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

No way!

Guess what I heard...

No way!

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Misinformation During Crisis Events
Informal Communication

- Informal exchange of information is a characteristic behavior
  Dunbar 1996
- Informal channels often first to deliver hazard-related information
  Shibutani 1966

Earthquake!

What do we do?
Informal Communication

- Informal exchange of information is a characteristic behavior
  
  Dunbar 1996

- Informal channels often first to deliver hazard-related information
  
  Shibutani 1966

- Social media has transformed informal communication channels
  
  Sutton et al. 2008; Starbird et al. 2010
Rumoring Behavior During Crisis Events
Social Theories of Rumoring Behavior

**Rumor:** story that is unverified at the time of communication
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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
(April 15 7:21pm): The 8 year old girl that sadly died in the Boston bombings while running the marathon. Rest in peace beautiful x <link>
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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

Maddock et al. (2015) CSCW.

Maddock et al. (2015) CSCW.
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

(April 18 7:47pm) Sunil Tripathi. One of the Boston bombers. I’m calling it
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(April 19, 2:50am): BPD scanner identified the names: Suspect 1: Mike Mulugeta Suspect 2: Sunil Tripathi. #Boston #MIT

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(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

(April 18 7:47pm) Sunil Tripathi. One of the Boston bombers. I’m calling it

(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
- **Disinformation:** information that is deliberately false or misleading with strategic intent

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Let’s Be Clear With Our Terms

- **Misinformation**: information whose inaccuracy is unintentional
- **Disinformation**: information that is deliberately false or misleading with strategic intent
- **Propaganda**: involves some effort at persuasion, but 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.
Retweet Network of #BlackLivesMatter/#BlueLivesMatter

PRO BLM, Politically “Left”  ANTI BLM, Politically “Right”

Starbird et al. (2019) CSCW.
Misinformation is Participatory

Photo Credit: CC0 Public Domain
Retransmission of Warning/Alert Messages

Sutton et al. (2015) PNAS.

Sutton et al. (2015) PNAS.
Rumoring and Reactions: Retransmission Speed

Zeng et al. (2016) HICSS.

Misinformation During Crisis Events
Dimensions of Social and Information Behavior

Giant Effect

Snowball Effect

Fizzle Effect

Babble Effect

Estimated Exposure

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

World state: 1001

Krafft et al. (2017) CHI.
Collective Sensemaking and Social Computation

- Everyone is posting the little girl running saying 8 year old killed in Boston marathon... It was an 8 year old boy that was killed guys.

- RT @XXX: For those seeing photo of 8 yr old girl running with claims that she died: CNN has reported it was an 8 yr old BOY wh..

- Just sayin it was an 8 year old boy that died, not a girl, for all those who posted a picture of a little girl running #GodBless #Boston

- RT @XXX: + Boston Marathon Bombing has me sobbing a fucking river. An 8 year old, a little girl who was running for Sandy Hooks.

- HES A BOY @XXX: R.I.P to the 8 year-old girl who died in Bostons explosions, while running for the Sandy Hook kids. #prayforboston

Krafft et al. (2017) CHI.
The Question of Intent?

- It is difficult, if not impossible in some cases, to determine intent from a single piece of content out of context.
The Question of Intent?

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

• Only by looking at the large information ecosystem, social network, and dynamic behavior can you identify strategic information operations.
When Disinformation Becomes Misinformation

The spread of false or misleading information is often dynamic. It starts when a disinformation agent engineers a message to cause maximum harm—for example, designing real-life protests that put opposing groups in public conflict. In the next phase, the agent creates “Event” pages on Facebook. The links are pushed out to communities that might be intrigued. People who see the event are unaware it is a false premise and share it with their communities, using their own framing. This reproduction continues.

**HOW DISINFORMATION BECOMES MISINFORMATION**

- **Creation**: When the message is designed
- **Production**: When the message is turned into a media product
- **Distribution**: When the product is pushed out or made public

Reproduction

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

Pomerantsev and Weiss (2014)
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Pomerantsev and Weiss (2014)

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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