What's the Story?

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Principles of Complex Systems, Vols. 1, 2, & 3D
CSYS/MATH 6701, 6713, & a pretend number, 2024–2025

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Storytellers
Stories
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Outline

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Typed by Pratchett the Cat:

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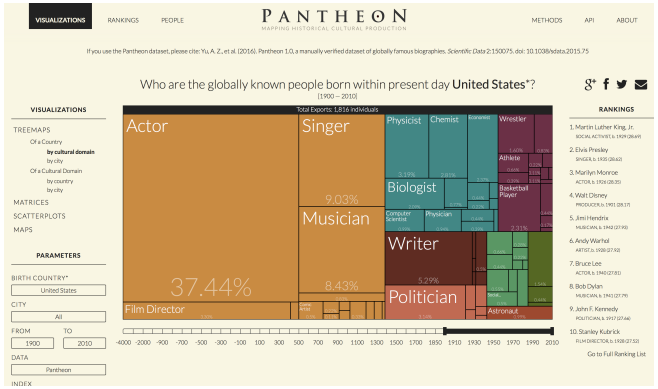
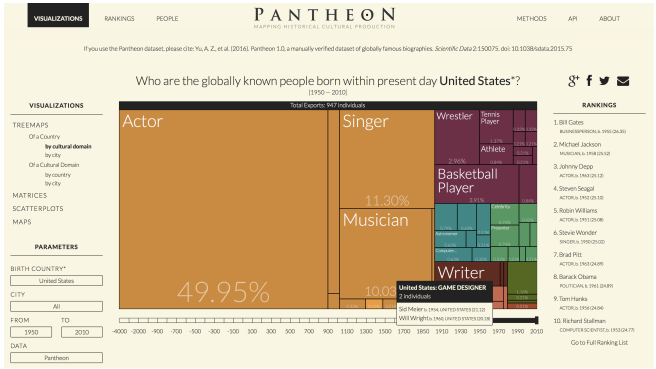
The famous are storytellers—United States:



For people born 1950–

http://pantheon.media.mit.edu/treemap/country_exports/US/all/1950/2010/H15/pantheon

Storytellers win:



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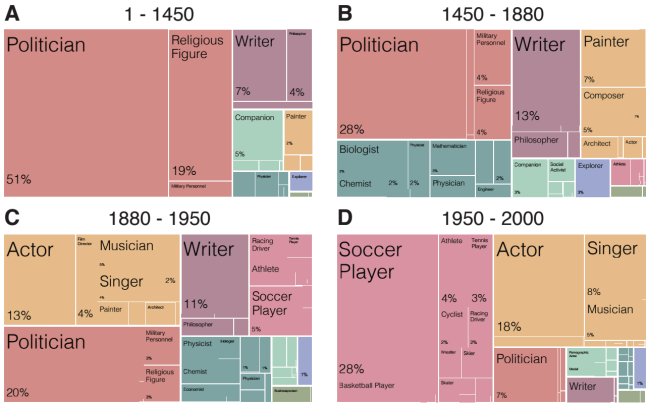

https://www.media.mit.edu/projects/pantheon-new/overview/

It's all about algorithms (stories):

"On the Origin of Stories: Evolution, Cognition, and Fiction" by Brian Boyd (2010). [4]

"The Storytelling Animal: How Stories Make Us Human" by Jonathan Gottschall (2013). [12]

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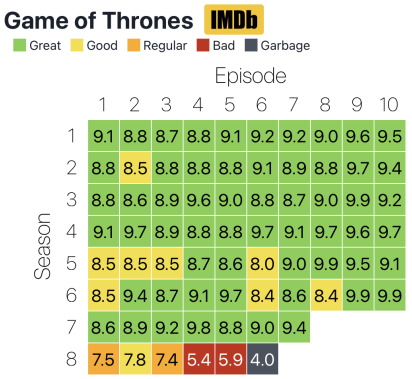
Stories are the essence of ... oh no, no, no ...

- Except for writers who destroy their own stories.
- Also audiences.
- Basic word of mouth.
- And critics.
- And other, better stories.
- Character assassination works too.



Series Heat for GoT

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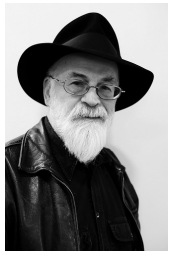
(Sir Terry) Pratchett's Narrativium:



- "The most common element on the disc, although not included in the list of the standard five: earth, fire, air, water and surprise. It ensures that everything runs properly as a story."
- "A little narrativium goes a long way: the simpler the story, the better you understand it. Storytelling is the opposite of reductionism: 26 letters and some rules of grammar are no story at all."
- "Heroes only win when outnumbered, and things which have a one-in-a-million chance of succeeding often do so."

Game of Thrones, S8E06: The Iron Throne

"What unites people? Armies? Gold? Flags?[1] Stories.
There's nothing in the world more powerful than a good story.
Nothing can stop it.
No enemy can defeat it."

[1] Character is the shortcut to story

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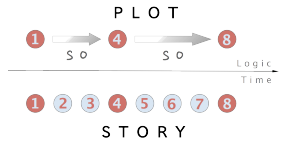
Simple Definitions:

- Story: a laying out of a temporal sequence of events.
- "Time is a great storyteller" (Irish proverb)
- Events may be any balance of real and imagined.
- Narrative ≡ Story.
- Plot: Essential sequence of a story's elements.[2]



- Plot = Algorithm

[2] By □□□□□□□ — Own work, CC BY-SA 4.0, https://commons.wikimedia.org/w/index.php?curid=34054522

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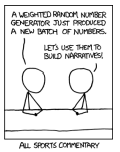
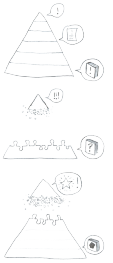
Understanding the Sociotechnocene—Stories:



xkcd.com/904/

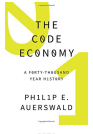


- Goal: a Science of Stories.
- Claim: Homo narrativus—we run on stories.
- "What's the John Dory?"
- "They've lost the plot/thread"
- Maybe: The narrative hierarchy and the Scalability of stories.
- Research: Extraction of metaphors, frames, narratives, motifs, tropes, and stories from large-scale text/corpora.
- Storywrangler, the smogasdashbord at the POTUSometer, ...
- Research: What's the taxonomy of human stories?
- Maybe: Stories ↔ Algorithms

Algorithms are everywhere:

- Communication/Language.
- Economic systems
  (Shiller: “Narrative Economics” [19])
- Legal systems.
- Social norms, customs, cultures.
- Food:
  growing, harvesting, preparing, distribution, ...
- Safety codes and protocols
- Military.
- Stories ...

Algorithms, recipes, stories, ...



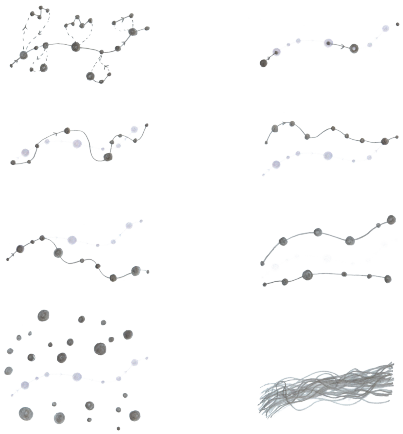
“The Code Economy: A Forty-Thousand Year History”
by Philip E Auerswald (2017). [2]

“Algorithms to Live By”
by Christian and Griffiths (2016). [8]

“Once Upon an Algorithm”
by Martin Erwig (2017). [11]

Also: Numerical Recipes in C [16] and How to Bake π [7]

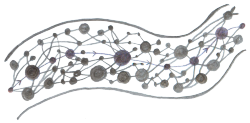
- Adjacent narratives—why mistruths and conspiracy theories exist and flourish:



Why adjacent narratives exist and untrue stories flourish:

1/4. A real story is never recorded and retold completely

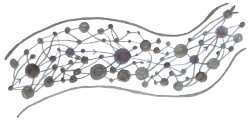
- Impossible to record every detail.
- Recording entails compression to scale of medium (narrative hierarchy).
- Story logic will be favored, and seemingly irrelevant aspects discarded.



Why adjacent narratives exist and untrue stories flourish:

2/4. The infinitude of adjacent stories will afford “better” stories

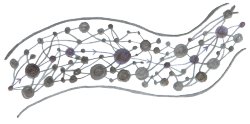
- Better = More engaging, more motivating to spread, more durable under spreading.
- Better stories exist for truthful recorders and retellers (journalists).



Why adjacent narratives exist and untrue stories flourish:

3/4. The infinitude of adjacent stories means “better” stories exist for those who would disinform

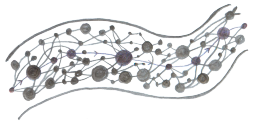
- Adjacent stories may be truth-limited and/or falsehood-bearing.
- There may exist adjacent stories that conform to a world view/ideology.
- Even the seemingly non-adjacent must have some plausibility (Pizzagate).



Why adjacent narratives exist and untrue stories flourish:

4/4. Character is the shortcut to story

- The barely implausible can be believed if the character can make it so.
- A believe-to-be evil character can do anything.
- Iterate between character and story to make the character fixed.



Conspiracy theories

1999 Gallup poll:

- 6% of Americans said the lunar landings were fake.
- 5% were undecided.
- Video replay
- “The Comments, the comments, ...”

JK Rowling doesn’t exist: conspiracy theories the internet can’t resist, The Guardian, 2017-10-27:

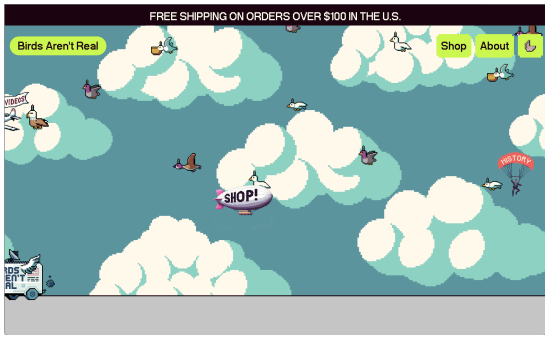
Highlights:

- The Earth is flat. https://www.tfes.org.
- The Beatles never existed:
  http://www.thebeatlesneverexisted.com.
- Per the title, JK Rowling doesn’t exist.
  - Q. “Is it possible that a person can write six thick books that are translated into 55 languages and sell more than 250 million copies in less than 10 years? — Nina Grünfeld”
  - A. “Yes. Yes it is.”

- Phantom time hypothesis:
  - The years 614–911 AD never existed.
  - Straight up jump of 297 years orchestrated by a first millennium cabal.
  - The year 2017 AD is really 1820 AD.
  - Good to know.
  - Holy Roman Emperor Otto III (@TheBoss37), Pope Sylvester II (@PSly2) wanted to live in 1000 AD, legitimize power.
  - Crushed by reality: Records of solar eclipses, comets, dendrochronology.

- Finland does not exist:

Birds aren't real:



https://en.wikipedia.org/wiki/Birds_Aren't_Real

Stories influence people, for good or bad:

- Parasocial relationships (Cosplay)
- Allusionist 82. A Novel Remedy
- Agatha Christie type murder mysteries: A salve post the Great War.
- Representation matters—possible future paths (narrative hodology)

Poe's law:

- In short: There is no parody too extreme that, when taken out of context, someone somewhere won't take to be sincere.
- Minor comment by Nathan Poe on christianforums.com:

  "Without a winking smiley or other blatant display of humor, it is utterly impossible to parody a Creationist in such a way that someone won't mistake for the genuine article."

- Usual win for Stigler's Law of Eponymy.
- Post by Jerry Schwarz on Usenet, 1983:

  'Avoid sarcasm and facetious remarks.
  Without the voice inflection and body language of personal communication these are easily misinterpreted. A sideways smile, :-), has become widely accepted on the net as an indication that "I'm only kidding." If you submit a satiric item without this symbol, no matter how obvious the satire is to you, do not be surprised if people take it seriously.'

- Related: "Nobody ever went broke underestimating the intelligence of the American people" — H. L. Mencken (but not exactly).

Stories influence people, for good or bad:

- But representation of good is accepted as real, representation of bad is "just entertainment"
- Columbine, references to Natural Born Killers (NBK)
- Natural Born Killers copycat crimes
- Aurora, Colorado shooting (Joker)

Absence of story, meaning, sense:

Las Vegas, 2017/10/01:

- 60 murdered, over 400 injured, 1000 bullets.
- Marked the lowest point ever on the English Twitter Hedonometer at the time.
- Why did the Las Vegas shooter do what he did?
- Why have we forgotten about it?

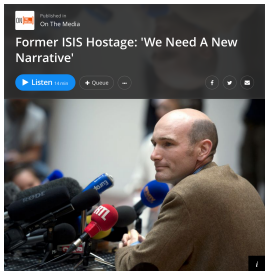
"The Written World: How Literature Shaped Civilization" by Martin Puchner (2017). [17]

We are what we read (NYT)

"Storytelling is as human as breathing. When fabulation intersected with writing, stories were empowered to propagate themselves in society and around the world as civilization-forming "foundational texts.""

- NYT review has a flicker of concern at the end that stories can be used for bad ...
- Common strawman frame: Stories as lightweight entertainment
- Not lighting up Google Scholar
- BBC, strawfree: How stories have shaped the world

Story Wars:



- Nicholas Hénin, French Journalist, held captive for 10 months.

From the end of the interview:

NICOLAS HENIN: No, it was just like in a movie. And, by the way, even the people going to Syria, joining ISIS in Syria to fight, even these people see himself as movie characters. They play their own movie. This is why I think that the most powerful way to fight ISIS are not bombs. It is to kill the narrative. We have to write another movie. We have to build other heroes. And this is why I believe that the French are making big mistakes in the ways they, they fight ISIS.

We created, for instance, accounts on the social media named "Stop Jihadism," and this is [BLEEP], like they did not understand anything. And I did understand why we are so bad. It's just because in France we don't know how to write TV series properly.

[BROOKE LAUGHS]

Just because we have no imagination, we cannot just tell beautiful stories, create beautiful characters, beautiful heroes.

And this is what we have to do because in our world, in our societies what do people want? They want to become heroes. They want to be famous. They want to be, to be recognized.

Stories make us do all kinds of things:

The Comet Ping Pong Gunman Answers Our Reporter's Questions:

- "According to court documents, Mr. Welch said he had come armed to help rescue the children."
- "'The intel on this wasn't 100 percent," he said.'
- He said he did not believe in conspiracy theories, but then added that the Sept. 11, 2001, attacks needed to be re-examined. He has listened to Alex Jones, whose radio show traffics in conspiracy theories and who once said that Mrs. Clinton "has personally murdered and chopped up" children. "He's a bit eccentric," Mr. Welch said. "He touches on some issues that are viable but goes off the deep end on some things.""

The Attack on the United States Capitol

Photo: Evelyn Hockstein for The Washington Post

Washington Post's massive analysis
Red Flags, Bloodshed, Contagion

Senate Chaplain Barry Black:

"These tragedies have reminded us that words matter, and that the power of life and death is in the tongue."

Massive informational misdirection as a cognitive denial of story:

"How the Chinese government fabricates social media posts for strategic distraction, not engaged argument"
King, Pan, and Roberts,
American Political Science Review, , ,
Forthcoming. [15]

- Make the truth a needle in a haystack
- Trump's Reality Distortion Field, http://www.onthemedia.org
- "Surkov turned Russian politics into a bewildering constantly changing piece of theater. He sponsored all kinds of groups, ...no one was sure what was real or fake. ...it is a strategy of power that keeps any opposition constantly confused."

Stories generated the first surveillance state:

- Low tech, low cost.
- Infrastructure maintained in the Social Wild by storytellers and storybelievers.
- Omnipresence and omniscience: The end of privacy.

Defend the Story:

The Ten (or Eleven) Commandments:

I am the LORD thy God
No other gods before me
No graven images or likenesses
Not take the LORD's name in vain
Remember the sabbath day
Honour thy father and thy mother
Thou shalt not kill
Thou shalt not commit adultery
Thou shalt not steal
Thou shalt not bear false witness
Thou shalt not covet

Operating systems:

Windows: "No other installations before me"

Propaganda

"If you're looking to understand what's actually happening in this country, always assume the opposite of whatever they're telling you on the big news stations," — Tucker Carlson

Defend your mind:

If a storyverse—whether it be through storytellers, groups, books, movies—tells you that all other stories are wrong, then that storyverse is false.

Book (story) burning (451°F)

The American Dream = Rags to Riches

- The story that anyone can become King or Queen.
- Story of individual, not the collective.
- But we know about fame and success:
  The presence of outsized fame in a social system means social imitation is a driver of value.
- Stories of societies can only hold if they have been and remain believable.
- "Entertaining beliefs in economic mobility": Effort to understand if rags to riches stories in popular culture affect people's lives. [14]

If not Trump, what?, David Brooks, New York Times, 2016-04-29:

"We'll probably need a new national story. Up until now, America's story has been some version of the rags-to-riches story, the lone individual who rises from the bottom through pluck and work. But that story isn't working for people anymore, especially for people who think the system is rigged."

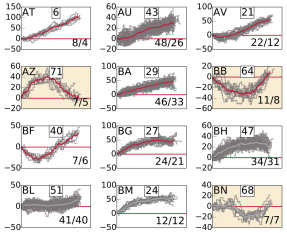
"I don't know what the new national story will be, but maybe it will be less individualistic and more redemptive. Maybe it will be a story about communities that heal those who suffer from addiction, broken homes, trauma, prison and loss, a story of those who triumph over the isolation, social instability and dislocation so common today."

Claim: Stories must have "real" substance to endure over generations[3]

- Enormous disasters: Fabrications of real experiences.
  - Plain old making stuff up: A million little pieces ... Oprah will get you.
  - Wikipedia's has a list of famous fake memoirs.
  - Expansive plagiarism: How Opal Mehta Got Kissed, Got Wild, and Got a Life.
    #kudos
  - Self-plagiarism and more standard badness: Jonah Lehrer. Amazingly: Made up Bob Dylan quotes.
  - Lance Armstrong. Also got to meet Oprah.
- Enormous power: Fiction that speaks to real experiences.

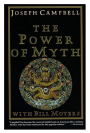
[3] Reality is being tested harshly

"The game story space of professional sports: Australian Rules Football"
Kiley, Reagan, Mitchell, Danforth, and Dodds.
Physical Review E, **93**, 052314, 2016. [13]

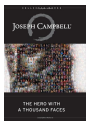


Sports = Spontaneous story producing systems

The "I wonder who wrote this?" Great Man Theory:

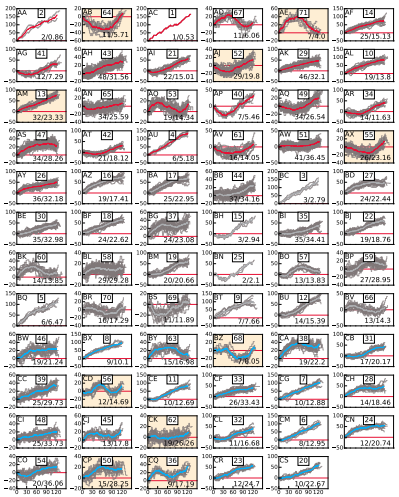


"The Power of Myth"
by Campbell and Moyers (1991). [6]



"The Hero with a Thousand Faces"
by Joseph Campbell (2008). [5]

Highly influential but it's a trap!



The story trap by Philip Ball, 2015-11-12

- "We use neat stories to explain everything from sports matches to symphonies. Is it time to leave the nursery of the mind?"
- "...we might wonder if the ultimate intelligibility of the universe will be determined not so much by the capacity of our minds to formulate the appropriate concepts and equations, but by whether we can find a meaningful story to tell about it."

The taxonomy of stories:

- ANIMAL TALES 1-299
  - Wild Animals 1-99
    - The Clever Fox (Other Animal) 1-69
    - Other Wild Animals 70-99
  - Wild Animals and Domestic Animals 100-149
  - Wild Animals and Humans 150-199
  - Domestic Animals 200-219
  - Other Animals and Objects 220-299
- TALES OF MAGIC 300-749
  - Supernatural Adversaries 300-399
  - Supernatural or Enchanted Wife (Husband) or Other Relative 400-459
    - Wife 400-424
    - Husband 425-449
    - Brother or Sister 450-459
  - Supernatural Tasks 460-499
  - Supernatural Helpers 500-559
  - Magic Objects 560-649
  - Supernatural Power or Knowledge 650-699
  - Other Tales of the Supernatural 700-749
- RELIGIOUS TALES 750-849
  - God Rewards and Punishes 750-779
  - The Truth Comes to Light 780-799
  - Heaven 800-809
  - The Devil 810-826
  - Other Religious Tales 827-849
- REALISTIC TALES 850-999
  - The Man Marries the Princess 850-869
  - The Woman Marries the Prince 870-879
  - Proofs of Fidelity and Innocence 880-899
  - The Obstinate Wife Learns to Obey 900-909
  - Good Precepts 910-919
  - Clever Acts and Words 920-929

How to write a screenplay:

"Save the Cat!"
by Blake Snyder (2005). [20]

- 9 acts.
- Someone important to the main characters gets toasted in the second act, blah, blah.
- Believes irony is key.
- Logline = one or two sentence summary.
- Logline fails to be a summary of logline.

Seven "good" stories?:

"The Seven Basic Plots: Why We Tell Stories"
by Christopher Booker (2005). [3]

- Seven Gateways to the Underworld (?)
- Overcoming the Monster ×2 and the Thrilling escape from Death (plot).
- Rags to Riches (plot).
- The Quest (plot).
- Voyage and Return (plot).
- Comedy ×2 (plot but really structure).
- Tragedy ×3 (plot).
- Rebirth (plot).
- The Dark Power: From Shadow into Light (master structure).

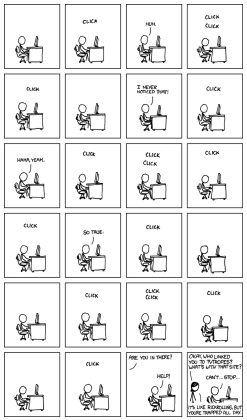
Folkloristics:

- Academic area formally started around 1900.
- Aarne–Thompson classification systems
- Motif-based taxonomy.
- Online classification database

"Computational folkloristics"
Abello, Broadwell, and Tangherlini,
Communications of the ACM, **55**, 60–70, 2012. [1]

- Motivation: "As a simple, historical example from the Danish materials, no one has yet classified (according to the ATU index) the several thousand fairy tales in the collections of the Danish Folklore Archive (http://www.dafos.dk), nor does it seem anyone ever will."
- 'Imagine a system in which the complexities of a folklore corpus can be explored at different levels of resolution, from the broad perspective of "distant reading" down to the narrow perspective of traditional "close reading."'

Motifs redux—TV Tropes:



- xkcd comic links to Universal Tropes.
- Of course: xkcd is on TV Tropes.
- TV tropes will ruin your life.
- Origin story: A wiki of story elements in Buffy The Vampire Slayer.
- To create: Tropometrics.
- To build: Tropometer, tropographs.

Trope inception:

- Chekhov's gun
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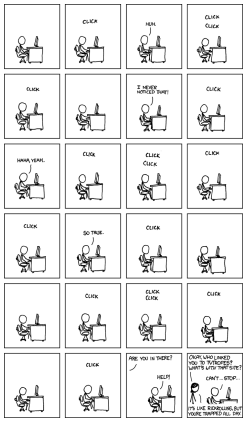
Rules of Story:

	Gun	Cat	Razor	Law
Checkov's	If a gun is introduced in the first act, it must be fired by the third.	If a box is introduced in the first act, a cat must sit in it by the third	The simplest way to fire a gun is to pull the trigger	Every gun in a play will be fired
Schrodinger's	You can't know if a gun is loaded, or not, until the trigger is pulled	An unopened box may contain a dead cat, or an alive one, and you won't know until you open it	An unopened box may contain the solution to your problems	You can't know that things will go wrong, until they do
Occam's	The simplest way to kill off a character is to shoot them	If you hear a strange noise at night, it's probably a cat	The simplest explanation is probably the correct one	Everything that can be explained, will be explained
Murphy's	Any gun that can go off, will go off	Any box that can contain a cat, will contain a cat	Anything that can be simple, will be simple	Anything that can go wrong, will go wrong

Revo, Hrdlicka, Halsenad, Venort, ATF

This is a bit of fun with bonus misspellings and only minor rage inducement.

Motifs redux—TV Tropes:



- alt text: "Cracked.com is another inexplicable browser narcotic. They could write a list of '17 worst haircuts in the Ottoman Empire' and I'd still read through to the end, then click on all the links at the end."

The taxonomy of stories:

Fundamental arcs:

- Kill the Monster.
- Rags to Riches (and Riches to Rags—The Metamorphosis).
- Journey/Odyssey: Search for a salvation, a "Holy Grail".
- Romance.
- Narratives in Left Nullspace: Again, All Stories of The Many.

What about comedies?

- Comedies are not in themselves a story, but a way of telling stories.

Stories are algorithms for life:

Homo narrativus:

- Provide dynamic paths and trajectories.
- If this, then that.
- Convey and reinforce how to behave, how not to behave.
- Full ecology of stories = Competing, self-defending operating system for people's minds.

Proverbs as algorithms (hero: Wolfgang Mieder):

- "Pride cometh before the fall."
- "A stitch in time saves nine."
- "Look before you leap."
- "Anti-aphorism: The one who hesitates is lost."
- Understanding randomness: "Shit happens"

"The phylogeny of Little Red Riding Hood"
Jamshid J. Tehrani,
PLoS ONE, **8**, e78871, 2013. [21]

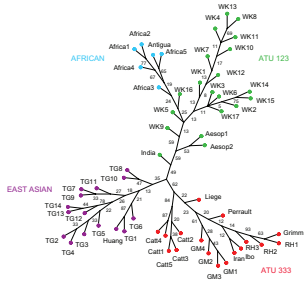
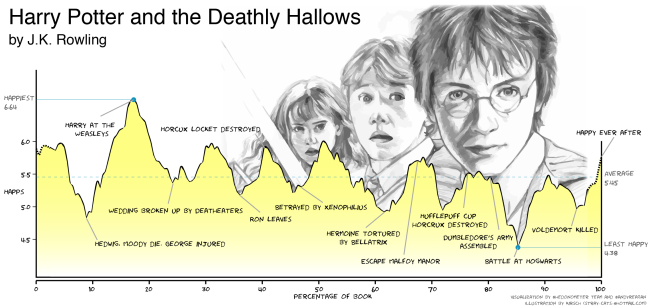


Figure 2. Majority-rules consensus of the most parsimonious trees returned by the cladistic analysis of the tales. Major groupings are labelled by region or ATU international type and indicated by the coloured nodes. Sub-types are indicated in the taxa labels (RH = Little Red Riding Hood; GM = Story of Grandmother; Cat# = Catterwalla; WK = The Wolf and the Kids; TG = Tiger Grandmother). Variants by particular authors, or from countries/ethnic groups that are discussed in the text have individual labels. Numbers beside the edges represent the level of support for individual clades returned by the bootstrap analysis.
doi:10.1371/journal.pone.0078871.g002

The boiled-down essence of stories:

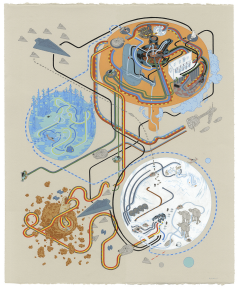
The three fundamental events of (non-clone) life:

- Hatchings, Matchings, and Dispatchings.
- Stories encode survival algorithms.
- Survival algorithms for individuals and groups.
- Dynamic paths: the true, the possible, the unlikely.
- The unifying theme of existence is existence.



"The emotional arcs of stories are dominated by six basic shapes"
Reagan, Mitchell, Danforth, Dodds, and Dodds.
EPJ Data Science, **5**, 31, 2016. [18]

"Plotted: A Literary Atlas"
by Andrew DeGraff (2015). [9]

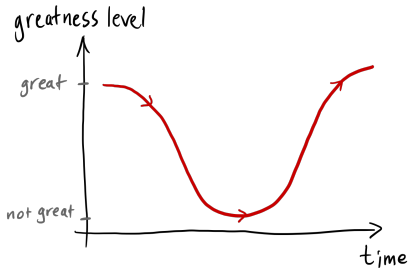


http://www.andrewdegraff.com/moviemaps/

"George Green and physics"
Freeman Dyson,
Physics World, **6**, 33, 1993. [10]

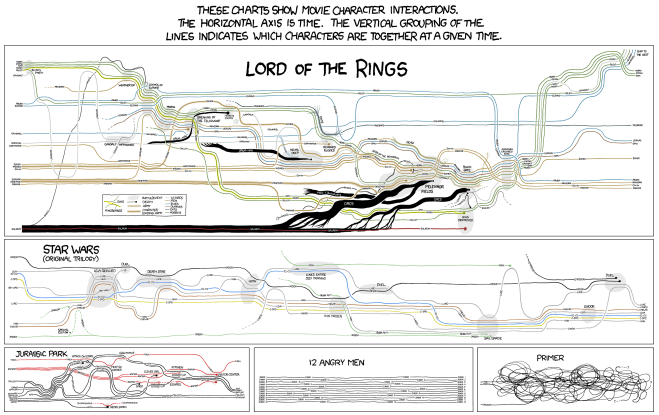
- "The concept-driven revolutions are the ones that attract the most attention and have the greatest impact on the public awareness of science, but in fact they are comparatively rare.
- In the last five hundred years we have had six major concept-driven revolutions, associated with the names of Copernicus, Newton, Darwin, Maxwell, Einstein and Freud, besides the quantum-mechanical revolution that Kuhn took as his model.
- During the same period there have been about 20 tool-driven revolutions, not so impressive to the general public but of equal importance to the progress of science."

Stories matter:



- Used by Reagan and Bush in 1980.
- Template used by many others including Bill Clinton.

Emotional arcs are not plots. Temporal character interaction networks are closer but still miss events, environments, interaction types:



https://xkcd.com/657/

A Science of Stories?

Stories are everything[4]

- Maybe? yes?
- Stories ~ Characters* + Time.
- One of the most important, dangerous, enjoyable terrifying things we can study.
- Essence: Bare survival to flourishing ("Danger Will Robinson")

We talk about and study stories everywhere but ...

- We don't have a central place academically.
- Departments of: English, history, political science, folklore, cognitive sciences, arts, musicology, communication, ...

We're we are now:

- SOCKS: Science of Online Corpora, Knowledge, and Stories ($20M, 2023–)

[4]Okay, poems are everything

"George Green and physics"
Freeman Dyson,
Physics World, **6**, 33, 1993. [10]

- "I will not attempt to make a complete list of tool-driven revolutions. Two prime examples are the Galilean revolution resulting from the use of the telescope in astronomy, and the Crick-Watson revolution resulting from the use of X-ray diffraction to determine the structure of big molecules in biology.
- The effect of a concept-driven revolution is to explain old things in new ways.
- The effect of a tool-driven revolution is to discover new things that have to be explained."

"George Green and physics"
Freeman Dyson,
Physics World, **6**, 33, 1993. [10]

- "... scientific revolutions are more often driven by new tools than by new concepts.
- Thomas Kuhn in his famous book, The Structure of Scientific Revolutions, talked almost exclusively about concepts and hardly at all about tools. His idea of a scientific revolution is based on a single example, the revolution in the theoretical physics that occurred in the 1920s with the advent of quantum mechanics.
- This was a prime example of a concept-driven revolution. Kuhn's book was so brilliantly written that it became an instant classic. It misled a whole generation of students and historians of science into believing that all scientific revolutions are concept-driven."

"George Green and physics"
Freeman Dyson,
Physics World, **6**, 33, 1993. [10]

- "I will not attempt to make a complete list of tool-driven revolutions. Two prime examples are the Galilean revolution resulting from the use of the telescope in astronomy, and the Crick-Watson revolution resulting from the use of X-ray diffraction to determine the structure of big molecules in biology.
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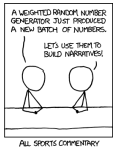
Observations/Claims/Questions:

- Primacy of storytelling and storybelieving in for individuals and populations.
- Maybe: Stories are dynamical paths; plots are algorithms that give rise to stories.
- Internet gives extraordinary power to propaganda, disinformation, conspiracy theories, ...
- Global social media creates a global robust-yet-fragile social system.
  - Failure can be endogenous (infighting) and/or ignited/supported from the outside.

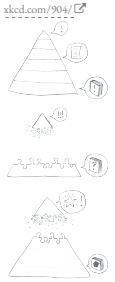
Observations/Claims/Questions:

- Basic social fabric: What is the spectrum of stories in the media being told about classes of people, from within and without.
- Story decoherence: telephone game
- What about stories about global problems like climate change? Government? Journalism (death of)?
- All separately powerful: Words, Music/Sound, Visual, ... interplay?
- Outcome: How to communicate scientific findings powerfully.

Understanding the Sociotechnocene—Stories:



xkcd.com/904/



- Goal: a Science of Stories.
- Claim: Homo narrativus—we run on stories.
- "What's the John Dory?"
- "They've lost the plot/thread"
- Maybe: The narrative hierarchy and the Scalability of stories.
- Research: Extraction of metaphors, frames, narratives, motifs, tropes, and stories from large-scale text/corpora.
- Storywrangler, the smogasdashbord at the POTUSometer, ...
- Research: What's the taxonomy of human stories?
- Maybe: Stories ↔ Algorithms

References I

[1] J. Abello, P. Broadwell, and T. R. Tangherlini.
Computational folkloristics.
Communications of the ACM, 55:60–70, 2012. pdf

[2] P. E. Auerswald.
The Code Economy: A Forty-Thousand Year History.
Oxford University Press, 2017.

[3] C. Booker.
The Seven Basic Plots: Why We Tell Stories.
Continuum, 2005.

[4] B. Boyd.
On the Origin of Stories: Evolution, Cognition, and Fiction.
Belknap Press, 2010.

References II

[5] J. Campbell.
The Hero with a Thousand Faces.
New World Lbirary, third edition, 2008.

[6] J. Campbell and B. Moyers.
The Power of Myth.
Anchor, 1991. pdf

[7] E. Cheng.
How to bake pi: An edible exploration of the mathematics of mathematics.
Basic Books, 2015.

[8] B. Christian and T. Griffiths.
Algorithms to Live By.
Macmillan, 2016.

References III

[9] A. DeGraff.
Plotted: A Literary Atlas.
Pulp/Zest Book, 2015.

[10] F. Dyson.
George Green and physics.
Physics World, 6(8):33, 1993. pdf

[11] M. Erwig.
Once Upon an Algorithm.
MIT Press, 2017.

[12] J. Gottschall.
The Storytelling Animal: How Stories Make Us Human.
Mariner Books, 2013.

References IV

[13] D. P. Kiley, A. J. Reagan, L. Mitchell, C. M. Danforth, and P. S. Dodds.
The game story space of professional sports: Australian Rules Football.
Physical Review E, 93, 2016. pdf

[14] E. Kim.
Entertaining beliefs in economic mobility.
https://www.dropbox.com/s/i9pm6wd51c3fzbh/Kim_WS.pdf?dl=0, 2018. pdf

[15] G. King, J. Pan, and M. E. Roberts.
How the Chinese government fabricates social media posts for strategic distraction, not engaged argument.
American Political Science Review, 2017 Forthcoming. pdf

References V

[16] W. H. Press, S. A. Teukolsky, W. T. Vetterling, and B. P. Flannery.
Numerical Recipes in C.
Cambridge University Press, second edition, 1992.

[17] M. Puchner.
The Written World: How Literature Shaped Civilization.
Random, 2017.

[18] A. J. Reagan, L. Mitchell, C. M. Danforth, and P. S. Dodds.
The emotional arcs of stories are dominated by six basic shapes.
EPJ Data Science, 5:31, 2016.
Available at https://arxiv.org/abs/1606.06820. pdf

[19] R. J. Shiller.
Narrative economics.
American Economic Review, 107(4):967–1004, 2017. pdf

References VI

[20] B. Snyder.
Save the Cat!
Michael Wiese Productions, 2005.

[21] J. J. Tehrani.
The phylogeny of Little Red Riding Hood.
PLoS ONE, 8:e78871, 2013. pdf