

In Medias Res

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Principles of Complex Systems, Vols. 1, 2, & 3D
CSYS/MATH 300, 303, & 394, 2022-2023 | @pocsvox

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Contagion

A confusion of contagions:

- Did Harry Potter spread like a virus?
- Can disinformation be "infectious"?
- Suicide, Violence, Stupidity?
- Morality? Evil? Laziness? Stupidity? Happiness?
- Religion?
- Democracy ...?
- Language? The alphabet?^[1]
- Stories?

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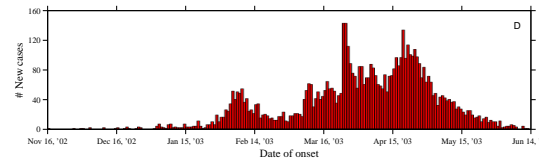
For novel diseases:

- Can we predict the size of an epidemic?
- How important is the reproduction number R_0 ?

R_0 approximately same for all of the following:

- 1918-19 "Spanish Flu" ~ 75,000,000 world-wide, 500,000 deaths in US.
- 1957-58 "Asian Flu" ~ 2,000,000 world-wide, 70,000 deaths in US.
- 1968-69 "Hong Kong Flu" ~ 1,000,000 world-wide, 34,000 deaths in US.
- 2003 "SARS Epidemic" ~ 800 deaths world-wide.

Resurgence—example of SARS



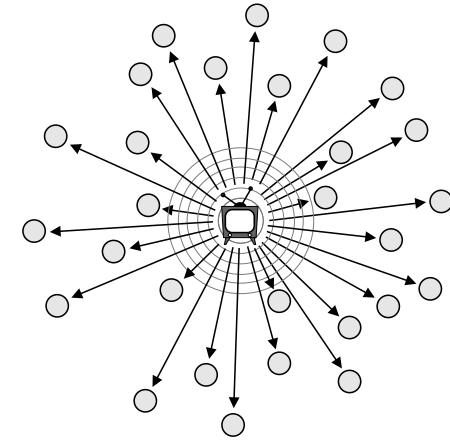
- Epidemic slows... then an infective moves to a new context.
- Epidemic discovers new 'pools' of susceptibles: **Resurgence.**
- Importance of rare, stochastic events.

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

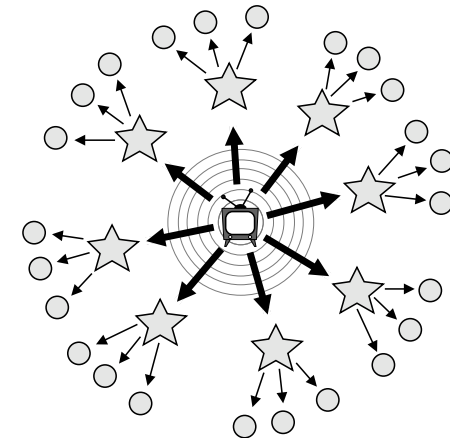


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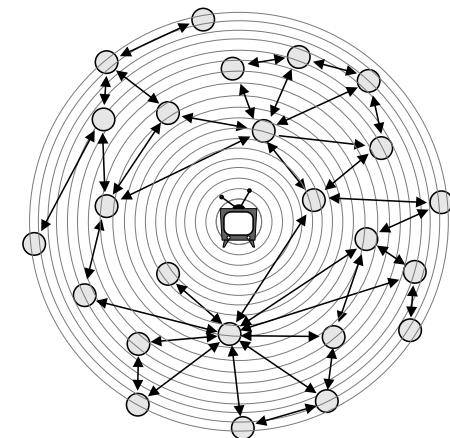
The hyperdermic model of influence:



The two step model of influence: [2]



The network model of influence:



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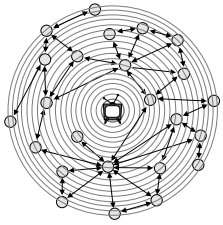
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The network model of influence:



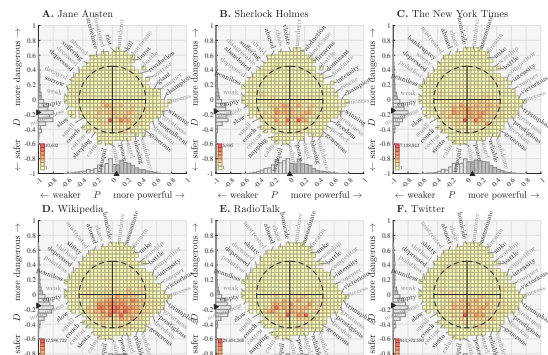
How superspreading works:
 Many interconnected, average, trusting people must benefit from both receiving and sharing a message far from its source.

“Influentials, Networks, and Public Opinion Formation”
 Watts and Dodds,
 J. Consum. Res., **34**, 441–458, 2007. [3]

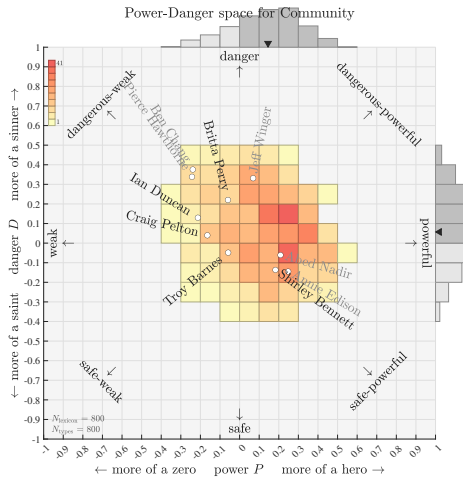
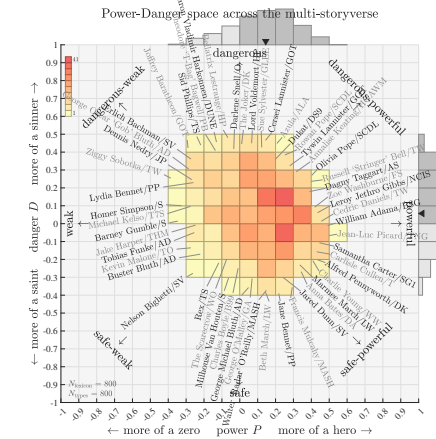
And of course:

A special thing has happened:

- The PDS framework emerged only from analyzing a lexicon (types).
- Applying PDS framework to disparate corpora (tokens) reveals a linguistic ‘safety bias’.



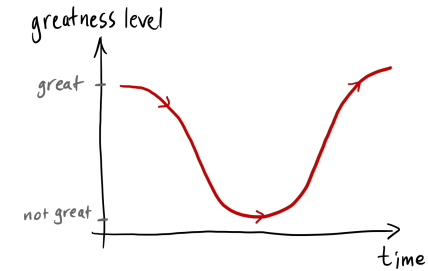
800 characters, 20+ semantic differential:



Some fictional characters most like the Deliverator:


- Ava (Ex Machina): 89%
- Dolores Abernathy (Westworld): 87%
- Dom Cobb (Inception): 86%
- Maeve Millay (Westworld): 84%
- Patrick Jane (The Mentalist): 84%
- Wyldestyle (The Lego Movie): 84%
- Daisy ‘Skye’ Johnson (Agents of S.H.I.E.L.D.): 84%
- Black Widow (Marvel Cinematic Universe): 83%
- Elizabeth Swann (Pirates of the Caribbean): 83%
- Jason Bourne (The Bourne Identity): 83%
- Mystique (X-Men): 83%
- Juliana Crain (The Man in the High Castle): 83%
- Arya Stark (Game of Thrones): 82%
- Gamora (Marvel Cinematic Universe): 82%
- Sherlock Holmes (Elementary): 82%

Stories matter:



A few fictional characters most like Pratchett the Cat:

- Elizabeth Swann (Pirates of the Caribbean): 83%
- Daenerys Targaryen (Game of Thrones): 82%
- Margaery Tyrell (Game of Thrones): 82%
- Francisco d’Anconia (Atlas Shrugged): 82%
- Dr. Hannibal Lecter (Hannibal): 82%
- Audrey Horne (Twin Peaks): 81%
- Princess Anna Karenina (Anna Karenina): 81%
- Danny Ocean (Ocean’s 11): 81%
- Ragnar Lothbrok (Vikings): 81%
- Olenna Tyrell (Game of Thrones): 80%

About 100 days earlier in the
PoCSverse ... 



References I

- [1] J. Gleick.
[The Information: A History, A Theory, A Flood.](#)
Pantheon, 2011.
- [2] E. Katz and P. F. Lazarsfeld.
[Personal Influence.](#)
The Free Press, New York, 1955.
- [3] D. J. Watts and P. S. Dodds.
Influentials, networks, and public opinion
formation.
[Journal of Consumer Research](#), 34:441–458, 2007.
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