Crisis on Twitter: Information & Emotion

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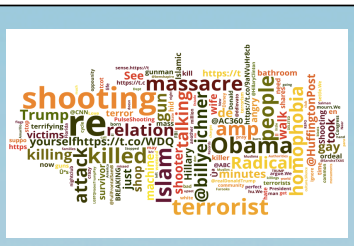
During a crisis, finding information on events, locations, active dangers, advice for safety can be essential. Social media, such as twitter are flooded with a mix of updates, eyewitness accounts, news, security notifications, and personal responses. ***Question:*** In a flood of postings, how can an individual find the crisis information they need?

Signal and Noise. **[1]** Observing that tweets during a crisis are a *mix of event updates and 'prayers for the victims'*, and how this noise gets in the way of the information signal **[2]** Realizing that *what is noise for some is signal for others*, and thus focusing on the purpose and expression of emotion during a crisis.

Two questions motivate this research:

- If a crisis is in progress, how do you find event information in the stream of tweets?
- What are we to make of the emotional outpourings that accompany such events?

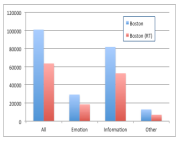
Boston – information tweets RTs removed (Wordle)

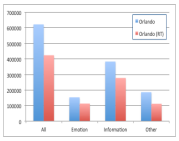


Orlando – emotion tweets RTs removed (Wordle)

Dataset and Content Analysis

Boston: 100,879 tweets (63% RT), April 15-20, 2013 following the bombings near finish line of Boston Marathon.
Orlando: 622,006 tweets (68% RT), June 12-18, 2016 following gunman attack at Pulse, a gay nightclub.





Content Analysis

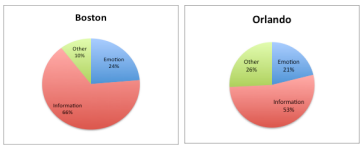
Information
- Systematic Google search for news report from the main news agencies (15/ incident) + Wikipedia description.
- Calculated word and bigram frequency, extracting top ranked descriptors (87 words)

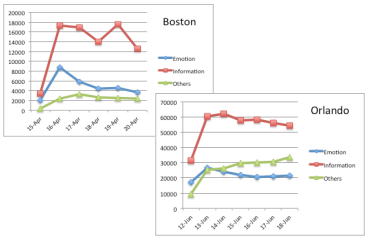
Emotion
- Linguistic Inquiry and Word Count (LIWC) word lists for categories: Anger; Anxiety; Negative Emotions; Positive Emotions; Sadness; + Netlytic categories for Feelings (good) and (bad)

Automated classification by presence of *information* or *emotion* word. When a tweet contained the word(s) in a category then it was classified into that category. If the tweet had no word in either the emotion or information keyword list, it was marked as 'other'. Tweets could be classified as both information and emotion.

Results

- What is the **distribution** of tweet type?
- Do the types of information differ over time? Or by crisis?





'**Other**' category requires further examination: some are political; others are foreign language or URLs; some could be interpreted as emotion

- **Key actors** – primarily news agencies
  - More international for Boston (BBC), more US and local for Orlando (CNN)
  - Approximately 4 times the activity for information than emotion

Conclusions. This initial look at crisis tweets suggests this approach may prove useful for separating the information and emotion streams. Further work is needed to refine both categories, and to explore further the make-up of the 'other' posts.

Limitations. Data collection was not comprehensive and depended on limited, mainstream hashtags as they appeared; information words were determined post hoc. Future work needs to derive terms as a crisis emerges.

Curiosities. Twitter handles appearing with event identification (@prayfor_boston,@prayf0rboston)

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Acknowledgments

With recognition of those affected by crises and those who contribute their information and emotions on social media.

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