

Visual Storytelling I

Session Seven

MVIS 5101 July–August 2023

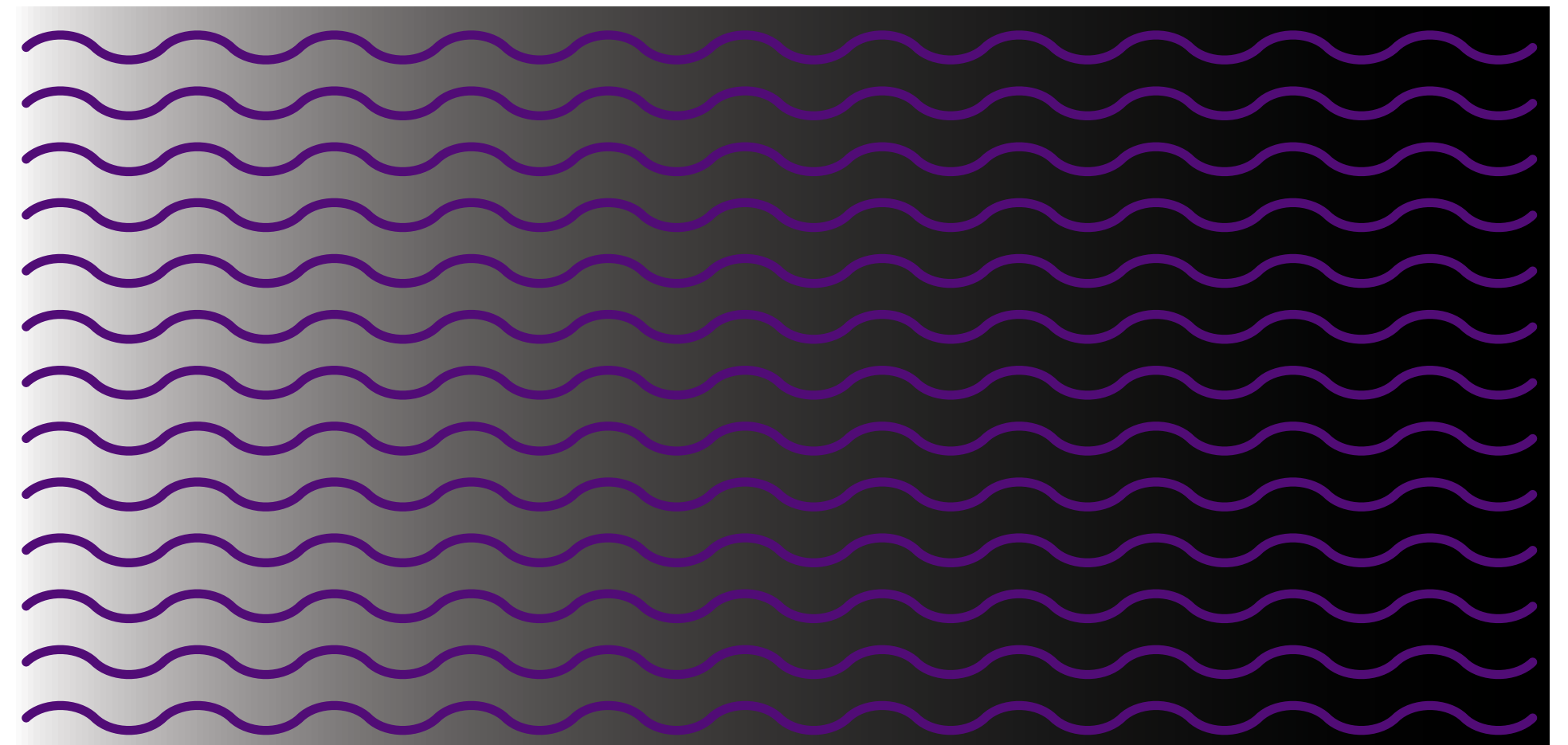
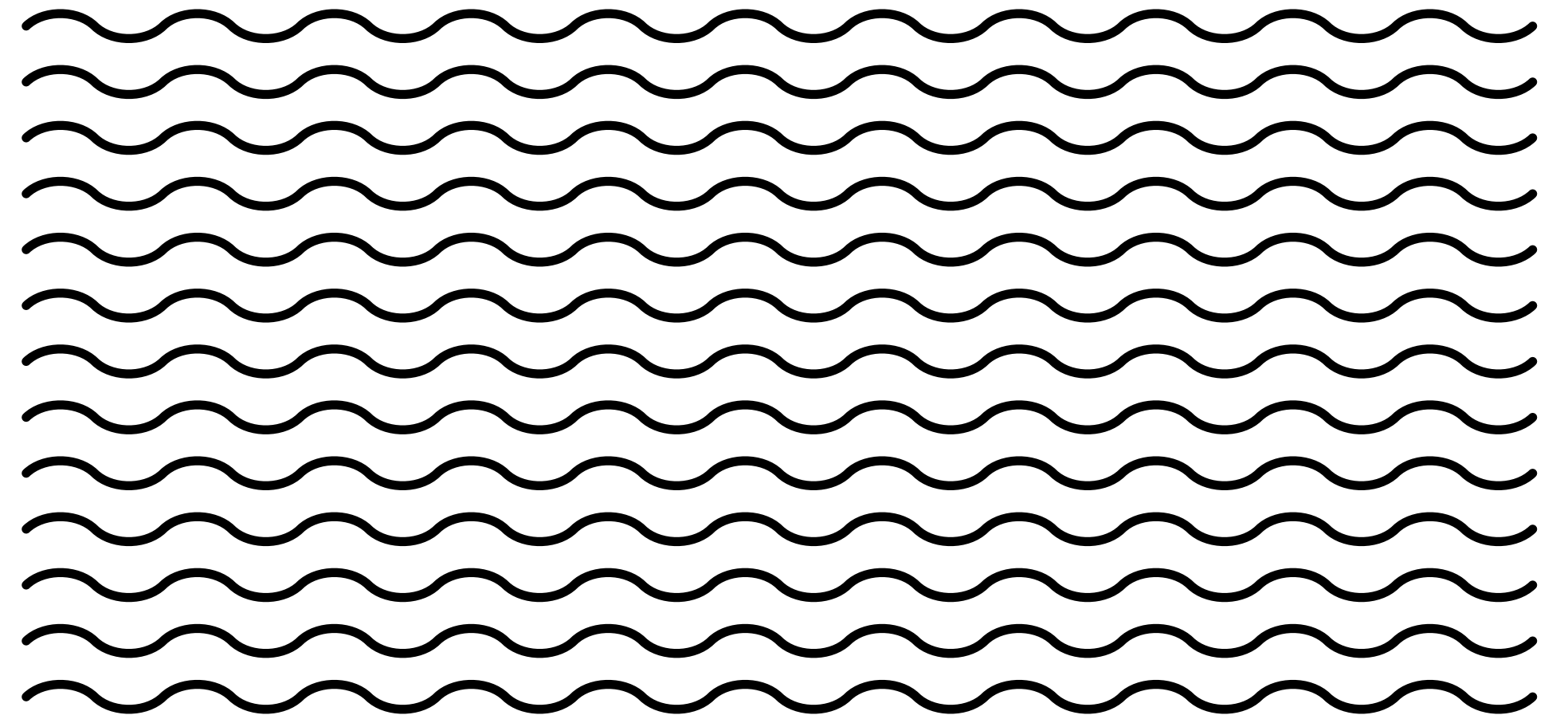
Today:

- Revisiting Color
- Letterforms
- Course recap
- Share our in-progress final projects

Revisiting color

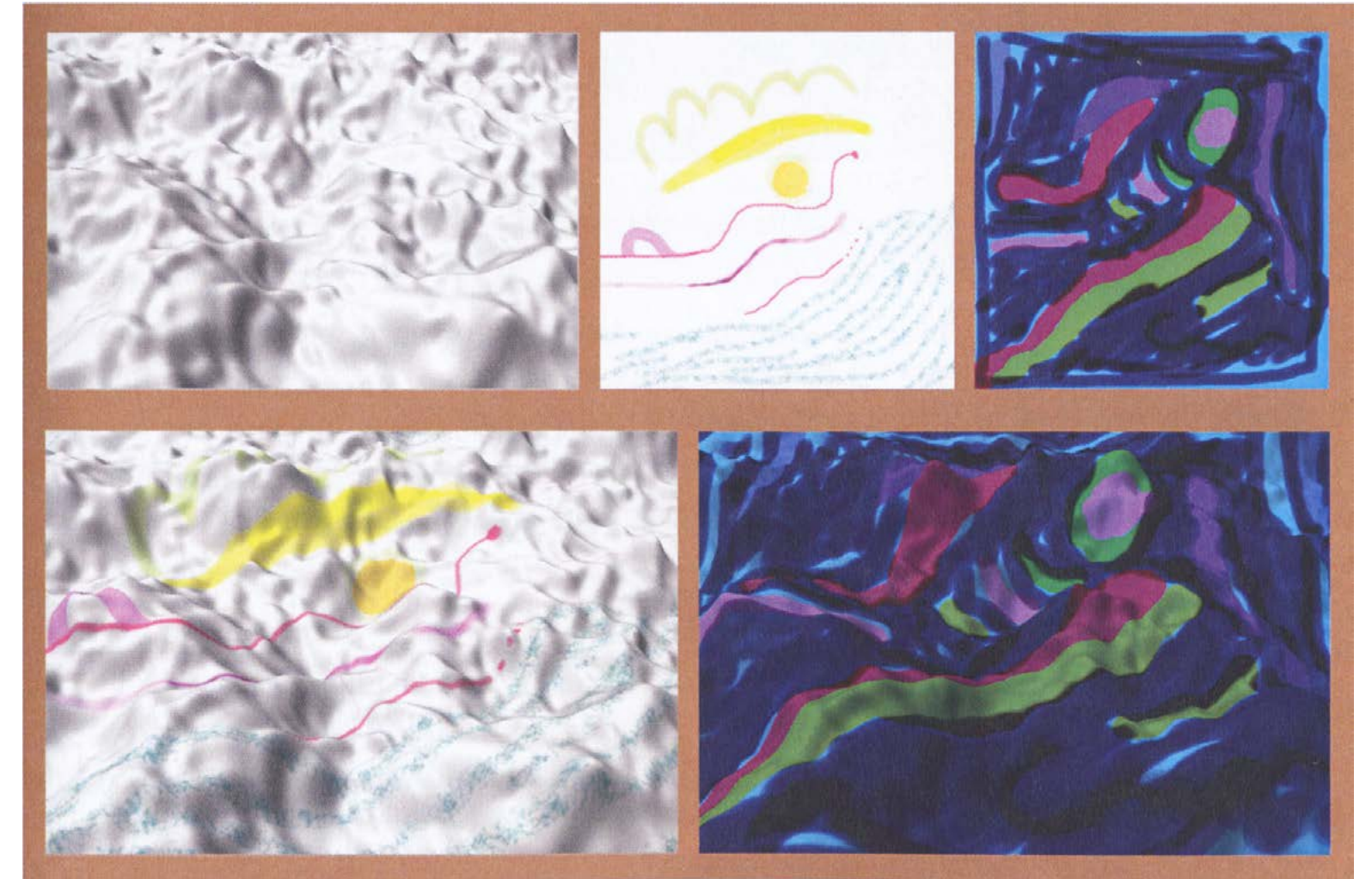
Luminance

Black and white (or high contrast) is better for identifying spatial detail than hues.



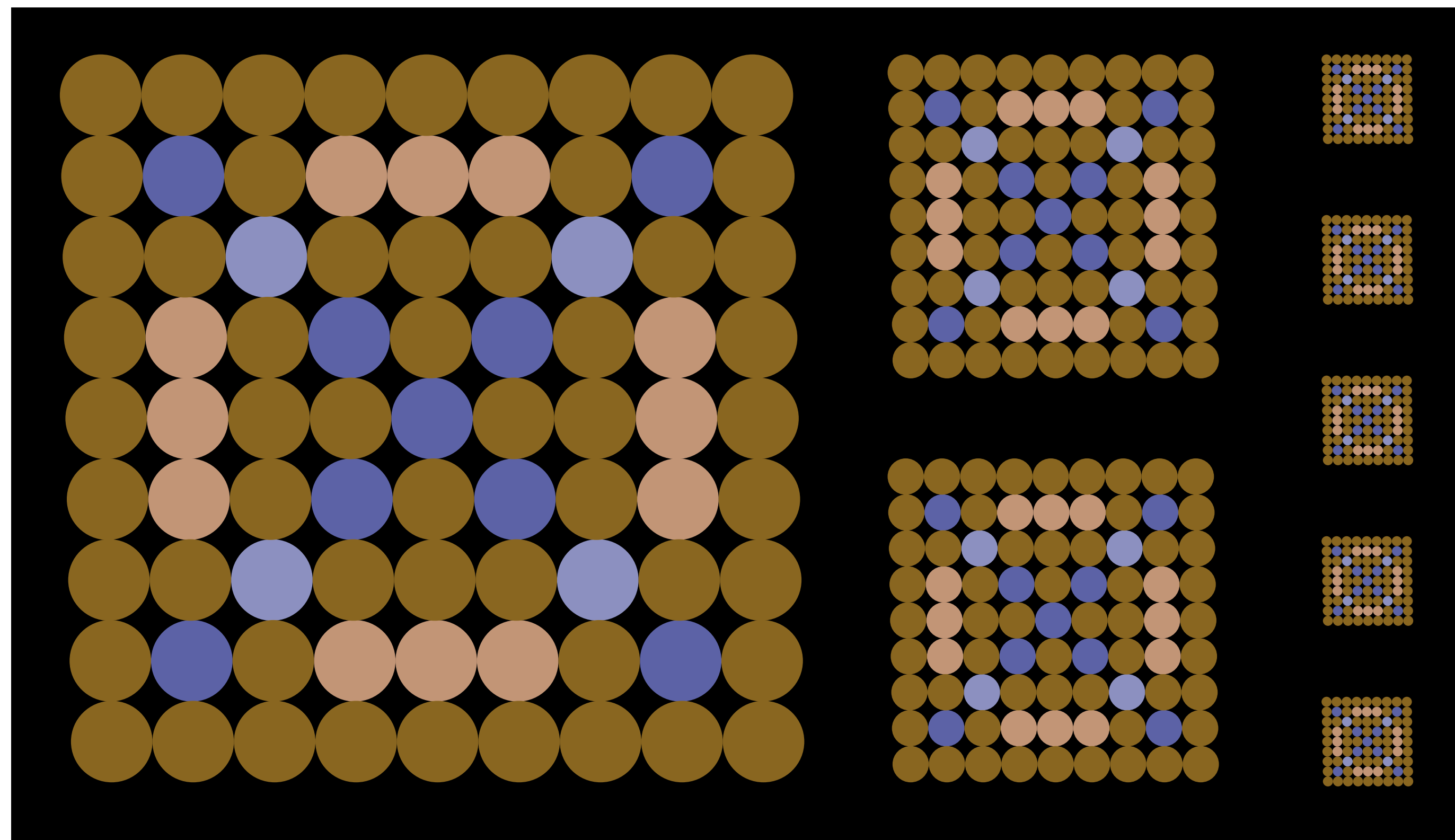
Patterns on shading

Patterns on shaded surfaces are hard to distinguish. This is why car manufacturers use patterns to conceal the design of concept cars when they are being road tested.



Showing detail

In the larger version of this pattern, the colors are most important and the “x” is prominent. At smaller sizes, contrast is most important and the “o” is prominent.

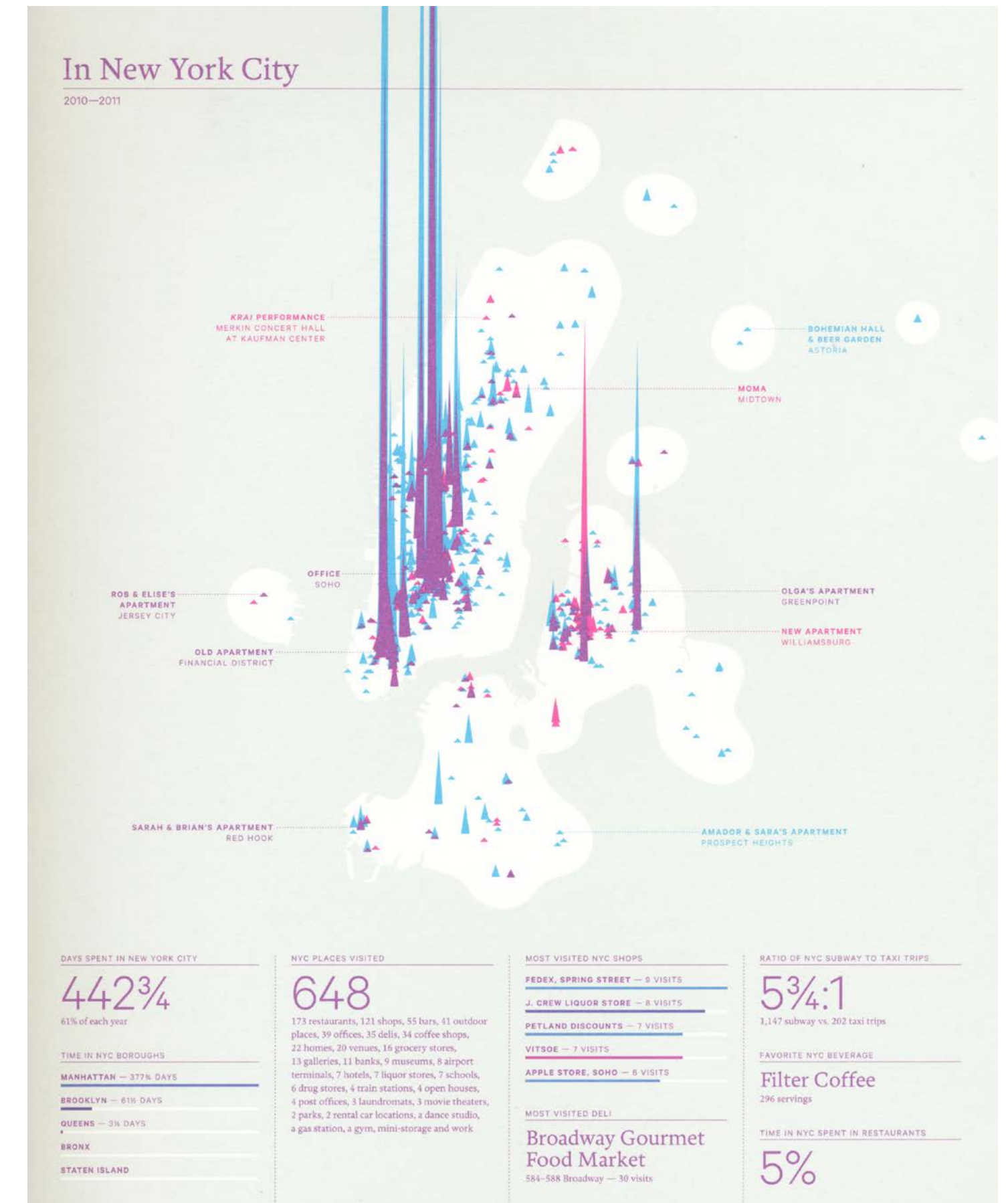


Color segmentation

Nicholas Felton

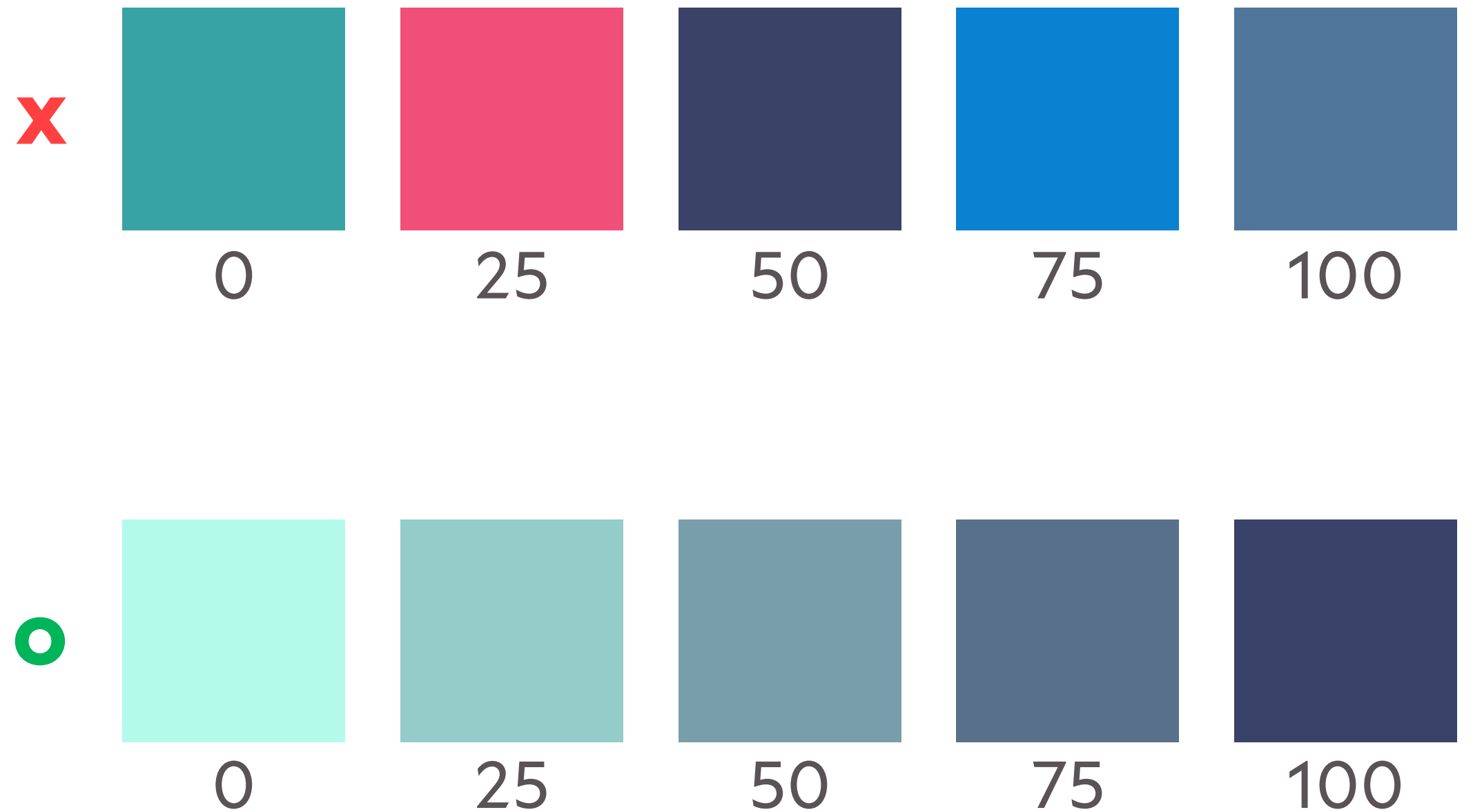
Colors must be visually distinct to support visual search and learnability.

A strong pop-out effect depends both on the other colored objects and on the background color.



Color segmentation

In a sequence, colors should be as visually different from each other as the items they represent.



Human vision

“It is because the brain is sensitive to differences and not absolute values that we can reproduce a reasonable facsimile of a beach scene at the movie theatre, despite the fact that there may be one-hundredth the amount of light reflecting from the screen compared to the real world scene.” -Colin Ware



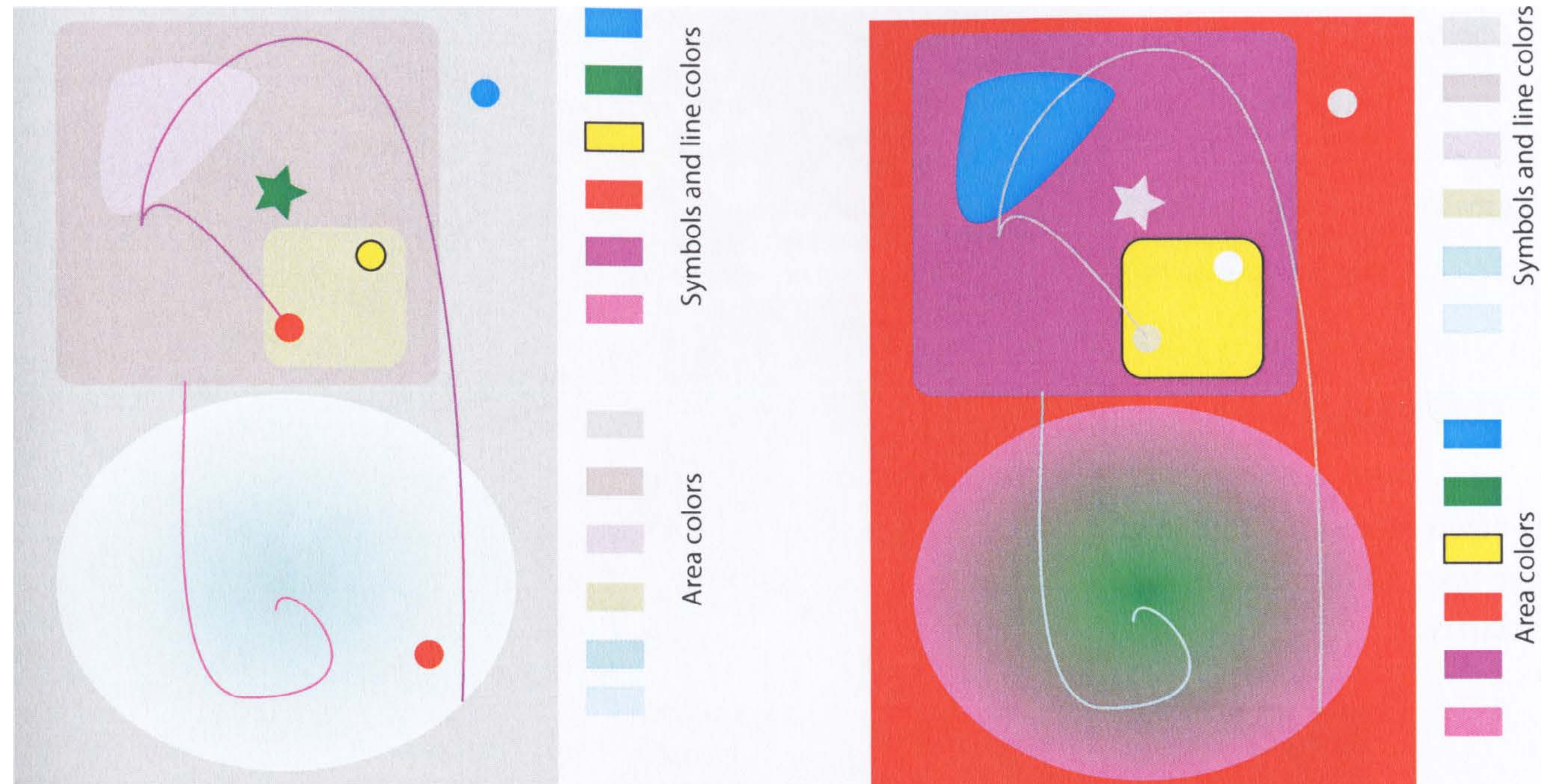
Human vision

The same is true for chromatic contrast.



Saturation

Use high saturation in small areas. Because we are far more sensitive to seeing color differences in large areas, strong color differences are unnecessary for large objects and backgrounds.



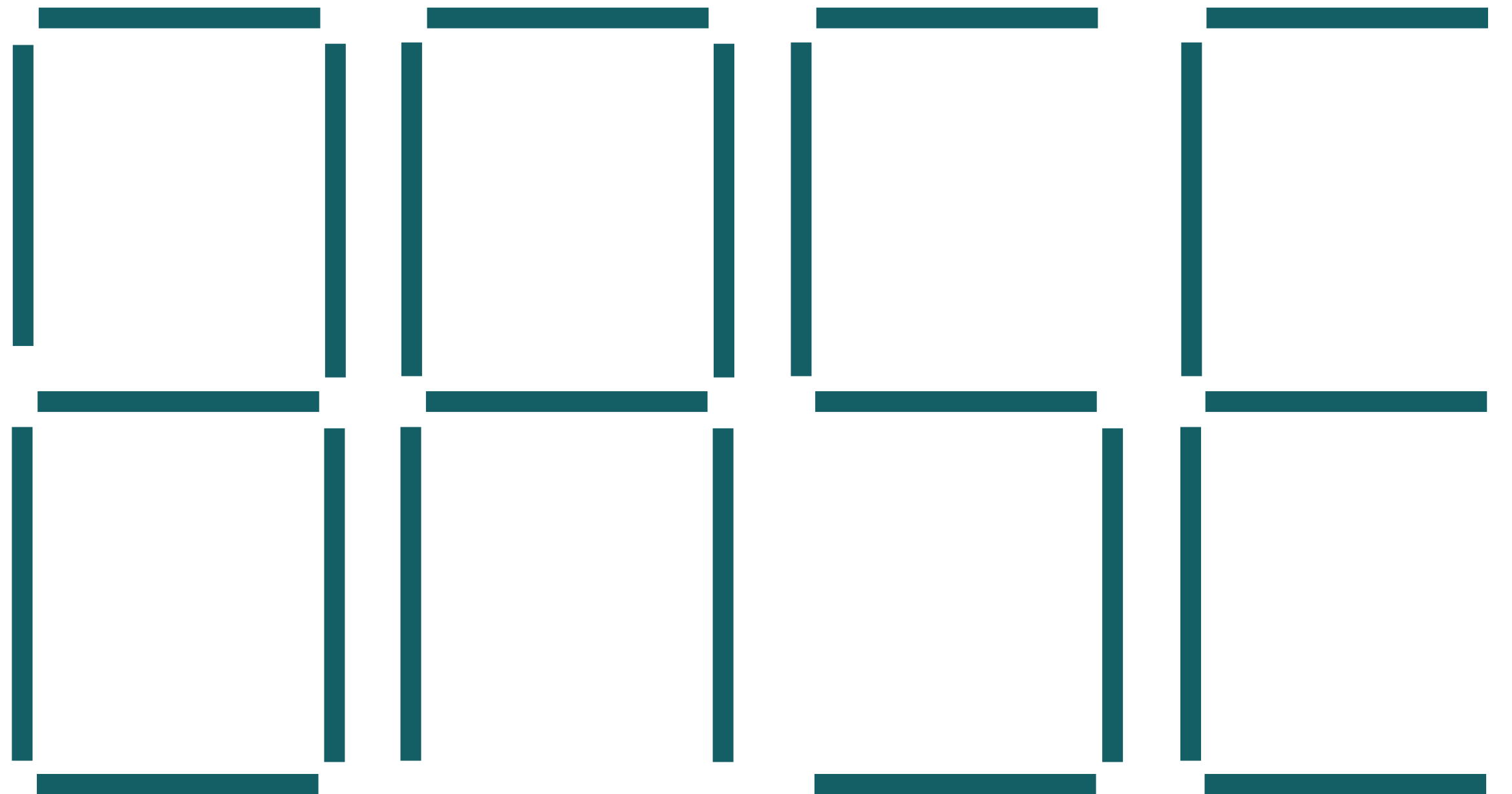
Thinking with Type



Letters & words

Letters that are distinct from one another help us to recognize them, but we can also gather information from the context. Similar to three colored circles = traffic light.

On the other hand, letters that are too dissimilar can slow down our comprehension.



Letters & words

A mechanized design approach gave way to view of typography as an elastic system of formal features. Relationships between letters became more important than the identity of individual characters.

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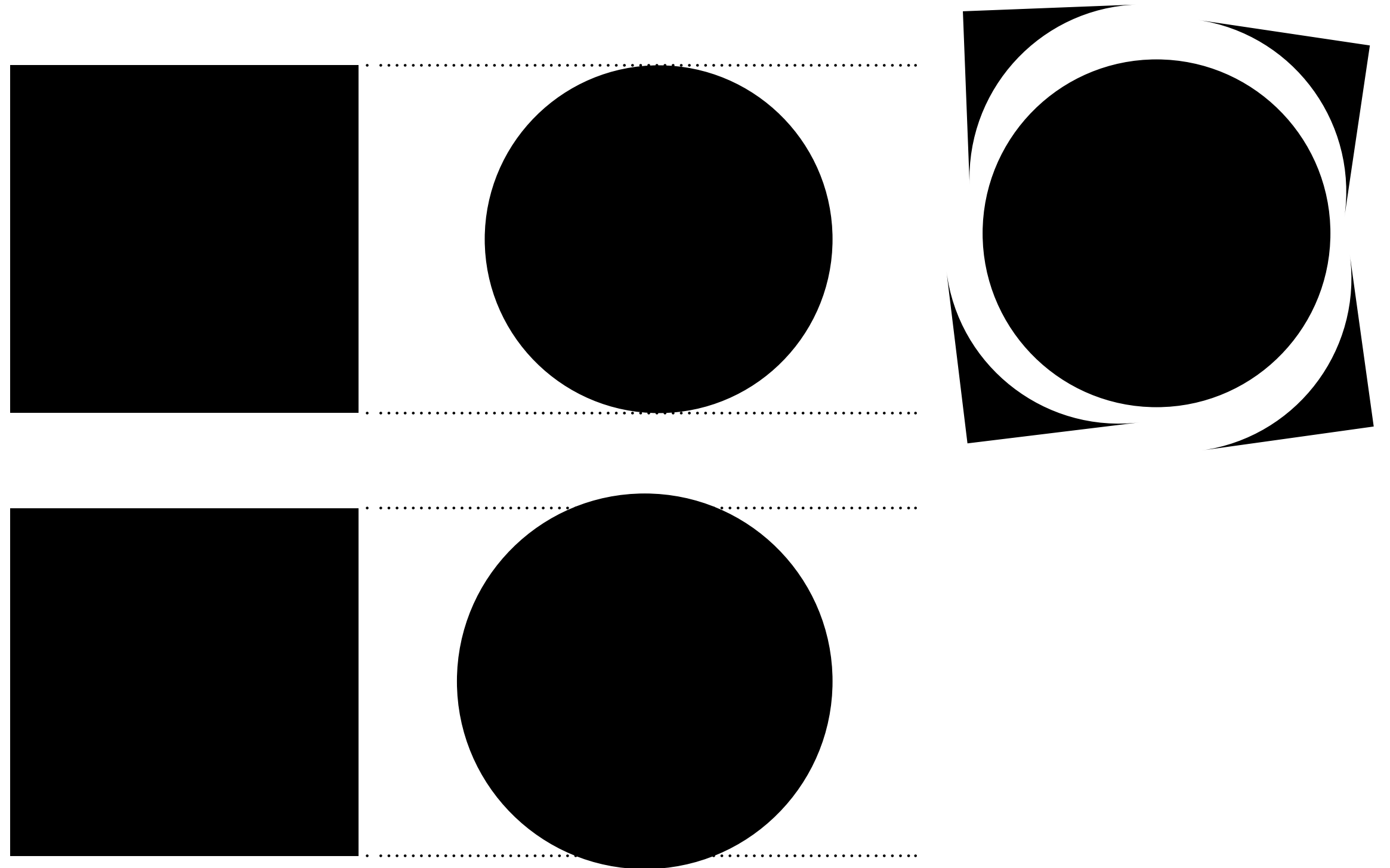
Typeface creation

One way type designers create similarity between letters in a typeface is to make rounded letters fall below the baseline, and rise above the cap- or x-height.



Typeface creation

One way type designers create similarity between letters in a typeface is to make rounded letters fall below the baseline, and rise above the x-height. This makes rounded letters feel like they have a similar size as rectangular ones.



Typeface creation

Another example of pattern recognition in type. This typeface was designed by Tobias Frere-Jones.

Sum of the 22vts

Tobias Frere-Jones

Letters

You expect a typeface to have 26 letters

z s o z o t s h
l k l m h o z s
v s f h v m k s z

Tobias Frere-Jones

Type

But this one actually has 11.



Choosing typefaces

Typefaces are essential resources for a designer.

They contain cultural coding.

“There is no playbook that assigns a fixed meaning or function to every typeface; each designer must confront the library of possibilities in light of a project’s unique circumstances.”

AMICABLE

AMICABLE

AMICABLE

AMICABLE

AMICABLE

Manipulating typefaces

Do not digitally distort the proportions of the letters to create wider or narrower letters. Choose a condensed or wide typeface instead.

o ANIMOSITY

x ANIMOSITY

Combining typefaces

Choose type combinations that have easily noticeable differences.

Avoid type combinations that are too similar to each other.

SINGLE-FAMILY MIXES

Creamy and **Extra Crunchy** | *Differences within a **single family***

UNIVERS 47 LIGHT CONDENSED AND UNIVERS 67 BOLD CONDENSED

Sweet Child of **MINE** | *Differences within a **SUPERFAMILY***

QUADRAAT REGULAR AND ITALIC; QUADRAAT SANS BOLD

Noodles with **Potato Sauce** | ***Bland and blander***

HELVETICA NEUE 56 MEDIUM AND HELVETICA NEUE 75 BOLD

TYPE CRIME

These typefaces are from the same family, but they are too close in weight to mix well.

MULTIPLE-FAMILY MIXES

Jack Sprat and his **voluptuous wife** | *Two-way **contrast***

THESIS SERIF EXTRA LIGHT AND VAG ROUNDED BOLD

Sweet, SOUR, and **hot** | ***THREE-way contrast***

BODONI ROMAN, THESIS SERIF EXTRA LIGHT SMALL CAPS, AND FUTURA BOLD

Mr. Potatohead and Mrs. Pearbutt | ***Too close for comfort***

ADOBE GARAMOND PRO BOLD AND ADOBE JENSON PRO BOLD

TYPE CRIME

These two type styles are too similar to provide a counterpoint to each other.

Combining typefaces

Avoid creating unintentional differences that could distract a reader.

barely
NOTICEABLE
minimally
NOTICEABLE
hardly
NOTICEABLE
x

barely
NOTICEABLE
minimally
NOTICEABLE
hardly
NOTICEABLE
o

Combining typefaces

Avoid minimally noticeable
differences in type

THE
WORLD
RECORD

x

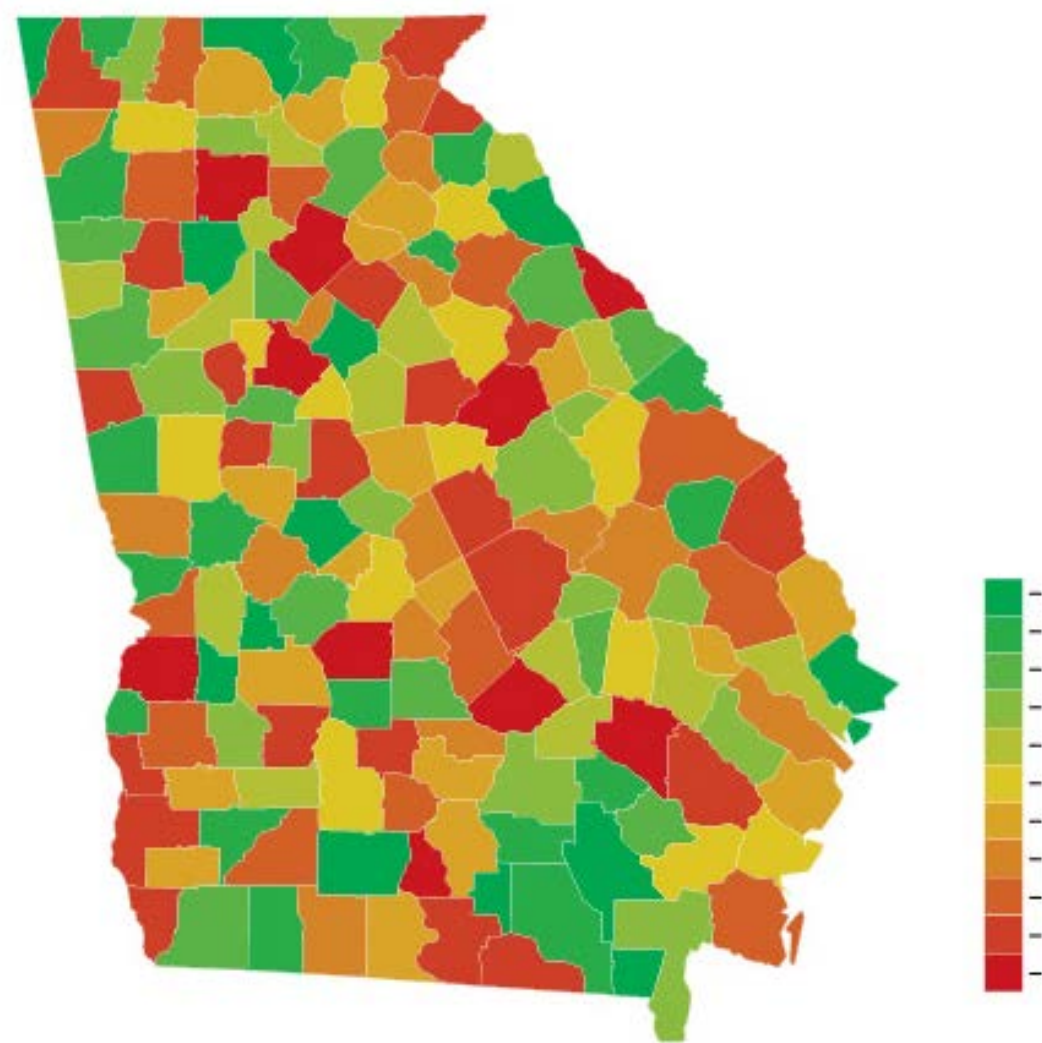
THE
WORLD
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o

Tuning distinction

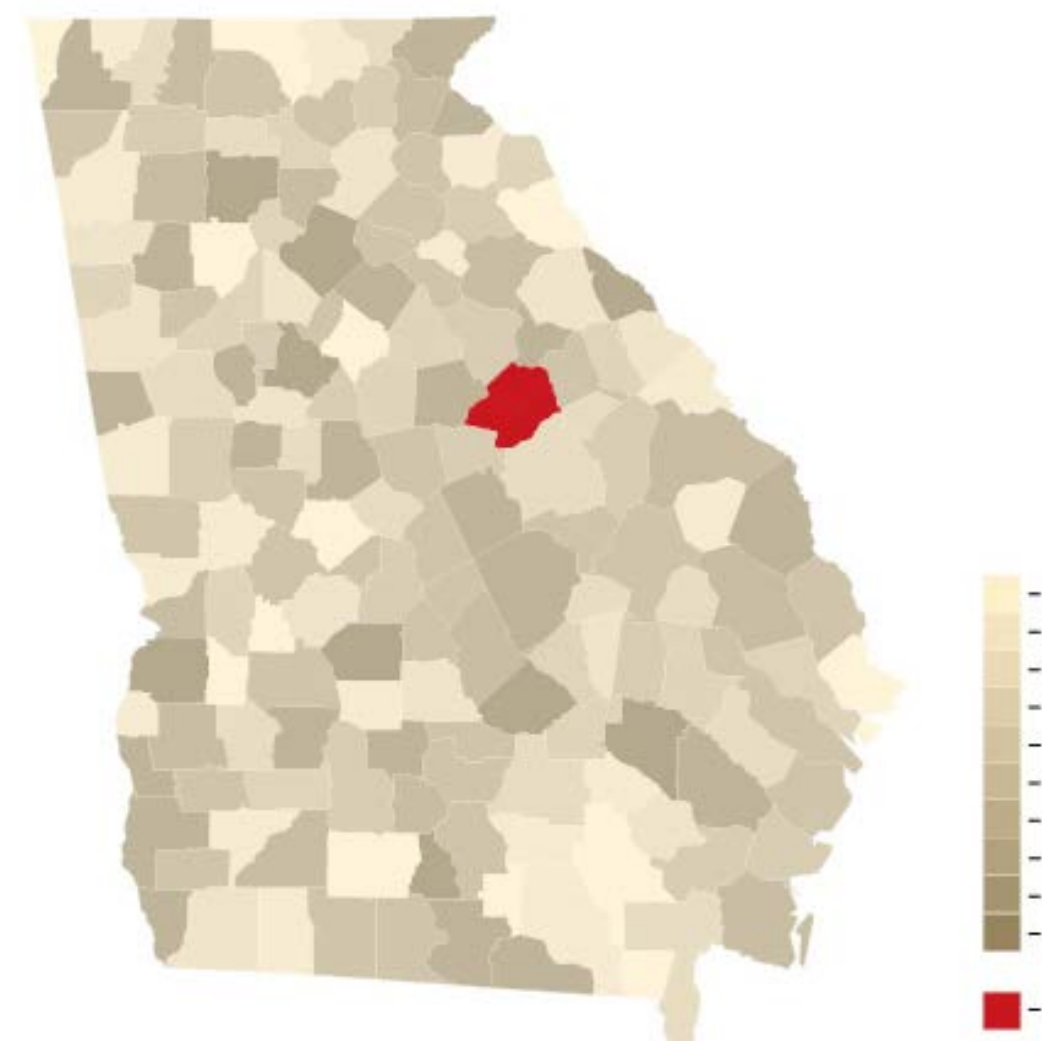
THE
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x



THE
WORLD
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o



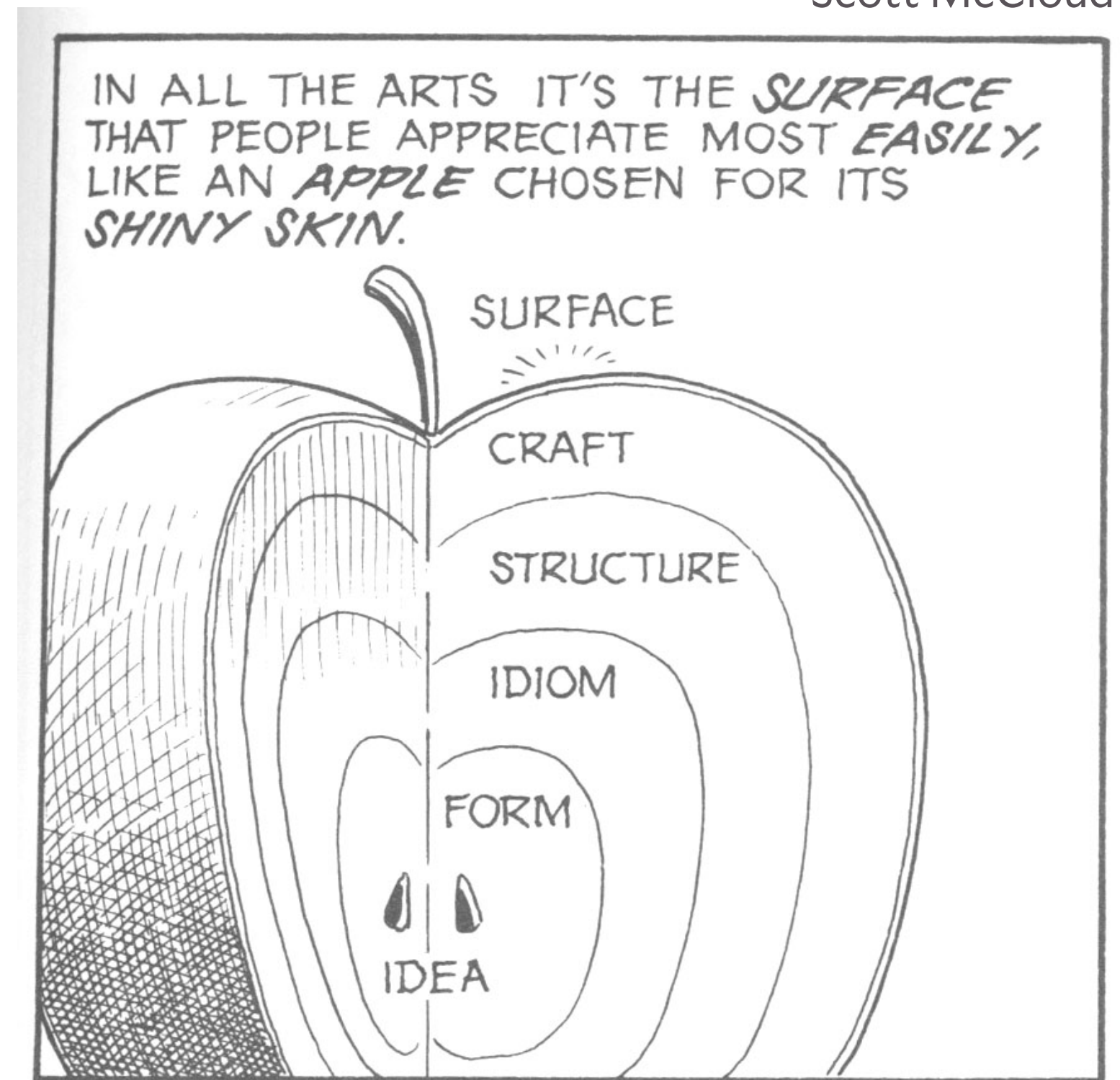
Course Recap

Elements of design

From Scott McCloud's *Understanding Comics*

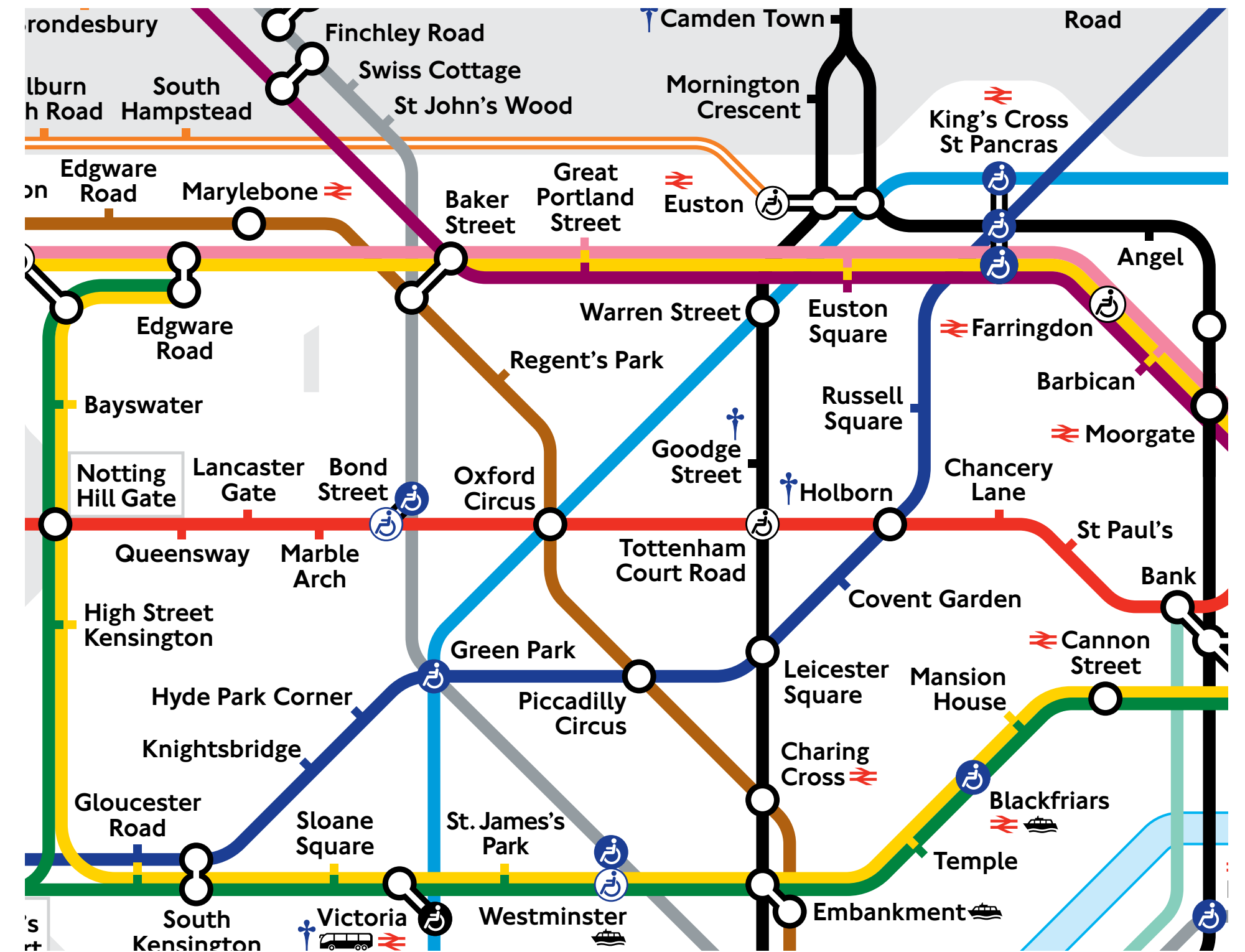
- Surface
- Craft
- Structure
- Idiom
- Form
- Idea/Purpose

Scott McCloud



Visual queries

A “query” is something that the mind does to compare visual elements.



Feature channels

The brain is tuned to see outliers. Understanding that helps us know how the brain and visual system makes sense of the world.

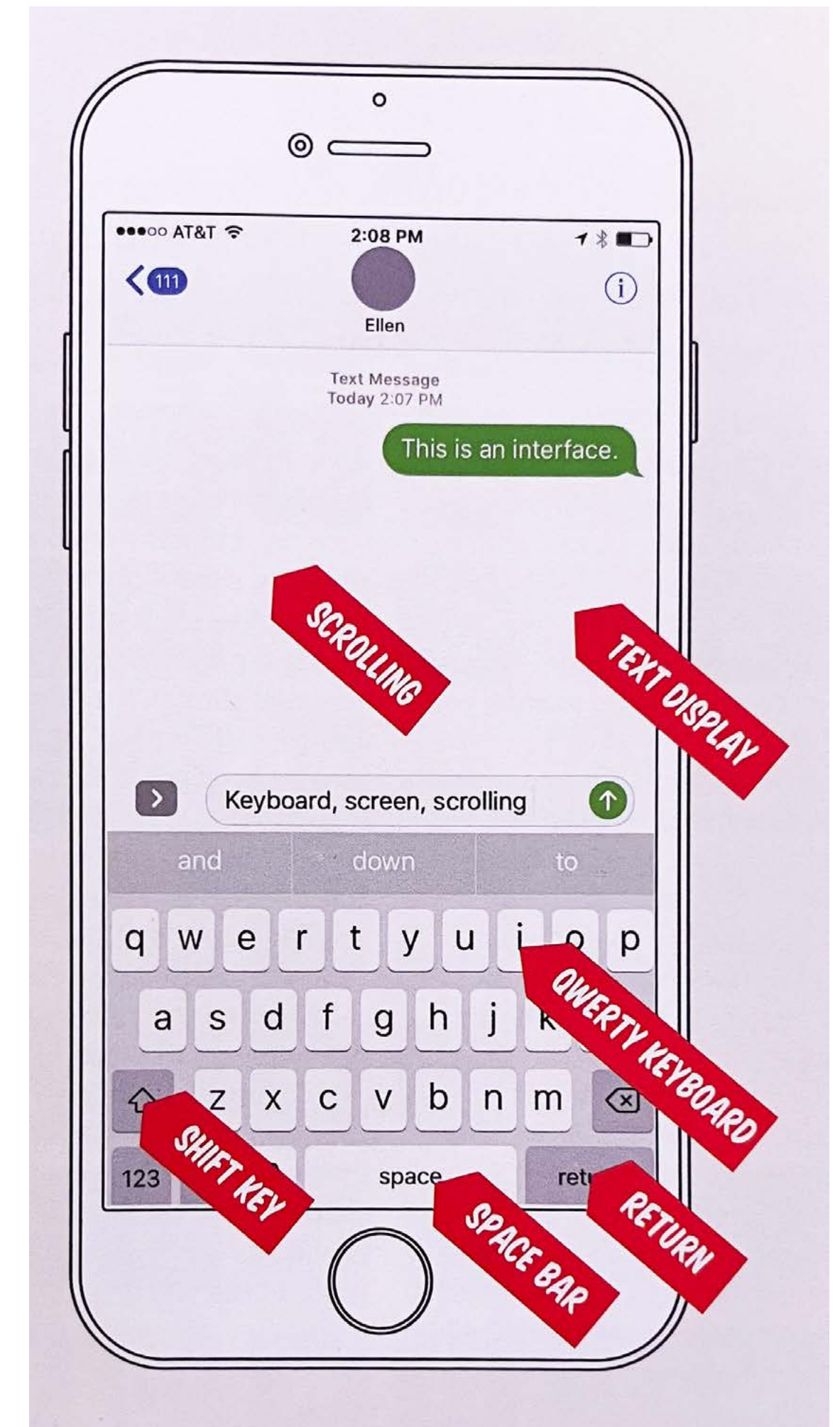
Use simple, high impact, and preattentive ways for the audience to distinguish data of different categories.

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Affordances

“The power of the unaided mind is highly overrated. Without external aids, memory, thought, and reasoning are all constrained. But human intelligence is highly flexible and adaptive, superb at inventing procedures and objects that overcome its own limits. The real powers come from devising external aids that enhance cognitive abilities. How have we increased memory, thought, and reasoning? By the invention of external aids: it is things that make us smart.”

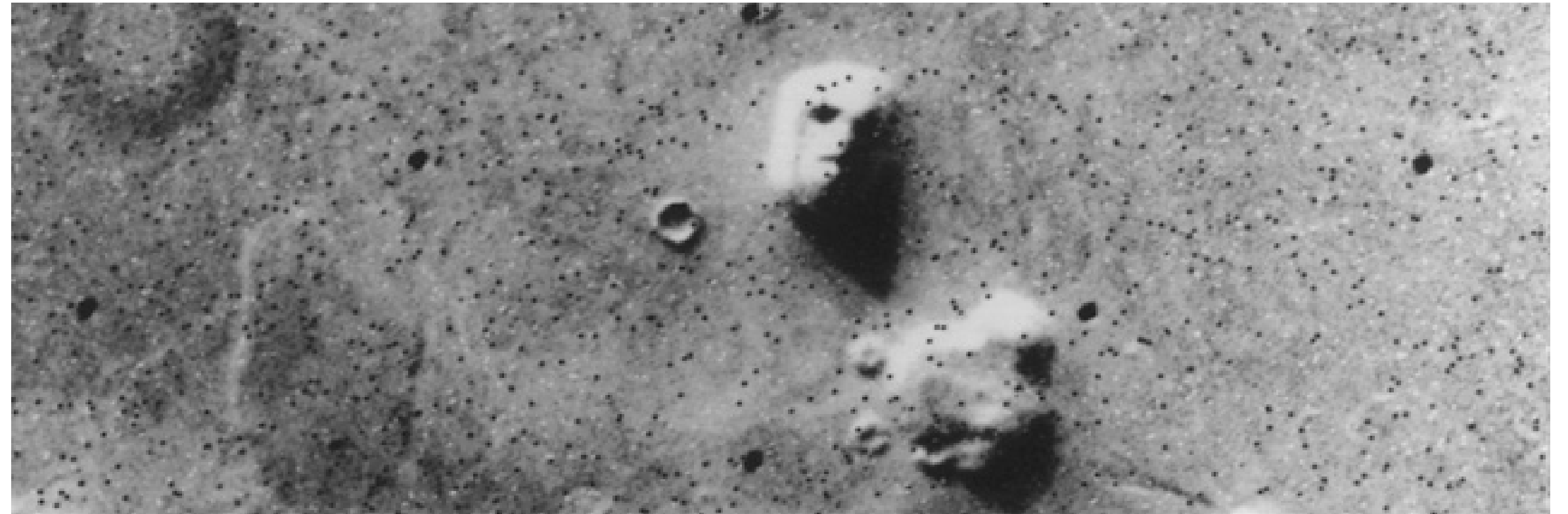
- Don Norman



“Bottom up” & “top down” perception

Bottom up

- Our brain perceives patterns and makes connections based on what we know
- Think of the traffic light
- Also: the “Face on Mars”



Top down

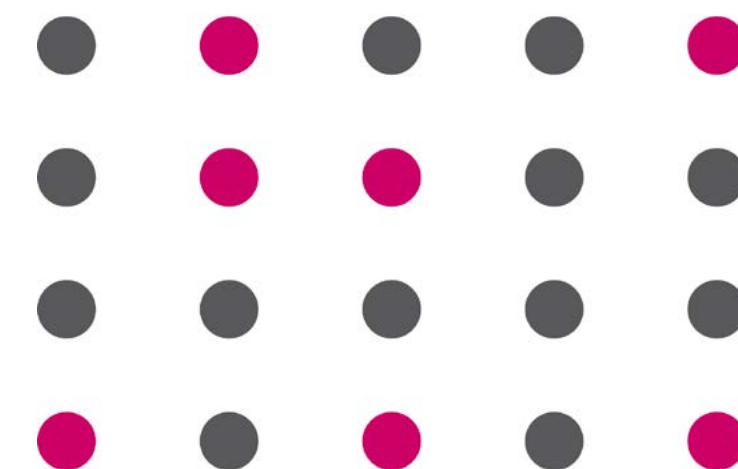
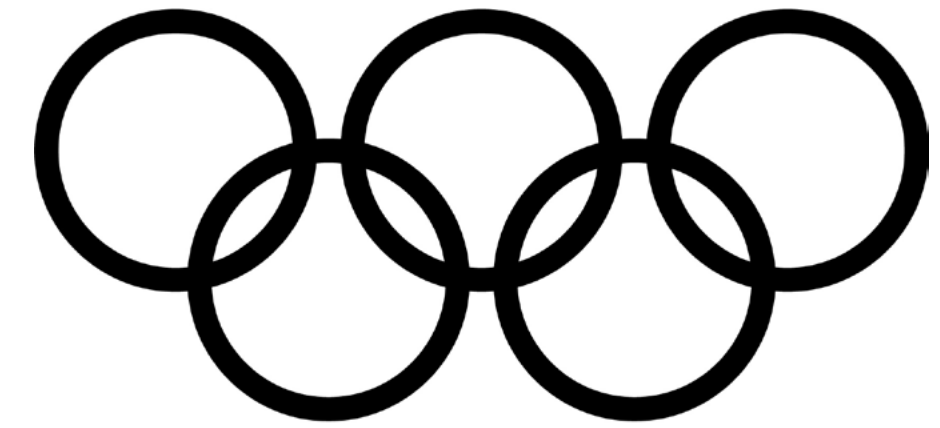
- Focus is on attention
- If you are looking for a red light, your red light detector will go off.

9485928342759487234697298457602938475084528734528710982
1034510249586109847592837450928745908273490587294829899
2319008970917654876354397619817948750098759986459254792
8274938562986981926174652874398745084305698067903459600
2948592842759487246972984576029384750384528734528710982
1045102349586109834759287450928745908273490587294829899
2190089709765487654397618179438750098743592986459254792
8274938562989819261257465238749874508405698067903459600

Gestalt Principles

In design, the main idea is that the mind “informs” what the eye sees by perceiving a series of individual elements as a whole. Examples include:

- Simplicity
- Continuity
- Similarity
- Synchrony
- Connectedness
- Common regions
- Proximity
- Figure/ground



Universal design principles

Examples include:

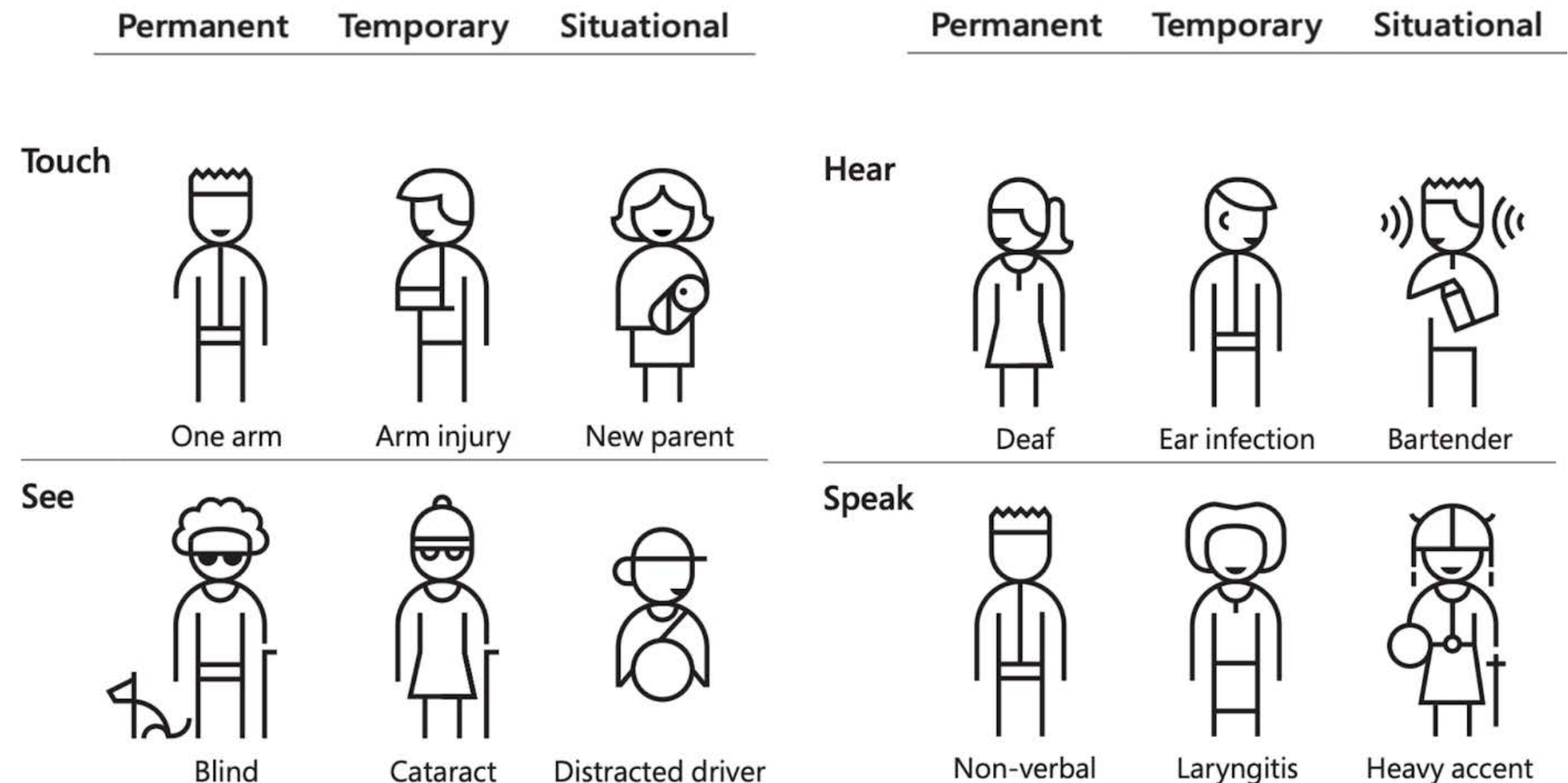
- Aesthetic Usability Effect
- Anthropomorphic Effect
- Archetypes
- Area alignment
- Chunking
- Classical conditioning
- Cognitive Dissonance
- Constancy
- Contour Bias
- Expectation Effect
- Exposure Effect
- Fibonacci sequence / Golden Ratio
- Highlighting
- Priming
- Orientation Sensitivity
- Signal to Noise Ratio

Designing for inclusion

Addressing mismatches with your possible audience:

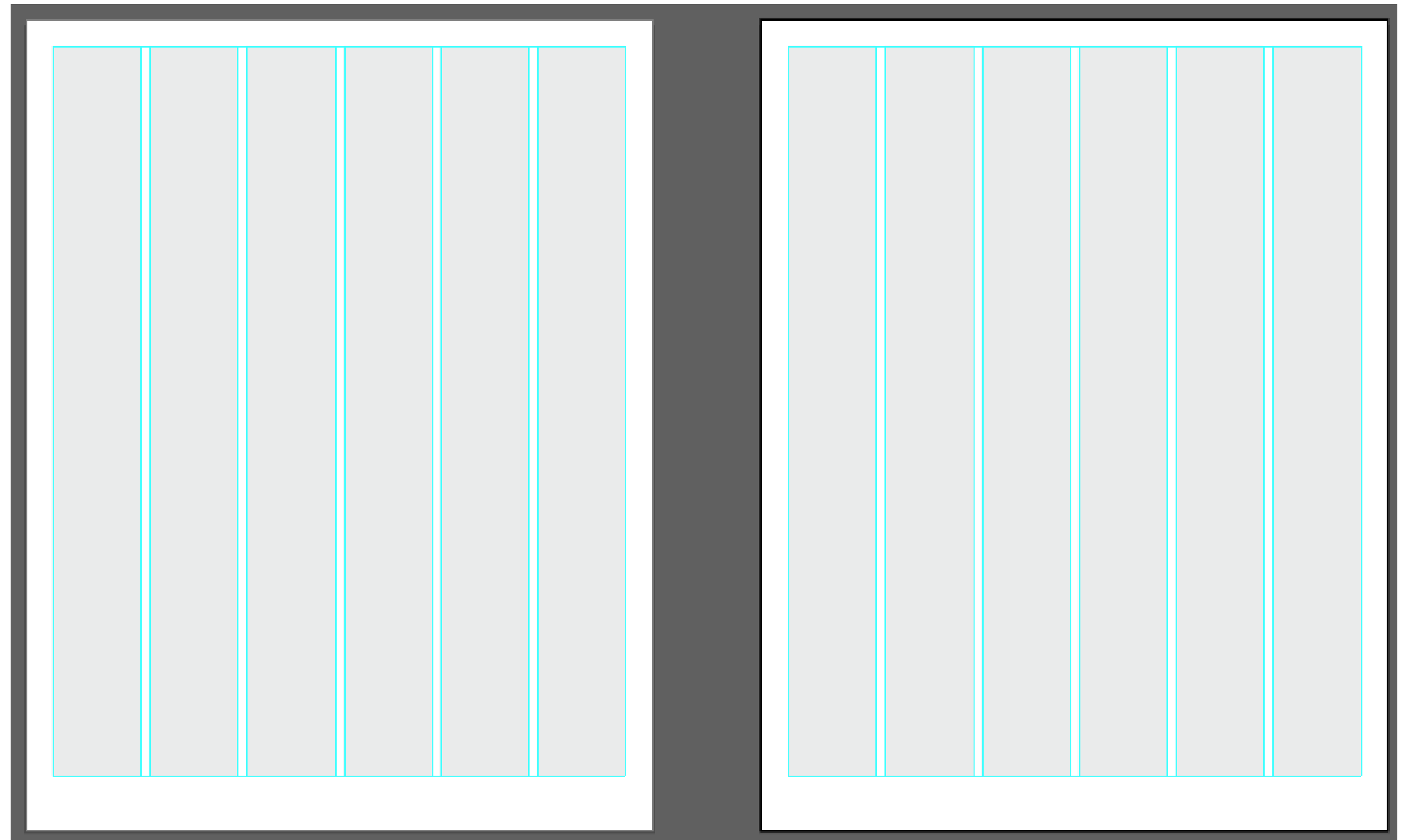
- Introductory description of what the visualization shows
- Direct labeling
- Translate data into clear language
- Alt text for screen readers
- Use sufficient contrast (including for color-blindness)

Microsoft



Grids and text

- Using margins, columns, and gutters to structure your content
- Selecting a type hierarchy with sufficient differentiation between levels
- Appropriate line length and alignment



Essence of narrative

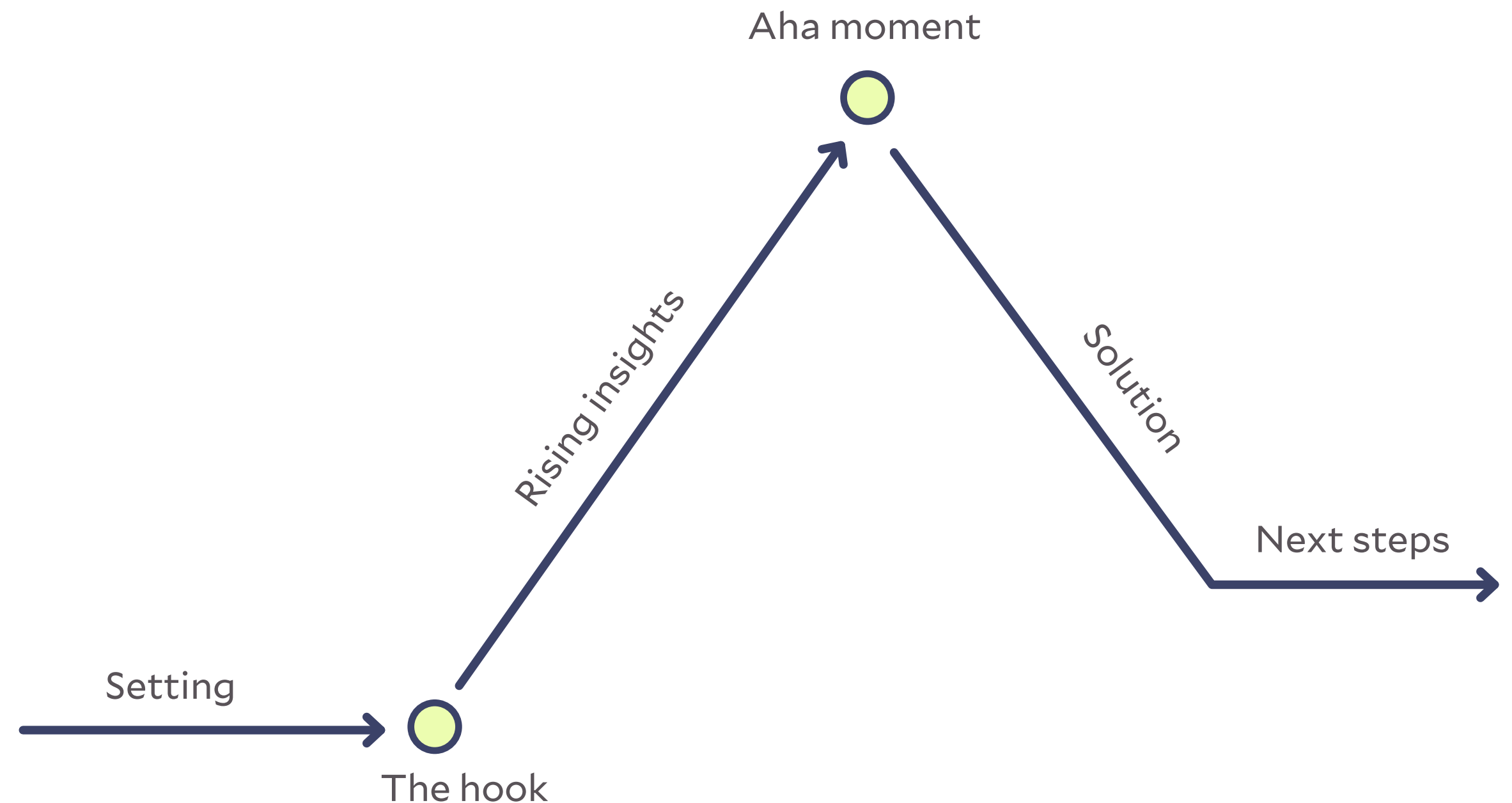
- Informative / Insightful
- Exploratory / Explanatory
- Abstract / Concrete
- Continuous / Finite
- Automated / Curated



Narrative structures

Examples including Brent Dyke's data storytelling arc

- Setting, background of your situation
- Hook: like an inciting incident
- Rising insights: Supporting details
- Aha moment: Major finding
- Solution / next steps: Audience's knowledge is enhanced and they are more likely to take action.

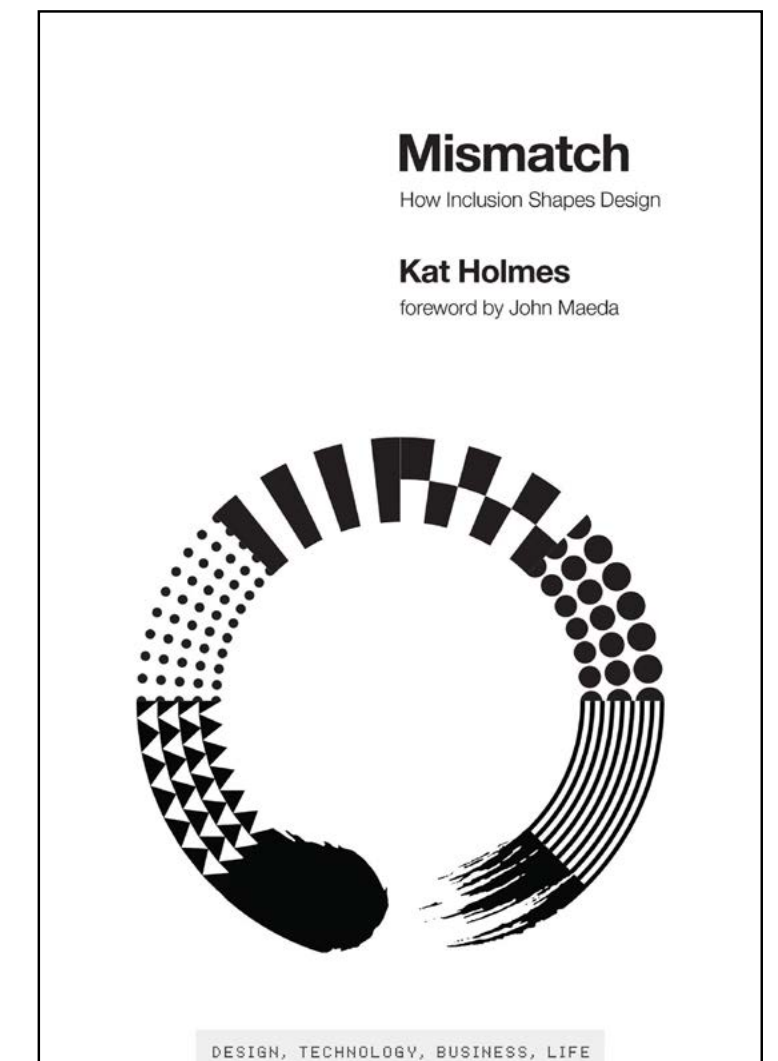
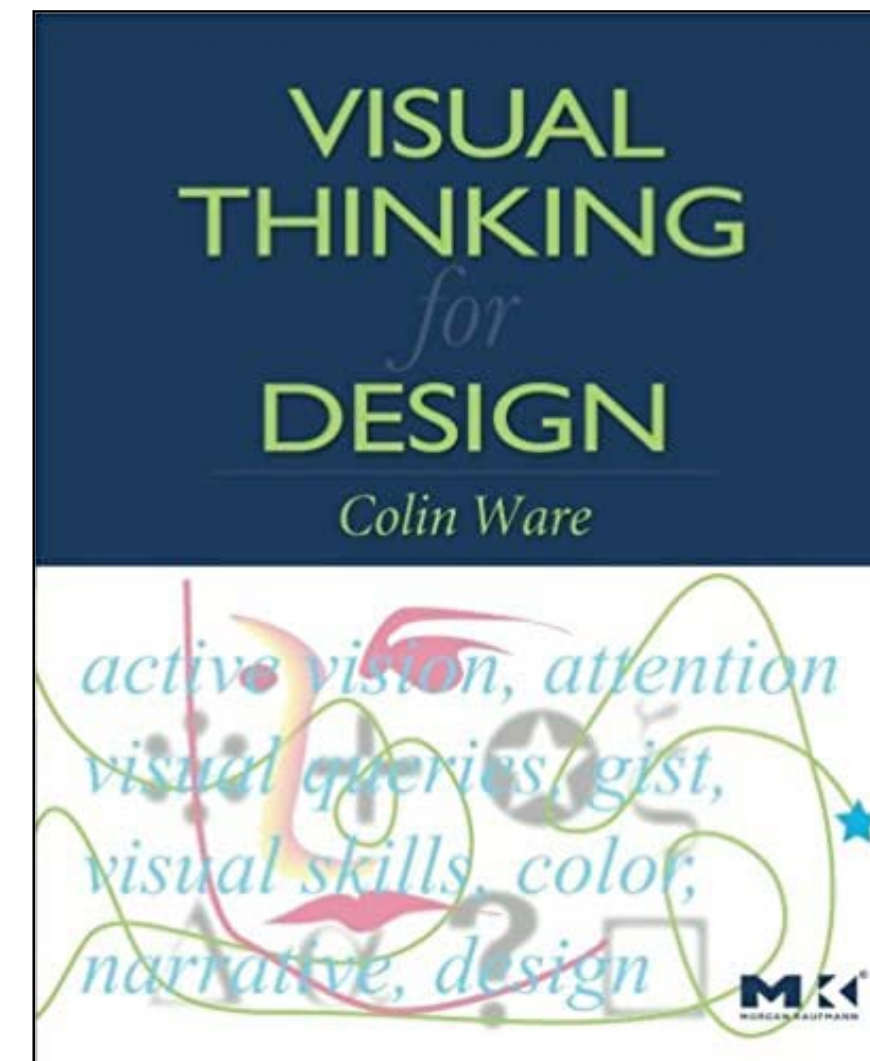


Questions?

For next week

Reading

- Mismatch chapters 6-7
- Visual Thinking for Design Chapter 7 (visual and verbal narrative)



The Final Project

Part 3 (due session 8)

Submit a PDF with all completed “sections” including at least 3 types of data visualization. Include the requirements from parts 1 & 2.

- Placed in your chosen format
- Created or modified in a design application
- Using a grid (include a screenshot of it)
- Using your type hierarchy

With your submission write a paragraph describing how your Final Project uses at least 5 of the themes.

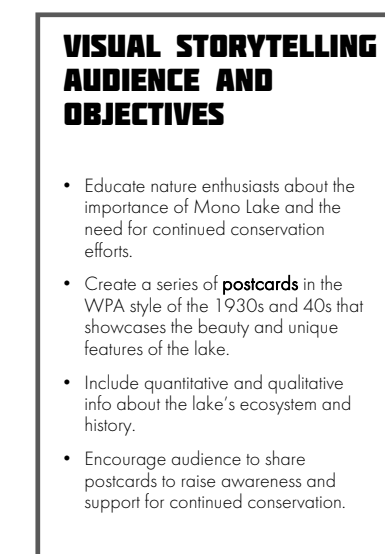
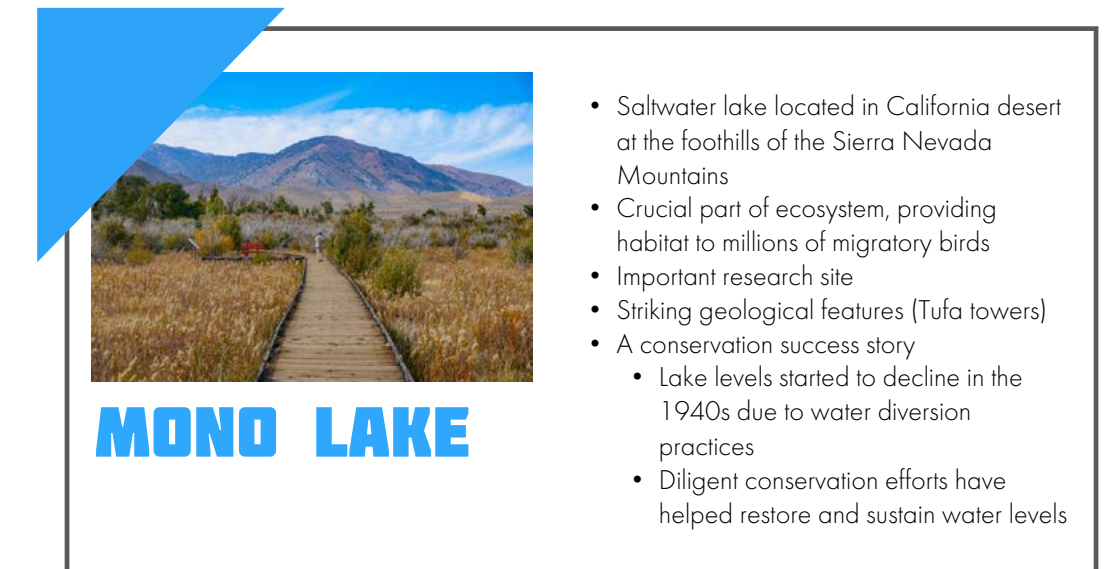
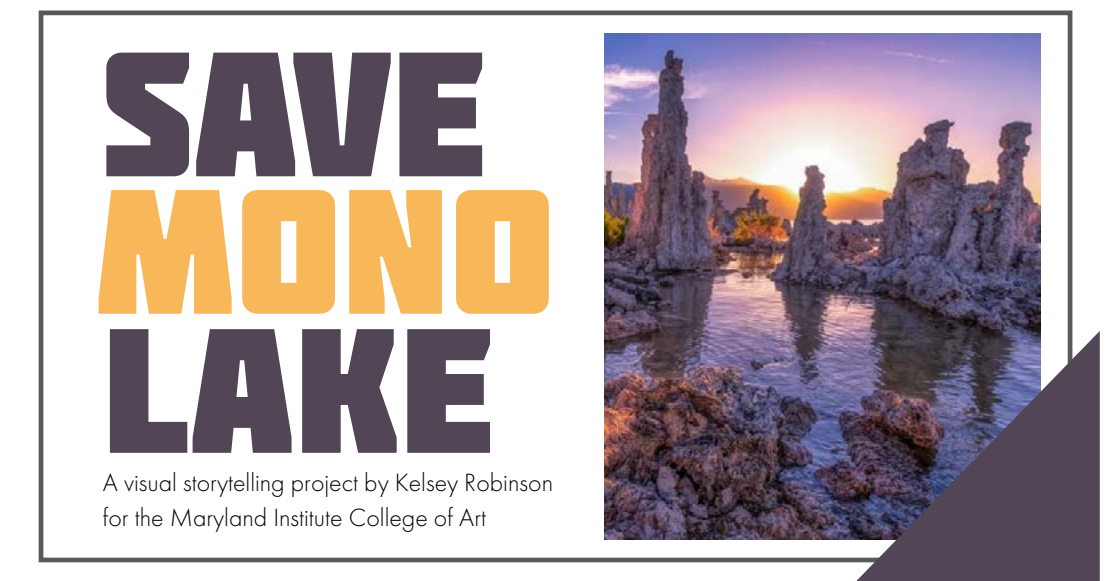
If there’s any requirement you didn’t submit in part 1 or 2, include it.

Prepare a 5 minute presentation of your completed Final Project.

Final Presentations

Tell us about your project including:

- Topic
- Audience
- Format
- A walk-through of the content
- You may create a slide deck highlighting these elements, but that isn't required



INSPIRATION

Peer feedback

Post your in-progress final project in Canvas and comment on at least two other people's projects.

Resubmitting work

- You have until Sunday August 27th
- You must email me by then to inform me what you've resubmitted

Break