Computational History

Last updated: 2023/08/22, 11:48:25 EDT

Principles of Complex Systems, Vols. 1, 2, & 3D
CSYS/MATH 6701, 6713, & a pretend number, 2023–2024 | @pocsvox

Prof. Peter Sheridan Dodds | @peterdodds

Computational Story Lab | Vermont Complex Systems Center
Santa Fe Institute | University of Vermont

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Outline

THE MECHANICS
OF FAME

THE TALK
OF FAME

THE STORIES
CONTAGIOUS

THE
SOCIAL WILD

THE STORIES
CONTAGIOUS

Fame by rank

Nature (2014): Most cited papers of all time

Word frequency:

The PoCSverse
Computational
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Statistics of
Surprise

Stories

Mechanics of
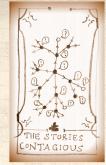Fame

Superspreading

Lexical Ultrafame

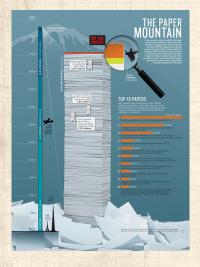Turbulent times

Extras
Sociotechnical time series
Adjacent Narratives

Extras
Memory & Turbulence

References

Brown Corpus $\square$ ($\sim 10^6$ words):

rank	word	% q		rank	word	% q
1.	the	6.8872		1945.	apply	0.0055
2.	of	3.5839		1946.	vital	0.0055
3.	and	2.8401		1947.	September	0.0055
4.	to	2.5744		1948.	review	0.0055
5.	a	2.2996		1949.	wage	0.0055
6.	in	2.1010		1950.	motor	0.0055
7.	that	1.0428		1951.	fifteen	0.0055
8.	is	0.9943		1952.	regarded	0.0055
9.	was	0.9661		1953.	draw	0.0055
10.	he	0.9392		1954.	wheel	0.0055
11.	for	0.9340		1955.	organized	0.0055
12.	it	0.8623		1956.	vision	0.0055
13.	with	0.7176		1957.	wild	0.0055
14.	as	0.7137		1958.	Palmer	0.0055
15.	his	0.6886		1959.	intensity	0.0055

Jonathan Harris's Wordcount: ⬀

A word frequency distribution explorer:

WORD**COUNT**

◀ PREVIOUS WORD   NEXT WORD ▶

the of and to a in that is was i for you he with ...

1   2   3   4   5   ...

|CURRENT WORD

FIND WORD: [   ] ▶   BY RANK: [   ] ▶   REQUESTED WORD: THE   86800 WORDS IN ARCHIVE

                                                     RANK: 1   ABOUT WORDCOUNT

WORD**COUNT**

◀ PREVIOUS WORD   NEXT WORD ▶

spitsbergen eyles turboprop pahdra[

55059   55060   55061   55062   5

                              |CURRENT WORD

FIND WORD: [   ] ▶   BY RANK: [   ] ▶   REQUESTED WORD: SPITSBERGEN   86800 WORDS IN ARCHIVE

                                                     RANK: 55059   ABOUT WORDCOUNT

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"Thing Explainer: Complicated Stuff in Simple Words " 🅐,⤢
by Randall Munroe (2015). [14]

Up goer five⤢

The everywhereness of algorithms and stories:

"On the Origin of Stories: Evolution, Cognition, and Fiction" ⓐ ☑,
by Brian Boyd (2010). [3]

"The Storytelling Animal: How Stories Make Us Human" ⓐ ☑
by Jonathan Gottschall (2013). [10]

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

Algorithms, recipes, stories, …

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"The Code Economy: A Forty-Thousand Year History" 🅰, ⬈
by Philip E Auerswald (2017). [1]

"Algorithms to Live By" 🅰 ⬈
by Christian and Griffiths (2016). [6]

"Once Upon an Algorithm" 🅰 ⬈
by Martin Erwig (2017). [9]

Also: Numerical Recipes in C [16] and How to Bake π [4]

The famous are storytellers—Japan:
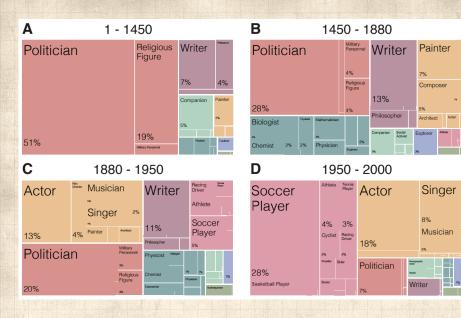
For people born 1950–

A 1 - 1450

- Politician 51%
- Religious Figure 19%
- Writer 7%
- Philosopher 4%
- Companion 5%
- Painter 2%
- Military Personnel
- Physician
- Explorer

B 1450 - 1880

- Politician 28%
- Military Personnel 4%
- Religious Figure 4%
- Writer 13%
- Painter 7%
- Composer 5%
- Architect
- Actor
- Philosopher
- Biologist 3%
- Chemist 2%
- Physicist
- Mathematician 2%
- Physician
- Engineer 2%
- Companion
- Social Activist
- Explorer
- Athlete

C 1880 - 1950

- Actor 13%
- Film Director 5%
- Musician
- Singer 2%
- Painter 4%
- Architect
- Writer 11%
- Philosopher
- Racing Driver
- Tennis Player
- Athlete
- Soccer Player 5%
- Politician 20%
- Military Personnel 3%
- Religious Figure 3%
- Physicist
- Biologist
- Chemist
- Economist
- Physician 1%
- Businessperson 1%

D 1950 - 2000

- Soccer Player 28%
- Athlete 4%
- Tennis Player 3%
- Cyclist 2%
- Racing Driver 2%
- Wrestler
- Skier
- Skater
- Basketball Player
- Actor 18%
- Politician 7%
- Writer
- Singer 8%
- Musician 5%
- Pornographic Actor
- Model 1%

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

Super Survival of the Stories:

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The Desirability
of
Storytellers ☑,
The Atlantic,
Ed Yong,
2017-12-05.

- 🪢 Study of Agta, Filipino hunter-gatherers.
- 🪢 Storytelling valued well above all other skills including hunting.
- 🪢 Stories encode prosocial norms such as cooperation.

Super Survival of the Stories:

The Desirability of Storytellers ⬀,
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- 🎲 Study of Agta, Filipino hunter-gatherers.
- 🎲 Storytelling valued well above all other skills including hunting.
- 🎲 Stories encode prosocial norms such as cooperation.
- 🎲 Like the best stories, the best storytellers reproduce more successfully.

The most famous painting in the world:

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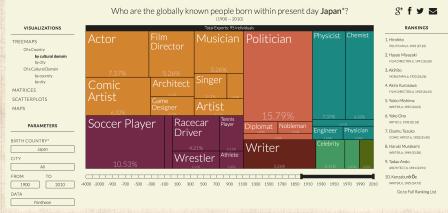Adjacent Narratives

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The dismal predictive powers of editors ......

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Twelve ...

THE STORIES
CONTAGIOUS

The completely unpredicted fall of Eastern Europe:

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Timur Kuran: [12] "Now Out of Never: The Element of
Surprise in the East European Revolution of 1989"

We understand bushfire stories:

1. Sparks start fires.

We understand bushfire stories:

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References

1. Sparks start fires.
2. System properties control a fire's spread.

We understand bushfire stories:

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1. Sparks start fires.
2. System properties control a fire's spread.

3. But for three reasons, we make two mistakes about Social Fires ...

We understand bushfire stories:

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References

1. Sparks start fires.
2. System properties control a fire's spread.

3. But for three reasons, we make two mistakes about Social Fires …

Reason 1—We are Homo Narrativus.

http://xkcd.com/904/

Reason 2—"We are all individuals." [↗]

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Archival footage:

🧊 Individual narratives are not enough to
understand distributed, networked minds.

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Reason 3—We are spectacular imitators.

BBC/David Attenborough.

Mistake 1:
Success is due to intrinsic properties

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Mechanics of
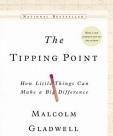Fame

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See "Becoming Mona Lisa" by David Sassoon ⎘

Mistake 1:
Success is due to intrinsic properties

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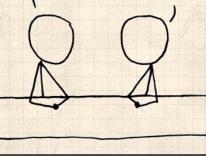
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it's just so disappointingly small

See "Becoming Mona Lisa" by David Sassoon ⬀

Mistake 1:
Success is due to intrinsic properties

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Stolen in 1913, recovered in 1915.

See "Becoming Mona Lisa" by David Sassoon ⧉

Mistake 1:
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Hidden during WWII.

See "Becoming Mona Lisa" by David Sassoon ↗

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Repeatedly vandalised and attacked. ☑

See "Becoming Mona Lisa" by David Sassoon ☑

48 songs
30k participants

Exp 1— weak social

Exp. 2—strong social

"An experimental study of inequality and
unpredictability in an artificial cultural
market"🔗
Salganik, Dodds, and Watts,
Science, **311**, 854–856, 2006. [18]

Resolving the paradox:

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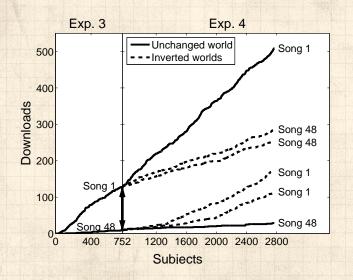
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Increased social awareness leads to
Stronger inequality + Less predictability.

Payola/Deceptive advertising hurts us all:

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"Mistake" 2:
Seeing success is 'due to social' and
wanting to say 'all your interactions are
belong to us'

"This is truly the last time, believe me"

WaPo article

The hypodermic model of influence:

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The two step model of influence: [11]

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The network model of influence:

The network model of influence:

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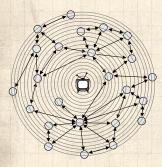
How superspreading works:

Many interconnected, average, trusting people
must benefit from both
receiving and sharing a message
far from its source.

"Influentials, Networks, and Public Opinion Formation" 🗗
Watts and Dodds,
J. Consum. Res., **34**, 441–458, 2007. [19]

Etymological clarity:

Fate—from the Latin *fatus*: meaning "spoken".

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- ♣ Fate—from the Latin *fatus*: meaning "spoken".
- ♣ Fate is talk that has been done.
  "It is written", fore-tell, pre-dict.

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Oscar Wilde, The Picture of Dorian Gray: Raw Fame

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The Picture of Dorian Gray.
By OSCAR WILDE.
COMPLETE.

JULY, 1890.

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LONDON: WARD LOCK & CO.

"There is only one thing in the world

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worse than being talked about,

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"There is only one thing in the world

worse than being talked about,

and that is

not being talked about."

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"Fame and Ultrafame: Measuring and
comparing daily levels of 'being talked
about' for United States' presidents, their
rivals, God, countries, and K-pop" ✈
Dodds et al.,
Available online at
https://arxiv.org/abs/1910.00149, 2019. [7]

"Computational timeline reconstruction of
the stories surrounding Trump: Story
turbulence, narrative control, and
collective chronopathy" ✈
Dodds et al.,
, 2020. [8]

🧊 POTUSometer with the Smorgasdashbord:
http://compstorylab.org/potusometer/ ✈

🧊 Stories surrounding Trump:
http://compstorylab.org/trumpstoryturbulence/ ✈

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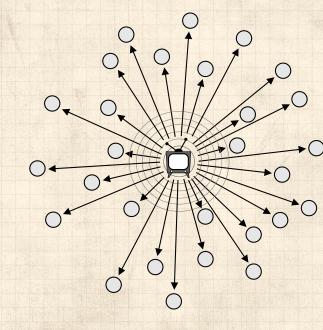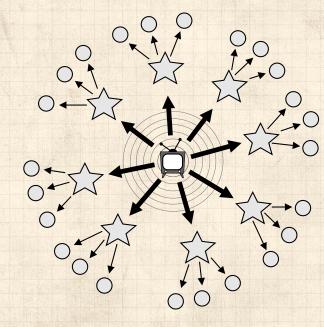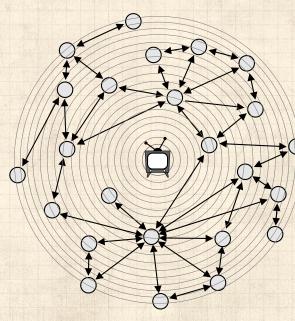Turbulent times

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Ultrafame:
Nobody expects ~~the Spanish Inquisition~~ K-pop:

Vox (2019-04-17):
BTS, the band that changed K-pop, explained ⎘

Telegnomics

Distant reading by smashing texts into storyons:

```
cd ~/work/stories/2019-10story-turbulence-trump/
261G
more updateall.sh
file names:
compute_rank_turbulence_divergence_sweep_the_leg

Zip files:
zless 2018-01-06/1grams/en_*.tar.tsv
zless 2021-01-05/1grams/en_*.tar.tsv
zless 2021-01-06/1grams/en_*.tar.tsv
zless 2021-01-07/1grams/en_*.tar.tsv
```

2011 Whitehouse Correspondents' Dinner

~ The Realm of Lexical Ultrafame ~

$r \leq r_{\text{god}} = 303$

$r = 1$
~ 'a'

$r = 10$
~ 'in'

$r = 32$
~ 'are'

$r = 100$
~ 'has'

↑
more
talked
about

$r = 316$
~ 'god'

Word
Rank
r

$r = 1,000$
~ 'america'

$r = 3,162$
~ 'argentina'

$r = 10,000$
~ 'spain'

less
talked
about
↓

$r = 31,623$
~ 'ukraine'

$r = 100,000$
~ 'cameroon'

$r = 316,228$
~ 'bhutan'

$r = 1,000,000$
~ 'kiribati'

'obama'

14 ↰ 'me'
highest rank
2008/11/04

'mccain'

31 ↰ 'at'
highest rank
2008/09/26

'romney'

33 ↱ 'your'
highest rank
2012/11/06

'hillary'

50 ↲ 'was'
highest rank
2016/11/08

— 'god' level —

'trump'

11 ↲ 'is'
highest rank
2016/11/09

195 ↱ 'rank'
median rank
post 2019/10/01

'biden'

24 ↲ 'y'
highest rank
2020/11/07

'@bts_twt'

3 ↱ 'to'
highest rank
2018/05/20

1,720 ↱ 'uk'
median rank

101 ↱ 'ana'
median rank
post 2018/01/01

806 ↱ 'hours'
median rank
in 2016

20,161 ↱ 'uruguay'

4,112 ↱ 'mexico'
median rank
post 2015/10/01

22,046 ↱ 'afghanistan'
median rank
pre 2015/12/31

5,065 ↱ 'pakistan'
median rank
in 2014

13,407 ↲ 'monaco'
median rank

23,829 ↱ 'greece'
highest rank
2015/12/31

30,652 ↱ 'qatar'
median rank

624,073 ↱ 'haiti'
median rank

71,445 ↲ 'rwanda'
lowest rank
2012/12/25

81,022 ↱ 'tanzania'
lowest rank
2013/10/26

274,352 ↱ 'nauru'
lowest rank
2011/11/24

342,148 ↲ 'bhutan'
lowest rank
2021/11/25

813,435 ↲ 'guangxi'
lowest rank
2010/08/15

~ The Lexical Abyss ~

$r \gg 10^5$

Ultrafame—Percentage of days per year ranked above 'god'

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
'barack'	1.8%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
'obama'	54.4%	6.9%	0.5%	0.5%	2.2%	0.3%	0.0%	0.3%	2.2%	2.2%	0.5%	0.0%	0.3%	0.0%
'@barackobama'	0.0%	0.0%	0.0%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
'john'	3.5%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.8%	0.3%	0.5%	0.0%
'mccain'	39.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	1.1%	0.0%	0.0%	0.0%
'@senjohnmccain'	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
'mitt'	0.0%	0.0%	0.0%	0.0%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
'romney'	0.0%	0.0%	0.0%	0.0%	1.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%
'@mittromney'	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
'hillary'	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	10.4%	0.0%	0.0%	0.0%	0.0%	0.4%
'clinton'	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.7%	0.0%	0.0%	0.0%	0.0%	0.0%
'@hillaryclinton'	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%
'donald'	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.7%	0.5%	0.0%	0.0%	1.6%	0.6%
'trump'	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	47.8%	98.6%	93.7%	92.3%	100.0%	10.2%
'@realdonaldtrump'	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.7%	26.8%	41.4%	62.7%	90.2%	2.2%
'joe'	3.5%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.2%	0.6%
'biden'	1.8%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	23.8%	6.1%
'@joebiden'	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.1%	0.3%
'@bts_twt'	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	8.5%	50.7%	100.0%	100.0%	98.9%	93.1%
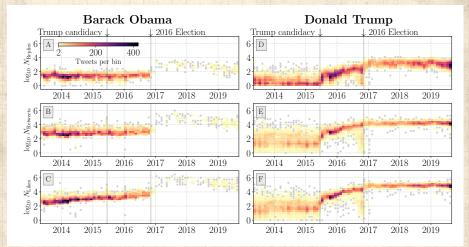
Relative median rates of 'being talked about' in the 8 weeks (56 days) pre-election day:

	2008	2012	2016	2020
'barack'	128	11	11	13
'obama'	1000	132	135	71
'@barackobama'	9	24	10	17
'john'	307	66	72	65
'mccain'	757	1	2	3
'@senjohnmccain'	0	0	1	0
'mitt'	3	50	2	2
'romney'	2	120	3	3
'@mittromney'	0	14	1	1
'hillary'	20	3	357	30
'clinton'	42	8	326	23
'@hillaryclinton'	0	0	130	19
'donald'	7	5	178	135
'trump'	4	3	656	1001
'@realdonaldtrump'	0	4	219	656
'joe'	128	39	32	287
'biden'	67	4	5	504
'@joebiden'	0	1	1	212
'@bts_twt'	0	0	166	1037
'god'	400	484	362	380

Relative median rates of 'being talked about' per year:

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
'barack'	50	38	17	9	10	7	8	11	14	15	14	14	19	3
'obama'	897	379	152	87	97	79	91	103	156	160	129	106	104	17
'@barackobama'	10	8	11	10	17	15	16	13	13	17	17	13	24	5
'john'	405	274	188	126	117	104	113	121	118	129	128	114	108	82
'mccain'	579	11	4	2	2	2	1	1	3	15	7	5	3	2
'@senjohnmccain'	0	2	1	0	0	1	1	1	1	9	2	0	0	0
'mitt'	5	8	5	6	25	6	5	4	4	2	2	3	3	2
'romney'	3	1	1	4	42	2	1	1	4	1	1	3	4	1
'@mittromney'	0	0	0	0	5	0	0	0	1	0	0	1	1	0
'hillary'	28	10	5	3	3	4	6	30	169	72	61	43	33	6
'clinton'	62	25	16	10	8	6	8	27	140	65	62	45	32	8
'@hillaryclinton'	0	0	0	0	0	0	1	11	71	22	19	21	23	3
'donald'	11	17	11	11	8	6	7	44	166	145	114	104	143	43
'trump'	7	20	10	7	4	3	3	77	583	1000	865	808	1134	229
'@realdonaldtrump'	0	0	0	1	2	3	2	32	219	468	555	652	888	1
'joe'	157	187	138	87	66	58	44	46	50	48	44	78	197	117
'biden'	72	7	3	1	2	2	2	3	5	3	4	52	284	221
'@joebiden'	0	0	0	0	0	0	0	0	1	1	2	18	162	28
'@bts_twt'	0	0	0	0	0	5	36	123	242	595	2487	1802	1440	1437
'god'	666	851	687	694	791	719	607	616	601	590	612	611	612	510

Ratiometrics:

Barack Obama   **Donald Trump**

"Ratioing the President: An exploration of public engagement with Obama and Trump on Twitter,"

Minot et al., 2020 [13]

Ratiometrics:

The PoCSverse
**Computational
History**
45 of 117

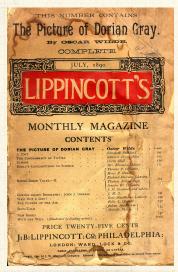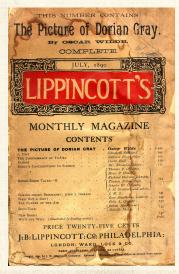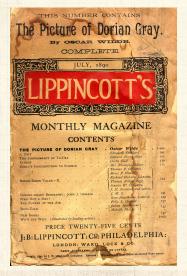Statistics of
Surprise

Stories

Mechanics of
Fame

Superspreading

Lexical Ultrafame

Turbulent times

Extras
Sociotechnical time series
Adjacent Narratives

Extras
Memory & Turbulence

References

Emotional turbulence:

The PoCSverse
Computational
History
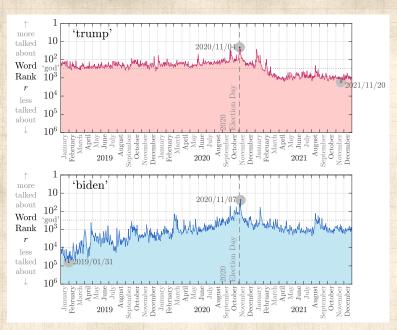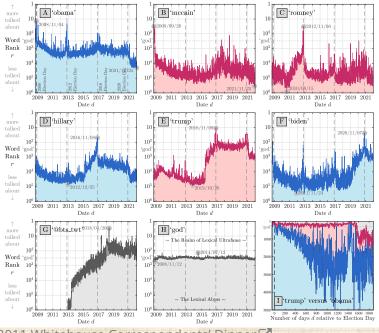46 of 117

Statistics of
Surprise

Stories

Mechanics of
Fame

Superspreading

Lexical Ultrafame

Turbulent times

Extras
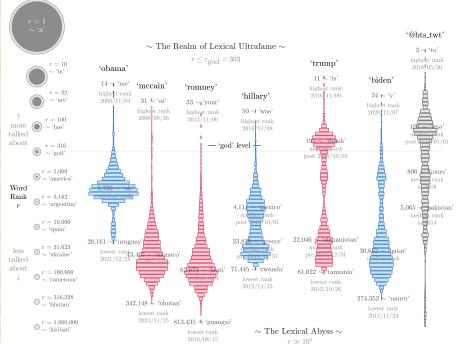Sociotechnical time series
Adjacent Narratives

Extras
Memory & Turbulence
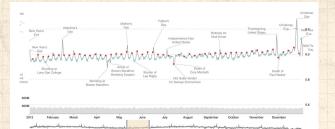
References
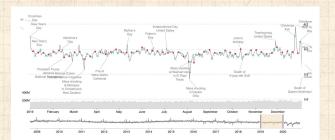
http://hedonometer.org/

Emotional turbulence:

http://hedonometer.org/

Allotaxonometry—
the comparison of complex systems:
http://compstorylab.org/allotaxonometry/

2016/01/01

2016 → 2020   01/01

top 10 most narratively dominant words

2020/10/05

12/31

most narratively dominant word at day-scale

most narratively dominant word at week-scale

narrative control

Week	2016	2017	2018	2019	2020
1. 01/01–01/07	Hillary 34.7	hacking 28.6	Bannon 2.2	shutdown 0.0	Iran 9.6
2. 01/08–01/14	Cruz 1.0	Meryl 5.0	Mueller 0.0	shutdown 0.0	Soleimani 5.9
3. 01/15–01/21	Cruz 10.7	inauguration 0.6	Mueller 2.2	Pelosi 6.6	Parnas 0.0
4. 01/22–01/28	Cruz 10.6	inauguration 3.1	Mueller 0.0	border 0.0	Ukraine 5.5
5. 01/29–02/04	Cruz 11.2	ban 2.1	Mueller 0.0	border 0.0	impeachment 0.0
6. 02/05–02/11	Cruz 5.1	Bannon 0.0	Mueller 0.0	Whitaker 0.5	Vindman 2.5
7. 02/12–02/18	Cruz 9.2	Flynn 0.0	Mueller 0.0	emergency 0.0	Barr 2.2
8. 02/19–02/25	Rubio 3.8	Sweden 4.9	Parkland 0.3	Jussie 0.0	Bloomberg 6.3
9. 02/26–03/04	Rubio 9.2	Russia 6.4	Mueller 0.0	Cohen 3.7	coronavirus 0.0
10. 03/05–03/11	Cruz 4.0	Russia 4.8	Mueller 0.0	Nadler 13.7	coronavirus 0.0
11. 03/12–03/18	Cruz 5.7	tax 1.8	Mueller 2.2	emergency 1.6	coronavirus 0.0
12. 03/19–03/25	Arizona 16.8	Nunes 0.0	Mueller 2.2	Barr 0.0	coronavirus 0.0
13. 03/26–04/01	woman 8.3	Russia 9.9	Stormy 0.0	Schiff 5.2	coronavirus 0.5
14. 04/02–04/08	Cruz 1.5	Russia 2.8	Mueller 0.0	returns 0.0	coronavirus 0.3
15. 04/09–04/15	Cruz 1.7	Syria 6.4	Mueller 0.0	Barr 2.4	coronavirus 0.0
16. 04/16–04/22	Cruz 10.5	Russia 0.5	Mueller 0.0	Barr 0.1	coronavirus 0.0
17. 04/23–04/29	Cruz 3.0	days 0.1	Kanye 8.0	Biden 6.0	coronavirus 0.0
18. 04/30–05/06	Indiana 11.5	Trumpcare 0.0	Mueller 0.0	Barr 0.0	coronavirus 0.0
19. 05/07–05/13	Ryan 2.5	Comey 2.8	Iran 6.6	Barr 0.0	coronavirus 0.0
20. 05/14–05/20	Bernie 25.3	Comey 1.0	ZTE 4.5	Barr 0.0	coronavirus 0.0
21. 05/21–05/27	Clinton 9.5	budget 0.0	Korea 18.2	Barr 0.0	pandemic 0.0
22. 05/28–06/03	Hillary 11.9	Kathy 4.4	Roseanne 4.0	USS 3.0	Minneapolis 32.1
23. 06/04–06/10	Clinton 11.1	Comey 0.8	pardon 0.0	Mexico 27.6	police 4.2
24. 06/11–06/17	Orlando 12.4	Russia 0.0	Kim 4.1	foreign 2.0	Tulsa 0.0
25. 06/18–06/24	Hillary 23.3	Trumpcare 0.0	children 1.0	Iran 12.9	Tulsa 2.1
26. 06/25–07/01	Clinton 13.0	Russia 5.8	Justice 8.3	Moon 39.9	bounties 0.0
27. 07/02–07/08	Crooked 80.6	CNN 0.0	toddlers 0.0	parade 0.0	Rushmore 2.3
28. 07/09–07/15	Crooked 71.5	Russia 0.0	NATO 13.8	Epstein 0.0	coronavirus 0.0
29. 07/16–07/22	Pence 2.3	Mueller 0.0	Helsinki 3.1	racist 0.8	coronavirus 0.0
30. 07/23–07/29	DNC 6.1	Scouts 0.0	Cohen 0.0	Baltimore 13.6	Portland 11.8
31. 07/30–08/05	Khan 6.5	Mueller 0.0	LeBron 0.7	Baltimore 9.4	pandemic 0.0
32. 08/06–08/12	Crooked 55.2	Korea 5.8	Paen 7.6		USPS 0.0
33. 08/13–08/19	Manafort 0.0	Charlottesville 1.5	Omarosa 9.5	Greenland 4.0	USPS 0.0
34. 08/20–08/26	Clinton 7.6	Charlottesville 3.8	Cohen 2.7	Greenland 8.0	Biden 6.0
35. 08/27–09/02	Crooked 57.4	Harvey 0.0	Ohr 14.0	Dorian 12.2	Kenosha 9.5
36. 09/03–09/09	Bondi 0.0	DACA 2.4	Puerto 0.0	Ukraine 0.0	Atlantic 4.8
37. 09/10–09/16	deplorable 0.0	ESPN 2.7	Puerto 7.5	flavored 0.0	Woodward 2.6
38. 09/17–09/23	Clinton 6.5	Kim 4.9	Kavanaugh 1.7	Ukraine 4.5	coronavirus 0.0
39. 09/24–09/30	debate 6.9	Puerto 4.7	Kavanaugh 9.5	Ukraine 6.8	ballots 0.7
40. 10/01–10/07	Pence 4.9	Puerto 2.1	Kavanaugh 6.8	Ukraine 5.1	Covid 0.0
41. 10/08–10/14	sexual 0.3	Puerto 1.8	Kavanaugh 4.0	Kurds 8.2	
42. 10/15–10/21	rigged 0.1	Puerto 0.2	Saudi 5.3	Kurds 3.7	
43. 10/22–10/28	star 0.0	Mueller 0.0	caravan 0.0	impeachment 0.0	
44. 10/29–11/04	FBI 5.9	Mueller 0.0	caravan 0.0	impeachment 0.0	
45. 11/05–11/11	Clinton 0.9	Gillespie 12.0	Whitaker 6.2	Ukraine 6.2	
46. 11/12–11/18	Bannon 0.0	sexual 1.7	caravan 0.0	Ukraine 6.2	
47. 11/19–11/25	Hamilton 12.4	LaVar 21.3	Saudi 1.6	Ukraine 3.5	
48. 11/26–12/02	recount 0.0	Moore 0.0	Mexico 0.1	impeachment 3.1	
49. 12/03–12/09	Taiwan 7.8	Moore 0.0	Cohen 2.1	impeachment 0.0	
50. 12/10–12/16	Russia 2.9	Mueller 0.0	Cohen 8.9	impeachment 0.0	
51. 12/17–12/23	inauguration 11.8	Mueller 0.0	wall 9.8	impeachment 1.4	
52. 12/24–12/31	inauguration 3.2	Mueller 0.0	wall 20.4	impeachment 7.6	

http://compstorylab.org/trumpstoryturbulence/

Week	2016	2017	2018	2019	2020	2021
1. 01/01–01/07	Hillary 34.7	hacking 28.6	Bannon 2.2	shutdown 0.0	Iran 9.6	Georgia 14.7
2. 01/08–01/14	Cruz 1.0	Meryl 5.0	Mueller 0.0	shutdown 0.0	Soleimani 5.9	Capitol 0.1
3. 01/15–01/21	Cruz 10.7	inauguration 2.0	DACA 6.7	Pelosi 6.8	Parnas 0.0	Capitol 0.0
4. 01/22–01/28	Cruz 10.6	inauguration 3.1	inauguration 0.0	Pelosi 2.6	Ukraine 5.5	insurrection 0.0
5. 01/29–02/04	Cruz 21.2	ban 2.1	Mueller 0.0	border 0.1	impeachment 0.0	Greene 0.0
6. 02/05–02/11	Cruz 5.1	Bannon 0.0	memo 2.3	Whitaker 0.0	Vindman 2.5	insurrection 0.0
7. 02/12–02/18	Cruz 6.9	Flynn 0.0	Mueller 0.0	emergency 0.0	Barr 2.2	Capitol 0.0
8. 02/19–02/25	Rubio 3.8	Sweden 4.9	Parkland 0.3	Jussie 0.0	Bloomberg 6.3	Capitol 0.0
9. 02/26–03/04	Rubio 9.2	Russia 6.4	Mueller 0.0	Cohen 3.7	coronavirus 0.0	Capitol 0.0
10. 03/05–03/11	Cruz 1.0	Russian 4.8	Mueller 0.0	Nadler 13.7	coronavirus 0.0	insurrection 0.0
11. 03/12–03/18	Cruz 5.7	tax 1.8	Mueller 2.2	emergency 1.6	coronavirus 0.0	Biden 0.0
12. 03/19–03/25	Arizona 16.8	Nunes 0.0	Mueller 2.2	Barr 0.0	coronavirus 0.0	Biden 0.0
13. 03/26–04/01	women 8.3	Russia 9.9	Stormy 0.0	Schiff 5.2	coronavirus 0.5	Capitol 0.0
14. 04/02–04/08	Cruz 1.5	Russia 2.8	Mueller 0.0	Barr 0.0	coronavirus 0.0	Matt 0.0
15. 04/09–04/15	Cruz 1.7	Syria 0.4	Mueller 2.0	Barr 2.4	coronavirus 0.0	Capitol 0.0
16. 04/16–04/22	Cruz 10.5	Russia 0.5	Mueller 0.0	Barr 0.1	coronavirus 0.0	Capitol 0.0
17. 04/23–04/29	Cruz 3.0	days 0.1	Kanye 0.0	Biden 0.0	coronavirus 0.0	audit 0.0
18. 04/30–05/06	Indiana 11.5	Trumpcare 0.0	Mueller 0.0	Barr 0.0	coronavirus 0.0	Cheney 0.0
19. 05/07–05/13	Ryan 2.5	Comey 2.8	Iran 6.6	Barr 0.0	coronavirus 0.0	Cheney 0.0
20. 05/14–05/20	Bernie 25.3	Comey 1.0	ZTE 4.5	Barr 0.0	coronavirus 0.0	Cheney 0.0
21. 05/21–05/27	Clinton 9.5	budget 0.0	Korea 18.2	Barr 0.0	pandemic 0.0	Weisselberg 0.0
22. 05/28–06/03	Hillary 11.9	Kathy 4.4	Roseanne 4.0	USS 3.0	Minneapolis 32.1	reinstated 0.0
23. 06/04–06/10	Clinton 11.1	Comey 0.8	pardon 0.0	Mexico 27.6	police 4.2	McGahn 0.0
24. 06/11–06/17	Orlando 12.4	Mueller 0.0	Kim 4.1	foreign 2.0	Tulsa 4.5	DOJ 0.0
25. 06/18–06/24	Hillary 23.9	Trumpcare 0.0	children 1.0	Iran 12.9	Tulsa 2.1	Capitol 0.0
26. 06/25–07/01	Clinton 13.0	Russia 5.8	Justice 8.3	Moon 29.9	bounties 0.0	Organization 0.0
27. 07/02–07/08	Crooked 80.6	CNN 0.7	toddlers 0.0	parade 0.0	Rushmore 2.3	Weisselberg 0.0
28. 07/09–07/15	Crooked 71.5	Russian 1.2	NATO 13.0	Epstein 0.0	coronavirus 0.0	CPAC 0.0
29. 07/16–07/22	Pence 2.9	Mueller 0.0	Helsinki 3.1	racist 0.8	coronavirus 0.0	vaccinated 0.0
30. 07/23–07/29	DNC 6.1	Scouts 0.0	Baltimore 13.6	Baltimore 0.0	Portland 11.8	Jan 0.0
31. 07/30–08/05	Khan 6.5	Mueller 0.0	LeBron 0.7	Baltimore 9.4	pandemic 0.0	Capitol 0.0
32. 08/06–08/12	Crooked 55.2	Korea 5.8	Omarosa 0.4	Paso 7.6	USPS 0.0	Rosen 0.0
33. 08/13–08/19	Manafort 0.0	Charlottesville 1.5	Omarosa 9.5	Greenland 6.3	USPS 0.0	Taliban 0.0
34. 08/20–08/26	Clinton 7.6	Charlottesville 3.8	Cohen 2.7	Greenland 8.0	Biden 6.6	Taliban 0.0
35. 08/27–09/02	Crooked 57.4	Harvey 9.0	Ohr 4.0	Dorian 12.2	Kenosha 9.5	Taliban 0.0
36. 09/03–09/09	Bondi 0.0	DACA 2.4	Kavanaugh 2.1	Dorian 12.6	Atlantic 4.8	Afghanistan 0.0
37. 09/10–09/16	deplorable 0.0	ESPN 2.7	Puerto 7.5	flavored 0.0	Woodward 2.6	Milley 0.0
38. 09/17–09/23	Clinton 6.5	Kim 4.9	Kavanaugh 6.8	Ukraine 4.5	coronavirus 0.0	Eastman 0.0
39. 09/24–09/30	debate 4.9	Puerto 4.7	Kavanaugh 9.5	Ukraine 6.8	ballots 0.7	audit 0.0
40. 10/01–10/07	Pence 4.9	Puerto 1.8	Kavanaugh 4.3	Ukraine 5.1	Covid 1.4	Bannon 0.0
41. 10/08–10/14	sexual 0.3	Puerto 1.8	Kavanaugh 4.3	Ukraine 4.3	COVID 5.1	Capitol 0.0
42. 10/15–10/21	rigged 10.1	Puerto 0.2	Saudi 5.3	Kurds 3.7	Biden 8.2	Powell 0.0
43. 10/22–10/28	star 0.0	Mueller 0.0	caravan 0.0	impeachment 0.0	Biden 9.2	Jan 0.0
44. 10/29–11/04	FBI 5.9	Mueller 0.0	caravan 0.0	impeachment 0.0	Biden 10.0	Youngkin 0.0
45. 11/05–11/11	Clinton 0.9	Gillespie 12.0	Whitaker 6.2	Ukraine 6.2	votes 3.4	infrastructure 0.0
46. 11/12–11/18	Bannon 0.0	sexual 1.7	caravan 0.0	Ukraine 5.2	Dominion 23.2	Christie 0.0
47. 11/19–11/25	Hamilton 12.4	LaVar 21.3	Saudi 1.6	Ukraine 3.5	Sidney 0.1	Rittenhouse 0.0
48. 11/26–12/02	recount 0.0	Moore 0.0	Moscow 0.1	impeachment 3.1	votes 24.1	Waukesha 0.0
49. 12/03–12/09	Taiwan 7.8	Mueller 0.0	Cohen 2.1	impeachment 0.0	Georgia 20.2	Meadows 0.0
50. 12/10–12/16	Russia 2.9	Mueller 0.0	Cohen 6.9	impeachment 0.0	vaccine 11.1	Meadows 0.0
51. 12/17–12/23	inauguration 11.8	Mueller 0.0	wall 9.8	impeachment 1.4	vaccine 15.4	Manchin 0.0
52. 12/24–12/31	inauguration 3.2	Mueller 0.0	wall 20.4	impeachment 7.6	Election 60.2	Cheney 0.0

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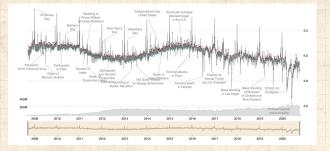
Extras
Sociotechnical time series
Adjacent Narratives
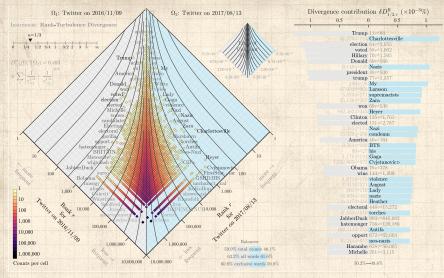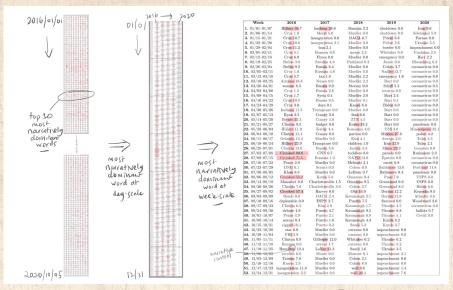
Extras
Memory & Turbulence

References

| Week	2016	2017	2018	2019	2020	2021
1. 01/01–01/07	Hillary Clinton 32.7	plant in 85.1	Steve Bannon 5.7	the government 0.0	a war 6.6	in Georgia 20.2
2. 01/08–01/14	Trump rally 0.0	Meryl Streep 6.6	shithole countries 0.0	the border 1.0	impeachment trial 0.0	the Capitol 0.0
3. 01/15–01/21	Ted Cruz 26.0	Trump's inauguration 0.0	the government 1.4	Cohen to 0.0	impeachment trial 0.0	the Capitol 0.0
4. 01/22–01/28	Megyn Kelly 4.9	executive order 0.0	the FBI 5.6	the government 0.0	impeachment trial 0.0	the Capitol 0.0
5. 01/29–02/04	Ted Cruz 19.7	travel ban 1.6	the FBI 9.4	Ralph Northam 26.0	impeachment trial 0.0	the Capitol 0.0
6. 02/05–02/11	New Hampshire 19.5	travel ban 1.1	military parade 0.0	El Paso 4.7	Alexander Vindman 0.0	the Capitol 0.0
7. 02/12–02/18	Ted Cruz 15.7	Michael Flynn 0.0	school shooting 3.1	national emergency 0.0	Roger Stone 4.0	the Capitol 0.0
8. 02/19–02/25	Ted Cruz 30.1	Trump administration 0.0	the NRA 0.0	Jussie Smollett 0.0	Bernie Sanders 13.6	the Capitol 0.0
9. 02/26–03/04	vote for 4.4	to Russia 22.0	Hope Hicks 0.0	Michael Cohen 5.3	the coronavirus 0.0	the Capitol 0.0
10. 03/05–03/11	Ted Cruz 2.4	travel ban 0.0	Stormy Daniels 0.0	Tim Apple 0.0	the coronavirus 0.0	the Capitol 0.0
11. 03/12–03/18	Trump is 0.1	Meals on 0.0	Stormy Daniels 0.0	New Zealand 17.9	the coronavirus 0.0	Lara Trump 0.0
12. 03/19–03/25	Lyin' Ted 66.2	health care 0.0	Stormy Daniels 0.0	Mueller report 0.0	the coronavirus 0.0	the border 0.0
13. 03/26–04/01	Trump is 0.0	Freedom Caucus 20.8	Stormy Daniels 0.0	Mueller report 0.0	the coronavirus 0.0	Matt Gaetz 0.0
14. 04/02–04/08	Ted Cruz 3.9	Susan Rice 0.3	National Guard 0.0	tax returns 0.0	the coronavirus 0.0	Matt Gaetz 0.0
15. 04/09–04/15	New York 19.3	in Syria 0.0	Michael Cohen 0.0	sanctuary cities 5.3	the coronavirus 0.0	Matt Gaetz 0.0
16. 04/16–04/22	Ted Cruz 28.1	turnout for 0.0	Michael Cohen 2.4	Mueller report 0.0	the coronavirus 0.0	Maxine Waters 0.0
17. 04/23–04/29	Trump rally 0.0	tax plan 0.0	the Korean 0.0	Mueller report 0.0	the coronavirus 0.0	Liz Cheney 0.0
18. 04/30–05/06	Ted Cruz 5.5	health care 0.0	Stormy Daniels 0.0	Mueller report 0.0	treated worse 0.0	Liz Cheney 0.0
19. 05/07–05/13	Paul Ryan 2.0	James Comey 6.7	the Iran 9.0	tax returns 0.0	tested positive 0.0	Liz Cheney 0.0
20. 05/14–05/20	Hillary Clinton 26.5	Saudi Arabia 12.5	are animals 0.0	Lindsey Graham 0.0	the pandemic 0.0	Kevin McCarthy 0.0
21. 05/21–05/27	Hillary Clinton 24.8	Saudi Arabia 8.2	the FBI 23.3	Nancy Pelosi 12.5	a mask 6.3	the January 0.0
22. 05/28–06/03	Trump university 3.3	Kathy Griffin 5.7	Samantha Bee 4.4	John McCain 0.0	photo op 0.0	Memorial Day 0.0
23. 06/04–06/10	Hillary Clinton 18.6	James Comey 0.2	Justin Trudeau 8.5	with Mexico 39.2	Left Democrats 75.1	the Capitol 0.0
24. 06/11–06/17	Trump is 0.0	obstruction of 12.6	their parents 0.0	the FBI 8.5	in Tulsa 7.1	Trump DOJ 0.0
25. 06/18–06/24	Hillary Clinton 20.6	Karen Handel 16.6	their parents 3.4	need soap 0.0	in Tulsa 2.2	the Capitol 0.0
26. 06/25–07/01	Hillary Clinton 20.5	Fake News 37.6	Supreme Court 3.7	Jean Carroll 0.0	American soldiers 0.0	Trump Organization 0.0
27. 07/02–07/08	Crooked Hillary 82.8	North Korea 28.6	Trump administration 0.0	Jeffrey Epstein 0.0	Mount Rushmore 3.9	Ashli Babbitt 0.0
28. 07/09–07/15	Crooked Hillary 73.3	Trump Jr 0.0	Supreme Court 7.9	Jeffrey Epstein 0.0	Roger Stone 0.0	the Capitol 0.0
29. 07/16–07/22	Mike Pence 6.8	Secret Service 0.0	in Helsinki 1.7	a racist 0.0	in Portland 0.0	Tom Barrack 0.0
30. 07/23–07/29	Crooked Hillary 79.6	Boy Scouts 0.0	Walk of 0.0	Elijah Cummings 27.2	in Portland 8.9	the Capitol 0.0
31. 07/30–08/05	Khizr Khan 0.0	Maxine Waters 0.0	enemy of 22.2	El Paso 11.1	the election 3.4	the Capitol 0.0
32. 08/06–08/12	Hillary Clinton 10.5	North Korea 5.0	Space Force 11.1	El Paso 7.7	Social Security 0.0	overturn the 0.0
33. 08/13–08/19	Trump campaign 0.0	white supremacists 0.0	security clearance 0.0	New Hampshire 26.5	the USPS 0.0	the Taliban 0.0
34. 08/20–08/26	Hillary Clinton 19.1	Joe Arpaio 3.5	Michael Cohen 4.3	Prime Minister 28.7	Joe Biden 5.9	the Taliban 0.0
35. 08/27–09/02	Crooked Hillary 61.8	Hurricane Harvey 0.1	John McCain 0.2	Hurricane Dorian 9.6	Joe Biden 2.7	the Taliban 0.0
36. 09/03–09/09	in Detroit 0.0	to end 0.0	Brett Kavanaugh 7.6	the Taliban 3.0	Joe Biden 0.0	Robert E 0.0
37. 09/10–09/16	tax returns 0.0	white supremacist 0.0	Puerto Rico 8.4	Dan Bishop 37.7	Joe Biden 13.3	the Taliban 0.0
38. 09/17–09/23	Trump Jr 0.0	North Korea 12.8	Blasey Ford 0.0	a foreign 6.4	Supreme Court 7.3	to overturn 0.0
39. 09/24–09/30	Hillary Clinton 7.5	Puerto Rico 5.2	Brett Kavanaugh 15.7	Impeachment inquiry 0.0	Supreme Court 5.7	debt ceiling 0.0
40. 10/01–10/07	Mike Pence 8.9	Puerto Rico 2.6	Supreme Court 6.9	Adam Schiff 13.3	Walter Reed 5.7	the Capitol 0.0
41. 10/08–10/14	sexual assault 0.0	Puerto Rico 2.2	Kanye West 0.0	the Kurds 11.3	Biden is 26.5	the January 0.0
42. 10/15–10/21	Hillary Clinton 19.9	families of 0.0	Saudi Arabia 6.6	the Kurds 3.8	Joe Biden 12.1	the January 0.0
43. 10/22–10/28	Hillary Clinton 11.7	Myeshia Johnson 0.0	the bombs 0.0	World Series 0.0	Joe Biden 0.0	Alec Baldwin 0.0
44. 10/29–11/04	Hillary Clinton 6.5	Twitter employee 0.0	birthright citizenship 0.0	the impeachment 0.0	Joe Biden 12.6	in Virginia 0.0
45. 11/05–11/11	Trump wins 0.0	mental health 0.0	Jim Acosta 0.0	pro quo 8.1	the election 2.2	infrastructure bill 0.0
46. 11/12–11/18	Steve Bannon 0.0	ban on 0.0	president who 0.0	impeachment inquiry 0.0	the election 2.2	Chris Christie 0.0
47. 11/19–11/25	Mike Pence 24.3	Roy Moore 0.0	Saudi Arabia 2.5	quid pro 1.3	the election 6.7	Kyle Rittenhouse 0.0
48. 11/26–12/02	popular vote 0.0	Native American 0.0	Trump Tower 2.5	Hong Kong 0.0	voter fraud 32.2	Donald Trump 0.0
49. 12/03–12/09	Air Force 18.4	Roy Moore 3.5	campaign finance 0.0	to impeach 7.7	in Georgia 12.9	Donald Trump 0.0
50. 12/10–12/16	of State 7.6	of sexual 0.0	Michael Cohen 7.8	articles of 0.0	the election 9.0	Mark Meadows 0.0
51. 12/17–12/23	Electoral College 5.8	tax bill 0.0	the wall 13.7	Christianity Today 8.1	election fraud 13.9	the Capitol 0.0
52. 12/24–12/31	Trump next 0.0	the FBI 0.1	Border Security 70.6	the Senate 29.1	on January 16.7	Donald Trump 0.0
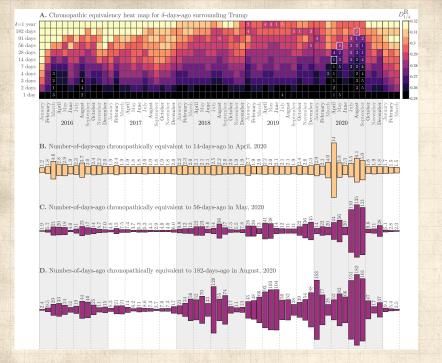
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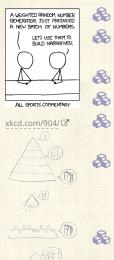Fame

Superspreading
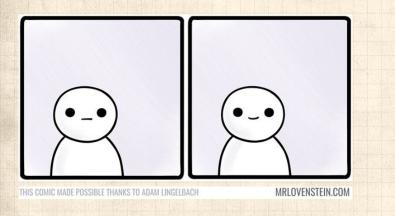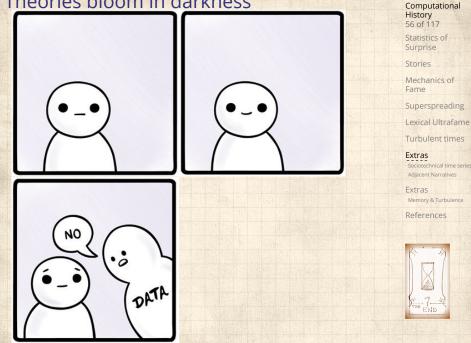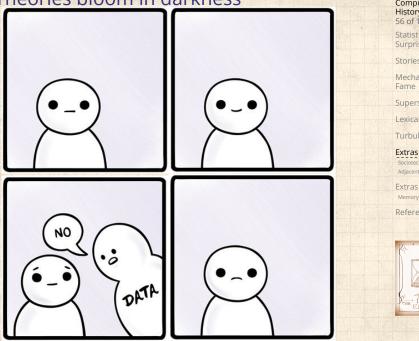
Lexical Ultrafame

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References

2016   2017   2018   2019   2020   2021

Obama 4.2
Hillary 8.5
Crooked Hillary 4.2
Rubio 5.9   Trump wins 0.0   Comey 2.9   Roger Stone 3.3
Ted Cruz 10.9   Mueller 4.4   bounties 0.0
popular vote 5.6   Stormy Daniels 0.0   Jeffrey Epstein 0.0   Ghislaine Maxwell 0.0
Khizr Khan 0.0 inauguration 1.5   Charlottesville 1.6   Brett Kavanaugh 10.2   Left Democrats 79.7
Megyn Kelly 1.5   Trump Tower 1.6   children 2.1   impeachment 1.1
Mike Pence 6.1   Flynn 0.9   Michael Cohen 2.4   Ukraine 4.4
debate 4.8   travel ban 0.8   Joe Biden 7.0
Iran 9.6
figg-4 12.4   Saudi Arabia 10.4   Space Force 6.6 Khashoggi 0.0   Greenland 7.1   coronavirus 0.1
Syria 7.4   Minneapolis 27.9
Black Lives 0.0   North Korea 15.4   the Kurds 9.1   Black Lives 1.4
tax returns 0.7   Puerto Rico 3.8   tax returns 0.0   Portland 10.2
women 3.6   fraud 6.2
sexual assault 0.0   Georgia 15.2
golf 2.2   insurrection 0.0
Russia 4.7
Supreme Court 9.6
Fake News 56.0
Witch Hunt 62.0   Capitol 1.0
our Country 76.3

A. Chronopathic equivalency heat map for δ-days-ago surrounding Trump

$D_{1/4}^{R}$

B. Number-of-days-ago chronopathically equivalent to 14-days-ago in April, 2020

C. Number-of-days-ago chronopathically equivalent to 56-days-ago in May, 2020

D. Number-of-days-ago chronopathically equivalent to 182-days-ago in August, 2020

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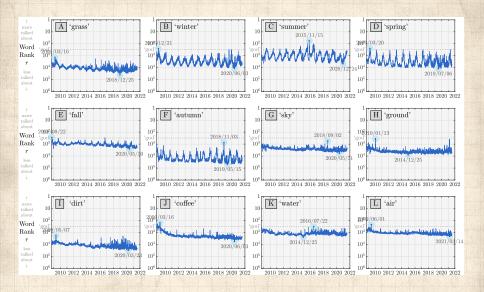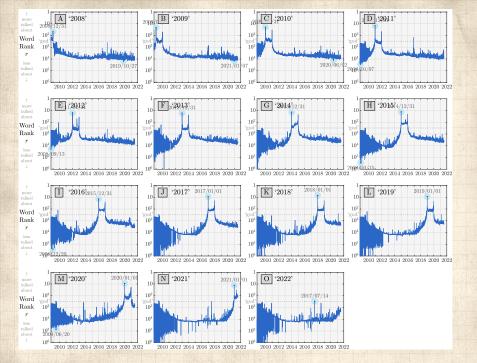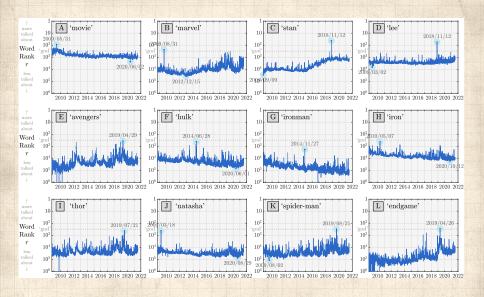Superspreading
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A WEIGHTED RANDOM NUMBER
GENERATOR JUST PRODUCED
A NEW BATCH OF NUMBERS.

LET'S USE THEM TO
BUILD NARRATIVES!

ALL SPORTS COMMENTARY

xkcd.com/904/ ⃞

- ⛁ Toward a Science of Stories.
- ⛁ Claim: Homo narrativus ⃞—we run on stories.
- ⛁ "What's the John Dory?"
- ⛁ "They've lost the plot/thread"
- ⛁ Narrative hierarchies and scalability of stories ⃞.
- ⛁ Research: Real-time and offline extraction of metaphors, frames, plots, narratives, conspiracy theories, and stories from large-scale text.
- ⛁ Research: The taxonomy of human stories.
- ⛁ To be built: Storyscopes—improvable, online, interactive instruments.

ding!

On Instagram at pratchett_the_cat

Theories bloom in darkness

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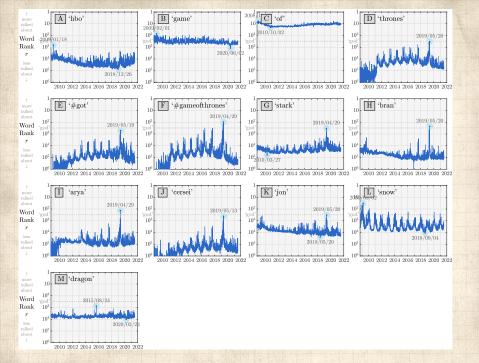
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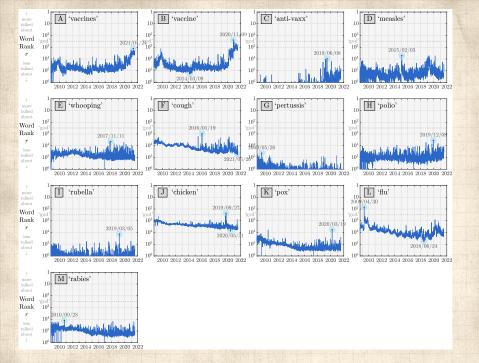THIS COMIC MADE POSSIBLE THANKS TO ADAM LINGELBACH

MRLOVENSTEIN.COM

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Theories bloom in darkness

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References

A — '@bts_twt' — 2018/05/20

B — 'bts' — 2019/04/24 — 2008/12/26

C — '#bts' — 2018/12/14

D — '@weareoneexo' — 2012/12/25

E — 'exo' — 2016/12/02

F — '#exo' — 2018/11/02

G — 'superm' — 2019/10/04

↑ more talked about

Word Rank r

less talked about ↓

'god'

A 'white' — 2017/08/12, 2009/03/31
B 'supremacist' — 2017/08/13
C 'nazi' — 2017/08/12, 2011/09/05
D 'nazis' — 2017/08/12, 2009/10/14
E 'mass' — 2019/08/04, 2014/03/12
F 'shooting' — 2017/10/02, 2020/03/21
G 'massacre' — 2017/02/03, 2016/11/10
H 'america' — 2016/11/09, 2013/12/26
I 'putin' — 2018/07/16, 2009/10/07
J 'china' — 2020/03/19, 2009/03/20
K 'north' — 2013/04/03, 2020/12/31
L 'korea' — 2013/04/03, 2009/01/03
M 'nuclear' — 2011/03/12, 2012/12/23
N 'kim' — 2018/06/12, 2009/03/02
O 'jong-un' — 2020/04/25
P 'bannon' — 2017/08/18

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Mt. Whatever
Mt. ZZZZ
Mt. Who cares?
Mt. Meh
Mt. Quite boring

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Mt.
Very surprising

Mts. Most of
the time

Mt.
OMG!

Mt.
Exogenous

Mt.
Financial
Collapse

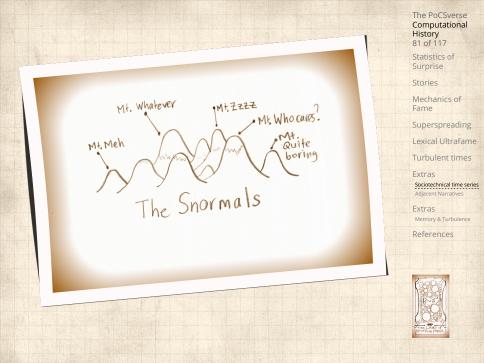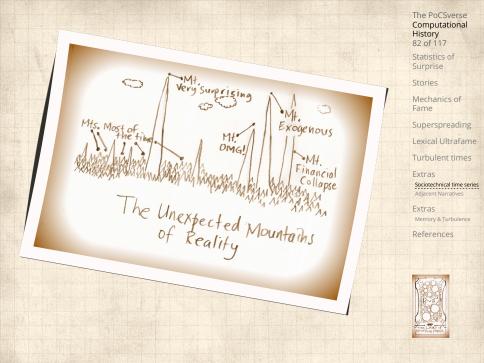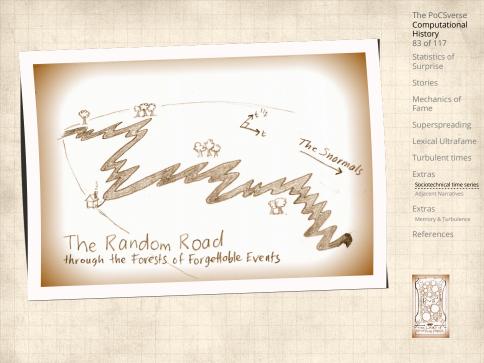The Unexpected Mountains
of Reality

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The Snormals

The Random Road
through the Forests of Forgettable Events
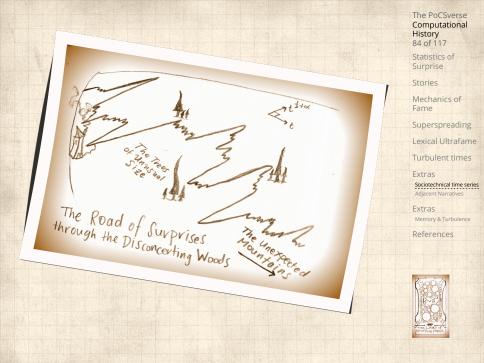
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The Trees
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Size

The Road of Surprises
through the Disconcerting Woods

The Unexpected
Mountains

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Belief

"Building a better America—One wealth quintile at a time"
Norton and Ariely, 2011. [15]

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Money
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Belief

Two questions about wealth distribution in the United States:

"Building a better America—One wealth quintile at a time"
Norton and Ariely, 2011. [15]

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Money
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Belief

Two questions about wealth distribution in the
United States:

1. Estimate the percentage of all wealth owned by
   individuals when grouped into quintiles.

"Building a better America—One wealth quintile at a time"
Norton and Ariely, 2011. [15]

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Belief

Two questions about wealth distribution in the United States:

1. Estimate the percentage of all wealth owned by individuals when grouped into quintiles.
2. Estimate what you believe each quintile should own, ideally.

"Building a better America—One wealth quintile at a time"
Norton and Ariely, 2011. [15]

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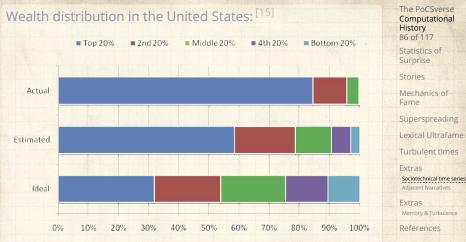Extras
Sociotechnical time series
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Money
$\equiv$
Belief

Two questions about wealth distribution in the
United States:

1. Estimate the percentage of all wealth owned by
   individuals when grouped into quintiles.
2. Estimate what you believe each quintile should
   own, ideally.
3. Extremes: 100, 0, 0, 0, 0 and 20, 20, 20, 20, 20

"Building a better America—One wealth quintile at a time"
Norton and Ariely, 2011. [15]

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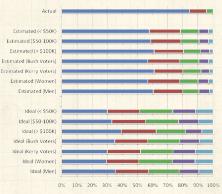## Wealth distribution in the United States: [15]

Fig. 2. The actual United States wealth distribution plotted against the estimated and ideal distributions across all respondents. Because of their small percentage share of total wealth, both the "4th 20%" value (0.2%) and the "Bottom 20%" value (0.1%) are not visible in the "Actual" distribution.

"Building a better America—One wealth quintile at a time"
Norton and Ariely, 2011. [15]

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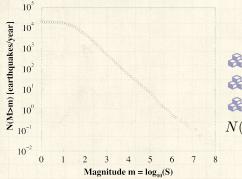Sociotechnical time series
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Wealth distribution in the United States: [15]

Fig. 3. The actual United States wealth distribution plotted against the estimated and ideal distributions of respondents of different income levels, political affiliations, and genders. Because of their small percentage share of total wealth, both the "4th 20%" value (0.2%) and the "Bottom 20%" value (0.1%) are not visible in the "Actual" distribution.

Aside: The 1% framing may be effective but makes no sense.

My, what big words you have …

How many words do you know?

Test your vocab

- Test ⤢ capitalizes on word frequency following a heavily skewed frequency distribution with a decaying power-law tail.

- This Man Can Pronounce Every Word in the Dictionary ⤢ (story here ⤢)
- Best of Dr. Bailly ⤢

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Gutenberg-Richter law⎘

📚 Log-log plot

📚 Base 10

📚 Slope = -1

$$N(M > m) \propto m^{-1}$$

📚 From both the very awkwardly similar Christensen et al. and Bak et al.:
"Unified scaling law for earthquakes" [5, 2]

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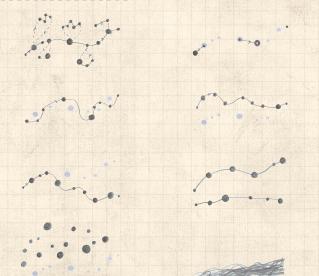
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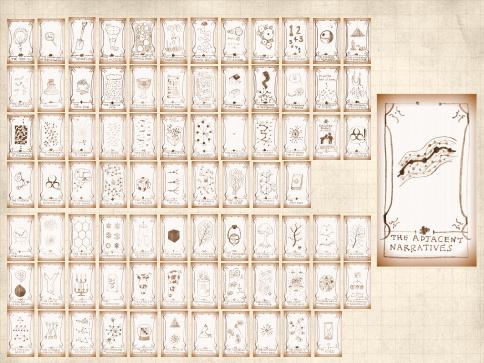
Adjacent narratives ☑—why mistruths and conspiracy theories ☑ exist and flourish:

Why adjacent narratives exist and untrue stories flourish:

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

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Why adjacent narratives exist and untrue stories flourish:

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

🧊 Impossible to record every detail.

Why adjacent narratives exist and untrue stories flourish:

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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).

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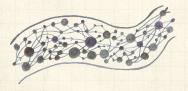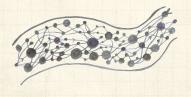
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1/4. A real story is never recorded and retold completely

- 🎲 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

Why adjacent narratives exist and untrue stories flourish:

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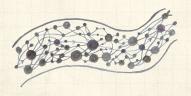Turbulent times

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

Better = More engaging, more motivating to spread, more durable under spreading.

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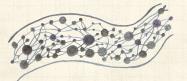Fame

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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

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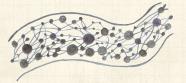
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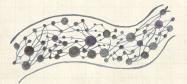Superspreading

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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.

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.

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:

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4/4. Character is the short cut to story

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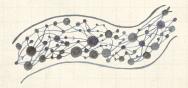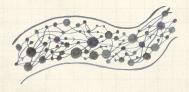Extras
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4/4. Character is the short cut to story

⬣ The barely implausible can be believed if the character can make it so.

Why adjacent narratives exist and untrue stories flourish:

4/4. Character is the short cut to story

- 🎲 The barely implausible can be believed if the character can make it so.
- 🎲 A believe-to-be evil character can do anything.

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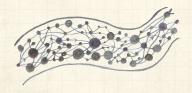Turbulent times

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4/4. Character is the short cut 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.

Things that spread quickly:

:-p

LOL win omg cute geeky trashy fail wtf

+ News + Conspiracy Theories ...

buzzfeed.com🔗:

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

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

♦ Hatchings, Matchings, and Dispatchings.

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

- Hatchings, Matchings, and Dispatchings.
- Stories encode survival algorithms.

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

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- 🎲 Survival algorithms are for both individuals and groups.

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- 🎲 Hatchings, Matchings, and Dispatchings.
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- 🎲 Stories are dynamic paths of the true, the possible, the unlikely.

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

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

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Shareworthy Content is King!

Shareworthy Content is "King":

1. Build entities/messages/stories that have intrinsic and social value out in the Social Wild.

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2. Advertise but lay off the social interactions.

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Shareworthy Content is "King":

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5. Essential implication: Billions of people can be harmoniously wrong.

Shareworthy Content is "King":

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6. Beware the evil, payola version.

Shareworthy Content is "King":

1. Build entities/messages/stories that have intrinsic and social value out in the Social Wild.

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3. Just keep trying and be trustworthy.

4. Of course it can all go wrong and be used for any purpose: good, stupid, bad, evil, …

5. Essential implication: Billions of people can be harmoniously wrong.

6. Beware the evil, payola version.

7. Challenge: What's the societal vaccine for conspiracy theories?

Fame: Zipfian rank-frequency plots

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George Kingsley Zipf:

🎲 Noted various rank distributions
have power-law tails, often with exponent near -1
(word frequency, city sizes, species numbers, ...)

🎲 Zipf's 1949 Magnum Opus🗗:

"Human Behaviour and the Principle of
Least-Effort" 🅐 🗗
by G. K. Zipf (1949). [20]

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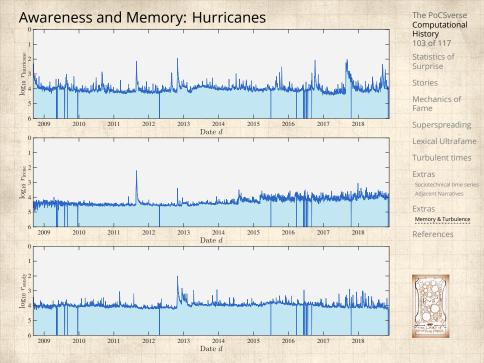
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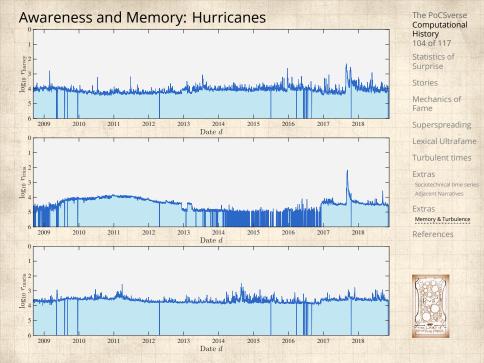Mechanics of
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Michael Jackson

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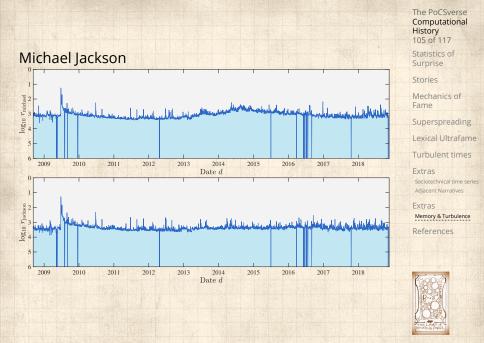Superspreading

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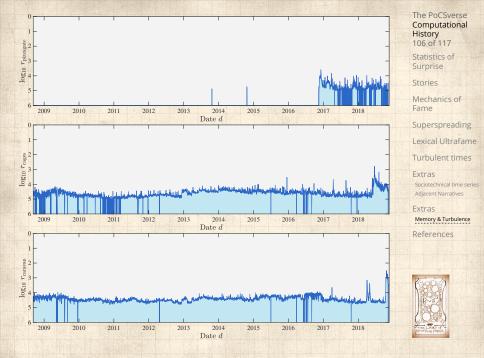
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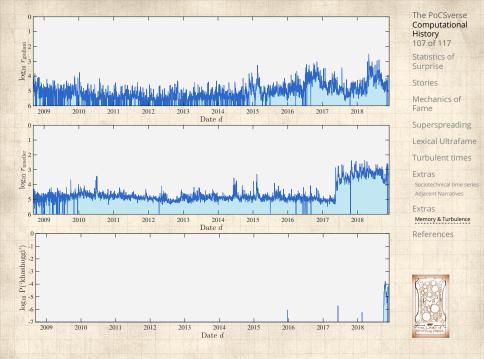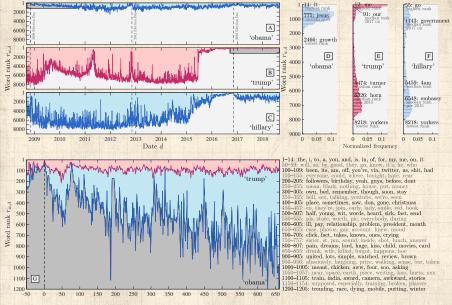
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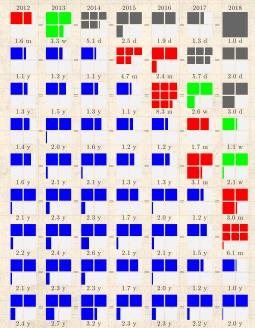Stories

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

[2] P. Bak, K. Christensen, L. Danon, and T. Scanlon.
Unified scaling law for earthquakes.
Phys. Rev. Lett., 88:178501, 2002. pdf🗗

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

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

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References II

[5] K. Christensen, L. Danon, T. Scanlon, and P. Bak.
     Unified scaling law for earthquakes.
     Proc. Natl. Acad. Sci., 99:2509–2513, 2002. pdf ✎

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

[7] P. S. Dodds, J. R. Minot, M. V. Arnold, T. Alshaabi,
     J. L. Adams, D. R. Dewhurst, A. J. Reagan, and C. M.
     Danforth.
     Fame and Ultrafame: Measuring and comparing
     daily levels of 'being talked about' for United
     States' presidents, their rivals, God, countries, and
     K-pop, 2019.
     Available online at
     https://arxiv.org/abs/1910.00149. pdf ✎

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[8] P. S. Dodds, J. R. Minot, M. V. Arnold, T. Alshaabi,
J. L. Adams, A. J. Reagan, and C. M. Danforth.
Computational timeline reconstruction of the
stories surrounding Trump: Story turbulence,
narrative control, and collective chronopathy,
2020.
https://arxiv.org/abs/2008.07301. pdf

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

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

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References

References IV

[11] E. Katz and P. F. Lazarsfeld.
Personal Influence.
The Free Press, New York, 1955.

[12] T. Kuran.
Now out of never: The element of surprise in the
east european revolution of 1989.
World Politics, 44:7–48, 1991. pdf ☑

[13] J. R. Minot, M. V. Arnold, T. Alshaabi, C. M.
Danforth, and P. S. Dodds.
Ratioing the President: An exploration of public
engagement with Obama and Trump on Twitter,
2020.
Available online at
https://arxiv.org/abs/2006.03526. pdf ☑

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References

[14] R. Munroe.
Thing Explainer: Complicated Stuff in Simple
Words.
Houghton Mifflin Harcourt, 2015.

[15] M. I. Norton and D. Ariely.
Building a better America—One wealth quintile at
a time.
Perspectives on Psychological Science, 6:9–12,
2011. pdf ☑

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

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

[18] M. J. Salganik, P. S. Dodds, and D. J. Watts.
An experimental study of inequality and
unpredictability in an artificial cultural market.
Science, 311:854–856, 2006. pdf ☑

[19] D. J. Watts and P. S. Dodds.
Influentials, networks, and public opinion
formation.
Journal of Consumer Research, 34:441–458, 2007.
pdf ☑

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References

[20] G. K. Zipf.
Human Behaviour and the Principle of
Least-Effort.
Addison-Wesley, Cambridge, MA, 1949.