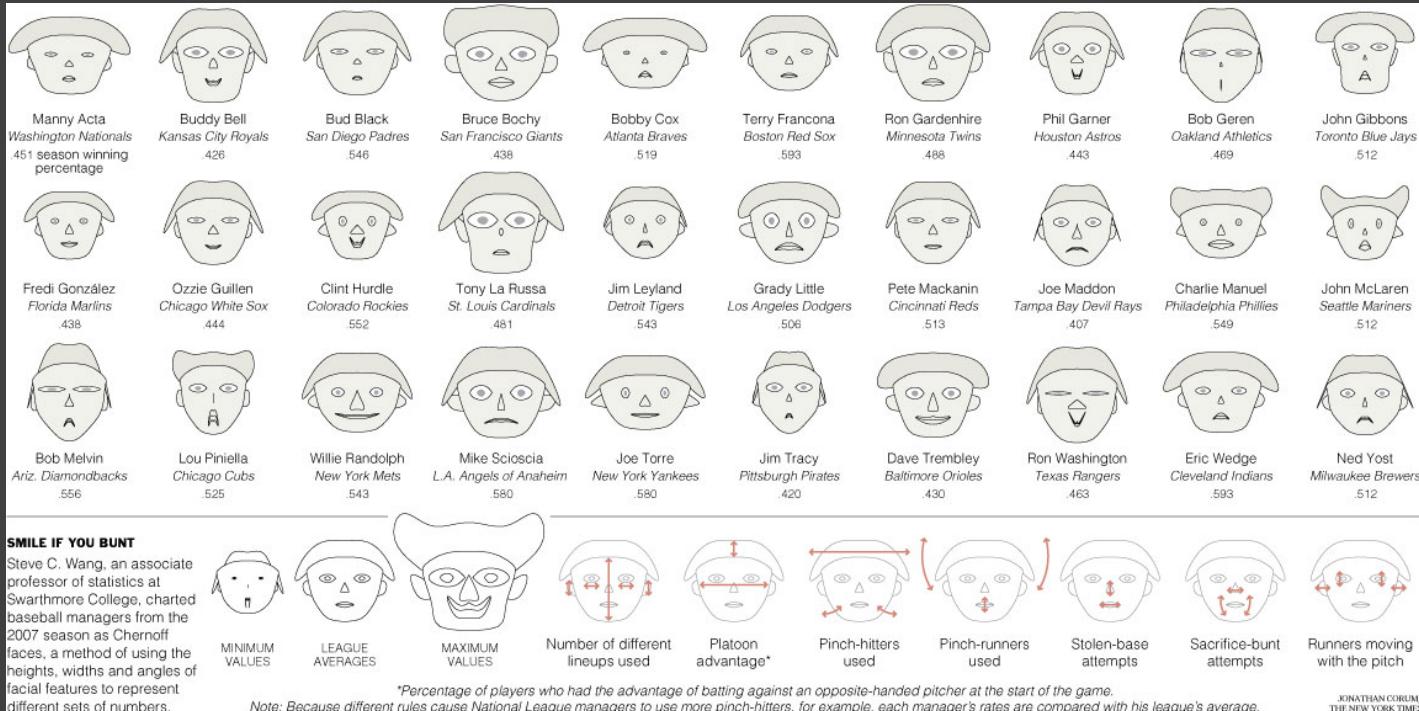




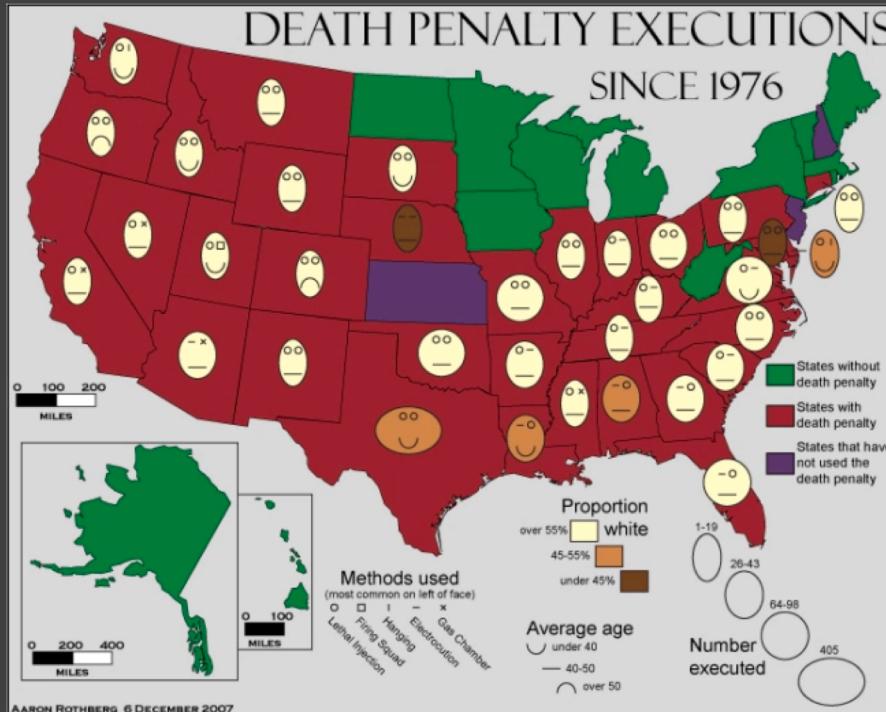
Contention

Chernoff Faces Suck

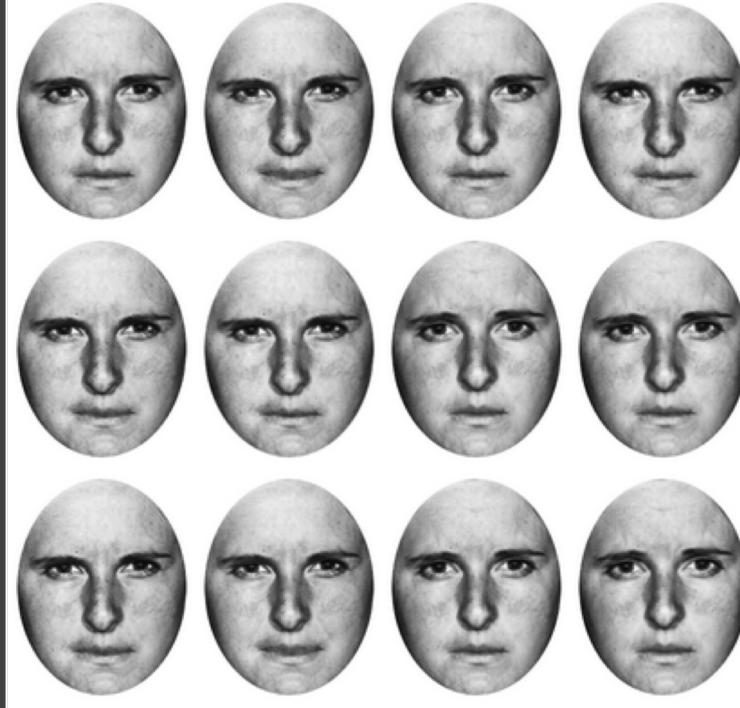
They Are Hard to Decode



They Are Silly/Emotionally Loaded



We Don't Know Enough About Face Perception



Haberman & Whitney. Rapid Extraction of mean emotion and gender from sets of faces. *Current Biology*, 2007.

Contention

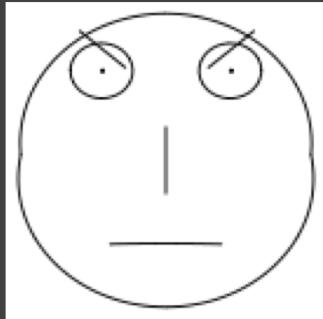
Chernoff Faces Suck

We Won't Shut Up About Them

Citation Count

Citation Count

~1950 Citations



[The use of faces to represent points in k-dimensional space graphically](#)

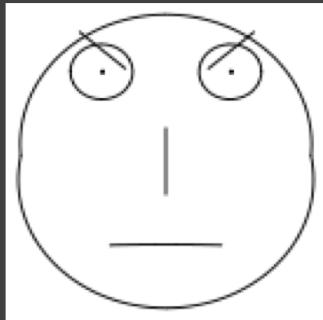
[H Chernoff](#) - Journal of the American Statistical Association, 1973 - Taylor & Francis

Abstract A novel method of representing multivariate data is presented. Each point in k -dimensional space, $k \leq 18$, is represented by a cartoon of a face whose features, such as length of nose and curvature of mouth, correspond to components of the point. Thus every multivariate observation is visualized as a computer-drawn face. This presentation makes it easy for the human mind to grasp many of the essential regularities and irregularities ...

[☆ 99](#) [Cited by 1909](#) [Related articles](#) [All 13 versions](#) [Import into BibTeX](#) [»](#)

Citation Count

~1950 Citations



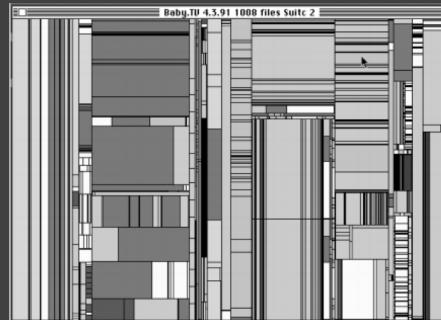
The use of faces to represent points in k-dimensional space graphically

H Chernoff - Journal of the American Statistical Association, 1973 - Taylor & Francis

Abstract A novel method of representing multivariate data is presented. Each point in k -dimensional space, $k \leq 18$, is represented by a cartoon of a face whose features, such as length of nose and curvature of mouth, correspond to components of the point. Thus every multivariate observation is visualized as a computer-drawn face. This presentation makes it easy for the human mind to grasp many of the essential regularities and irregularities ...

☆ 99 Cited by 1909 Related articles All 13 versions Import into BibTeX ☰

~1800 Citations



Tree-maps: A space-filling approach to the visualization of hierarchical information structures

B Johnson, B Shneiderman - Proceedings of the 2nd conference on ..., 1991 - dl.acm.org

Abstract This paper describes a novel method for the visualization of hierarchically structured information. The Tree-Map visualization technique makes 100% use of the available display space, mapping the full hierarchy onto a rectangular region in a space-filling manner. This efficient use of space allows very large hierarchies to be displayed in their entirety and facilitates the presentation of semantic information.

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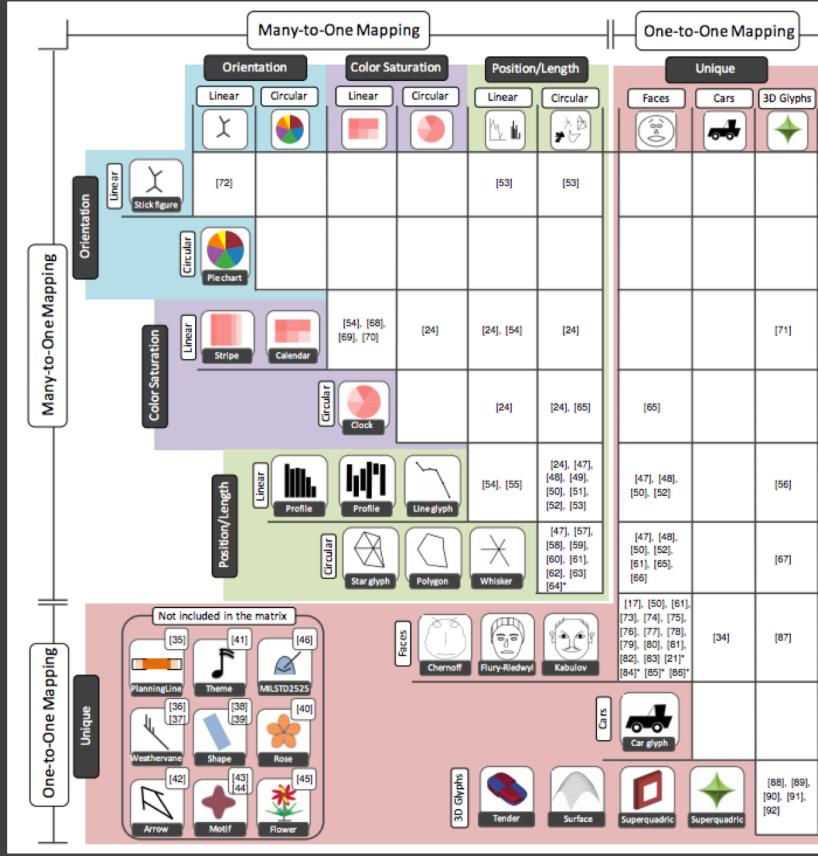
Contention

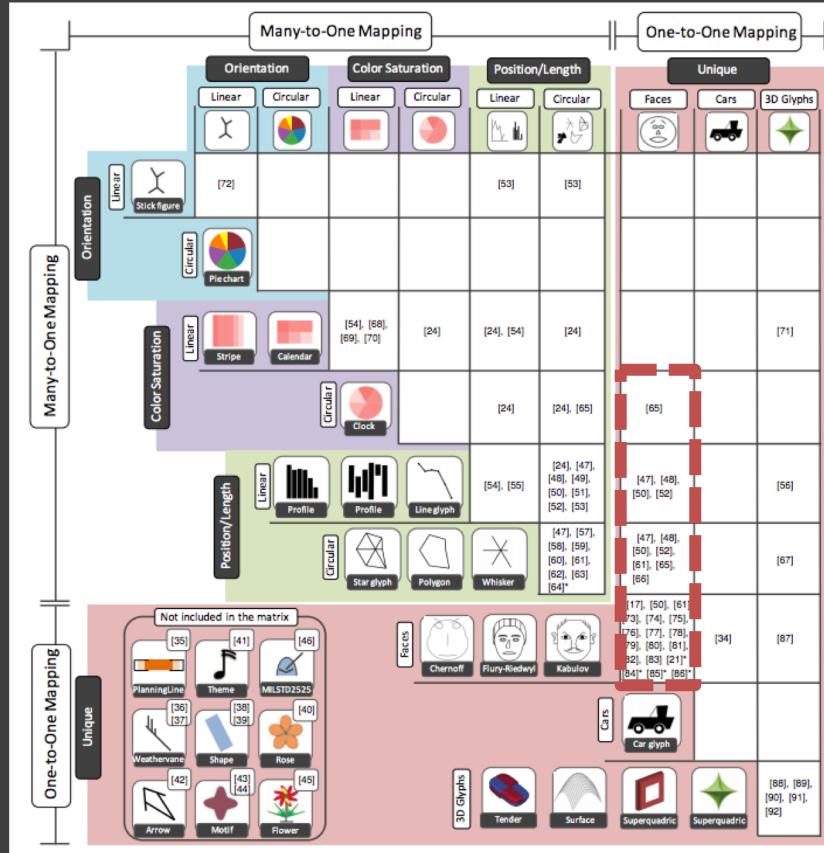
Chernoff Faces Suck

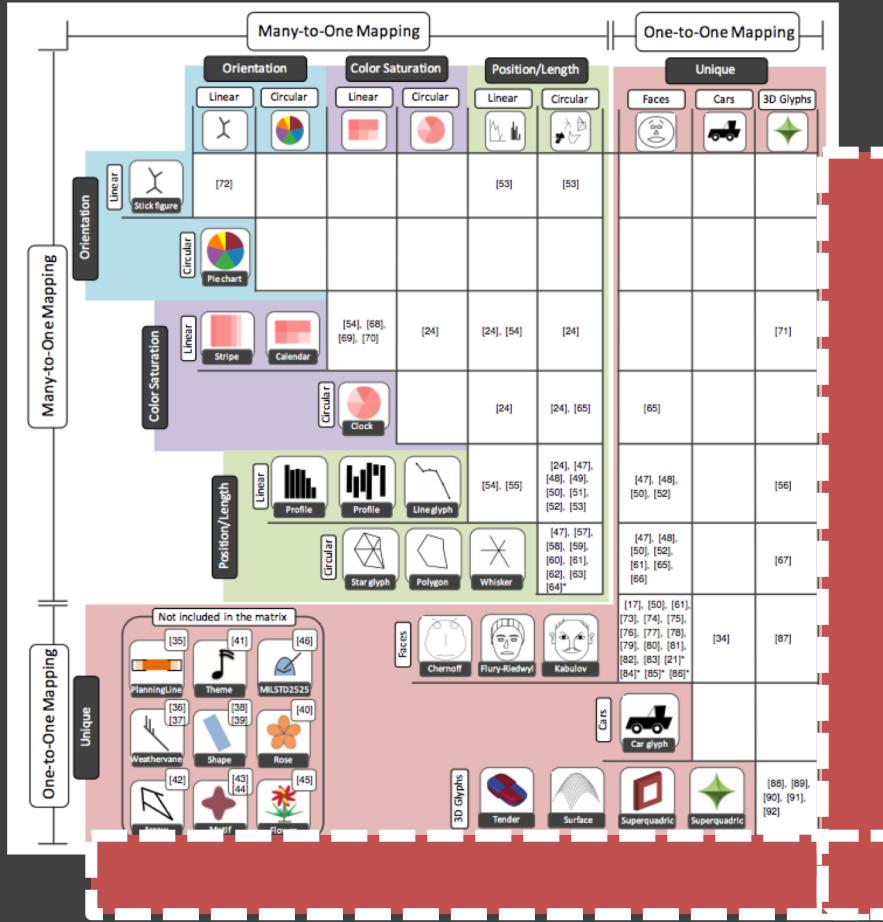
We Won't Shut Up About Them

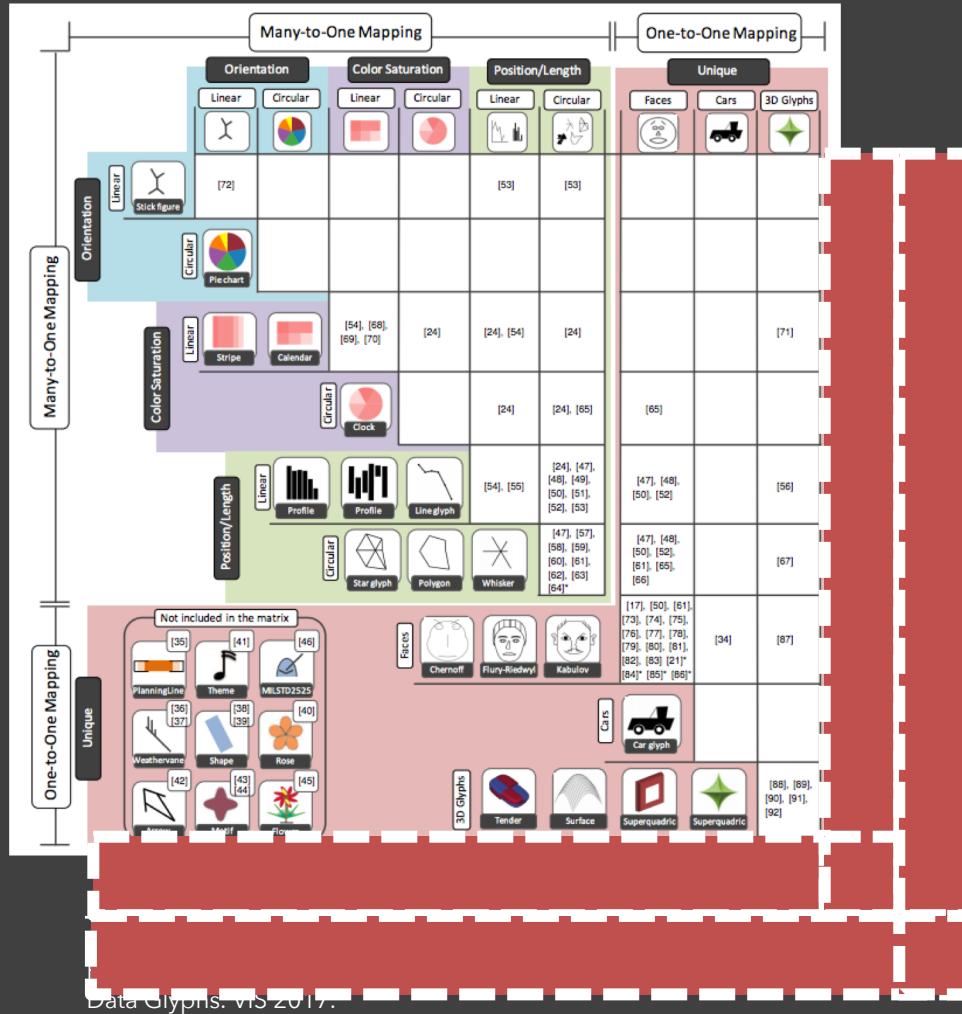
This Is Bad For The Field

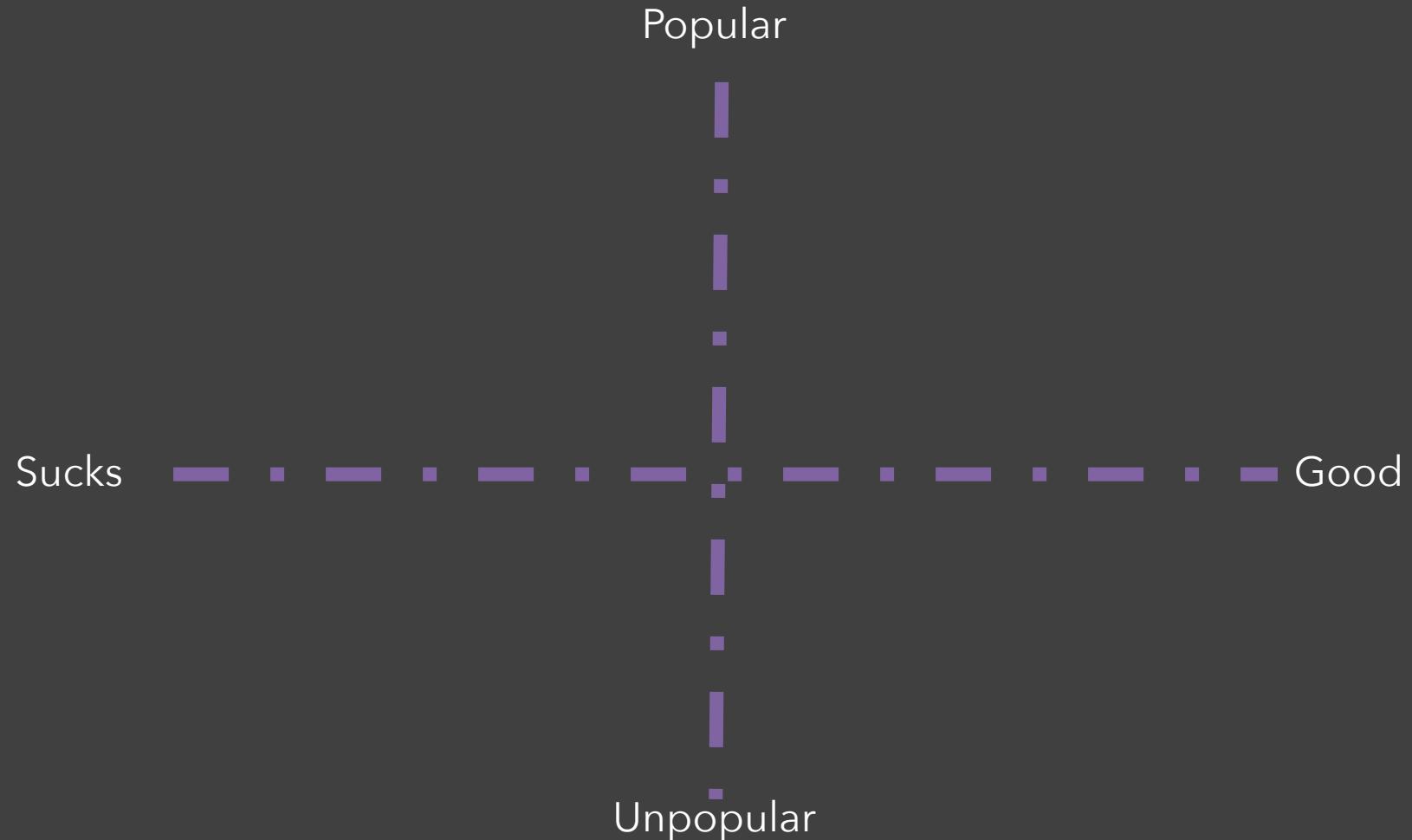
“The apostle may be daring, but the bishop must be timid” - Victor Hugo





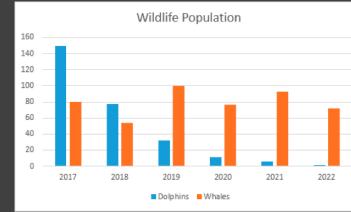






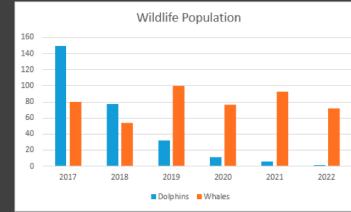
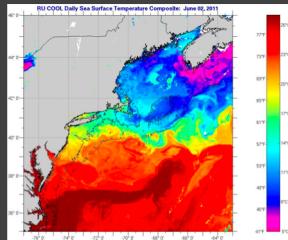
Popular

Sucks Good

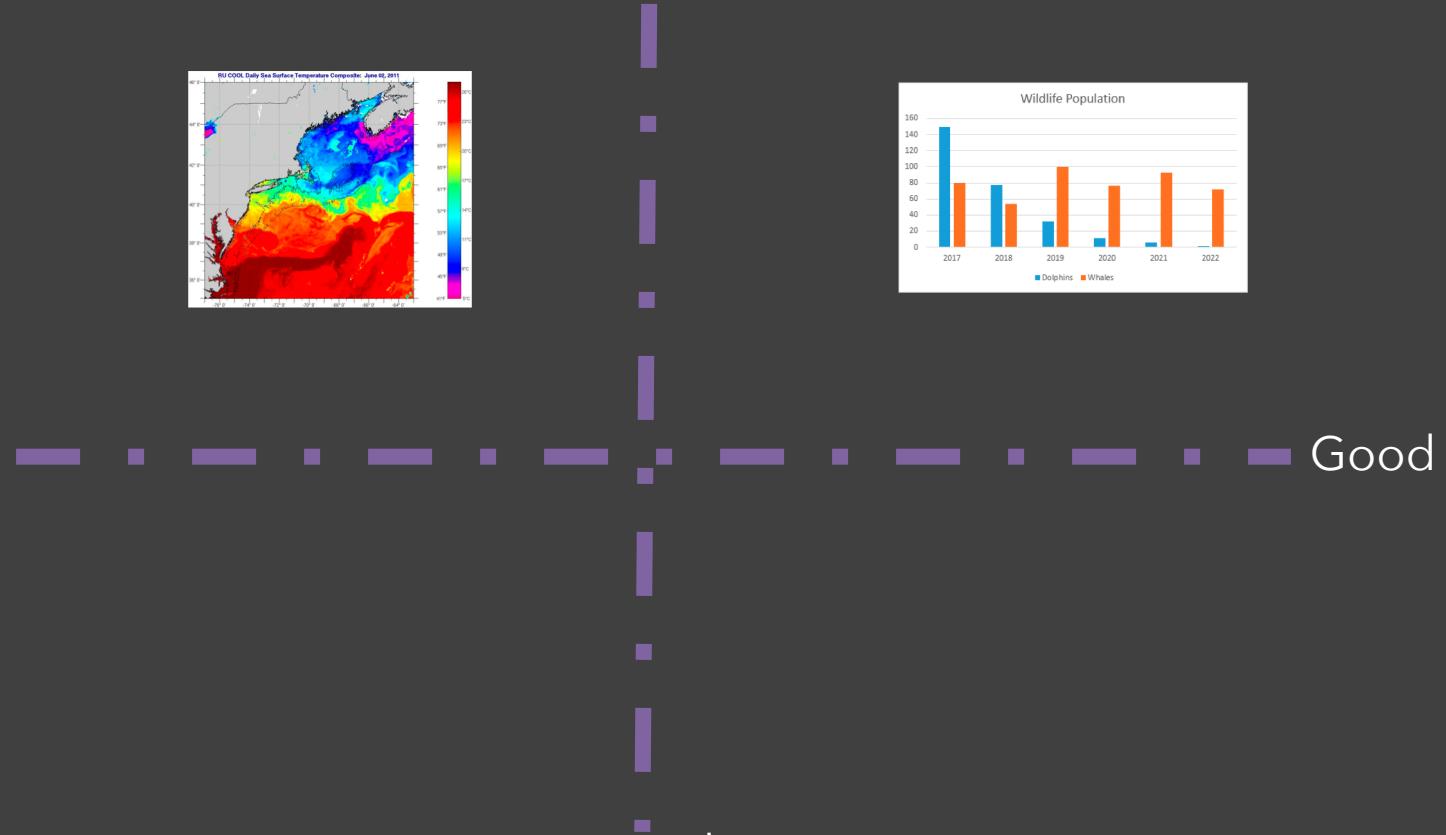


Unpopular

Popular

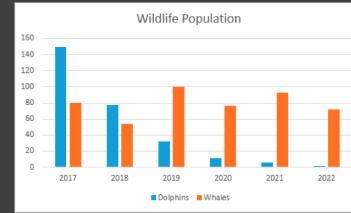
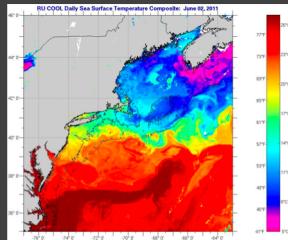


Sucks



Unpopular

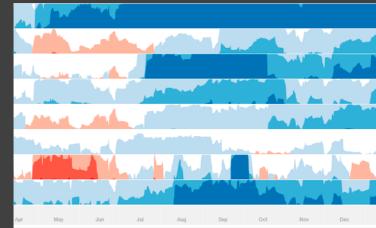
Popular



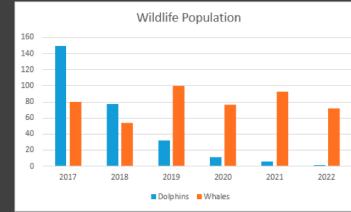
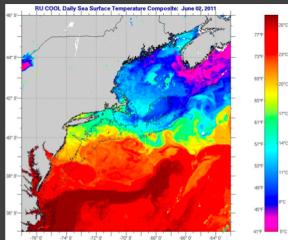
Sucks



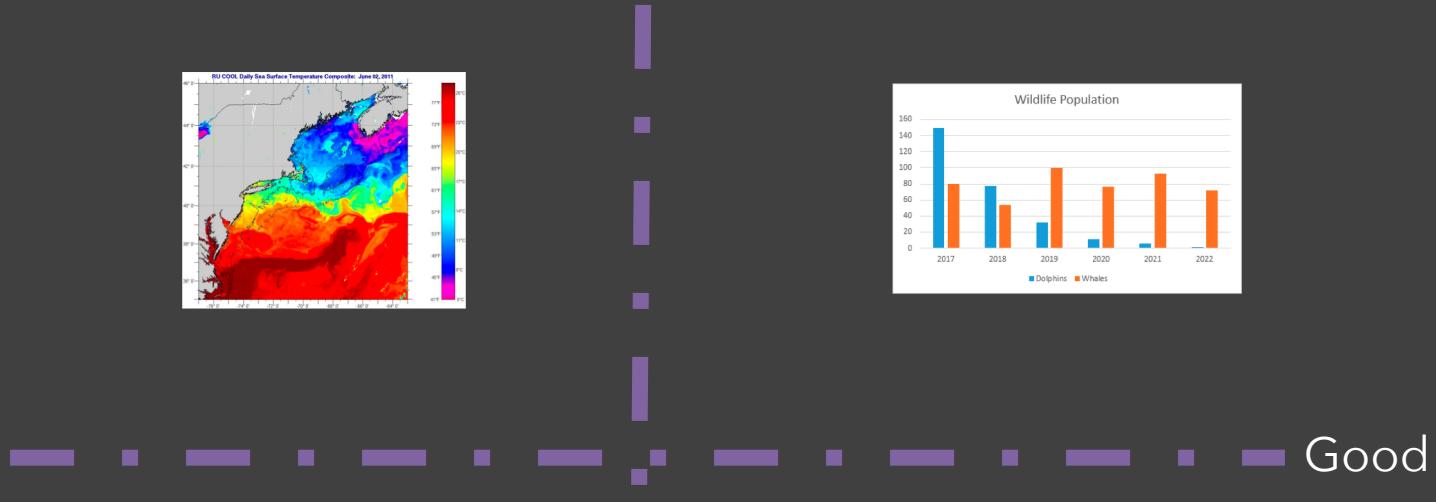
Unpopular



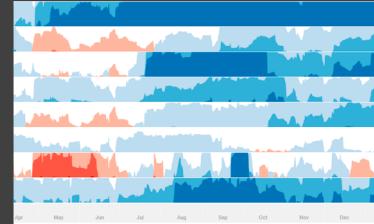
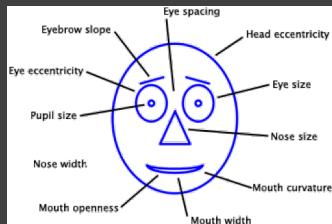
Popular



Sucks



Good



Unpopular

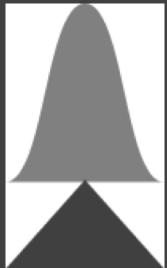
Reductio ad absurdum

What's the worst glyph idea that I could plausibly put forward?

How might this idea get past the gatekeepers?

How do we stop it if it does?

Ross-Chernoff Glyph



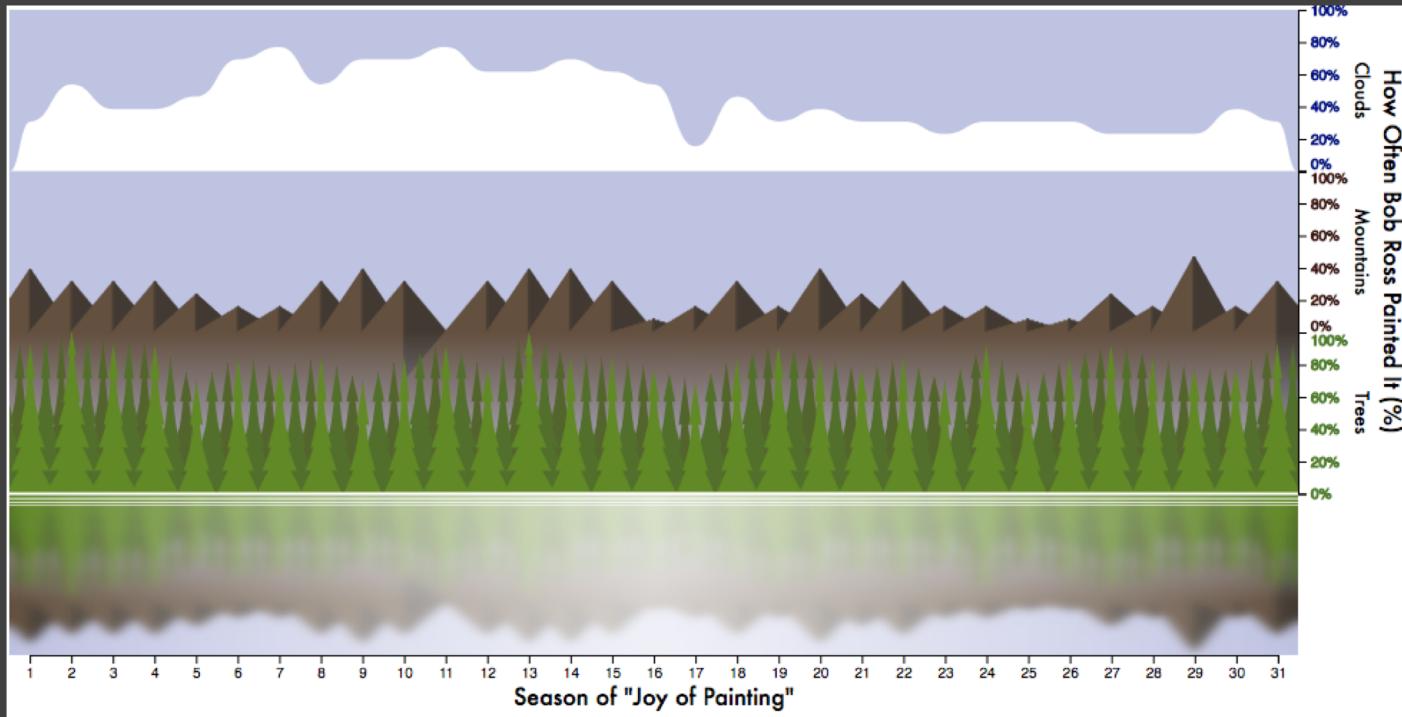
← Cloud



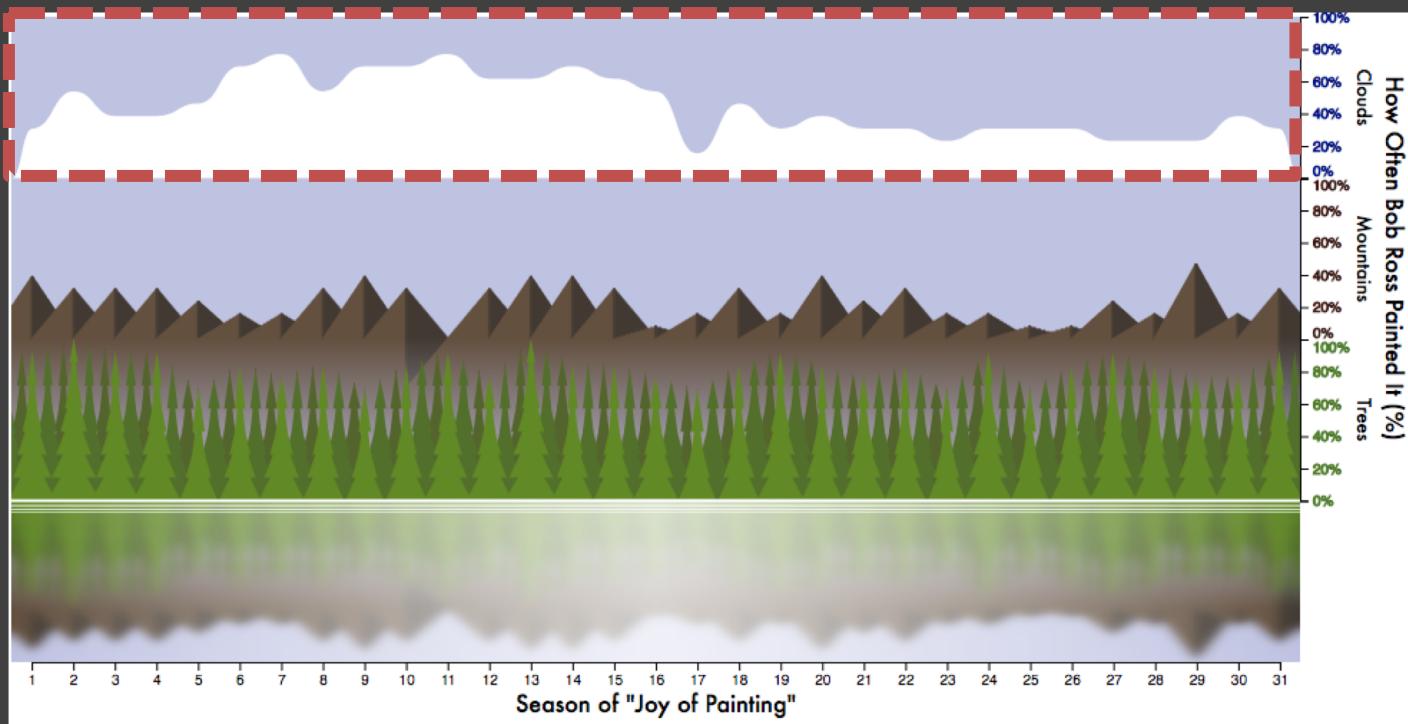
← Mountains

← Trees

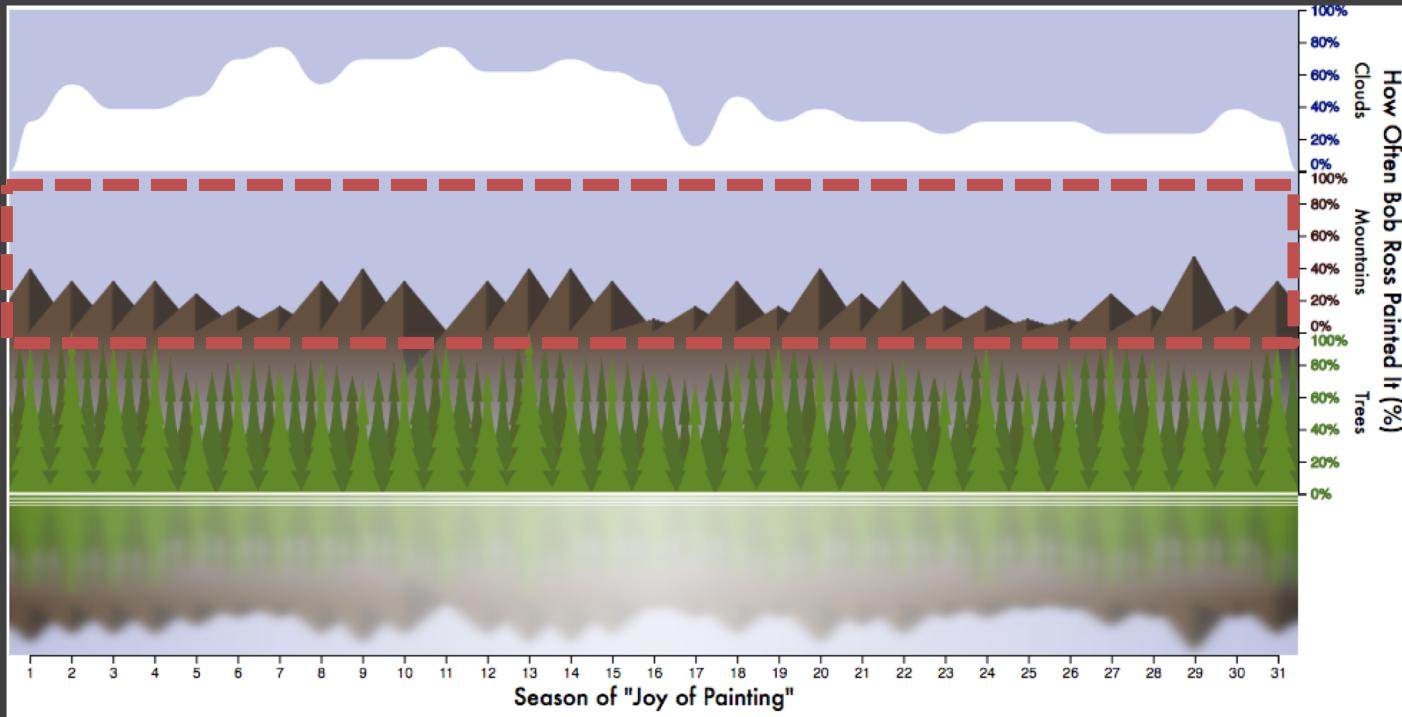
Ross-Chernoff Glyph



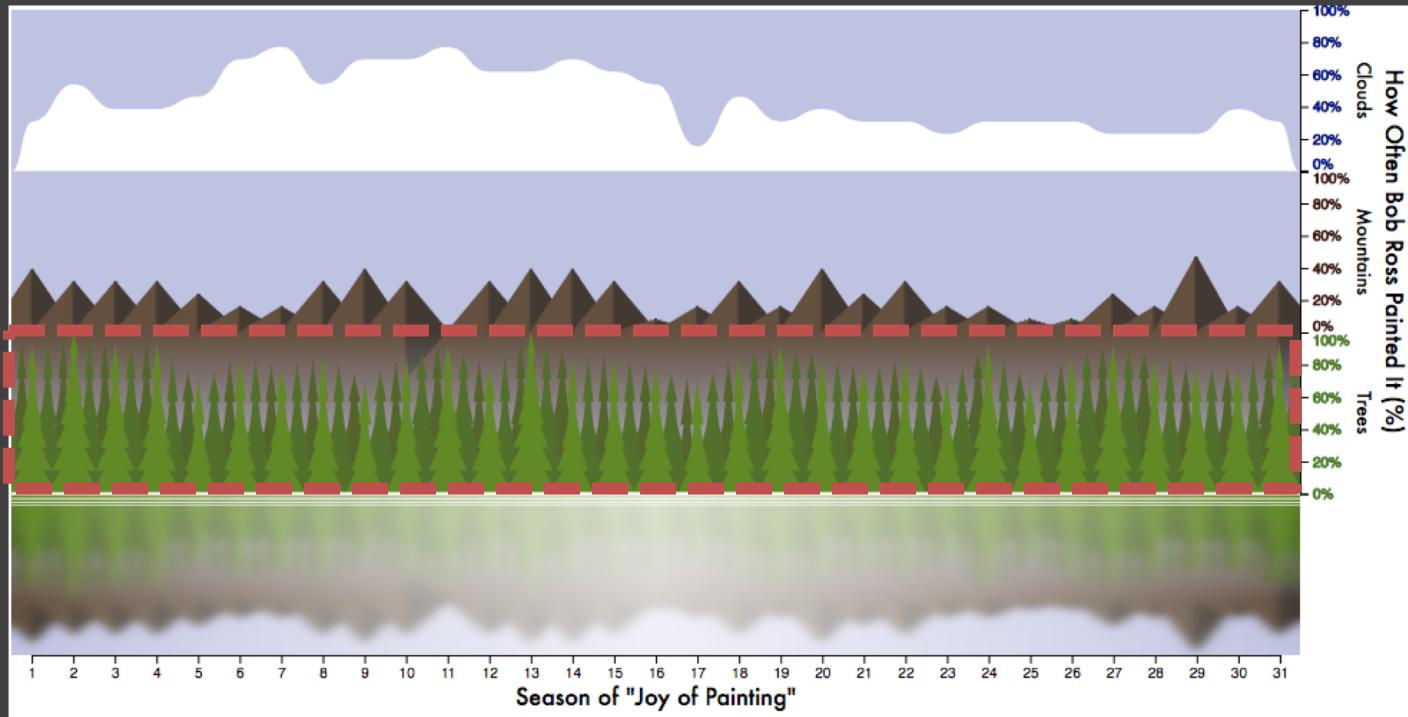
Ross-Chernoff Glyph



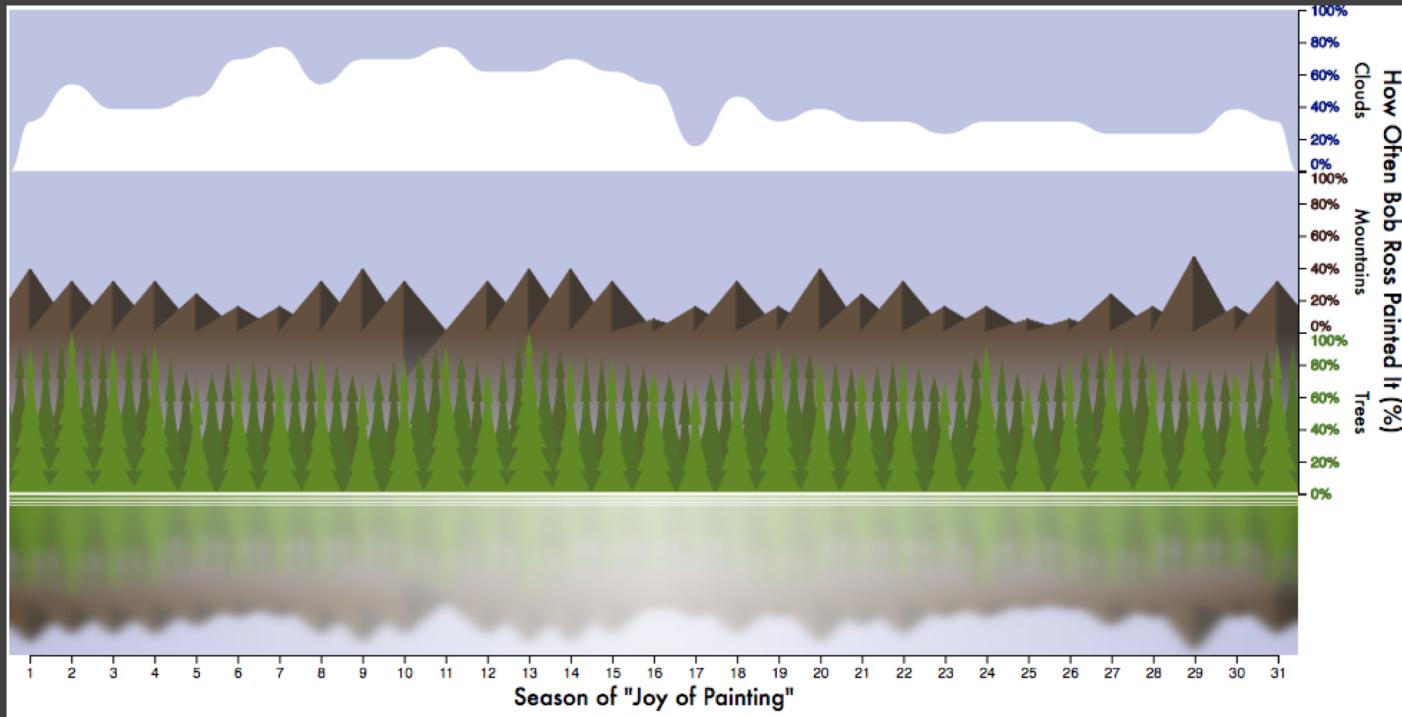
Ross-Chernoff Glyph

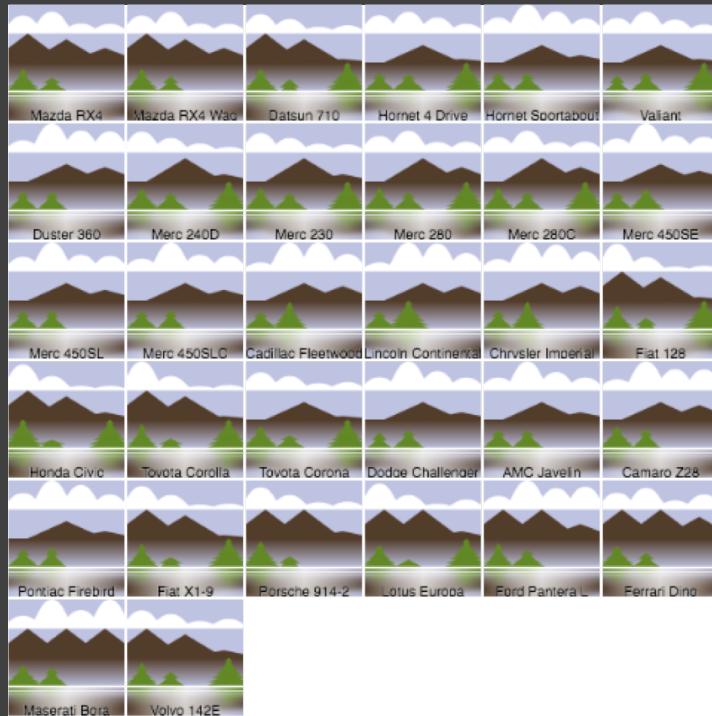


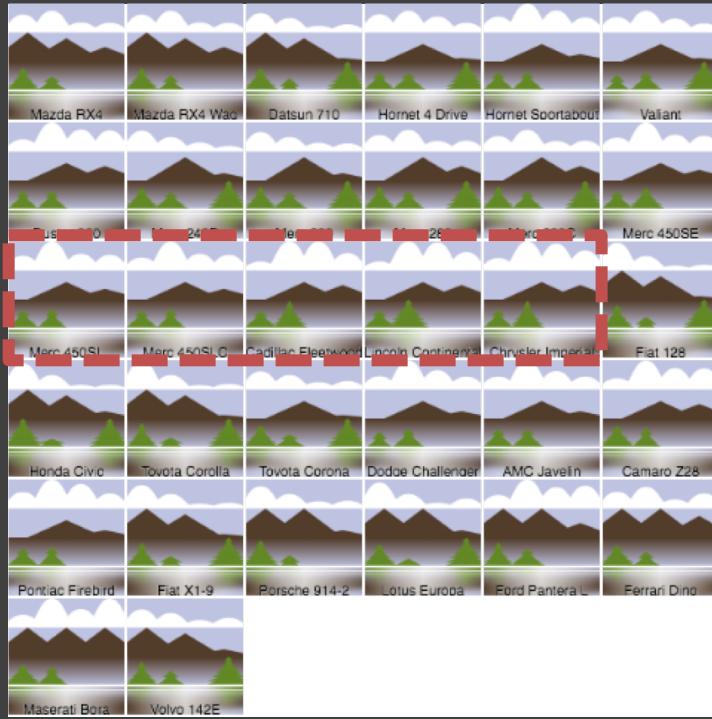
Ross-Chernoff Glyph

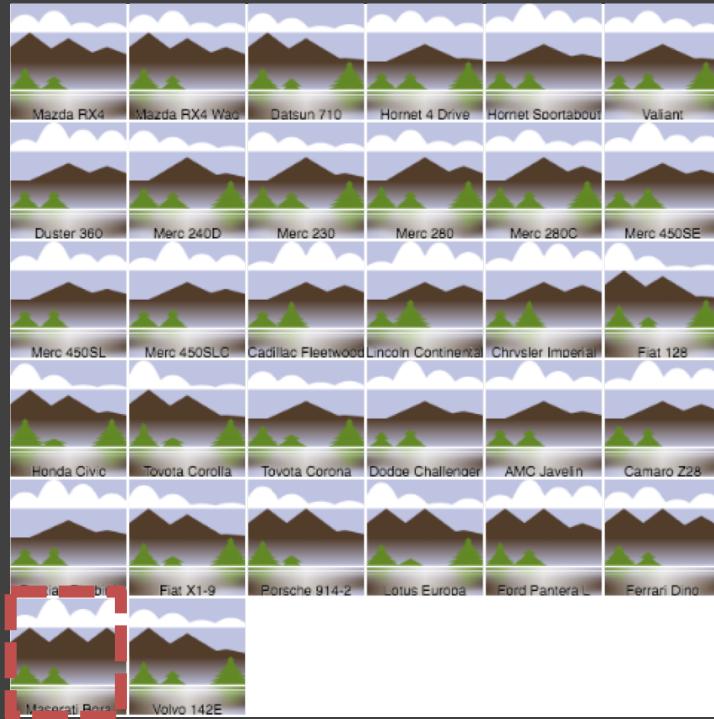


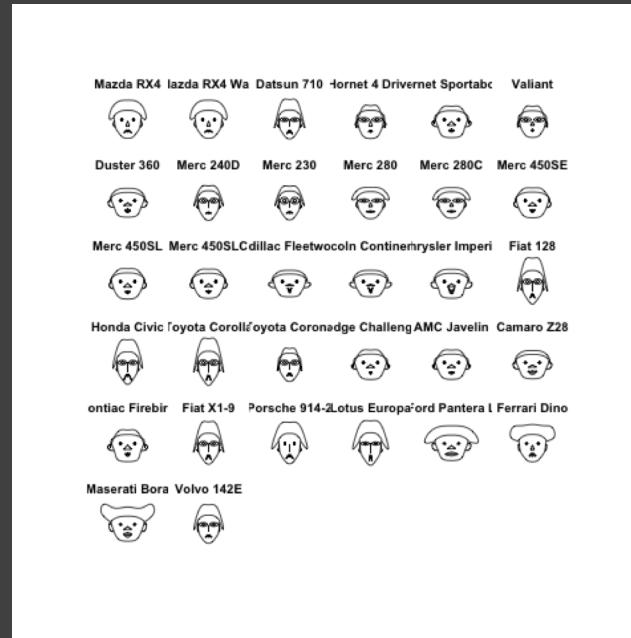
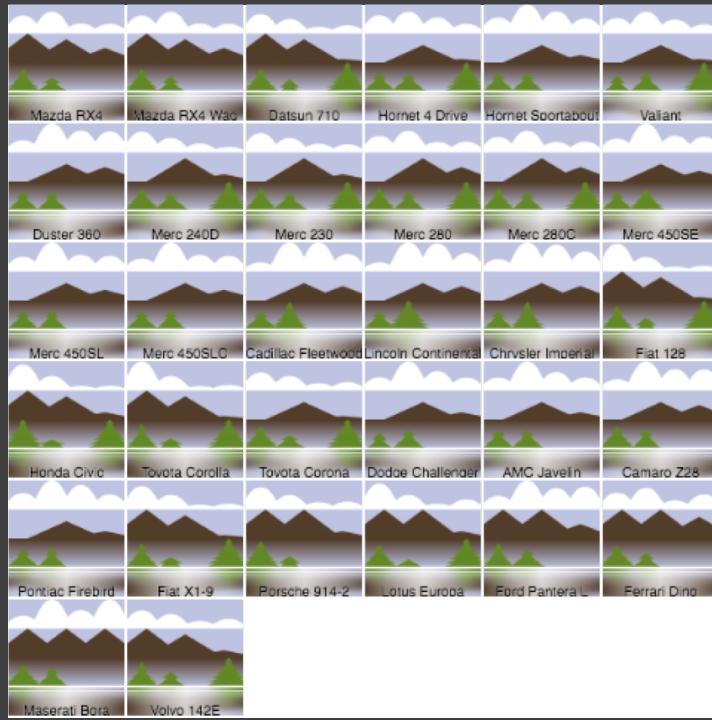
Ross-Chernoff Glyph











Why Ross-Chernoff Glyphs *Might* Suck

Not very “glyph”-y

Embellishments hurt
decoding

Visually complex

What Should We Do About It?

Something

Nothing

What Should We Do About It?

Something

Nothing

Let's Study Ross-
Chernoff Glyphs!

Let's Pretend Ross-
Chernoff Glyphs Never
Happened!

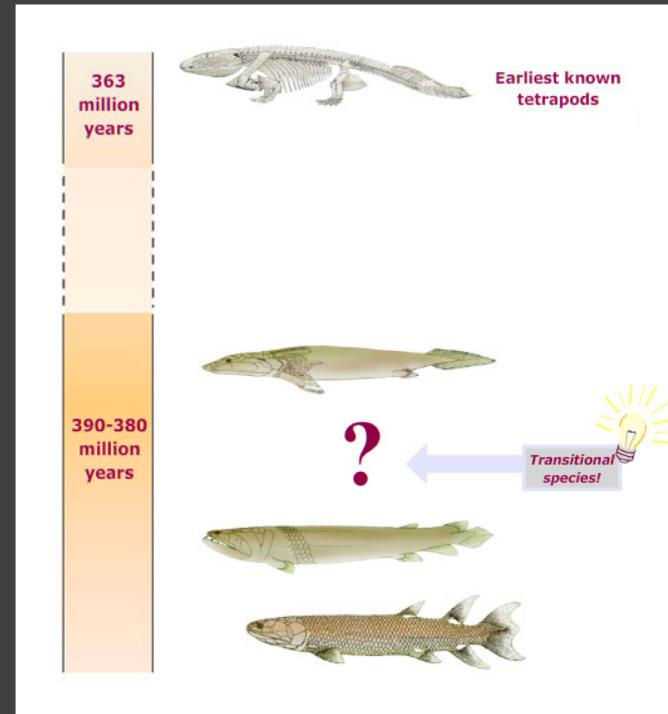
Reasons to Do Nothing

Brandolini's Law

"The amount of energy
necessary to refute
bullshit is an order of
magnitude bigger than
to produce it."

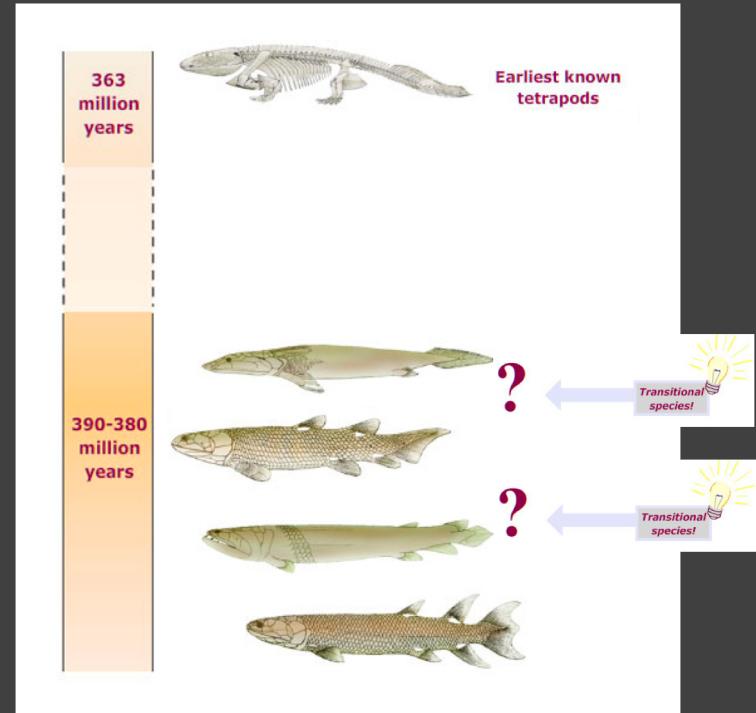
Brandolini's Law

"The amount of energy necessary to refute bullshit is an order of magnitude bigger than to produce it."



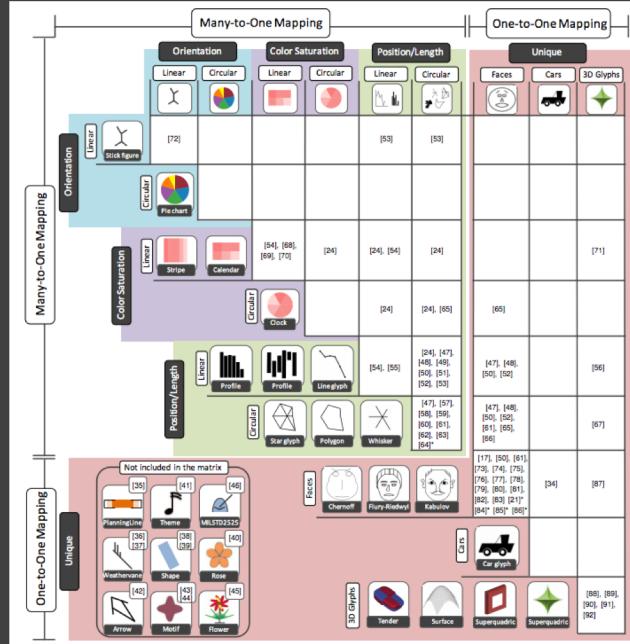
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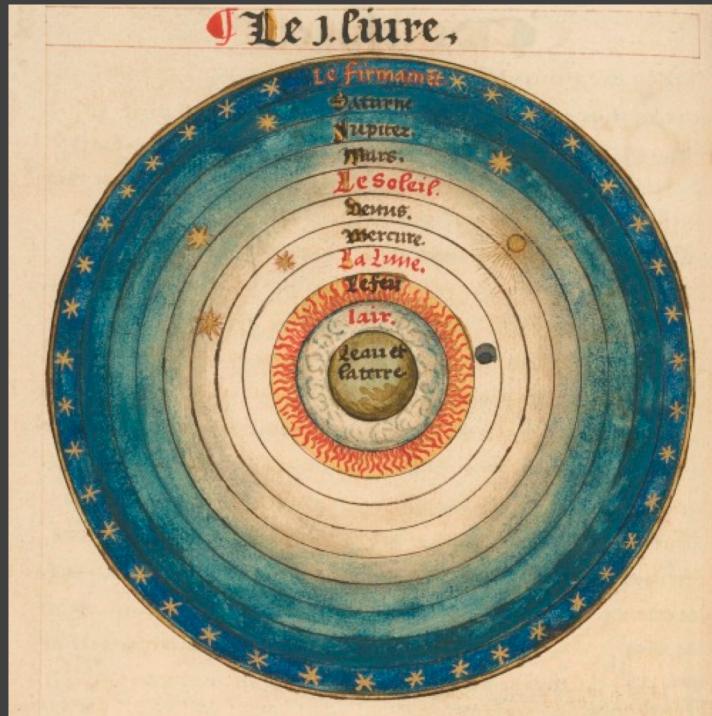


Brandolini's Law

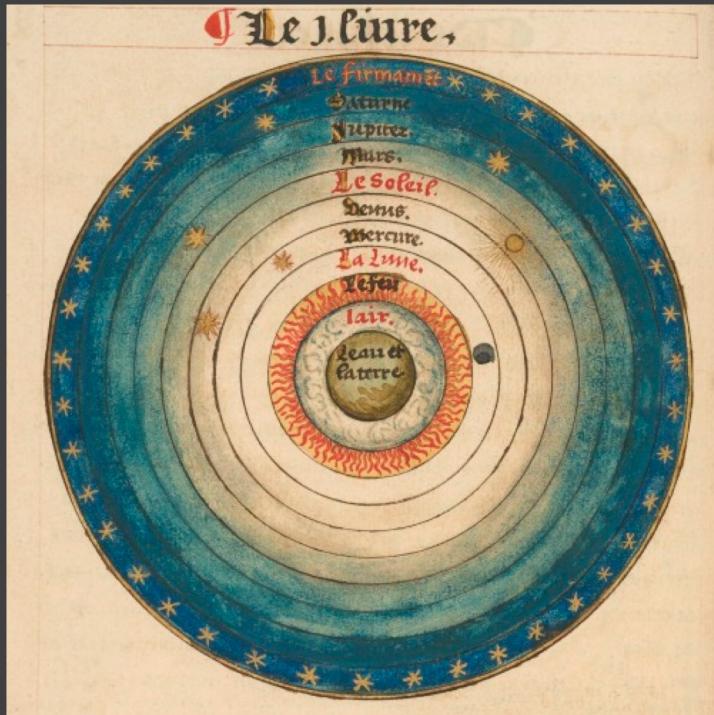
"The amount of energy necessary to refute bullshit is an order of magnitude bigger than to produce it."



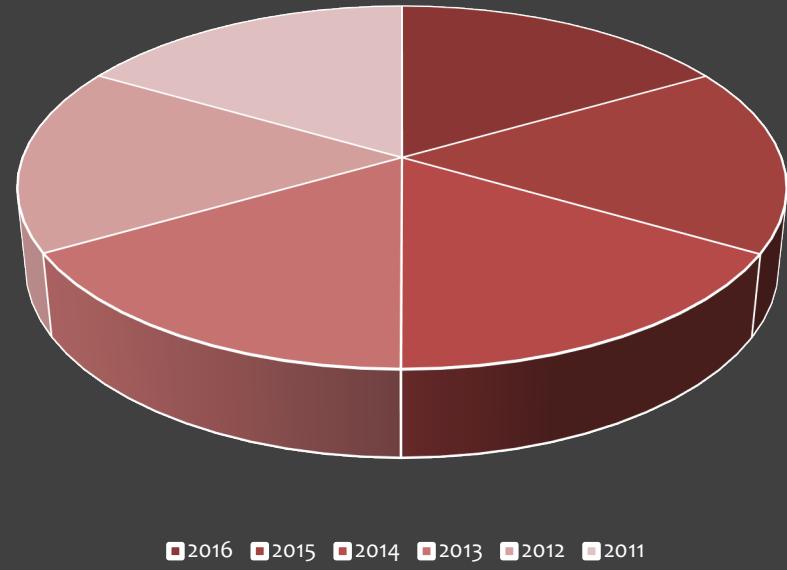
Moving Theory Forward



Moving Theory Forward



CHI Attendance

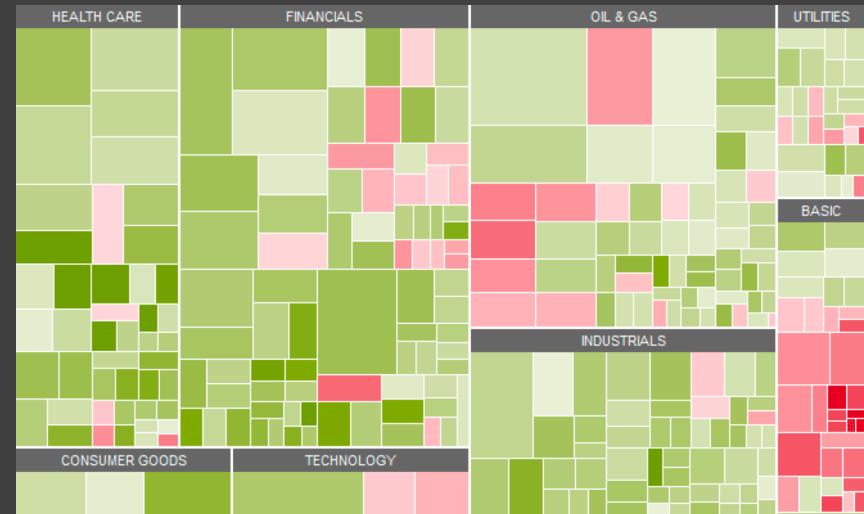
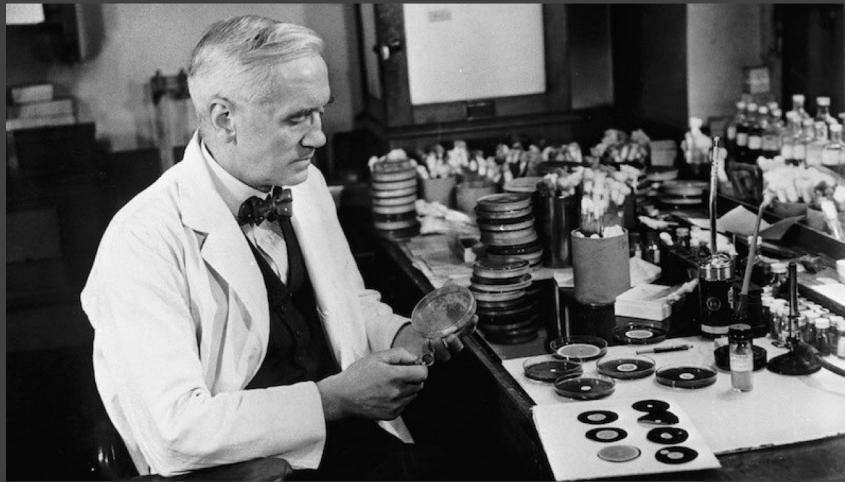


Reasons to Do Something

Happy Little Accidents



Happy Little Accidents



Try 'Em All And Let Science Sort 'Em Out



Try 'Em All And Let Science Sort 'Em Out



It's Gotta Be Good For *Something*



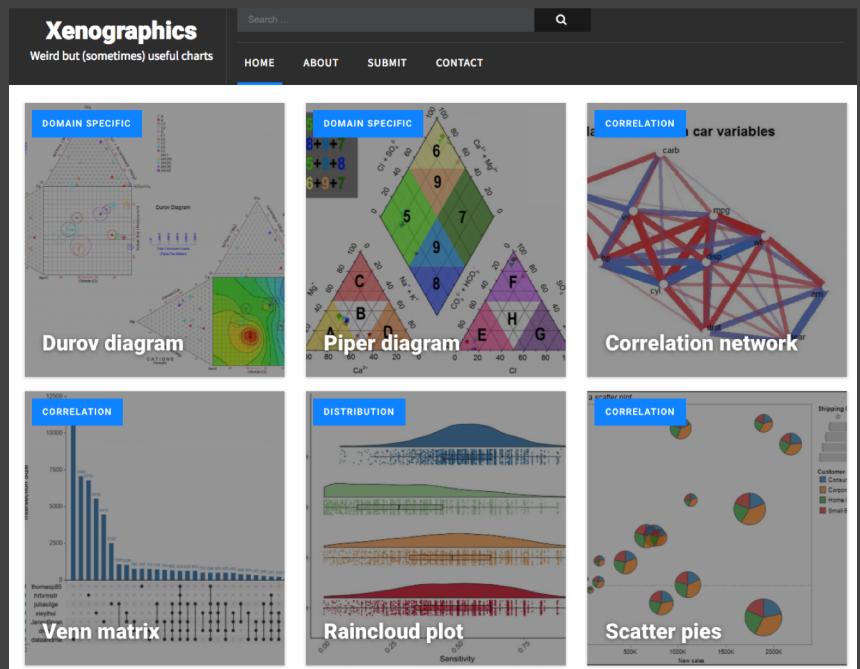
It's Gotta Be Good For *Something*



It's Gotta Be Good For Something



It's Gotta Be Good For *Something*



Questions

What makes a visualization bad?

Is a visualization ever *so* bad that it's not worth studying?

What are the academic vis equivalents of spontaneous generation or geocentrism?

Can we progress as a field without filtering out the bad?

Code: github.com/mcorrell/ross-chernoff

Not-Code: correll.io



Extra Slides

Evaluation

Chernoff Faces



Ross-Chernoff Glyphs

