

# Story-Telling I

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Assistant Professor  
Terry College of Business  
University of Georgia

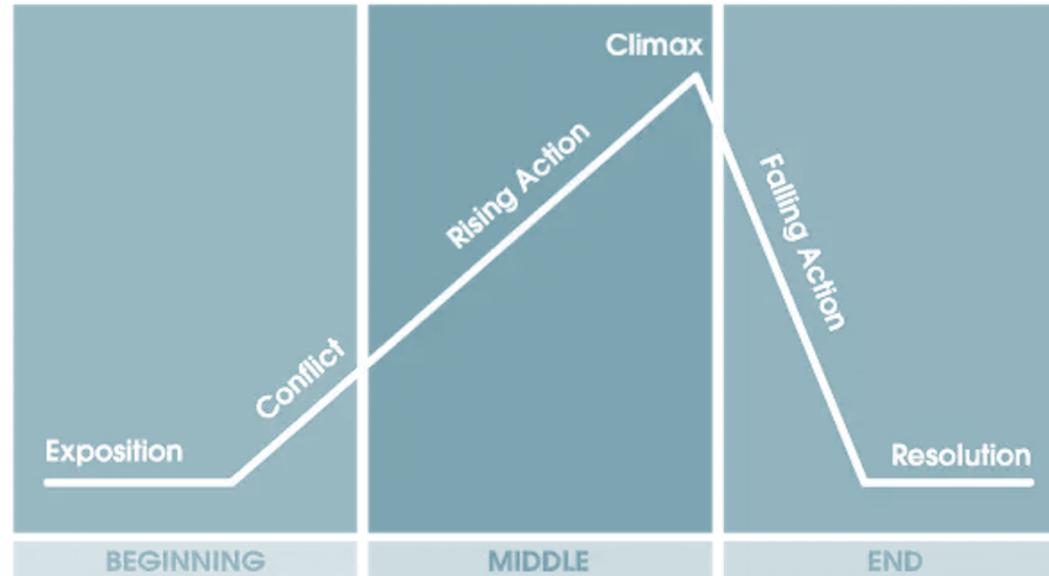
# *Business Intelligence*

## *Spring 2021*

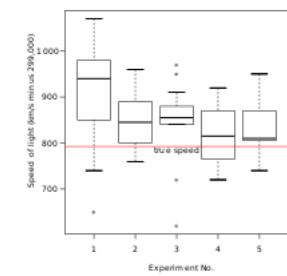
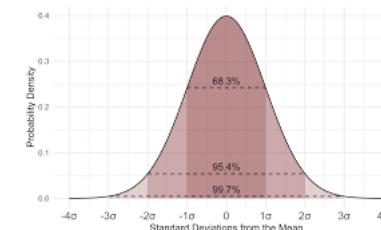
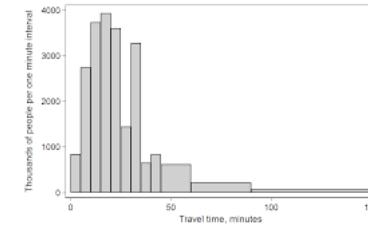
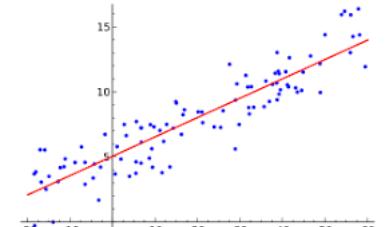


# **Terry College of Business**

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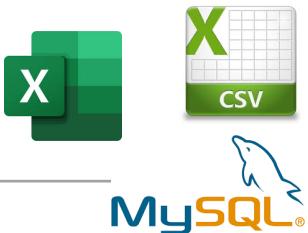


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# Where We Are

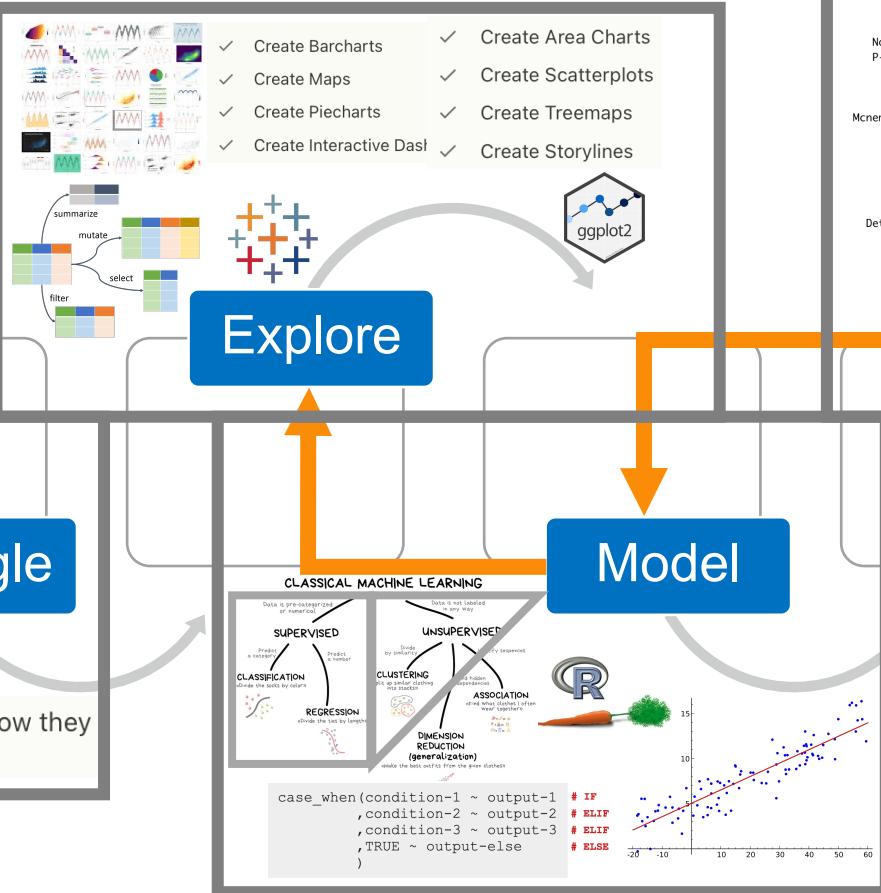
- ✓ Connect Tableau to various Datasets: Excel and CSV files



Question

- ✓ Understand Types of Joins and how they work
- Diagram showing types of joins:
- `left_join()`:
  - `right_join()`:
  - `inner_join()`:
  - `full_join()`:
  - `semi_join()`:
  - `anti_join()`:

Database



Statistics

```
> # how did we do with test set? confusion matrix
> confusionMatrix(data = churn_test$pred_churn,
+                   reference = churn_test$Churn,
+                   mode = "prec_recall",
+                   positive = "Yes")
```

Confusion Matrix and Statistics

Reference	Prediction
No	Yes
No	906 186
Yes	126 187

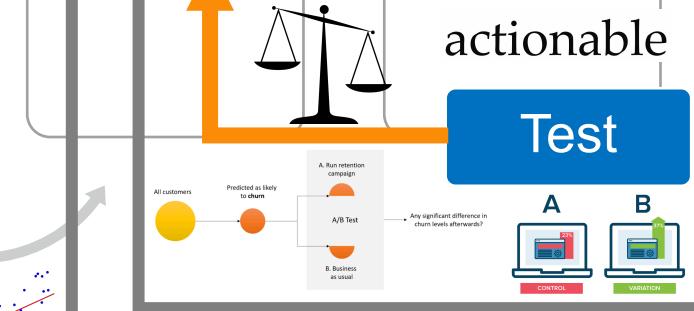
Accuracy : 0.7779  
95% CI : (0.7553, 0.7994)  
No Information Rate : 0.7345  
P-Value [Acc > NIR] : 9.989e-05

Kappa : 0.3998  
McNemar's Test P-Value : 0.0008371

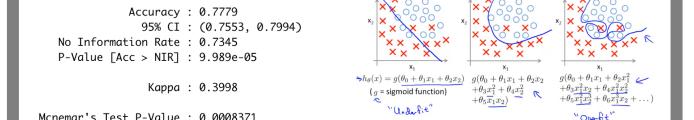
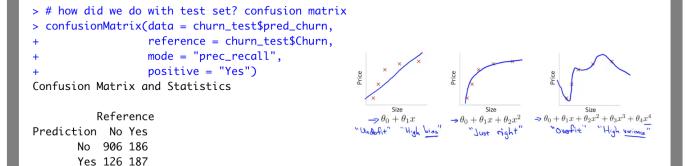
Precision : 0.5974  
Recall : 0.5013  
F1 : 0.5452  
Prevalence : 0.2655  
Detection Rate : 0.1331  
Detection Prevalence : 0.2228  
Balanced Accuracy : 0.6896

'Positive' Class : Yes

Evaluate



Deployment

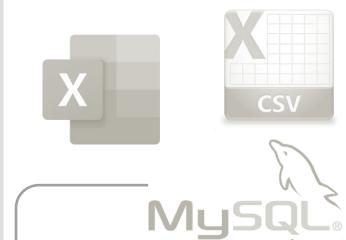


Root Mean Squared Error (RMSE)

$$RMSE = \sqrt{\frac{r_1^2 + r_2^2 + \dots + r_n^2}{n}}$$


# Where We Are

- ✓ Connect Tableau to various Datasets: Excel and CSV files



Question



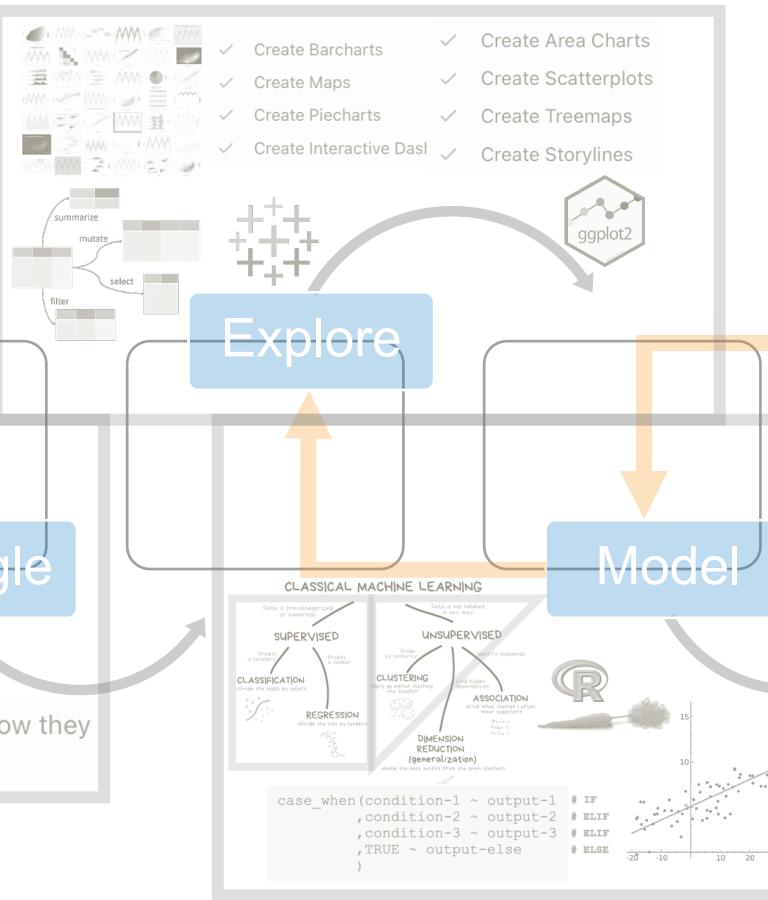
Import

```
left_join()  
right_join()  
inner_join()  
full_join()  
semi_join()  
anti_join()
```

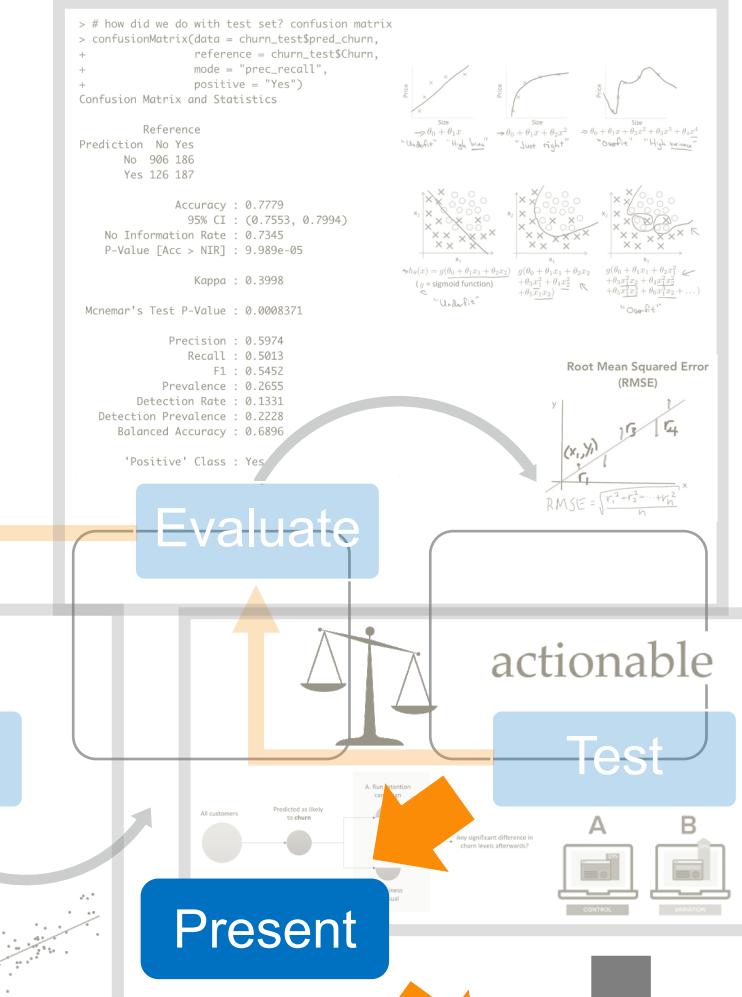
- ✓ Understand Types of Joins and how they work

Database

Wrangle



Statistics



Machine Learning

```
> # how did we do with test set? confusion matrix  
> confusionMatrix(data = churn_test$pred_churn,  
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Confusion Matrix and Statistics

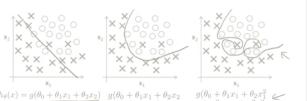
Reference  
Prediction  
No Yes  
No 906 186  
Yes 126 187

Accuracy : 0.7779  
95% CI : (0.7553, 0.7994)  
No Information Rate : 0.7345  
P-Value [Acc > NIR] : 9.389e-05  
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Evaluate



# Presentation

All about communication

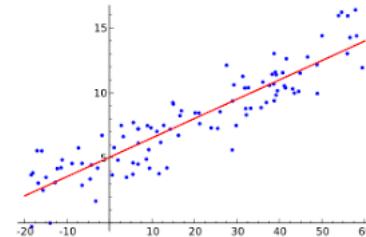
- Overlooked, but one of the most important aspects of a project
- If not well communicated, your insights won't be put to good use
- The objective is to **“persuade the audience”**



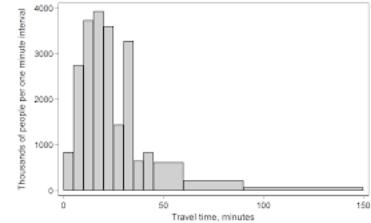
# Two Ways to Persuade People

## Conventional Rhetoric

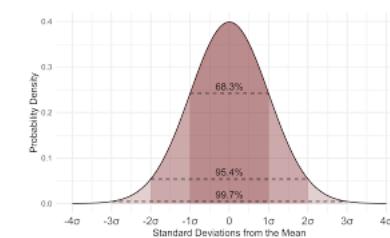
- Slides (or reports) filled with facts and statistics
- An intellectual process, but problematic...
  - ... you are trying to persuade your audience, but they are arguing with you in their heads



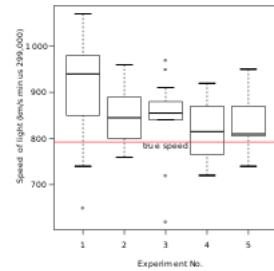
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[https://en.wikipedia.org/wiki/Summary\\_statistics#/media/File:Michelsonmorley-boxplot.svg](https://en.wikipedia.org/wiki/Summary_statistics#/media/File:Michelsonmorley-boxplot.svg)



“If you do succeed in persuading them, you’ve only done so on an *intellectual basis*. That’s not good enough, because **people are not inspired to act by reason alone**”

Robert McKee, award-winning writer and director



# Two Ways to Persuade People

## Story

- Grabs the attention
- Takes the reader to a journey
- Evokes emotional response
- Keeps engagement
- Makes it memorable



<https://bbogady.com/the-5-ws-of-storytelling-in-marketing/>



Harder than conventional rhetoric because it requires *creativity* – but worth it because **we can use stories to engage people emotionally in a way that goes beyond what facts can do**



# Story-telling with words (reports)

1

Find a topic you care about

2

Keep it simple

3

Edit ruthlessly

4

Be authentic

5

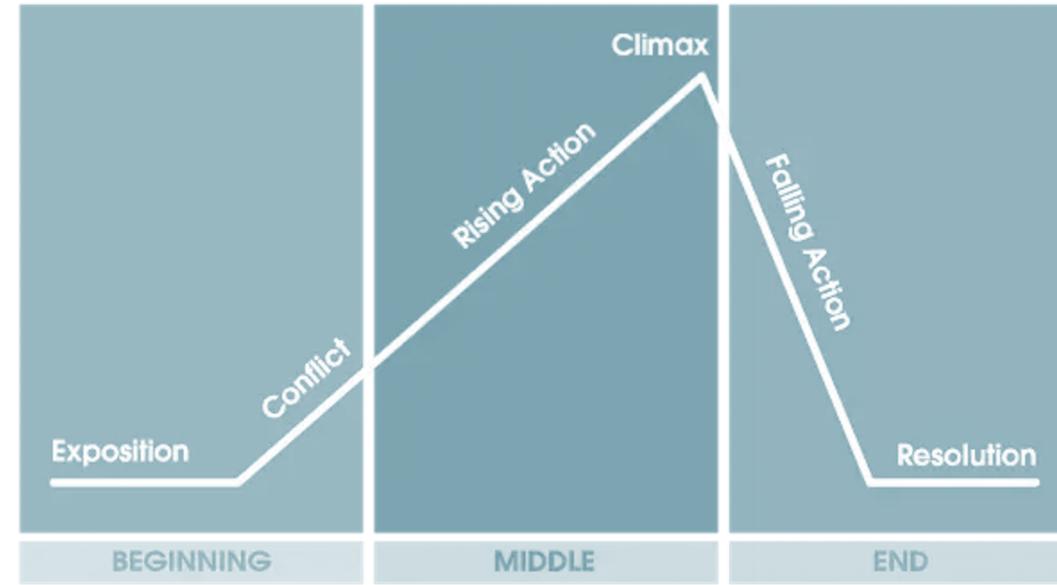
Don't communicate for yourself, but rather for your audience



# Constructing the Story

Every story has a beginning, middle, and end

Commonly referred to as **setup, conflict, resolution**



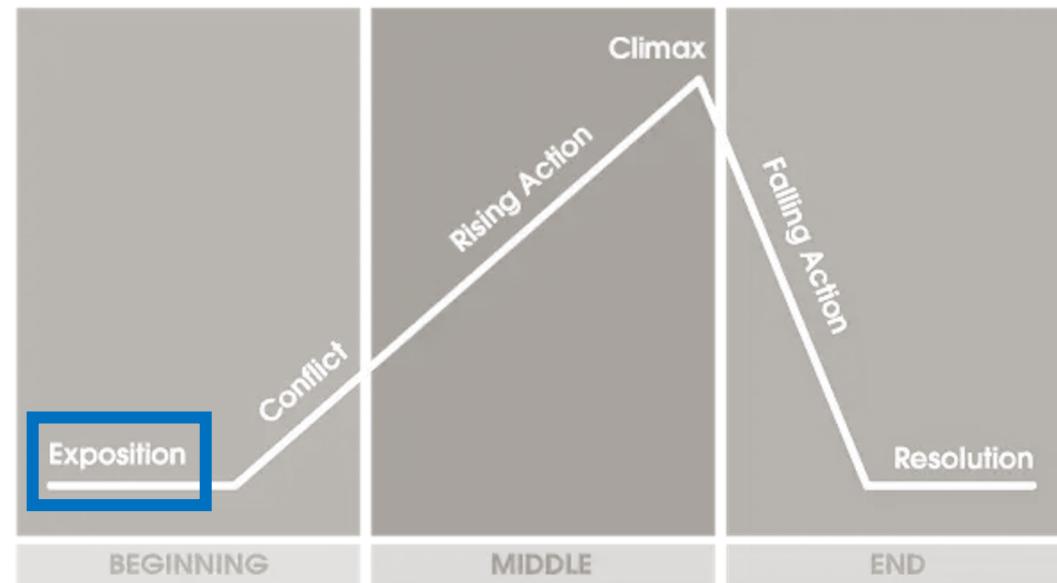
<https://www.storyboardthat.com/articles/e/plot-diagram>



# Beginning

Introduce the plot, *building context* for the audience

- When and where does the story take place?
- Who is driving the action?



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Knaflc, C. G. (2015). [Storytelling with Data](#)

# Beginning

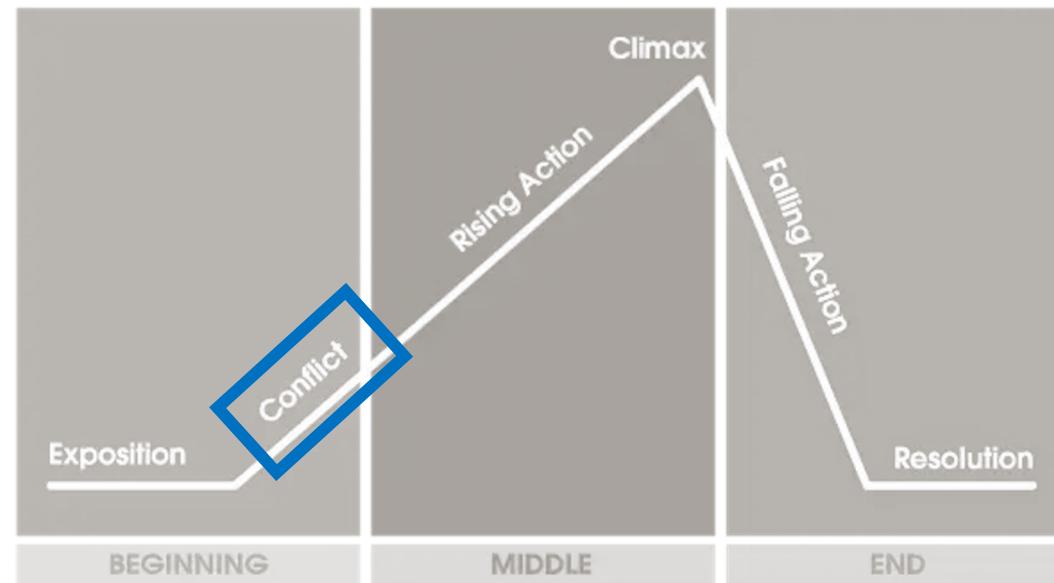
Introduce the plot, *building context* for the audience

- **What is the unresolved situation?**
- **What is the opportunity (or desired outcome)?**

*Why is the unresolved situation problematic? What has changed?*

*What do you want to happen? How will you bring about the changes?*

*Why should I pay attention? What is in it for me?*



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<https://www.storyboardthat.com/articles/e/plot-diagram>



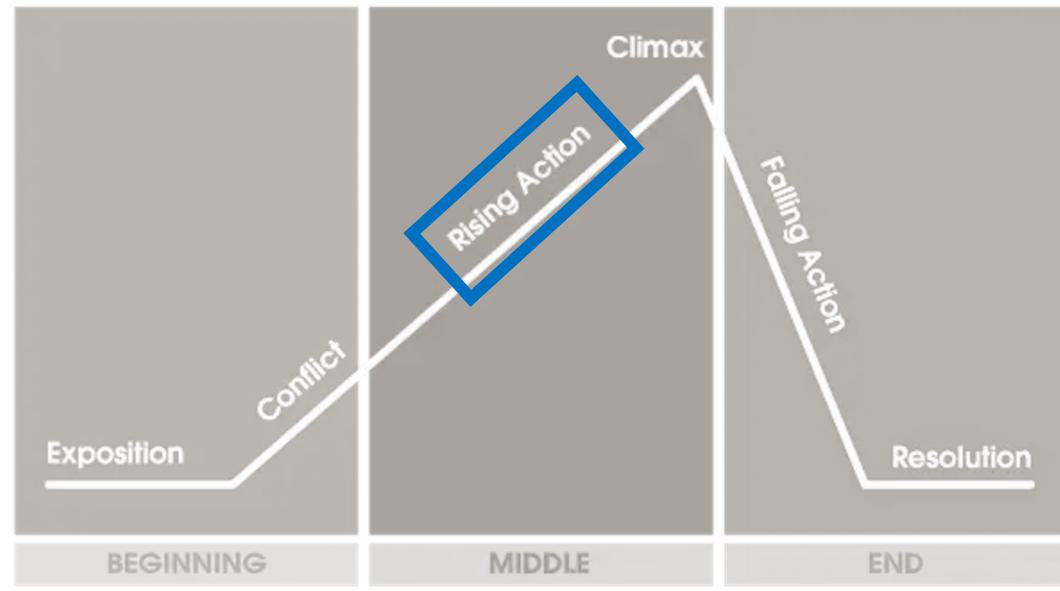
# Middle

How to solve the problem introduced - the action!

- Develop the situation by covering relevant background
- Add external context and data supporting the problem

*What will happen if the problem situation remains unresolved?*

*What are the potential options for addressing the situation?*



<https://www.storyboardthat.com/articles/e/plot-diagram>



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Knaflic, C. G. (2015). Storytelling with Data

# Middle

How to solve the problem introduced - the action!

- Introduce and highlight the rigor of your approach
- Illustrate the actionability of your proposed solution

*How good is the performance of your model?*

*What is the treatment proposed, and does it work in real life?*



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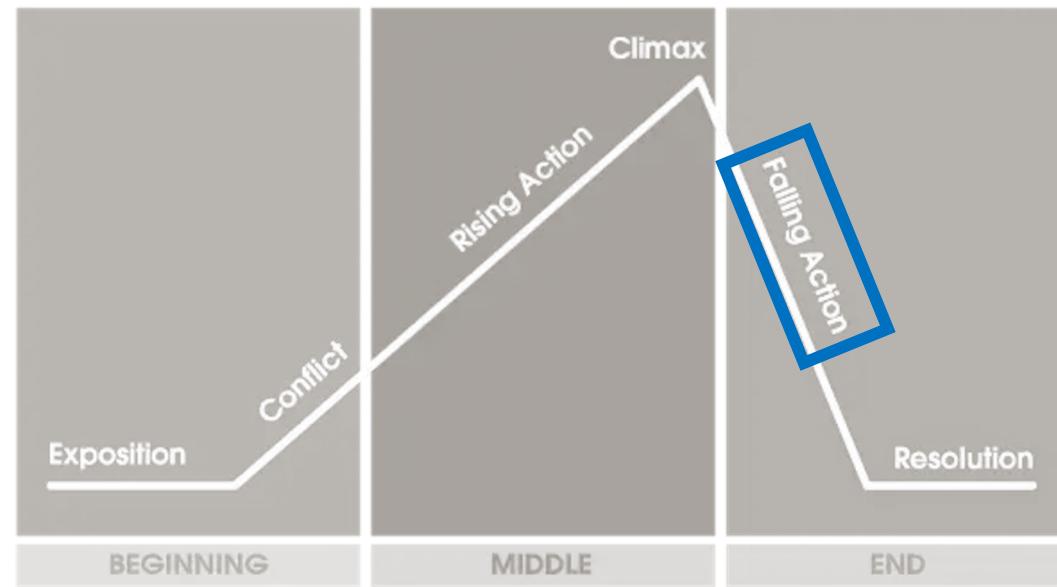
# End

Convince the audience why they should accept your solution

- **Show the value of your proposed solution to the firm**
- **Articulate why it makes sense to move forward**

*What are the potential costs and benefits of deploying your solution?*

*Why do the benefits outweigh the costs, making your solution a good investment?*



<https://www.storyboardthat.com/articles/e/plot-diagram>



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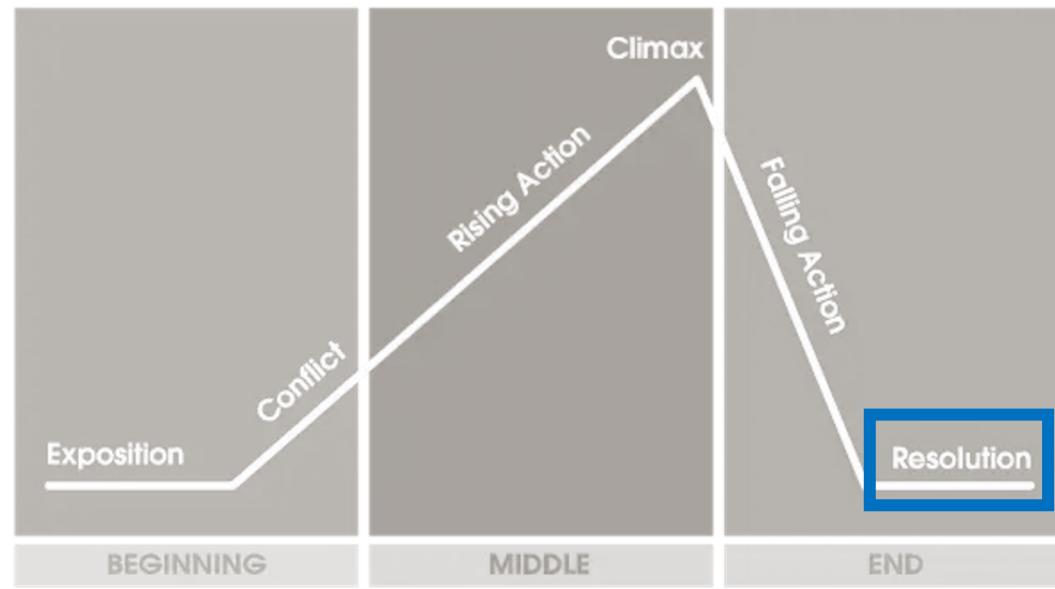
# End

Convince the audience why they should accept your solution

- **End with a call to action**
- **Tie it back to the beginning**

*What do you need the audience to do in terms of next steps?*

*Why are these important first steps for addressing the situation?*



<https://www.storyboardthat.com/articles/e/plot-diagram>

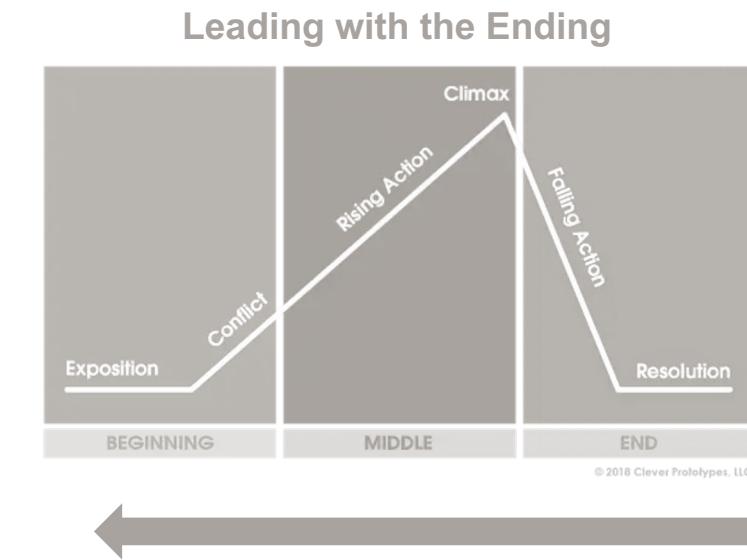
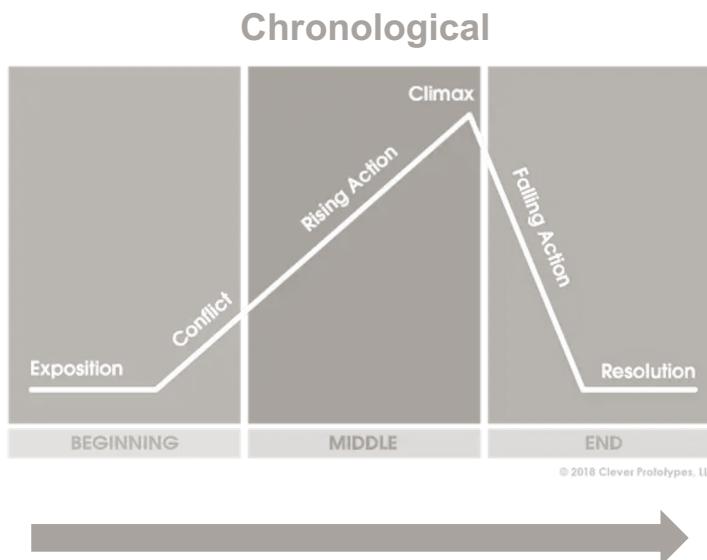


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Knaflic, C. G. (2015). Storytelling with Data

# After the Story, Comes the Narrative Structure

Have a solid understanding of your story before crafting the presentation – only then you can start to think about what narrative flow makes sense and how to organize your work



# After the Story, Comes the Narrative Structure

Introduce plot

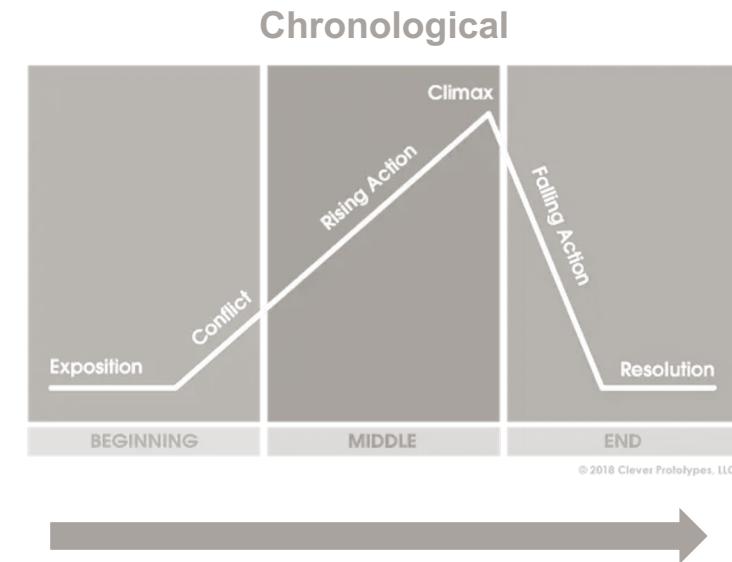
Identify problem

Present data supporting problem

Detail approach to solve problem

Emerge with a solution

Recommend action

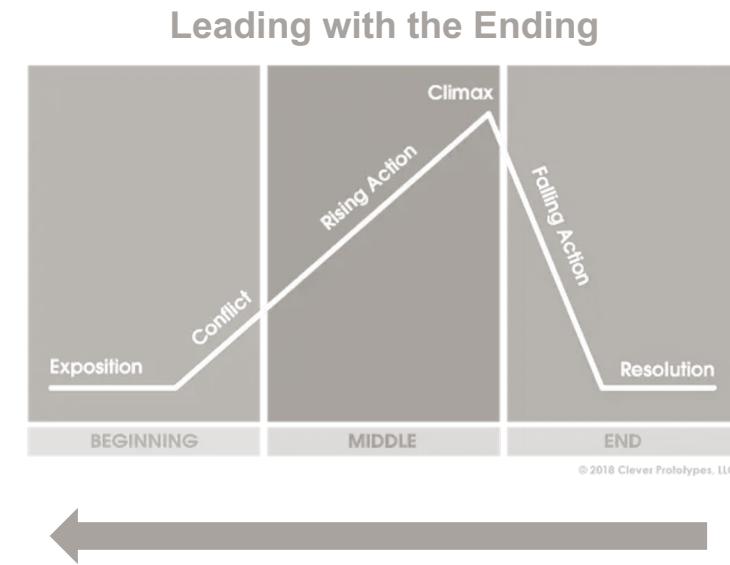


# After the Story, Comes the Narrative Structure

Start with call to action

Back up into critical pieces of the story in order to support it

Works well if you have already established trust with audience and/or if the audience is more interested in the “so what”



# Summary

Presenting the results of your project is almost as important as your project

- If you do a great job, your insights will be put to good use!
- If you do not do a great job, your insights will likely be ignored ...

Story-telling is one way to present your results in a persuasive manner!

- It is gaining traction in business data science
- Provides solid foundation to build upon (beginning, middle, end)
- More effective (if well executed) but also more difficult (requires creativity) than conventional rhetoric

*Narrative structure determines what comes first and why (audience, audience, audience ...)*



# *Thank You!*



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