

**(quiz)**

**(laptops)**

# **Storytelling (and some other stuff)**

**SI 649 W20: Information visualization**

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& Computer Science and Engineering  
University of Michigan

Portions of slides adapted from Eytan Adar

# This week

## Lecture

Sidebar: Domain / abstract tasks ("Nested Model")  
Storytelling

## Lab

First Design Lab

# Prep for lab

Make sure you understand **domain tasks** versus  
**abstract tasks** (more today)

**Please be on time!**

All the design labs are timed to fit lab time **exactly**.  
Will feel rushed at first; you'll get the hang of it.

**Sit with your project groups**

# Prep for lab

Can pre-read instructions if you want (optional):

[https://docs.google.com/document/d/1d8HwYAOT3SH  
N87LB1\\_TvWGDpCmsojip8pQ8REVJxDE/  
edit?usp=sharing](https://docs.google.com/document/d/1d8HwYAOT3SHN87LB1_TvWGDpCmsojip8pQ8REVJxDE/edit?usp=sharing)

# **Group project initial data exploration**

It **must**:

- describe structure of your data
- convince us you have truly explored your data

Ideally, it **should**:

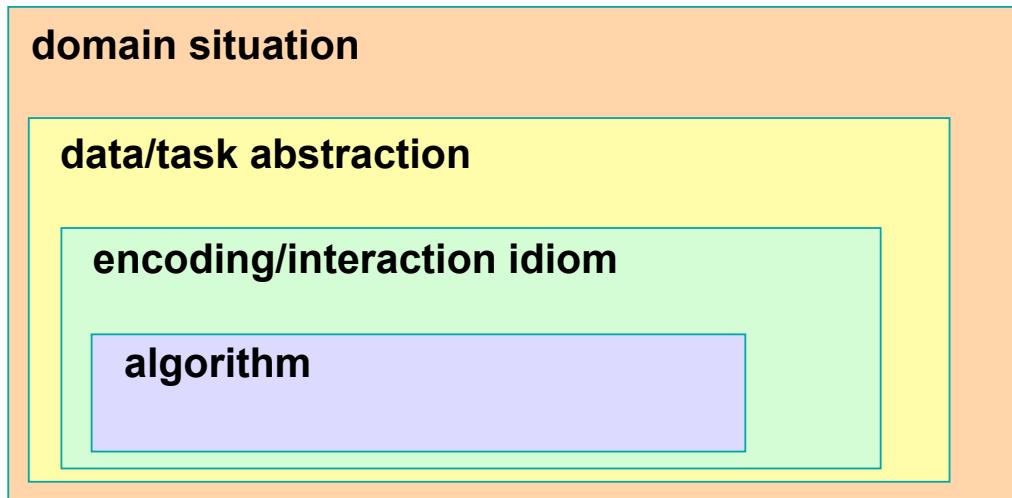
- convince us you have found / are on the path to finding interesting insights to communicate

[Sidebar: Nested model, tasks, etc]  
**(pay attention for lab)**

# The Nested Model [Munzner]

4 **levels** of Vis design, **threats to validity** at each

We will take a simplified view of this...

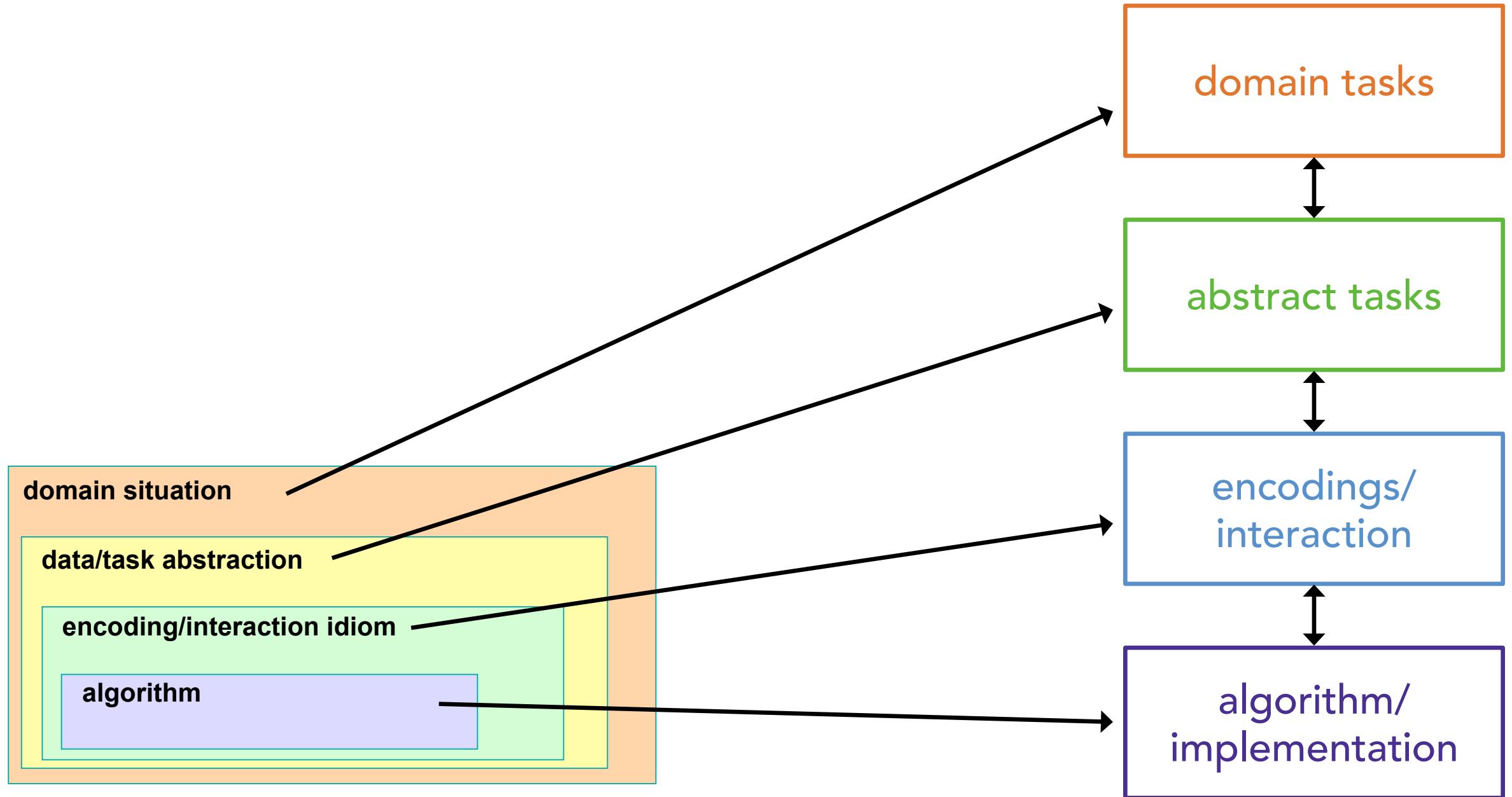


**domain situation**

**data/task abstraction**

**encoding/interaction idiom**

**algorithm**



domain tasks

abstract tasks

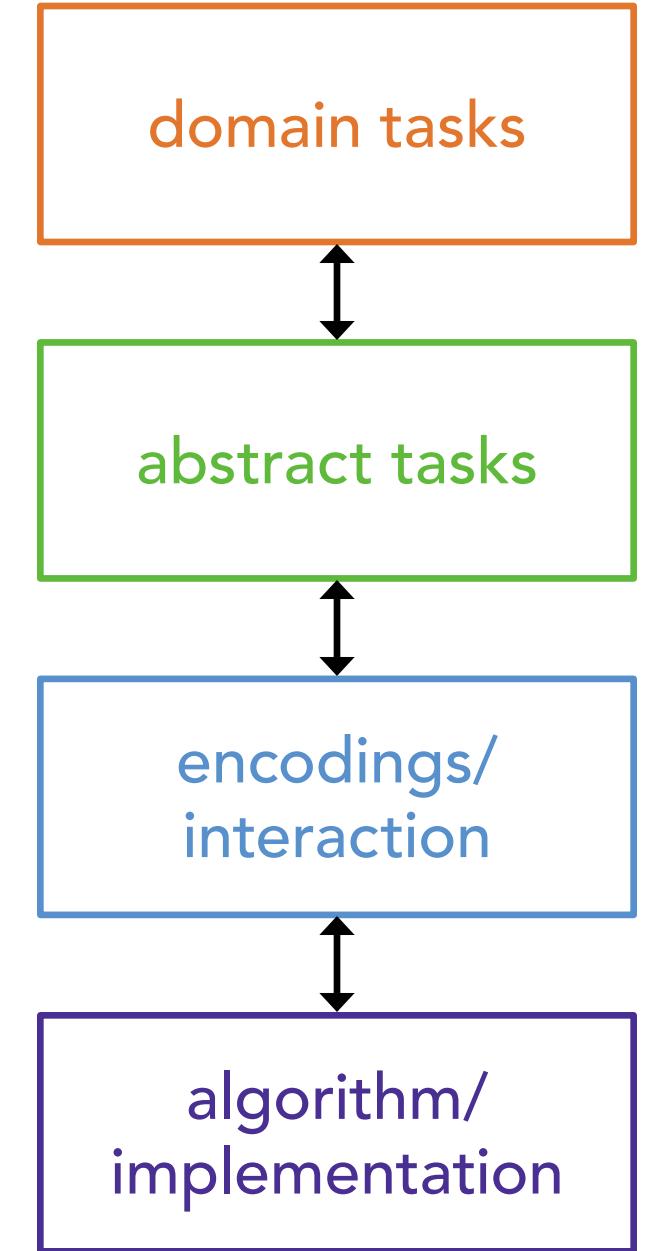
encodings/  
interaction

algorithm/  
implementation



1. Find cars with  
low MPG

2. Understand relationship  
between MPG and weight



1. Find cars with  
low MPG



1. Find minimum;  
compare values

2. Understand relationship  
between MPG and weight

domain tasks

abstract tasks

encodings/  
interaction

algorithm/  
implementation

1. Find cars with  
low MPG



1. Find minimum;  
compare values

2. Understand relationship  
between MPG and weight



2. Estimate correlation  
between variables

domain tasks

abstract tasks

encodings/  
interaction

algorithm/  
implementation

1. Find cars with low MPG

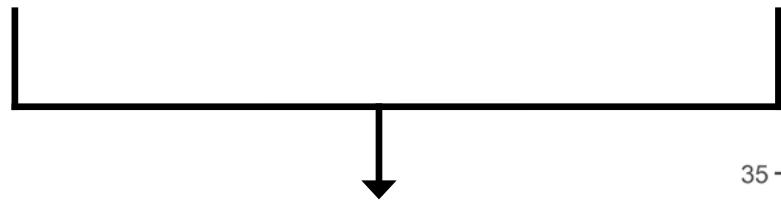


1. Find minimum; compare values

2. Understand relationship between MPG and weight



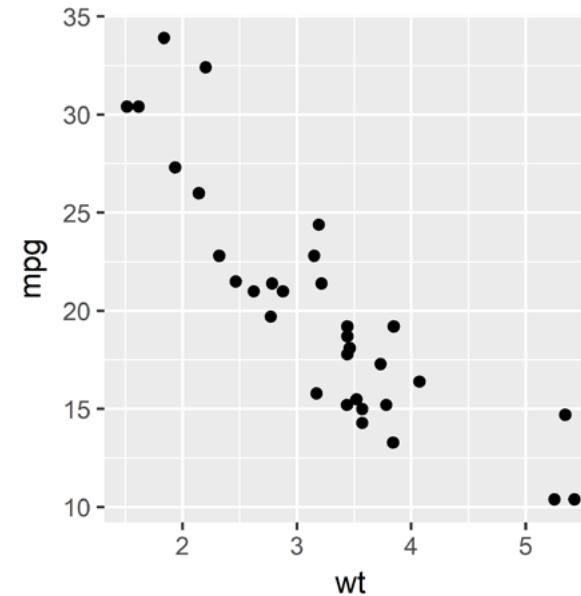
2. Estimate correlation between variables



weight -> x

MPG -> y

car name -> tooltip



domain tasks

abstract tasks

encodings/  
interaction

algorithm/  
implementation

# Storytelling

# **Rest of today: Storytelling**

Intersection of Infographics and Infovis

Useful to think about for group projects &  
individual assignment round 2

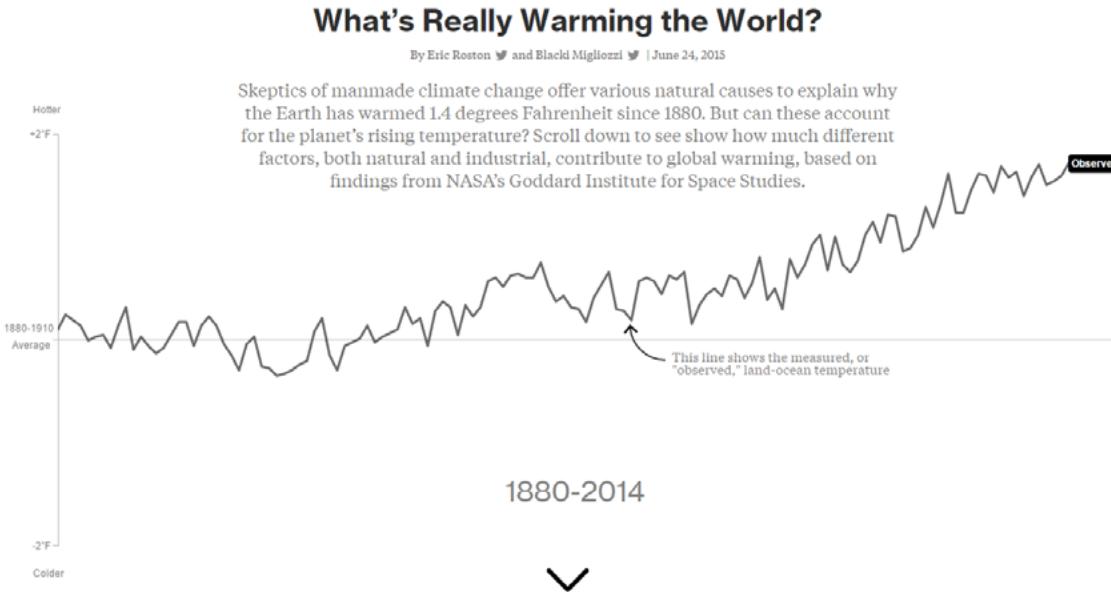
# Storytelling

We'll consider some ideas from **Segel and Heer**:

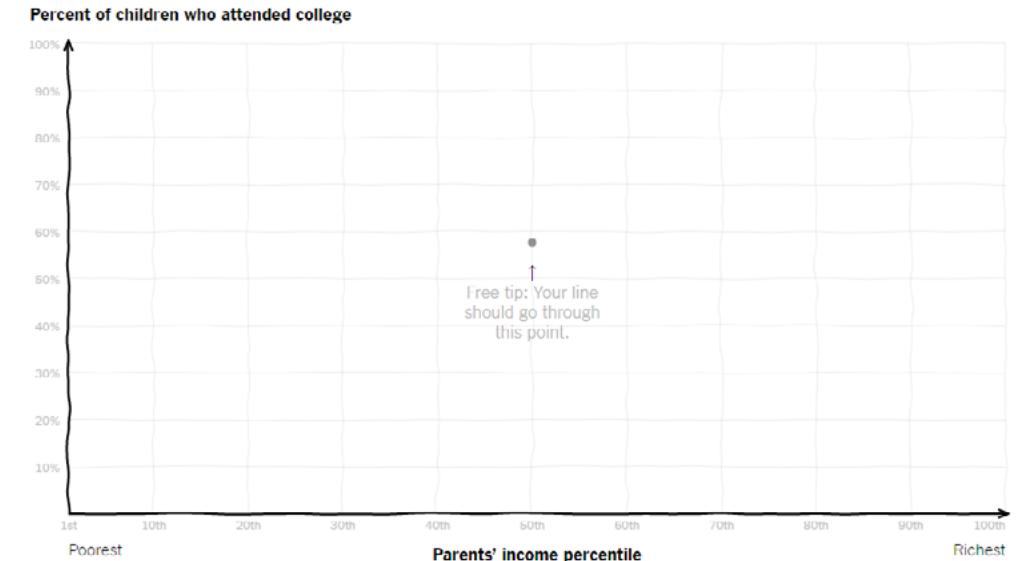
- Genres
- Interactivity in storytelling
- Designer/reader balance

Plus some insights from **film**

# We've already seen some examples...



Draw your line on the chart below



<https://www.bloomberg.com/graphics/2015-whats-warming-the-world/>

<https://nyti.ms/2jX8zue>

# **Value of storytelling**

Get beyond **exploring** data to **engaging** and **explaining**



More than “just annotation”

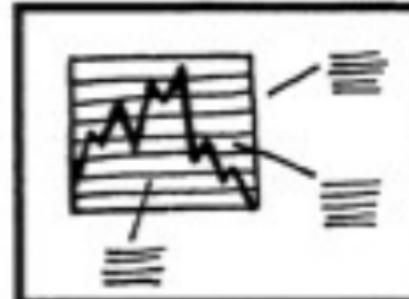
Engages through **conflict, resolution, uncertainty**

# Narrative vis genres [Segel and Heer]

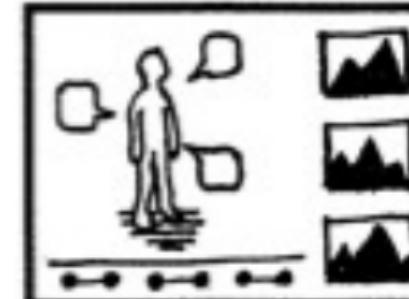
Seven  
Genres



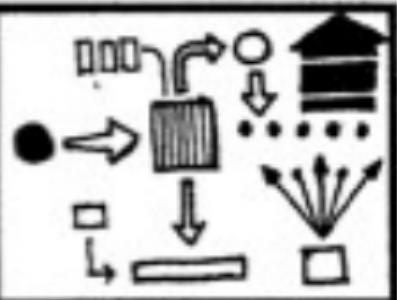
Magazine Style



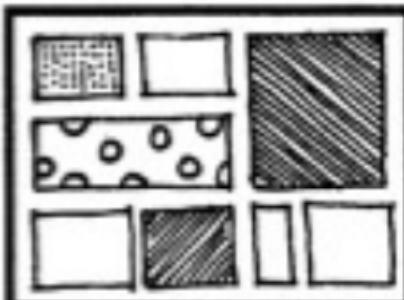
Annotated Chart



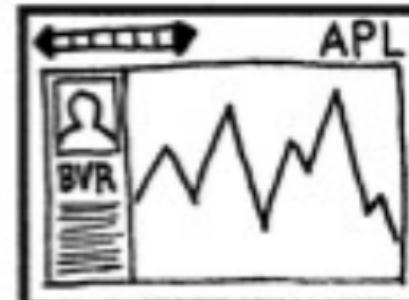
Partitioned Poster



Flow Chart



Comic Strip



Slide Show

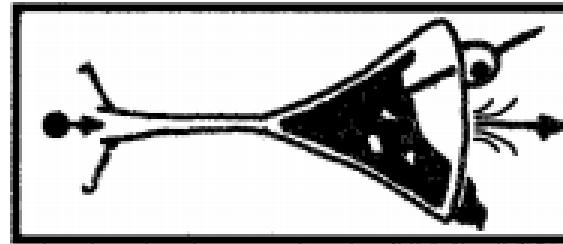


Film/Video/Animation

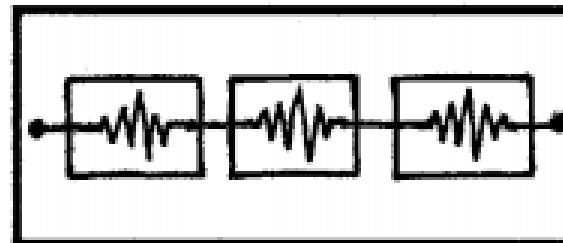
Differ in **ordering** and **designer/reader control**

# Interactivity in storytelling – 3 rough types

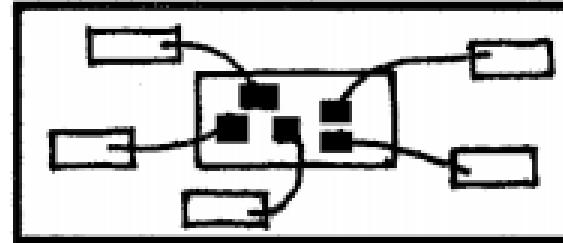
Martini glass



Interactive slideshow



Drill-down story



More designer control

More reader control

# Can think about **order**, **control** in terms of film

Similar trade-offs in storytelling. Some inspiration...



<https://www.youtube.com/watch?v=v4seDVfgwOg>



## Montage / editing

- Prescribed order
- Where you look explicitly directed
- Little reader/viewer agency



## Ensemble staging / direction

- Less prescribed order
- Salience, structure nudges you to look
- More reader/viewer agency



## Montage / editing

- Prescribed order
- Where you look explicitly directed
- Little reader/viewer agency

## Ensemble staging / direction

- Less prescribed order
- Salience, structure nudges you to look
- More reader/viewer agency

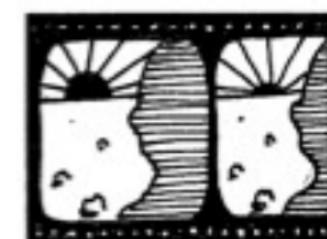
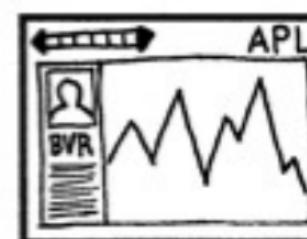
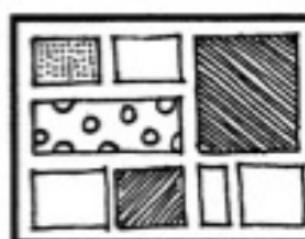
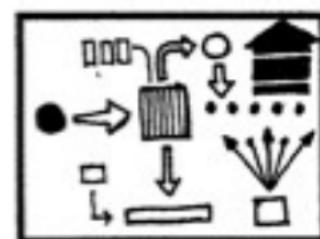
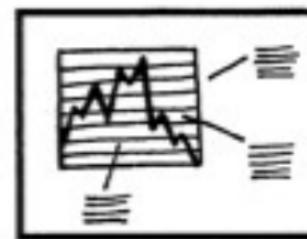
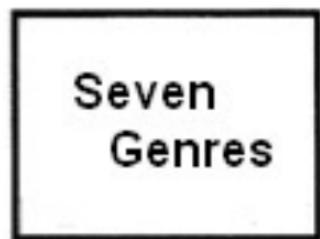
Film uses both, so can we! But the choice should be deliberate



Montage / editing

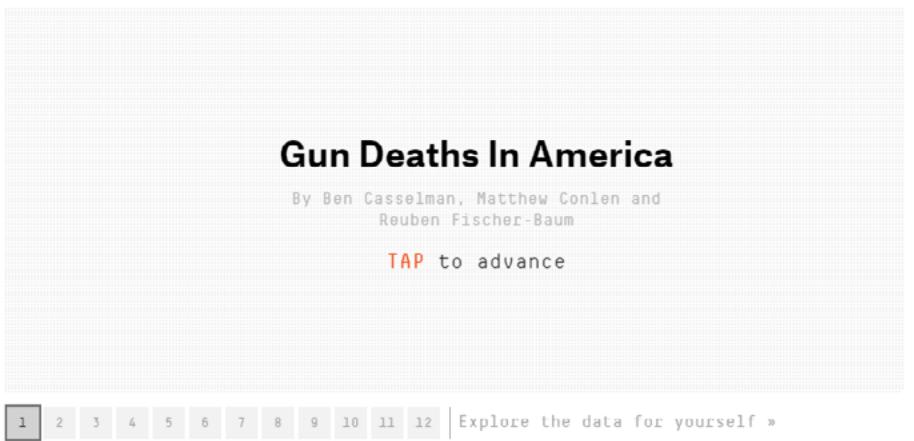


Ensemble staging / direction





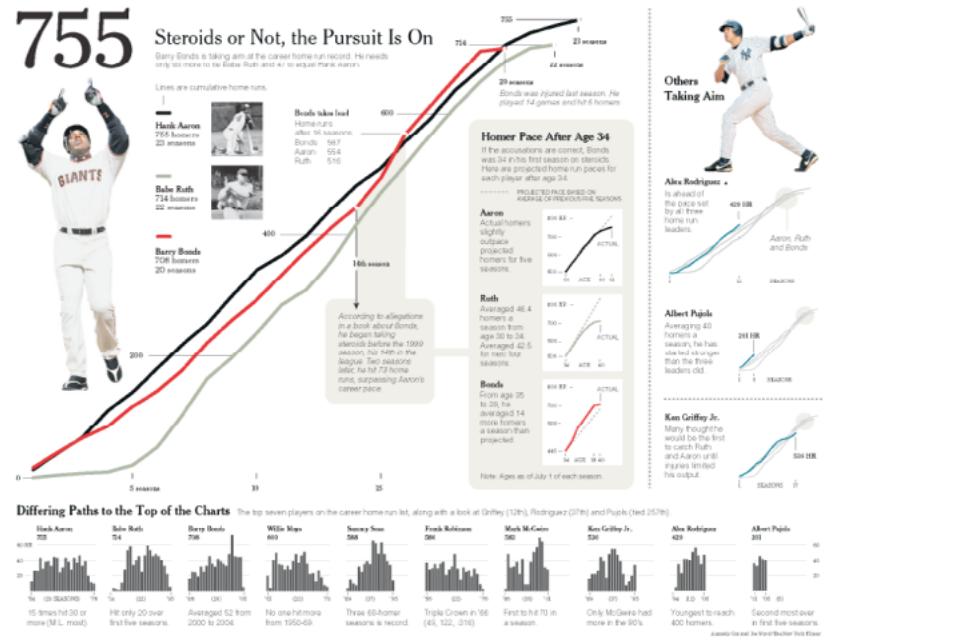
## Montage / editing



<https://fivethirtyeight.com/features/gun-deaths/>

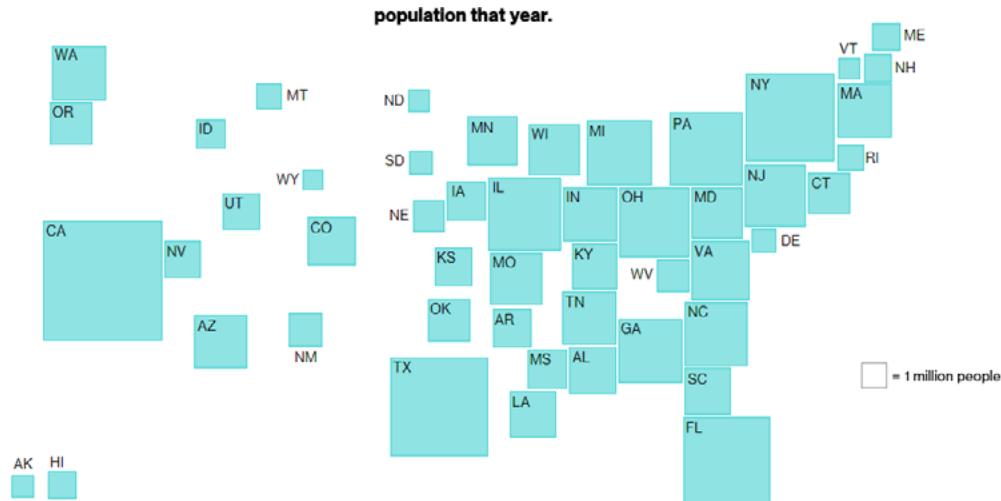


## Ensemble staging / direction



Some examples...

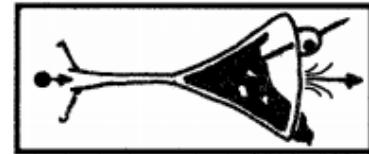
# Senate midterms '14



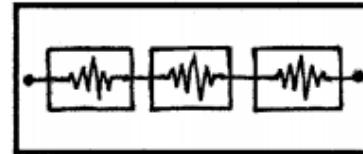
Montage / editing



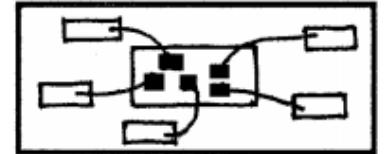
Ensemble staging / direction



Martini glass



Interactive slideshow



Drill-down story

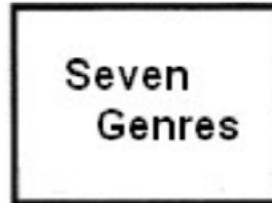
<https://tinyurl.com/yaehpraw>

What techniques?

How are they directing attention?

Does the story flow?

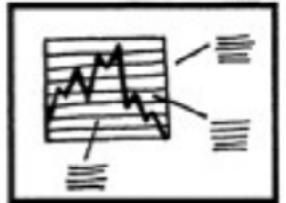
Is it effective / engaging?



Seven Genres



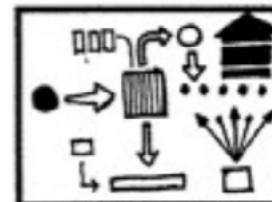
Magazine Style



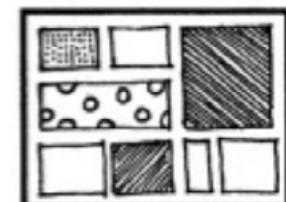
Annotated Chart



Partitioned Poster



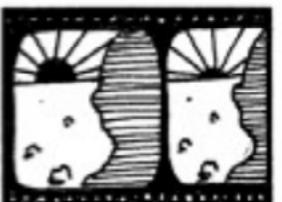
Flow Chart



Comic Strip

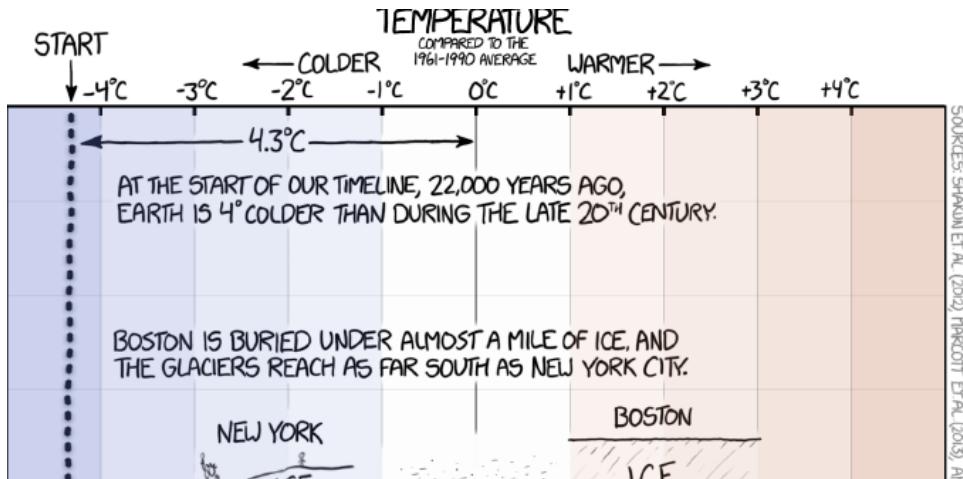


Slide Show



Film/Video/Animation

# Temp timeline [xkcd]



<https://xkcd.com/1732/>

What techniques?

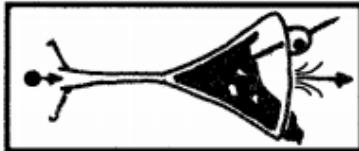
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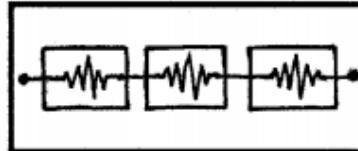
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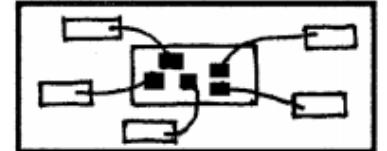
Montage / editing



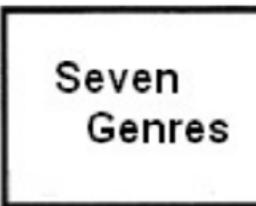
Martini glass



Interactive slideshow



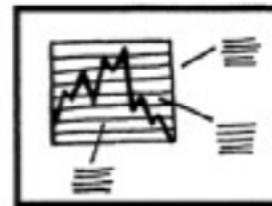
Drill-down story



Seven  
Genres



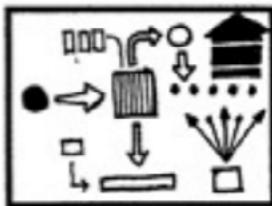
Magazine Style



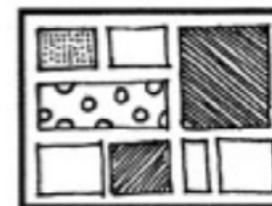
Annotated Chart



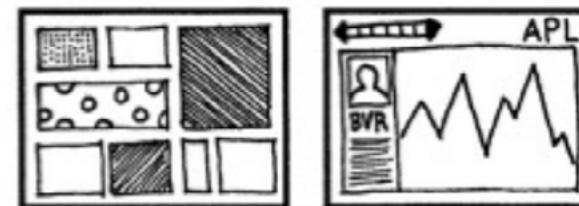
Partitioned Poster



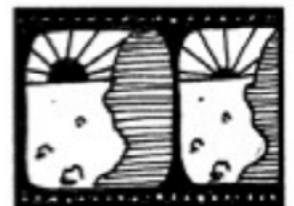
Flow Chart



Comic Strip

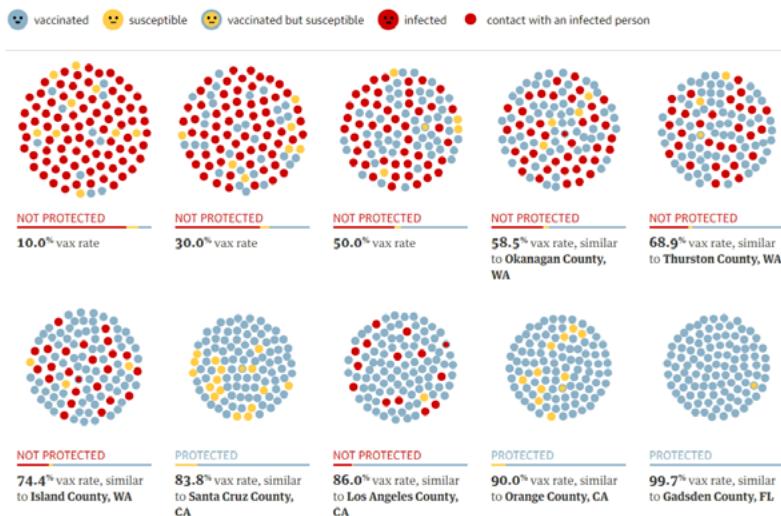


Slide Show



Film/Video/Animation

# Measles vaccination



<https://tinyurl.com/mjd5sv9>

What techniques?

How are they directing attention?

Does the story flow?

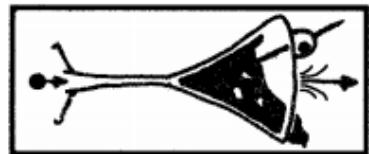
Is it effective / engaging?



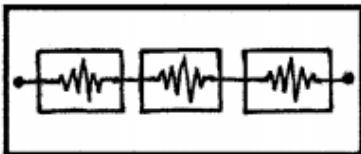
Montage / editing



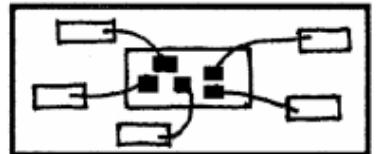
Ensemble staging / direction



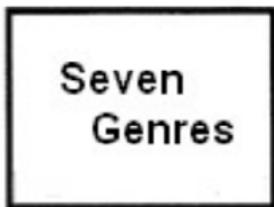
Martini glass



Interactive slideshow



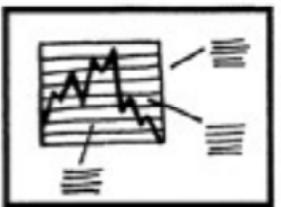
Drill-down story



Seven Genres



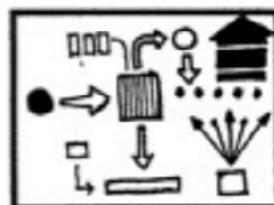
Magazine Style



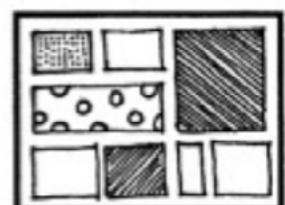
Annotated Chart



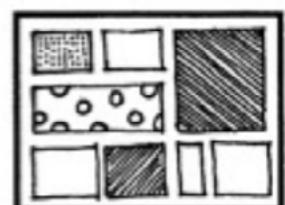
Partitioned Poster



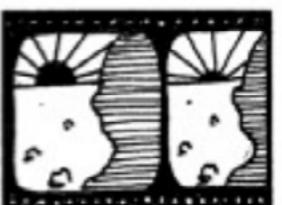
Flow Chart



Comic Strip

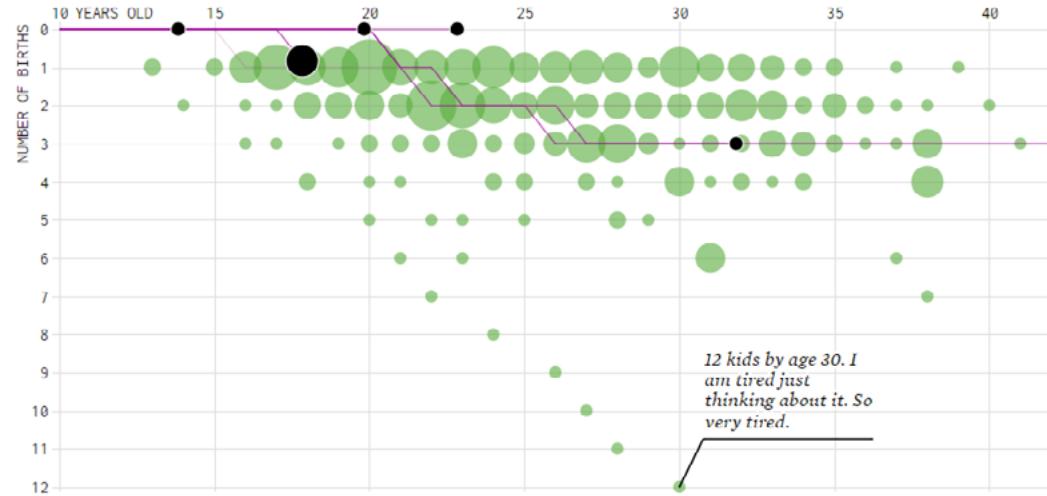


Slide Show



Film/Video/Animation

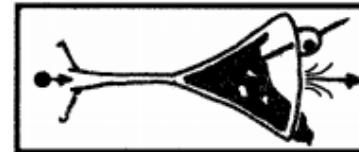
# Family timelines



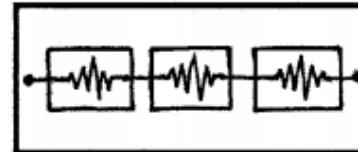
Montage / editing



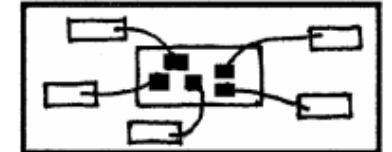
Ensemble staging / direction



Martini glass



Interactive slideshow



Drill-down story

<https://tinyurl.com/y475tw7d>

What techniques?

How are they directing attention?

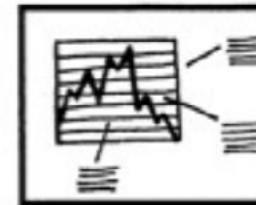
Does the story flow?

Is it effective / engaging?

Seven Genres



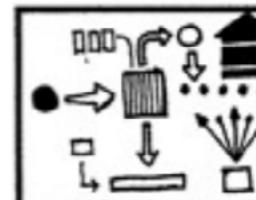
Magazine Style



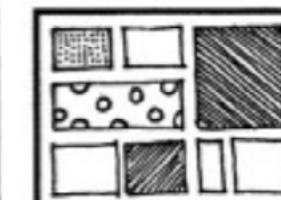
Annotated Chart



Partitioned Poster



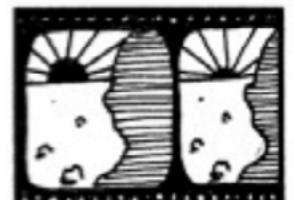
Flow Chart



Comic Strip



Slide Show



Film/Video/Animation

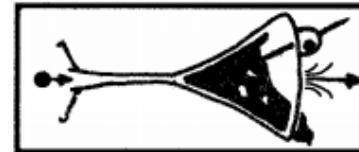
# Evolution of bacteria



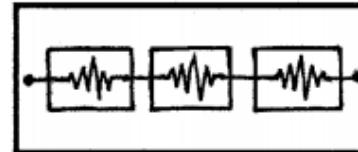
Montage / editing



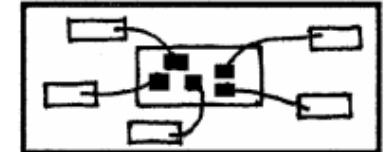
Ensemble staging / direction



Martini glass



Interactive slideshow



Drill-down story

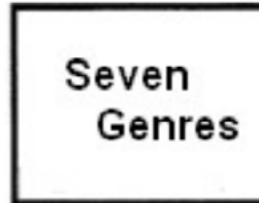
<https://vimeo.com/180908160>

What techniques?

How are they directing attention?

Does the story flow?

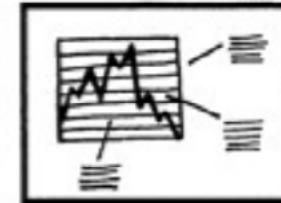
Is it effective / engaging?



Seven Genres



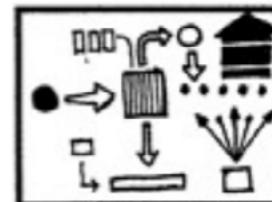
Magazine Style



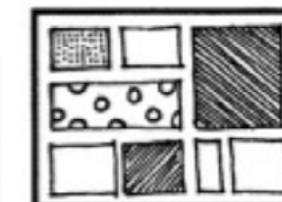
Annotated Chart



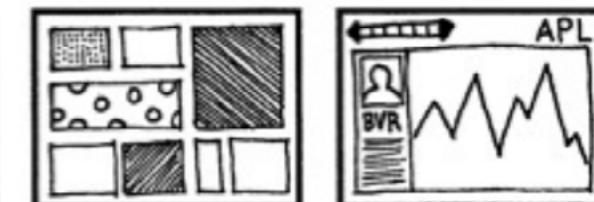
Partitioned Poster



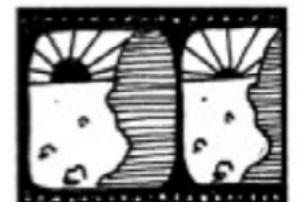
Flow Chart



Comic Strip

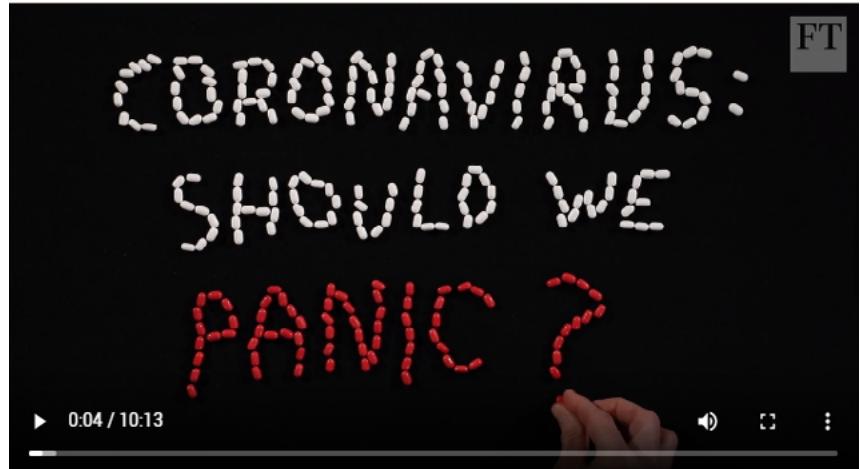


Slide Show



Film/Video/Animation

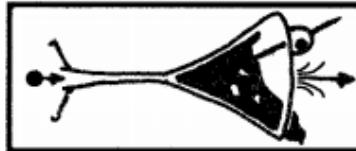
# Coronavirus panic



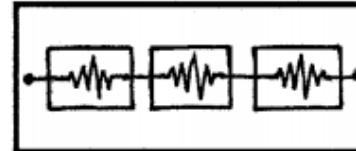
Montage / editing



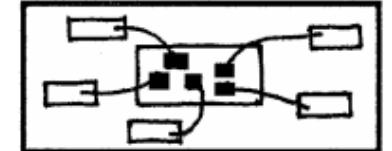
Ensemble staging / direction



Martini glass



Interactive slideshow



Drill-down story

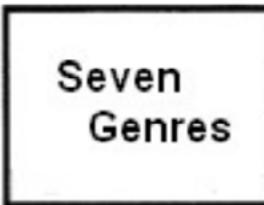
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What techniques?

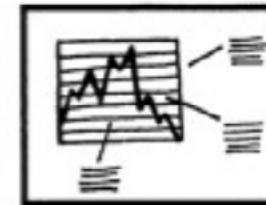
How are they directing attention?

Does the story flow?

Is it effective / engaging?



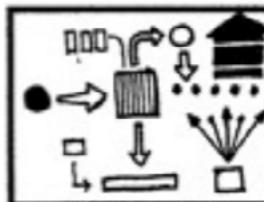
Magazine Style



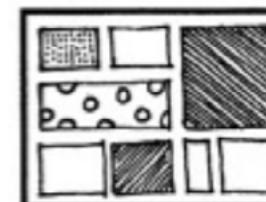
Annotated Chart



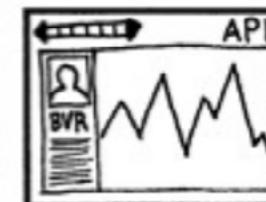
Partitioned Poster



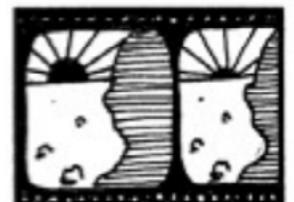
Flow Chart



Comic Strip

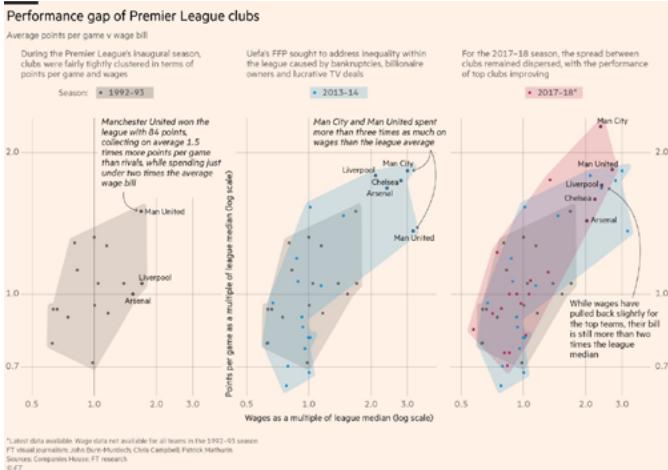


Slide Show



Film/Video/Animation

# English football



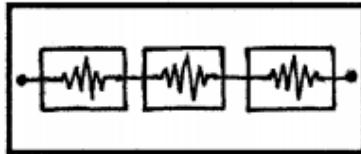
Montage / editing



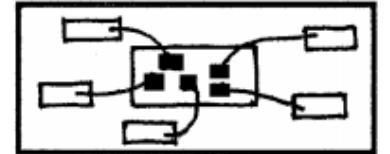
Ensemble staging / direction



Martini glass



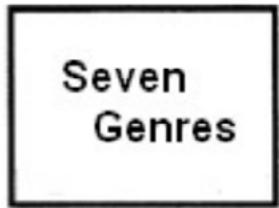
Interactive slideshow



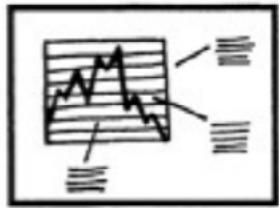
Drill-down story

<https://tinyurl.com/uhnbrnb>

What techniques?  
How are they directing attention?  
Does the story flow?  
Is it effective / engaging?



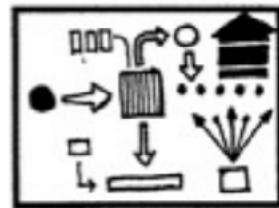
Magazine Style



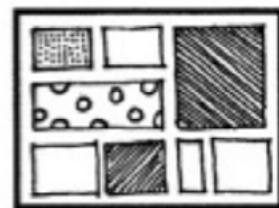
Annotated Chart



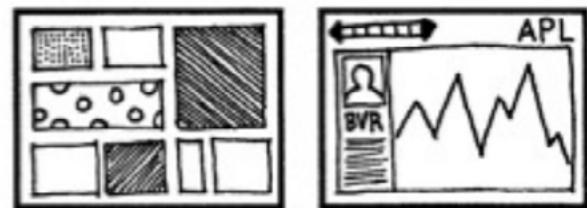
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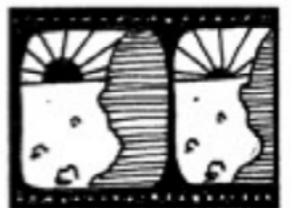
Flow Chart



Comic Strip

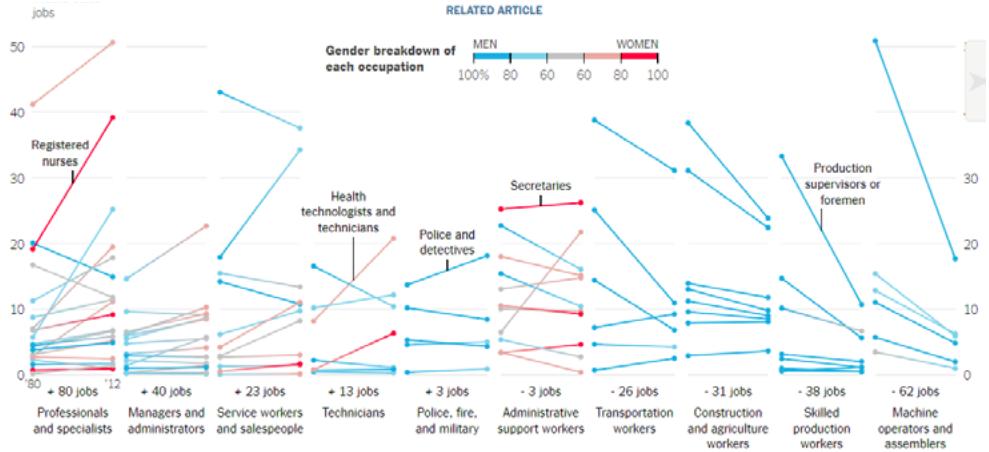


Slide Show

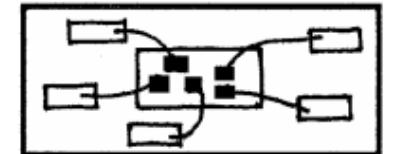
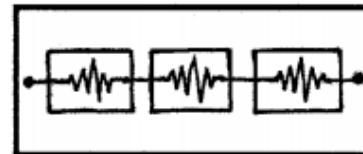
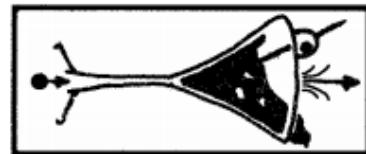


Film/Video/Animation

# Middle-class jobs



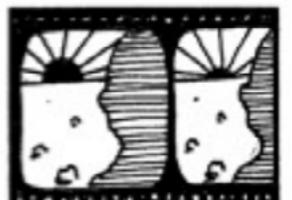
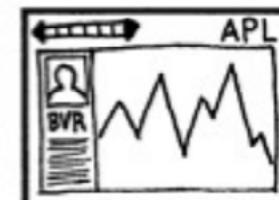
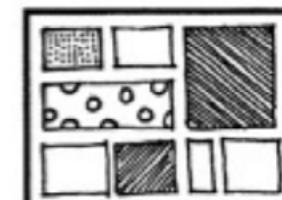
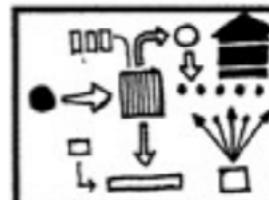
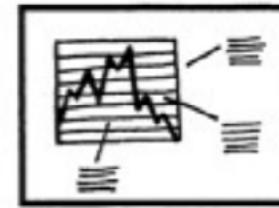
Montage / editing



<https://nyti.ms/2k5jxOf>

What techniques?  
How are they directing attention?  
Does the story flow?  
Is it effective / engaging?

**Seven Genres**



Flow

Comic

Slide

Film

# Storytelling

Think about **order** and how **explicit** it needs to be

Tension, suspense, surprise, uncertainty...

Take inspiration from other work, even film