

# Dealing with Digital Misinformation: A Polarized Context of Narratives and Tribes

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SOCIAL CHANGE**

Center at Ca'Foscari  
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*“So you have to find a way to **break out of your echo chambers**. This is tougher than it sounds — especially when it comes the issues you care most about. But it’s in your interest to engage the people you disagree with, rather than shutting them out or shutting them up. Not only because it gives you a chance to challenge their views, and maybe even change them. But also because sometimes they might just be right.”*

—US Ambassador Samantha Power's 2016 Yale College Class Day—

# A Hyperconnected World

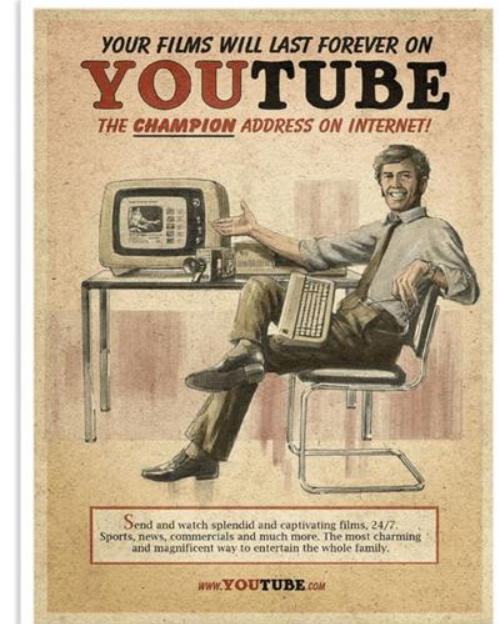
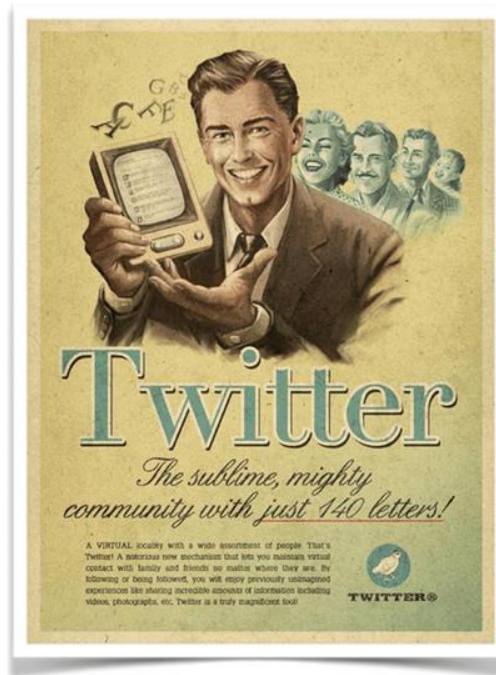


# Shift of Paradigm

**Old Media**  
*Mediated*



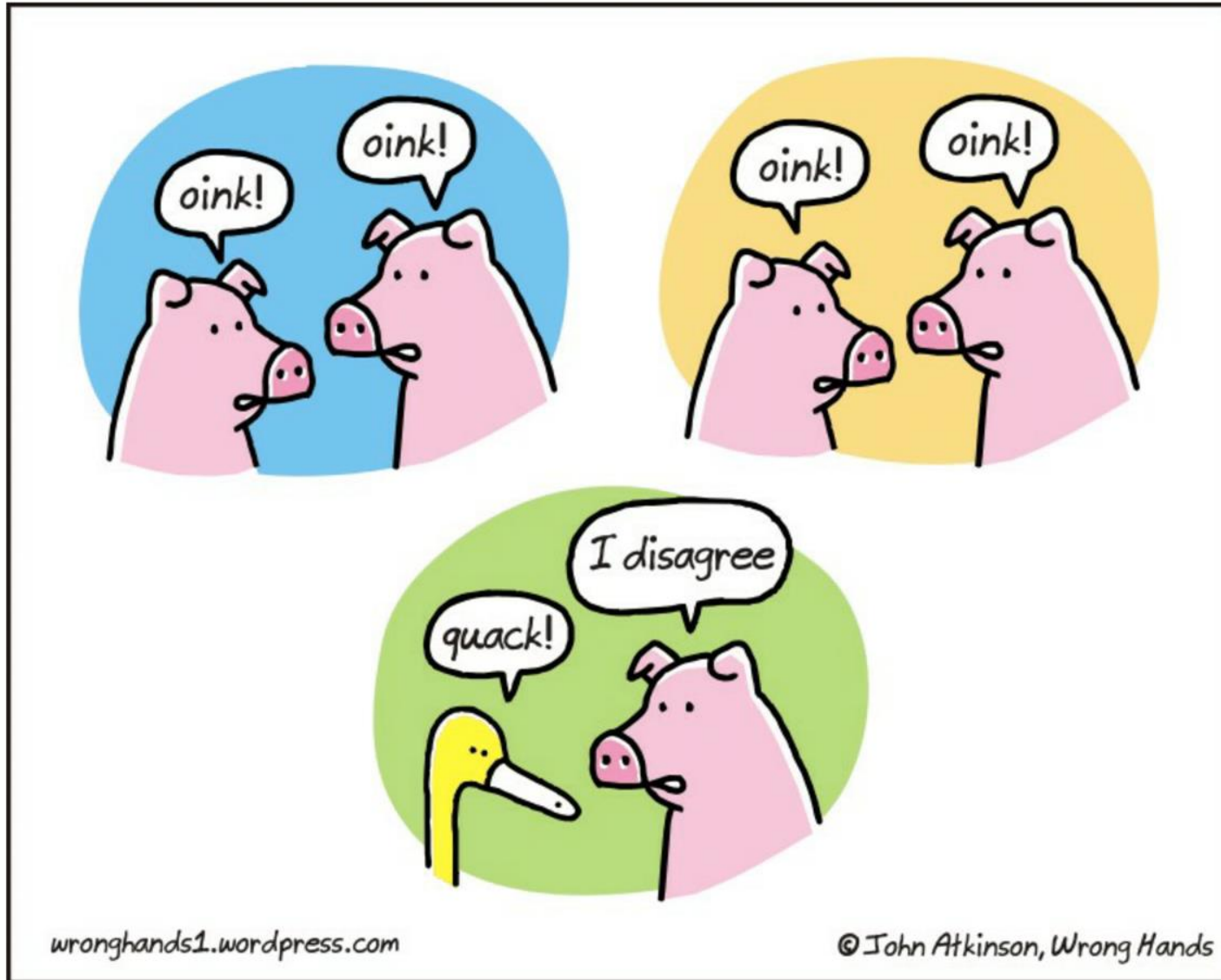
**New Media**  
*Disintermediated*



“Simplicity is complexity resolved.”

–Constantin Brâncuși

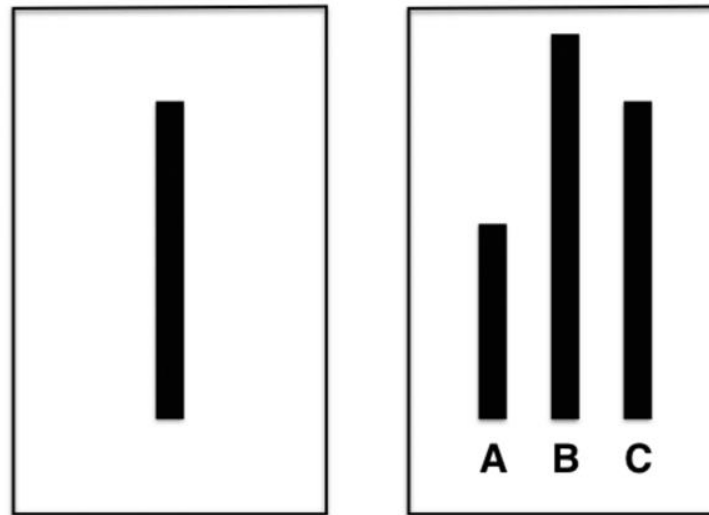
# Confirmation Bias



# Group Polarization

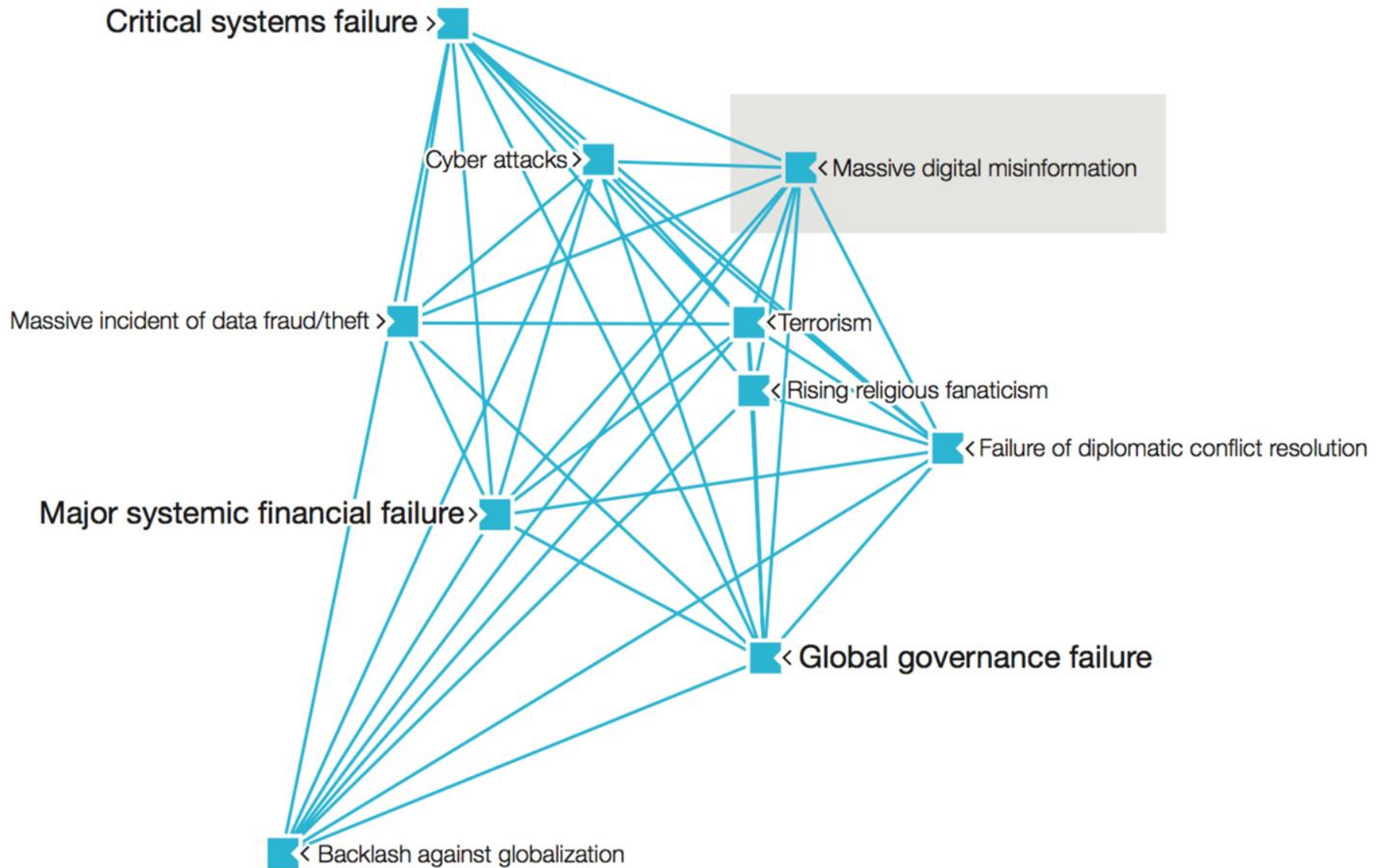
When **like-minded** people discuss, they **reinforce** their shared views thus ending up in a **more extreme** position

## Asch Experiment (1955)



C. R. Sunstein, *The law of group polarization*, Journal of political philosophy, 2002  
S. E. Asch, *Opinions and social pressure*, Readings about the social animal, 1955

# Massive Digital Misinformation





# Nigerian Ebola Hoax Results in Two Deaths

By LIZ NEPORENT · Sep 30, 2014, 6:10 AM ET



Nigeria health officials wait to screen passengers at the arrival hall of Murtala Muhammed International Airport.

# Vanguard

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## Ebola: Two dead, 20 others hospitalised over excessive salt consumption

The Washington Post  
*Democracy Dies in Darkness*

# Why Operation Jade Helm 15 is freaking out the Internet — and why it shouldn't be

By Dan Lamothe March 31, 2015

No, Jade Helm isn't a military takeover of Texas

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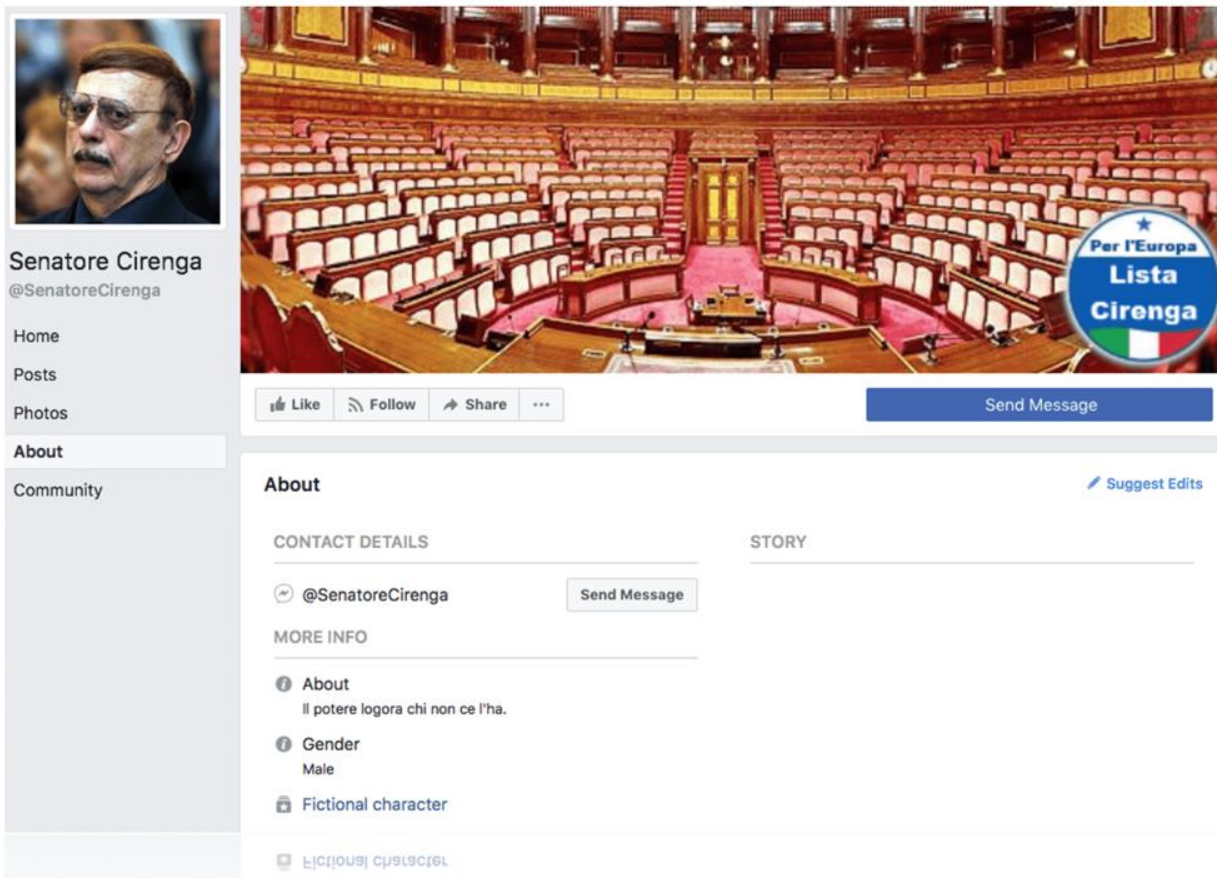
The Army says the size and scope of Jade Helm 15, a Special Operations exercise that begins in July, set it apart from other training exercises. Also setting it apart: The widespread conspiracy theories that the U.S. is preparing to hatch martial law. The Post's Dan Lamothe explains. (Tom LeGros/The Washington Post)

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### Our Online Games

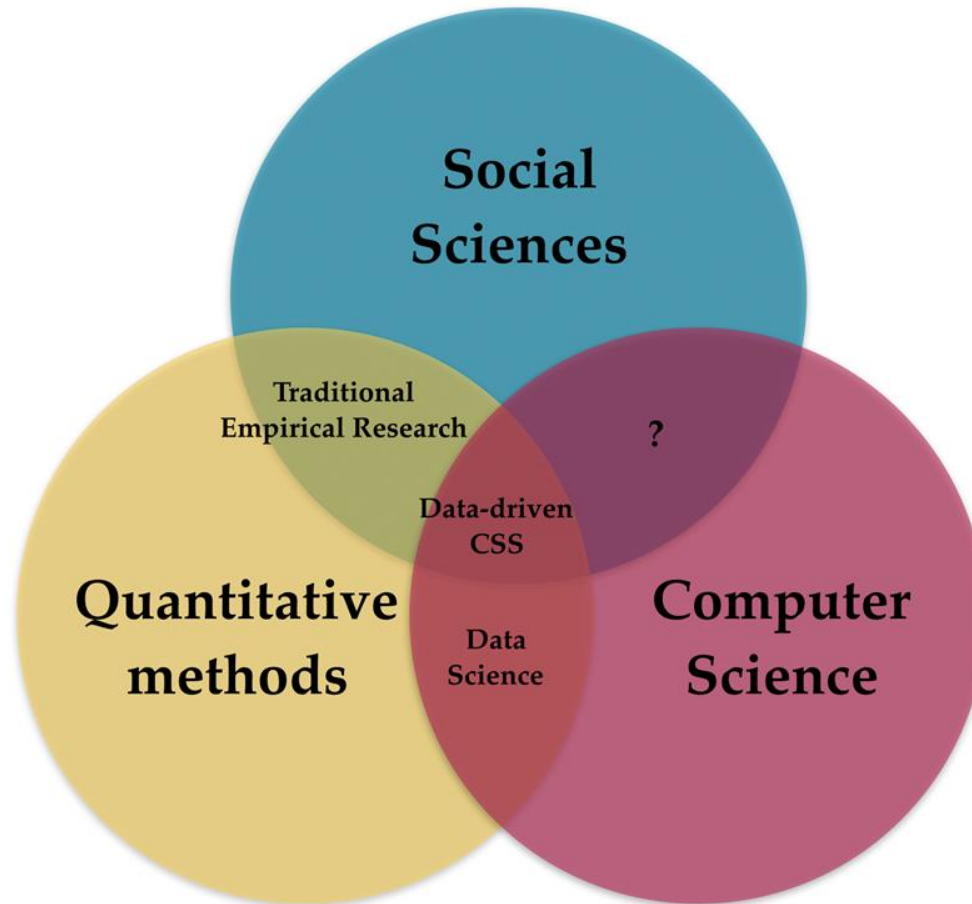
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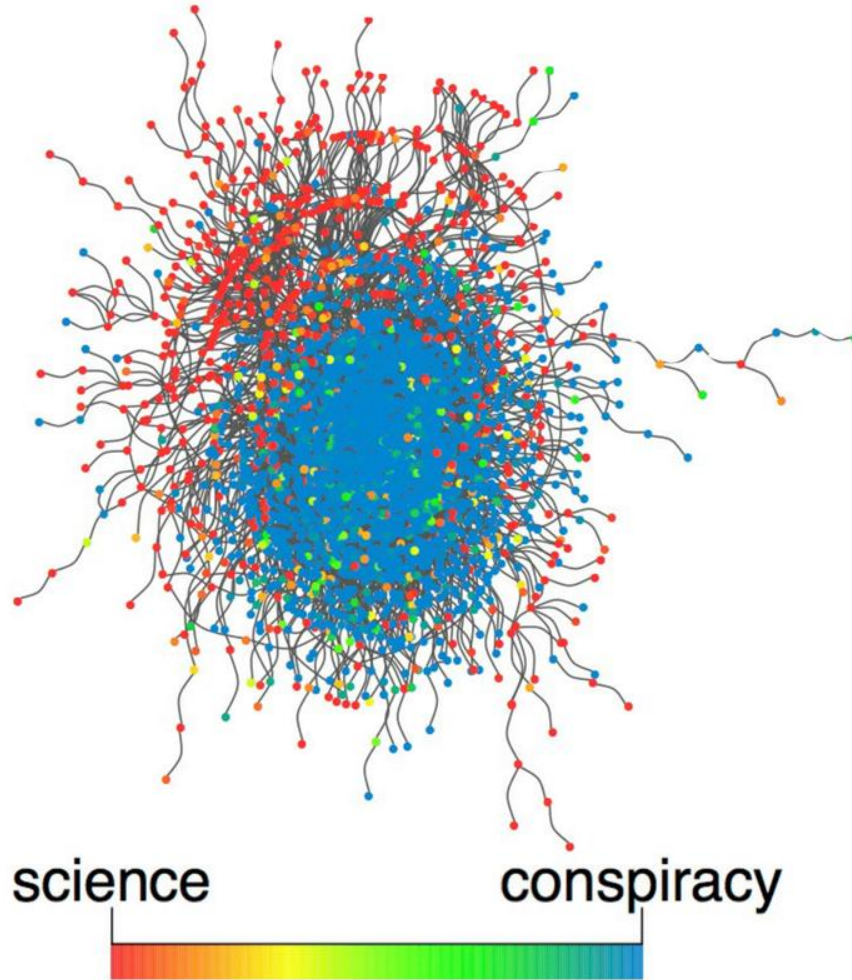
*“Yesterday the Senate approved by 257 votes in favour and 165 abstentions a bill (introduced) by Senator Cirenga that provides for the establishment of a fund for “parliamentarians in crisis” towards the approaching end of the legislative term. The fund provides for 134 billion Euros to be allocated for all the Members that will not find a job in the year following the end of their term. And that’s when in Italy ALS patients have to pay for their treatments.*

*Educate yourself and (please) share”*

# A New Approach



# Echo Chambers



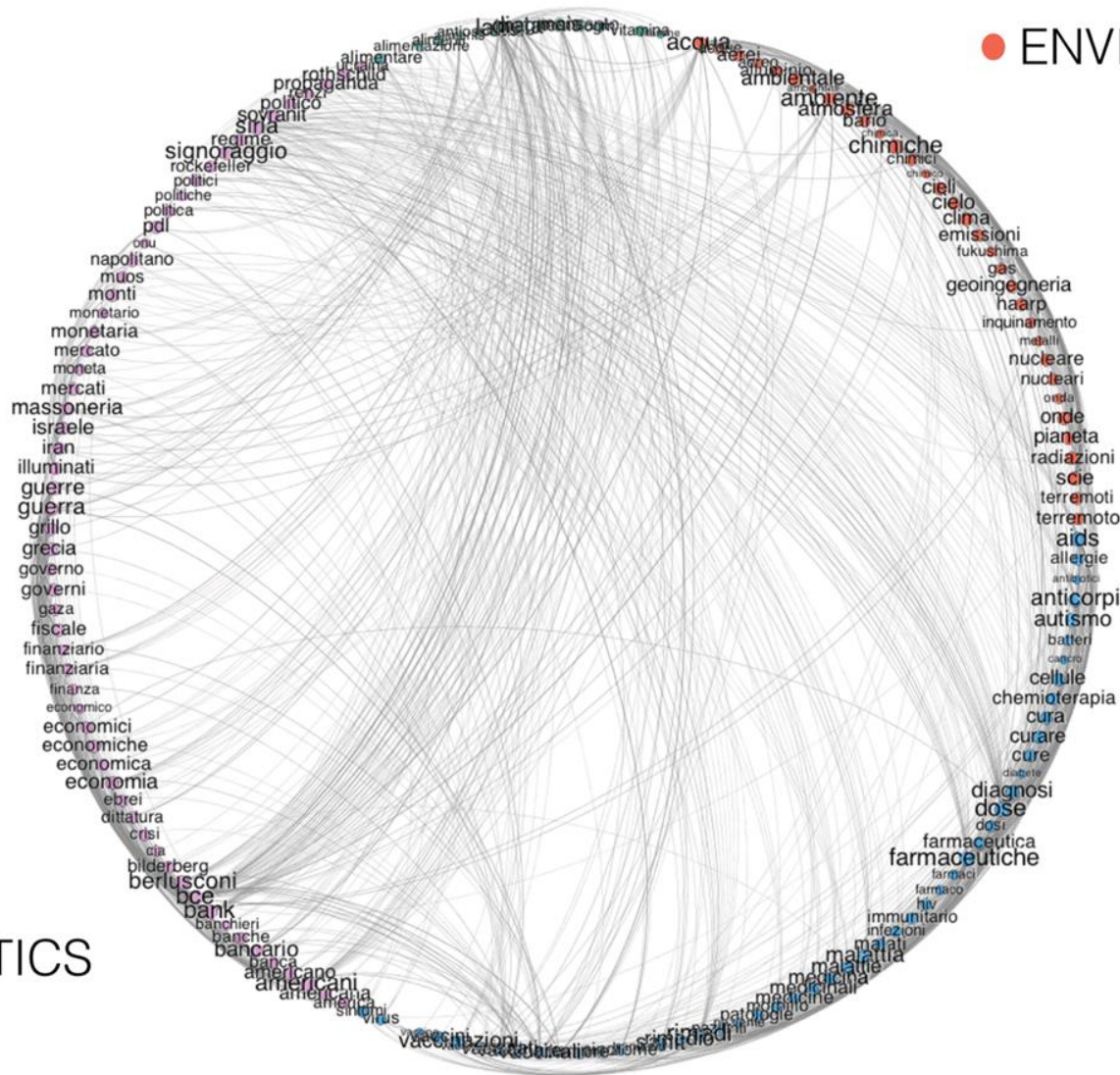
# The Pseudoscientific Narrative

● DIET

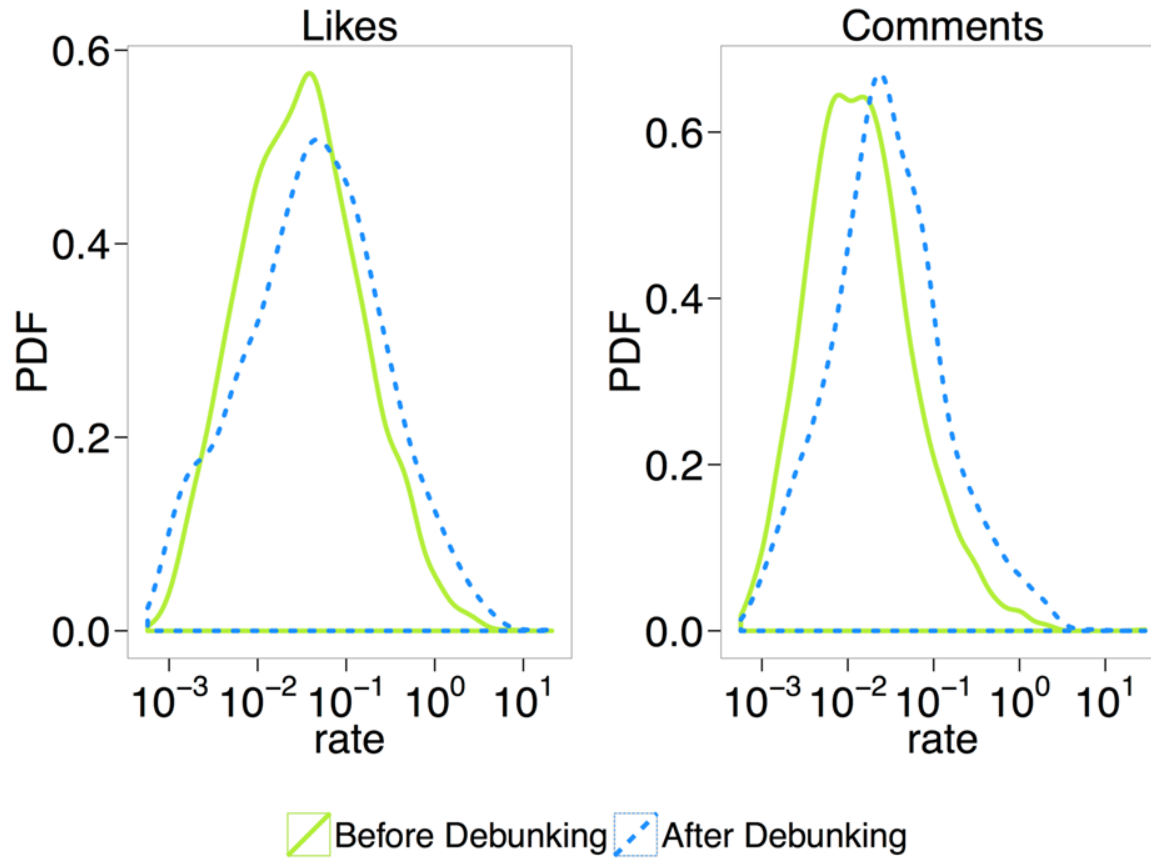
● ENVIRONMENT

● GEOPOLITICS

● HEALTH

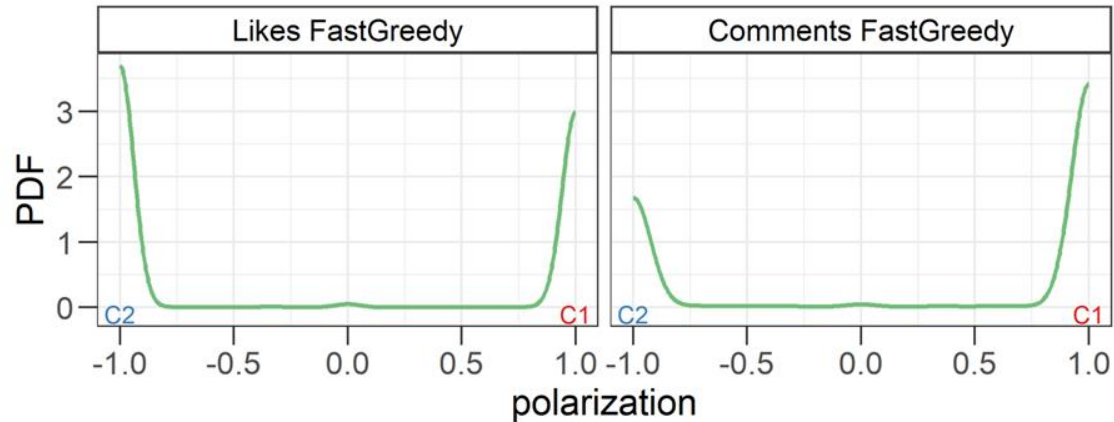


# Backfire Effect

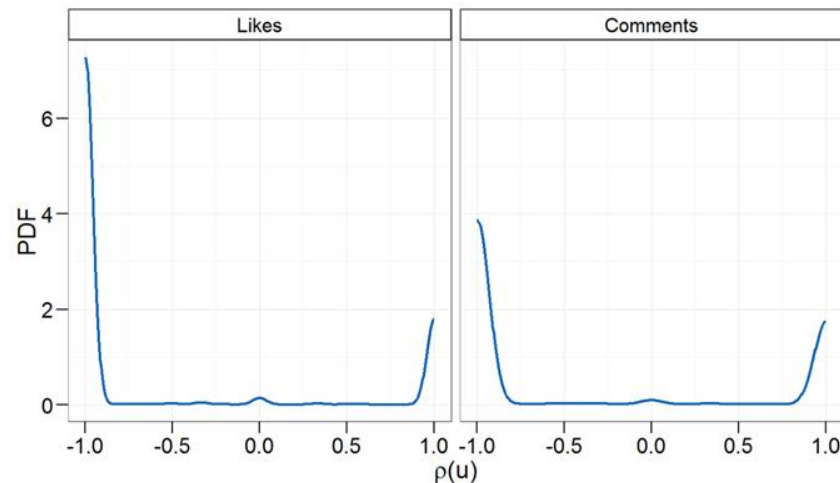


# Beyond Misinformation: Narratives

**Vaccines:** Facebook, 243 pages, 2.6M users (2010-2017)

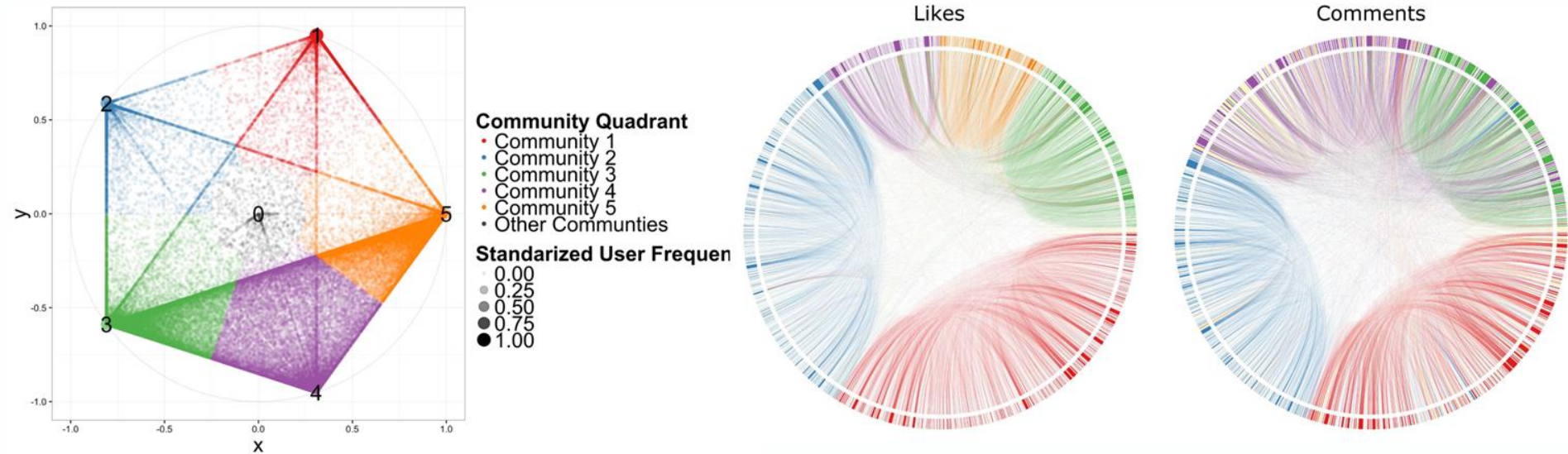


**Brexit:** Facebook, more than 1M users (Jan-Jul 2016)



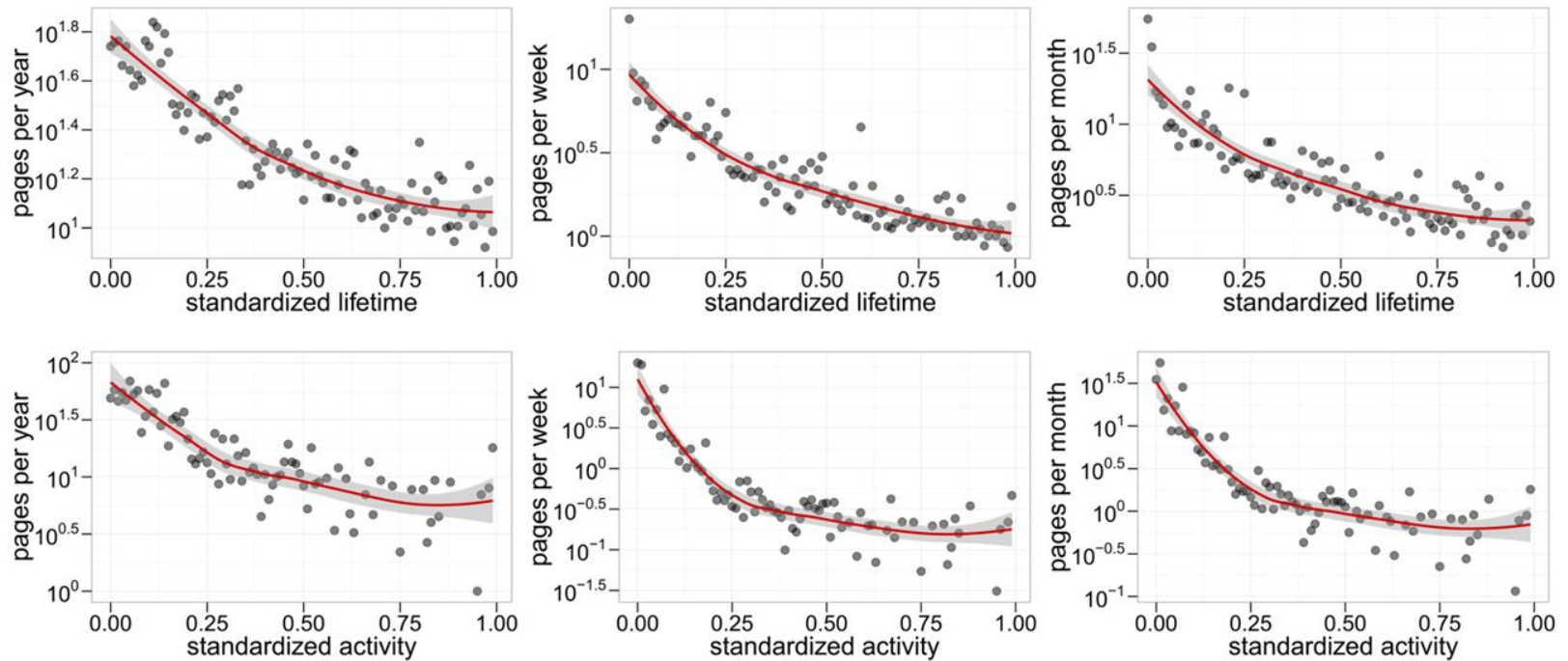
# News Consumption

920 news outlets, more than 376M users (2010-2015)





# Selective Exposure



# Impact on Media



*“Frankly, this column wasn’t designed to address the current environment. This format doesn’t make sense. I’ve spoken to several researchers and academics about this lately, because it’s started to feel a little pointless.”*

—Caitlin Dewey—


# Can Anything Be Done?

SOCIAL MEDIA

## How Facebook Makes Us Dumber

© JAN 8, 2016 9:51 AM EST  
By [Cass R. Sunstein](#)

Why does misinformation spread so quickly on the social media? Why doesn't it get corrected? When the truth is so easy to find, why do people accept falsehoods?



Cass R. Sunstein, the former administrator of the White House Office of Information and Regulatory Affairs, is the Robert Walmsley university professor at Harvard Law School and a Bloomberg View columnist.  
[Read more](#)

[Follow @CassSunstein](#)

*“The best solution is to promote a culture of humility and openness.”*  
—Cass Sunstein—

- ▶ Polarization and Fake News: Early Warning of Potential Misinformation Targets
- ▶ Quality and effectiveness in science and technology communication (QUEST), Horizon2020 Science with and for Society

# Selected Publications

1. A. L. Schmidt, **F. Zollo**, A. Scala, W. Quattrociocchi, *Polarization Rank: A Study on European News Consumption on Facebook*. preprint arXiv:1805.08030
2. M. Del Vicario, W. Quattrociocchi, A. Scala, **F. Zollo**. *Polarization and Fake News: Early Warning of Potential Misinformation Targets*, (forthcoming)
3. **F. Zollo** and W. Quattrociocchi. *Misinformation Spreading on Facebook*. Chapter in Book "Spreading Dynamics in Social Systems", Springer Nature, 2018
4. **F. Zollo** and W. Quattrociocchi. *Social Dynamics in the Age of Credulity: The Misinformation Risk and its Fallout*. Chapter in Book "Digital Dominance: Implications and Risks", Oxford University Press, 2018
5. A. L. Schmidt, **F. Zollo**, A. Scala, C. Betsch, W. Quattrociocchi. *Polarization of the Vaccination Debate on Facebook*, *Vaccine*, Volume 36, Issue 25, 2018
6. **F. Zollo**, B. Sluban, I. Mozetic, W. Quattrociocchi. Toward a Better Understanding of Emotional Dynamics on Facebook. In: *Complex Networks & Their Applications VI*, 2018
7. M. Del Vicario, S. Gaito, W. Quattrociocchi, M. Zignani, and **F. Zollo**. *News consumption during the Italian Referendum: A cross-platform analysis on Facebook and Twitter*, *IEEE DSAA*, 2017
8. **F. Zollo**, A. Bessi, M. Del Vicario, A. Scala, G. Caldarelli, L. Shekhtman, S. Havlin, W. Quattrociocchi. *Debunking in a World of Tribes*, in *PLoS ONE* 12(7), 2017
9. A. L. Schmidt, **F. Zollo**, M. Del Vicario, A. Bessi, A. Scala, G. Caldarelli, H. E. Stanley, W. Quattrociocchi. *The Anatomy of News Consumption on Facebook*, in *Proceedings of the National Academy of Sciences (PNAS)*, 2017.
10. M. Del Vicario, **F. Zollo**, G. Caldarelli, A. Scala, and W. Quattrociocchi. *Mapping Social Dynamics on Facebook: The Brexit Debate*, *Social Networks*, 2017
11. M. Del Vicario, G. Vivaldo, A. Bessi, **F. Zollo**, A. Scala, G. Caldarelli, and W. Quattrociocchi. *Echo Chambers: Emotional Contagion and Group Polarization on Facebook*, *Nature Scientific Reports*, 2016
12. A. Bessi, **F. Zollo**, M. Del Vicario, M. Puliga, A. Scala, G. Caldarelli, B. Uzzi, and W. Quattrociocchi. *Users Polarization on Facebook and Youtube*, in *PLoS ONE* 11(8), 2016.
13. A. Bessi, F. Petroni, M. Del Vicario, **F. Zollo**, A. Anagnostopoulos, A. Scala, G. Caldarelli, and W. Quattrociocchi. *Homophily and Polarization in the Age of Misinformation*, in *Eur. Phys. J. Special Topics*, 2016.
14. M. Del Vicario, A. Bessi, **F. Zollo**, F. Petroni, A. Scala, G. Caldarelli, H. E. Stanley, W. Quattrociocchi. *The Spreading of Misinformation Online*, in *Proceedings of the National Academy of Sciences (PNAS)*, 2016.
15. **F. Zollo**, P. K. Novak, M. Del Vicario, A. Bessi, I. Mozetic, A. Scala, G. Caldarelli, and W. Quattrociocchi. *Emotional Dynamics in the Age of Misinformation*, in *PLoS ONE* 10(9), 2015
16. A. Bessi, **F. Zollo**, M. Del Vicario, A. Scala, G. Caldarelli, and W. Quattrociocchi. *Trend of Narratives in the Age of Misinformation*, in *PLoS ONE* 10(8), 2015
17. A. Bessi, F. Petroni, M. Del Vicario, **F. Zollo**, A. Anagnostopoulos, A. Scala, G. Caldarelli, and W. Quattrociocchi. *Viral misinformation: the role of homophily and polarization*, in *Proceedings of WWW'15, WebSci Track Papers & Posters*, 2015