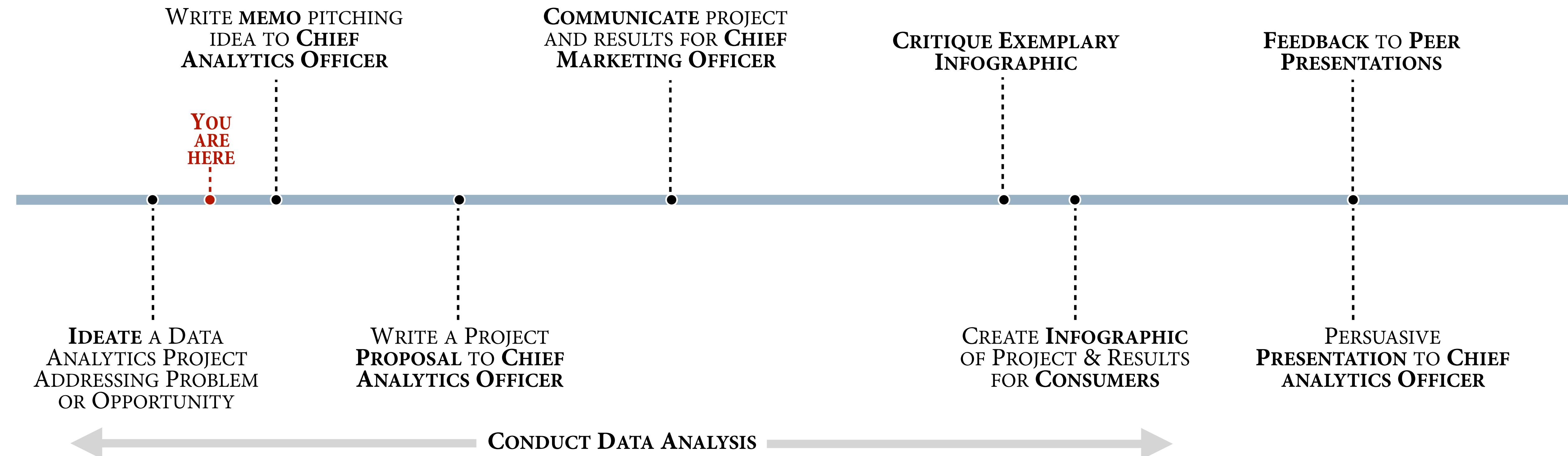


Storytelling With Data

Persuasive business writing: purpose, audience, and craft

Conceptual project timeline



the point of (business) communication

Get our audience to

pay attention to,
understand,
(be able to) act upon



a maximum of **messages**,
given constraints.



Information versus messages

INFORMATION | A concentration of 175 μg per m^3 has been observed in urban areas.

MESSAGE | A concentration in urban areas ($175 \mu\text{g}/\text{m}^3$) is unacceptably high.



Three laws of communication

Adapt to your audience

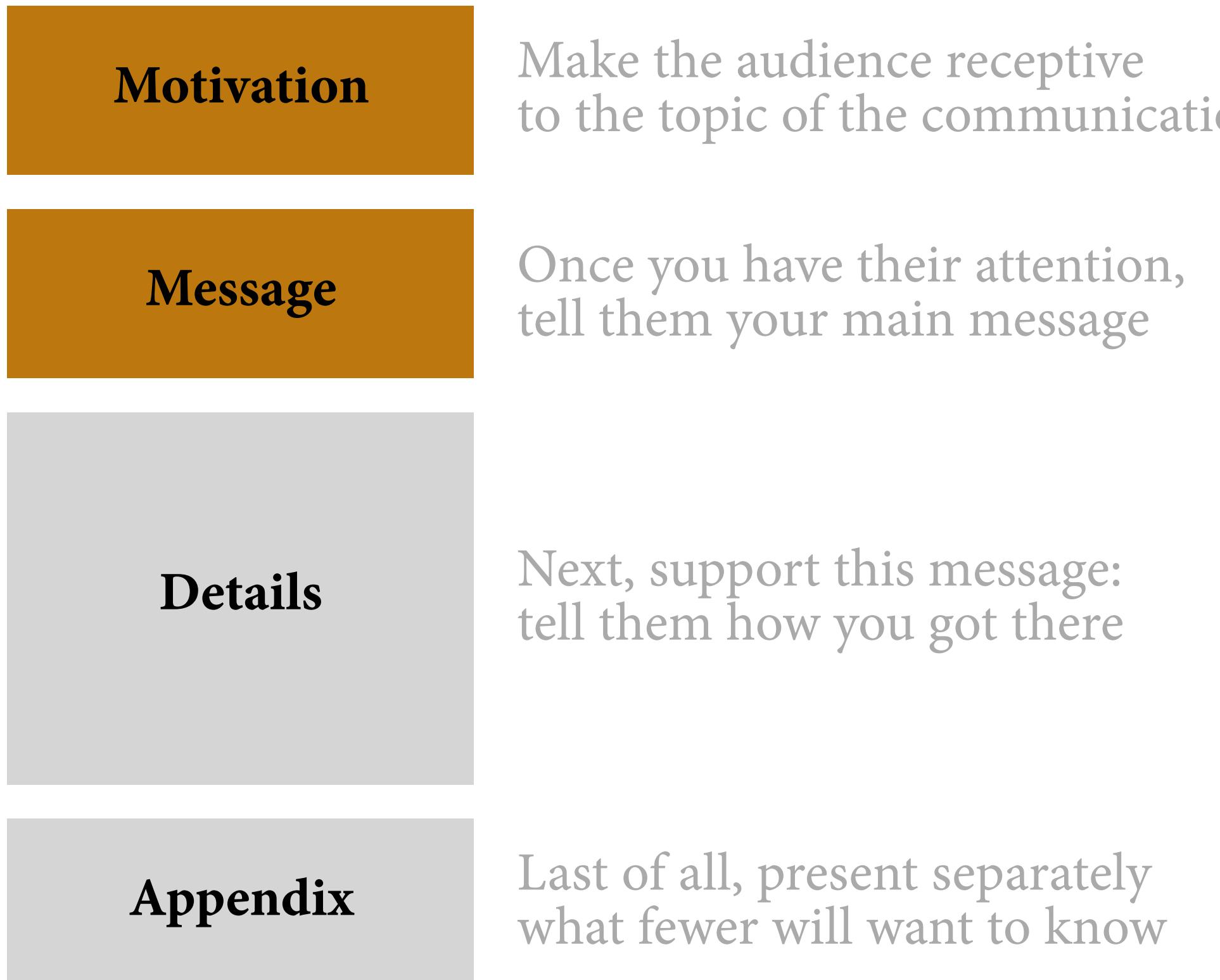
Maximize the signal-to-noise ratio

Use effective redundancy

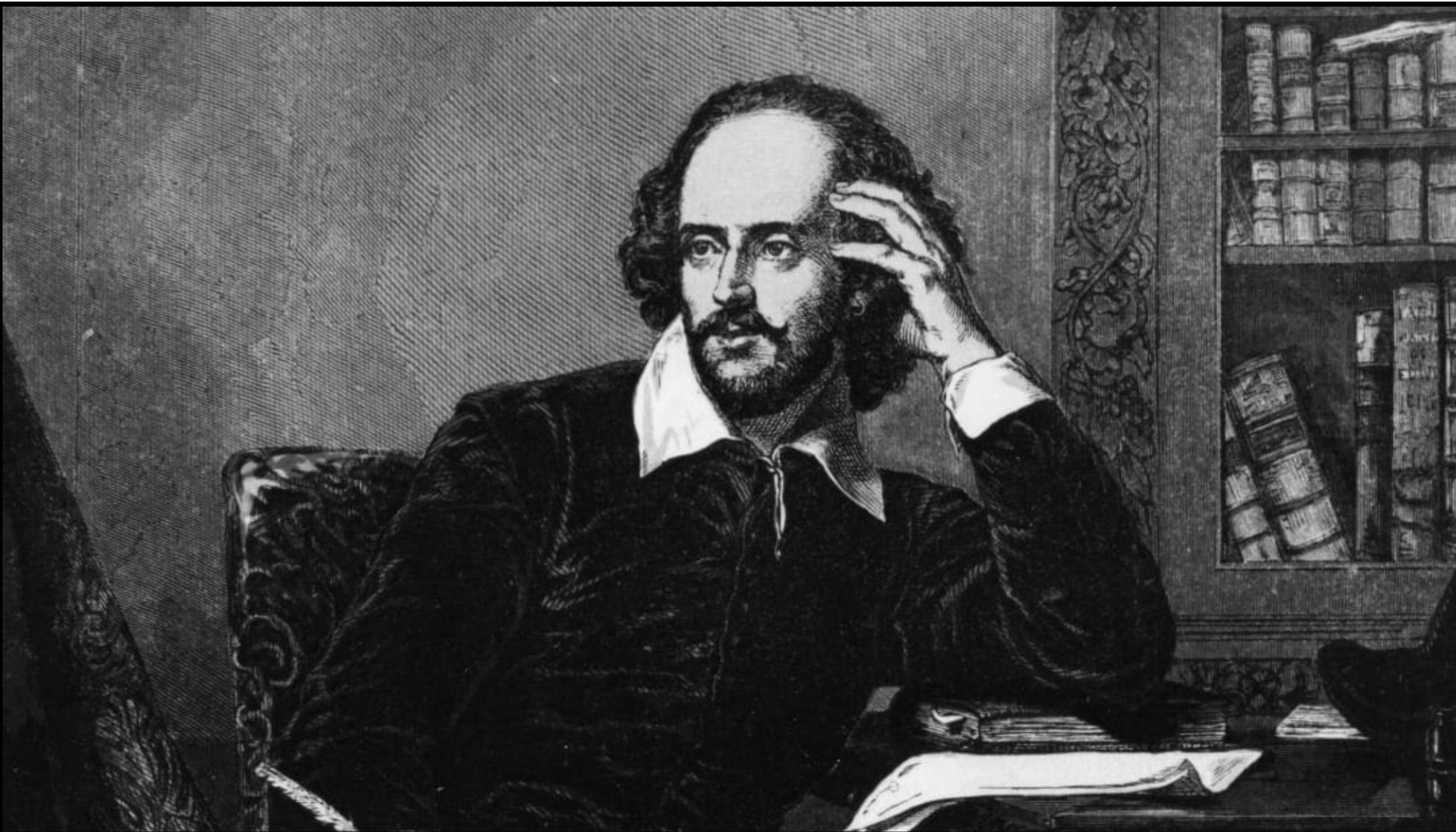


document structure

document structure

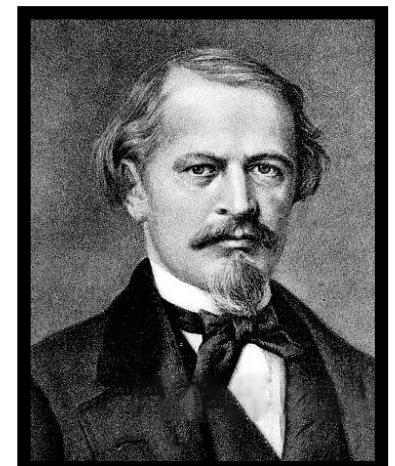
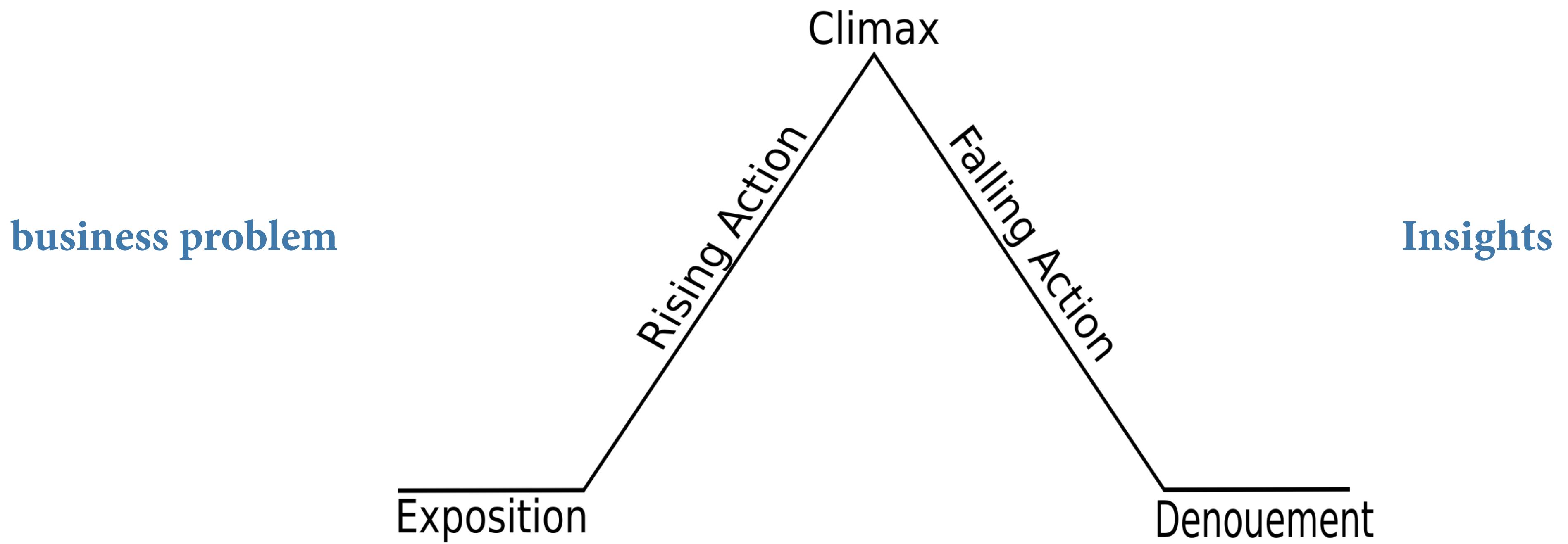


document structure, story or narrative



document structure, story — from Shakespeare to data science?!

data analytics



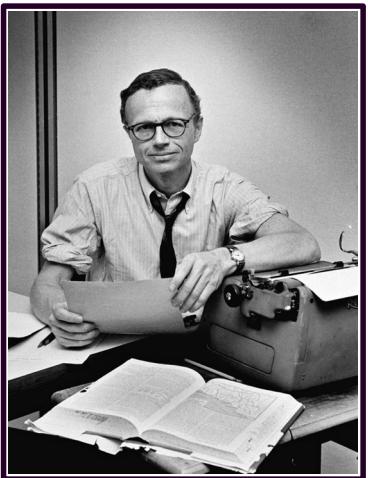
Freytag, Gustav

unexpected change

opening of an information gap



the lead and the ending



Zinsser, William

sentence structure

sentence structure

old

new



Williams, Bizup, Fitzgerald

Section 17.3, example 10(a)

Because the naming power of words was distrusted by Locke, he repeated himself often. Seventeenth-century theories of language, especially Wilkins's scheme for a universal language involving the creation of countless symbols for countless meanings, had centered on this naming power. A new era in the study of language that focused on the ambiguous relationship between sense and reference begins with Locke's distrust.

example 10(b)

Locke often repeated himself because he distrusted the naming power of words. This naming power had been central to seventeenth-century theories of language, especially Wilkins's scheme for a universal language involving the creation of countless symbols for countless meanings. Locke's distrust begins a new era in the study of language, one that focused on the ambiguous relationship between sense and reference.



structure

Want to confuse?
new before old

"One of the most compelling and challenging films of this year, you'll be gripped, enthralled and exhausted. A MODERN CLASSIC.
UNFORGETTABLE!" ★★★★★

- UNCUT MAGAZINE

"Dazzling, a masterpiece on a par with *The Usual Suspects*"

- FHM

GUY PEARCE
CARRIE-ANNE MOSS
JOE PANTOLIANO

www.pathe.co.uk/memento

NEWMARKET PRESENTS IN ASSOCIATION WITH SUMMIT ENTERTAINMENT A TEAM TODD PRODUCTION
A FILM BY CHRISTOPHER NOLAN GUY PEARCE CARRIE-ANNE MOSS JOE PANTOLIANO "MEMENTO"
CASTING JOHN PAPSIDERA, C.S.A. EDITOR DODY DORN PRODUCTION DESIGNER PATTI PODESTA PHOTOGRAPHY WALLY PFISTER
PRODUCED BY ELAINE DYSINGER EXECUTIVE PRODUCERS WILLIAM TYLER AND CHRIS J. BALL EXECUTIVE PRODUCER AARON RYDER PRODUCED BY SUZANNE TODD AND JENNIFER TODD
SCREENPLAY CHRISTOPHER NOLAN BASED ON THE JONATHAN NOLAN STORY BY CHRISTOPHER NOLAN



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PATHE!

15



communicating data analytics, discuss *Citi Bike* memo

audience for the memo, chief analytics officer

CHIEF ANALYTICS OFFICER | heads up a company's data analytics operations, transforming data into business value, and drives data-related business change.

—Zetlin, Minda. “What Is a Chief Analytics Officer? The Exec Who Turns Data into Decisions.” CIO, November 2, 2017.

communicating data analytics, memo for discussion

To CitiBike
Director of Analytics

2019 February 2

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Then, we will build upon the initial work, exploring causal factors such as the availability of alternative transportation (e.g., subway stations near docking stations) and weather. Both of which, we have available data that can be joined using timestamps.

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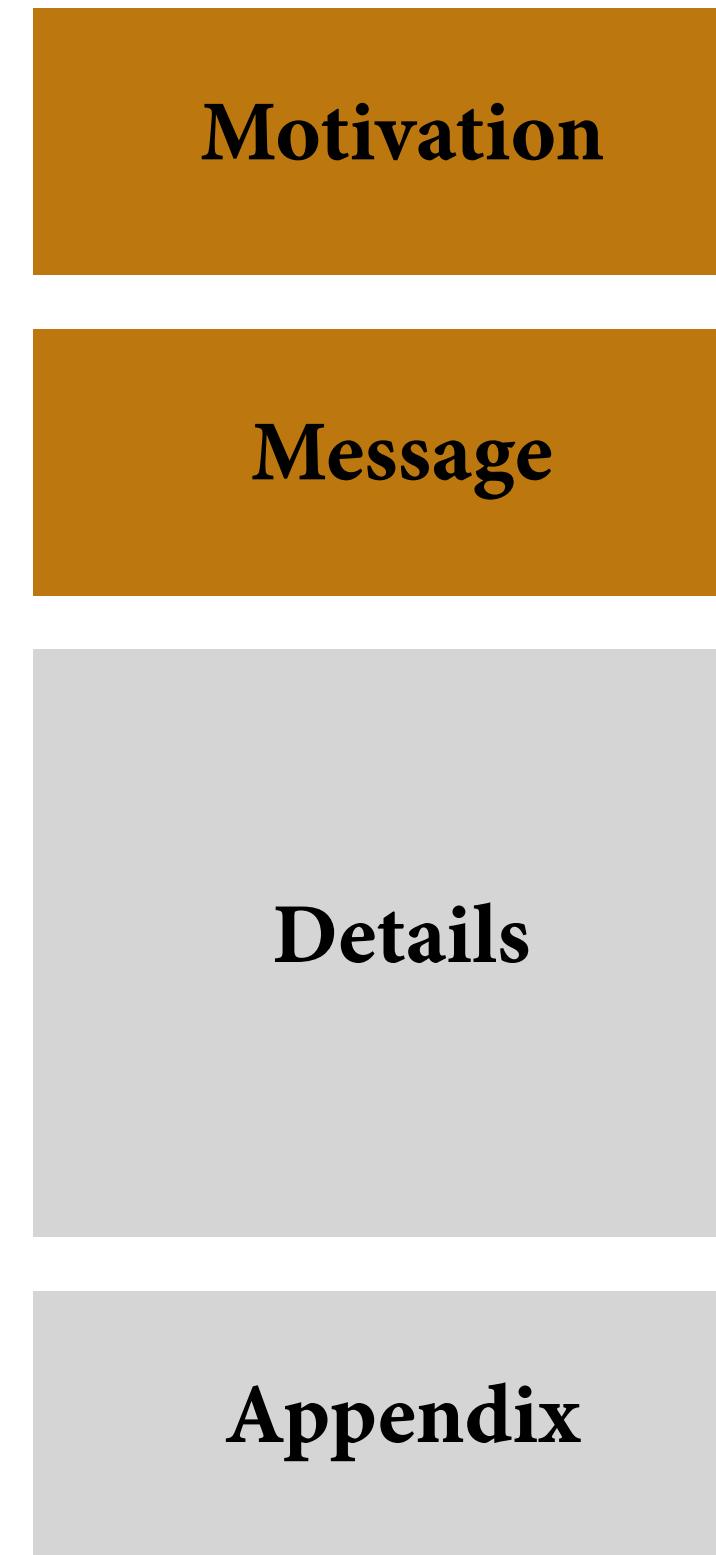
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communicating data analytics, messages first?

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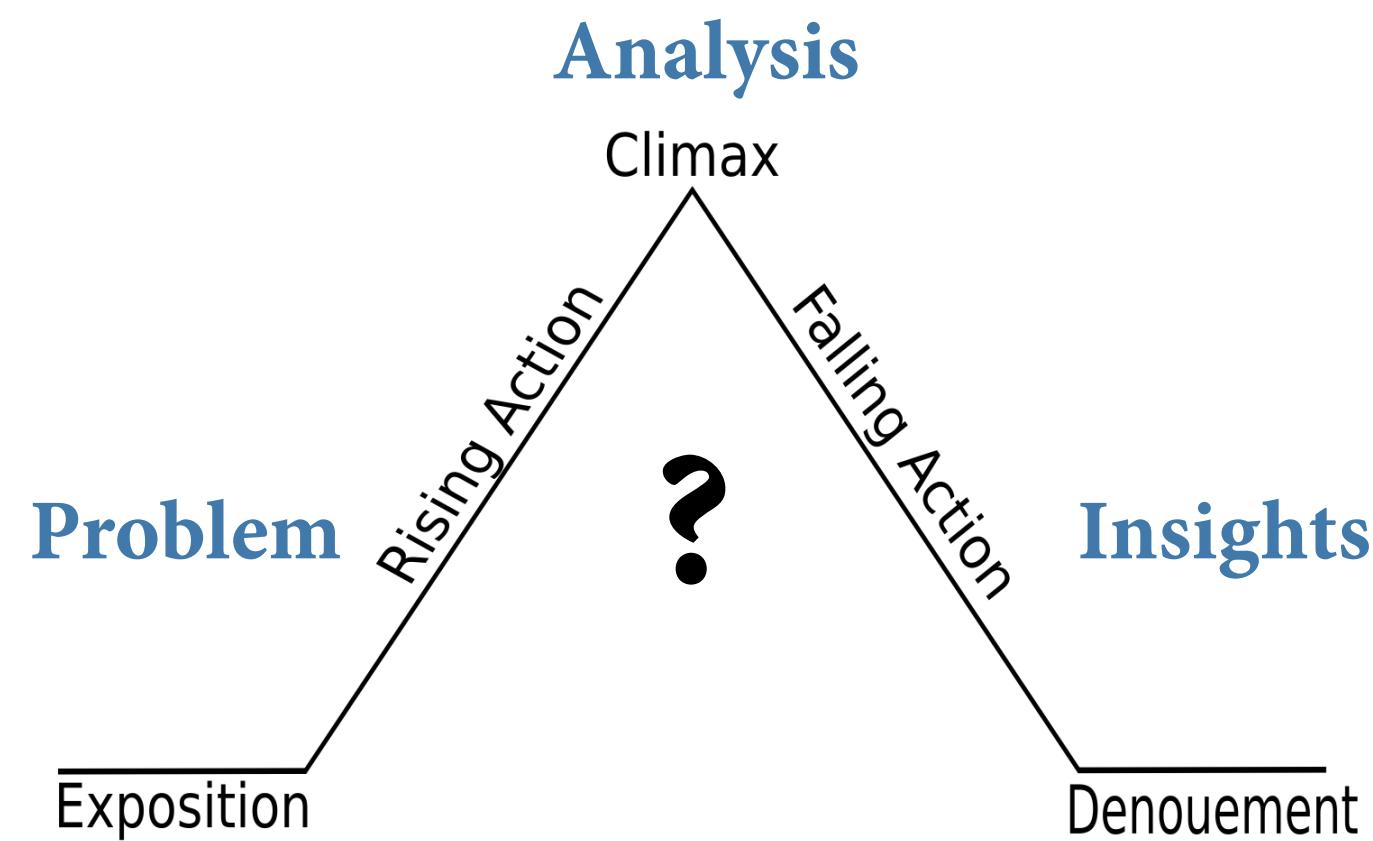
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communicating data analytics, narrative structure?

Unexpected change?

Open an information gap?



The lead and the ending?

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Counts	
Words	246
Characters	1,312
Paragraphs	5
Sentences	9
Averages	
Sentences per Paragraph	1.8
Words per Sentence	27.3
Characters per Word	5.1
Readability	
Flesch Reading Ease	33.6
Flesch-Kincaid Grade Level	15.3
Passive Sentences	11.1%

audience

message first, context
solution, high-level
goal, action, problem

background, context

data sources and types
solution, first stage

solution, second stage

link project back to goals

author

reference information

To

CitiBike

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communicating data analytics, old before new?

old ? new

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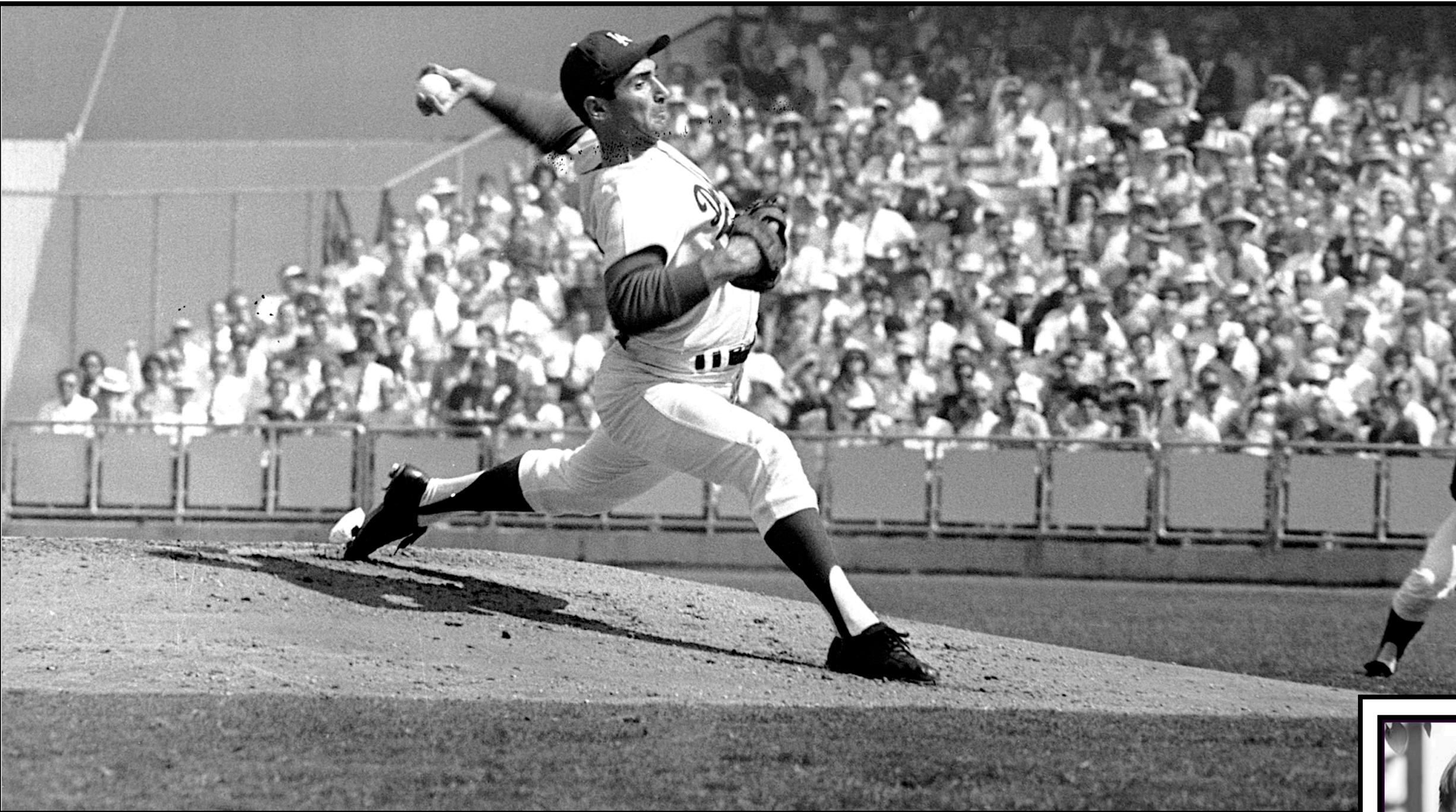
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communicating data analytics, discuss *Dodgers memo*



perfect game

Los Angeles Dodgers

pitcher Sandy Koufax

baseball

Statcast data

(attempting to) steal a base

salary cap

models

mode, maximum likelihood

statistics, probability, computing

probability distributions

joint distributions

R language and packages



Scott Powers
Director of quantitative analytics
PhD Statistics, Stanford

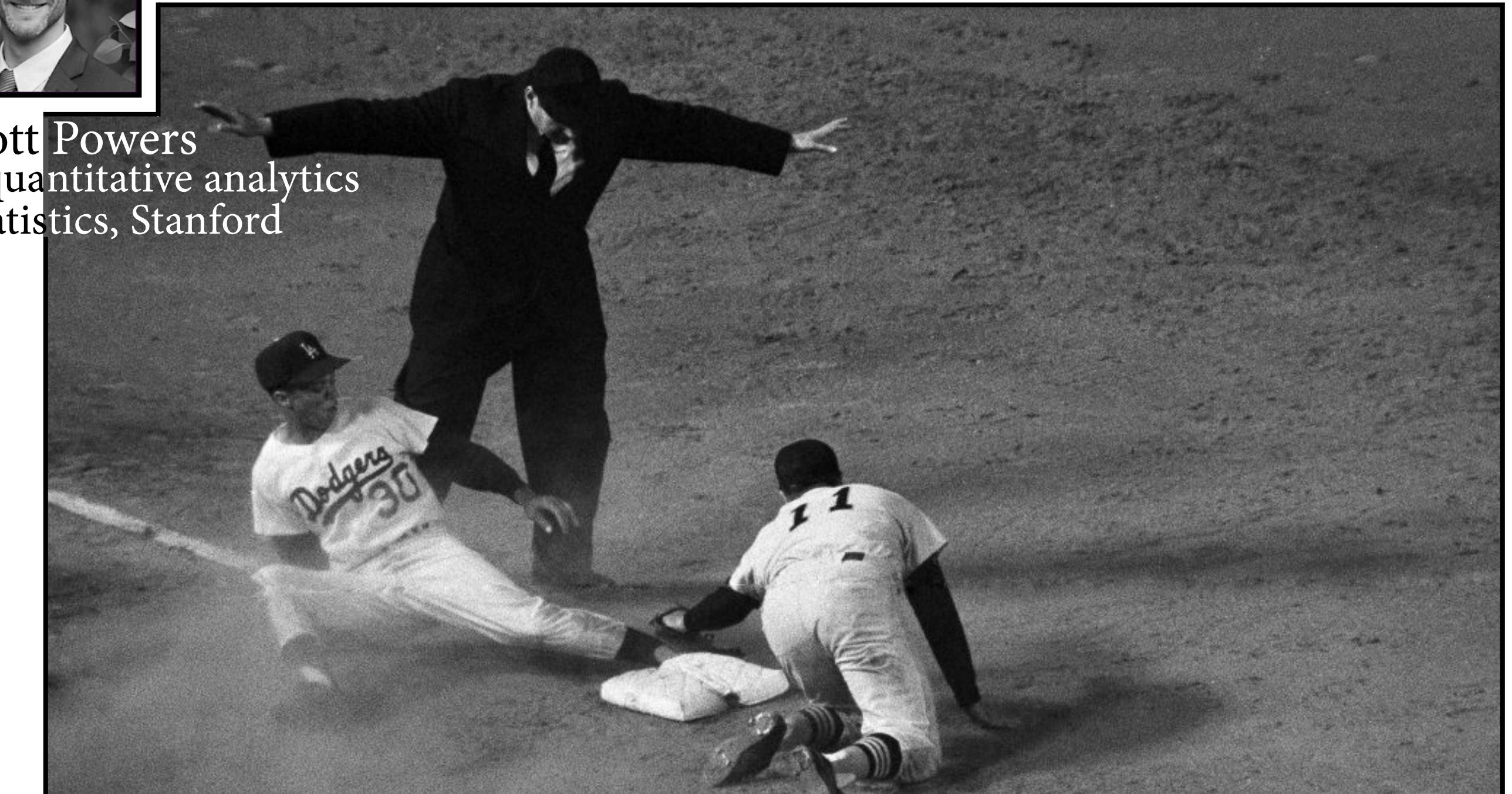
inferences

mean, expectations

decision theory

counterfactuals

simulations



communicating data analytics, memo for discussion

To

Scott Powers

Director, Quantitative Analytics

2019 February 2

Our game decisions should optimize expectations. Let's test the concept by modeling decisions to steal.

Our Sandy Koufax pitched a perfect game, the most likely event sequence, only once: those, we do not expect or plan. Since our decisions based on other most likely events don't align with expected outcomes, we leave wins unclaimed. To claim them, let's base decisions on expectations flowing from decision theory and probability models. A joint model of all events works best, but we can start small with, say, decisions to steal second base.

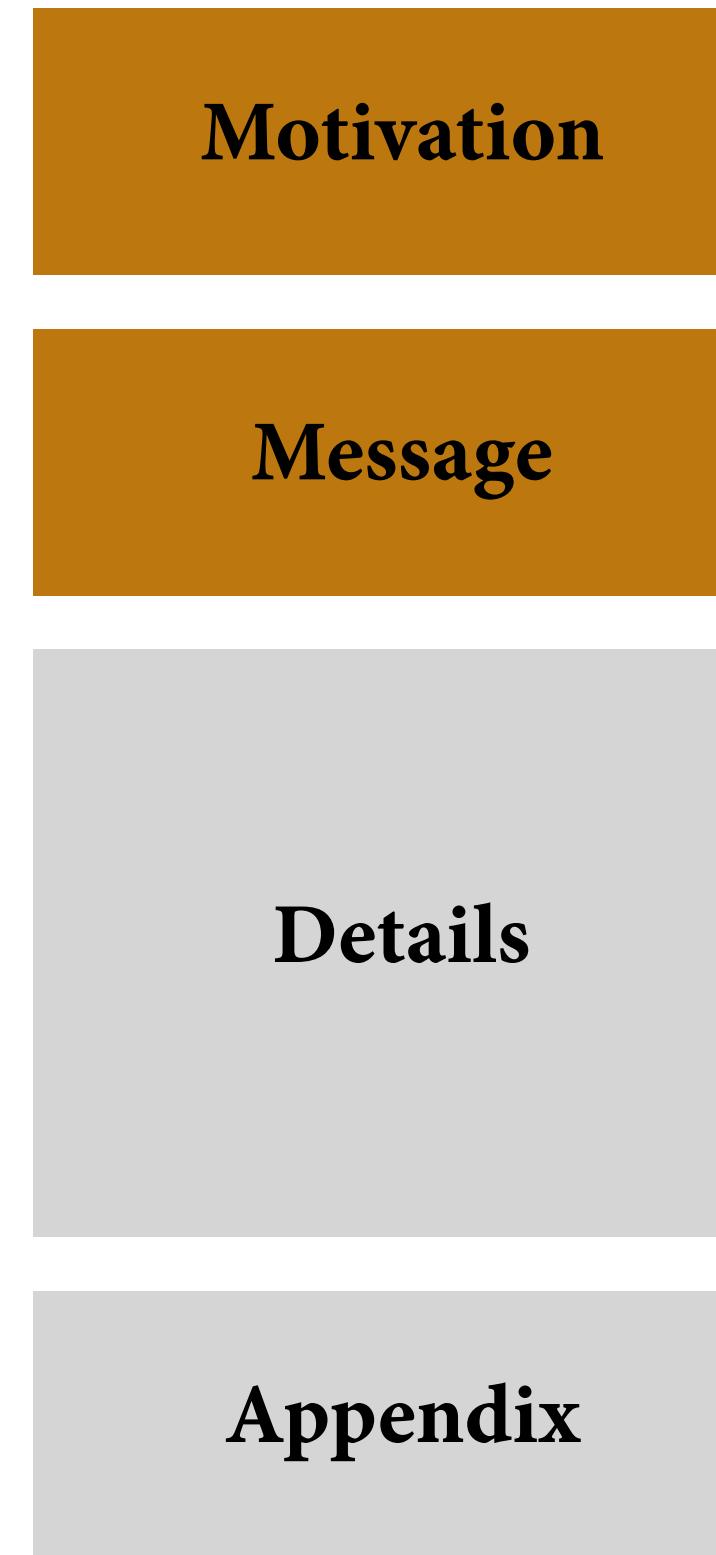
After defining our objective (e.g. optimize expected runs) we will, from Statcast data, weight everything that could happen by its probability and accumulate these probability distributions. Joint distributions of all events, an eventual goal, will allow us to ask counterfactuals — “what if we do *this*” or “what if our opponent does *that*” — and simulate games to learn how decisions change win probability. It enables optimal strategy.

Rational and optimal, this approach is more efficient for gaining wins. For perspective, each added win from the free-agent market costs 10 million, give or take, and the league salary cap prevents unlimited spend on talent. There is no cap, however, on investing in rational decision processes.

Computational issues are being addressed in Stan, a tool that enables inferences through advanced simulations. This open-source software is free but teaching its applications will require time. To shorten our learning curve, we can start with Stan interfaces that use familiar syntax (like lme4) but return joint probability distributions: R packages rthinking, brms, or rstanarm. Perfect games aside, we can test the concept with decisions to steal.

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communicating data analytics, messages first?



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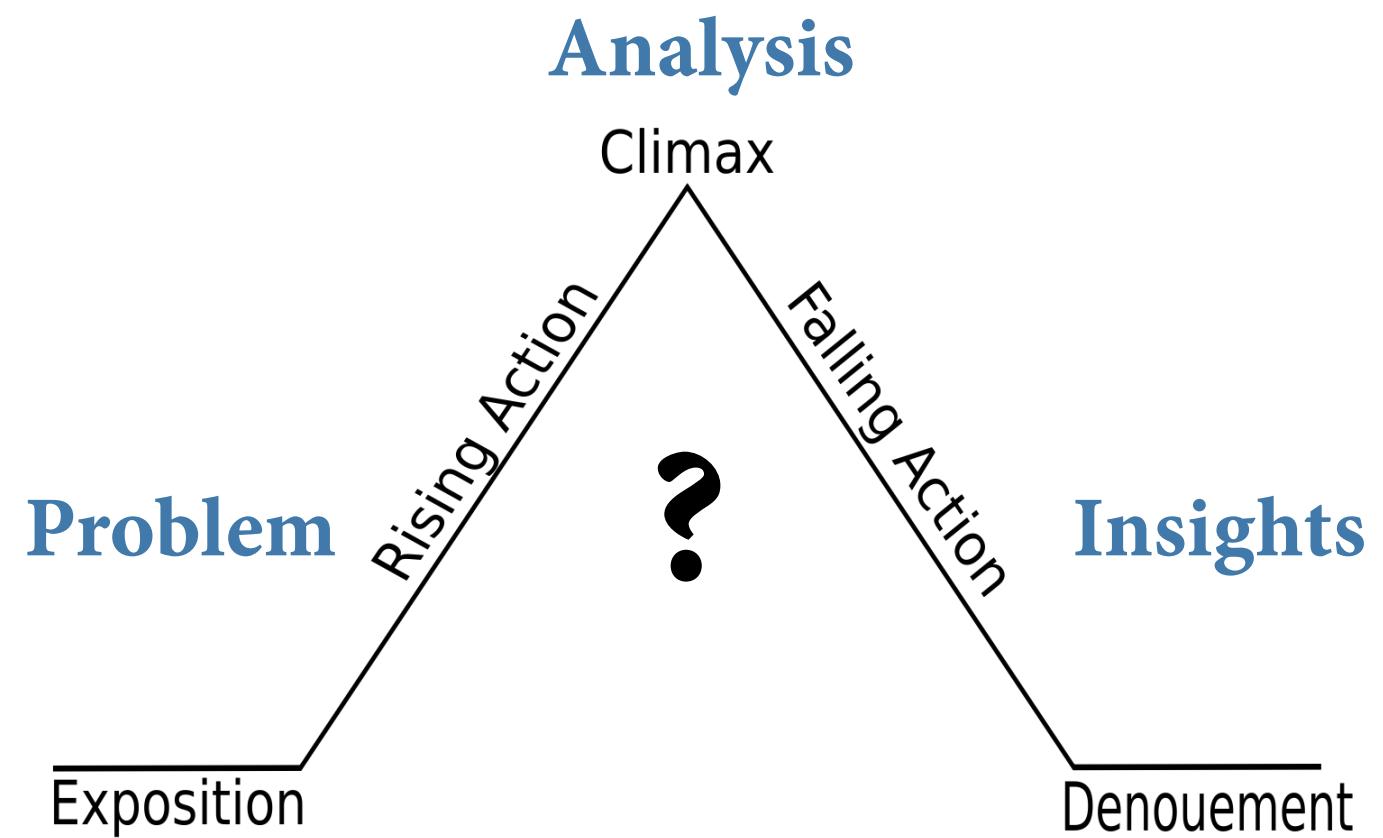
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communicating data analytics, narrative structure?

Unexpected change?

Open an information gap?



The lead and the ending?

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Readability Statistics

Counts	
Words	250
Characters	1,357
Paragraphs	4
Sentences	14
Averages	
Sentences per Paragraph	3.5
Words per Sentence	17.8
Characters per Word	5.2
Readability	
Flesch Reading Ease	43.5
Flesch-Kincaid Grade Level	11.6
Passive Sentences	0%

audience

message first, context
orient the audience
goal, action, problem
solution proposed
objectives, data, method
benefit (eventual)

benefit, comparison, financial
limitations, solution (short-term)
reminder of proposal
author

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Exercise: draft first paragraph for your project

In the last couple of weeks, we discussed scoping an analytics project, and we have researched potential data analytics projects we find interesting, along with data we may analyze to create insights. In the next several minutes, draft a first paragraph of the memo for your data analytics project. Consider the ***concepts we've discussed as tools*** for structuring your paragraph and sentences.

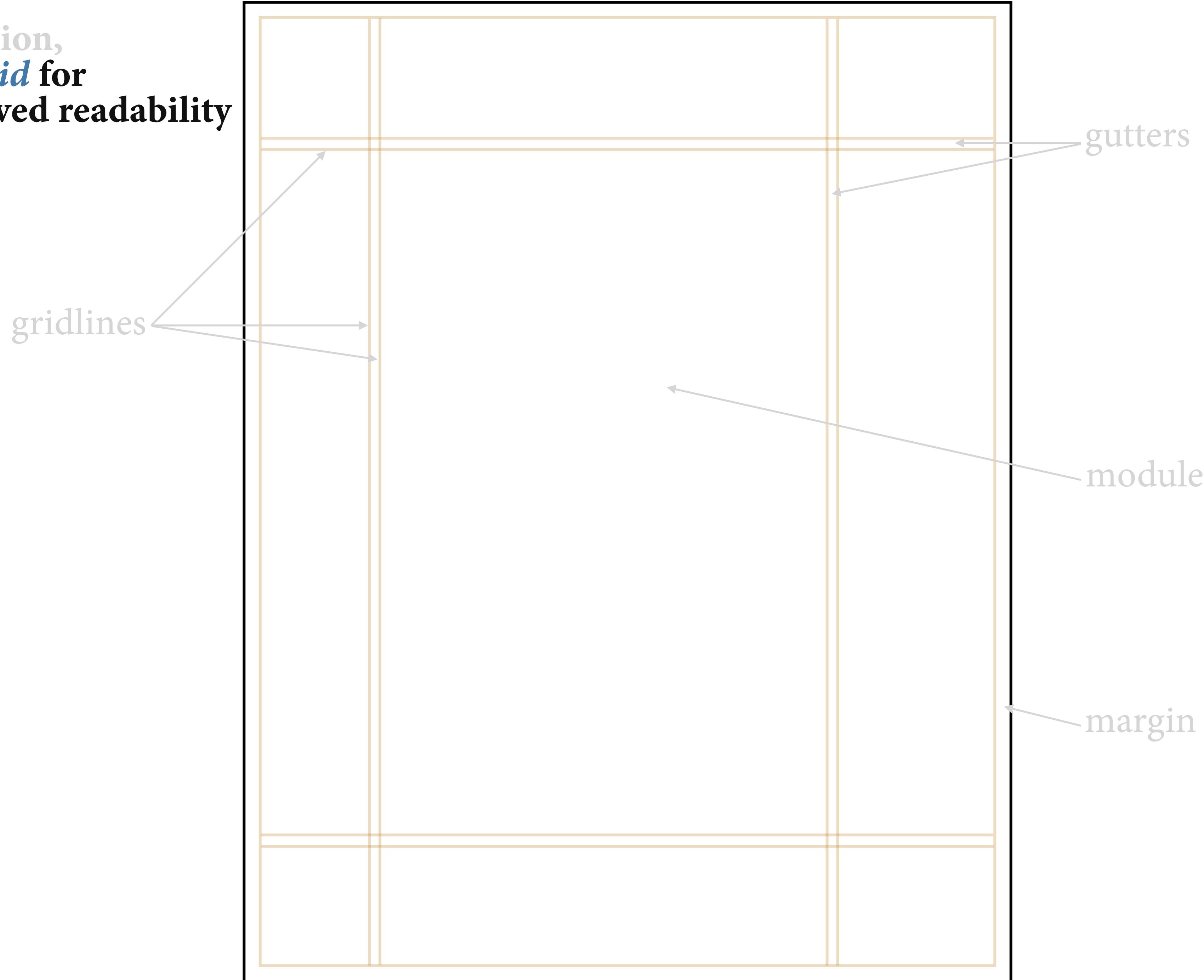
Exercise:
Revise a
colleague's memo

Exchange your drafts, and offer a few revision suggestions *by applying the concepts we have covered.*

Get specific!

visual organization

visual organization,
a very simple *grid* for
layout to improved readability



Butterick, Matthew

visual organization, very basic guidelines for optimizing text readability

Body text
Point size
print 10-12 pt
web 15-25 px



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Director of Analytics 2019 February 2

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← Line length 45 - 90 characters →

Line height 120 - 145 % of point size

References

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