Don’t let data get in the way of a good story?

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The problem with bad framing

Leads to bad assumptions about use, inappropriate features, poor understanding of substitutability and the impacts it will have.
“Story” often devolves to discussions about this

The Three-Act Structure

ACT I

ACT II

ACT III

introduction

rising action

stakes get higher

crisis

failure action

SETUP

CONFRONTATION

RESOLUTION

Plot Point (a major twist that provokes the beginning of a new act.)
There can be many structures, as many as there are tellers. "Story" is one form of narrative, a specific sequence of events - what happens.
Visuals vs words: a narrative, without story
Borrowing from film: fabula and syuzhet, the story and the way it’s told; similar to story and plot.
The purpose of a story is to raise your blood pressure, not your IQ.
Stories engage emotion vs engaging intellect
Stories provide anecdote over evidence
Emotion and anecdote over intellect and evidence?
There are other narrative structures we could use that aren’t story, and may serve better in a work context.

**Academic paper**

<table>
<thead>
<tr>
<th><strong>Abstract</strong></th>
<th>The purpose and conclusion</th>
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There are other narrative structures we could use that aren’t story, and may serve better in a work context.
You have a choice in structures and forms

**Inverted Pyramid News Writing**
- Critical info must go at the beginning
- Additional information that helps them understand but isn't essential
- Information that's interesting or nice to have
- They could stop reading at any time

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**Story-driven**

* Drama, emotion

**Data-driven**

* Facts, process

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* Interest, anecdote
You are an unreliable narrator

This shows the slow change of culture and practice.
There are two opposing conclusions one could draw after analyzing this, depending entirely on your perspective.
Story #1: the data warehouse market takes over

Do new stuff with old things
Story #2: the big data market takes over

Do old stuff with new things
A problem that doesn’t seem like a problem:

Storytelling gives priority to authoritative, definitive voicing.

You are the giver, everyone else is the receiver, all the information comes from you, personally.
Recall that stories are a sequence of events told in a particular order and way. There are many stories for any situation, not just one, and they are subject to many human frailties. Reality is consensual, not objective.
The solution is generative, via discourse.
λόγος
Audience mediates your choice of narrative structure
The context of the communication matters too.
Where should you start?

“The beginning is the most important part of the work.” – Plato
“In the Kamigata area they have a sort of tiered lunchbox they use for a single day when flower viewing. Upon returning, they throw them away, trampling them underfoot. The end is important in all things.”

— Tsunetomo Yamamoto, Hagakure, 1716

The top level goal is to effect change (or the opposite) by communicating data or insight from the data.

1. Define the change you want.
2. Work from this to your goal or intent in communicating.
3. From this, decide what narrative and techniques will work best for your intent, audience and content.
Understanding human sensemaking will help make it actionable
Goal and Intent

To explore and understand:
- to interpret the data and the models
- to reason and build shared understanding – learning causes and effects

To inform and explain:
- to inform – here is an answer
- to explain the data and interpretation – here is how this works
- to educate / teach – here is how you can learn this

To convince and decide:
- to prompt someone to take action
- to communicate the truth*
- to convince others that this interpretation is the right one
- to make a decision or choose a course of action
In practice...

When communicating, you are at the intersection of:

- Your goal
- The type of audience
- The goals of the people in that audience
- The context in which they participate

There is a formula, just remember:

“I want to <X> the audience of <Y> in the <Z>”

where:

<X> is your goal, <Y> is the type of audience, and <Z> is format in which you will interact with them.
For example: presenting findings to a large group
Techniques vary by context. For example, meaningless charts and formulas are effective.

Charts Are Persuasive

Researchers compared the share of people persuaded by a verbal description of a drug trial with the share of those persuaded when a chart adding no new information was included.

<table>
<thead>
<tr>
<th>Proportion of people who were persuaded by the information</th>
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<tbody>
<tr>
<td>Read verbal description only</td>
</tr>
<tr>
<td>Also saw a chart</td>
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Source: “Blinded With Science: Trivial Graphs and Formulas Increase Ad Persuasiveness and Belief in Product Efficacy” by Aner Tal and Brian Wansink

This presentation is more persuasive because I’m using charts*

\[ P = \sum_{i=1}^{n} a_i x_i \]

*see the references
Storyboarding is a verb. It’s important to focus on the process, not on the product.
We spend too much time infatuated with product, not enough with why.
For example: getting people to decide and act
It’s hard to get people to take ownership

What if you want them to take ownership and do something other than eat doughnuts in meetings?

This is an important part of many analyst’s jobs.

Not “nice story, when can you get that to me” but “I’ll take it from here”.
Which viz is better?

There is an easy first segmentation in your audience: are they analysts, or consumers of analysis?

Statistical graphics and classic visualization says the latter.

Visuals to communicate and visuals to understand, or to explore data vs explain data, will lead to different requirements, driven by different goals.
How we develop best practices: survival bias
“A story has no beginning or end: arbitrarily one chooses that moment of experience from which to look back or from which to look ahead.”

— Graham Greene, *The End of the Affair*
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About the Presenter

Mark Madsen is president of Third Nature, a technology research and consulting firm focused on business intelligence, data integration and data management. Mark is an award-winning author, architect and CTO whose work has been featured in numerous industry publications. Over the past ten years Mark received awards for his work from the American Productivity & Quality Center, TDWI, and the Smithsonian Institute. He is an international speaker, a contributor to Forbes Online and on the O’Reilly Strata program committee. For more information or to contact Mark, follow @markmadsen on Twitter or visit http://ThirdNature.net
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