

Storytelling with Data

Module 5: Analyze before you speak—audience analysis

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Unanswered, or new, questions from discussion?

Agenda

Next deliverable, and today's objectives

Wearing shoes of the marketing executive

Heuristics and biases
(yours and your audiences)

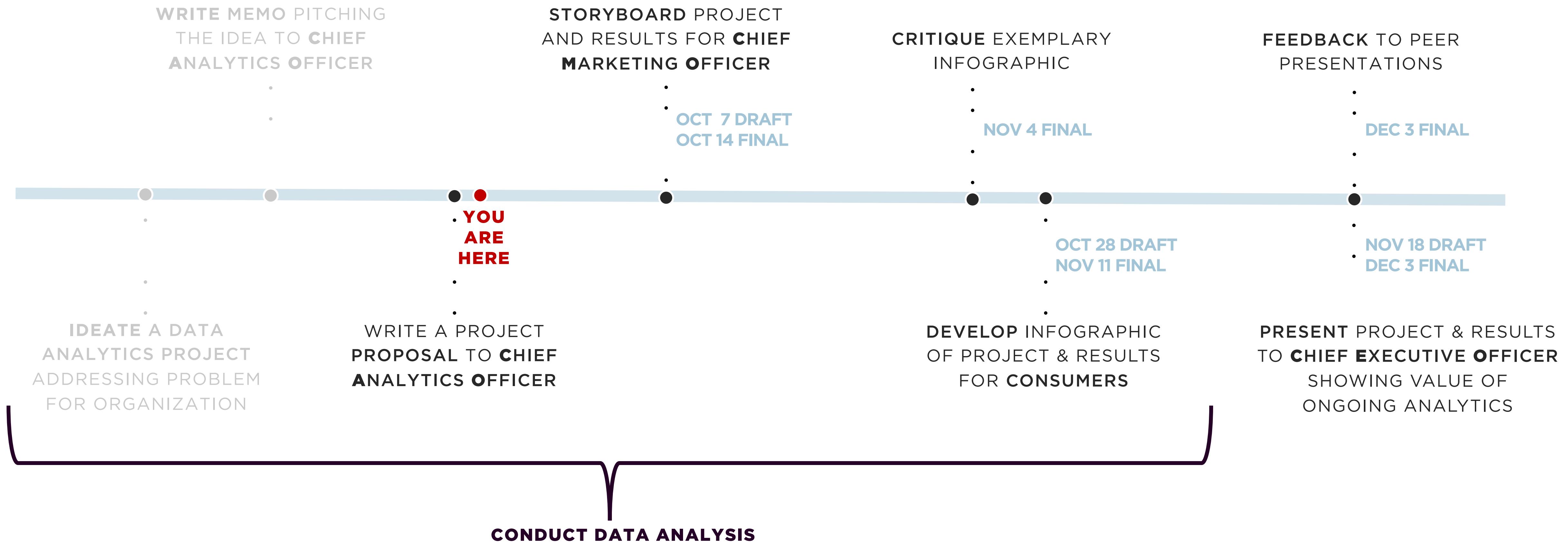
Comparison as narrative structure

Getting started with storyboards,
a tool for testing narrative structure

Upcoming deliverable

Upcoming deliverable

In **Storyboard** form – describe (1) your project, (2) preliminary results or insights so far, and (3) why those results are interesting for the marketing team. Use a distinct narrative arc (beginning, middle, and end), be clear and accessible for the **CMO**.



Today's Objectives

Objectives

- 1 | Articulate the need for **audience analysis** and sensitivity in the applied analytics setting.
- 2 | Consider **professional, demographic, cultural, and personal issues** when building, contributing to, or managing an analytics team or project.

Communicating analytics with marketing: who's the CMO?

“Technical” Chief Analytics Officer

Leads an organization’s data analytics strategy, driving data-related business changes to transform company into a more analytics-driven one.

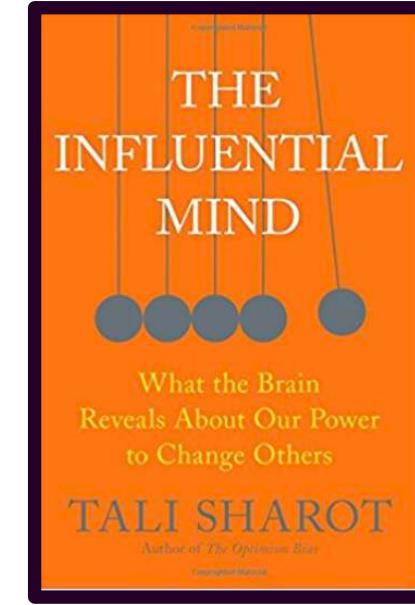
“Less-Technical” Chief Marketing Officer

Leads responses to changing circumstances; shapes products, sales strategies, and marketing ideas, collaborating across the company.

The influential mind

Sharot

A London neuroscientist, her research focuses on decision-making, emotion, and influence.



Learn what your audience is thinking

If we want to affect the behaviors and beliefs of the person in front of us, we need to **first understand what goes on inside their head**.

Formula for changing beliefs

Four factors come into play when we form a new belief: our **old belief** (this is technically known as the “prior”), **our confidence in that old belief**, the **new evidence**, and **our confidence in that evidence**.

Find common ground with audience's beliefs

When you provide someone with new data, they **quickly accept evidence that confirms their preconceived notions** (what are known as prior beliefs) and **assess counterevidence with a critical eye**.

Focusing on what you and your audience have in common, rather than what you disagree about, enables change.



David J Carr

Strategy Director, ex-CD, Planning Director & Head of UX @ Digitas, DIG, Publicis, Chemistry & JWT, APG Gold & Google Planning Innovator of Year.

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Latest

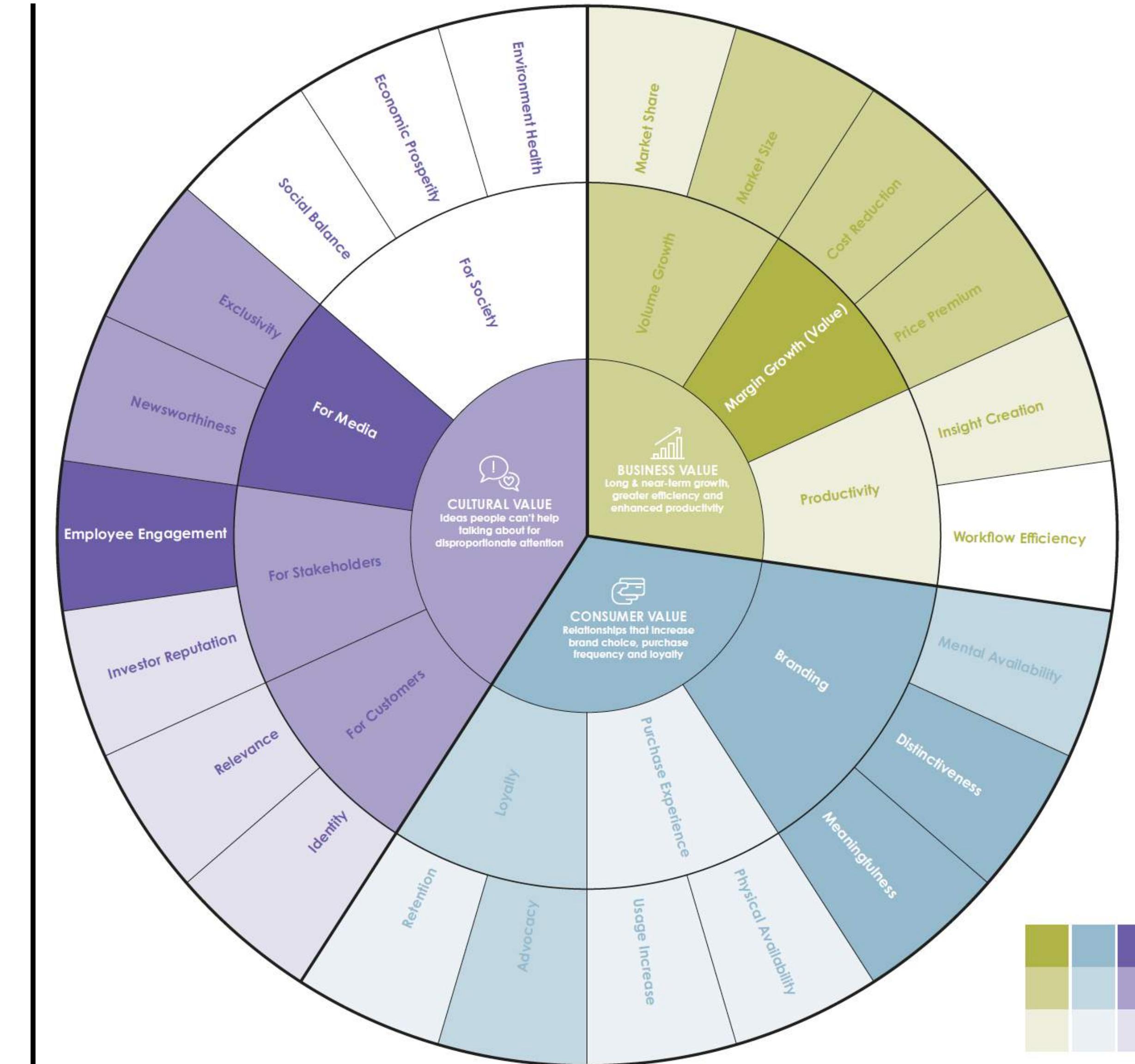
What Value do you Create? Marketing's 3 Types of Value

2.5K responses

What Value do you Create? Marketing's 3 Types of Value.

Carr

David is Director of Marketing Strategy and Analysis at Digitas, a global marketing agency.





A Map of Modern Brand Building

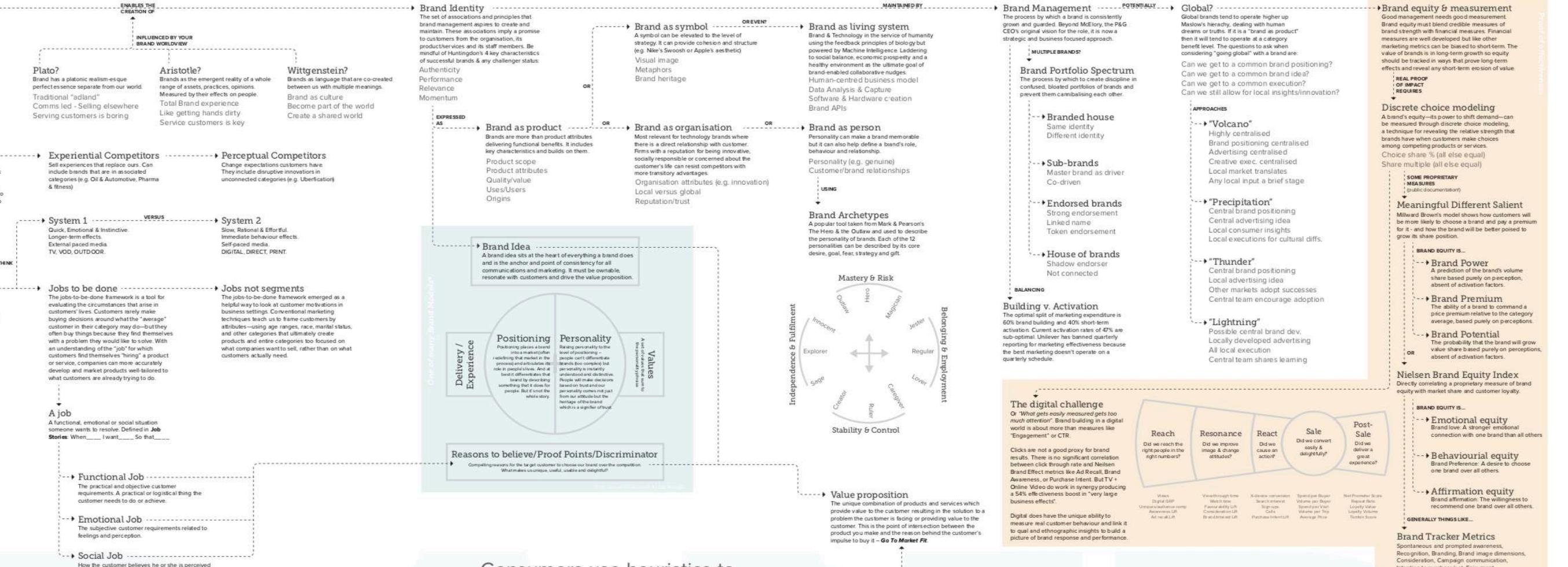
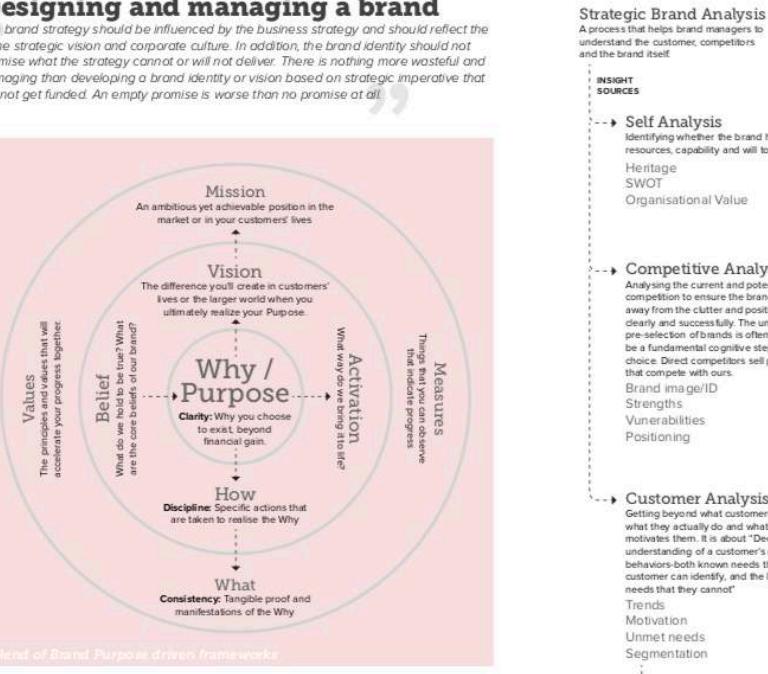
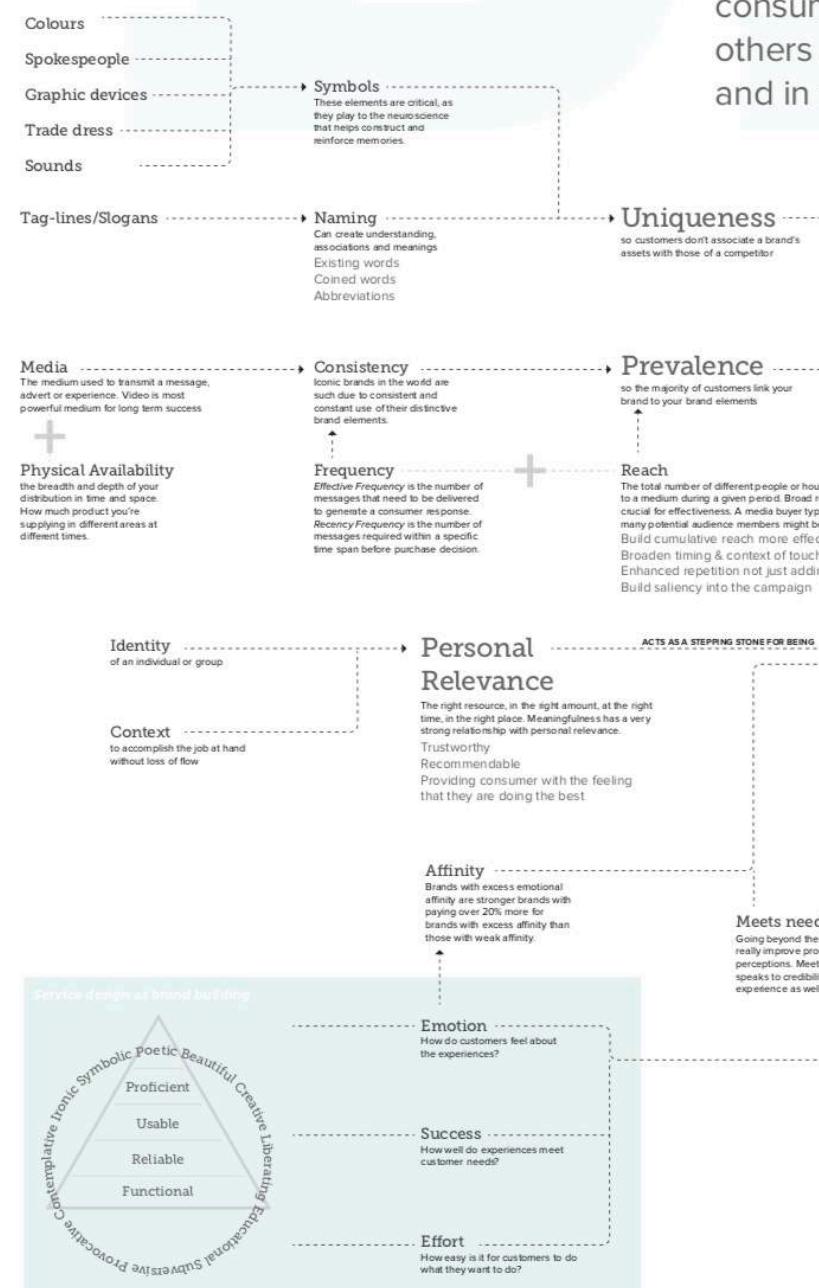
David is Director of Marketing Strategy and Analysis at Digitas, a global marketing agency.

Storytelling with Data – Lecture 5



"First, it has to be a **coherent totality**, not a lot of bits. The physical product, the pack and all the elements of communication - name, style, advertising, pricing, promotions, and so on - **must be blended** into a single

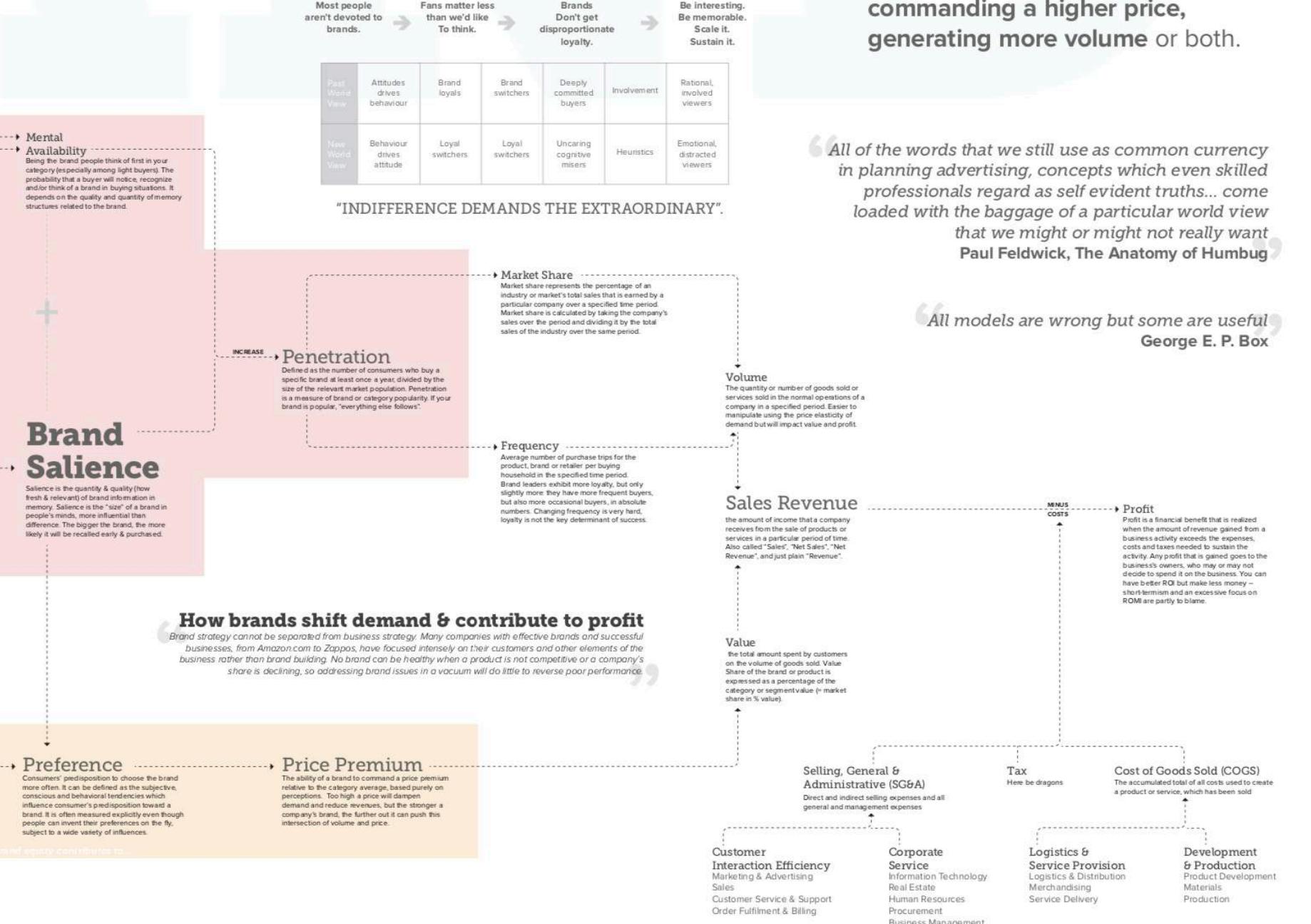
brand is a set of **associations** that combine with **heuristics** to reduce the complexity of buying decisions.



Consumers use heuristics to make 'good enough', not perfect, decisions. Consumers are not rational, involved and deeply committed buyers, but uncaring cognitive misers who rely upon

heuristics in the mind of consumers to **shift demand**
reduce the effort in making a
buying decision to a minimum.

by creating **mental and physical availability**. Well-managed brands
use these heuristics to their advantage.



mate point of a brand is not emotional appeal, or buzz. The point is to shift

ing mental and physical
ity. Well-managed brands
mand in several ways: by
nding a higher price,
ing more volume or both.

All of the words that we still use as common currency in planning advertising, concepts which even skilled professionals regard as self evident truths... come loaded with the baggage of a particular world view that we might or might not really want

Paul Feldwick, The Anatomy of Humbug

models are wrong but some are useful
George E. P. Box

Marketing executives' understanding, and uses, of data



Data is the new oil: dirty, misunderstood, polluting the world & pulled from all the wrong places

Carr

David is Director of Marketing Strategy and Analysis at Digitas, a global marketing agency.

Data drives marketing, can reveal biases

Limitations in data need to be understood, addressed

Use of data is about truth and trust, requires openness about source and methodology

Data is an AND, not an OR

This marketing director knows that marketing is data-driven. Further, "Data can often show the basis for our biases and intuition."

He also understands issues with use of data:

Sources of unique data can be limited.

Data is often corrupted, unhygienic, or mis-transformed when converting to information.

Data is often guestimated, panel-skewed, inaccurate, and not proven, but at the same time "treated as gospel."

Measured data is only part of the story; things that go unmeasured are important and can change what the total information mean from a business standpoint.

"The debate about the use of data in marketing and communications is really a debate about truth and trust, the two biggest issues in the world today."

"Where data has been best used is where it combines with empathy and imagination to shift our way of thinking."

Think. Pair. Share.

Think about the relevance of your analytics project to a marketing executive at your organization. **Write** it down.

Pair up, and take turns briefly discussing your project **data**, what **analysis** you are conducting, and identify how it is **relevant to a marketing** executive.

The person **listening** should strive to provide **helpful feedback**. Probe. Ask questions.

Get Specific!

Analyzing audiences, heuristics and biases

Audience: questions to specifically answer

Who is the audience or decision maker?

What is your relationship with them?

What do you need them to know or do?

How will you communicate with them?

What tone do you want your communication to set?

What data are available to help make your point?

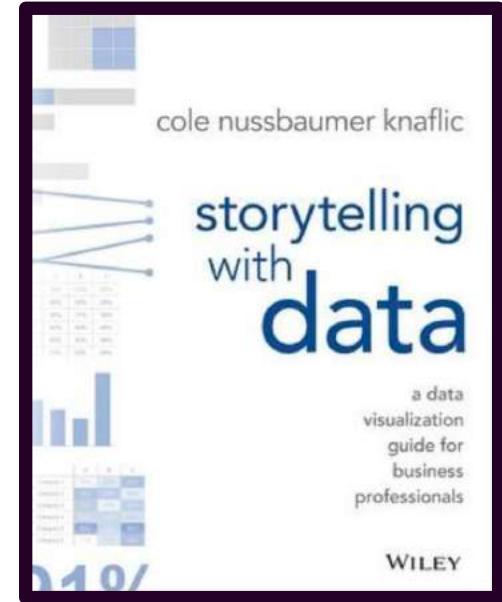
Is your audience familiar with these data?

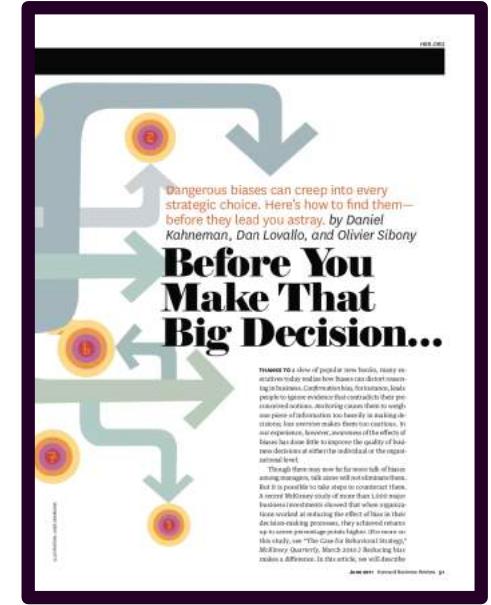
What are audience biases as related to your messages?

Storytelling with data

Knafllic

The author is a consultant focused on visual displays. Her experience arose from human resources in Google where she applied theory learned as a student of Yale's Edward Tufte.





Before you make that big decision...

Kahneman, co-authors

Awarded the Nobel-Prize in economics and senior scholar at Princeton, Kahneman introduced the idea of cognitive biases, and their impact on decision making.

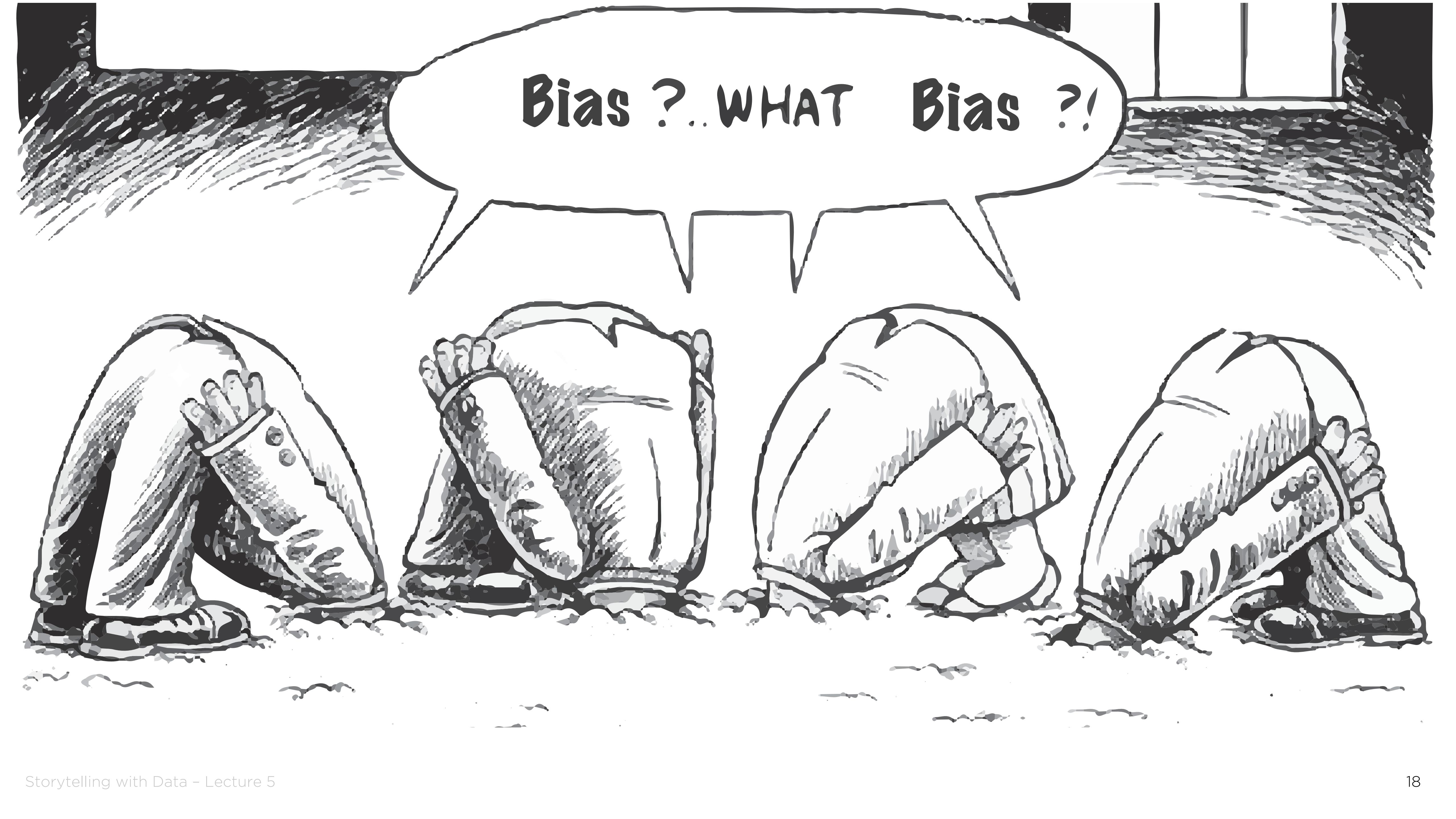
Two modes of thinking

Intuitive (system one) thinking, impressions, associations, feelings, intentions, and preparations for actions flow effortlessly. This system mostly determines our thoughts. System one uses **heuristics**, has **biases**.

Reflective (system two) thinking is slow, effortful, and deliberate.

Both are continuous, but system two typically monitors things, and only steps in when stakes are high, we detect an obvious error, or rule-based reasoning is required.

It's very **hard to remain aware of our own biases**, so we need to develop processes that **identify them** and, most importantly, get feedback from others to **help protect against them**.



Bias ?..WHAT Bias ?!

1

Check for self-interested biases

Is there any reason to suspect the team making the recommendation of errors motivated by self-interest?

Review the proposal with extra care, especially for over optimism.

2

Check for the affect heuristic

Has the team fallen in love with its proposal?

Rigorously apply all the quality controls on the checklist.

3

Check for groupthink

Were there dissenting opinions within the team? Were they explored adequately?

Solicit dissenting views, discreetly if necessary.

4

Check for saliency bias

Could the diagnosis be overly influenced by an analogy to a memorable success?

Ask for more analogies, and rigorously analyze their similarity to the current situation.



Check for confirmation bias

Are credible alternatives included along with the recommendation?

Request additional options.



Check for availability bias

If you had to make this decision in a year's time, what information would you want, and can you get more of it now?

Use checklists of the data needed for each kind of decision.



Check for anchoring bias

Where are the numbers from? Can there be ... unsubstantiated numbers? ... extrapolation from history? ... a motivation to use a certain anchor?

Re-anchor with data generated by other models or benchmarks, and request a new analysis.



Check for halo effect

Is the team assuming that a person, organization, or approach that is successful in one area will be just as successful in another?

Eliminate false inferences, and ask the team to seek additional comparable examples.

9

Check for sunk-cost fallacy, endowment effect

Are the recommenders overly attached to past decisions?

Consider the issue as if you are a new executive.

10

Check for overconfidence, optimistic biases, competitor neglect

Is the base case overly optimistic?

Have a team build a case taking an outside view: use war games.

11

Check for disaster neglect

Is the worst case bad enough?

Have the team conduct a premortem: imaging that the worst has happened, and develop a story about the causes.

12

Check for loss aversion

Is the recommending team overly cautious?

Align incentives to share responsibility for the risk or to remove risk.

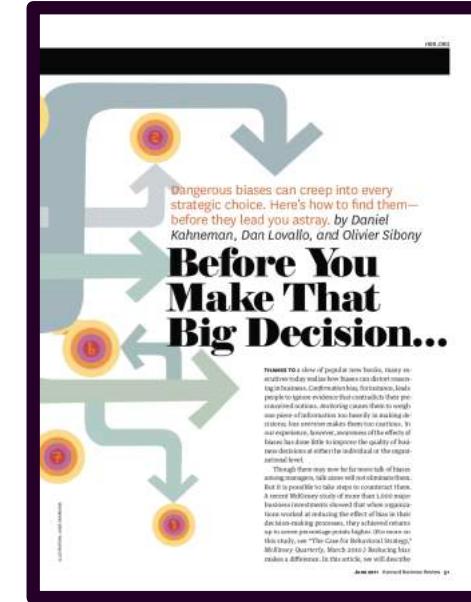
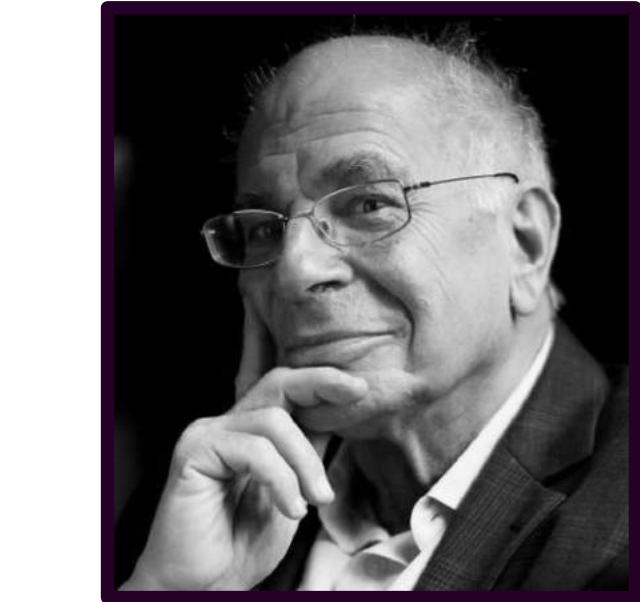
Think. Pair. Share.

What biases do you perceive the marketing executive at Digitas — David Carr — may have?

What information might he **quickly accept**?

What information might he assess with a **critical eye**?

How might you **address those biases** if you discussed your data analytics project with him?



Before you make that big decision...

Kahneman, co-authors

Awarded the Nobel-Prize in economics and senior scholar at Princeton, Kahneman introduced the idea of cognitive biases, and their impact on decision making.

Keeping out the appearance of bias

Present ideas from a **neutral perspective**. Becoming too emotional suggests bias.

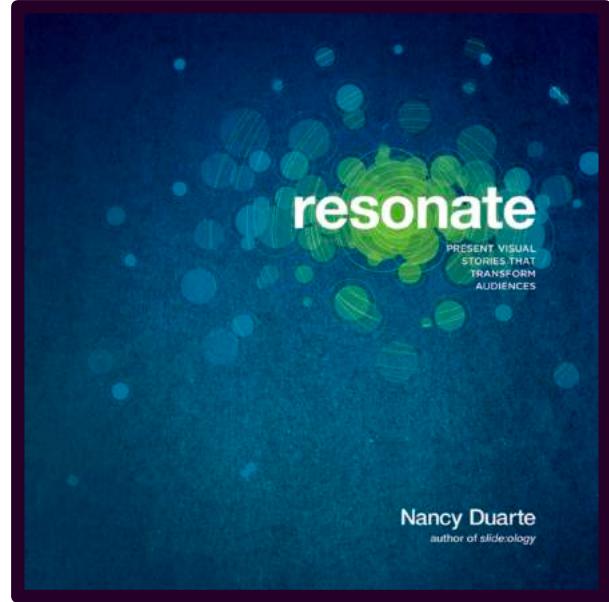
Make **analogies and examples comparable** to the proposal.

Genuinely **admit uncertainty** in the proposal, and **recognize multiple options**.

Identify **additional data** that may provide new insight.

Consider **multiple anchors** in the proposal.

Comparison as narrative structure



The Contour of Communication

Duarte

Duarte is known for her work with Vice President Al Gore on the award-winning documentary slide show known as An Inconvenient Truth.

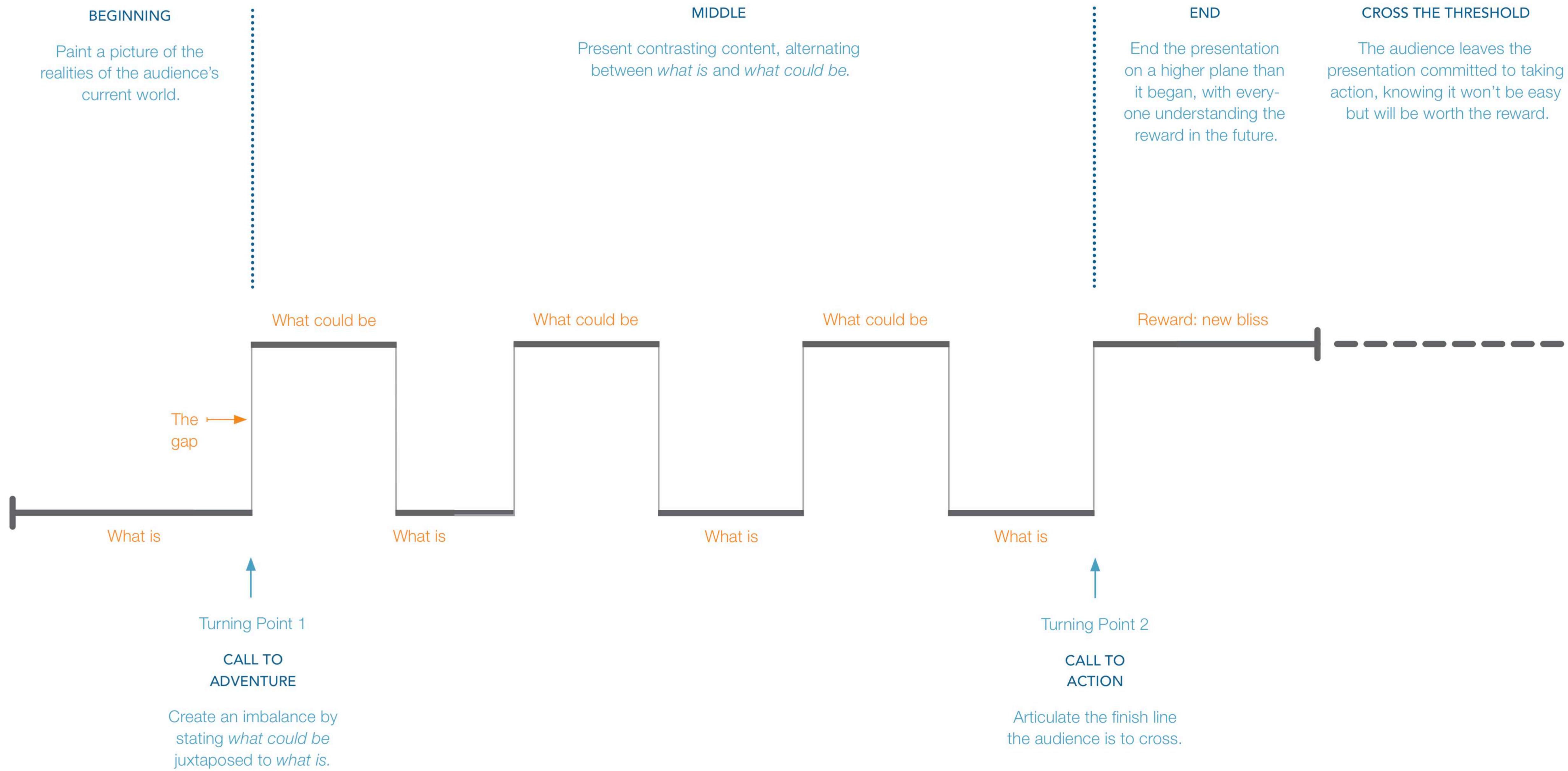
What
could be

The
gap



What is

Dramatic tension is created by contrasting the commonplace with the lofty.



Analyzing comparison as narrative structure

Recall some of our examples so far,

The Next Rembrandt (to general audience)

Jakarta analytics blog post and paper (to other data scientists)

Dodgers analytics project draft memo and proposal (to Director of Quantitative Analytics)

Citi Bike infographic (to general audience)

In each of these, can we identify any “**what is**” and “**what could be**”, creating a “**gap**”?

Applying comparison as narrative structure

Think. In each of your analytics projects, identify a “what is” and a “what could be”, that creates a “gap” you are bridging with your analytics projects.

Pair up. Get feedback from your peer for ideas on **how you can improve** these contrasts.

Consider how your projects are relevant to the marketing executive, and how your **narrative** to the CAO **can be changed for the CMO**.

Sneak peek: storyboards, a tool for testing narrative

Oxford English Dictionary

Storyboard, *n.*

[View as: Outline](#) | [Full entry](#)

Pronunciation: Brit.  /'stɔːrɪbɔːd/, U.S.  /'stɔri,bɔ(ə)rd/

Frequency (in current use):  

Origin: Formed within English, by compounding. **Etymons:** [STORY *n.*](#), [BOARD *n.*](#)

Etymology: < [STORY *n.*](#) + [BOARD *n.*](#).

Film and Television.

A sequence of drawings or other images, typically with some directions and dialogue, representing the shots planned for a film, television programme, or advertisement. Also: a board on which such images are displayed.

- 1941 *Pop. Sci.* Mar. 109/2 Reese thinks nothing of sitting down in the morning prepared to fit sounds to 80 photographs of scenes laid out before him on a story board.
- 1965 *N.Y. Times Mag.* Apr. 21/3 They send out story boards..to their three or four favorite commercial producers, for bids.
- 1975 R. HILL *April Shroud* xii. 154 A huge sheet of card pinned to the wall. On it were pasted a series of drawings... 'Yeah, that's my story board.'
- 1999 *8 Days* 4 Dec. 34/4 (caption) A hand-drawn Storyboard panel captures a moment with *Toy Story 2* characters.
- 2003 *Dreamwatch* Aug. 25/1 Not all the special effects were in, so at some points they would go to the storyboards to illustrate where the effects would be.

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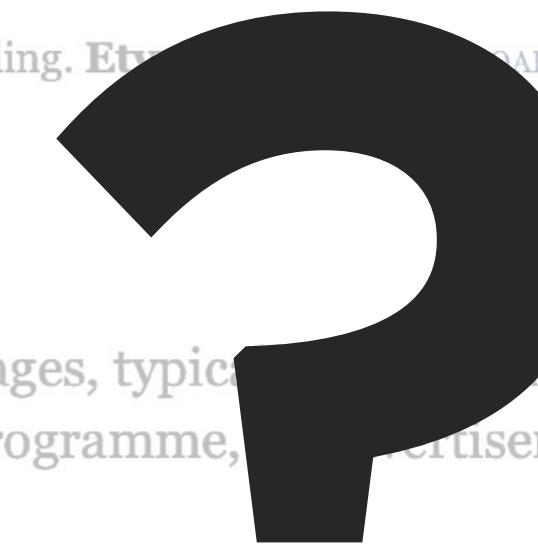
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A very simple example. Storyboard for IBM as part of making an end-to-end experience for data scientists to research, create, and collaborate.



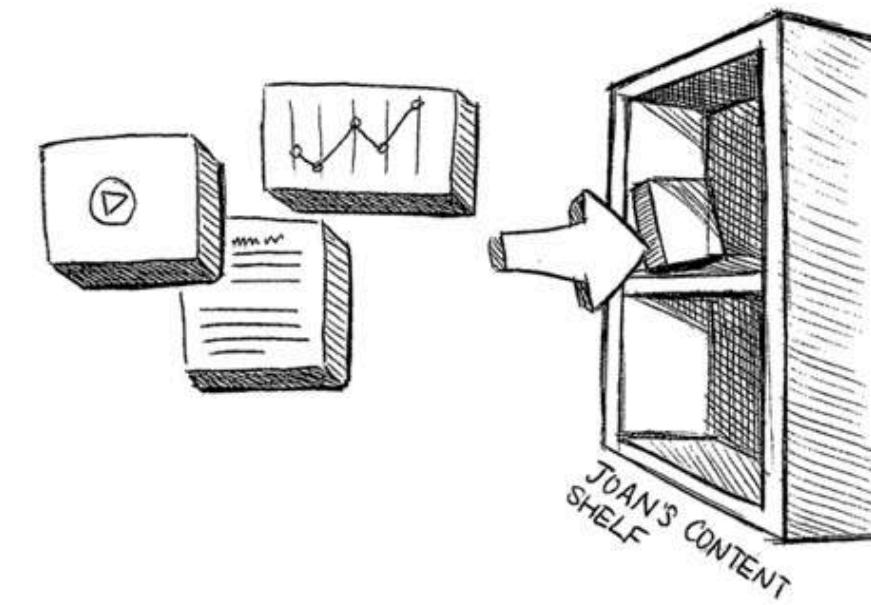
Joan, a Data Scientist at an enterprise company, is looking for resources to help her figure out how weather affects customer sales.



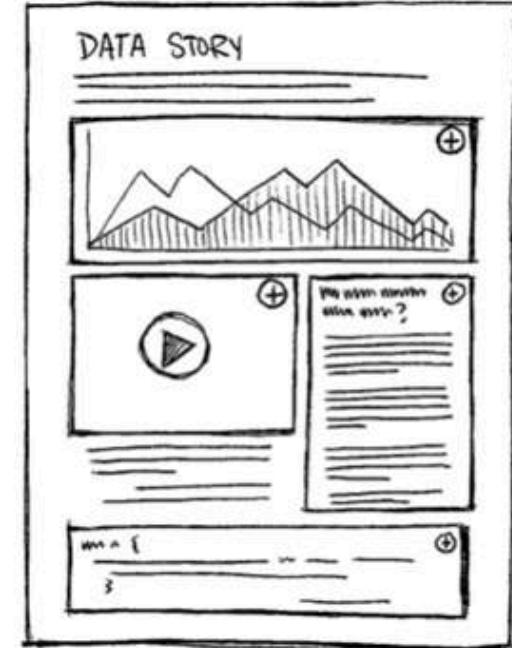
She turns to Google for help. The top search result shows a preview of an interesting paper from Project Miles.



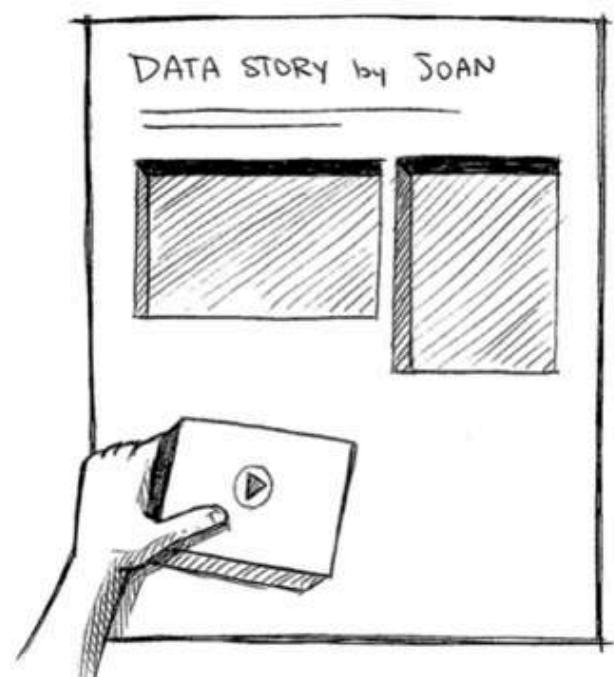
The paper presents a weather algorithm that Joan can use for her own project. She bookmarks the paper for later use.



Joan continues reading Paula's Data Story because she sees a wealth of relevant resources, e.g. videos, papers, talks, that she could use for her project.



Joan clicks on the search result where she sees the paper in context of a workflow, called a "Data Story." It was created by another user named Paula.



Once she has added a handful of resources to her bookmark list, Joan creates her own Data Story. She uses her bookmark content as a reference point.

Front Office Directory

[« Back to directory](#)



Lon Rosen

Executive Vice President & Chief Marketing Officer

One of the foremost executives in the sports and entertainment industry, Lon Rosen directs the Dodger organization's marketing, sales and broadcasting initiatives as their executive vice president and chief marketing officer.

With more than 25 years of experience in the field, Rosen was instrumental in assisting his former employer, Magic Johnson, and Guggenheim Partners in acquiring the Dodgers on May 1, 2012, in what was the largest team sports transaction in history. Rosen previously served in the same role for two years starting in 2004 before rejoining Magic Johnson Enterprises.

Rosen focused his efforts for Magic Johnson on business development, television productions, sports consulting and new media ventures, in addition to his representations of broadcasters, coaches, hosts and other entertainment personalities.

Upon graduation from college, Rosen headed to the Fabulous Forum, where he began his sports career with the NBA's Los Angeles Lakers and the NHL's Los Angeles Kings. He worked his way from an internship to the position of director of promotions for the Lakers, Kings and the Los Angeles Forum's Special Events, where he served seven years (1980-87). From there, he started his own sports marketing company, First Team Marketing, and moved into sports marketing and sports representation.

Rosen, a University of Southern California graduate, resides in Los Angeles with his wife, Laurie. They have two sons.

Visual narrative

1

Our average game attendance hovers around mid-80 percent capacity — we have seats to fill, despite having multiple winning seasons.

To draw more fans, consider the words of famed economist Simon Rotternberg, who said “uncertainty of outcome” is necessary for consumers to pay admission to ball games. While winning is important, it’s the not-knowing that creates excitement.

2

We have started modeling the uncertainty of outcome for different events in the game.

Let's focus, then, on an event that lead baseball writer for NBC sports, Calcaterra, said is potentially the most exciting play in baseball. He says that the most exciting play may be one where the baserunner just beats the catcher's throw when stealing a base.

3

Using our model, we asked whether we are maximizing base-stealing excitement. We considered running speed of the player on first base, catcher throw time to second base, the latent talents of the specific pitcher, catcher, and baserunner, and estimated the probability of successfully stealing second.

From a game outcome perspective — whether teams win — managers should be indifferent if a baserunner steals when the expected change in runs is zero. The model suggests baserunners are too conservative.

Written narrative

Visual narrative

4

Among teams, we were only average in attempting Calcaterra's most exciting play in baseball. Following the model, our baserunners will know to steal more often, when the outcome is less certain, but the probability still favors our team.

We still have room to take more risks, to give consumers more uncertainty in what happens, to entice more fans into seats.

5

Having the uncertainty of each play outcome gives our managers a new tool to tell players to take more risks. The outcome can seem closer to a coin-flip, but in the long run, we can keep our decisions on the winning side. Our model-informed game will be more exciting, making it easier to market, sell tickets, generate buzz.

6

By accessing our model, marketing can make better content even before games start. While the model is proprietary, marketing will know ahead of time what matchups may be more interesting and can use that data to build anticipation. Along with pre-game insights, marketing can better engage with fans on social media, have better highlights as streaming content. Marketing better content will add to the post-game buzz.

Visual narrative

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Visual narrative



“Uncertainty of outcome is necessary if the consumer is to be willing to pay admission to the game.”
— Simon Rotenberg, 1956

“What is the most exciting play in baseball?

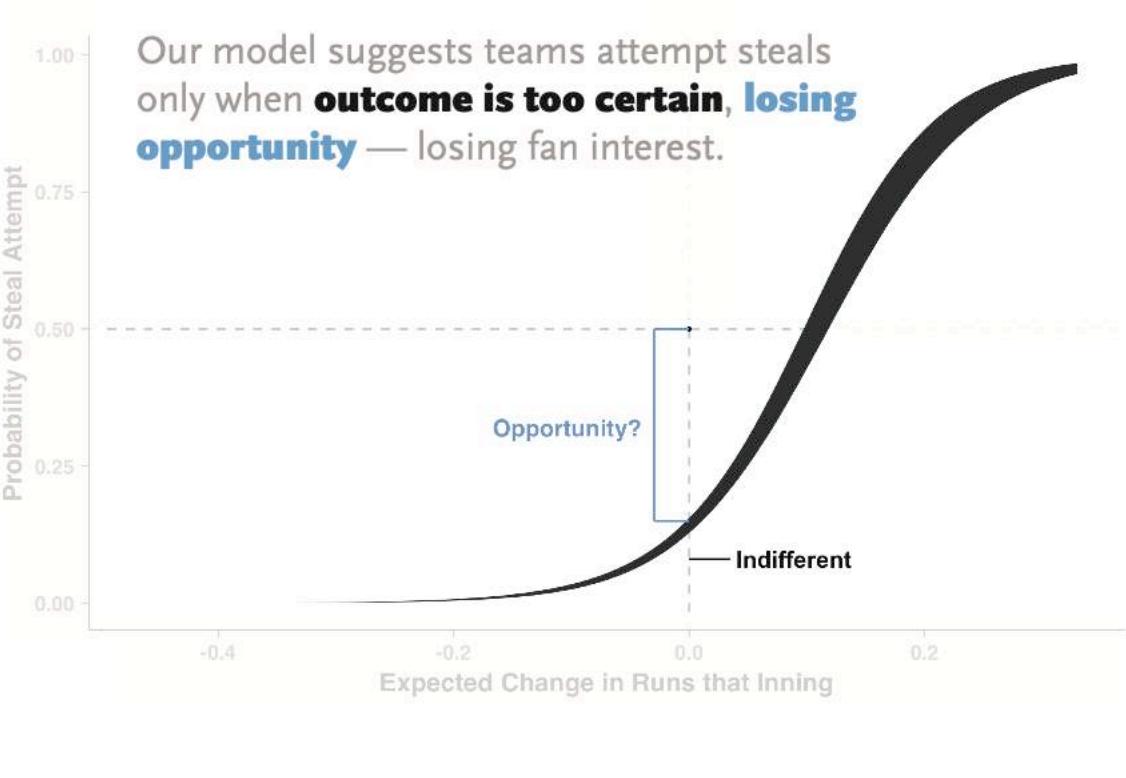
One in which the batter makes a perfect slide and **just beats the throw** right as a crowd is about to go absolutely nuts with joy, anger or amazement, depending on their rooting interests.

Which, now that I think about it, the play could be a putout if it unfolds exactly that way too. I don't care. I'm going for the **kinetic energy** and the execution of the whole deal, one way or another.

— Craig Calcaterra, Lead baseball writer, NBC Sports. August 2018



Our model suggests teams attempt steals only when **outcome is too certain, losing opportunity** — losing fan interest.



Written narrative

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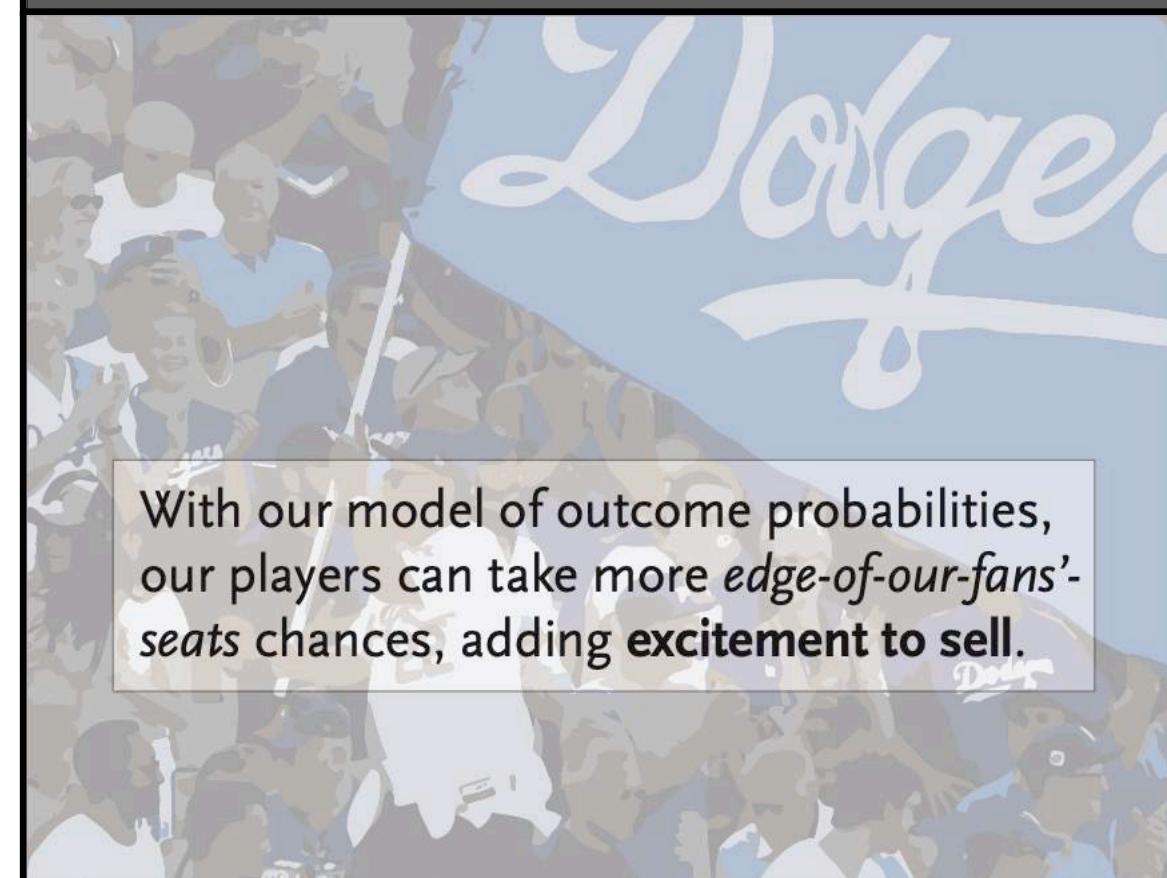
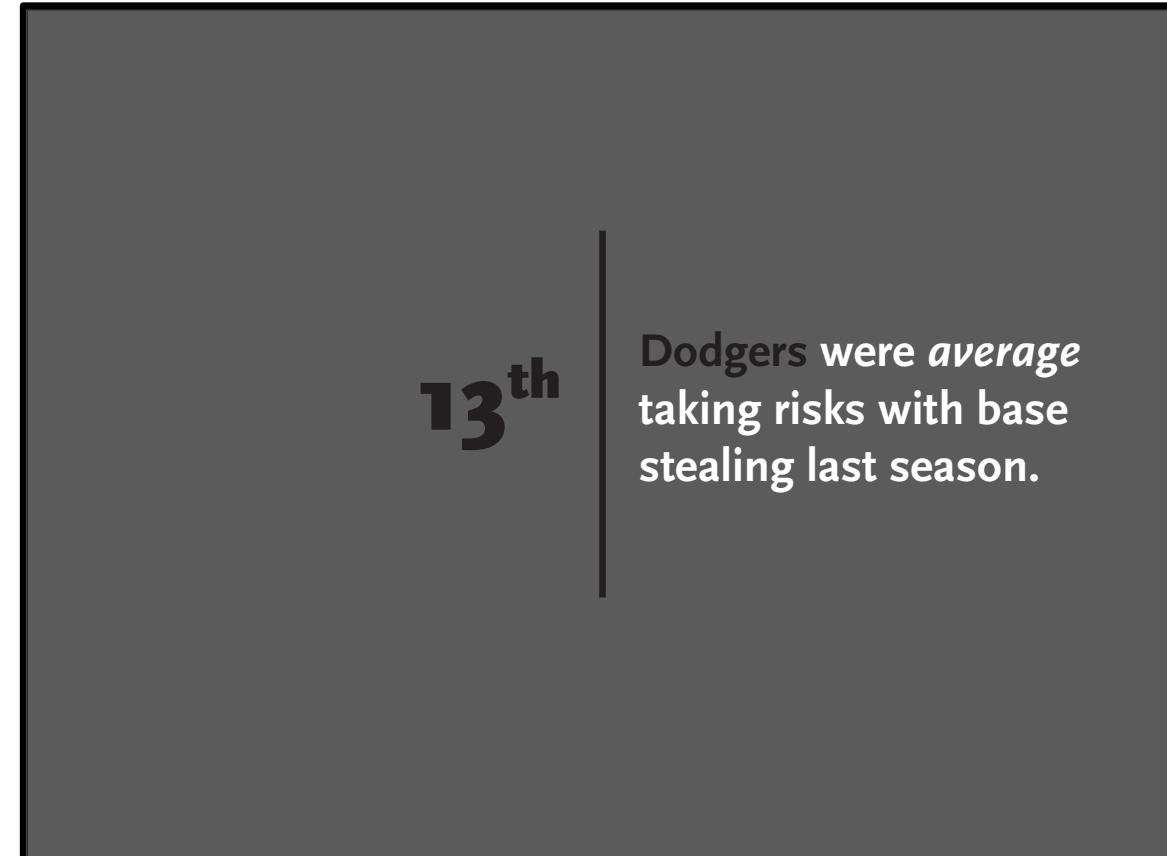
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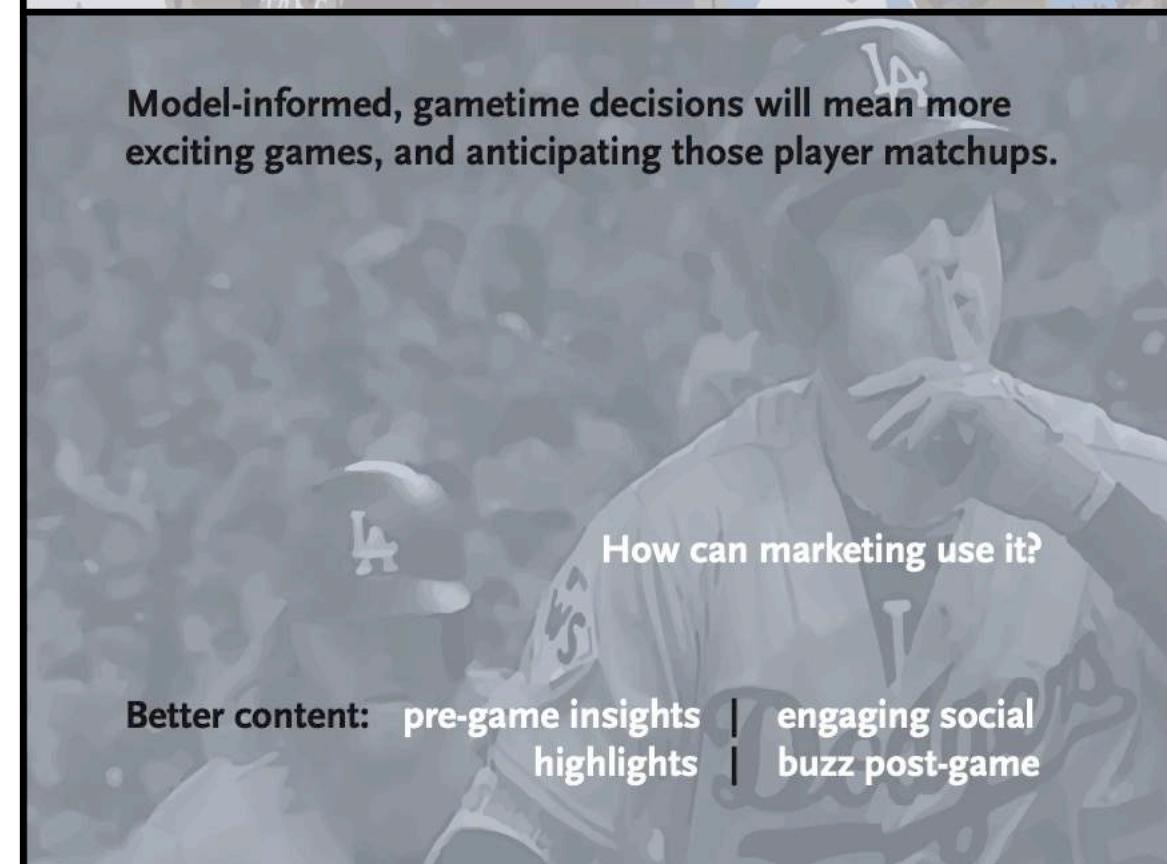
Visual narrative

4

Dodgers were average taking risks with base stealing last season.



With our model of outcome probabilities, our players can take more *edge-of-our-fans'-seats* chances, adding **excitement to sell**.



Model-informed, gametime decisions will mean more exciting games, and anticipating those player matchups.

How can marketing use it?
Better content: pre-game insights highlights | engaging social buzz post-game

Written narrative

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For contemplating.

Do you see any narrative structure in this example draft storyboard?

If so, how would you describe that structure?

If not, how would you create structure?

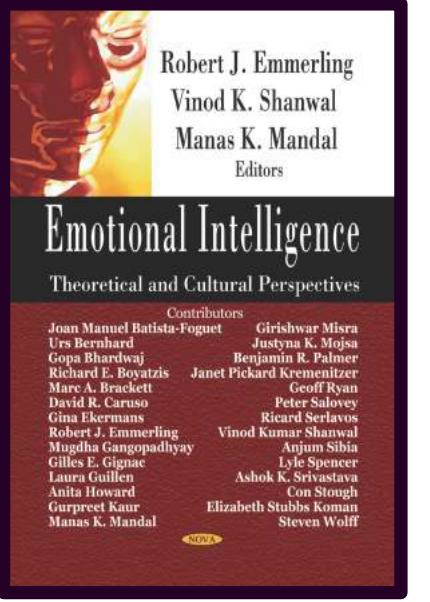
Get Specific.

Emotional tone – and context – of communication

Emotional intelligence theoretical and cultural perspectives

Salovey, co-authors

Yale president (and double bassist), Salovey introduced the idea of emotional intelligence. This book collects numerous authors' perspectives, examining the **cross-cultural similarity of the concept of emotional intelligence**.



Emotions are universal, but expression depends on culture

Emotional Intelligence guides communication

Higher and lower context cultures

Basic emotions are **perceived similarly** across the world, but display rules for emotional **expression vary** from culture to culture. That is, the norms pertaining to how—and to what intensity—certain emotions should be expressed within social contexts.

“Emotional intelligence involves the ability to monitor one’s own and **others’ feelings and emotions**, to discriminate among them, and to use this information to **guide one’s thinking and actions**” including “our **ability to communicate effectively**.”

Caveat: much of the research in this field has originated from Western cultures. This reference includes other perspectives.

In **high context cultures**, unlike the US, the internal meaning of a message is usually embedded deeper in the information; **not everything is explicitly written**.



Just keep swimming

For Next Week, Module 6:

Agenda next week

Next deliverable, **draft** storyboard

The storytelling process

The minimum

Riche, Nathalie Henry et al. Ch. 5 and 9. *Data-Driven Storytelling*. CRC Press, 2018. Print.

Read for more perspective on the process of data-driven, visual stories.

Lee, Bongshin et al. “*More Than Telling a Story: Transforming Data Into Visually Shared Stories*.” IEEE Computer Graphics and Applications 35.5 (2015): 84–90. Web.

Read for more perspective on the process of data-driven, visual stories.

McCloud, Scott. Ch. 6. *Show and Tell. Understanding Comics: the Invisible Art*. Kitchen Sink Press, 1993. Print.

Read for ideas about how words and pictures combine to tell stories.

Holtz, Yan, and Conor Healy. *From Data to Viz*. www.data-to-viz.com 2018: web.

Become familiar with common chart typologies, the types of data structures used for them, and how charts share common underlying attributes.

You get to choose which to answer

Applying Duarte's tool

Images and words?

Find a short data story online that is interesting to you, and see if Duarte's concept of a "what is" and "what may be" that creates some "gap" is present. Is it that gap that interests you or does other structure create the interest for you?

Consider what McCloud says in Understanding Comics, a reading for next week. Do you see similarities or differences between the way he describes using images and words, with the way images and words are used in the Dodgers example draft storyboard?

**See you
next week!**

