

Storytelling with Data

MARIA MASSEI-ROSATO

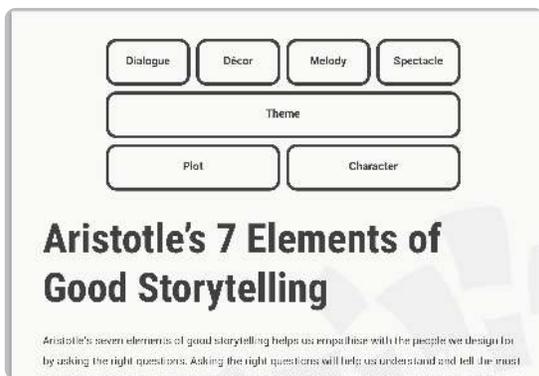
LEGEND

-  : Assignments & Homework
-  : Storyboarding / Brainstorming
-  : Artist / Designer to look up
-  : Events & prospects to explore

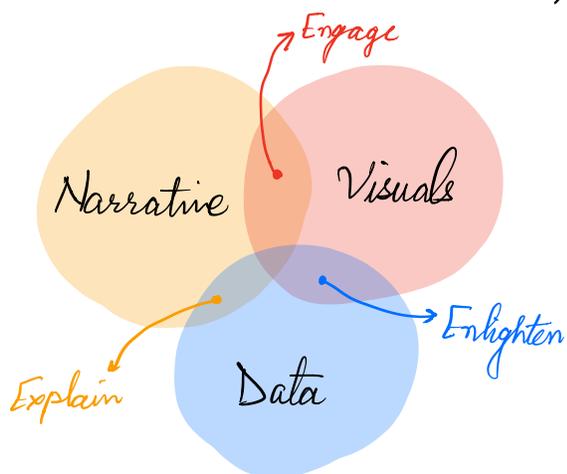
24 Jan 2019

o About Maria

- ↳ Started as a computer programmer
- ↳ Into the data space for over 8 yrs
- ↳ Works at the Federal Reserve Bank of NY



o About this class: trying to create stories through data that people will remember



→ This class is ONLY about the narrative

- ↳ Visuals → make yourself
- ↳ Data → find what you want to use

◦ Example : Yield Curve : NY Times

↳ Diff. b/w interest rates on short-term
govt. bonds & long-term govt. bonds in
the US.

★ Select the data you want for your narrative by the 3rd
class.

◦ Final Project :

① Find the data

② Find the story in the data

③ Create a narrative & visuals for the story

◦ Think about : Explanatory vs Exploratory Data .

◦ For data : Think about visual data : for Machine
Learning

— x —

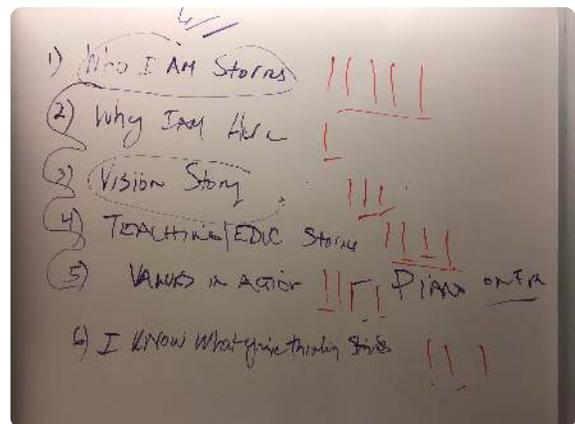
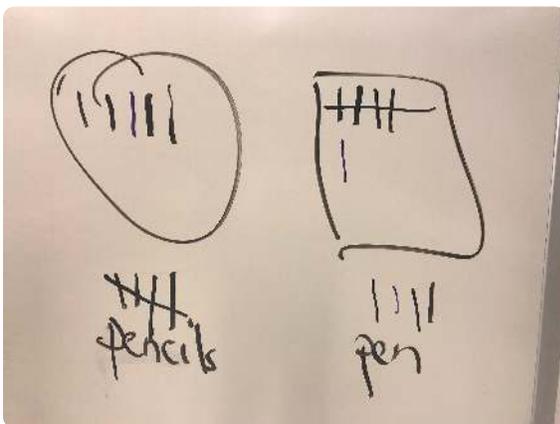
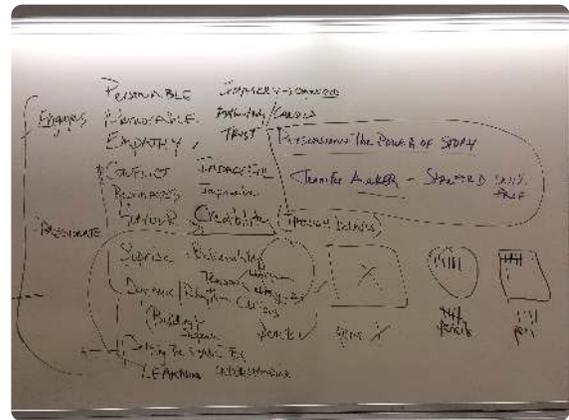
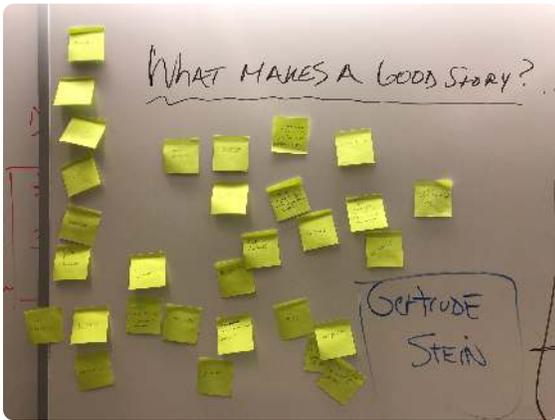
◦ Idea :

↳ Creating a narrative for speculative world data
↳ speculative design

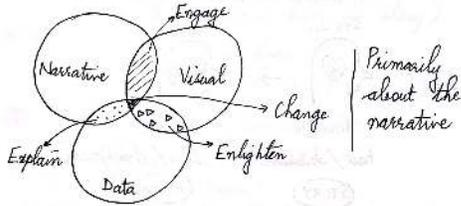
◦ Idea

- ↳ Analysing data (study material) from high school & creating stories around that to make it more understandable.
- ↳ Combine with the course Design & Education

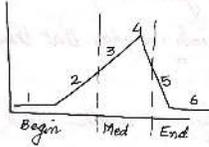
31 Jan 2019



* About the class structure: Storytelling with Data



• Narrative Structure



- 1: Exposition
- 2: Conflict
- 3: Rising action
- 4: Climax
- 5: Falling action
- 6: Resolution

- Reference: Red Riding Hood

• Journalists are the sophisticated set of data story-tellers.

• A similar class to Storytelling with Data: Narrative Dynamic Systems

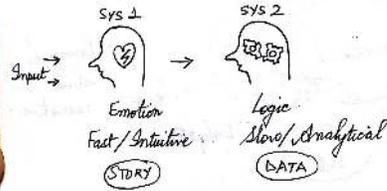
• Thinking Fast and Slow Book

HBR Article on this

↳ Daniel Kahneman

↳ Summary:

Our brains work in 2 systems:



• Story shared: Doctors & germ theory.

"Everybody gets so much info everyday that they lose their common sense."

• Idea: think about analyzing weather data patterns

• You should care about what you are talking about.

• The Story Factor (by Annette Semmons)

- ↳ 6 types of stories: (a) Who I am stories
- (b) Why I am here (c) Vision Story (d) Teaching
- (e) Values-in-action (f) I know what you think

Q. Answer these questions when you listen to someone else's story:

- ↳ Identify the type of story (from the 6 types)
- ↳ What do you know? (what did you learn from the story)
- ↳ What do you want to know? (what advice would you give them)

• Story Reference: Persuasion + Power of Story

↳ Jennifer Aaker - Stanford

• Neural Coupling (Jury Haason)

- ↳ when a storyteller talks to a listener, the brain patterns synchronize
- ↳ Coupling \propto Communication \propto Understanding

* Activity: what makes a good story?

- Personable
- Memorable
- Empathy
- Conflict
- Resonates
- Humor
- Surprise
- Dynamism/Rhythm
- Setting Pre-Stage
- Learning
- Imagery (+ Connection)
- Authenticity/Candid
- Trustworthy
- Impactful
- Impressive
- Credibility (+ Details)
- Believable
- Tension
- Passionate
- Curious
- Engages

• Daily Class Assignment

↳ Create a takeaway log for what you learnt in class.

07 Feb. 2019

07 FEB 2019

Jennifer Baker (Stanford) - YouTube video
 ↳ 3 components of a good story: Memorable, Impactful, Reasonable.

* Activity: What makes a bad story?

- Too many details
- Inconsistency
- Monotony - Rhythm (— ^)
- Not relatable
- Bland - no clear pt. of view

* Write about a story in which you tried to persuade or influence someone.

- It was ^{June 2017} a month before Goods & Services Tax was had to be implemented in India. As the partner partner & promoter of technology, I was

in a room full of taxpayers who were confused about the new law & wanted answers. I had created a 120 minute long presentation deck to explain them the law.

The idea was to pitch them our company's GST compliant software by the end of the ppt so that they sign up for it.

My background was new in the legal domain, so, I was working with the Taxation departments of the center & the state, as well as the Chartered Accountants to establish my credibility.

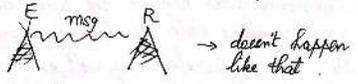
The presentation was very casual & discussion based. It was more of a tutorial. Having given over 20 presentations since then, I know ~~that~~ the touchpoints of the audience.

Since technology ~~was~~ adoption was relatively difficult for traders who relied on manual record. I found that my job was more about making them comfortable with the new system rather than making it look like a sales pitch. I felt that would automatically drive the sales.

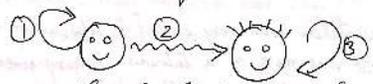
• Plato's story

↳ Doing a trade & accepting the trade agreement by a higher party.
 ↳ stronger

• Storytelling - interpretⁿ is not straightforward

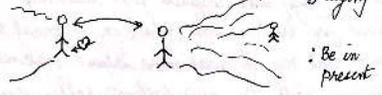


• When we have a conversⁿ with someone, its 3 convers^{ns} are having at the same time:



• with each other & with ourselves.

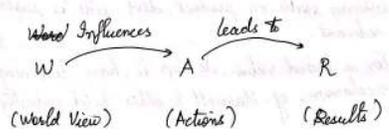
• Ability to understand a person \propto Judging them



• Ability to understand the other person (group) - their need — a diff^t definⁿ of LEADERSHIP
 ↳ ABILITY TO LISTEN

• Active listening: thinking about the motivⁿ of the speaker.

- : our minds tend to think "what's wrong". We tend to cloud our listening skills.
- : (world view) what is the perspective of the speaker
- : (distraction) what cond^{ns} are present for the speaker
- : social constraint
- : one round game or multiple round game (game = conversⁿ)
- : what are your goals in that interacⁿ
- : what are the learning preferences of the speaker?
- : what are his expectations?
- : familiarity with the topic
- : data literacy



◦ If you're not getting results, you think of changing your Actions & further, your World View.



↳ Learn how to listen
↳ Trust is a common prerequisite.

* Doing a constructive discussion: Enquiry
: Yes &

* Activity on Active listening

- ↳ Discussion based on enquiry
- ↳ Idea: learn & about the other person.
- ↳ Try to empathize with the other person.
- ↳ Advising DOESN'T work (No one wants unsolicited advice)

- Society revolves around mutual understanding of needs.
- Listening skills on product dev. side is super relevant.
- For a brand value, it's imp. to have listening mechanisms. eg. Marriott & other hotel industry

◦ Understanding user requirements: TECHNIQUES

- ① Use Case (SDLC)
- ② Map data points (create storyboard of user & make)
- ③ Participant observⁿ / interview
- ④ Creating personas

◦ Agile development ≡ Iterative dept. → small to big
↳ const. f/b & providing prototypes



◦ Read: AGILE MANIFESTO

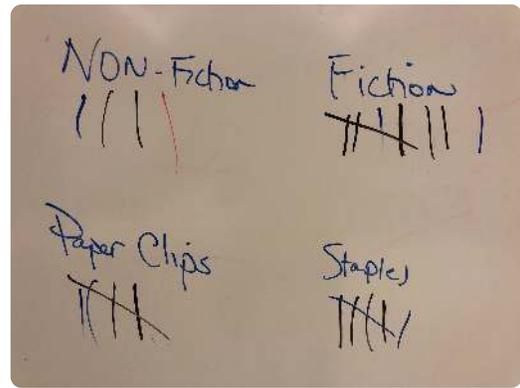
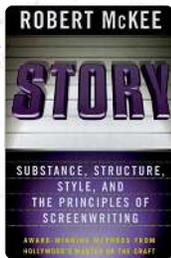
◦ "The fool tells me his own reasons, the wise man persuades me with my own reasons."
- Aristotle

◦ Book reference: The User's Journey
- Donna Lichaw
- Foreward by Jonathon Colman

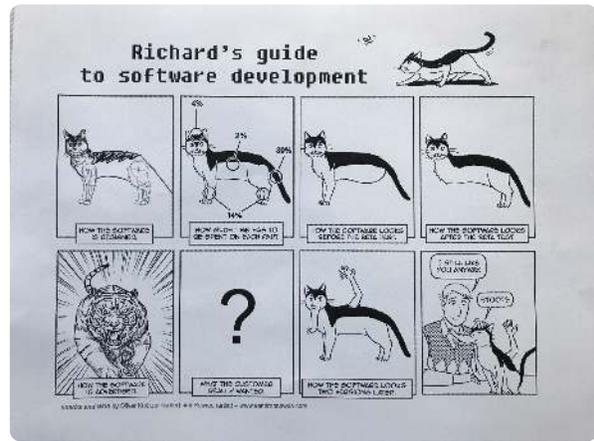
- * About final project
 - Should have data, visuals & Narrative
 - Pitch the idea



◦ Story - Substance, Structure, Style, and Principles of Screenwriting
- Robert McKee
(Book Reference)



CLASS POLL



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14 Feb. 2019

14 FEB 2019

- Activity: Writing off a page → Leski Hamson
 - ↳ Select a poem - The Book of Endings
 - ↳ Pick a phrase (randomly)
 - ↳ Continue writing from that phrase.
- Idea: Use poetry to explore sth new.
- My chosen prose: [Dear god I ask] (pg 77)
 - ↳ phrase: Dear god I ask nothing for myself.....

as much as I do for the wellness & prosperity of the people around me. In a world focused towards hatred &

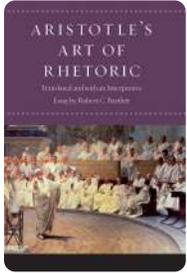
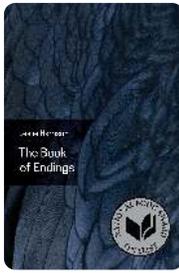
jealously, I ask to make me strong enough to stay away from these emotions because I love to care for others. I am an emotionally inclined person & I find the world better when it is dominated by love. Dear god I ask for a constant companionship in return to my love for I never want to have a moment of loneliness in my life, especially with the presence of my friends, family & peers.

- Think aloud: what motivated you to choose that phrase?

Events: National Book Award Readings
↳ The New School, Nov 2nd week

Book Reference:
The art of rhetoric - Aristotle
SYSTEM OF PERSUASION

- Ethos: the will & character to change the current situation
- Logos: logical structure of the argument
- Pathos: the capacity to empathize



o Using Metaphors

↳ Thought: ∃ metaphors that were relevant in some time in history, but are now used without knowing the meaning. Similarly, there are metaphors we use today which would lose their relevance in the future.

o George Lakoff: every word represents a piece of a frame.

o when you're a child, you gather 100s of metaphors by the age of 6.

↳ metaphors don't need to be textual. The warmth of a mother's womb can be associated with comfort.

↳ Idea of associative fluency: connect 2 concepts to form a new idea.

o Class Discussion on Columbia Space Shuttle Collapse - what went wrong with the PowerPoint.

o Activity 2: Poem by Emily Dickinson

↳ Hope is the thing with feathers!

- Think about the emotion for each circled word/phrase, frame of reference (how you are interpreting the word)

① Hope: struggle & freedom

② without the words: silence & peace
: darkness

③ crumb of me: sharing a part / story of yourself with someone

Interpretation of every word is different. So, think about the perspective of the audience.

o Ordinary words convey only what we know already, it is from metaphor that we can but get hold of something fresh.

- Aristotle

The image shows an open book with two pages of technical text. The left page is titled "REVIEW OF TEST DATA INDICATES CONSERVATISM FOR TILE PENETRATION" and discusses SOFI (Softer OFI) and tile coating. The right page is titled "CONSERVATISM STYLE OF CONSERVATISM" and discusses the style of conservatism. Handwritten notes in blue and black ink are scattered across both pages, with arrows pointing to specific sections of the printed text.

CLASS POLL

Writing III Mornings III

Reading III Dinings III



21 Feb. 2019

21 FEB 2019

- I think that structure is required for creativity
 - Tanya Tharp
 - ↳ creativity and habit are opposing ideas
 - ↳ Book: Creative Habit.
 - ↳ Allocating a block of time - helps

END OF PART-I OF THE COURSE
(Building Blocks)

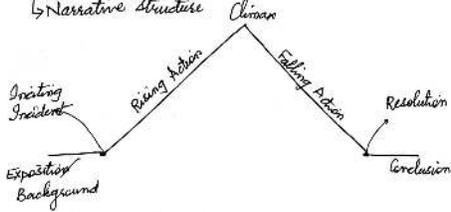
- ↳ Trilogy
- ↳ The power of story
- ↳ Know your audience
- ↳ Words/Metaphor

Next: EXPLORING HOW TO

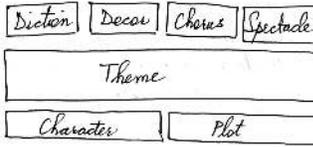
- ↳ Novels
- ↳ Films
- ↳ Comics
- ↳ Journalism



◦ Freytag's Pyramid (Structure of a story)



◦ 7 Elements of a story (Aristotle)



◦ The Atlantic's ML/AI article: The six main arcs in storytelling identified by a computer.
- 2016

- 1 Rags to Riches (Rise)
- 2 Riches to Rags (Fall)
- 3 Man in a Hole (Fall then Rise)
- 4 Icarus (Rise to fall)
- 5 Cinderella (Rise to Fall to Rise)
- 6 Oedipus (Fall then Rise then Fall)

◦ Activity: What was Old Man & the Sea? Why?

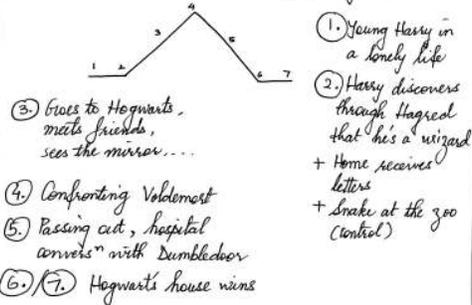
- Oedipus (Fall-Rise-Fall)
- It has a falling start (no fishes, no food, ...), then he goes to the sea & finds a fish (rise - hope). In the end, he loses all fishes (fall)

◦ What is the climax of the Old Man & the Sea? Why?

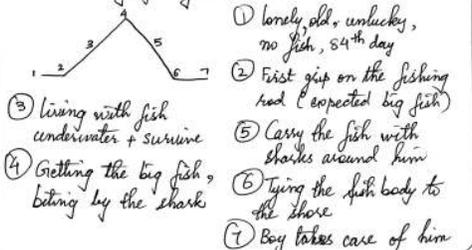
- The time when the old man catches a big fish; but the sharks start attacking his boat after that which gives a falling action.
- Catching the fish was the climax in the way the story unfolds. For the first part of the book, he is holding on to the harpoon (fishing rod), waiting for the fish to make a move, but it doesn't happen. So, it's availed that the fish would finally give up.

◦ Hemingway's Style of Storytelling: Simplified language but complexity in the story.

◦ Activity 2: Map "Harry Potter & the Sorcerer's Stone" with Freytag's Pyramid.

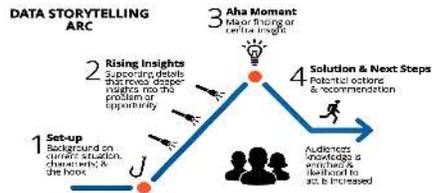


◦ Activity 3: Map "The Old Man & the Sea" with Freytag's Pyramid.



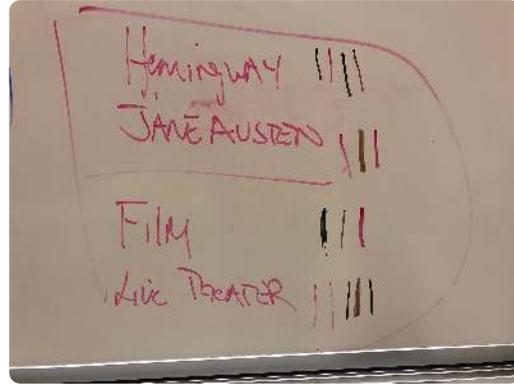
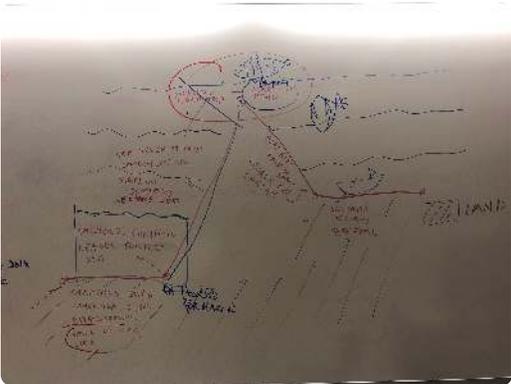
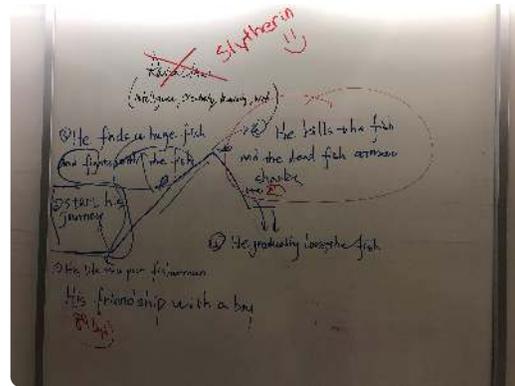
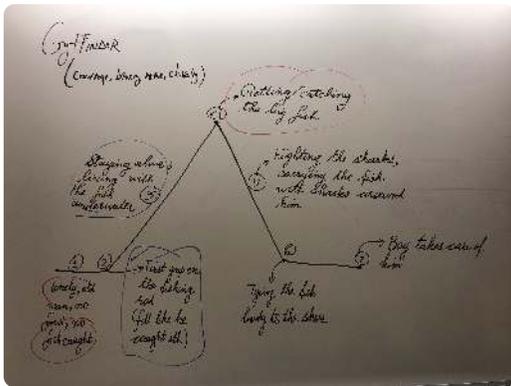
Call To Adventure	Threshold	Guardians/Helpers/Mentors
<p>1. The hero is called to adventure by a messenger, a friend, or a stranger. The hero must be willing to leave the familiar world behind and enter the unknown.</p>	<p>2. The hero crosses the threshold, leaving the familiar world behind and entering the unknown. This is often a point of no return.</p>	<p>3. The hero is aided by a mentor, who provides the hero with the tools, skills, and knowledge needed to face the challenges ahead.</p>
Challenges	Trials	Abyss
<p>4. The hero faces a series of challenges, which are often tests of the hero's strength, courage, and wisdom. The hero must overcome these challenges in order to reach the goal.</p>	<p>5. The hero undergoes a series of trials, which are often tests of the hero's endurance, patience, and faith. The hero must persevere through these trials in order to reach the goal.</p>	<p>6. The hero reaches the abyss, a point of no return where the hero must face their deepest fears and doubts. The hero must overcome these fears and doubts in order to reach the goal.</p>

Translate to Data Storytelling Arc (B. Dykes)



<http://tbl.tbl.com/windows.net/storyboards/vmessimg/en1929/harry-potter.doc>

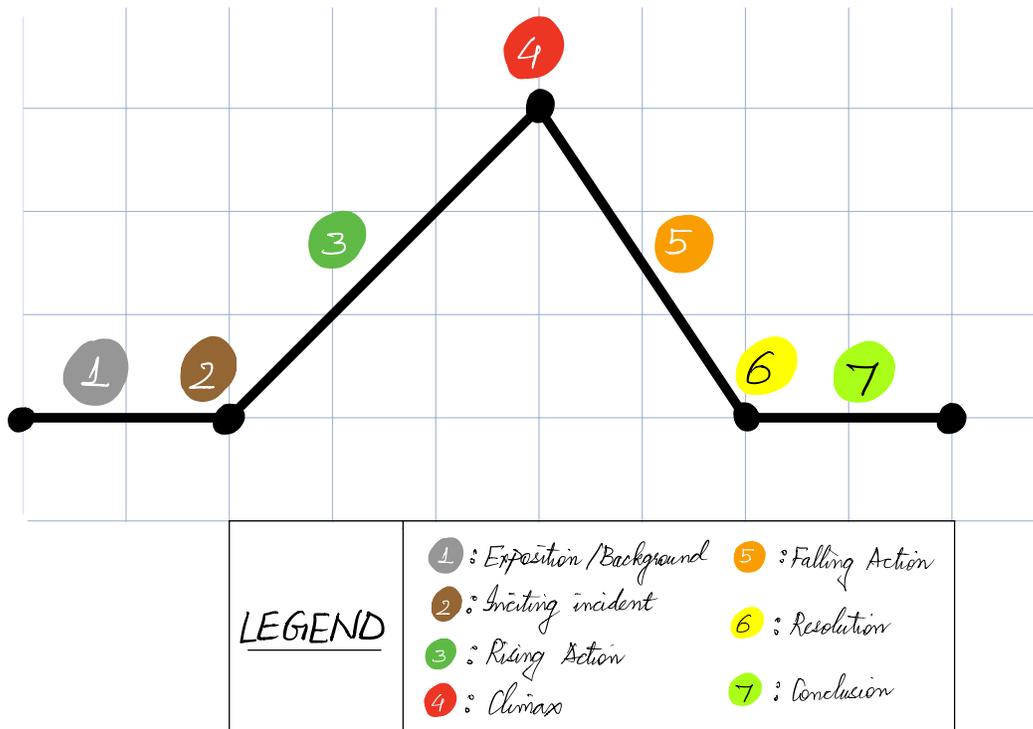
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— X —

Homework : Freytag's Pyramid

A THOUSAND SPLENDID SUNS



1 : Mariam, Nana & Jahl's life & family relations

2 : Mariam moves with Rasheed to Kabul; marriage

3 : Mariam adopts Laila, Laila's babies Aziza & Zahmai, Laila meets Tariq

4 : Mariam kills Rasheed

5 : Laila leaves Taliban, Mariam dies

6 : Laila & Tariq start a new life in Pakistan

7 : Laila, Tariq, Aziza & Zahmai move to Kabul

Homework Review by Maria

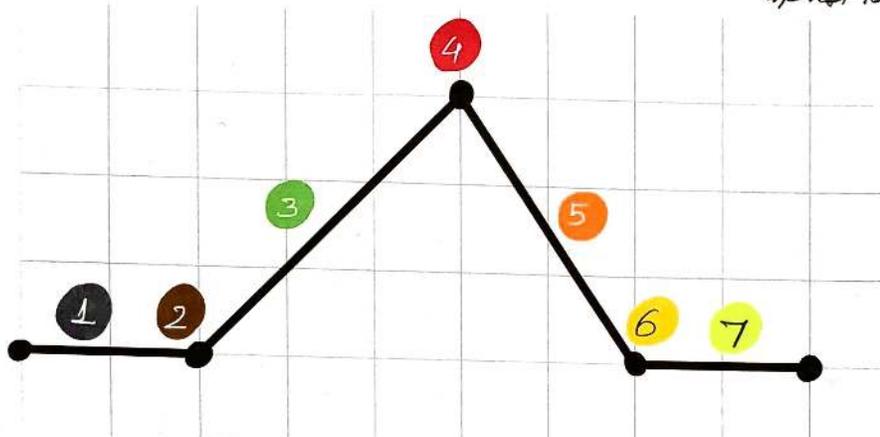
AKSHANSH

Homework : Freytag's Pyramid

AKSH ANSH

Impressed with your color-coding. Just a question on including incident. The rest looks good.
M-

A THOUSAND SPLENDID SUNS



LEGEND	
1 : Exposition/Background	5 : Falling Action
2 : Inciting incident	6 : Resolution
3 : Rising Action	7 : Conclusion
4 : Climax	

Is this really the inciting incident?

1 : Mariam, Nana & Jalil's life & family relations

2 : Mariam moves with Rasheed to Kabul; marriage

3 : Mariam adopts Laila, Laila's babies Aziza & Zabmai, Laila meets Tariq

4 : Mariam kills Rasheed

5 : Laila leaves Taliban, Mariam dies

6 : Laila & Tariq start a new life in Pakistan

7 : Laila, Tariq, Aziza & Zabmai move to Kabul

28 Feb. 2019

28 FEB 2019

* Discussion on narrative structure

- ↳ what to include in the ~~own~~ background?
 - ↳ You want the viewers/readers to hook at the writing incident. So, choose what info. in the background would be imp for that.
 - ↳ The hook is the turning pt. which catches/grips the audience. It is a notable/unusual incident.
 - ↳ Falling action in a data story can be a solution / root steps.

* General rule: any script for a movie would not be more than 100 pages.

ACTIVITY: What do you think Casablanca (movie) is about? Think about the story at diff^t levels/dimensions.

There were several parallel/overlapping stories in Casablanca. At one end, there was a love story between the leading actors.

The background environment was set up in a new scene. So, national rivalry between the French & Germans went along the story.

Adding to that & somewhat connected with it was the tenacity of the residents of Casablanca to leave the city & move to America.

The culture presented in the film gave a sense of the ~~own~~ tensions that existed b/w nations & their people. This tension was juxtaposed with melodious tunes and theme music throughout the film.

Overall, I feel that Casablanca was about taking decisions to leave Casablanca in the midst of love, relationships, politics & culture.

↓
++ Protagonist's change in character (Rick)

* Storytelling is the most powerful way to put ideas into the world today.

- Robert McKee, author of the book, Story

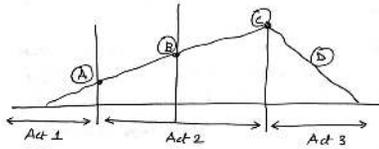
* Every scene in a film should start from positive & end with -ve or vice versa.

- Robert McKee

* Activity: Divide in groups & create a storyboard of the act of Casablanca

* Assignment: Start working on the storyboard for your final project

* ACTIVITY: Narrative structure of Casablanca



Act 1: Starts with globe spinning & reveal of Casablanca

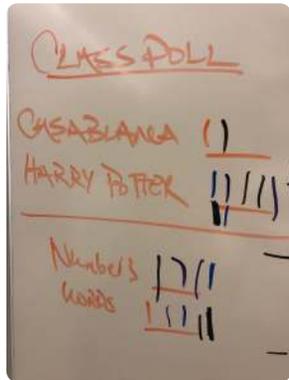
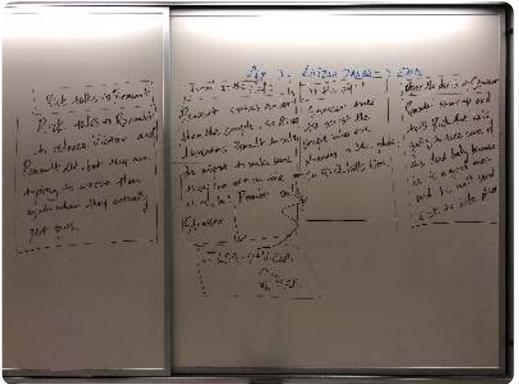
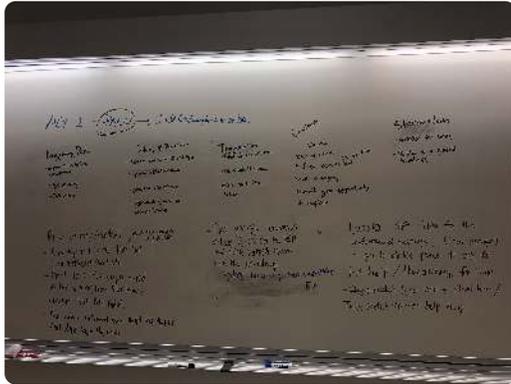
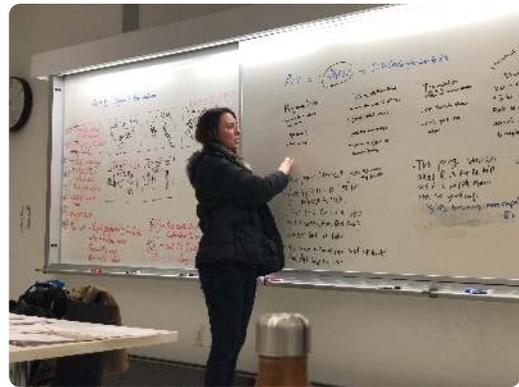
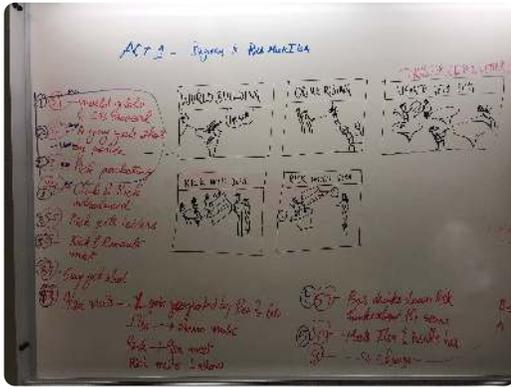
(A): Inciting incident: Rick gets letters

Act 2: The story starts with Ilsa & Paris

(B): Blue Parrot's owner offers \$ 100k (Mini climax)

Act 3: (C) Rick double crosses Renault

(D): Ilsa gets to know she is not going with Rick
: Renault shoots the German officer
: Renault & Rick go as friends



07 Mar. 2019

* Activity: Divide in groups & create a storyboard of the act of Casablanca

— x —

* Assignment: Start working on the storyboard (due Mar 22) for your final project

07 MAR 2019

* Revision of inciting incident & climax

Turning point that sends a problem or opportunity

Turning point of narrative
↳ Highest tension point

* ACTIVITY: Writing Exercise

↳ Prompt: I remember... (Joe Bernard's book, I remember)

↳ free association writing

o I remember → leaves falling outside my home on a sunny day

↳ me & my friends connecting our cycles to create a big ride ↓

me getting hurt as I fell from the cycle ↓

me hitting a car in Dubai, a day before my annocation ↓

a lady driving a scooter over me as I cycle on the road ↓

me painting on glass in an art class Summer holidays ↓

I remember → the first Mohit Chohan music concert I attended in Abu Dhabi

↳ the joy I had when I heard "Jeh Booriyan" sung live

↳ The next concert I attended of Arjit Singh ↓

↳ I sang/shouted with random college boys & girls

Book Reference: Scott McCloud
↳ Understanding the Invisible art of Comics

* ~~Data~~ Storytelling Transitions (Top 3)

- ↳ Action-to-action (65% time it's used)
- ↳ Subject-to-subject (20%)
- ↳ Scene-to-scene (15%)

The percentages are more suitable for comic writing

— x —

* Visual Storytelling tips for comics

- ↳ Compress
- ↳ Decompress
- ↳ Show, not tell
- ↳ Tell, not show

Show + tell

- o Compress: Taking info & compressing it into shorter form of visuals
- o Decompress: When you are revealing the most imp. part of your story
- o Show don't tell: Don't tell the reader what is happening, but you describe their feelings using details. Like, don't say: John is very angry.
- o Tell don't show: Describe the scene.

* Idea: for your data story, think about how to maintain a balance b/w show & tell.

Transition and Gutters | Understanding Comics

Page 1 of 12

UNDERSTANDING COMICS

HOME START UNDERSTANDING SCOTT MCCLOUD

TRANSITION AND GUTTERS

Gutters: The Invisible Messenger

If one were to look at a comic they would see empty space between the panels that contain the illustrations and dialogue of the text. This is an obvious observation that has not so obvious implications. In the comic world this space is known as the gutter. The gutter is essential for comics to be successful because it allows for closure to happen. Scott McCloud describes closure as, "Observing the parts, but perceiving the whole." This is important within comics because they are a medium that do not allow for actions to take place in real time. The author can only draw a static picture so how are they supposed to convey the passage of time and movement? This is where the reader and gutters come in to play.

Here we see an example used by Scott McCloud that shows how the gutter stimulates time and motion when the reader uses closure.



My estimate is that the odds are, you agree

Click and accept

https://understandingcomics177.wordpress.com/about/1-2/2-2/ 3/7/2019

Transition and Gutters | Understanding Comics

Page 3 of 12



Action-to-action transitions show a single subject progressing through a specific movement.



Subject-to-subject transitions stays within a specific scene or idea and call for more reader involvement.



Scene-to-scene transitions take place across significant distances within time and space.

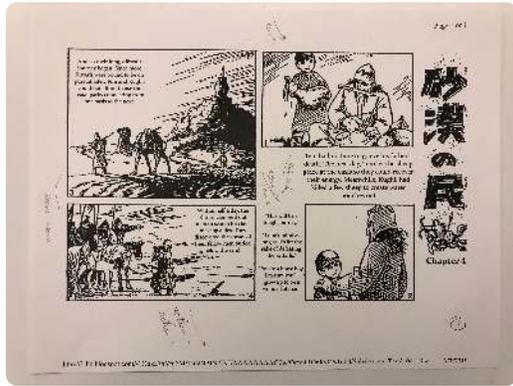


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CLASSROLL - 41 Migs in April (to make up for 44 class)

Post April 11

MON	5-6		6-7	
TUE	5-6		6-7	
WED	5-6		6-7	
THUR	5-6		6-7	



— X —

14 Mar. 2019

§ Storytelling in Journalism

- Tell don't show: describe the scene.
- * Sopa: for your data story, think about how to maintain a balance b/w show & tell.

-x-

14 MAR 2019

- * Writing exercise: reflect on your audience for the final project - what you want to share with them & why?
- Write in the form of a letter

Dear John,

You have been one of the most influential person on the web - sharing news articles with friends, reading news on media sites like BuzzFeed, & tweeting about it.

While I applaud your online achievements - your followers on Insta, Twitter & FB, I am worried ~~as~~ about your intellectual depth.

The world today is drifting towards a different form of content creation & sharing. News media sites like the BuzzFeed create

luring clickbait news headlines. They make you click & share them, but you don't get much out info. out of reading them.

Orgs like BuzzFeed focus on click-based as advertising model to sustain their business. This leads them to create content which is being created with a vision to increase clicks & not to share news.

I am writing this to you today because I want you to be aware about the bias that exists in the system.

I would soon get in touch with you to give you a product that will help you filter out the news articles which are potentially clickbait.

Till then, be wary of anything that's free. You are the person being sold!

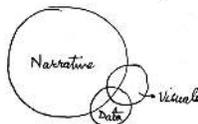
Your well-wisher,
Sheharch.

- Personalizing your audience & seeing it from their eyes is valuable to understand a project user's motivation.
- That's why personas are helpful in design.

-x-

* Today's topic: DATA JOURNALISM

- Search for the popular work on Data Journalism for project inspiration.
- ↳ examples: NIT Times - a year in graphics
- : Data Journalism awards



§ 4 Primary Underlying Motivations for Media Consumption: (taken from "Data Driven Storytelling")

- 1) Staying Informed
- 2) Gaining insight into oneself
- 3) Socially interacting + connecting with others
- 4) Relieving entertainment (chiversion)

* Activity: Article reading & group discussion.

- ↳ Think about: Narrative Structure?
 - ↳ at least: inciting incident
 - : Where is data?
 - : How would you visualize it?

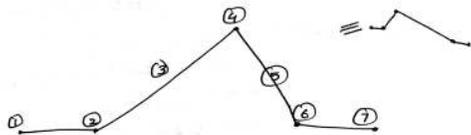
• Notes: Story is told with 2 specific people in mind:

- Story of the lawyer - why he fought for the case - Teghayan.
- Story of a guy who took out the insurance policy - Setrak

: When writing data stories, ~~numbers~~ numbers can get ~~decent~~ decontextualized. So, it's imp. to contextualize them.

↳ 1.5m people = populⁿ of a city

: It's a back story - inciting incident is not to do with how a story is told. A story can start with a climax & reveal the inciting incident later.



- ②: Sethak takes out life insurance
- ③: Genocide, life insurance holder migrating, life insurance policy handed, lawyer's father dead
- ①: Arrest in the Armenians, their history
- ④: ~~Lawyer~~ finds the relative lawyer
- ⑤: Class action lawsuit, rejecting to sign, judge dismissal.
- ⑥: The settlement money.

* Activity: Article Storyboarding: FT Climate Change

- Pretend you have access to every data you want
- Choose your audience
- Draw your storyboard

Reading Activity

legal

Features

NEWS | ARTS | 2006

More of Power: Ambition Goes Awry By Robert A. Caplan
Don't Stop, Liza By Richard A. Caplan
Wrecking Ball By Richard Caplan
Stomach Surge By Charles G. Thompson
Condemned in Washington By Michael Meyer
Children of the Holocaust By Michael Meyer

WALKER'S LIST

Of the million or more Americans executed by General Stryker 900 years ago, thousands had insurance from New York Life. A slip-and-fall lawyer accused the F&I of pushing them and by forcing the company to pay their bills, gain voice as the victims of genocide.

By Michael Debevoise

WALTER TROTSKYMAN IDENTIFIED THE LOS ANGELES FEDERAL COURTHOUSE FROM A PHOTO OF AN ARMY OFFICER CAPTIONED "THE LOS ANGELES FEDERAL COURTHOUSE" IN A PHOTOGRAPHIC BOOK. THE PHOTOGRAPHIC BOOK WAS A PHOTOGRAPHIC BOOK OF THE LOS ANGELES FEDERAL COURTHOUSE. THE PHOTOGRAPHIC BOOK WAS A PHOTOGRAPHIC BOOK OF THE LOS ANGELES FEDERAL COURTHOUSE.

To the surprise and anger of the outgroups, Trotskyman had tried to identify all the names of the victims of the genocide. He had tried to identify all the names of the victims of the genocide. He had tried to identify all the names of the victims of the genocide.

In 1915, some 1.5 million Armenians were killed in the genocide. The genocide was a genocide. The genocide was a genocide. The genocide was a genocide.

I still remember seeing a 1915 photograph of the genocide. The genocide was a genocide. The genocide was a genocide. The genocide was a genocide.

The genocide was a genocide. The genocide was a genocide. The genocide was a genocide. The genocide was a genocide. The genocide was a genocide.

Armenians were in the Caucasus during the first half of the 19th century. It is not known whether they were from Iran, Asia Minor, or the Caucasus. The Armenians were in the Caucasus during the first half of the 19th century. It is not known whether they were from Iran, Asia Minor, or the Caucasus.

In the 1920s, most Armenians had been Ottoman subjects. The law enabling the Turkish people to become citizens of the new Turkey, after the end of the empire, was not applied to Armenians. The Armenians were in the Caucasus during the first half of the 19th century. It is not known whether they were from Iran, Asia Minor, or the Caucasus.

In 1914, the genocide was a genocide. The genocide was a genocide.

As the new wave of violence raged, the Armenians were in the Caucasus. The genocide was a genocide. The genocide was a genocide. The genocide was a genocide.

Like in Constantinople, the Armenians were in the Caucasus. The genocide was a genocide. The genocide was a genocide. The genocide was a genocide.

WALTER TROTSKYMAN WAS SOBER IN 1915 in a nearby town. The genocide was a genocide. The genocide was a genocide. The genocide was a genocide.

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WALTER TROTSKYMAN WAS SOBER IN 1915 in a nearby town. The genocide was a genocide. The genocide was a genocide. The genocide was a genocide.

In the early days of World War I, when the Armenians in many national armies, including the Russian forces of the Caucasus, had been recruited, Turkey was a neutral country. The Armenians were in the Caucasus during the first half of the 19th century. It is not known whether they were from Iran, Asia Minor, or the Caucasus.

After October 1917, in the wake of the revolution, the Armenians were in the Caucasus. The genocide was a genocide. The genocide was a genocide. The genocide was a genocide.

By 1918, the Turks had captured the Caucasus. The genocide was a genocide. The genocide was a genocide. The genocide was a genocide.

Through the spring and summer of 1918, the Armenians were in the Caucasus. The genocide was a genocide. The genocide was a genocide. The genocide was a genocide.

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WILMERHALE

THE UNIVERSITY PRESS OF CALIFORNIA

ASPEN PUBLISHERS

KEEPING THE DIFFERENCE NEUTRAL

Check-out
Winter ice thins and low in Bering Sea



Labels: Environmental Consequence 945214 2019

An area of ice the size of the US and Iceland disappeared from the Bering Sea this year as temperatures warmed in the region and ice melted at a rapid rate.

Scientists in the Bering Sea, which is between Alaska and Russia, changed by low (melting) ice, according to the Colorado-based National Snow and Ice Data Center (NSIDC). The center says it is a major indicator for sea level rise.

The ice has been so thin that it has forced the organizers of the Iditarod, the world's most famous sled dog race, to shorten it to a shorter route in Alaska, to help the dogs in warmer weather where it is usually much easier to run.

The race, which began in 1975, has been held annually since then but has never been suspended — just earlier this year — because the weather was so warm, leading to the dogs' deaths.

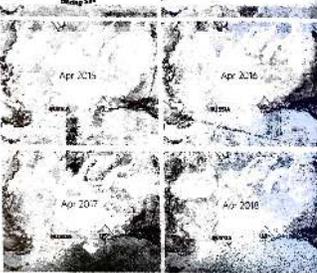
Global temperatures are about 1.2 degrees Celsius warmer than pre-industrial times because of greenhouse gas emissions from human activities, which has a small high level year. Temperature in the Bering Sea is warming at a faster rate than the rest of the planet.

Sea ice in the Bering Sea hits record lows



Labels: Topic
 1. Global warming
 2. Reduced water levels
 ENVIRONMENTAL AGENCY

Spring 2014



March 7, 2019



In the Bering Sea, where ice has melted the lowest extent on record for the third year in a row, the amount of ice has fallen below the 1979-2000 average for the first time since 1979.

"It's just a matter of time before the ice melts out of the Bering Sea, and we're moving toward that," says the NSIDC. "This time, we are seeing a record low in the amount of ice that has been observed in the Bering Sea."

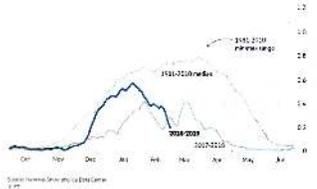
When ice extent is reduced, it can lead to a warmer ocean, which can lead to a warmer atmosphere, which can lead to a warmer planet.

which is the Arctic area, which includes the Bering Sea, were also the highest average in the world since February 2009. The annual low ice levels are recorded for the month.

Researchers also say the ice is melting at a faster rate than in previous years, because the melting that used to be delayed by the ice formed elsewhere by clouds, warming, the ice.

Rich Thompson, a scientist at the Alaska Center for Climate Assessment and Policy, said that the "year's 'beard' ice" was becoming evident in the Bering Sea.

Bering Sea ice drops below long-term ranges



Source: National Snow and Ice Data Center (NSIDC)

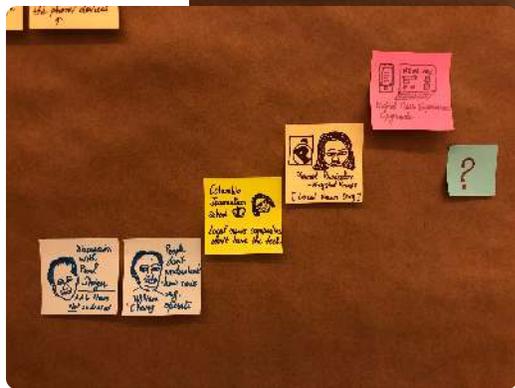
"We've been told that ice is melting faster than ever," says Thompson. "We're seeing a record low in the amount of ice that has been observed in the Bering Sea — we are in a state of global warming."

Dr. Thompson, a former scientist, said that the observations for the first time in an open ocean in the Bering Sea, such as a warming, the melting and a warming.

Climate Change: The Science of Global Warming

Labels on Climate change

28 Mar. 2019



28 MAR 2019

Midterm Storyboard Presentation : Notes

- * Who's your audience?
- * What's your hypothesis?
- * What do you need help with?

Make sure you talk about these.

Apr 4, 2019 : Class cancelled.

↳ 1-on-1s to compensate for that.

* Homework for Apr 4

↳ Plan for how you are going to revise your work based on the feedback on presentation.

Questions on PPT

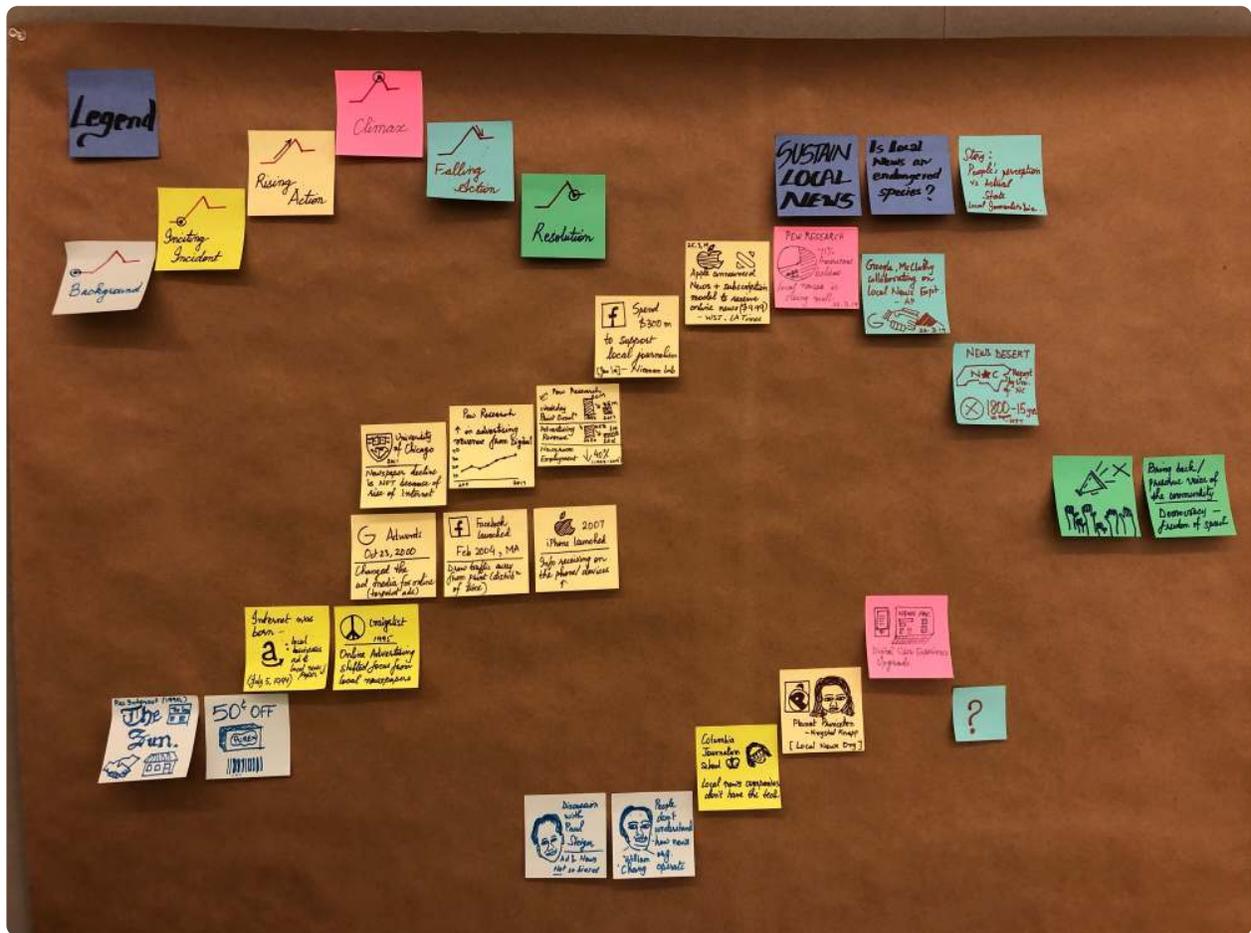
- ↳ Make it apparent - why is that important? - sentiment of locale ...
- ↳ Think about - what you want - where to compress/decompress?
- ↳ Focus PPT on local news organizing
- ↳ from their lens - background story can support that.

- ↳ See the shift that took place from Elections
- ↳ Start with Ad confused the viewer how it was related to local journalism
- ↳ See what info you want to put in your project
- ↳ See the forms of visual representⁿ of the story
- ↳ Acknowledge the current state of the news & then start your project scope
- ↳ Try to simplify the discussion & story

When doing a project on awareness - try to create a personal story. It helps audience remember.

Be careful about making correlation with your data.

↳ Correlation is not causation.

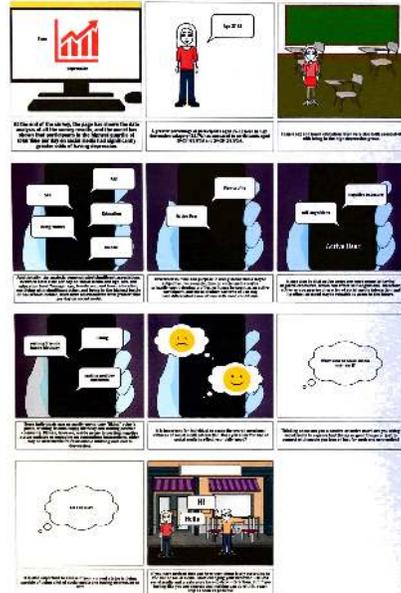
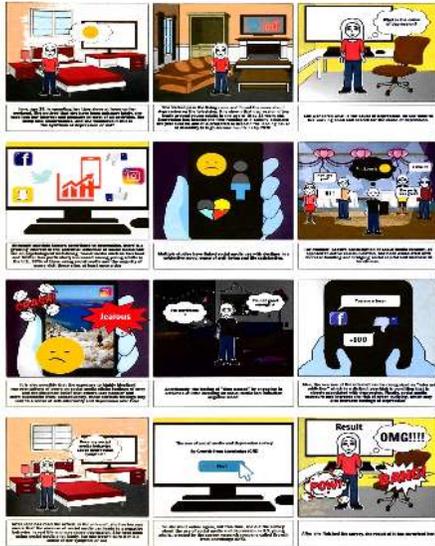


★ CLASS FEEDBACK

- ① Vincent
 - ↳ A Chinese/Japanese company has implemented automated restaurant services
 - ↳ Snoring Incident; Resolution → spelling mistake
- Necessary
- ② Goal → educate about address of Meknes
 - I liked you talked about your scope — not Egyptian
 - Audience → ?
 - Tomatonic — story reference
- Ruinian Nda
- ③ What is H4 visa ✓
 - H4-visa required mostly by women
 - Who are these women? — who are not working? ✓
 - look into the legal consider... — why govt. doesn't allow them to work
- ④ Convince
 - Story of Beatha — Death [Social Media Addiction]
 - ↳ Reference: Movie, Searching
 - ↳ Reference: 13 Reasons Why
 - ↳ Reference: Suicide
 - ↳ Reference: 14-18 yr kids
- ⑤ Pratik
 - ↳ Indian election next month — any plans to write that?
 - ↳ I have seen riots → comment was shut
 - ↳ 5 yrs there might be targeted attack

- ⑦ Leah — Impact of climate change on flight experience
 - ↳ Temp & rainfall — India
 - ↳ ~~Leah~~ Research on the quality of airlines — Infrastructure
 - ↳ Big news on reason for cancellation
 - ↳ Boeing ~~is~~ is seen from some other perspective
 - ↳ what would the awareness do for the passengers?
 - ↳ See weather patterns that are diff. than usual —
 - ↳ filter the data out → show the impact of climate change on weather patterns of India
- ⑧ Verity Eche — why do Chinese people eat everything?
 - ↳ Reason — food shortage
 - ↳ background — historical
 - ↳ no religion
 - You said that people have stereotype about Chinese food.
 - Most of us didn't know. — back to back it up. ✓
- ⑨ Rukmineni
 - ↳ Evaluate emotional wellness of social media in their lives
 - ↳ Reference: Book called 'Hooked'
 - ↳ Reference: Shelly Terrible/Touchable
 - ↳ Amanda
- ⑩ Role of smartphones on romantic relationships
 - ↳ Impact of smartphones on social skills
 - American high school — cursive writing teaching stopped
 - Artist: Stagnation → Georgia Walsh
 - To who could predict the future of Tech?

- ① Stephanie: National Parks
- ↳ Audience: **Visitors + Organizers** of national parks.
 - ↳ **Contributing factors to health of Parks**
 - ↳ **Visitors, Govt, Global Warming**
 - ↳ **Research on: Greenery at the parks** → **habitat change**
 - ↳ **Migration patterns**
 - ↳ **Govt shutdown** got attention on National Parks.



The role of smartphones on platonic and romantic relationships

Amanda Blake

Audience: Middle school and high school principals, or district school board

Goal: Many US students took required Home Ec and Wood Shop classes in middle school and high school. In the past decade, mobile technology has caused the most extreme communications transformation since the Gutenberg printing press (1440). Educators should institute a required course that helps Gen-ers develop face-to-face communication and interpersonal skills.

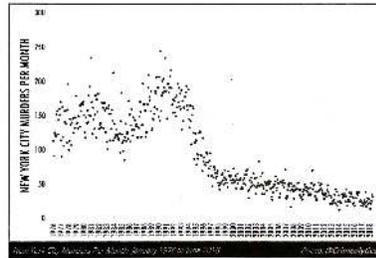
About Gen-ers:

- Born between 1995 and 2012, this generation grew up with smartphones and don't remember a time before the internet.
 - Gen's oldest members were early adolescents when the iPhone was introduced, in 2007, and high school students when the iPad was released in 2010.
 - A 2017 survey of more than 5,000 American teens found that three out of four owned an iPhone.
- (Source: *Have Smartphones Destroyed a Generation?*, Jean M. Twenge, September 2017, The Atlantic)

11 Apr. 2019

Check Out This Graph Showing New York City's 3-Decade Murder Rate Decline

By Matt Currey/STAT at 2:00 PM on July 20, 2018



Using the FBI's Supplementary Homicide Reports for monthly counts until 2016, and New York City's open data portal for 2017 and 2018, analyst Joel Alder recently created this graph showing the steady decline of the City's murder rate since its peak in 1990.

2001: 9/11 incident deaths not shown bc no footer showing that they slipped it

Thursday, Apr 11, 2019 12:34:10

11 APR 2019

- o Comments on the midterm storyboard
 - ↳ Add data to your story & properly backed up
 - ↳ Go beyond internet research - go outside, meet people, visit museums, etc.

* Paul Azmon

- ↳ Works with Maria at Federal Reserve Bank of NY
- ↳ Expertise in Philosophy (Ph.D)

* Discussion on Kahneman & Tversky's paper

- o People don't think rationally when they are making decisions.
- o "If you are seeking truth" & "being transparent", you are not doing enough - "what you communicate" may not be true (following the survival/death based story)
 - ↳ perspective matters
- o If patient asks what would/should I do, what should the doctor respond?
 - ↳ Surgery? radiation?

↳ TOO SHALLOW

- o "Lack the truth & present as fully as possible"
 - ↳ doesn't cover it. Reporter should cover how the info was acquired
- o when you present data - have a reason for what & why you filter it.
 - ↳ Discussion on NYC death chart
- o "SUNK COST"
 - ↳ The money is lost. It's your mind who needs a reward for your payment.

Activity: LOTTERIES

Perspective 1:

- o return 80% of the money they take in
- o are bad bets (costs of winning vs cost of entry)
- o take disproportionately from the poor

Perspective 2:

- o people are entitled to make bad choices
- o the 40% they take goes to good causes

↳ what would an ethically sound lottery promotion look like?

- Consider:
 - ↳ To what extent can you manipulate people?
- Option:
 - ↳ Try creating a storyboard - how would you tell an ethically apt story?

Notes on the activity

- 1) Buy lottery to send 40% of money to the poor / for a good cause
- 2) Present both perspectives

40%
 you get it

60%
 you get it

your choice
 ↙ ↘
 Bad? Bet?

- 3) It's exciting to gamble. So, buy a lottery.
- 4) People are not rational agents. So, you can't get them to do anything. Be cautious about sharing info - don't share opinions.
 - ↳ you should know how you are manipulating them.
 - ↳ Data is entangled.

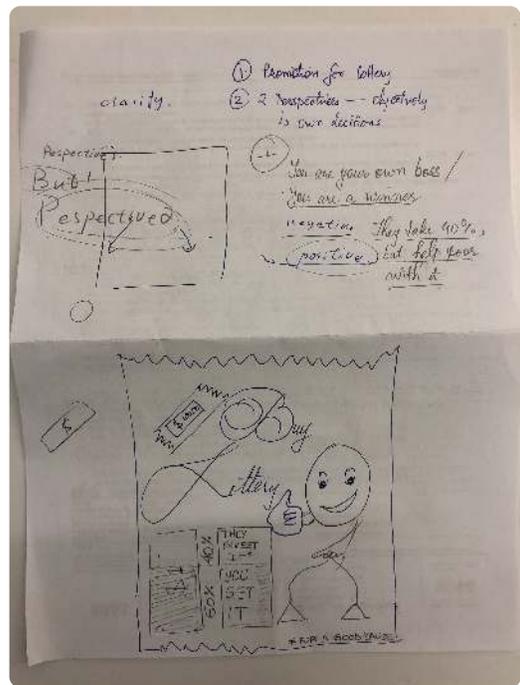
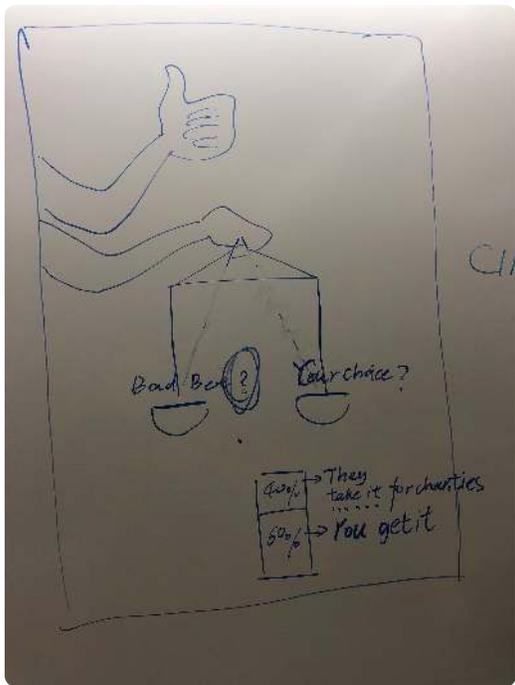
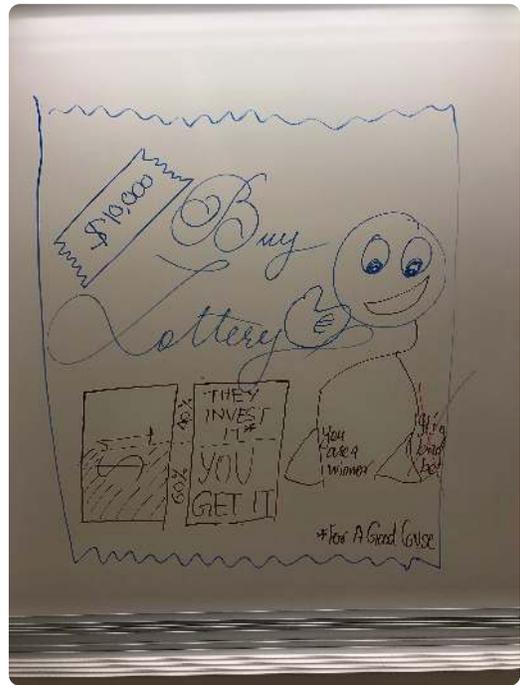
CLASS POLL

PAUL - ||||

Heman - ||

WINE ||

Beer |||



18 Apr. 2019

18 APRIL 2019

- Final presentation divided in 2 weeks
 - May 2 and May 9.
 - Students choose who goes when.
- Submit Takeaway log (bring it to class)
 - Print
- Book appointments through Stardisk (my.norwich.edu)
- Anything/topic you want reviewed in class.
 - ☑

- x -

- Paul's class: Recap
 - You as data storytellers - how do you make a conscious decision to tell your stories?
 - ↳ Be an ethical one.
 - There is no right or to wrong answer. The interpretation was up to the storyteller.
- When you go from exploratory to explanatory phase, you may have more data than you want
 - ↳ your goal should be to tell a memorable story based on your key findings.

- x -

* How to filter data: Ask yourself [Brett Dykes]

- What data is irrelevant?
- What data is redundant?
- What data is confusing or ambiguous?
- What data is weak or questionable?
- What data is not aligned with your central insight?

* Quote by Ed Catmull - Creativity Inc.

"Frank Talk, Spirited Debate, Laughter + Love"
 ↳ He used this phrase in his "Brain Trust" meetings

* "The more you leave out, the more you highlight what you leave in."

↳ Context: filtering content for your data story.

- x -

* Ways you can inadvertently introduce extraneous load into your data stories

↳ Any mental load the audience spends on your extraneous story, would drive them away from understanding the central concept.

- When you rely on dense text than clear visuals
 - ↳ you are building on extraneous load
- When you don't organize or lay out your content in a manner that's easy to follow
 - ↳ Avoid that (through narrative structure)
- Create charts that are cluttered with non-essential elements.
- Fail to cite sources / Failing to be transparent
- Doing Data Decoration
 - ↳ sometimes using Tableau, D3, etc may not share the right story.

* Concise 1-2 Description of your project

Creating an animated story to explain the importance of local journalism by showing the history of news, ads and technology, and how they are all related.

* Activity: Find fallacies & see how your/ someone else's project have/may have that

↳ Reference: Here are 15 common data fallacies to avoid

- Jeff DeJardins, Apr 3, 2018

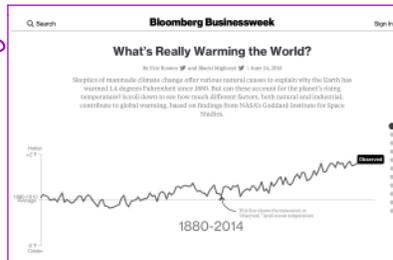
* Mine - False Causality (refer article)

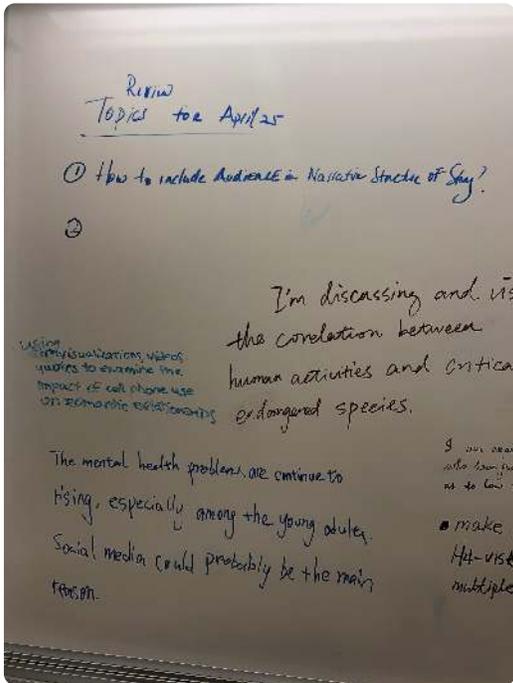
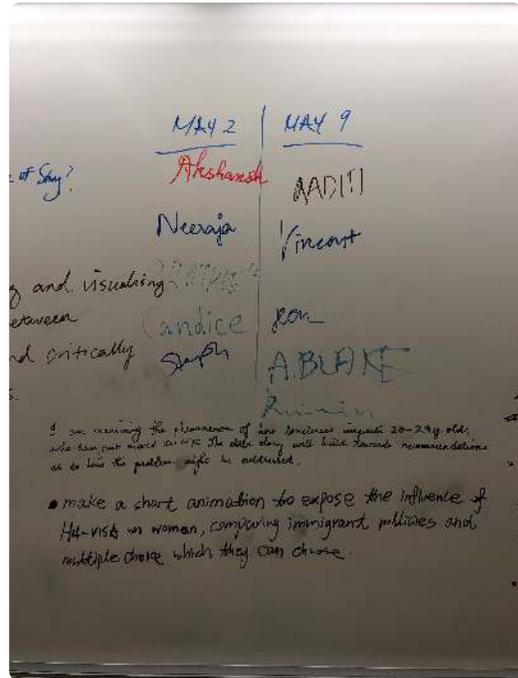
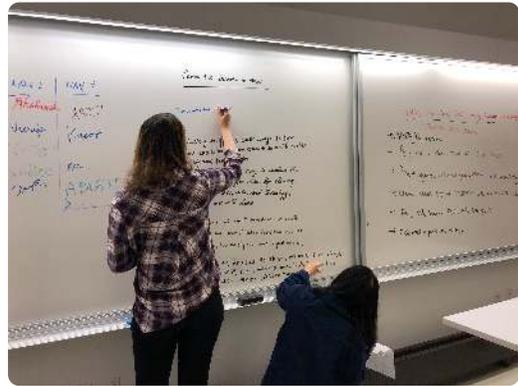
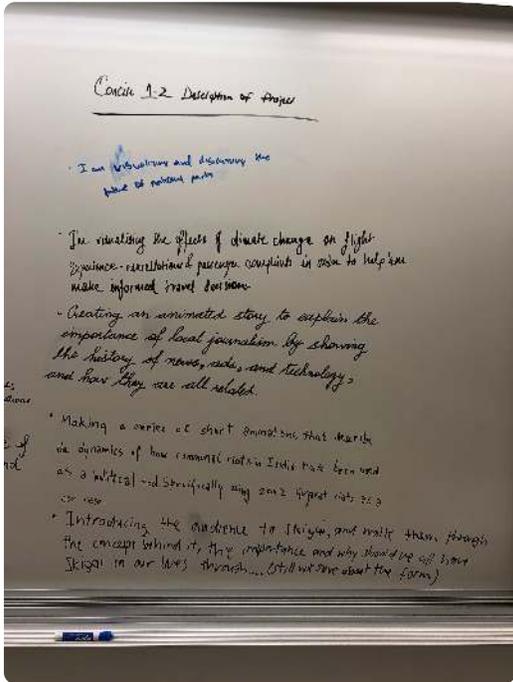
REFERENCE: Bloomberg
 What's really warming the world?
 ↳ Good way to share your data story
 ↳ Another reference by NY Times - Sharing a data story on Privacy (Brooklyn security camera)

* A helpful construct to think about where you are in a space - ANALYTIC PATH TO INSIGHT



↳ How far are you in this story?





25 Apr. 2019

25 APRIL 2019

* Arunesh Kaushik : Digital Marketing Guru
(Brent Dykes replicated his work)
↳ He has asked 3 "so-what" questions.

For final project : Narrative Structure's Conclusion
Understand your audience (Herwants lecture)

↳ Q1 : Why should your audience care?
↳ Q2 : What should they do about it?
↳ Q3 : What is the potential business impact?

* You should have "1" target audience. If NOT, your ~~viewers~~ viewers will have extraneous load.
↳ Specify that in your final presentation.

o Presenting your data story :
If your listeners are not your audience, they would act as a proxy for your audience.
So, give them a persona of your audience.
↳ YOUR PROLOGUE

* Activity : What do your evaluators need to know for them to be your audience (put themselves in your audience's shoes)

- My audience for this data story is the local community. It is a group of people in a small geographical area which ~~are~~ may be connected with each other.

In the past ~~the~~ people formed a community with their neighbors & now, with ~~the~~ technology having brought the world closer, people have moved away from their neighborhood connections.

This trend extends in the area of journalism. With exhaustive amount of content present online, the locals feel that their local news media company is doing well, through online ads, promotions, etc.

But, they don't realize that local newspapers are actually collapsing.

This data story is for the local community to make them realize the existing state of local journalism & what they should do to support it.

So, you are those people who live in that small neighborhood, listen to stories about traffic congestion, follow the news of your child's events in school...

* Not everyone understands a local community.
So, make sure you clear that to your audience.

* **Criteria** : How actionable is your insight?
↳ Valuable : perceived value is a motivating factor
↳ Relevant : know your audience + what's relevant to them
↳ Practical : Is it feasible?
↳ Specific : the more specific → the more clarity
↳ Concrete : more concrete → more drive for action
↳ Contextualized : context for appreciation

o Arunesh Kaushik : Have "Out of Sight", instead of "Insight".
↳ NARC : Novel Actionable Relevant Credible

* Discussion on Ch-5 from Data Driven Storytelling

↳ Reference : napa-cards.net
↳ great data viz charts

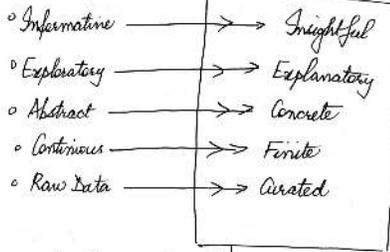
* Final presentation evaluation

Met the criteria Exceeded criteria Didn't meet the criteria

Criteria :
1. Identify a key insight & correlation ≠ causation
2. Minimize or remove bias
3. Gain adequate context
4. Understand your audience
5. Curate the information
6. Assemble the story
7. Provide narration
8. Choose the visuals
9. Add credibility
↳ examples to visualize your data (contextualization)
↳ Ref : Tableau cookbook
what makes you a credible story-teller?

↳ *Datastory Continuum*

↳ *Every data doesn't need a story*



The closer to the right, the more it's required for storytelling.

Final Projects due in class on May 2/9 (30% of your grade)
The success of your narratives will depend on your ability to effectively perform the following tasks and responsibilities as the data storyteller:

- **Identify a key insight.** As the storyteller, you are responsible for directly or indirectly finding a meaningful data insight and deciding whether it needs to be prepared and shared as a data story.
- **Minimize or remove bias.** Everyone has inherent biases. It's important to be mindful of what years are and strive to make your data communication as objective as possible.
- **Gain adequate context.** Prior to telling a data story, you should have ample contextual or background knowledge to ensure the insight is meaningful and will resonate with your audience.
- **Understand the audience.** Each insight will appeal to a particular audience. You need to understand your audience and your intended impact: awareness, persuasion, influence, etc.
- **Curate the information.** As the storyteller, you will apply your judgment to determine what data should be included and not included in the story. Too much information will overwhelm your audience but too little may not catch their attention.
- **Assemble the story.** As you direct your data story, you will decide on the flow of the story and how the different elements come together. The organization or structure of the information can be just as crucial to the story's success as the underlying data itself.
- **Provide narration.** The storyteller acts as a guide through the information and helps the audience to understand and interpret the data. By adding your narrative to the numbers, you unavoidably become a central part of the story. Choose your words carefully - each word or phrase needs to be meaningful in the context of your story.
- **Choose the visuals.** With various chart types and visualization options to choose from, your design decisions will shape how a key insight is perceived and understood by the audience. In this area, you wield significant influence as a single data set can often be visualized in multiple ways and convey vastly different messages.
- **Add credibility.** The storyteller's reputation and expertise can lend credibility and authority to the numbers. If you are perceived as being untrustworthy or overly biased, you can undermine the validity of an otherwise sound data story.

from Oakes, Chapter 3 The Anatomy of a Data Story

It usually swings back naturally to values in fiction.
From sport to crime and disaster, we see this common theme.
An effect we call, statistically, regression to the mean.

When Bruce plays his cards right and he's holding up a queen, the house that uses a lower card is likely to be won.
Because there are so many cards much lower than a queen, it's simple probability. It's regression to the mean.

Random fluctuations of performance in sports.
Slightly better professionals, who use gimmicks of all sorts.
Cry-babies, magicians, repair manuals, chess masters.
But improvements in achievement are regression to the mean.

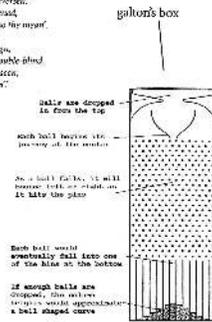
A man with a few kachichis, that sometimes gets much worse.
May turn to normal troubles and never let you're recovered.
Perhaps it has, but not because the herbalist discovered.
The pain will ease quite simply through regression to the mean.

Evidence-based treatments that doctors should design.
The tests that will be randomized, controlled and double-blind.
stepping self diagnosis before those test results are seen.
It stops them being fooled by regression to the mean.

REGRESSION TO THE MEAN

"Regression to the mean is not a natural law. Merely a statistical tendency. And it may take a long time before it happens."

— Peter Bevelin



When Kohnen was getting a letter to teach, he knew about the psychology of education. He was the first to understand his experience that extending grass to his school. He was in some performance, whereas holding his to an improvement in educational efforts. As a consequence, he had grown to his genius with regular feedback and had become rather wary of getting his much praise.

Kohnen immediately noted that it was regression to the mean at work. He illustrated the reasons why by a simple statistic you may want to be yourself. He drew a conclusion

A keyboard and they asked the others one by one to throw a piece of chalk on the center of the case with their back to the blackboard. It then reported the experimenter and associated each other's performance in the last and second trial.

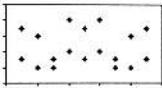
Normally those that did best in the first trial tended to do worse on their second try and vice versa. The only thing that became clear: the change in performance comes randomly. They again had to say the feedback does not cause it all - maybe it does, but the other and no evidence is available to tell.

The Imperfect Correlation and Chance

At this point, you might be wondering why the regression to the mean happens and how we can make sense of the error of a when it means.

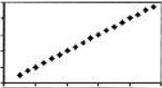
In order to understand regression to the mean, we must first understand correlation.

The correlation coefficient between two variables which vary between -1 and 1, is a measure of the relative weight of the factors they share. For example, one plant grows with four factors shared, each to better some characteristics, versus six shared, one shared, one common coefficient of close to 1. The further away from 1, the more different the variables are. The correlation coefficient of a specific year against your score on a previous year's test, the post score, shows no relation at all.



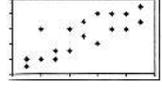
no correlation

On the contrary, there are measures which are widely distributed on the same factor. A good example of this is the correlation between the number of cigarettes smoked and the corresponding value in cholesterol. The higher the number of cigarettes, the higher the cholesterol. The correlation coefficient of 1 and the plot, will be a straight line.



correlation = 1

There are few if any phenomena in human nature that have a correlation coefficient of 1. There are however, plenty where the association is weak or moderate and there is some correlation. A good example of this is the correlation between height and weight. While normally, every 100 lbs. will be lighter and shorter than every 100 lbs. taller, not all 100 lbs. men or 100 lbs. women of the same height will weigh the same.



moderate correlation

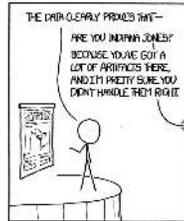
When the correlation of two measures is less than perfect, we must watch out for the effects of regression to the mean.

Kahneman observed a general rule: Whenever the correlation between two scores is imperfect, there will be regression to the mean.

Evolutionary Regression

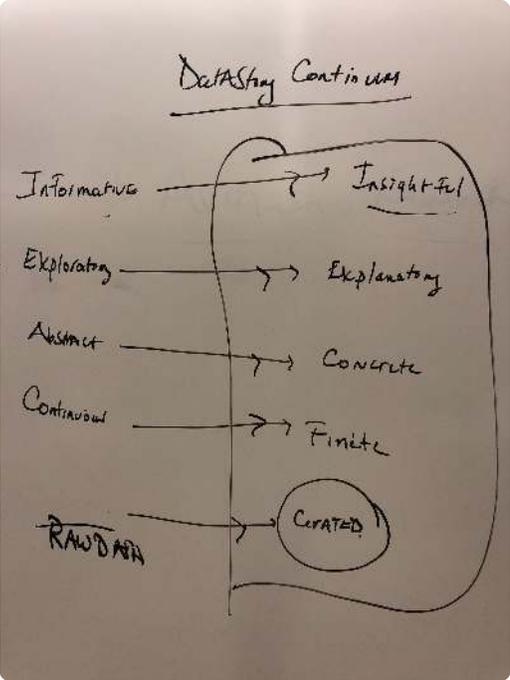
This sounds an awful lot like regression to the mean should never happen since the universe is full of things doing worse, everything is tangled up with everything else, and mutual information always exists except when it doesn't exist. We could suppose in the cavity that every instance of what we think is regression to the mean is actually regressive behavior, but this hardly seems parsimonious since nothing happening is generally more likely than something happening, and any feedback whatsoever demands at least phenomenological consciousness. So how can it be that we see regression to the mean so often if in reality the conditions of an operation are never met?

The answer is entropy. Regression to the mean isn't a process so much as a manifestation of the general tendency of the universe to move towards low energy states as seen through the lens of statistics. Thus it's not that the existence of mutual information prevents regression to the mean from happening, but that mutual information is the work being done to counteract regression to the mean, and if that mutual information is not enough - if not enough entropy is displaced to notice a local rise in complexity - then it falls into the background noise and goes unnoticed because it's weaker than the static that is regression to the mean.



Criteria: How ACTIONABLE is your insight? *Out of Sight* NONE, ASSESSABLE, RELEVANT, CONCRETE

- **VALUABLE** - perceived VALUE is a motivating factor
- **RELEVANT** - Know your Audience + what's relevant to them
- **PRACTICAL** - IS it Feasible?
- **SPECIFIC** - the more specific → the more clarity
- **CONCRETE** - more concrete → more drive for action
- **CONTEXTUALIZED** - context for application



CLASS ROLL

Brownies IIII
 Cookies IIII
 Blueberry Muffins II

Apple Cider IIII
 Milk Makers IIII

end of course