

Building User Interfaces

Visual Design

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Make a copy of ICA B and share it with your group members!

Learning Objectives

1. Understand the elements and principles of design.
2. Understand the influence of color, type, and images.
3. Apply these concepts to the visual design of a webpage.

Elements of Design

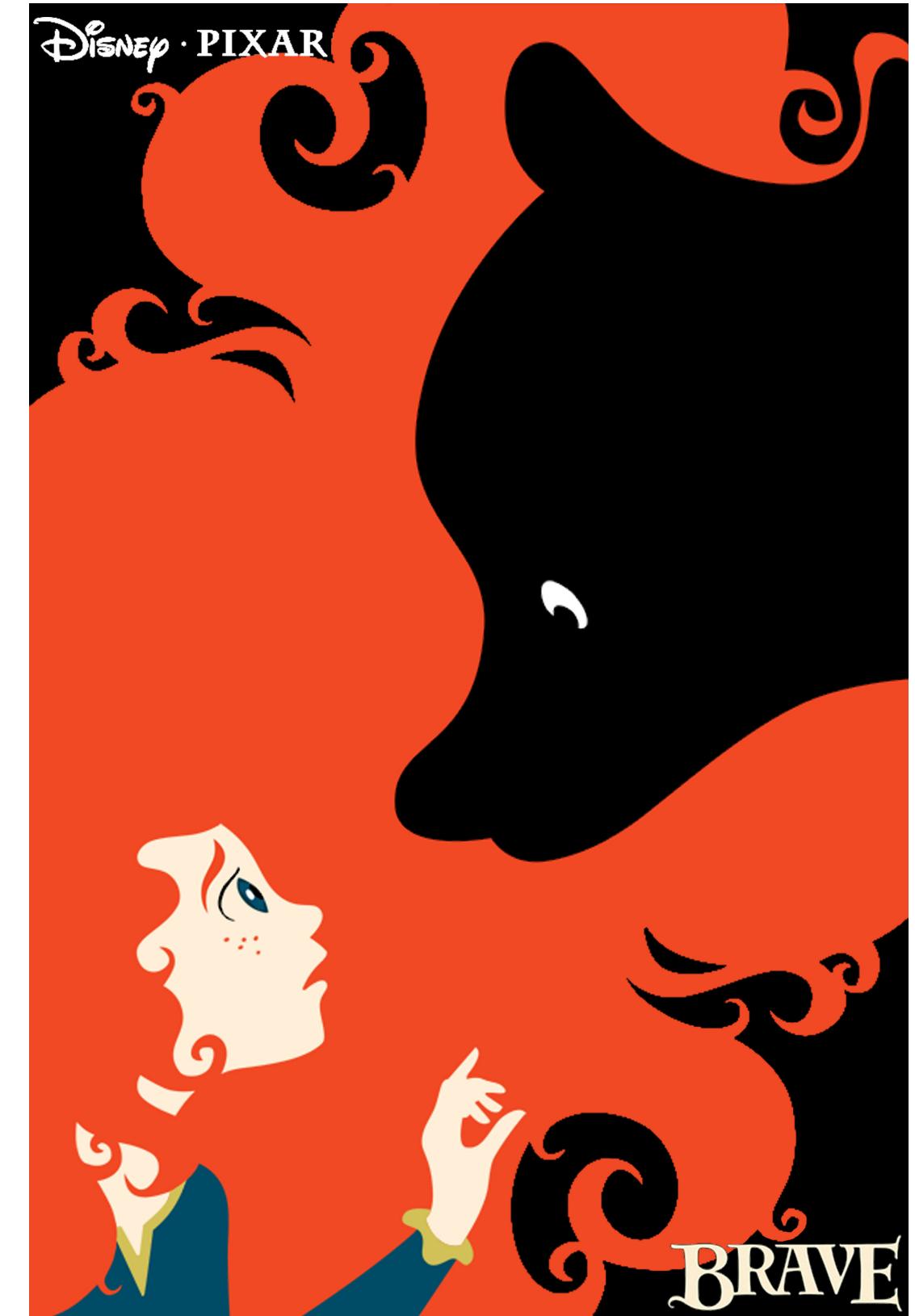
Elements of Design

1. Space
2. Line
3. Shape
4. Size
5. Pattern
6. Texture
7. Value

Space¹

Definition: Space is the canvas on which visual elements are placed.

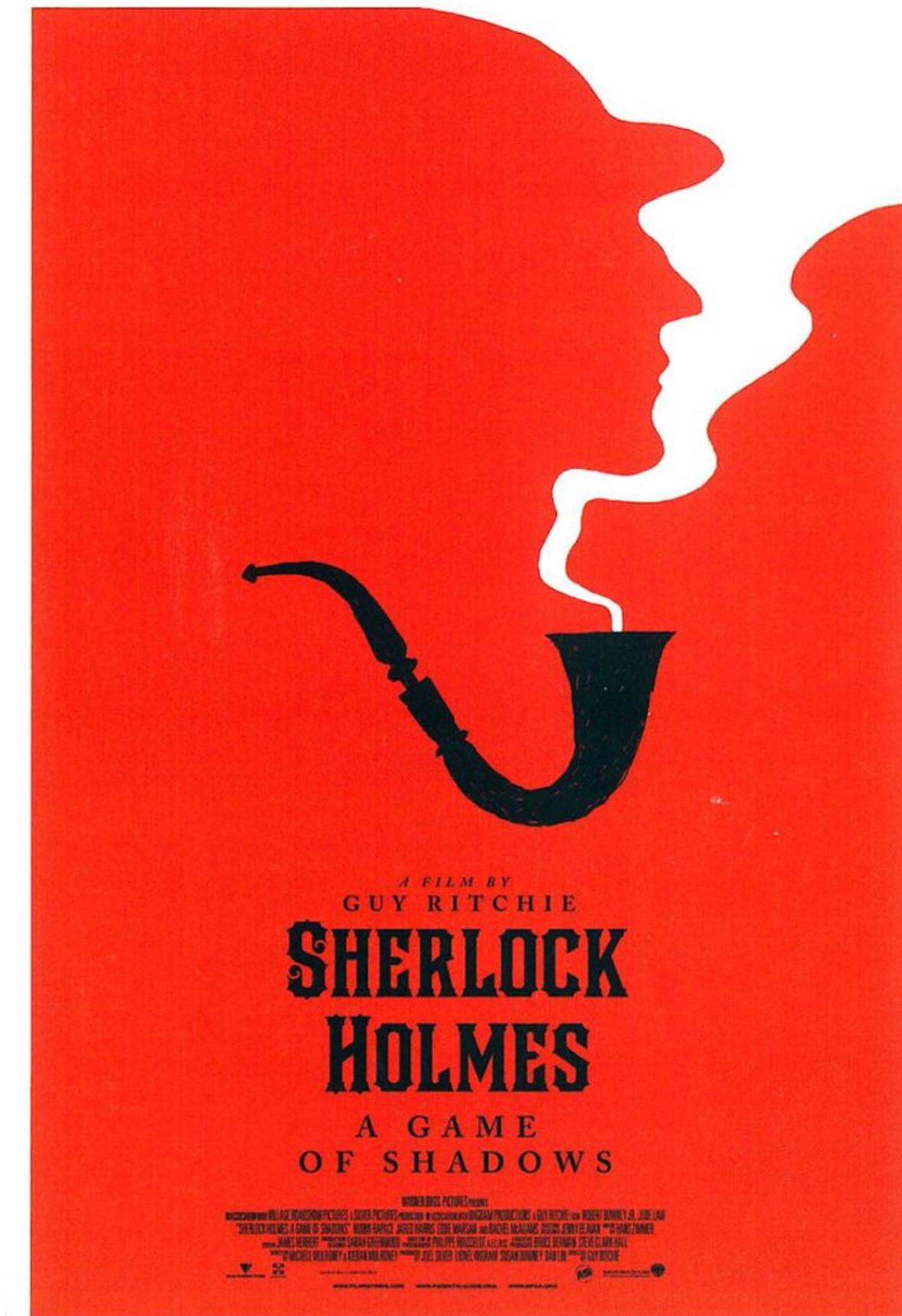
- Space can be *positive* or *negative*
- *Positive*: where the subject is positioned
- *Negative*: the space surrounding the subject
- Negative space can be used as positive



¹Image sources: [this slide](#), next slide: [left](#), [right](#)

Now data helps pinpoint more oil.

In Venezuela, IBM deep computing processes seismic data, helping Tricon Geophysics pinpoint new oil and gas using 40% less energy. ibm.com/smarterplanet



Line²

Definition: The most primal design element that can divide space, call attention to, organize, and make up other elements.

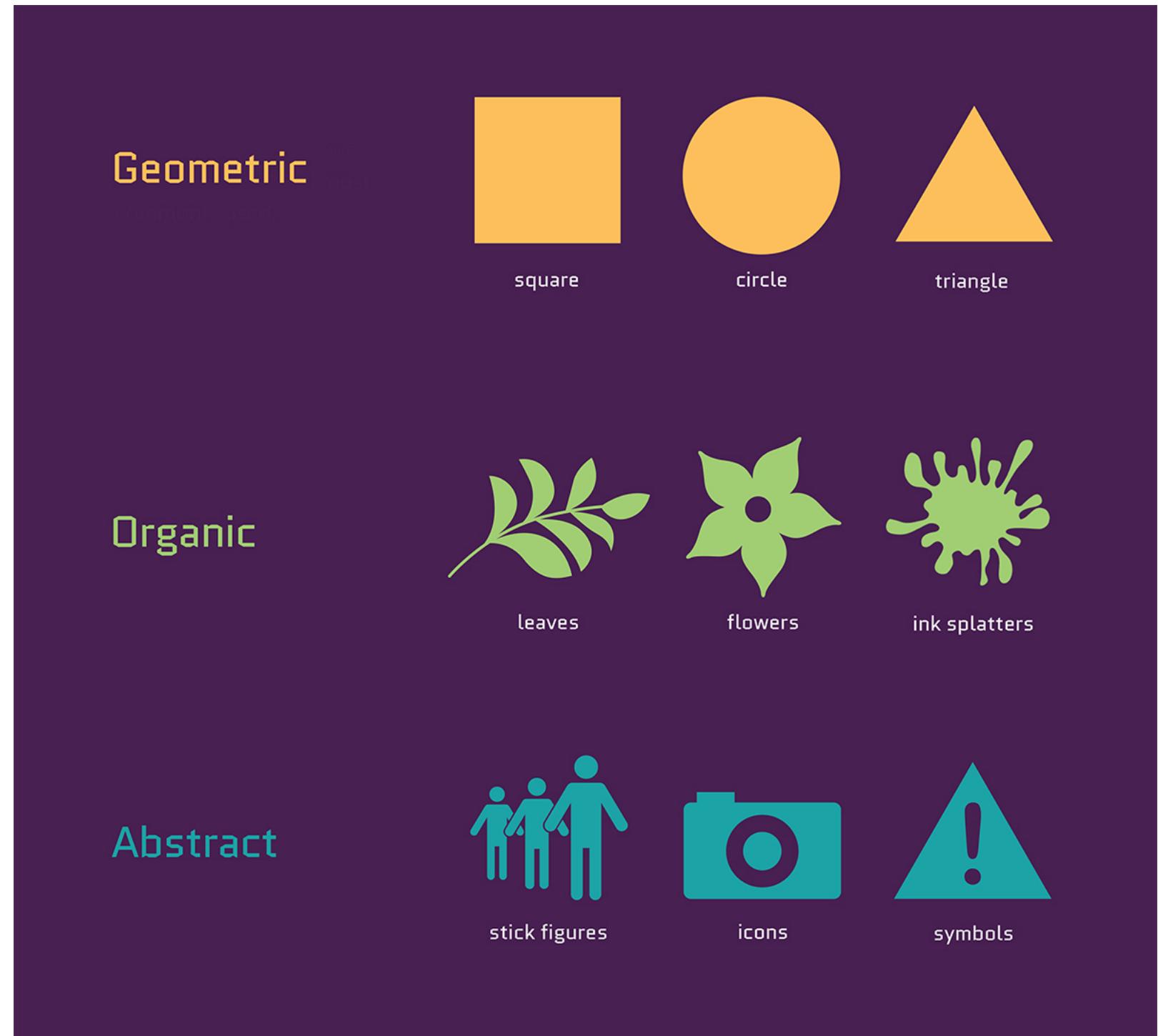


² Image source

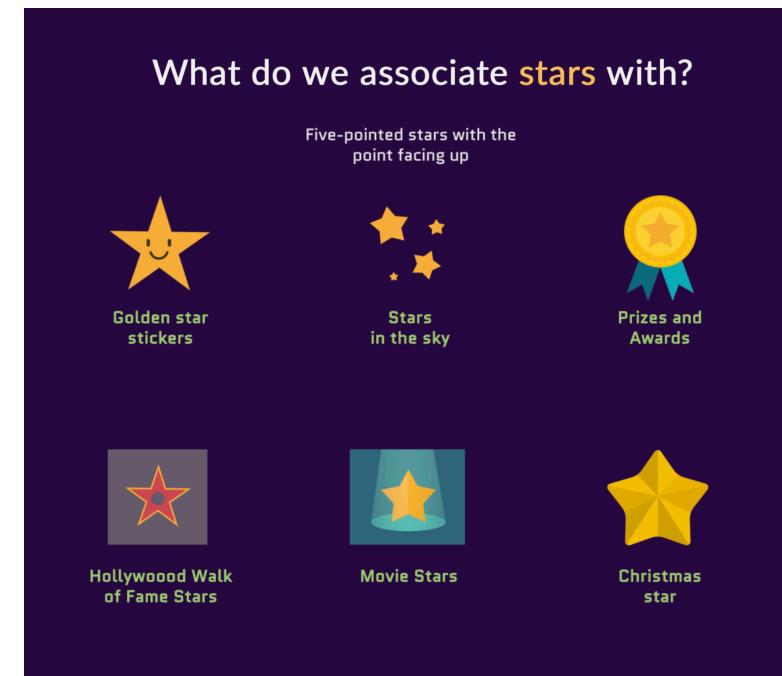
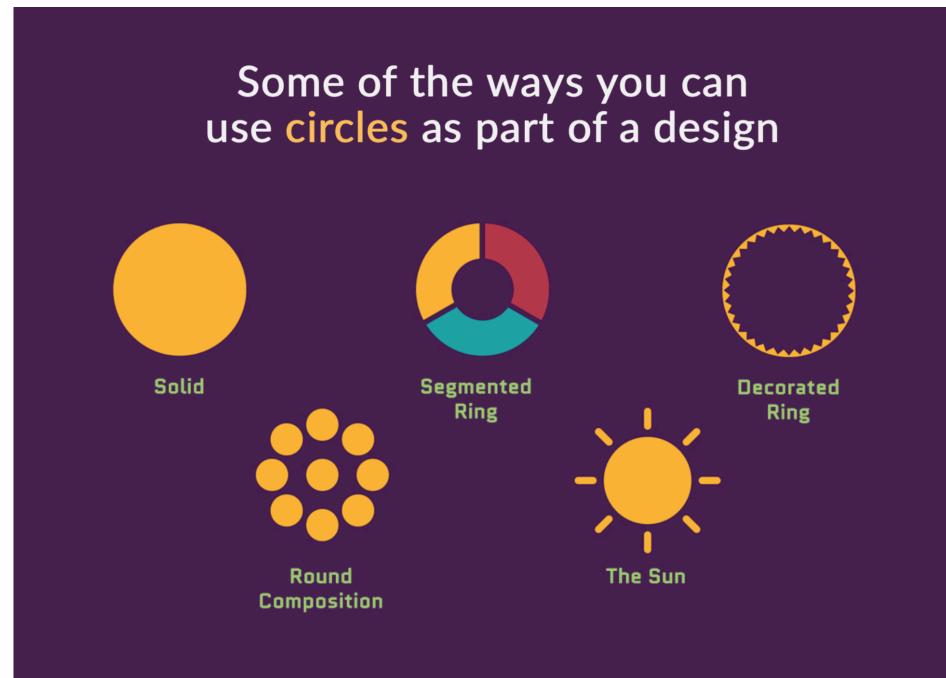
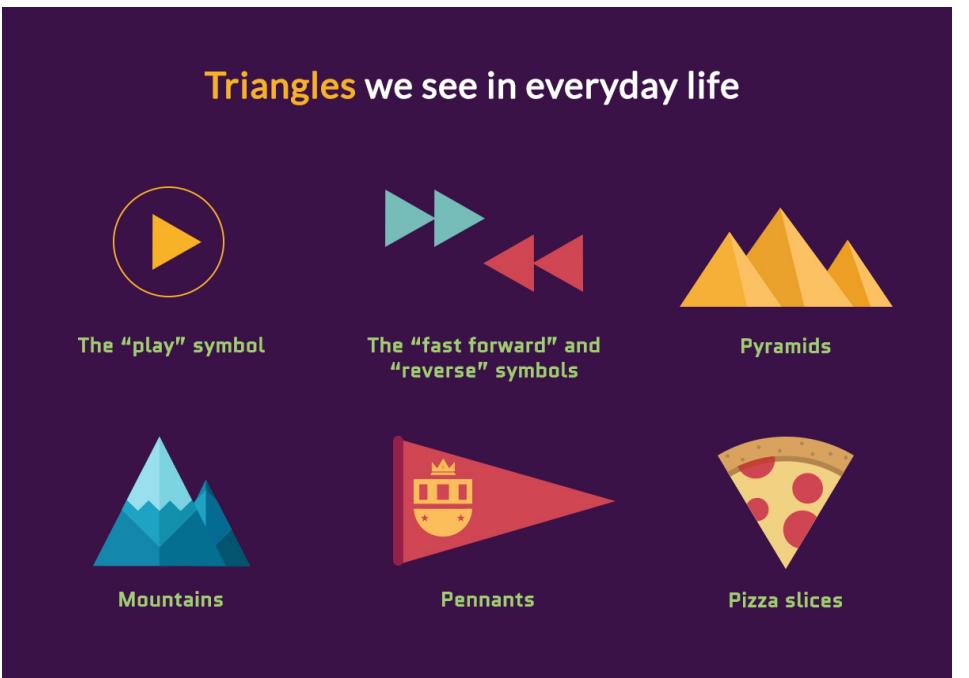
Shape³

Definition: Space outlined by a contour.

— *Organic* vs. *inorganic* shapes



³ Image sources: [this](#) & next slides



Size⁴

Definition: Size, or *scale*, is the relative extent of the design elements such as shapes and lines.



⁴ [Image source](#)

Pattern⁵

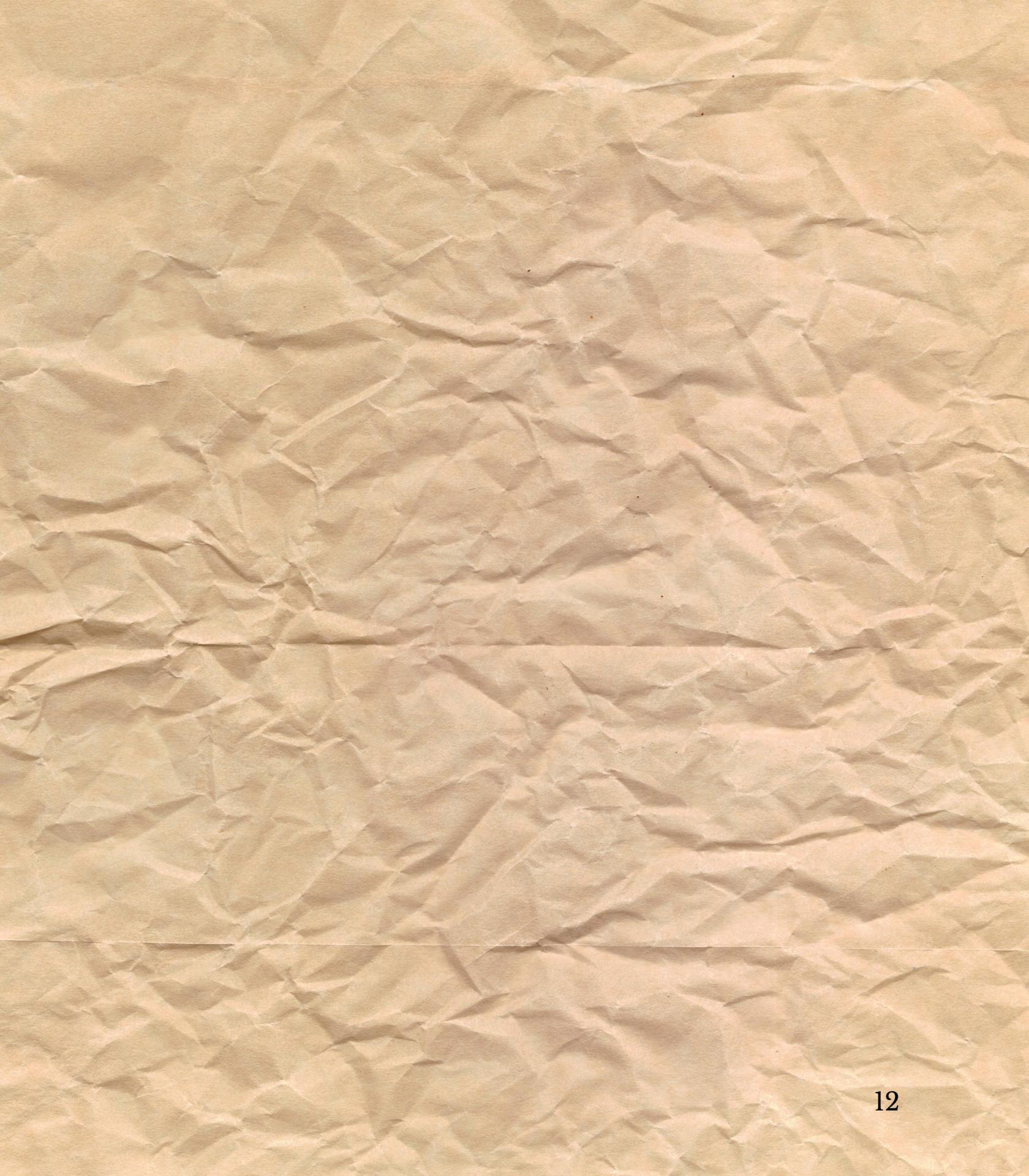
Definition: Pattern, or *repetition*, systematic duplication of other design elements such as shapes and lines.



⁵ Image source

Texture⁶

Definition: Tactile and visual quality of a shape or space made up of different colors, materials, and different structures.



⁶Image source

Value⁷

Definition: The intensity in which a design element is expressed.



⁷ Image source

Principles of Design

Principles of Design

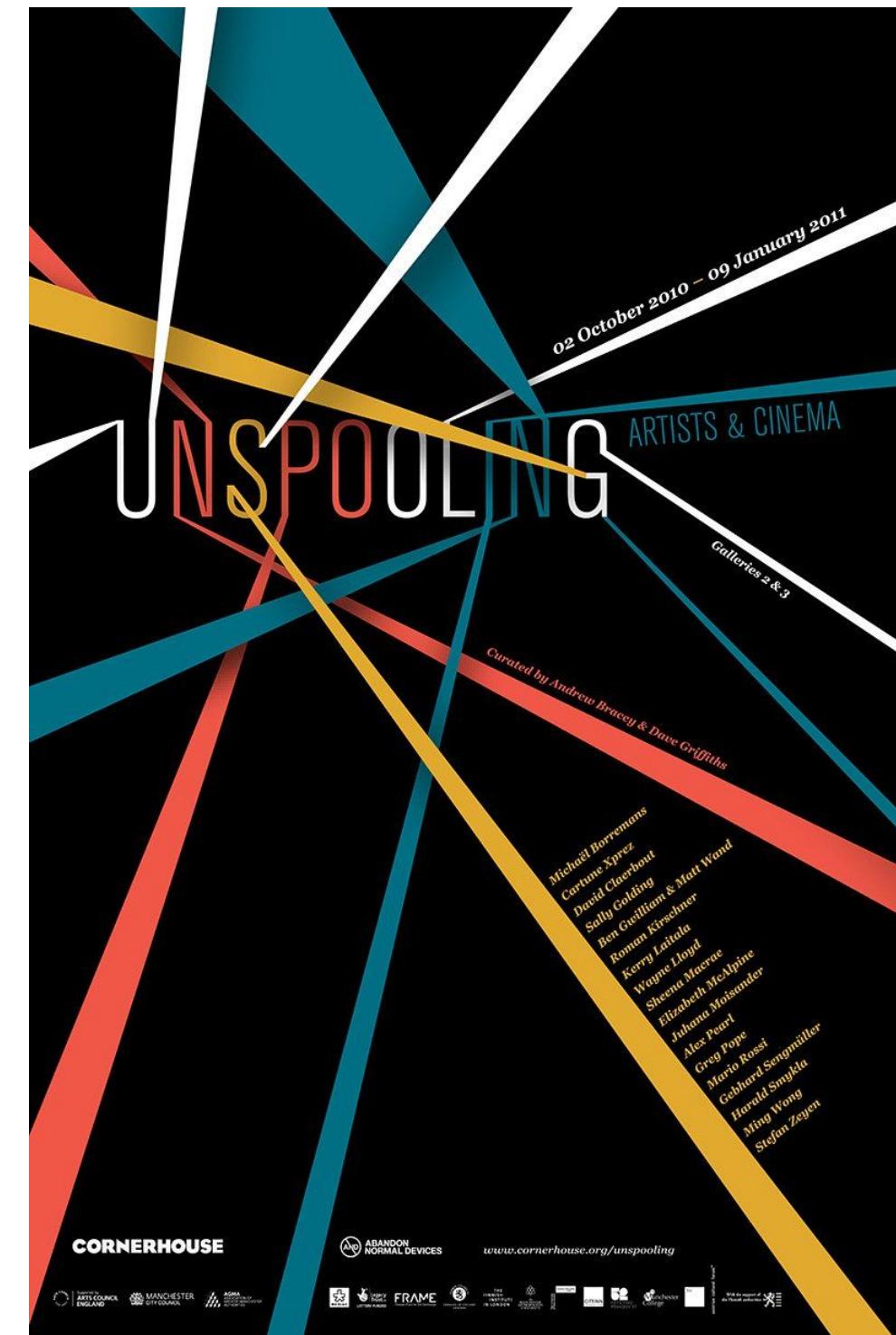
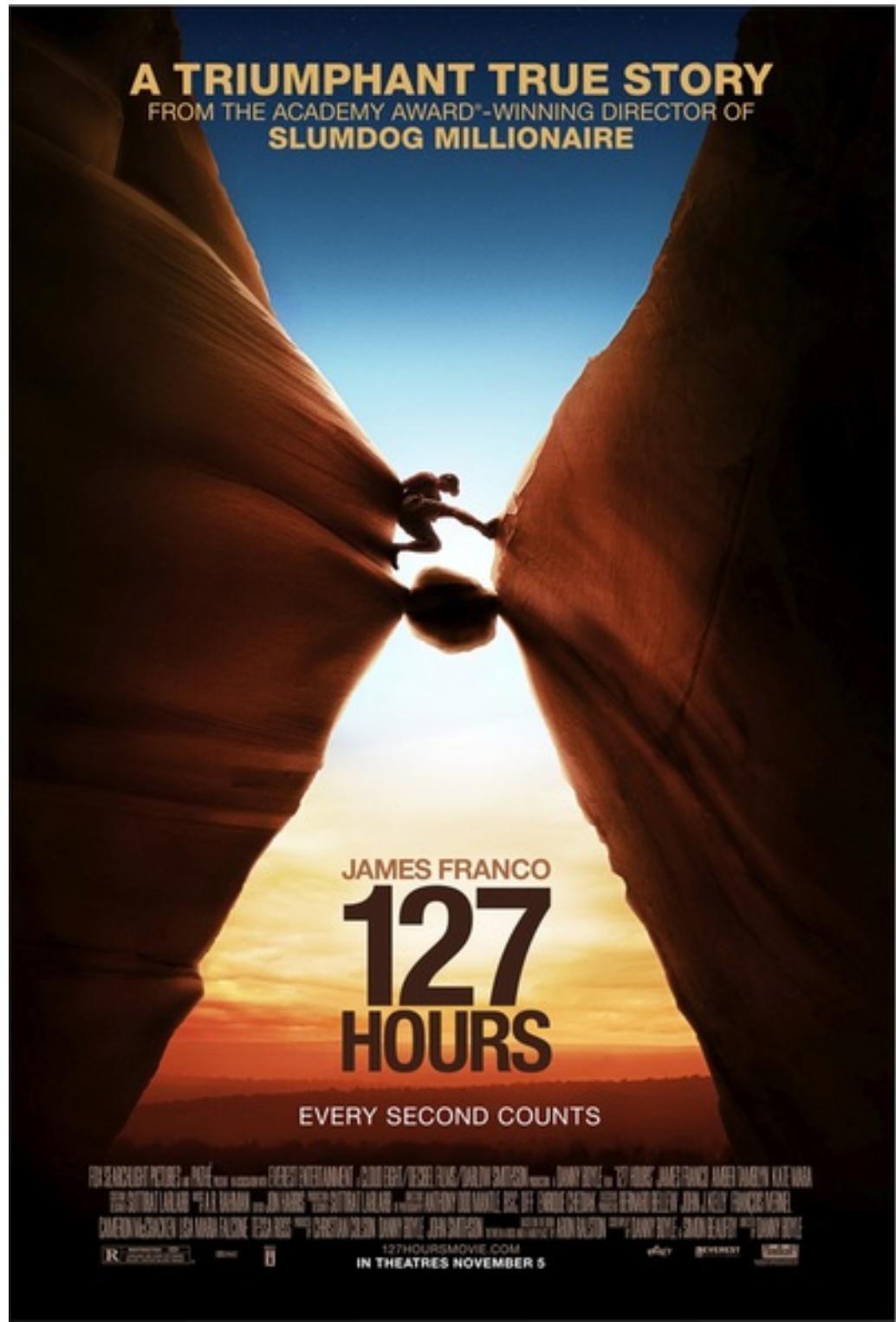
1. Focal Point
2. Contrast
3. Balance
4. Movement
5. Rhythm
6. Perspective
7. Unity

Focal Point⁸

Definition: Focal point, or the area of visual interest, is where the design directs the attention of the viewer first.



⁸ Images sources: [this slide](#), next slide: [left](#), [right](#)



Contrast⁹

Definition: Contrast, is the juxtaposition of design elements that strikingly differ from each other to guide user attention and action.



⁹ Image sources: [this slide](#), next slide: [left](#), [right](#)



Balance¹⁰

Definition: The organization of design elements on a canvas to provide a sense of visual balance or imbalance.

Pro Tip: Balance can be achieved through *symmetry* or *asymmetry*.

¹⁰ [Image source](#)



Movement¹¹

Definition: The organization of design elements in a way that suggests a particular flow on the canvas to direct the user's attention.



¹¹ [Image source](#)

Rhythm¹²

Definition: Patterned use of design elements in a way that communicates movement or order.

¹² [Image source](#)

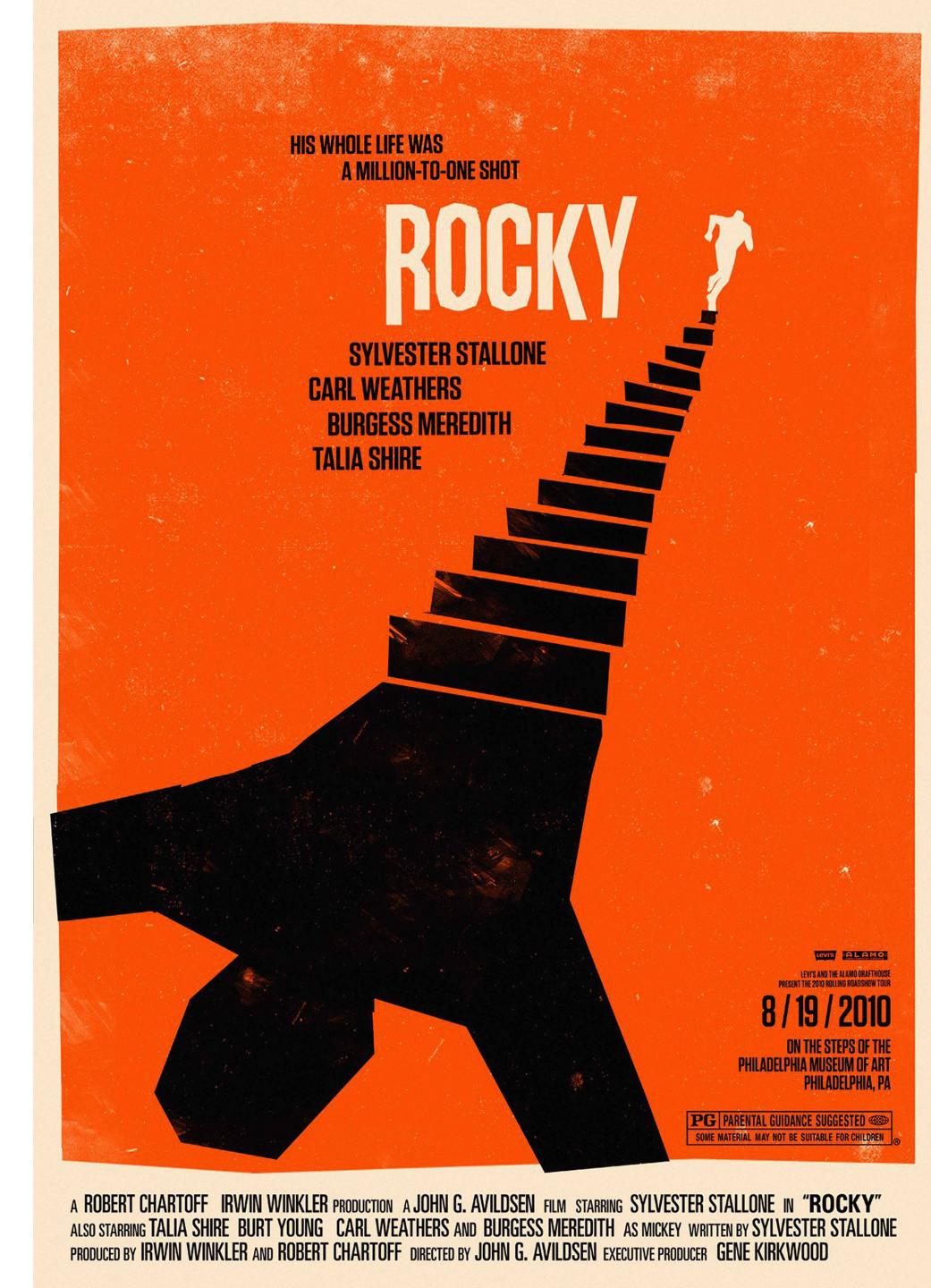


Perspective¹³

Definition: Creating a sense of horizon and movement along the depth axis of canvas.

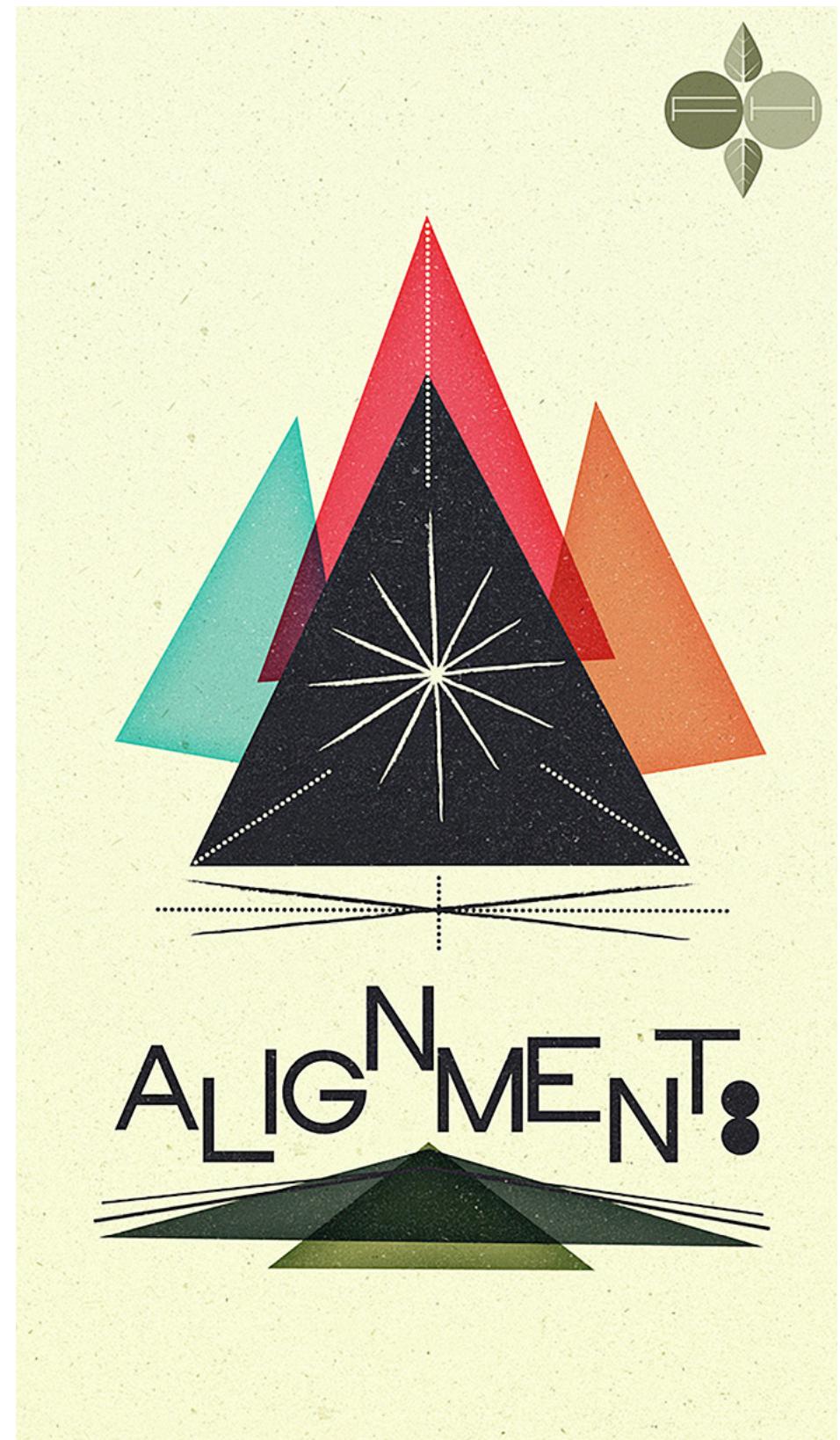


¹³ Image sources: [this slide](#), next slide: [left](#), [right](#)



Unity¹⁴

Definition: Unity reflects the holistic consistency in the use of design elements.



¹⁴ Image sources: [this slide](#), next slide: [left](#), [right](#)



This all sounds good. But how do we actually use these?

Some Strategies

- Create *cheat sheets*, and *checklists*
- Analyze existing designs using these tools to build visual analysis skills
- *Practice* designing using the principles
 - *Pro Tip:* Your canvas should have no elements that do not follow an overall principle

The Elements of Design

(the tools to make art)

Line		Horizontal, vertical, diagonal, straight, curved, dotted, broken thick, thin.
Shape		2D (two dimensional)/ flat Geometric (square, circle, oval, triangle) Organic (all other shapes)
Form		3D (three dimensional), Geometric (cube, sphere, cone), Organic (all other forms such as: people, animals, tables, chairs, etc).
Colour		Refers to the wavelengths of light. Refers to hue (name), value (lightness/darkness), intensity (saturation, or amount of pigment), and temperature (warm and cool). Relates to tint, tone and shade.
Value		The lightness or darkness of an image (or part of an image).
Texture		The feel, appearance, thickness, or stickiness of a surface (for example: smooth, rough, silky, furry).
Space		The area around, within, or between images or parts of an image (relates to perspective). Positive and negative space.

The Principles of Design

(how to use the tools to make art)

Pattern		A regular arrangement of alternated or repeated elements (shapes, lines, colours) or motifs.
Contrast		The juxtaposition of different elements of design (for example: rough and smooth textures, dark and light values) in order to highlight their differences and/or create visual interest, or a focal point.
Emphasis		Special attention/importance given to one part of a work of art (for example, a dark shape in a light composition). Emphasis can be achieved through placement, contrast, colour, size, repetition... Relates to focal point.
Balance		A feeling of balance results when the elements of design are arranged symmetrically or asymmetrically to create the impression of equality in weight or importance.
Scale		The relationship between objects with respect to size, number, and so on, including the relation between parts of a whole.
Harmony		The arrangement of elements to give the viewer the feeling that all the parts of the piece form a coherent whole.
Rhythm/Movement		The use of recurring elements to direct the eye through the image; the way the elements are organized to lead the eye to the focal area. The eye can be directed, for example, along edges and by means of shape and colour.
Unity		All parts of an image work together to be seen as a whole.
Variety		Using different elements in an image to create visual interest.

ICA B: Visual Design

Analyze an existing page using the design elements and principles

- What elements can you see in use?
- What principles can you see in use?
- What problems do you see that can be addressed using design principles?

The screenshot shows the homepage of the Wisconsin State Journal. At the top, there's a navigation bar with links for News, Sports, Food & Fun, Opinion, Obituaries, Politics, and Buy & Sell. To the right are buttons for Log In and Become a Member. Below the navigation is a weather widget showing 65° Fair. The main header features the "WISCONSIN STATE JOURNAL" logo with a capitol building icon. Below the header, there are several news snippets and advertisements. A prominent advertisement for Polo Ralph Lauren is centered, featuring a couple in a tropical setting. Below the ad, a news headline reads "JUST IN US outlines sweeping plan to provide free COVID-19 vaccines. Get the highlights." Another headline below it says "Breaking News Big Ten announces football returning Oct. 23-24". On the left, there's a local government section with an article about Governor Evers' mask order. On the right, there's a "Trending now" section with two items: one about UW-Madison and another about a sexual assault case. A sidebar on the right encourages users to support local businesses.

Key Components for UX Design

Key Components for UX Design

We will focus on *type*, *color*, and *images*.

Type¹⁵

Definition: Printed letters and characters of language.



¹⁵ [Image source](#)

Associated Concepts

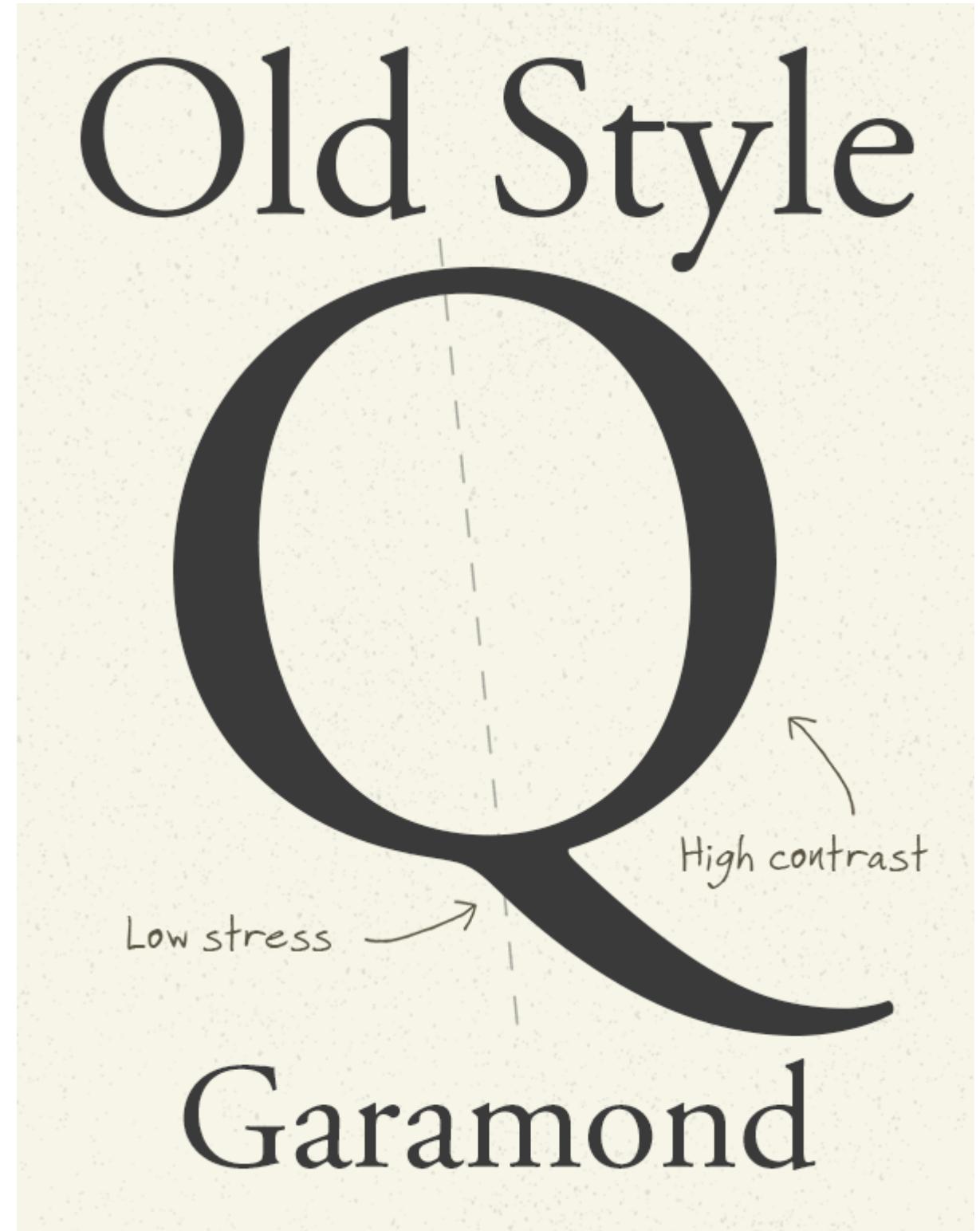
- A **font** is the style in which type is created.
- A **typeface** is a font family that includes fonts of different variations that follow the same style.
- A **glyph** is a particular character.

Categories of Typefaces

1. Old style
2. Modern
3. Slab serif
4. Sans serif
5. Script
6. Decorative

Old-style fonts

Definition: Old-style fonts have "serifs" at the tips of a glyph that taper closer to the tip.



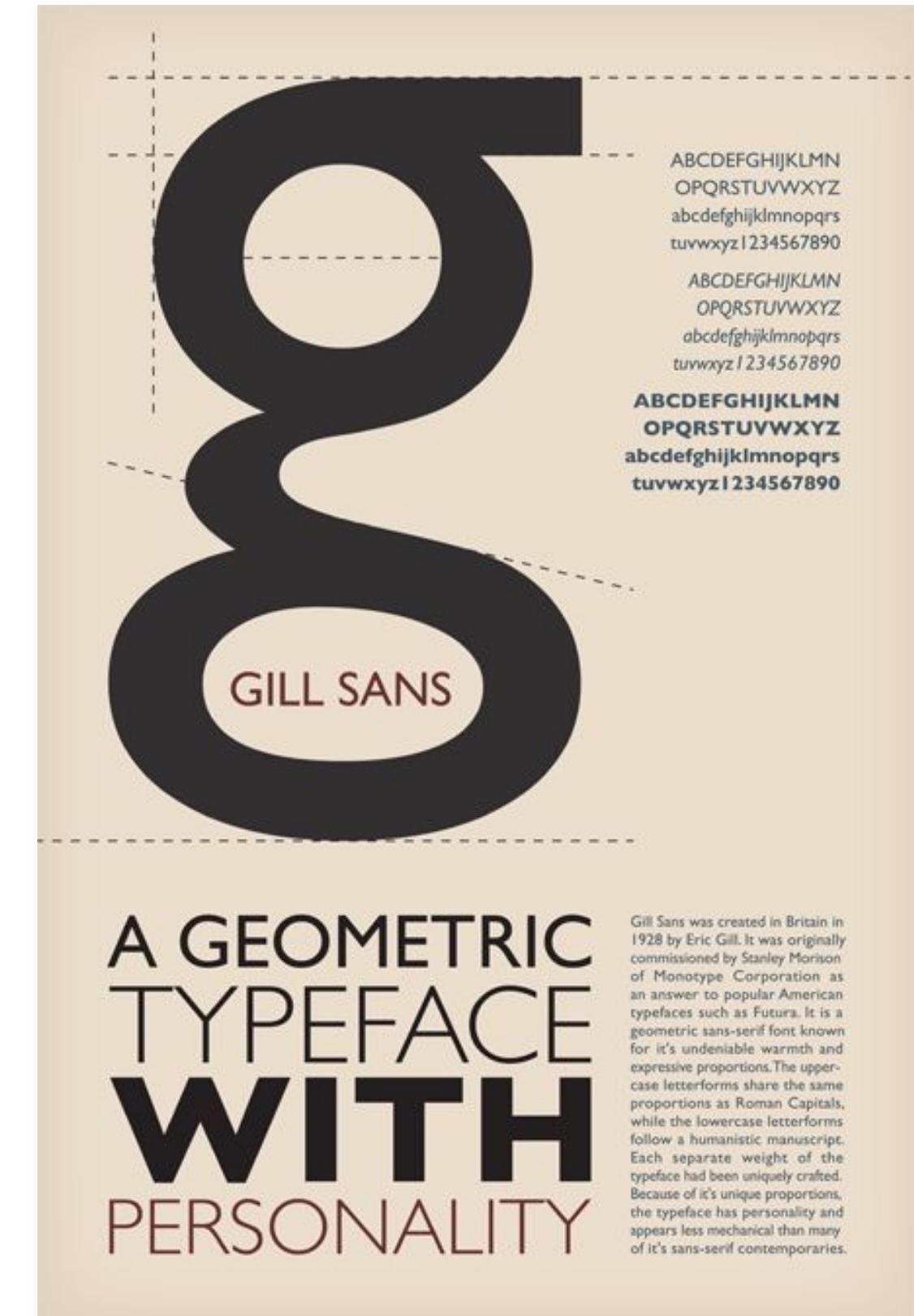
Modern & slab-serif fonts

Definition: Modern and slab-serif fonts have very thin or very thick serifs.



Sans-serif fonts

Definition: Sans-serif fonts lack the serif at the tips of the glyphs, and their strokes follow uniform weight.



Script fonts

Definition: Script fonts simulate cursive writing where glyphs connect with each other at the downstroke.



Decorative fonts

Definition: Decorative fonts are designed specifically to convey a particular context or elicit a particular feeling, e.g., "gothic."



orem ipsum dolor
sit amet, consecetur
adipiscing elit,
sed do eiusmod tempor
incididunt ut labore et dolore
magna aliqua. Ut enim ad
minim veniam, quis nostrud
exercitation ullamco labo-
ris nisi ut aliquip ex ea
commodo consequat. Duis
aute irure dolor in reprehend-
erit in voluptate velit esse
cillum dolore eu fugiat
nulla pariatur. Excepteur
sint occaecat cupidatat
non proident, sunt in culpa
qui officia deserunt mollit
anim id est laborum.

Galdino Otten

Font parameters

- Style variations: bold, italic, oblique
- Caps: all caps, small caps
- Weight: extra light, light, medium, bold

Muller™ Styles Overview
Weights

Hairline & Hairline Italic
Antimon

Thin & Thin Italic
Beryllium

UltraLight & UltraLight Italic
Californium

Light & Light Italic
Sauerstoff

Regular & Italic
Dysprosium

Medium & Medium Italic
Unununium

Bold & Bold Italic
Quecksilber

ExtraBold & ExtraBold Italic
Kohlenstoff

Black & Black Italic

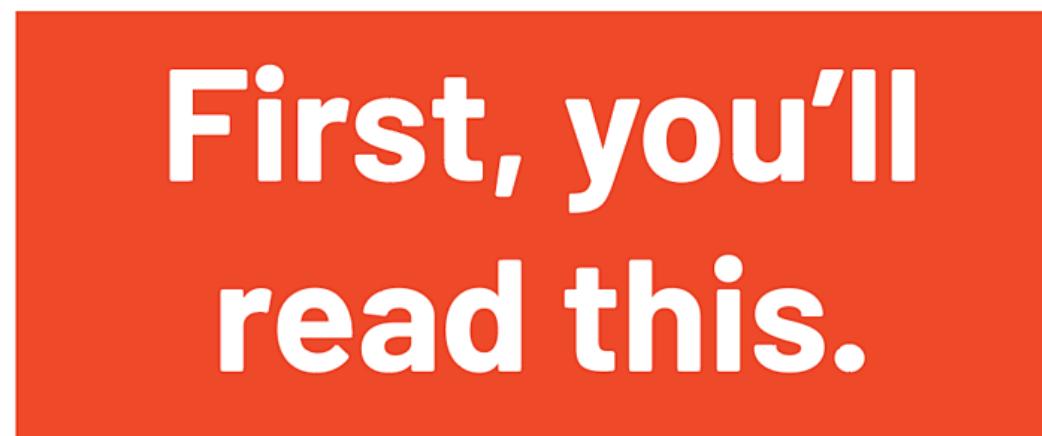
Wolfram

Heavy & Heavy Italic

Seaborgium

Pro Tip: Type alone can be used to achieve design principles, such as *hierarchy* and *movement*.

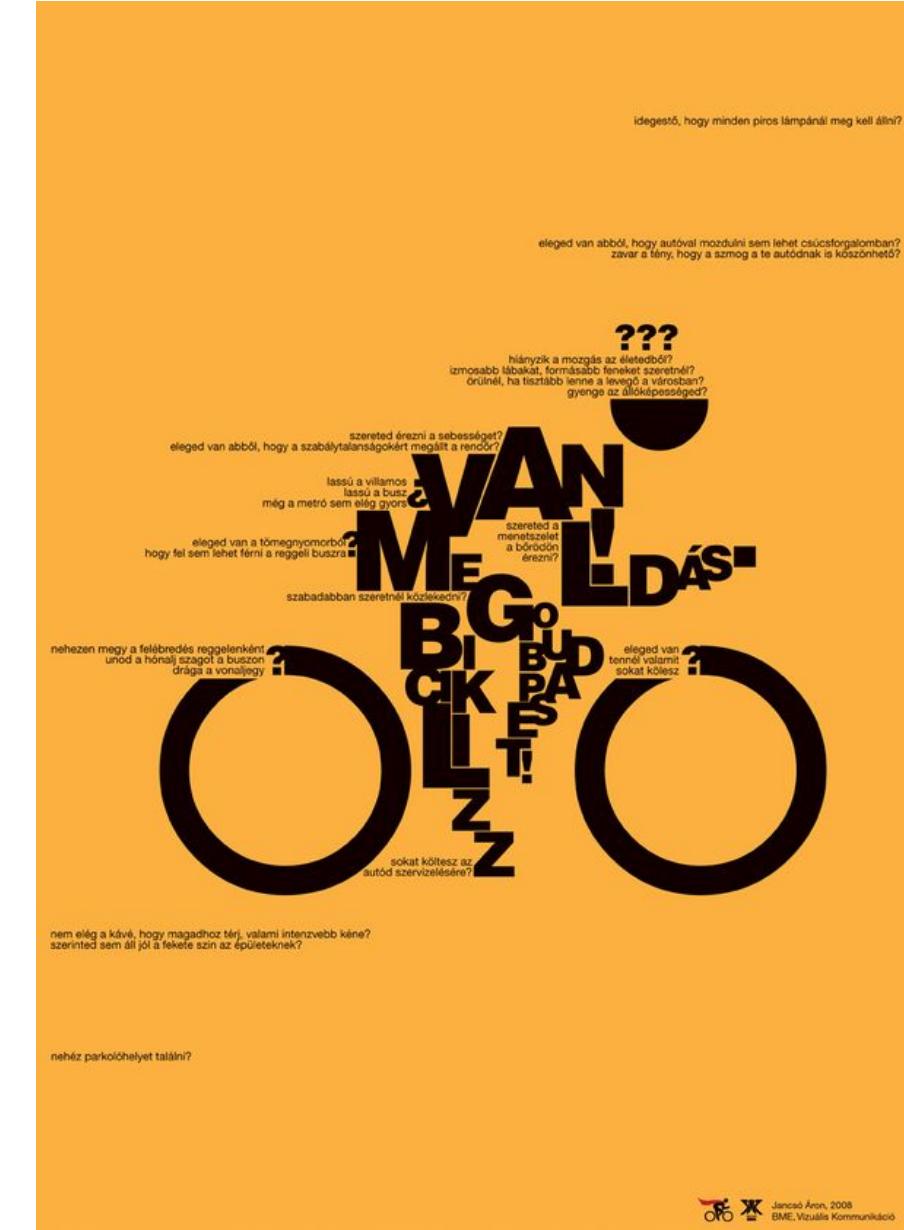
You'll probably see this last.



Then, you'll read this.

And then this.

G



Pro tip: For good typography, become familiar with *leading*, *tracking*, *kerning*, *widows*, *orphans*, *rags*, *rivers*.



kerning
tracking
leading
point size
typeface
justification
line width

what is typography?

Color

Definition: Human visual perception of light reflecting from an object.

- Creates emphasis
- Organizes content
- Evokes emotion





Marketing Proposal

Digital Content Team

Client: UNIVERSITY OF WATERLOO

Presented by: GEORGE ZANDER

“Don’t settle: Don’t finish crappy books. If you don’t like the menu, leave the restaurant. If you’re not on the right path, get off it.”

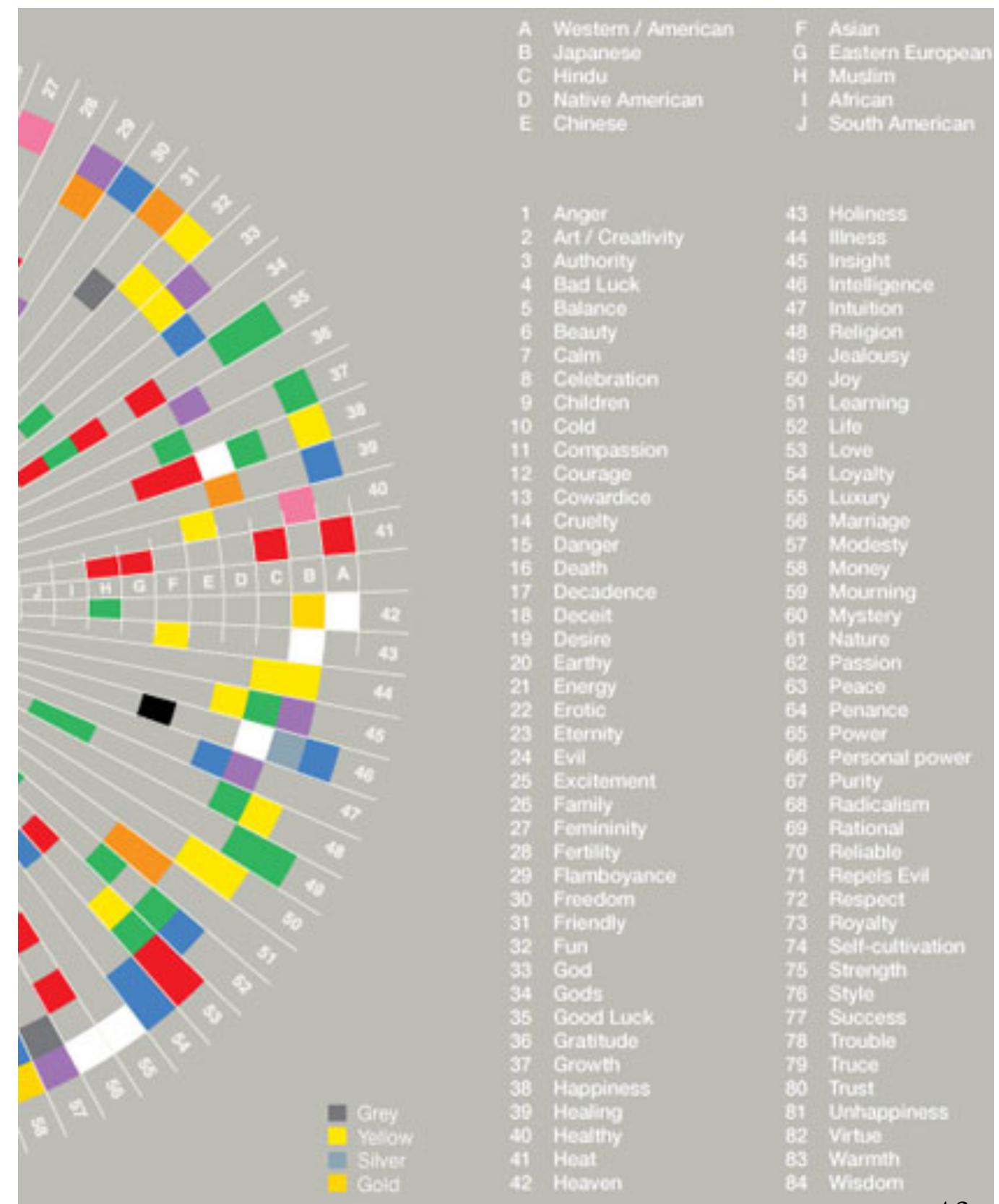
Our Objectives

- To develop creative, high-impact executions that reach large groups of consumers and maximize viewership.
- To deliver cost effective business to consumer communications that builds a strong consumer relationship.

Our Overview

Your marketing plan should start with an executive summary. The summary gives a quick overview of the main points of the plan.

Although the executive summary appears at the beginning of the plan, you should write it last. Writing the summary is a good opportunity to check that your plan makes sense and that you haven’t missed any important points.

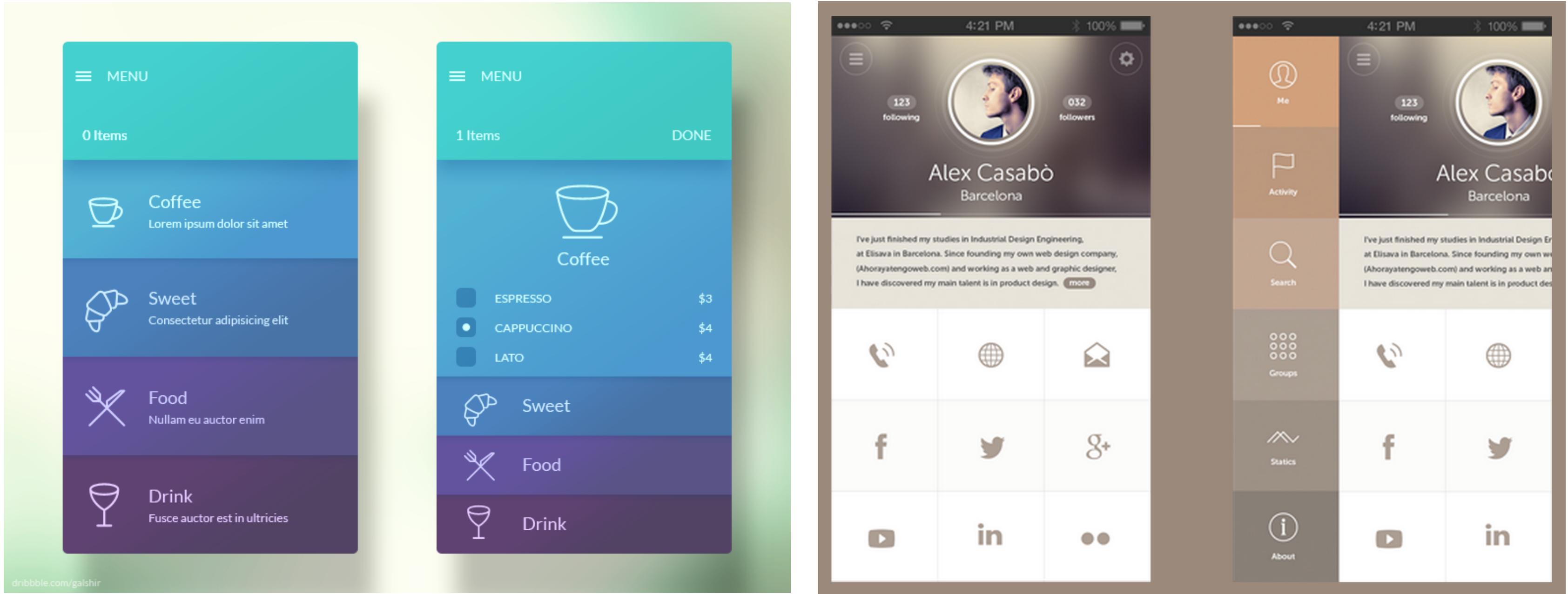


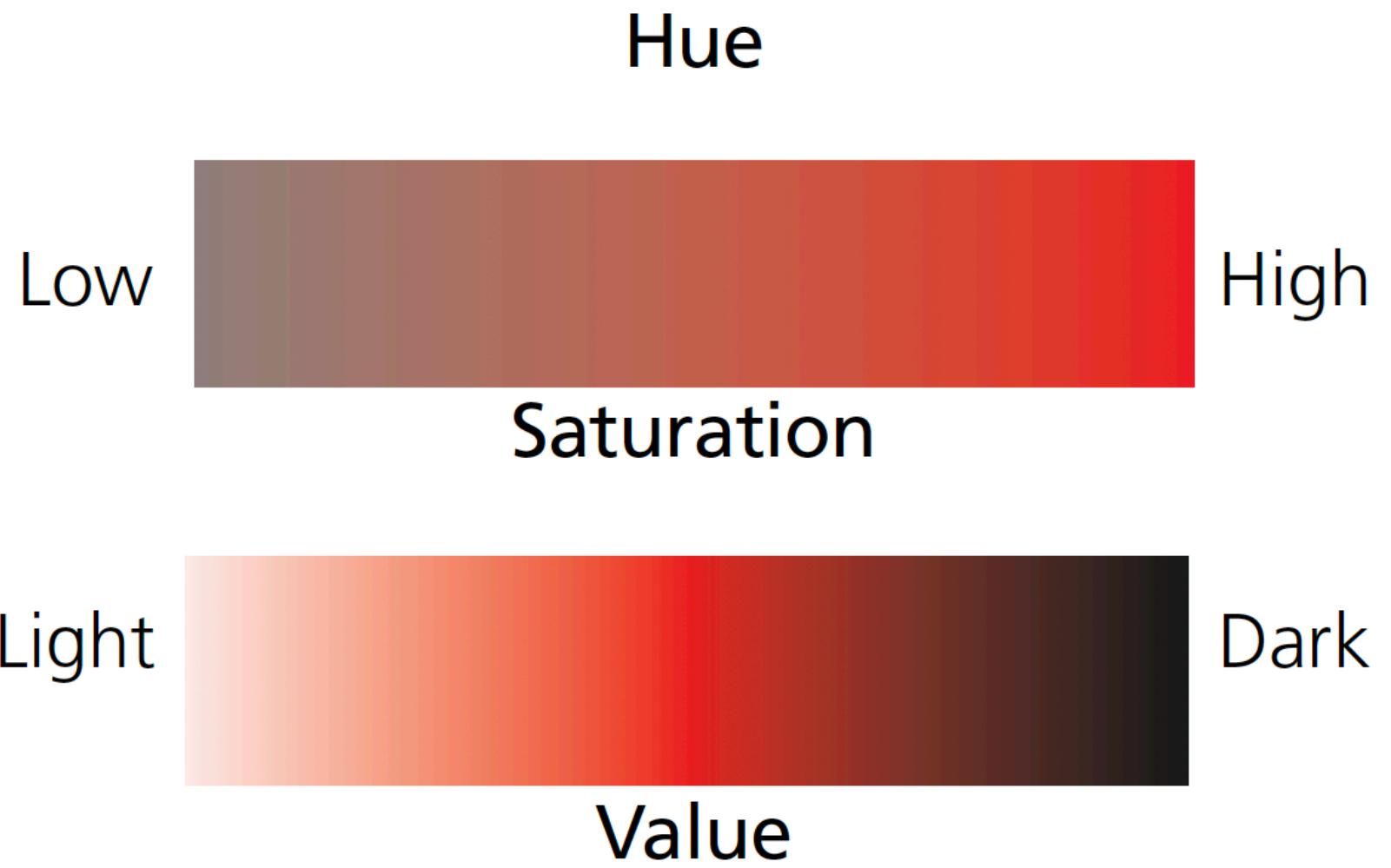
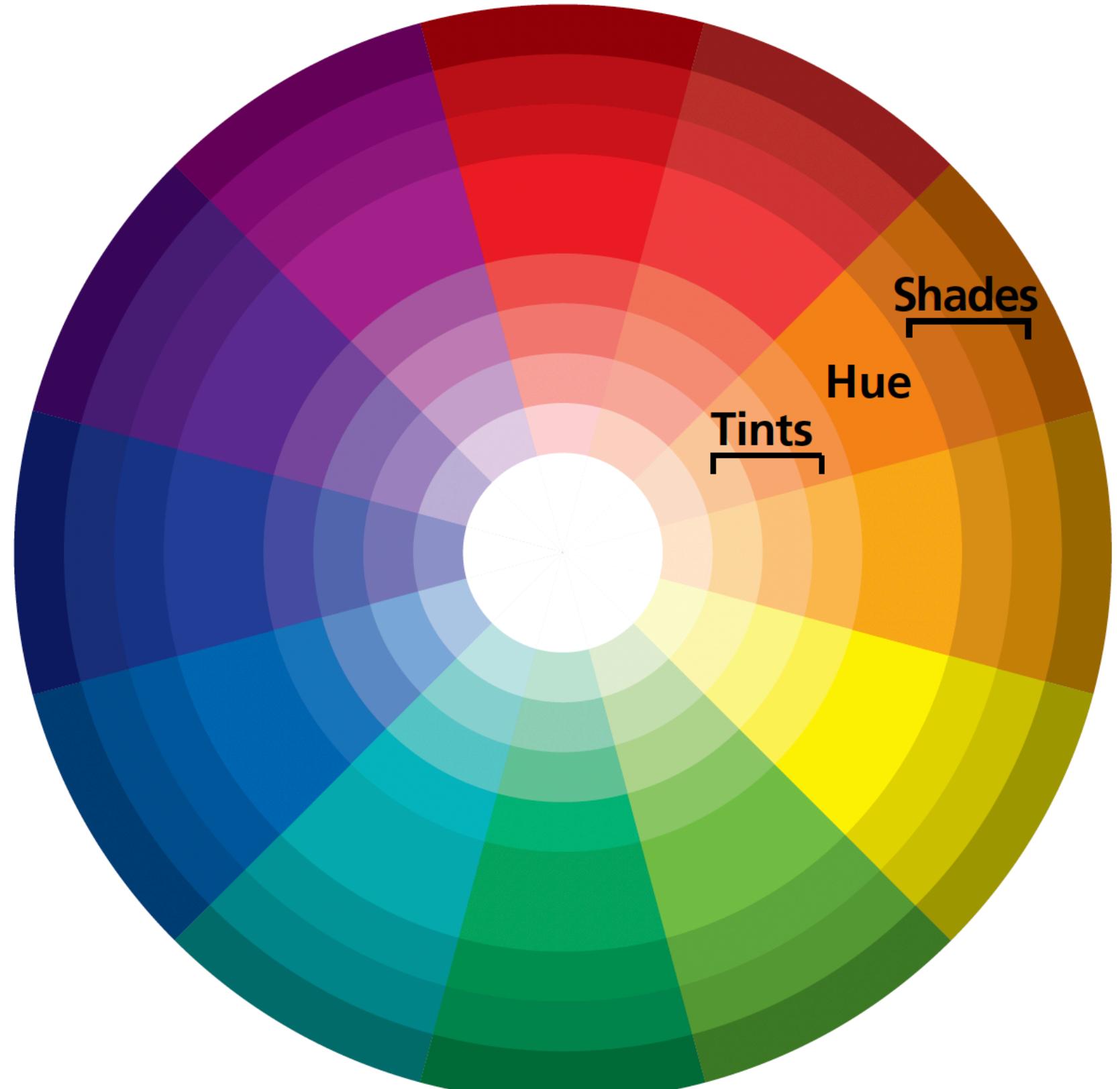
The Color Wheel

- Primary, secondary, tertiary colors
- Tints, shades, tone
- Complementary colors
- Warm, cool colors

The basic colors







Color Palettes

1. Analogous
2. Complementary
3. Split Complementary
4. Triadic
5. Monochromatic
6. Achromatic

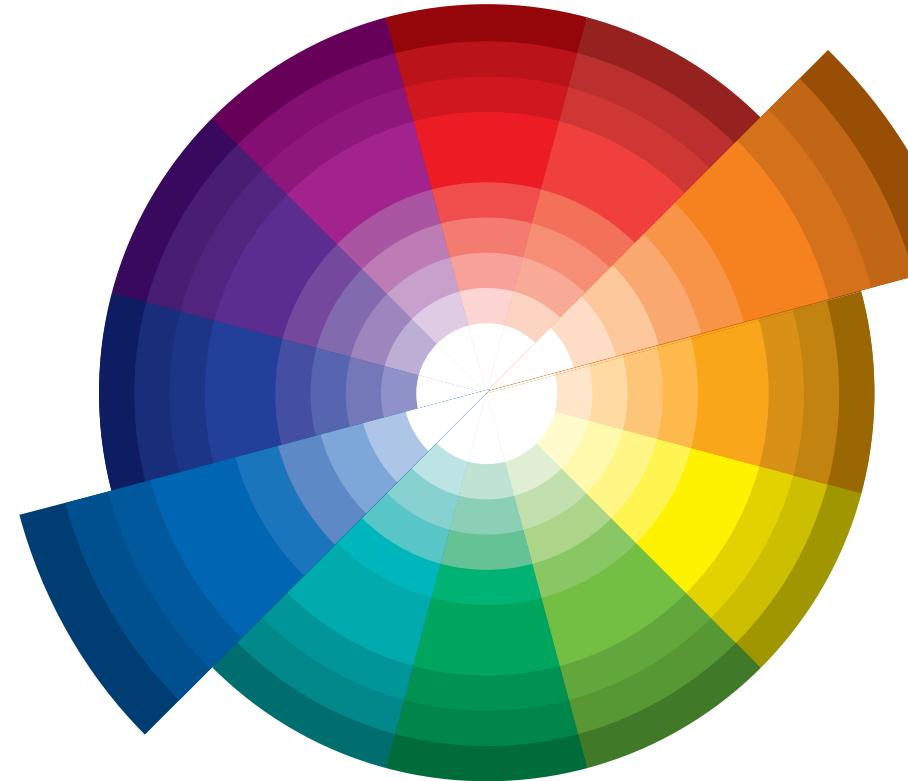
UNDERSTANDING COLOR THEORY



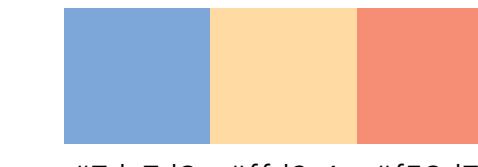
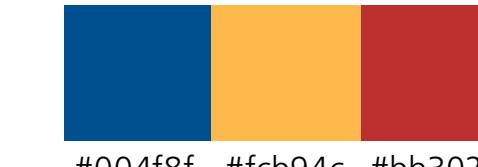
ANALOGOUS



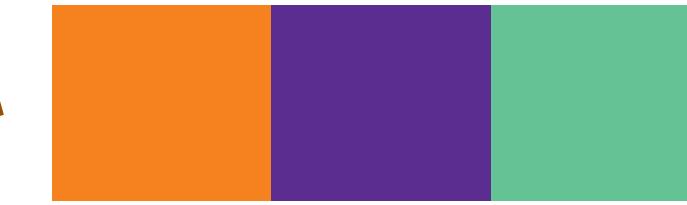
COMPLEMENTARY



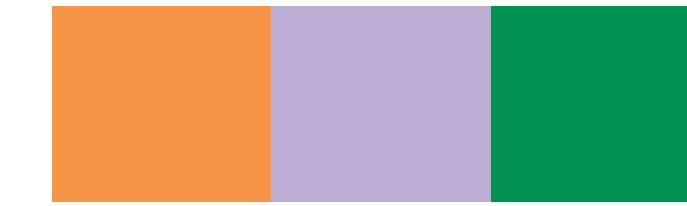
SPLIT-COMPLEMENTARY



TRIADIC



#f5821f #5c2d91 #65c194



#f79447 #bbaed5 #009252

MONOCHROMATIC

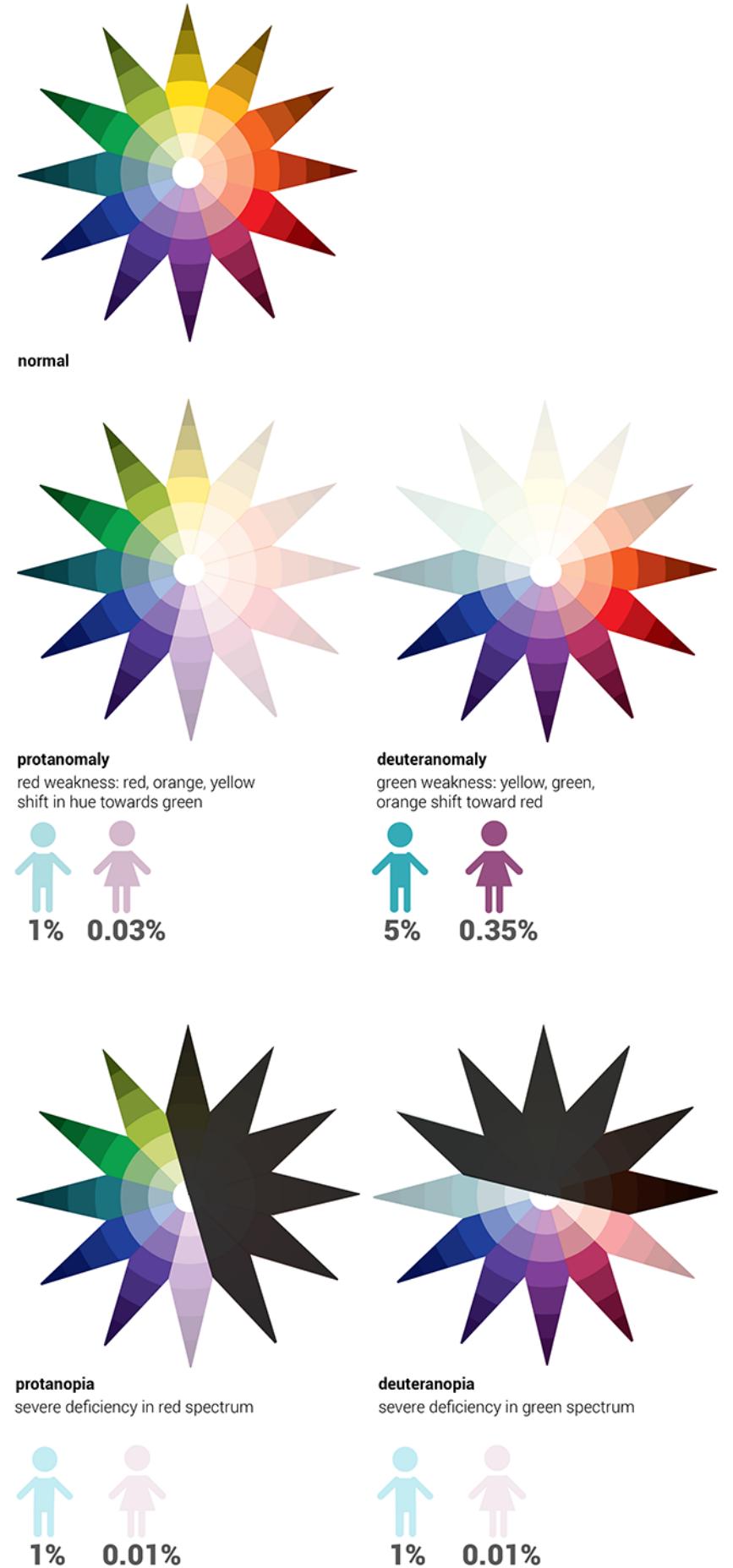


ACHROMATIC



Color Vision Deficiencies

- Affects 8% of males, 0.5% of females
- Consider alternatives
 - *Intensity* vs. *hue* for emphasis
 - *Size* of colored elements
 - *Proximity* of similar colors
- Use tools to check designs



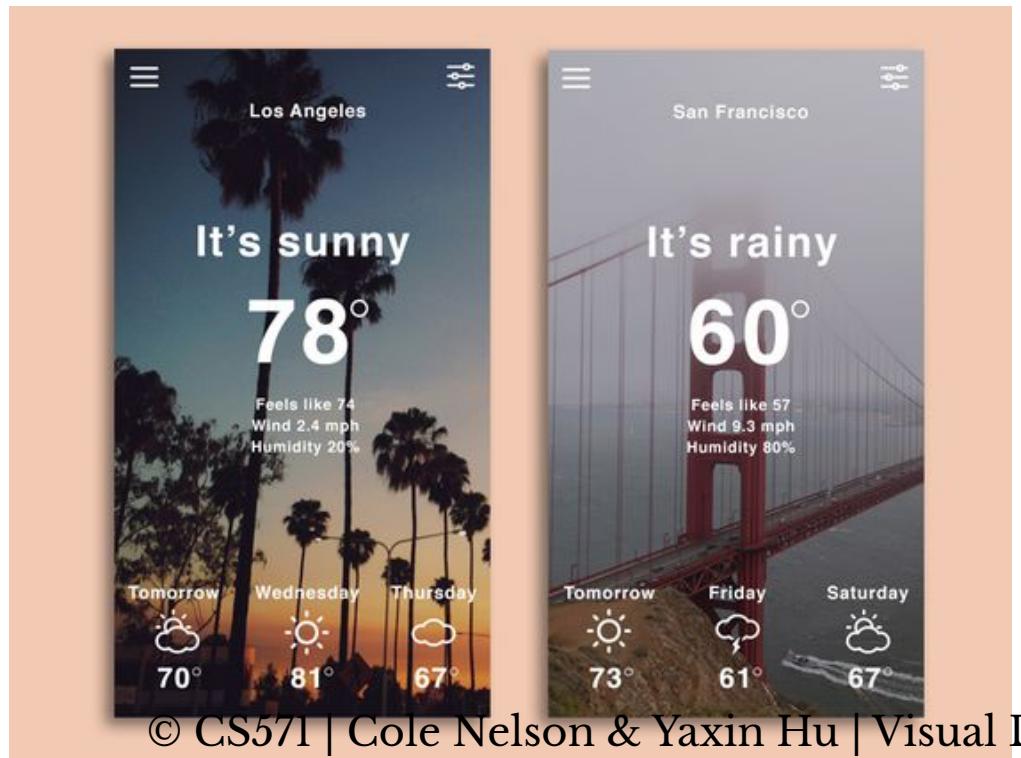
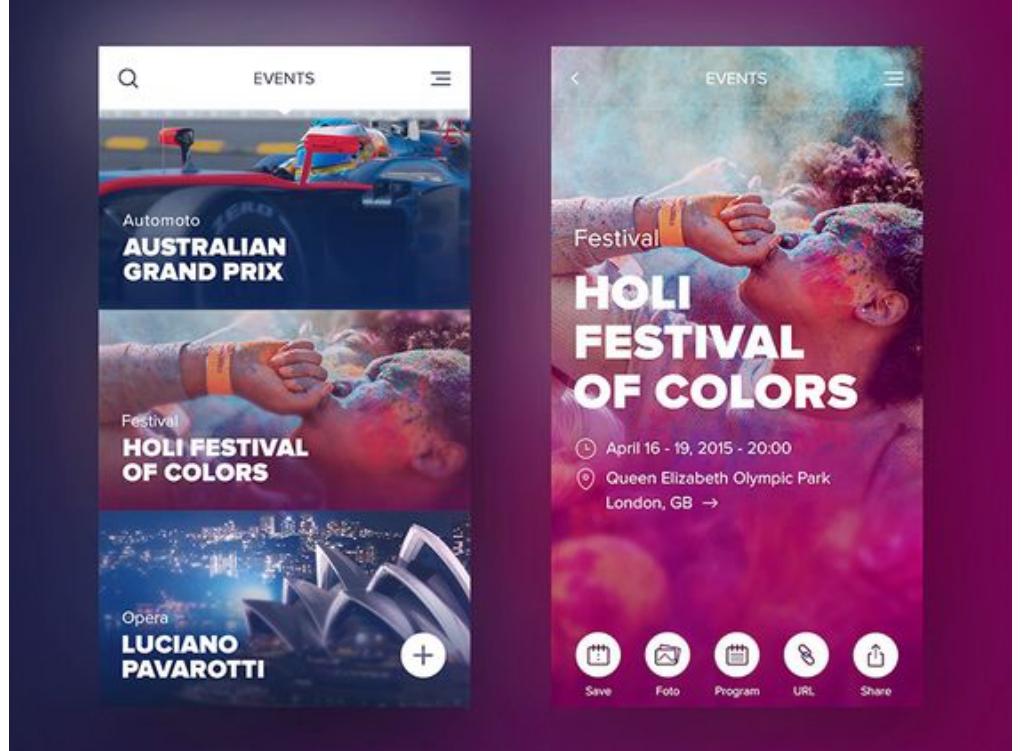
Images

Definition: Photographs, illustrations, three-dimensional art, silhouettes, icons, dingbats, infographics, and simpler shapes that convey rich information or context.

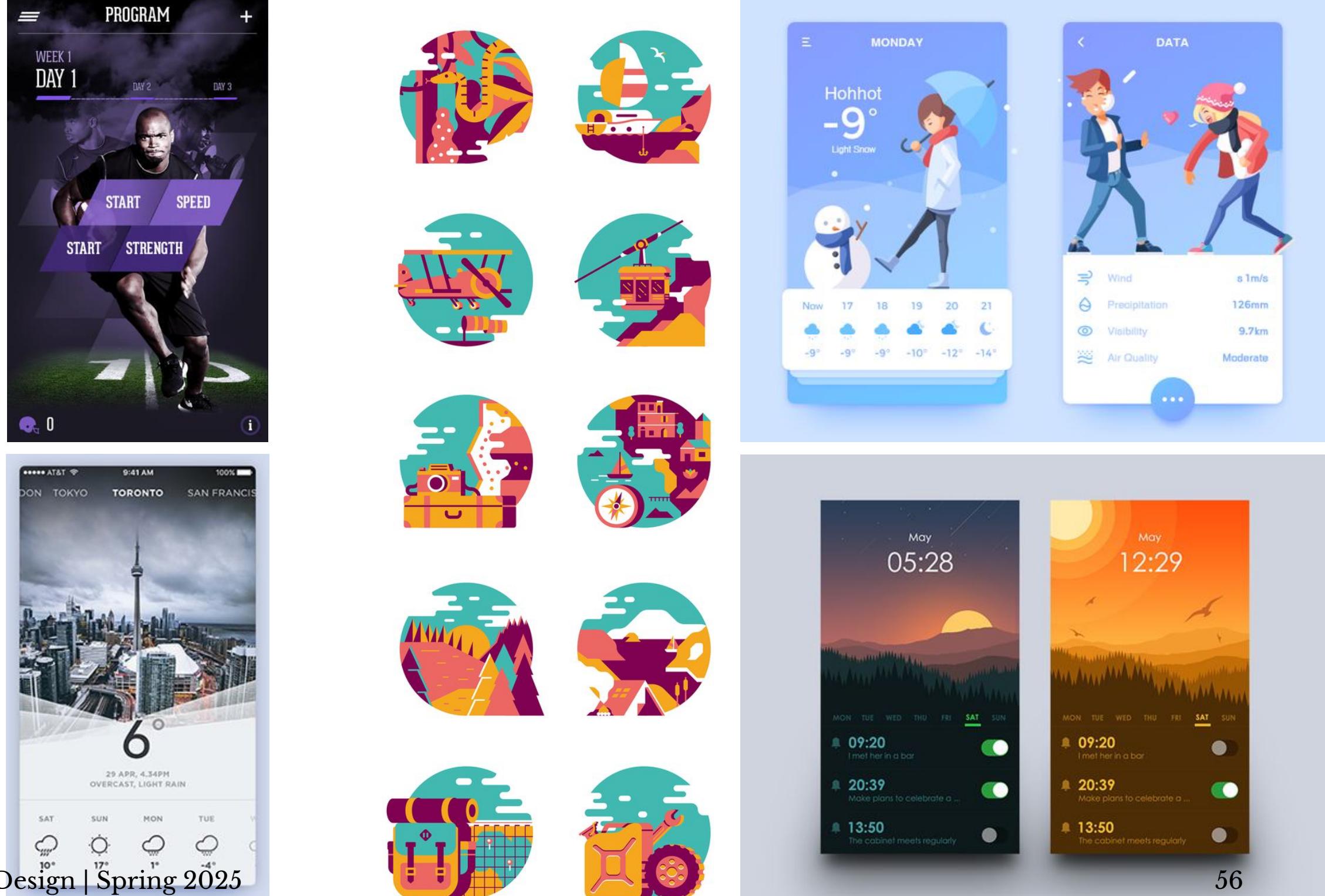
TABLE 5.1. Graphic types to use for varied goals.

Instructional or Communication Purpose	Consider These Graphic Types
Depict concrete objects	Photograph 3-D graphic Illustration Clip art (particularly in diagrams and as game elements)
Tell a story or provide a scenario	Sequence of photographs Sequence of illustrations Timeline
Persuade an audience	Sequence of photos or illustrations to tell a story Photographs that evoke emotions Visualization of statistics and data
Explain unfamiliar or complex concepts and theories	Visual metaphor Diagram showing connections
Demonstrate a procedure	Show the steps in a sequence of photos or illustrations Flow chart Series of screen captures for software simulation
Explain a process	Diagram the stages or operations of the process Icons or simple illustrations to represent each component
Point out something specific	Arrow or pointed shape Highlight Outline of a circle
Depict components of a system	Illustrated object with labels Diagram of the structure
Make comparisons	Bar graph Pictograph Line graph with multiple lines Table (when specific values are important)
Demonstrate trends in data	Line graph Scatter plot
Organization of information	Various chart types (hierarchical, radial, etc.) Concept map
Demonstrate motion without animation	Show object moving along a path Illustrations with motion lines Illustrations with arrows or dashed lines depicting movement
History or changes over time	Timeline (these don't have to be arrows) Sequence of photos or illustrations

RASTER GRAPHICS



VECTOR GRAPHICS





◀ More Realistic

Less Realistic ▶



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2 SUZHOU

23.08 DEC 31

w

live

coming soon on App Store

w

share

coming soon on App Store

w

wondr



ICA B: Visual Design

Analyze an existing page with an eye for color, type, and image.

- What can you see?
- What are their purposes (if any)?
- How could you improve the design?

ICA B: Visual Design

Create your own webpage for a product!

Questions?