

# Graphic Design

## Session 2

PMAP 8921: Data Visualization with R  
Andrew Young School of Policy Studies  
Summer 2025

# Plan for today

Truth, beauty, stories, design

Graphic design and CRAP

Contrast

Alignment

Repetition

Proximity

Image types

**Truth, beauty, stories,  
design**

# Why even care about design?

 Why care about design?

# Content + form

**Art is how we translate  
core, essential content  
to different forms  
for specific audiences.**

# Stories + content + form

**Stories are an art form for  
translating core, essential content  
to different forms  
for specific audiences.**

# Stories

“A need to tell and hear stories is essential to the species *Homo sapiens*—second in necessity apparently after nourishment and before love and shelter.”

—Reynolds Price, from *A Palpable God*

# Beauty, stories, and truth

Truth comes from aesthetic combination of content and form.

Raw facts must be communicated through some form.

Beauty shapes that form.

**There are aesthetic principles we can follow to create beauty—and truth.**

# Graphic design and CRAP

# Principles of design

There are thousands of books and centuries of debate and theory about what makes good design.

For this class, the easiest and most memorable distillation of these principles is CRAP.

# CRAP

Use these principles as a checklist when creating and critiquing designed objects:

**Contrast**

**Repetition**

**Alignment**

**Proximity**



## Robin Williams's The Non-Designers Design Book

Buy this book and your life will change forever.

# Contrast

**If two items are not exactly  
the same, make them different.  
Really different.**

**Don't be a wimp.**

# Typographic contrast: Family

Use contrasting type families

Serif + Sans serif

Script + Serif

Slab + Sans serif

etc.

Serif

Sphinx of black quartz, judge my vow

Sans serif

Sphinx of black quartz, judge my vow

Slab serif

Sphinx of black quartz, judge my vow

Script

Sphinx of black quartz, judge my vow

Monospaced

Sphinx of black quartz, judge my vow

# Typographic contrast: Family

## Add contrast in family

Here's a heading

Lorem ipsum dolor sit amet,  
consectetur adipisicing elit, sed  
do eiusmod tempor incididunt ut  
labore et dolore magna aliqua.

**Here's a heading**

Lorem ipsum dolor sit amet,  
consectetur adipisicing elit, sed  
do eiusmod tempor incididunt ut  
labore et dolore magna aliqua.

# Typographic contrast: Weight

Use contrasting weights in same type family

**Bold + Regular      Regular + Extra light      Black + Light      etc.**

Extra light	Sphinx of black quartz, judge my vow
Light	Sphinx of black quartz, judge my vow
Regular	Sphinx of black quartz, judge my vow
Semi bold	<b>Sphinx of black quartz, judge my vow</b>
Bold	<b>Sphinx of black quartz, judge my vow</b>
Black	<b>Sphinx of black quartz, judge my vow</b>

# Typographic contrast: Weight

Add contrast in weight

Here's a heading

Lorem ipsum dolor sit amet,  
consectetur adipisicing elit, sed  
do eiusmod tempor incididunt ut  
labore et dolore magna aliqua.

**Here's a heading**

Lorem ipsum dolor sit amet,  
consectetur adipisicing elit, sed  
do eiusmod tempor incididunt ut  
labore et dolore magna aliqua.

# Size contrast

Use contrasting sizes

Huge

Big

Regular

Small

Tiny

# Color contrast

## Color theory

[color.adobe.com](https://color.adobe.com)



Triad

Triad



Monochromatic

Monochromatic



Complementary

Complementary



Split complementary

Split complementary

# Color contrast



## Extracted colors

Colors extracted from an image at [color.adobe.com](https://color.adobe.com)

# Usability and accessibility

## Perceptually uniform colors

Values close to each other use similar colors,  
and values far from each other use different colors

## Colorblind-safe colors

8% of men & 0.05% of women have some form of color  
blindness

Colors should be distinguishable by people  
with common forms of color blindness

# Perceptually uniform colors

## Typical palettes

Traditional palettes vs. viridis

## Deuteranopic palettes

Traditional palettes vs. viridis as seen with deuteranopia

# Perceptually uniform colors

##

Downloading: 16 kB

Downloading: 16 kB

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Downloading: 47 kB

Downloading: 47 kB

Downloading: 65 kB

Downloading: 65 kB

Downloading: 84 kB

Downloading: 84 kB

Downloading: 100 kB

Downloading: 100 kB

# Repetition

**Repeat some aspect  
of the design throughout  
the entire piece.**

# Things to repeat

**Colors**

**Fonts**

Families, weights, sizes

**Graphical elements**

**Alignments**



# Alignment

**Every item should have a visual connection with something else on the page.**

# Alignment



## Bad alignment

Bad alignment



## Good alignment

Good alignment—everything is connected to something

# Alignment + repetition

**Share lines and repeat alignments where possible.**



## Bad alignment

4 horizontal alignments; 3 vertical alignments



## Good alignment

1 shared horizontal alignment; 2 vertical alignments

# Alignment + contrast

**Center + left is super common, but has weak contrast**

**Mixing left and right alignment provides stronger contrast**

## Chapter 1

Here's a title

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

## Chapter 1

Here's a title

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

# Proximity

**Group related items together.**

# Proximity

Use white space, color, location, contrast, repetition, alignment, etc. to make visually distinct groupings



## Bad proximity

Bad proximity; no logical groupings



## Good proximity

Good proximity; information visually grouped

# CRAP review

**Contrast**

 Contrast

**Repetition**

 Repetition

**Alignment**

 Alignment

**Proximity**

 Proximity

# Image types

# Image types

## Bitmaps

 Example bitmap image

**JPEG: Photographs**

**PNG/GIF: Images  
with limited colors**

## Vectors

 Example vector image

**PDF (or EPS):  
Anything vector based**

**SVG: Vectors online**


**PNG • 130 KB**

 **Standard PNG**

**PNG • 130 KB • Zoomed**

 Standard PNG zoomed

**JPG • 75% quality • 161 KB**

 **75% JPG**

**JPG • 75% quality • 161 KB • Zoomed**

 75% JPG zoomed

**JPG • 10% quality • 88 KB**

 10% JPG zoomed

**JPG • 10% quality • 88 KB • Zoomed**

 10% JPG zoomed



 xkcd compression comic

# In defense of the JPG



**Benjamin**  
Benjamin, December 2017

**RAW**

**No compression • 27.1 MB**



**JPG**

**75% quality • 3.2 MB**

**JPG**

**10% quality • 654 KB**

**PNG**

**32.9 MB** 

# Use the right file type

 Atlanta

Photographs

Web

JPG

Print

JPG

 Health wealth

Graphs & logos

Web

PNG or  
SVG

Print

PDF

# What programs do I use?

## Photos/bitmaps

 **Adobe Photoshop**  
Adobe Photoshop

 **GIMP**  
GIMP

 **Canva**  
Canva

## Vectors

 **Adobe Illustrator**  
Adobe Illustrator

 **Inkscape**  
Inkscape

 **Gravit  
Designe**  
Gravit Designer

## Documents

 **Adobe InDesign**  
Adobe InDesign

 **Scribus**  
Scribus

 **Canva**  
Canva