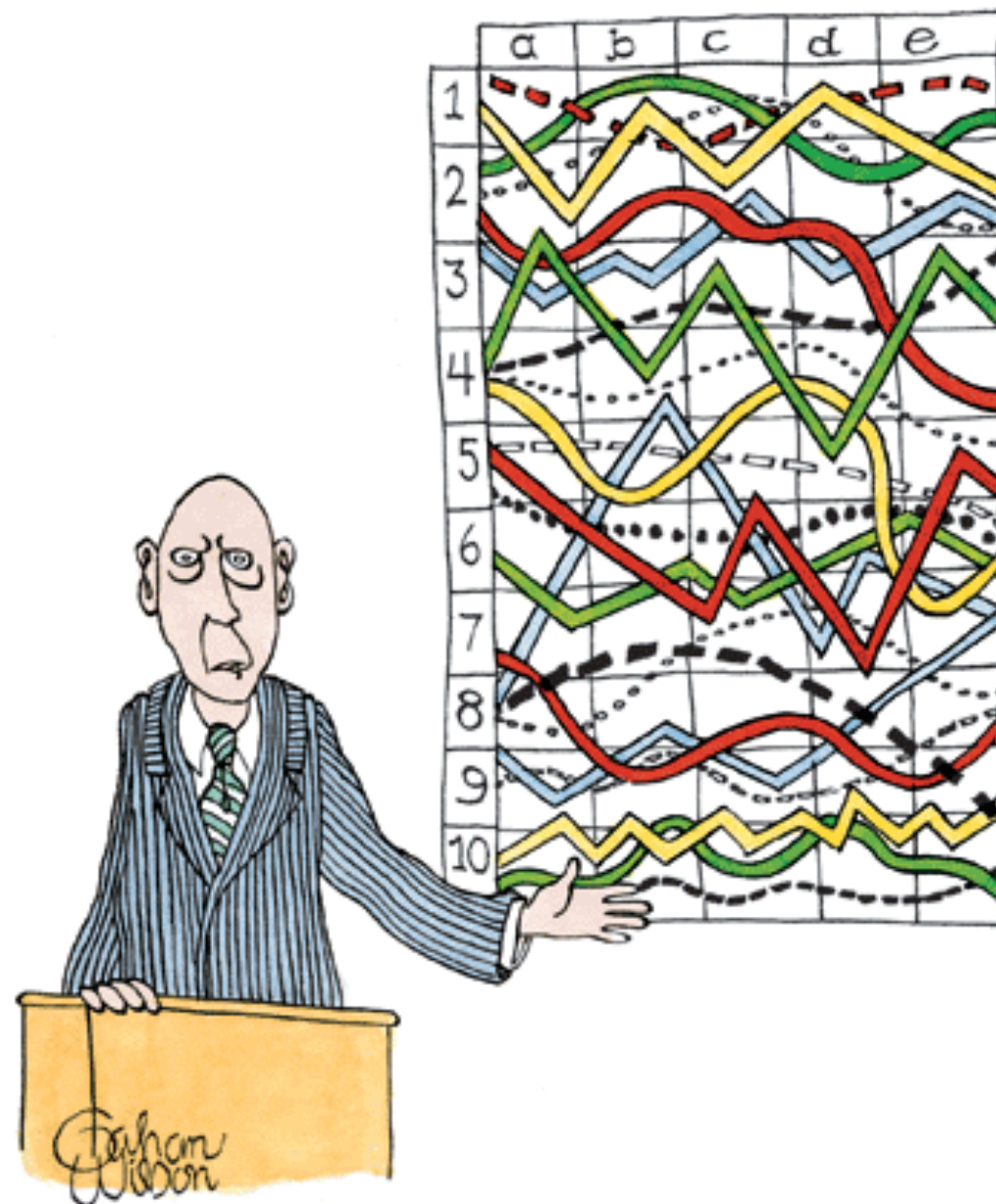


Data Visualization

Elianna Abrahams & Thomas Robitaille

Why is
Data Visualization
useful?



"I'll pause for a moment so you can let this information sink in."

“Good data visualization
leads you to see what might
otherwise go unnoticed”

- *Daniela Huppenkothen* -

✦ **To Discover**

- ✦ Exploratory plots and charts allow us to find relationships

✦ **To Explain**

- ✦ Published figures allow us to disseminate results with the community
- ✦ Outreach visualizations allow us to share our findings with the public

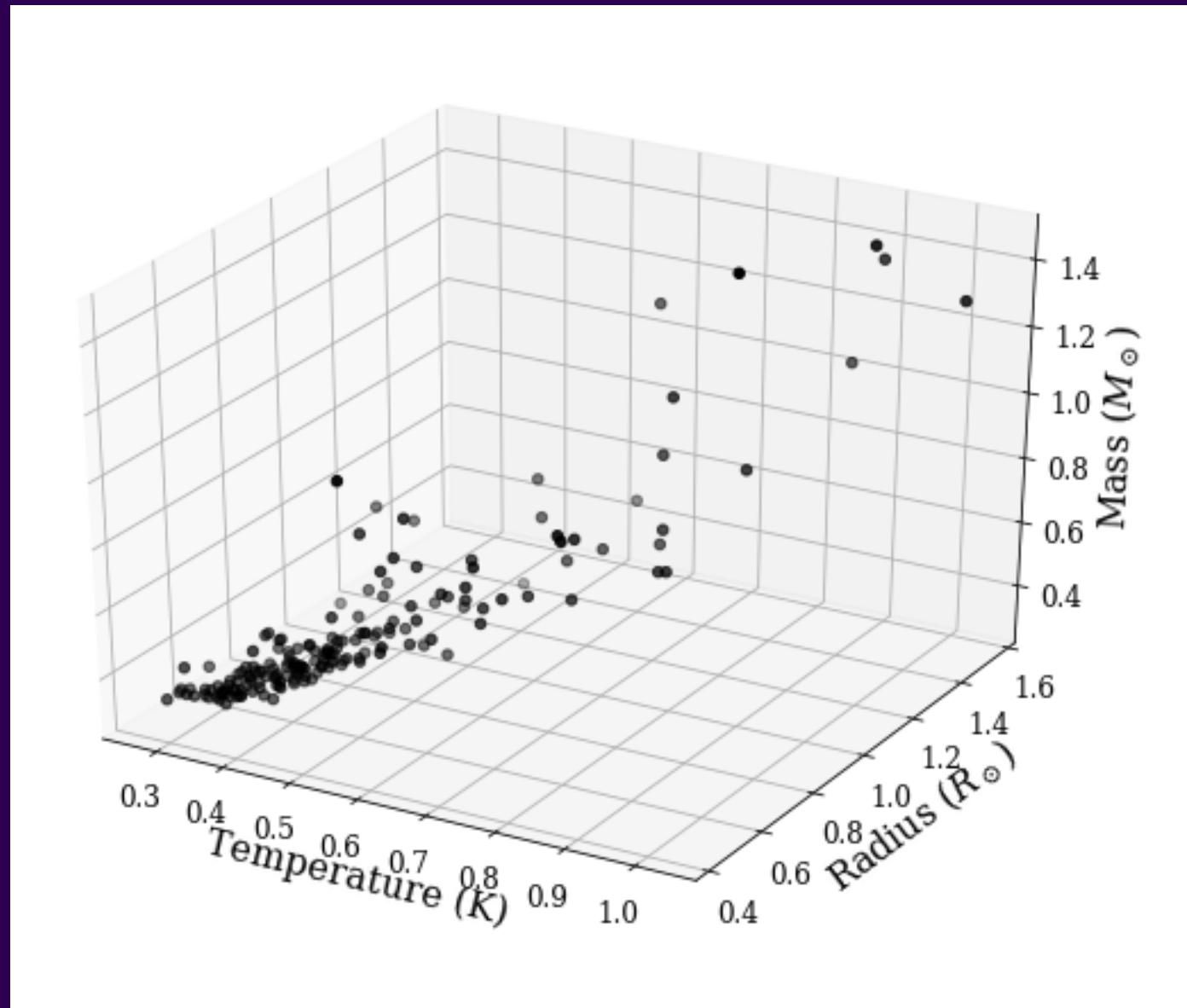
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- ✦ Exploratory plots and charts allow us to find relationships

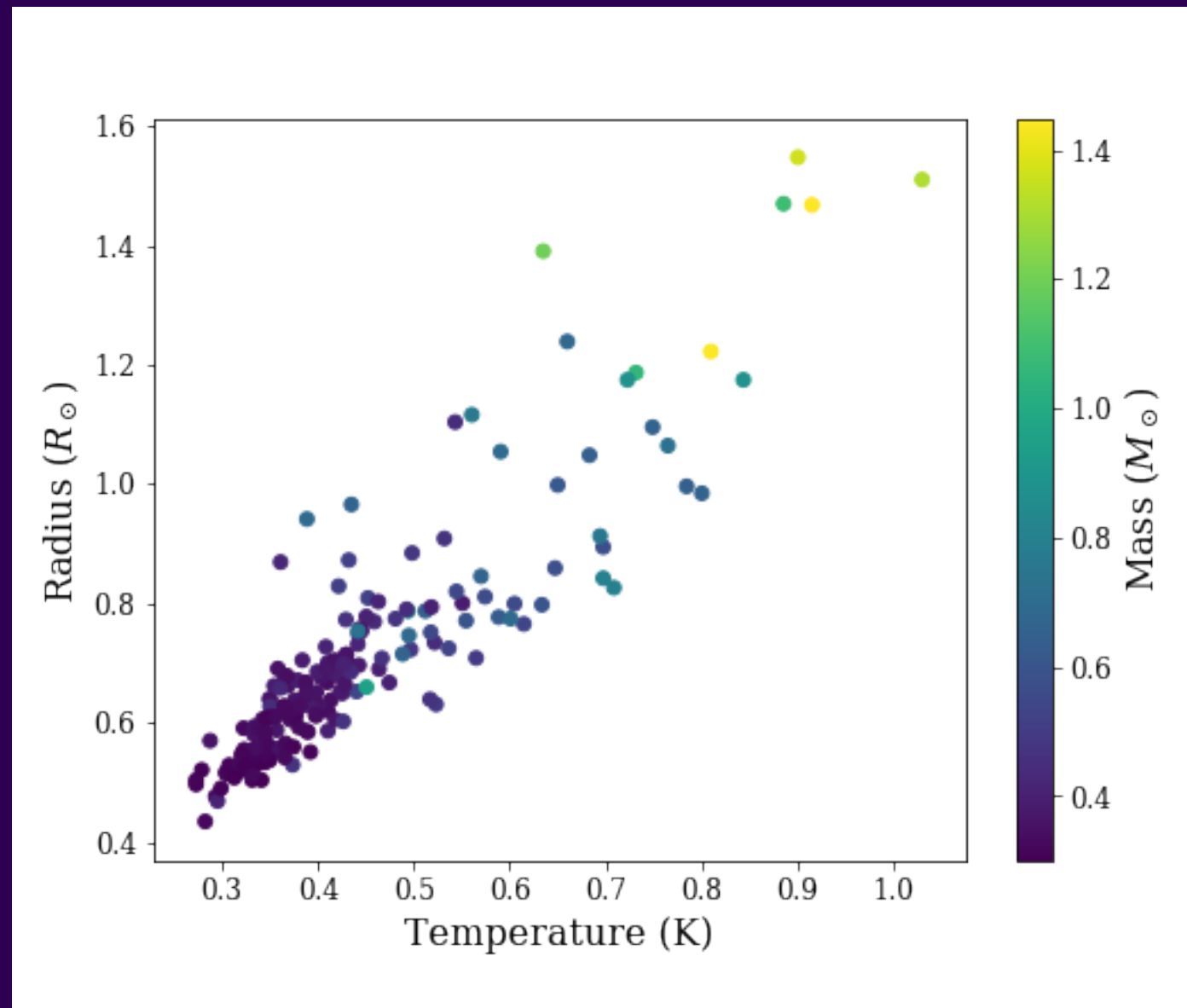
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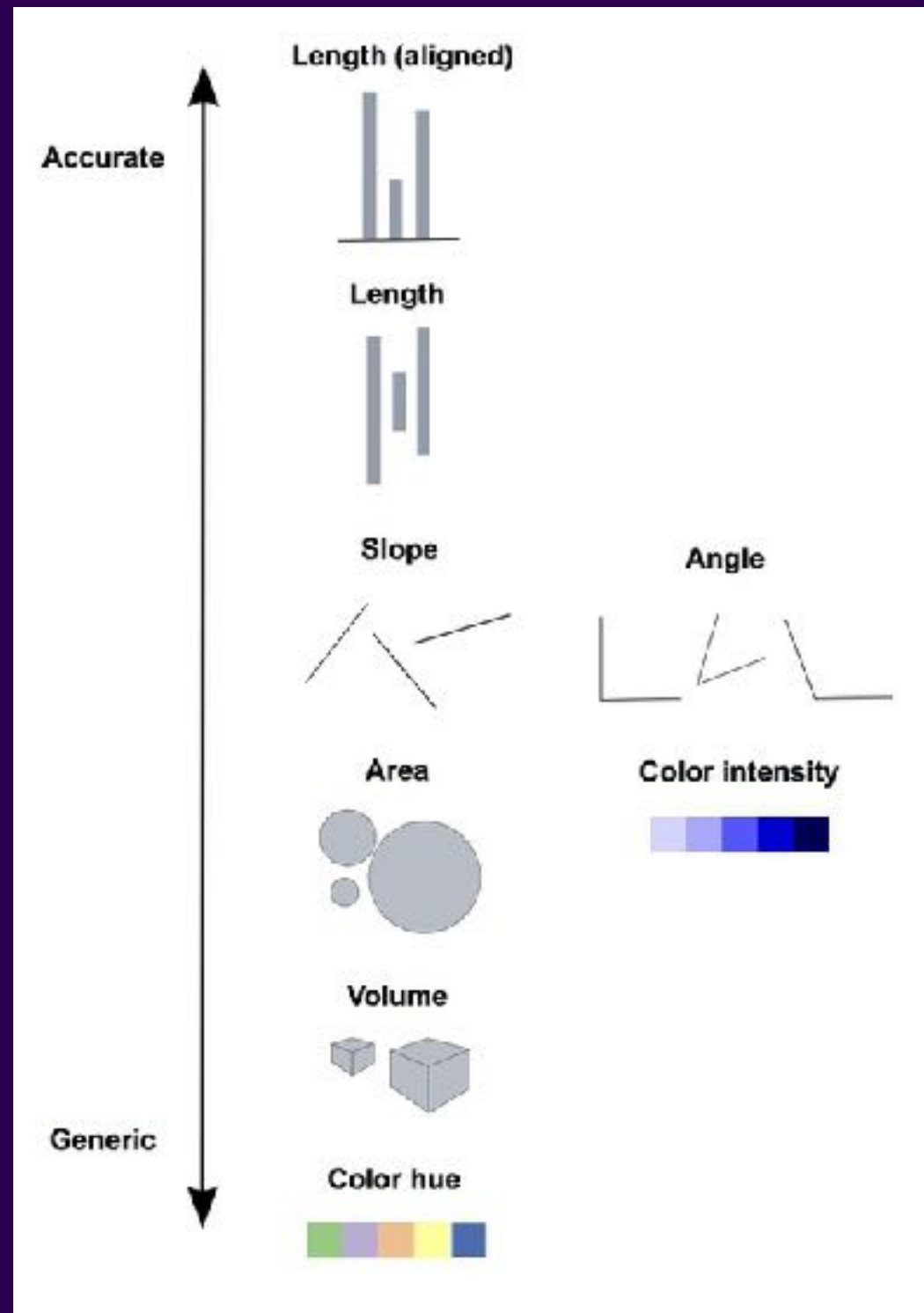
1. Simpler is Better



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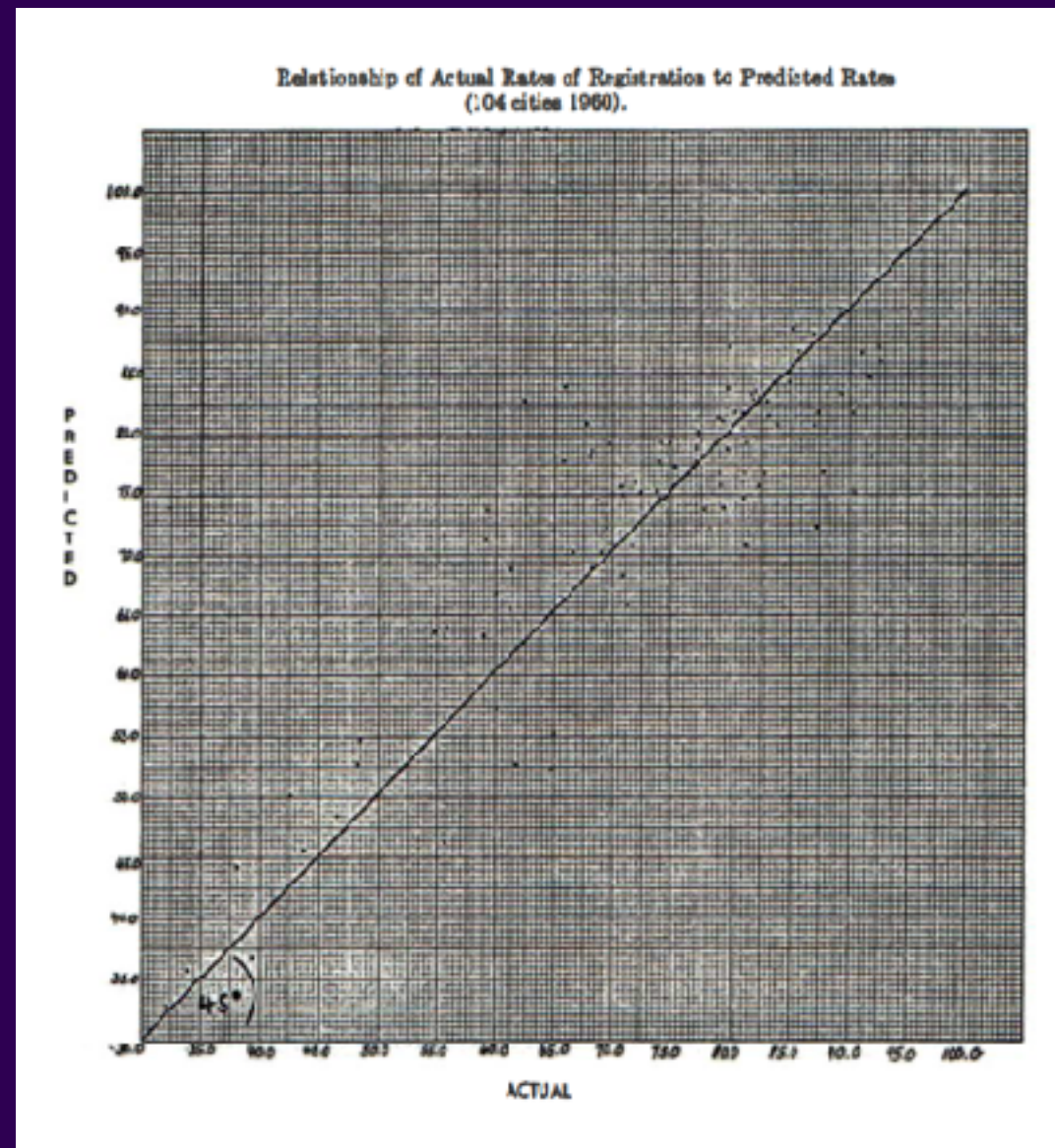


Perceptual Hierarchy

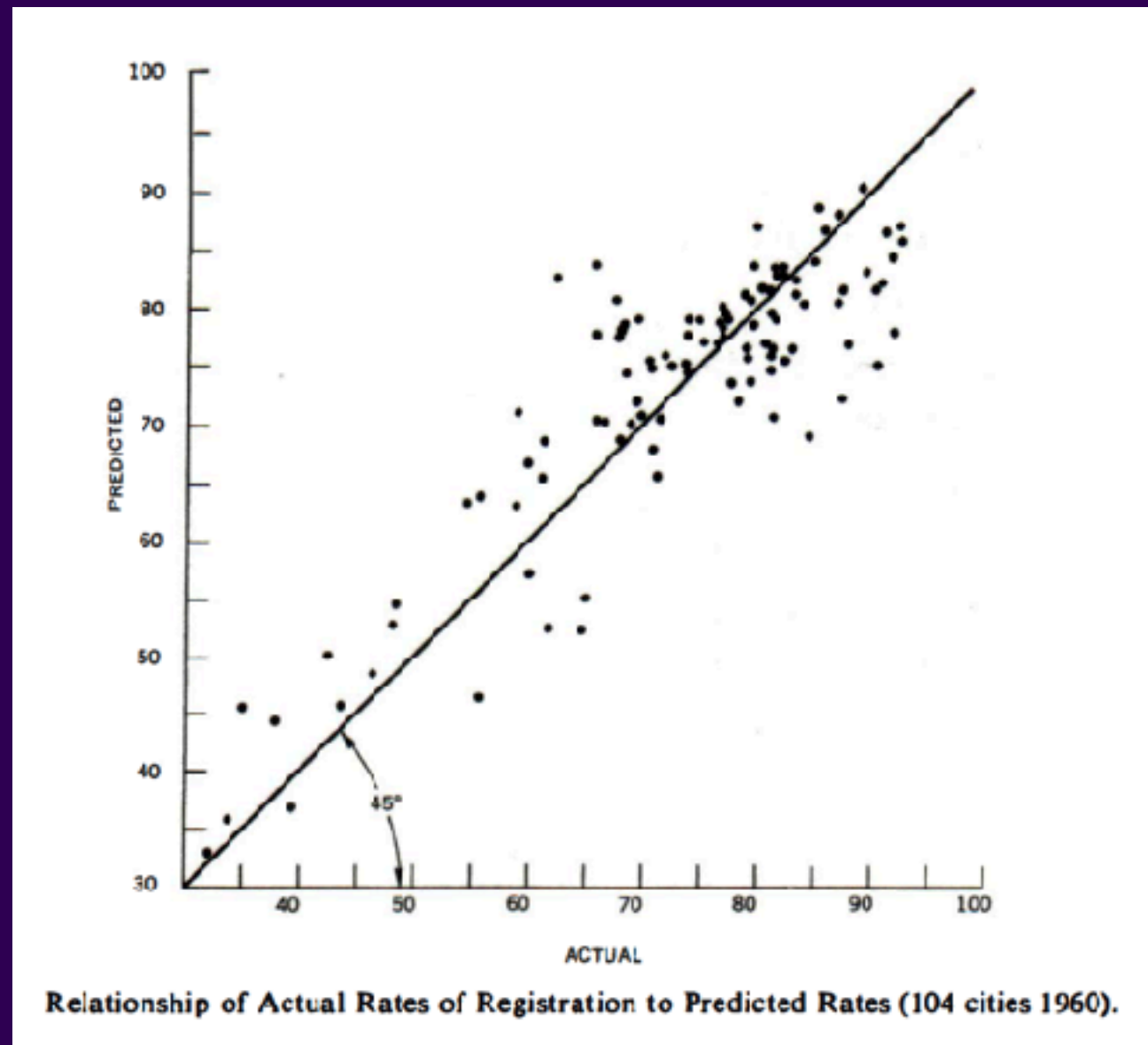


Cleveland & McGill 1984
Graphic by P. Aldhous

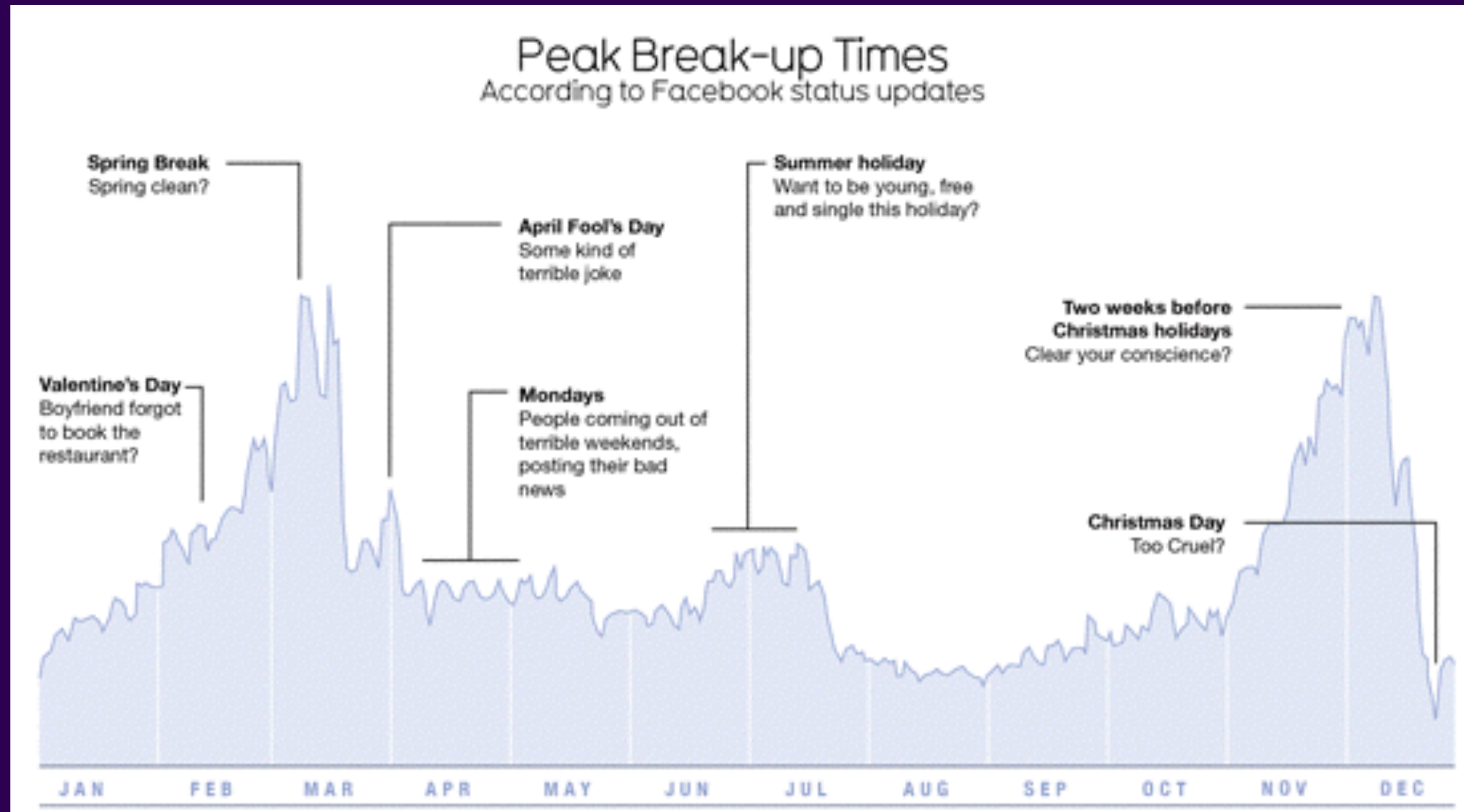
2. “Spend Ink” on Data



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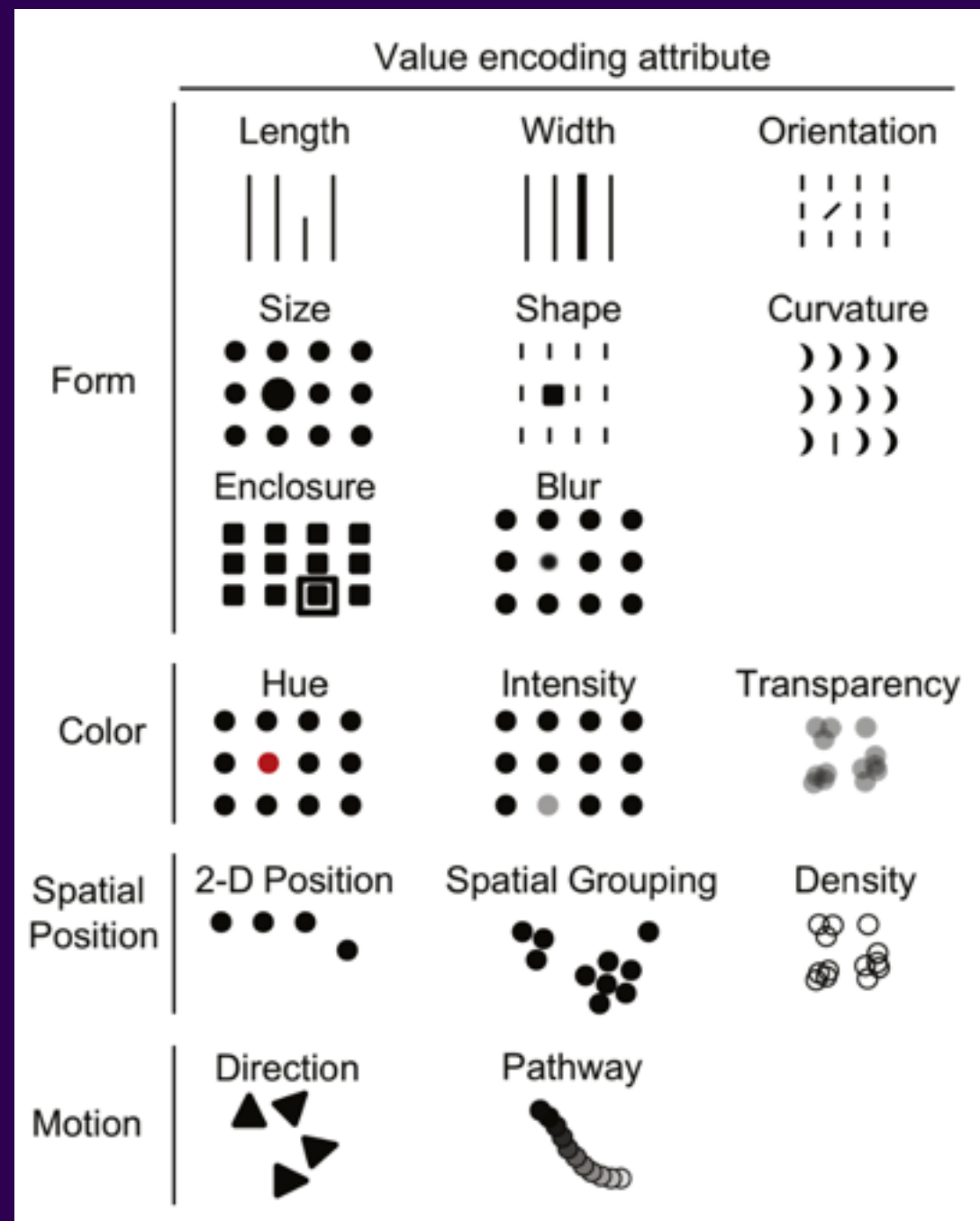
3. Make Data Coherent



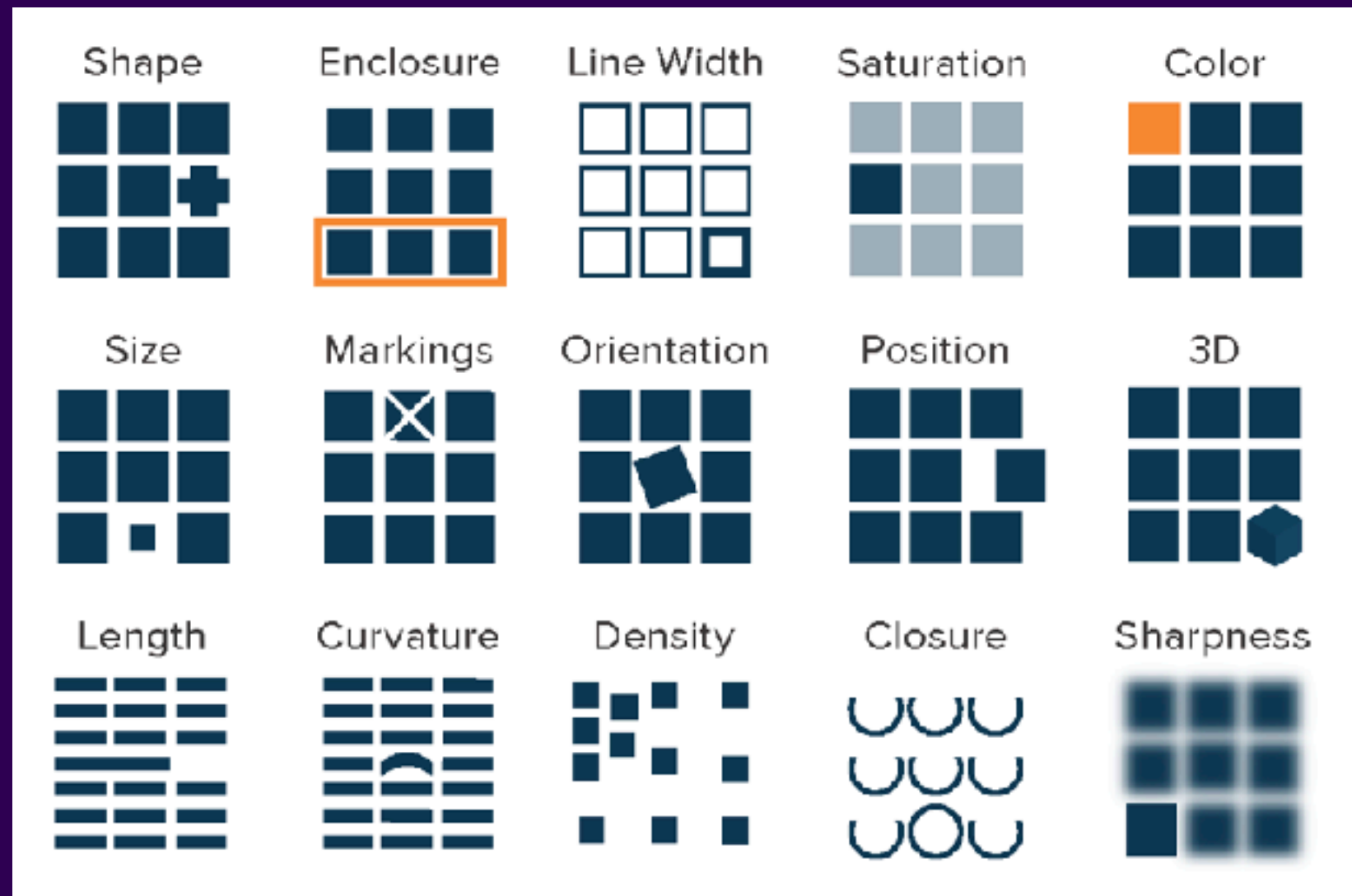
Tufte 1983

Graphic by D. McCandless and L. Byron

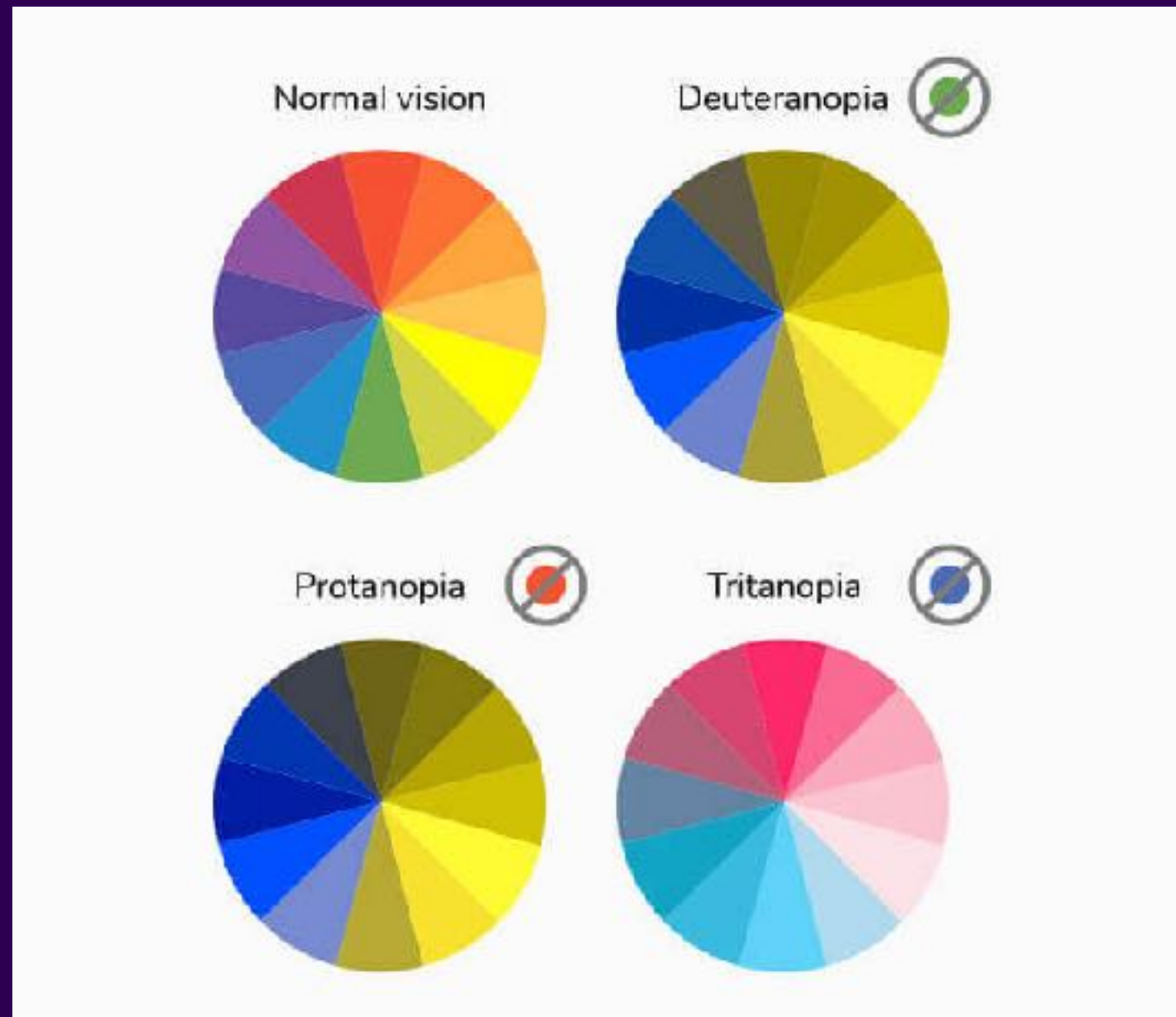
Pre-Attentive Processing



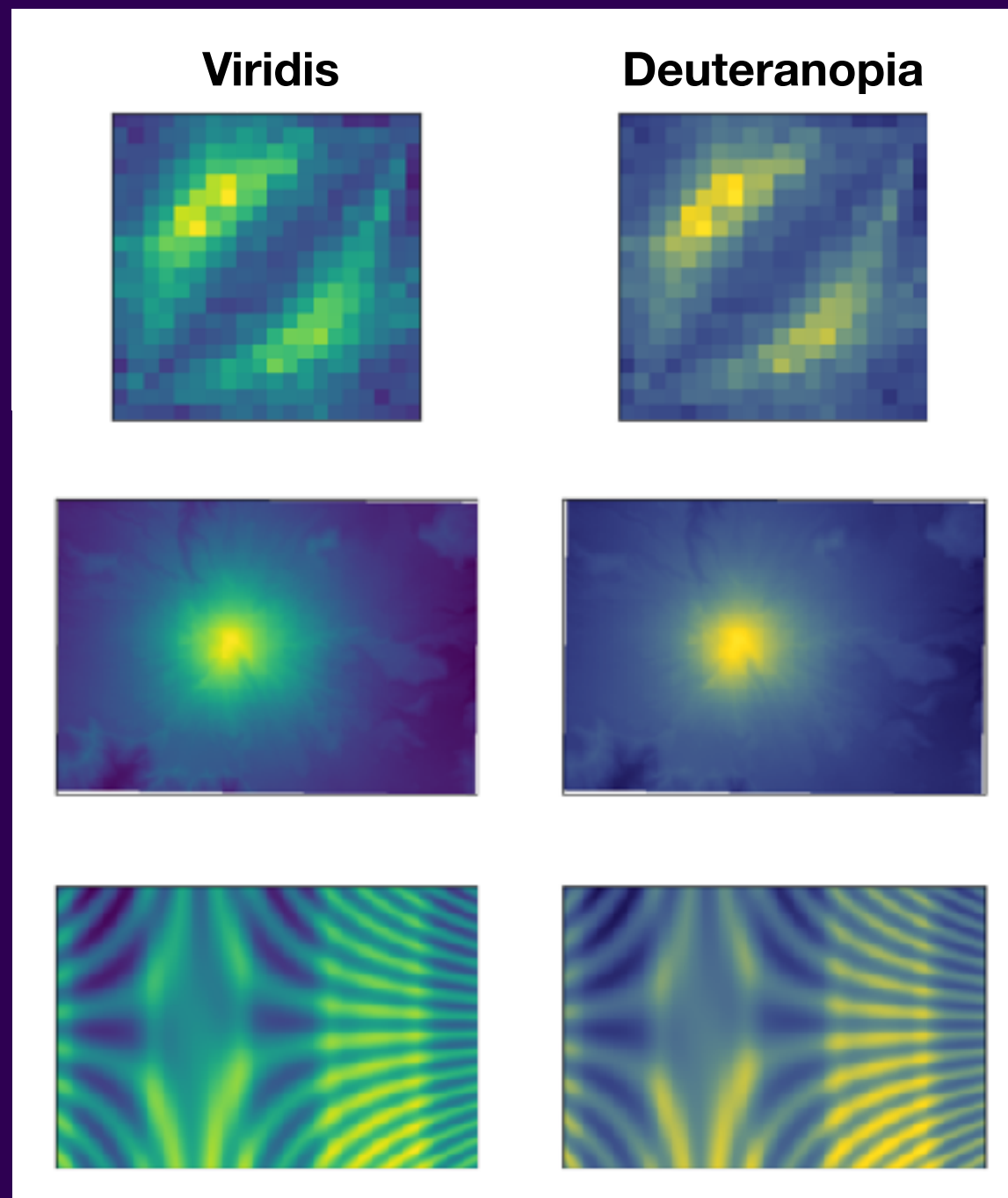
Pre-Attentive Processing



4. Accessibility



Perceptual Uniformity



Further Reading

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- ✦ Ten Guidelines for Effective Data Visualization in Scientific Publications, Kelleher & Wagener

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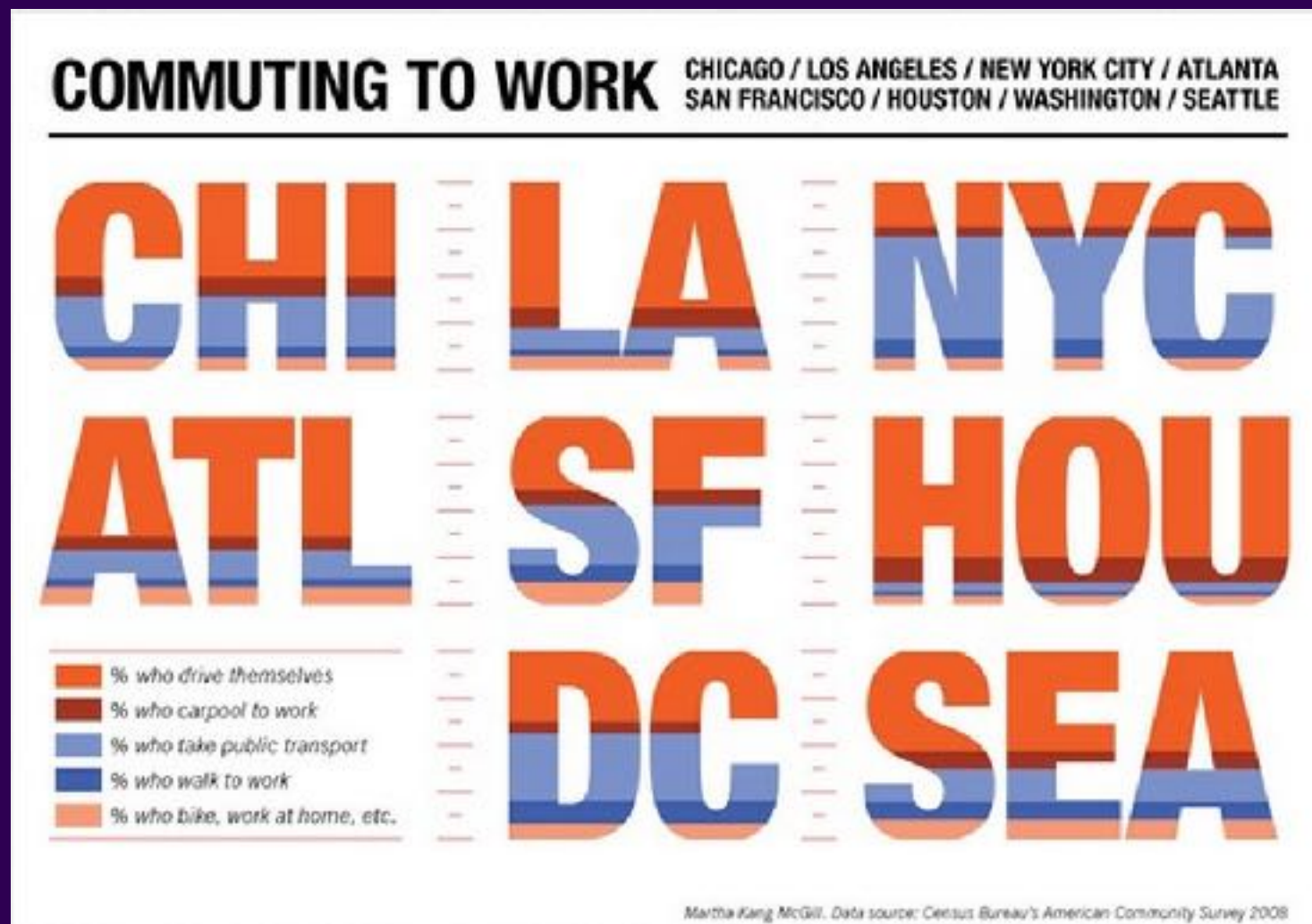
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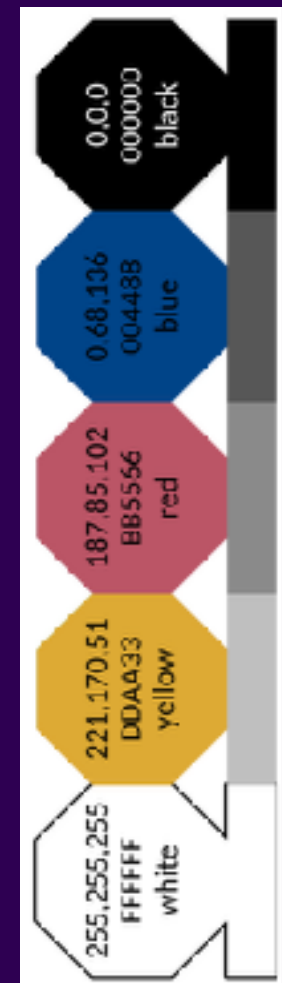
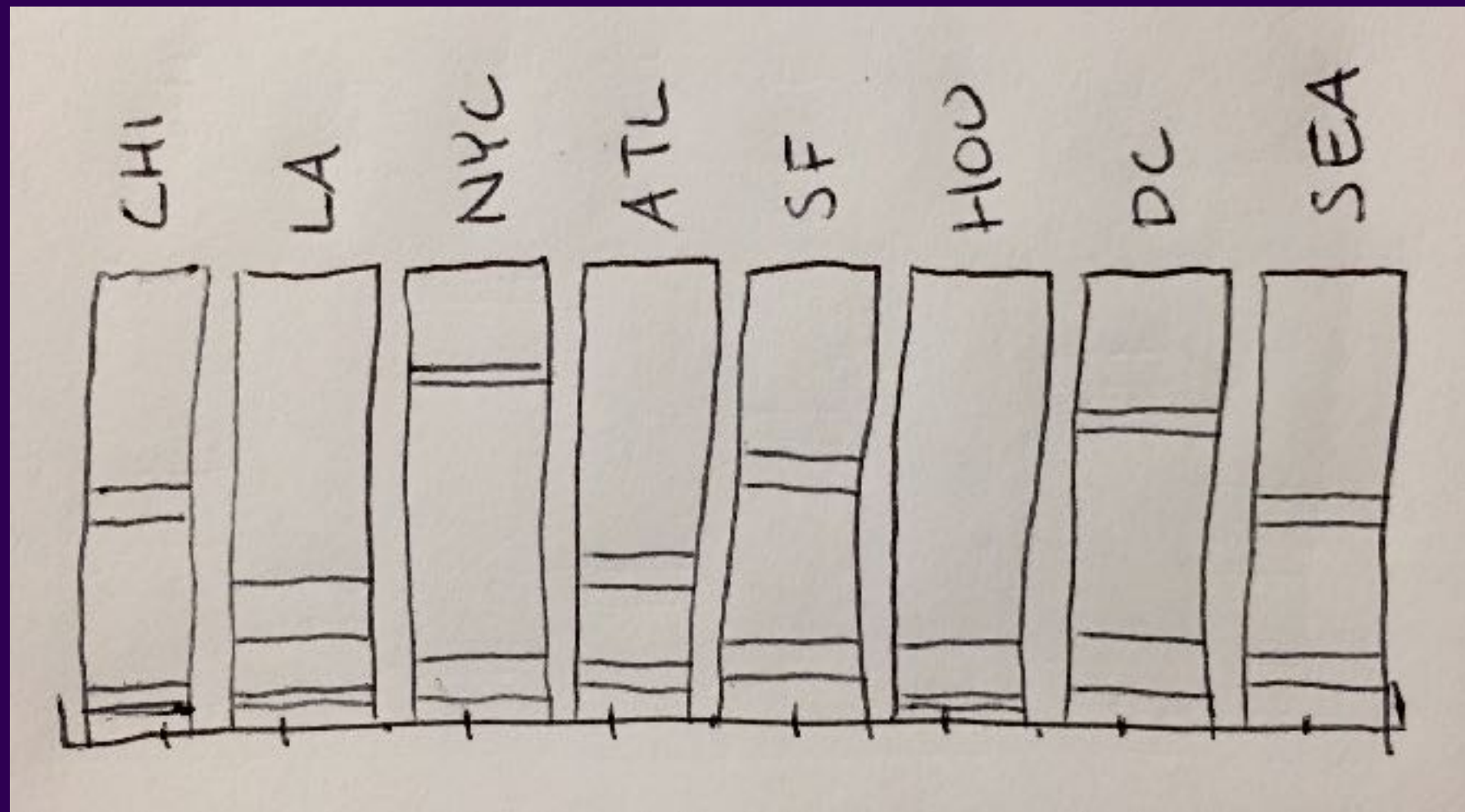
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- ✦ An Improved Rainbow Colormap for Visualization ([Google AI Blog](#))

Walkthrough: Improve a Visualization



Walkthrough: Improve a Visualization



Invitation:

Improve a Visualization

1. Form groups (3-4 people)
2. Pick a data visualization (Your own or from Github)
3. Brainstorm improvements yourself
4. Share your brainstorm with your team
(Hear from every person)
5. Vote on the 3-5 improvements your team wants to do
6. Prototype on paper