

Infographics, Data Visualizations & Evaluation: Helping Evaluators Empower Themselves

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Art or Science

Rather than serving as a means for the artist to express his or her inner world and feelings, an infographic or visualization strives for objectivity, precision and functionality, as well as beauty.

Visual Content

- Mining Data to Tell a Story (visually)
- Helping Others Manipulate Data to Tell Their Own Stories
- Design Principles Derived from Human Perception and Cognition

The Function Constrains the Form

- Choosing visual shapes to encode information should not be based on aesthetics and personal tastes alone.
- Design architecture should be decided on how the architecture assists analytical thinking about evidence. (Tufte, 2004)

Cognition

The brain doesn't just process information that comes through their eyes. It also creates mental visual images that allow us to reason and plan actions that facilitate survival.

Line Graph: Comparing Sets of Numbers

2009 Sales (thousands of U.S. \$)												
Region	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Domestic	1,983	2,343	2,593	2,283	2,574	2,838	2,382	2,634	2,938	2,739	2,983	3,493
International	574	636	673	593	644	679	593	139	599	583	602	690
Total	2,557	2,979	3,266	2,876	3,218	3,517	2,975	2,773	3,537	3,322	3,585	4,183

Figure 35.1

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This table does two things extremely well: it expresses these sales values precisely and it provides an efficient means to look up values for a particular region and month. But if we're looking for patterns, trends, or exceptions among these values, if we want a quick sense of the story contained in these numbers, or we need to compare whole sets of numbers rather than just two at a time, this table fails.

Now look at the following picture of the same information in the form of a line graph:

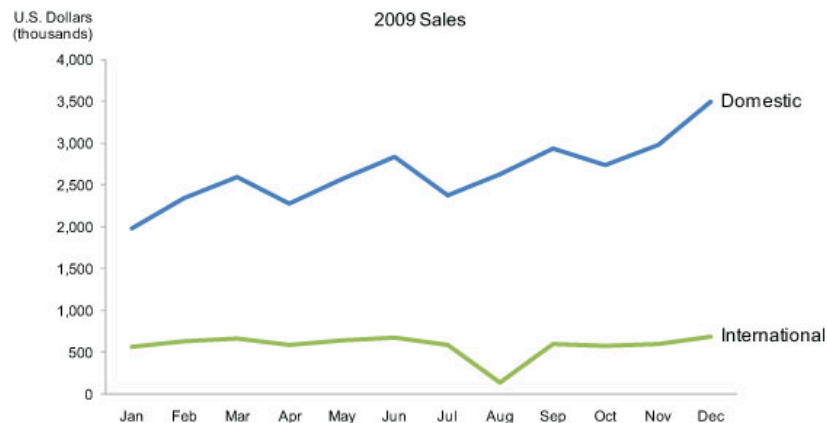


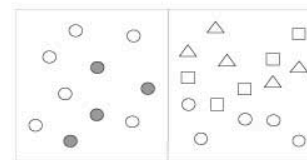
Figure 35.2

Groupings: Gestalt Principles of Perception

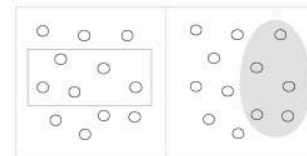
Proximity Objects that are close together are perceived as a group.



Similarity Objects that share similar attributes (e.g., color or shape) are perceived as a group.



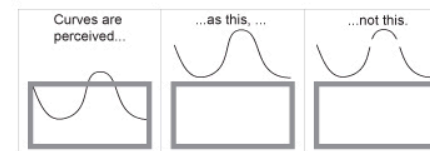
Enclosure Objects that appear to have a boundary around them (e.g., formed by a line or area of common color) are perceived as a group.



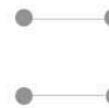
Closure Open structures are perceived as closed, complete, and regular whenever there is a way that they can be reasonably interpreted as such.



Continuity Objects that are aligned together or appear to be a continuation of one another are perceived as a group.



Connection Objects that are connected (e.g., by a line) are perceived as a group.



Accuracy: Bars on Horizontal Axis

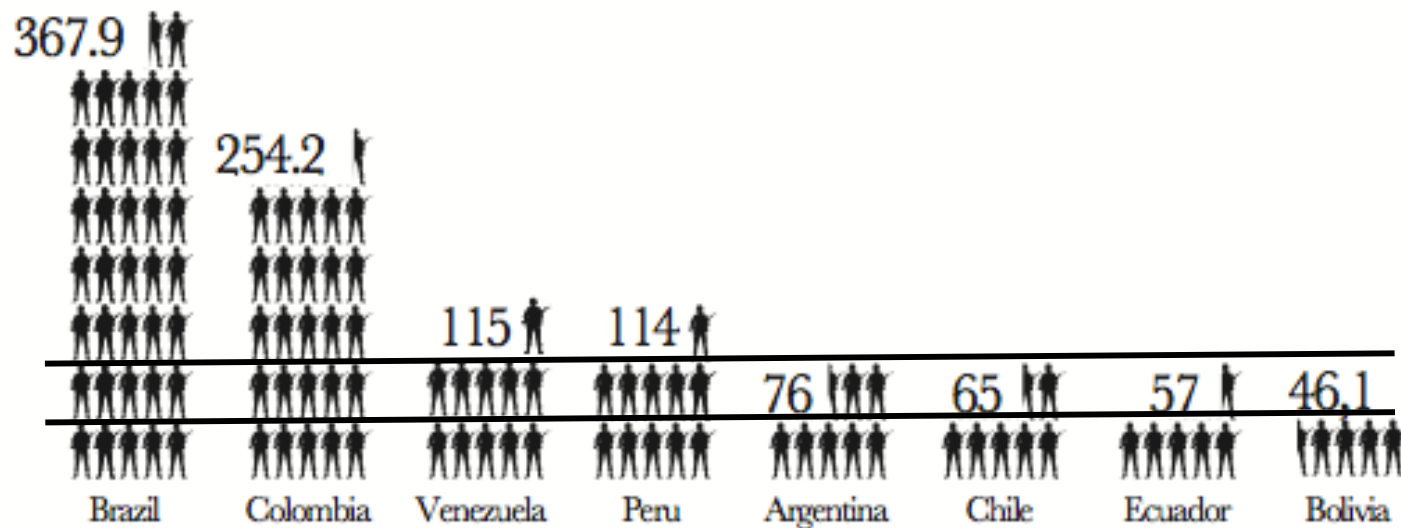


Figure 2.2 Simply placing the bars on the same horizontal axis allows you to make more accurate comparisons.

Symbol Map: Visualize the Big Picture

Red and Blue, the Divided Electorate, in All Its Shades

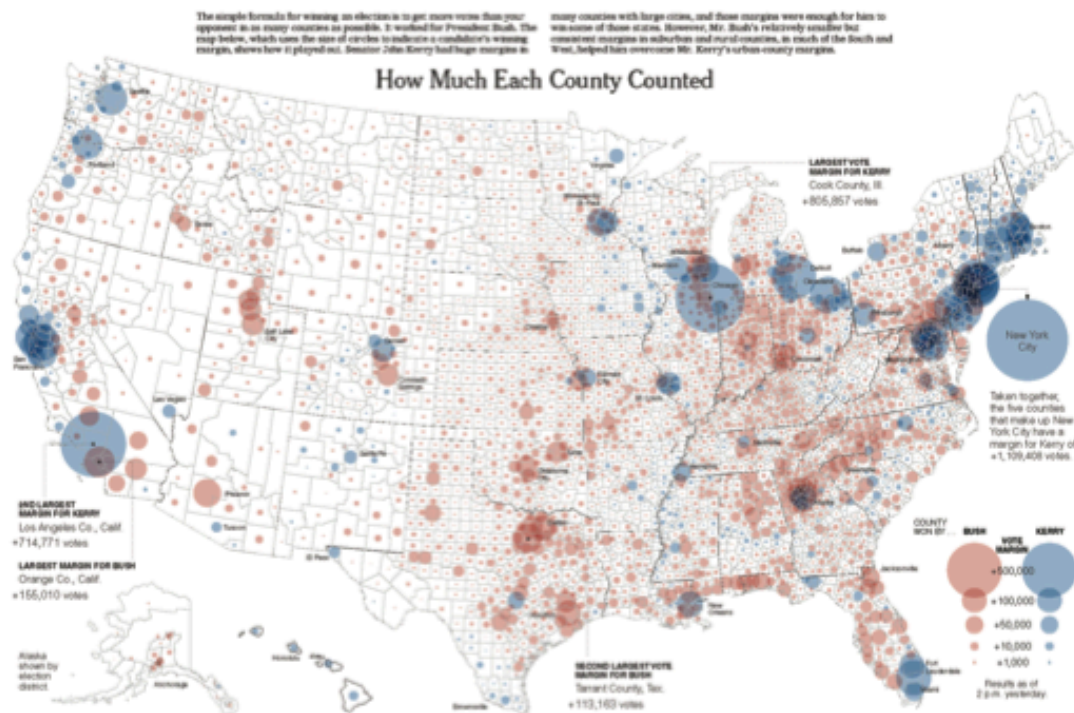
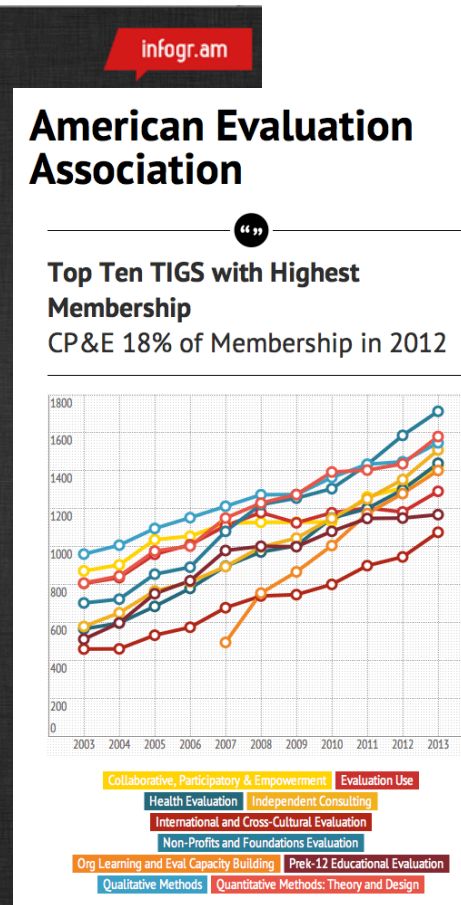
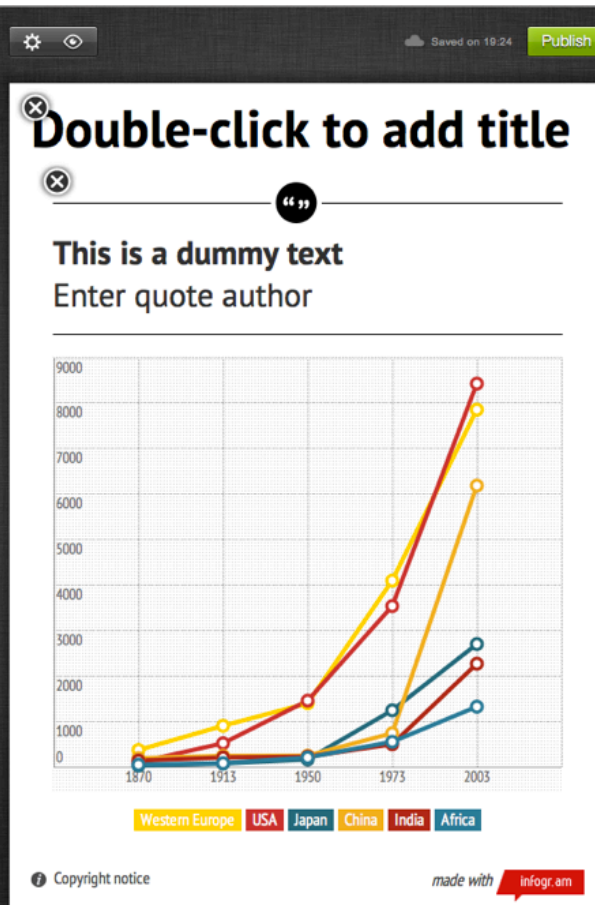


Figure 2.13 A proportional symbol map is appropriate when your goal is to visualize the big picture. It allows you to perceive general patterns and trends.

Storyboard

- Our main goal should be to tell a story (Grimwade)
- Establish a Hierarchy
 - Main Components of the Story
 - Sequence
 - Create a visual narrative

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Smokers lose a full decade
of productive, healthy life.

Because the risks are big,
the benefits of quitting
are also big.

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Get the full decade back!

40



Get 9 of the 10 years back.

50



Get 6 of the 10 years back.

60

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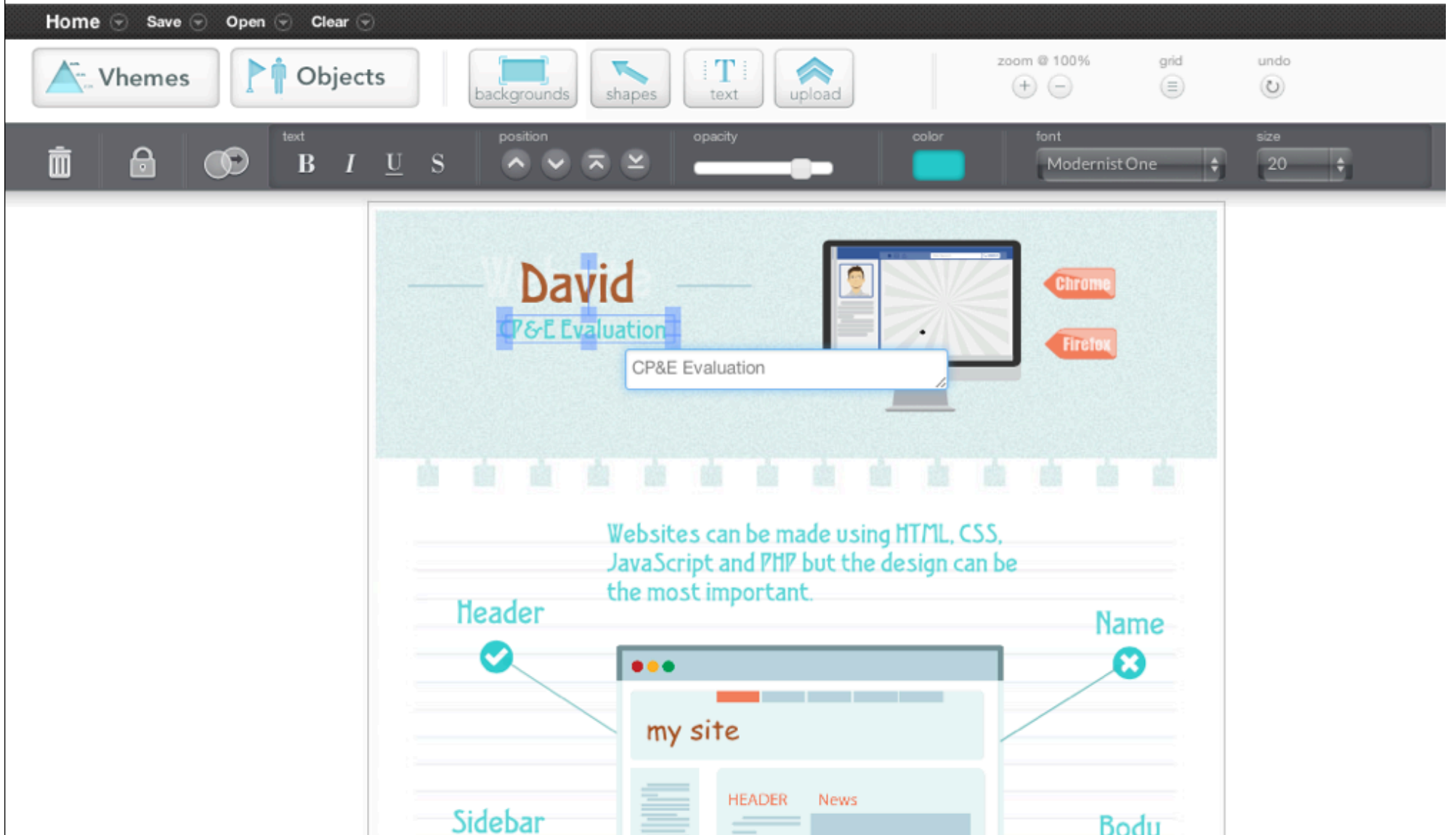


Get 4 of the 10 years back.



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Quit by the time you're 30
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and anniversaries — get back
a full decade of your life.

Easelly



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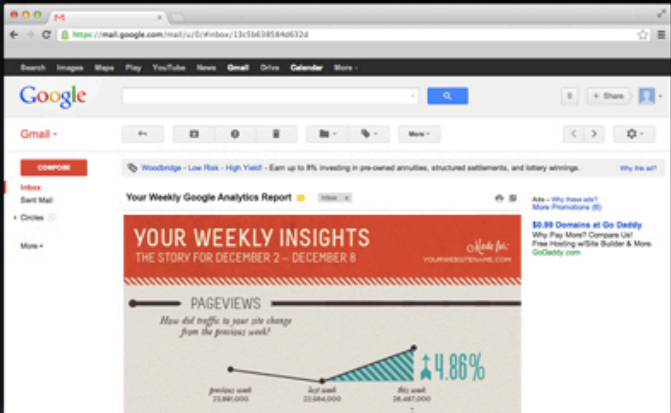
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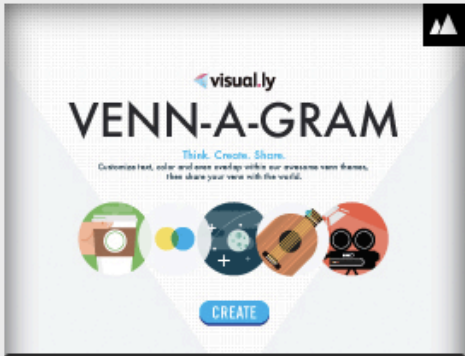




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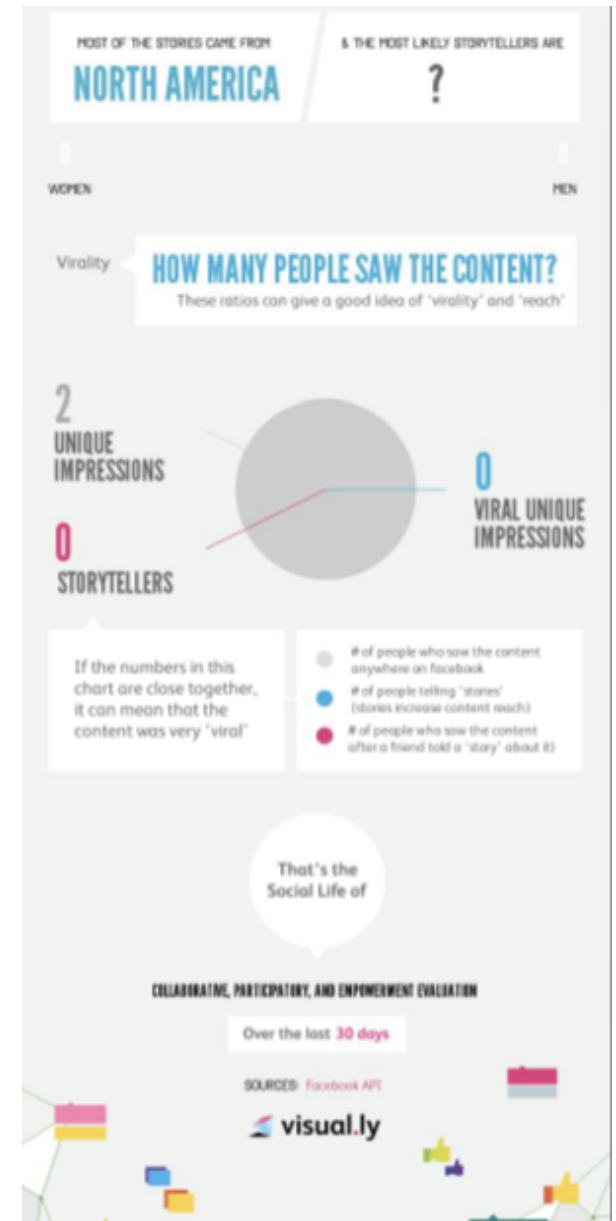
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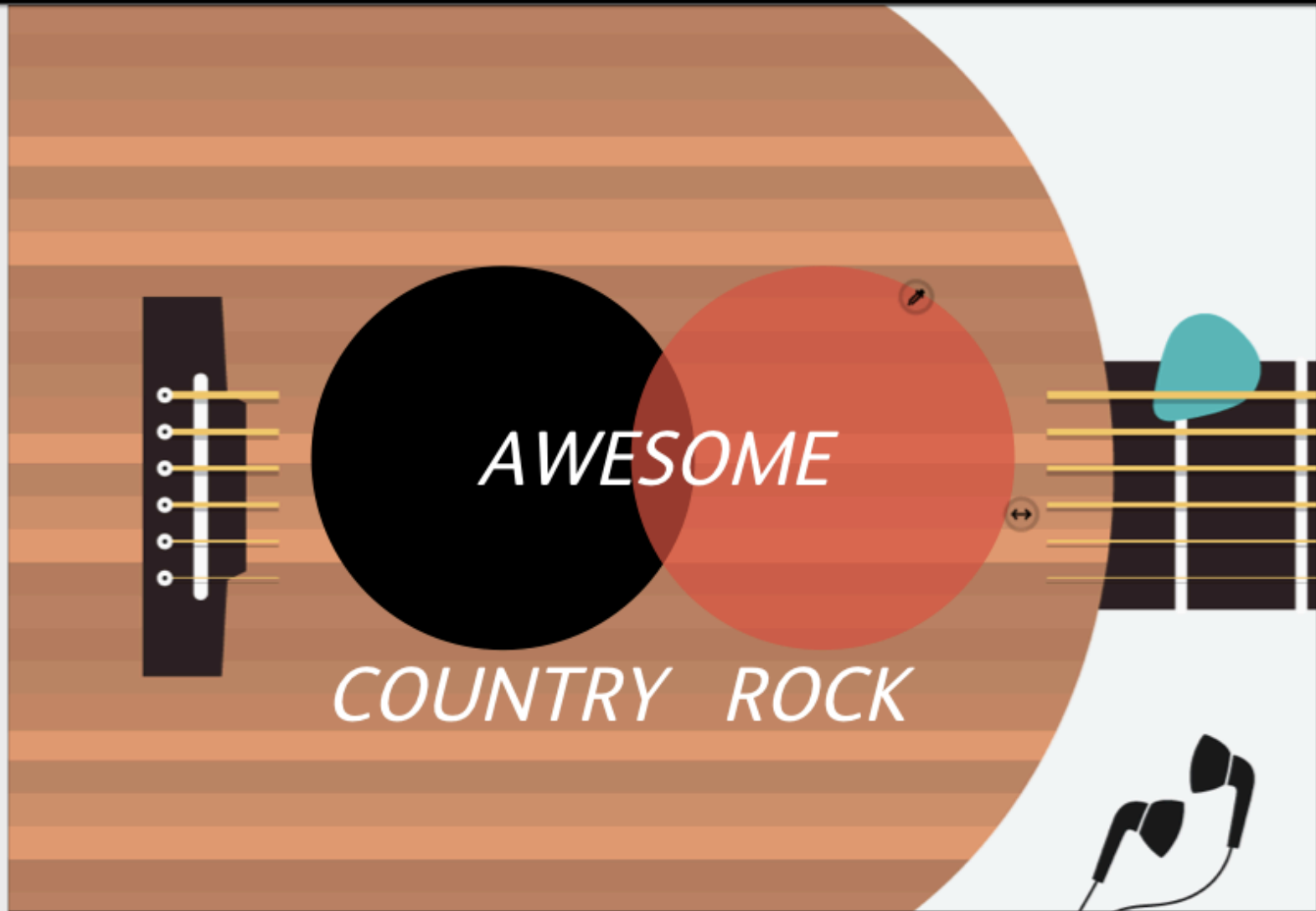
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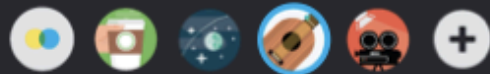


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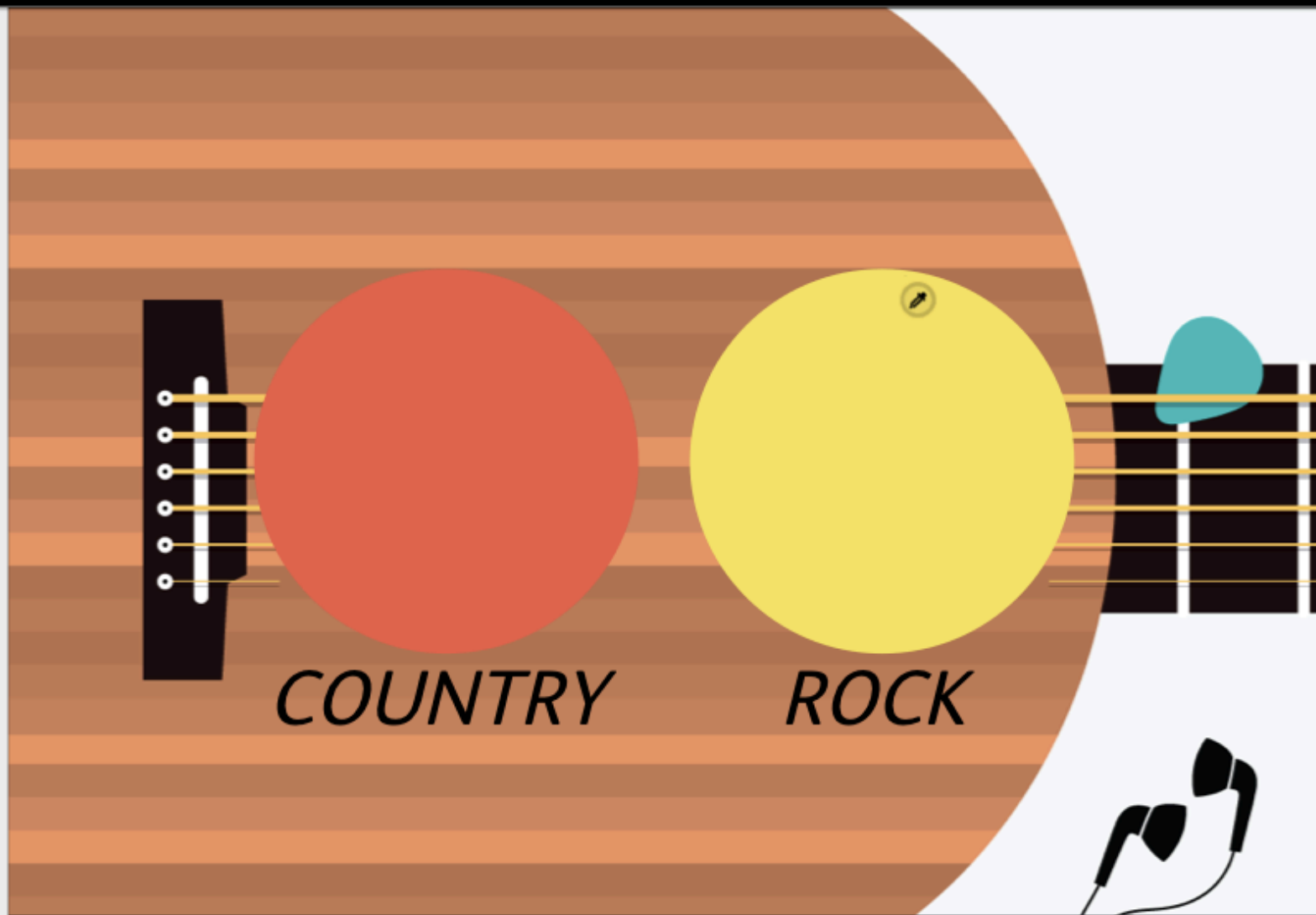


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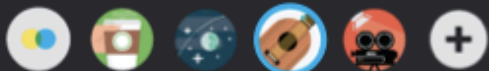
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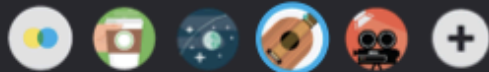
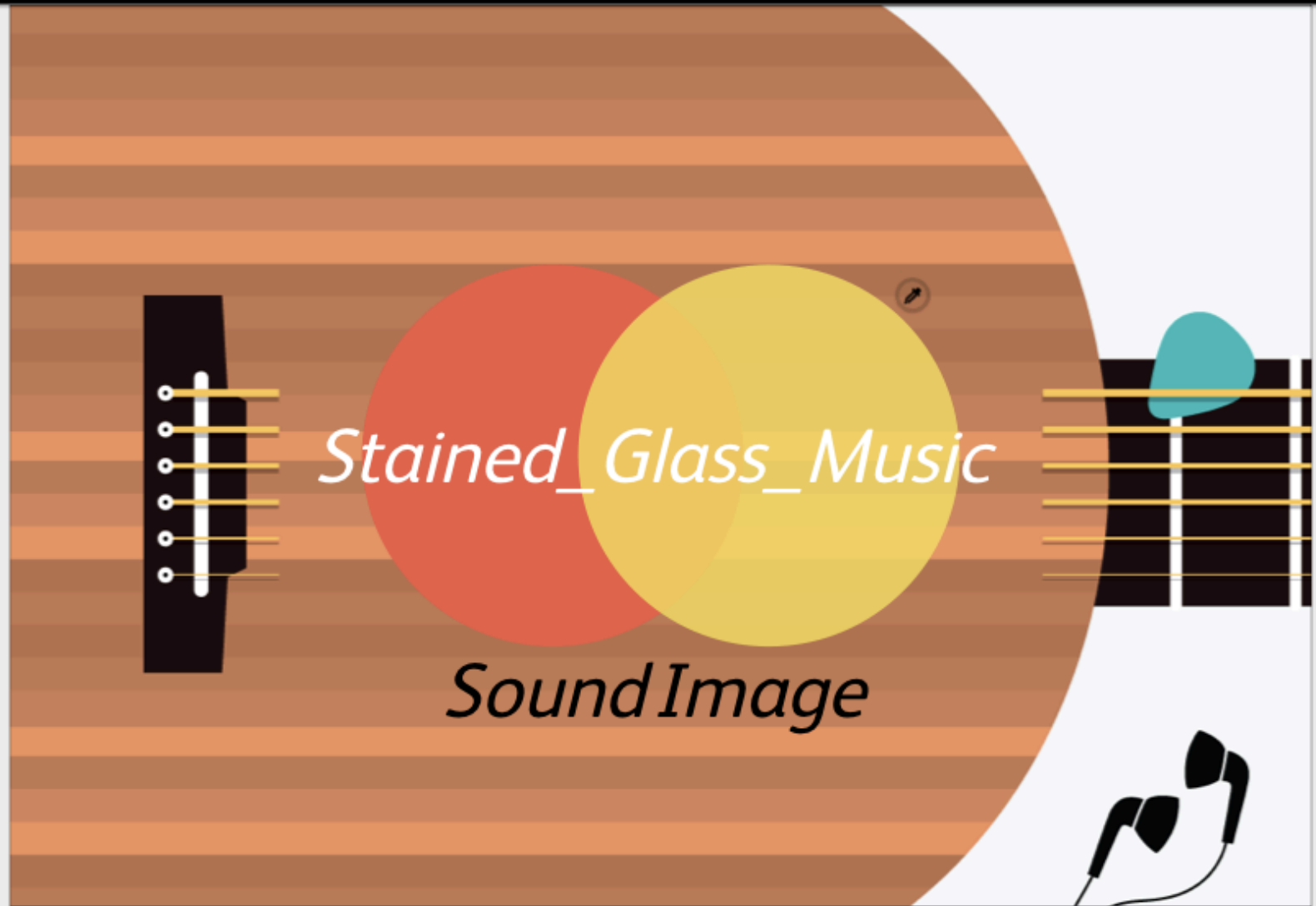


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Critique: Common Problems

- Exceeding the boundaries of a single screen
- Supplying inadequate context for the data
- Displaying excessive detail or precision
- Choosing inappropriate display media
- Introducing meaningless variety
- Using poorly designed display media

Critique: Common Problems

- Encoding quantitative data incorrectly
- Arranging the data poorly
- Highlighting important data ineffectively
- Cluttering the display with useless decoration
- Misusing or overusing color
- Designing an unattractive visual display

Infographic Business Card



Fetterman & Associates

**25 Years Experience
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Recommended Resources & Tools

- Cool Infographics: <http://www.coolinfographics.com/>
- Info.gram (several templates)
- Visual.ly (several templates free limited)
- Re.vu (resume or Linked In)
- Easelly (drag and drop)