Misinformation in the Context of Emergencies and Disaster Events

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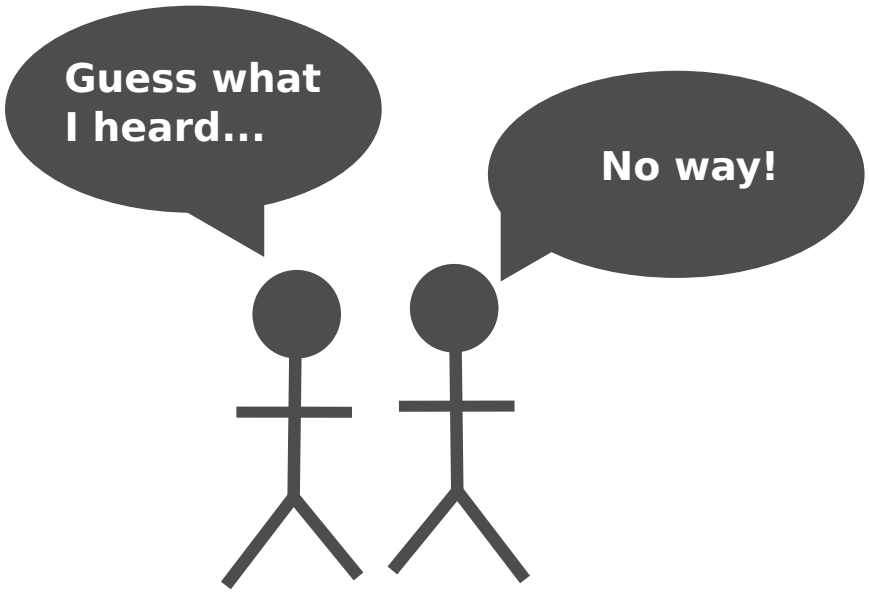
Informal Communication

- Informal exchange of information is a characteristic behavior

Dunbar 1996



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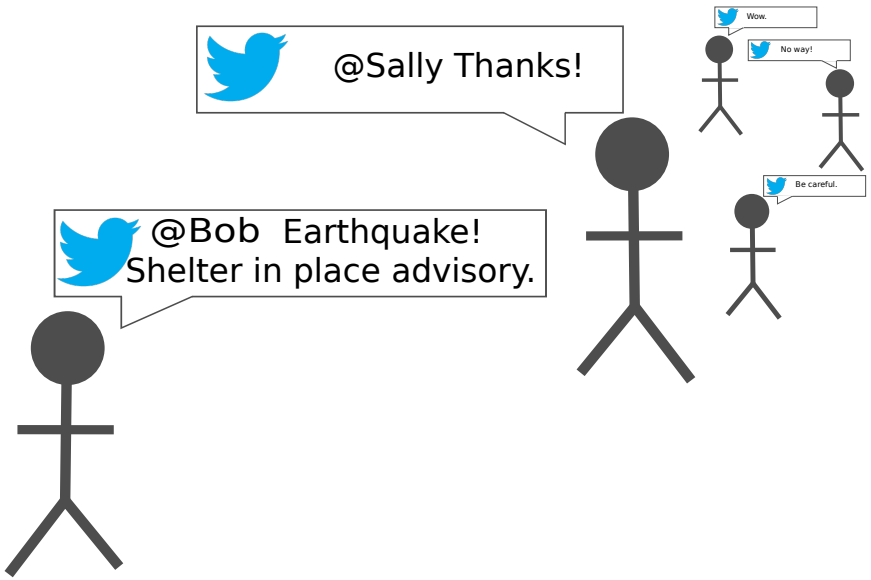
  Shibutani 1966
- Social media has transformed informal communication channels

  Sutton et al. 2008; Starbird et al. 2010



Rumoring Behavior During Crisis Events

[Photo Credit: Doug Mills, AP]

Social Theories of Rumoring Behavior

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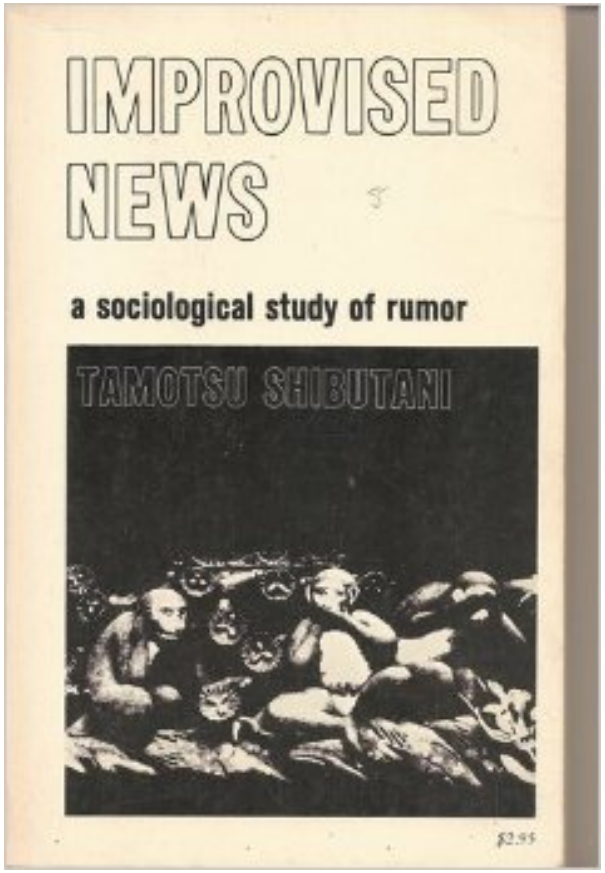
Determinants of rumor spread:

1. Perceived importance of the information shared
2. Degree of uncertainty surrounding the information
3. Suggested behavioral change resulting from information

Allport and Postman (1945)

Rumoring Behavior During Crisis Events

- Rumoring can relieve anxiety and fill information voids
- People trying to make decisions in non-routine situations
- Rumor as **collective sensemaking**



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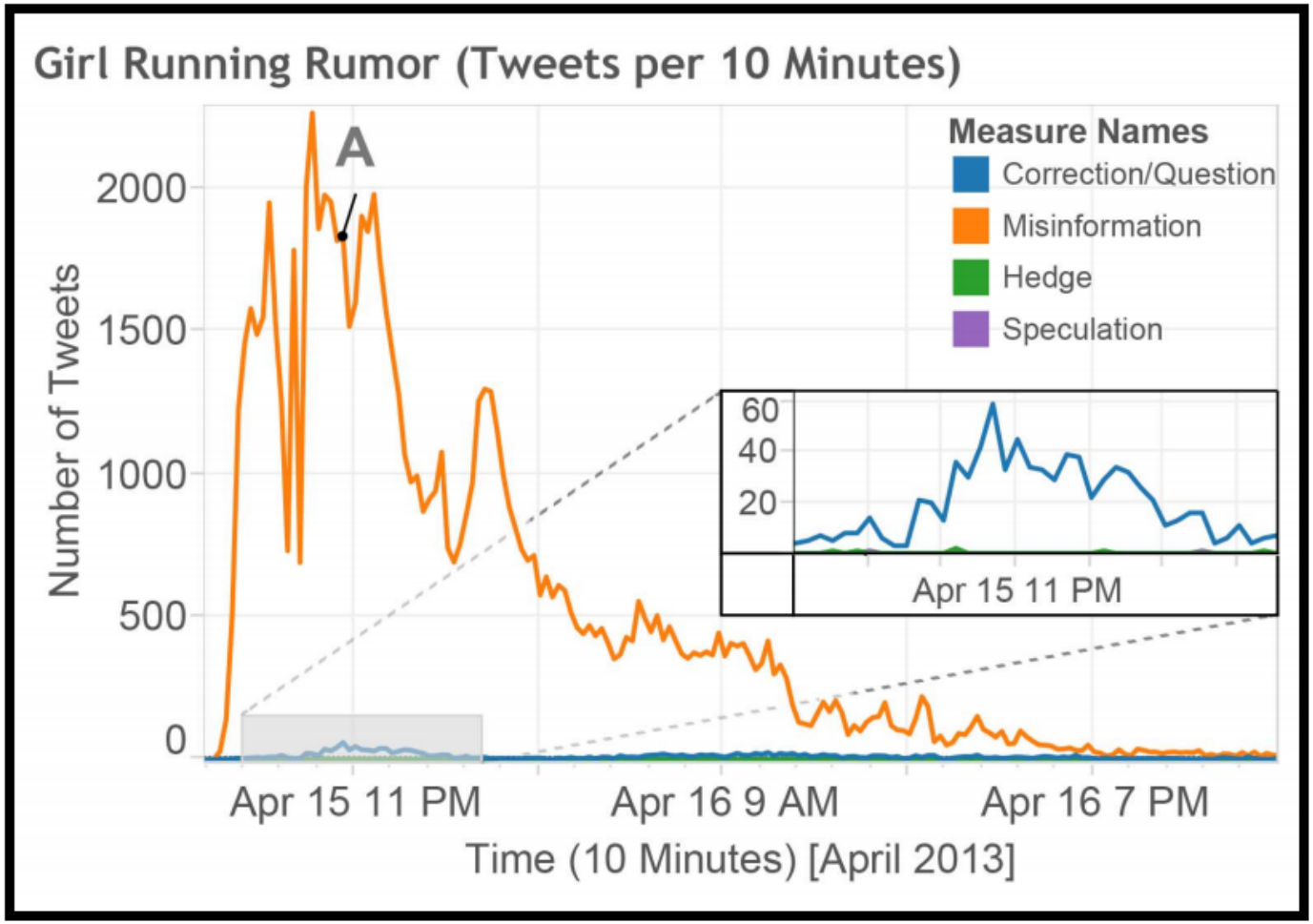
(April 15, 11:42pm): Whoever started this 8yo girl dying while running the Boston marathon for Sandy Hook needs to be dealt with swiftly. #hoax

Maddock et al. (2015) CSCW.

Rumoring During the Boston Marathon Bombing



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Boston Marathon Bombing: Falsely Accused

(April 18 7:38pm) Sunil Tripathi - Some might think he looks like the kid in Boston. But the FBI photos are too grainy to say for sure. http://t.co/9y5CivjlCX

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(April 19, 2:50am): BPD scanner identified the names: Suspect 1: Mike Mulugeta Suspect 2: Sunil Tripathi. #Boston #MIT

(April 19, 2:40am): Come on, you've been watching way too many thrillers. Sunil Tripathi doesn't look at all like one of the Marathon bombing suspects. (Question)

(April 19, 3:20am): No, the scanner DID NOT say suspect missing was Sunil Tripathi, they said repeatedly light skinned, white. #MITshooting #Boston (Correction)

Maddock et al. (2015) CSCW.

Misinformation During Crisis Events

- Crisis context is ripe for misinformation due to heightened uncertainty
- In the crisis context, mis/disinformation can have severe consequences including loss of life
- Crisis information space can be the target of information operation campaigns

But Some Information Can Be Problematic

- **Inaccurate**
- **Misleading**
- **Lacking context**
- **Inappropriately attributed**
- **Fabricated**

Figure 1. Tweet from *The Daily Express* reporting inaccurate information about a Manchester shooting.

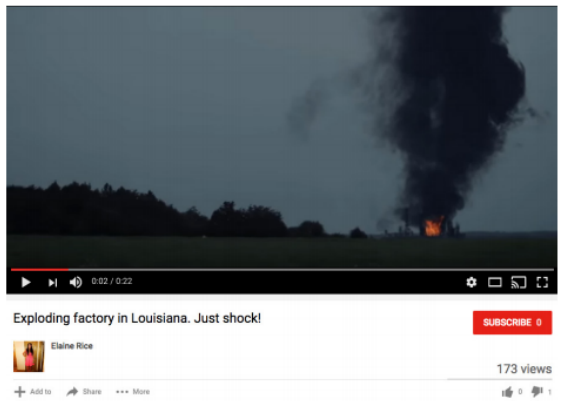

Figure 2. Screenshot of YouTube video from the Columbia Chemicals misinformation campaign.

Jack (2017) D&S.

Let's Be Clear With Our Terms

- **Misinformation:** information whose inaccuracy is unintentional
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- **Disinformation:** information that is deliberately false or misleading with strategic intent

- **Propaganda**: involves some effort at persuasion, buts it's hard to settle on clear boundaries on what counts as propaganda
- **Information Operations**: deliberate and systematic attempts to steer public opinion using inauthentic accounts and inaccurate information

Jack (2017) D&S.

What are We Already Learning?

- Language for talking about these problems; words carry assumptions about how information spreads, who spreads it and why, and what solutions are possible, let alone desirable
- We are **ALL** vulnerable to misinformation
- We need to understand that both misinformation and disinformation are **participatory** phenomena

We Are All Vulnerable to Misinformation

[Photo Credit: AP Charlie Riedel]

Retweet Network of #BlackLivesMatter/#BlueLivesMatter

PRO BLM, Politically "Left"

ANTI BLM, Politically "Right"

Stewart et al. (2017) CSCW.

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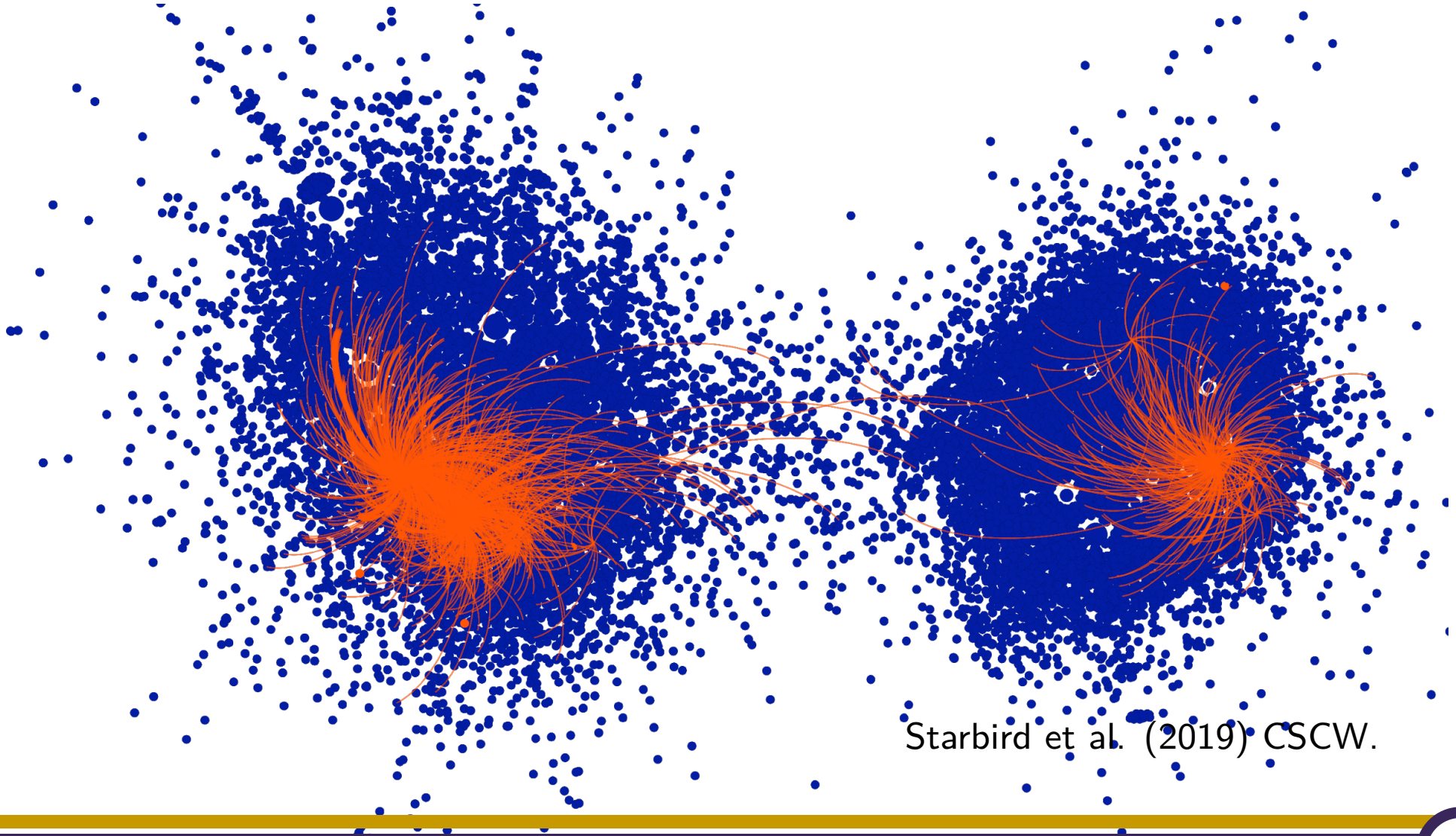


Starbird et al. (2019) CSCW.

Misinformation is Participatory

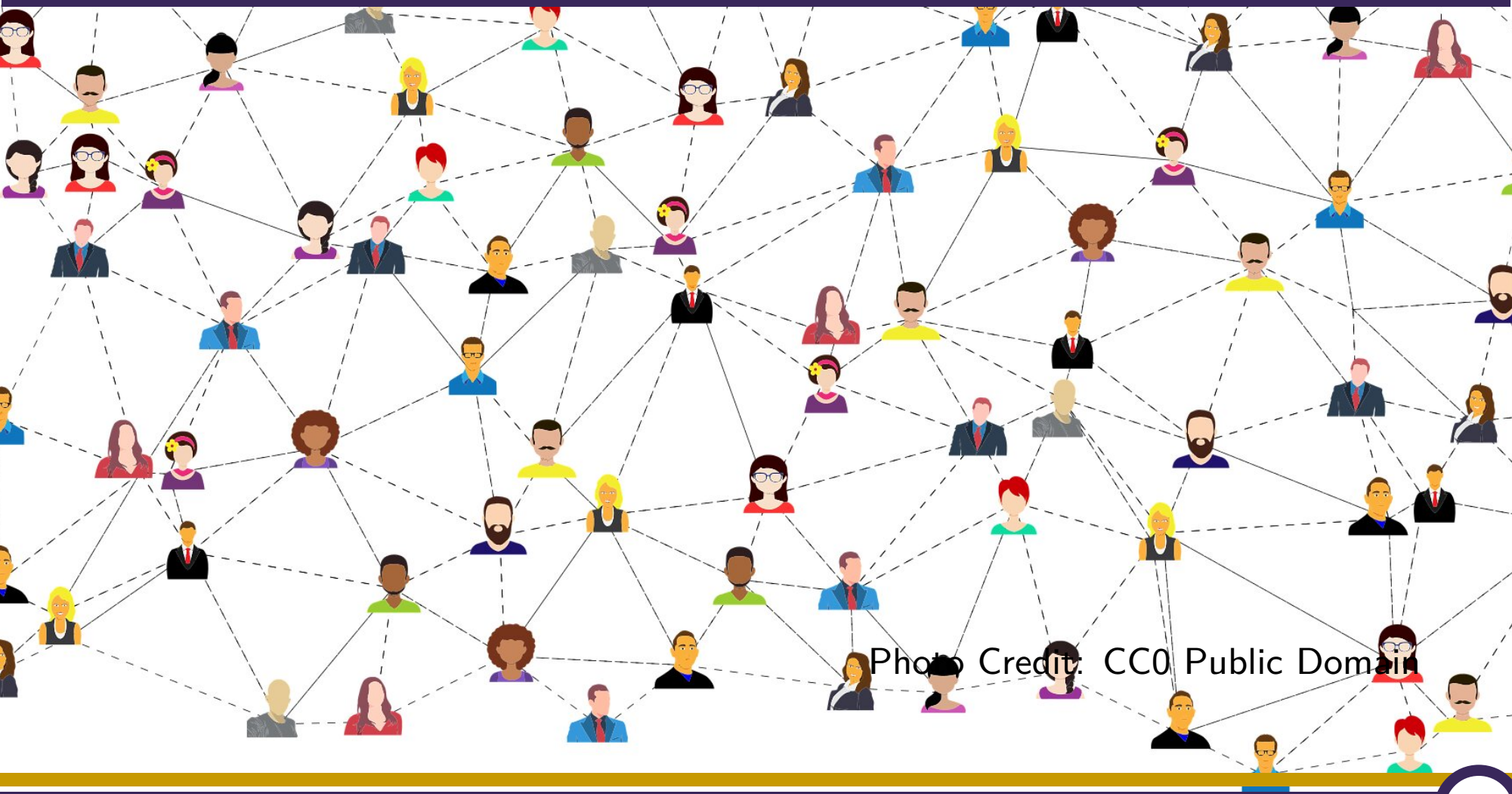
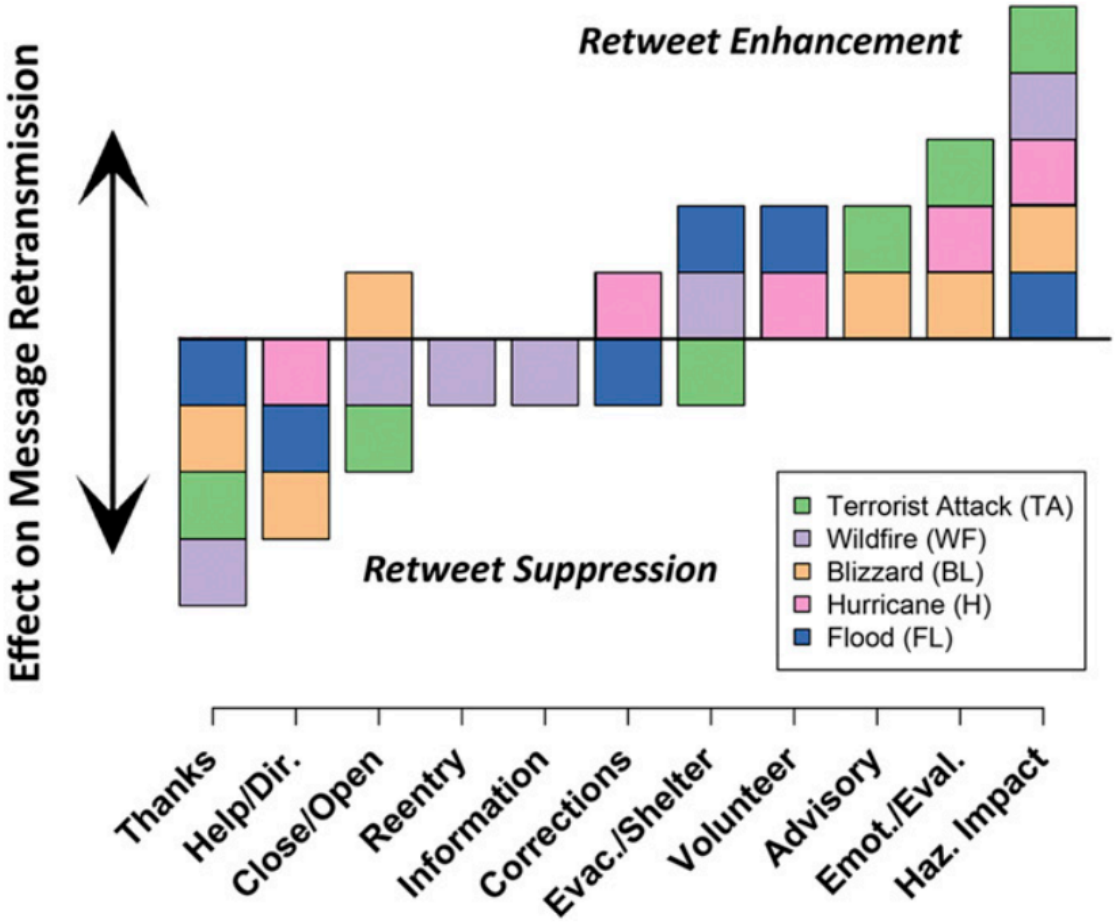


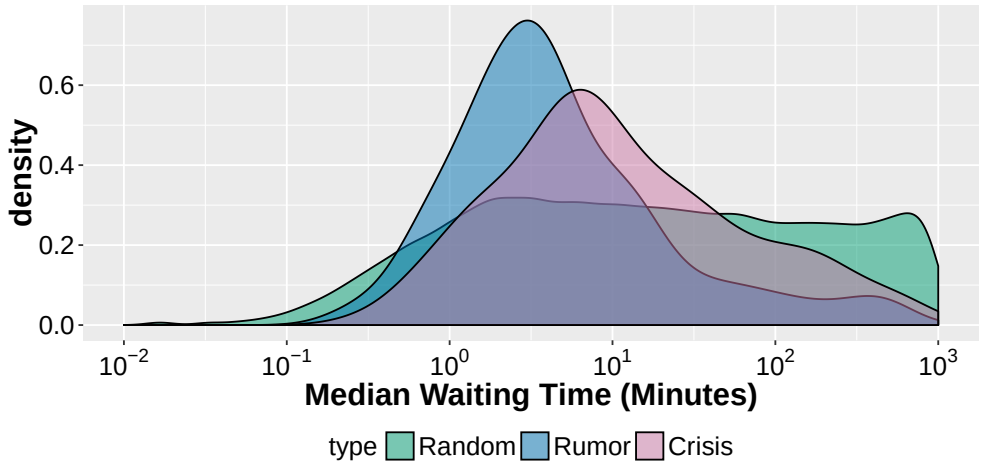
Photo Credit: CC0 Public Domain

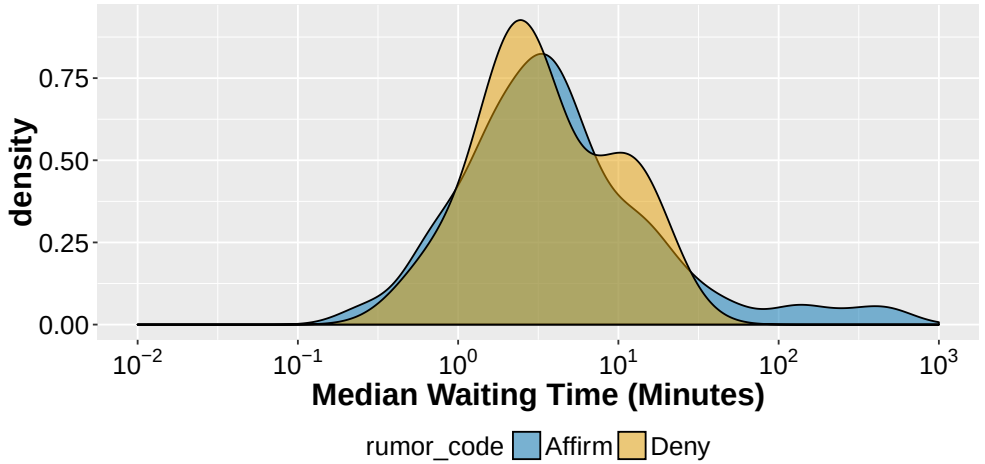
Retransmission of Warning/Alert Messages



Sutton et al. (2015) PNAS.

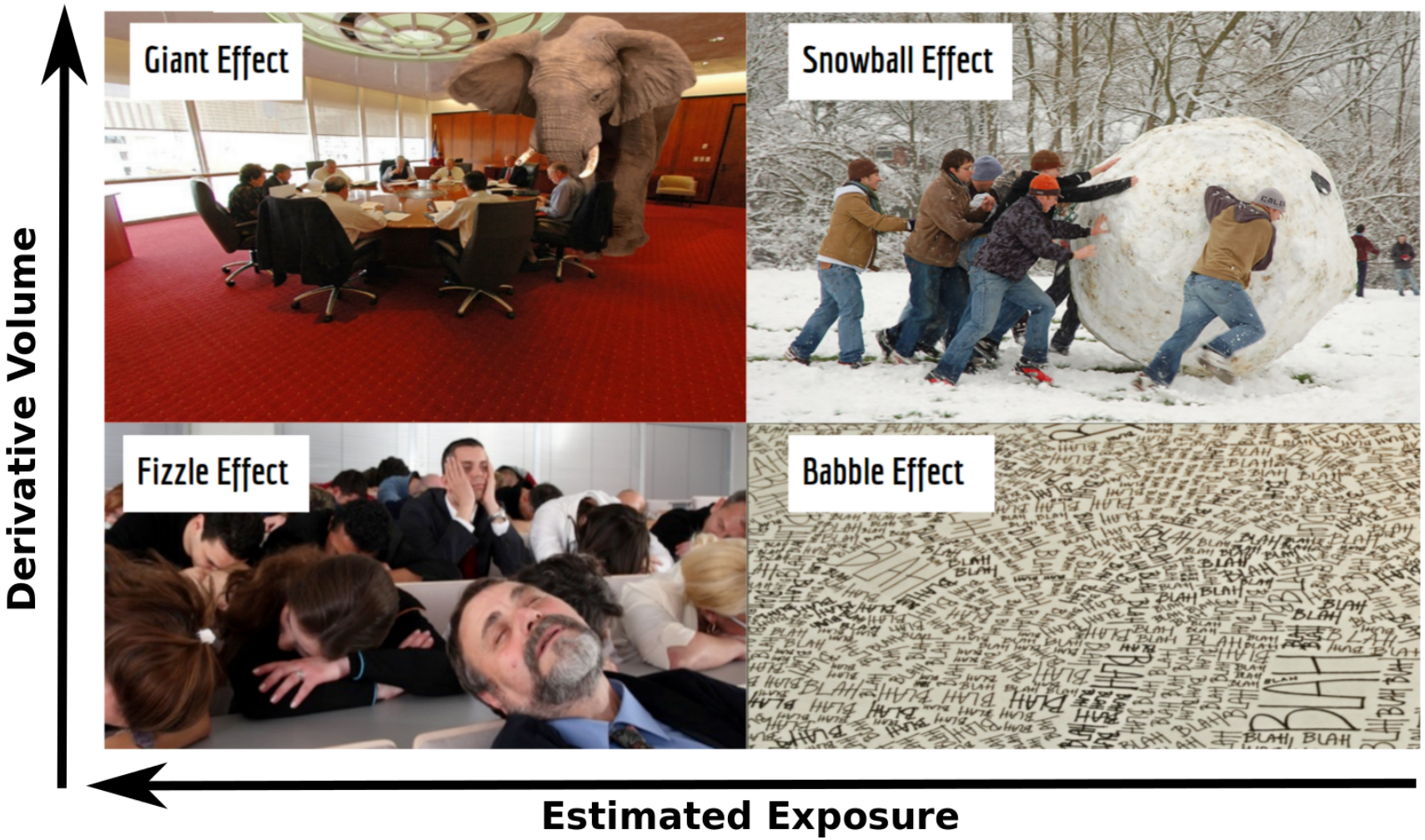
Rumoring and Reactions: Retransmission Speed





Zeng et al. (2016) HICSS.

Dimensions of Social and Information Behavior



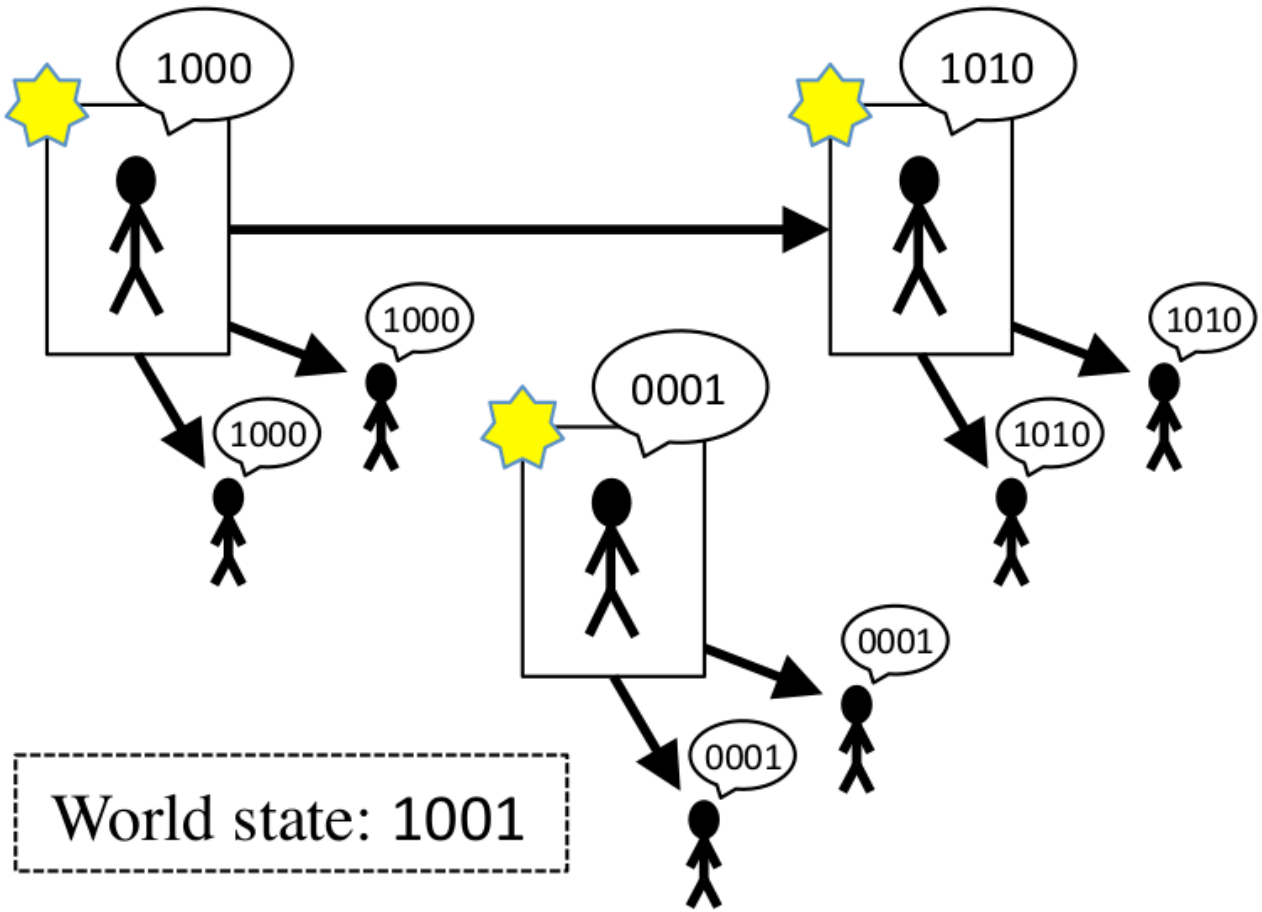
Arif et al. (2016) CSCW.

Keeping Rumors in Proportion

- How can we manage problematic information when we don't have ground truth?
- What rumor proportions are reasonable with respect to available evidence?
- How much variance in expressed beliefs is reasonable with respect to available evidence?

Krafft and Spiro (2019) CHI.

Collective Sensemaking and Social Computation



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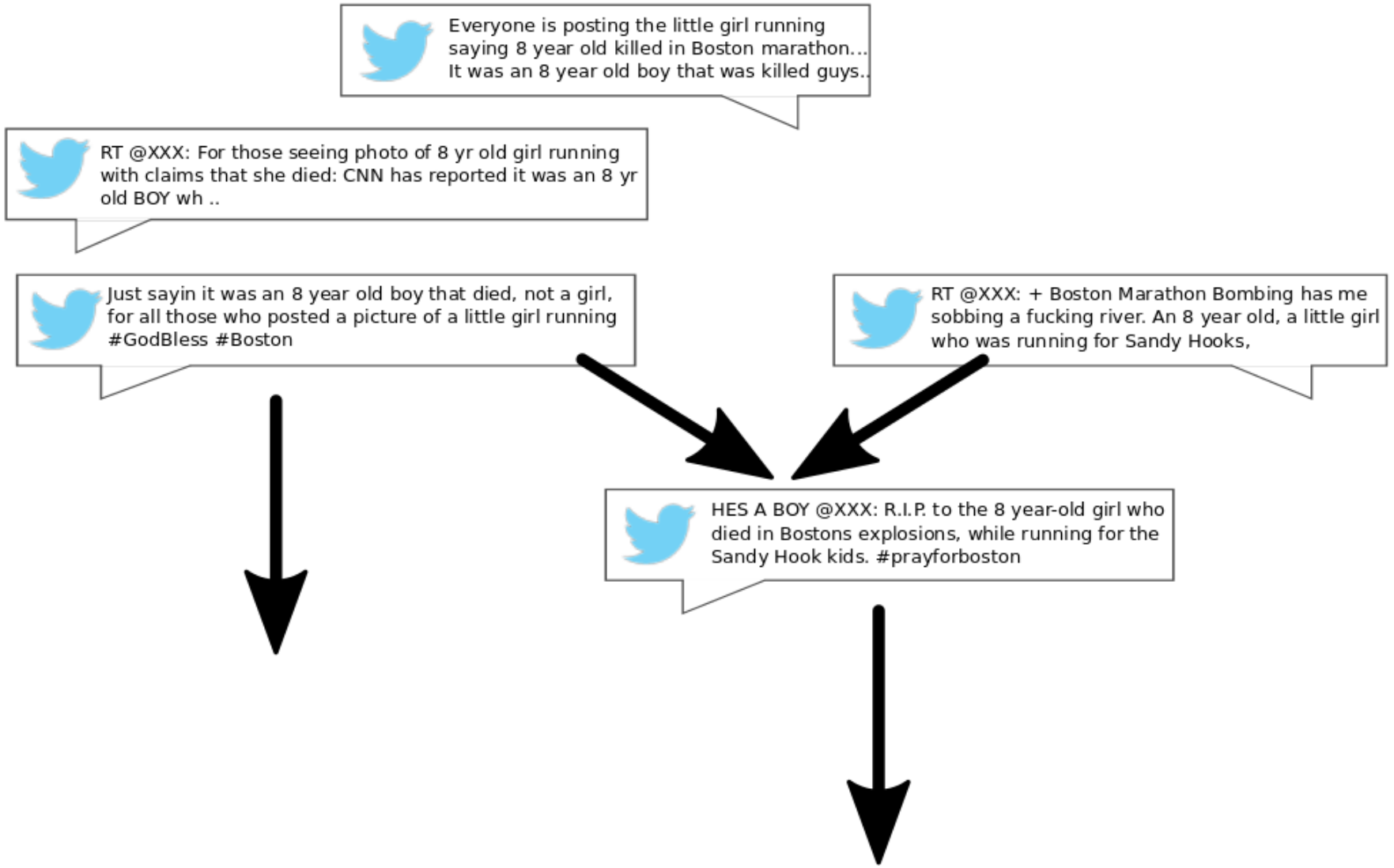

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The Question of Intent?

- It is difficult, if not impossible in come cases, to determine intent from a single piece of content out of context

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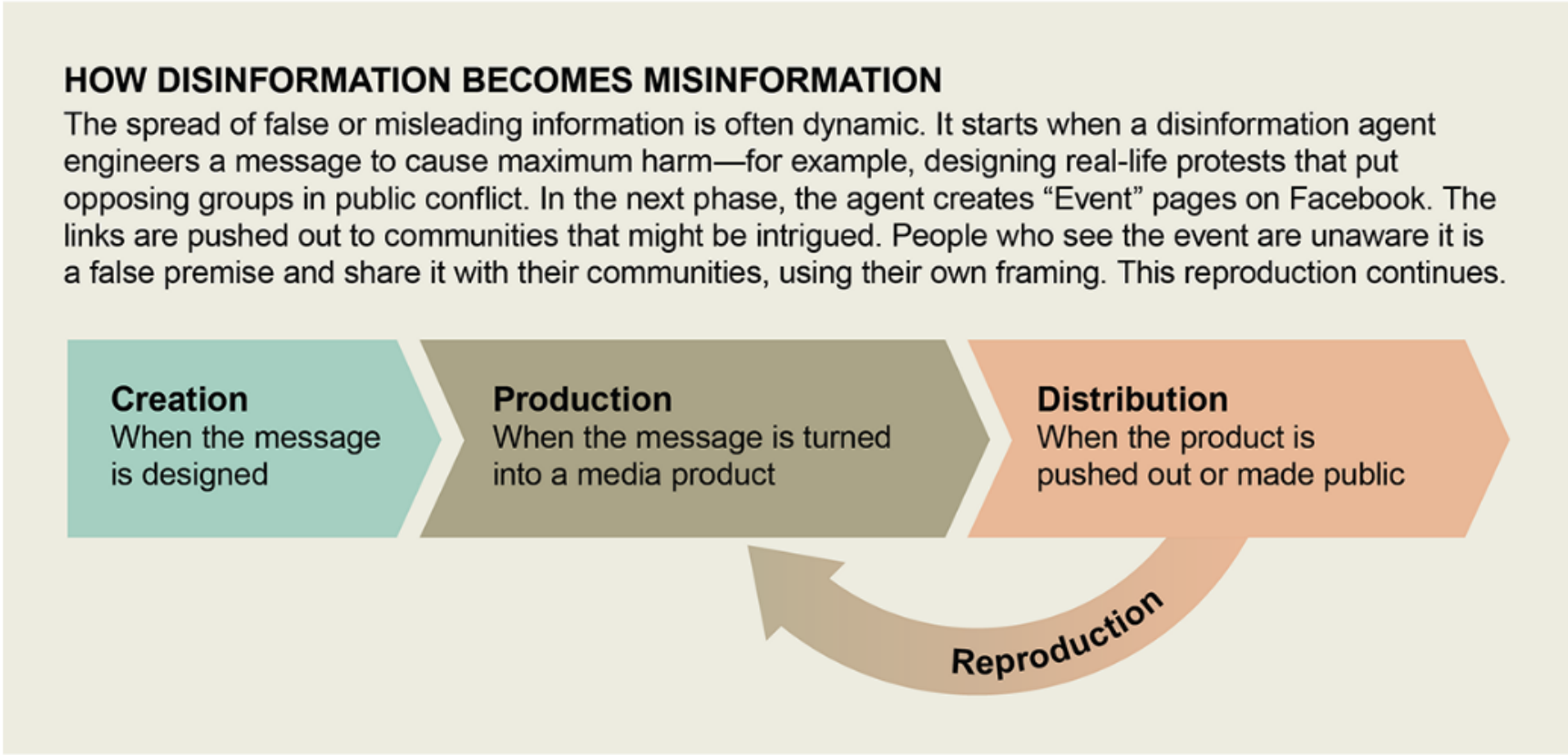
- Only by looking at the large information ecosystem, social network, and dynamic behavior can you identify strategic information operations

When Disinformation Becomes Misinformation



Credit: Jen Christiansen; Source: *Information Disorder: Toward an Interdisciplinary Framework for Research and Policymaking*, by Claire Wardle and Hossein Derakhshan. Council of Europe, October 2017

Wardle (2019). Scientific American

Convince or Confuse

The purpose of disinformation is not to convince.
The purpose of disinformation is to confuse...
to create "muddled thinking" across society.

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The goal of these activities is to undermine trust in information and social institutions.

Misinformation Strikes at Our Emotions

[Photo Credit: John Amis, AP]

> “When you see a news headline that makes you feel something either very good or very bad, make sure it isn't too good, or too bad, to be true.”
>
> *- Gordon Pennycook, Cameron Martel and David Rand*

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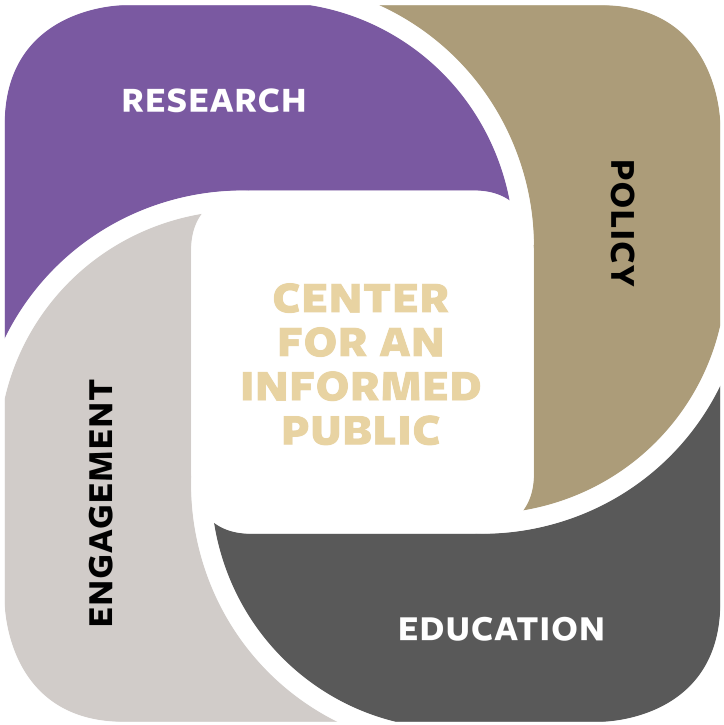

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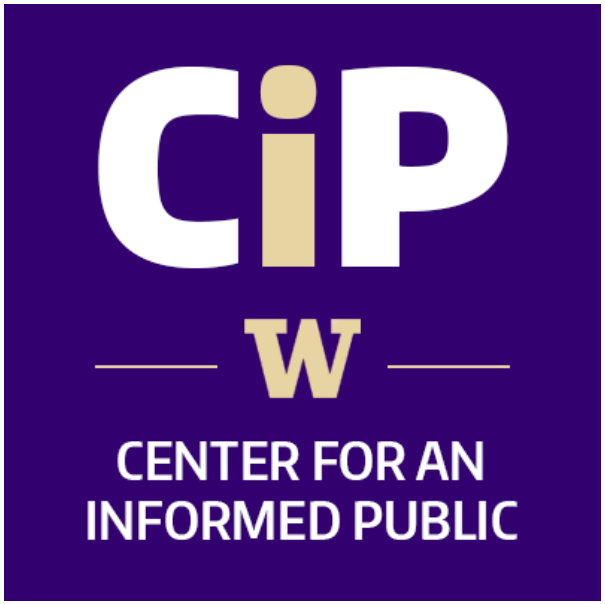

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