

PHEME

Veracity: The 4th Challenge of Big Data

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- **Memes** are thematic motifs that spread through social media in ways analogous to genetic traits
- We coined the term **phemes** to add truthfulness and deception to the mix

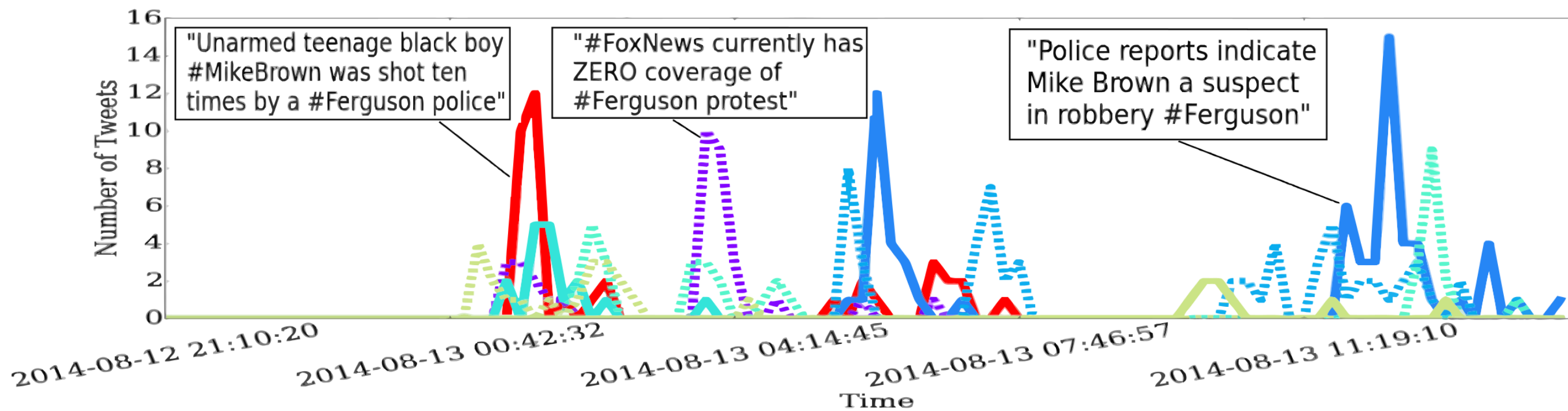
PHEME focuses on a **fourth crucial**, but hitherto largely unstudied, challenge: **Veracity**

Now mostly manual



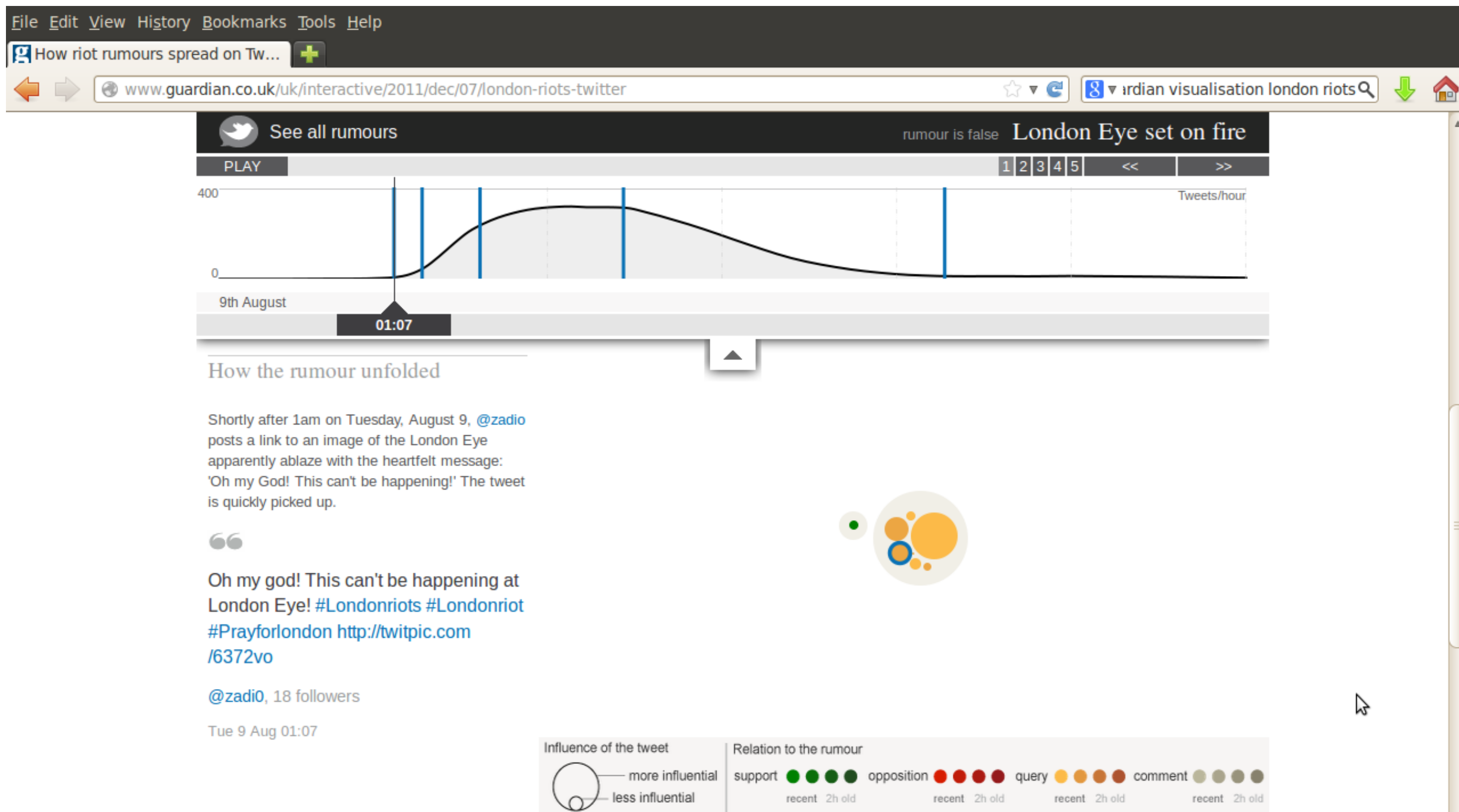
- Rumours are challenging
 - Some rumours could take hours, days, weeks or even months to die out
 - Ill-meaning humans can currently outsmart computers (and humans) and appear genuine

Rumour analysis: The Problem

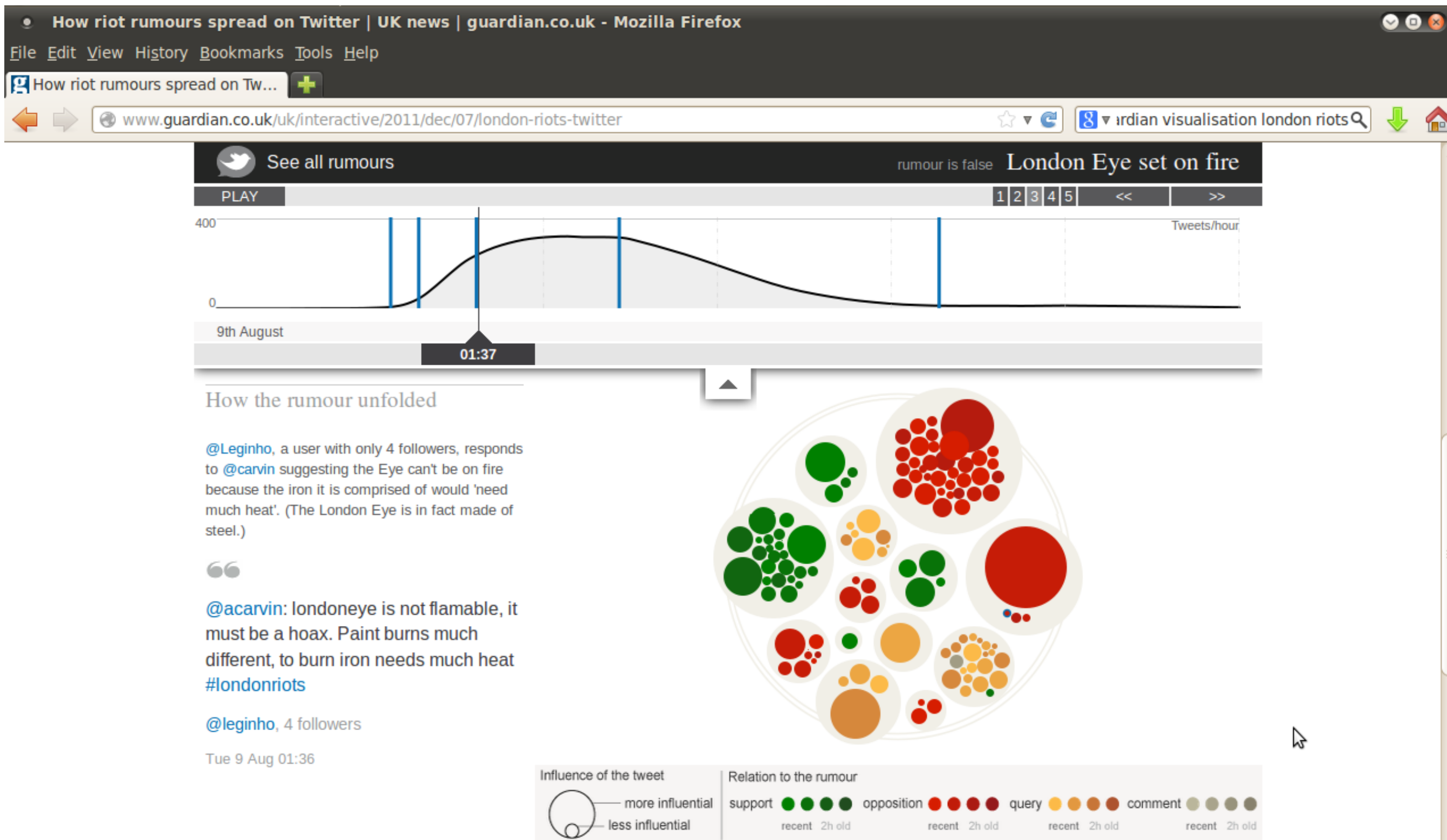


- Mike Brown shot by police in Ferguson
 - We have different rumors emerging from the topic
 - We don't know if they are true.
 - We see the spikes and sometimes they come back (different temporal dynamics)
 - We need to understand the overall conversation to see the different points of view and how the rumours go forward

Social Media is Rife with Phemes



Social Media is Rife with Phemes



From manual to automatic

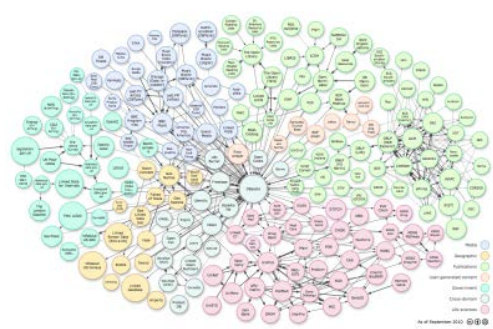
We are investigating...



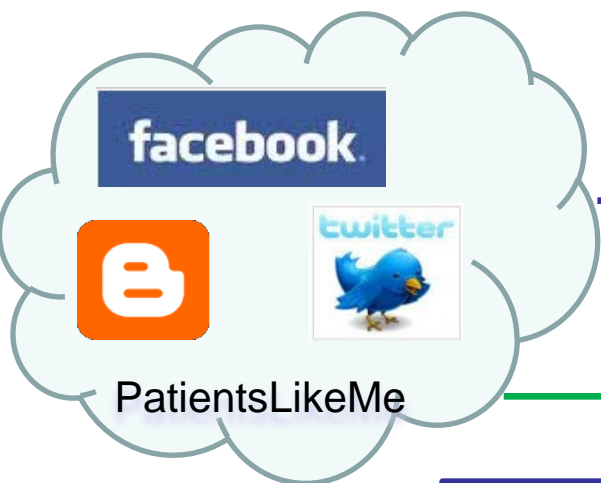
- Ontologies for modelling phemes
- Use a priori knowledge (LOD) and reasoning to detect contradictions
- Model phemes spread across media, social networks, and time
- Conversational analysis
- Real-time rumour classification
- PHEME visualisation to support veracity checking: media maps, impact maps, geographical maps...



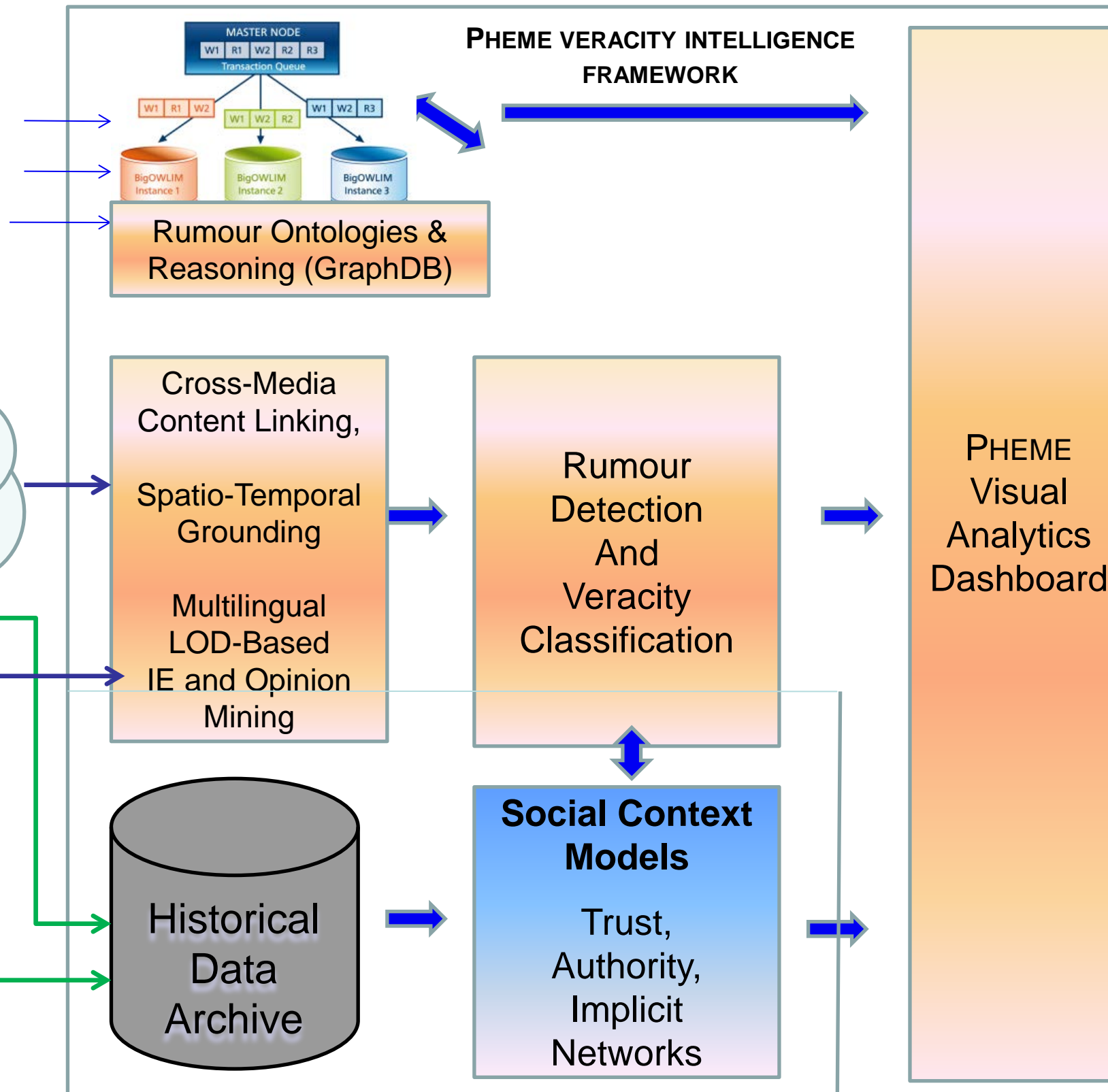
Technology Outcome: Open Source Computational Framework



Linked Open Data



PatientsLikeMe



USE CASES

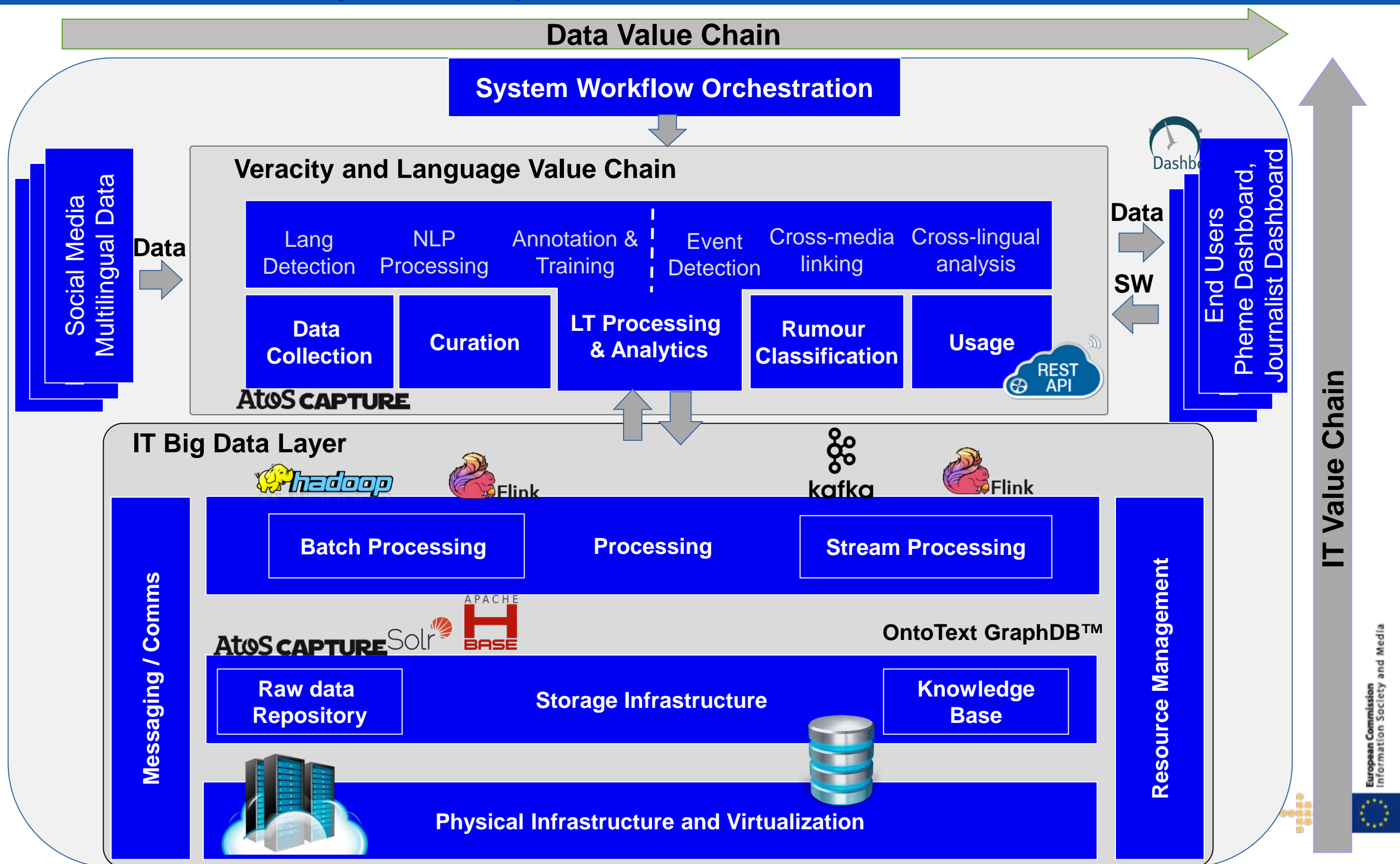


Veracity Intelligence In Patient Care



Digital Journalism

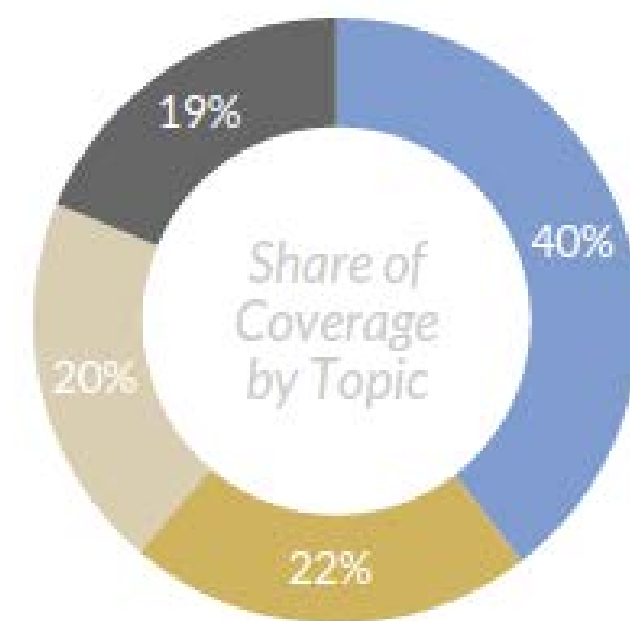
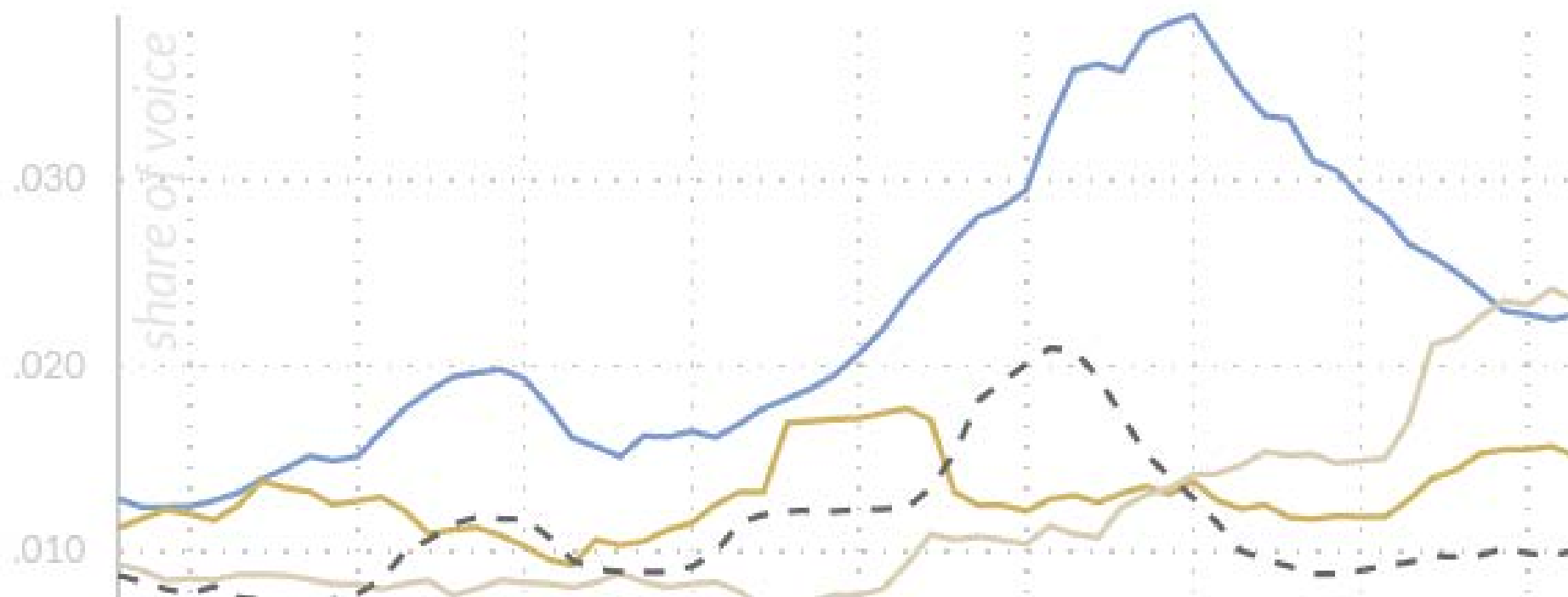
PHEME Big Data Architecture for veracity analysis



- Open-source social intelligence tools for data journalism
 - Involves journalists from SwissInfo.ch, the Guardian, New York Times, and other media
- Improving healthcare
 - What health-related rumours are discussed in patient-clinician consultations
 - Preventative medical advice, e.g. warn patients not to trust certain rumours, when researching their disease online

PHEME Dashboard

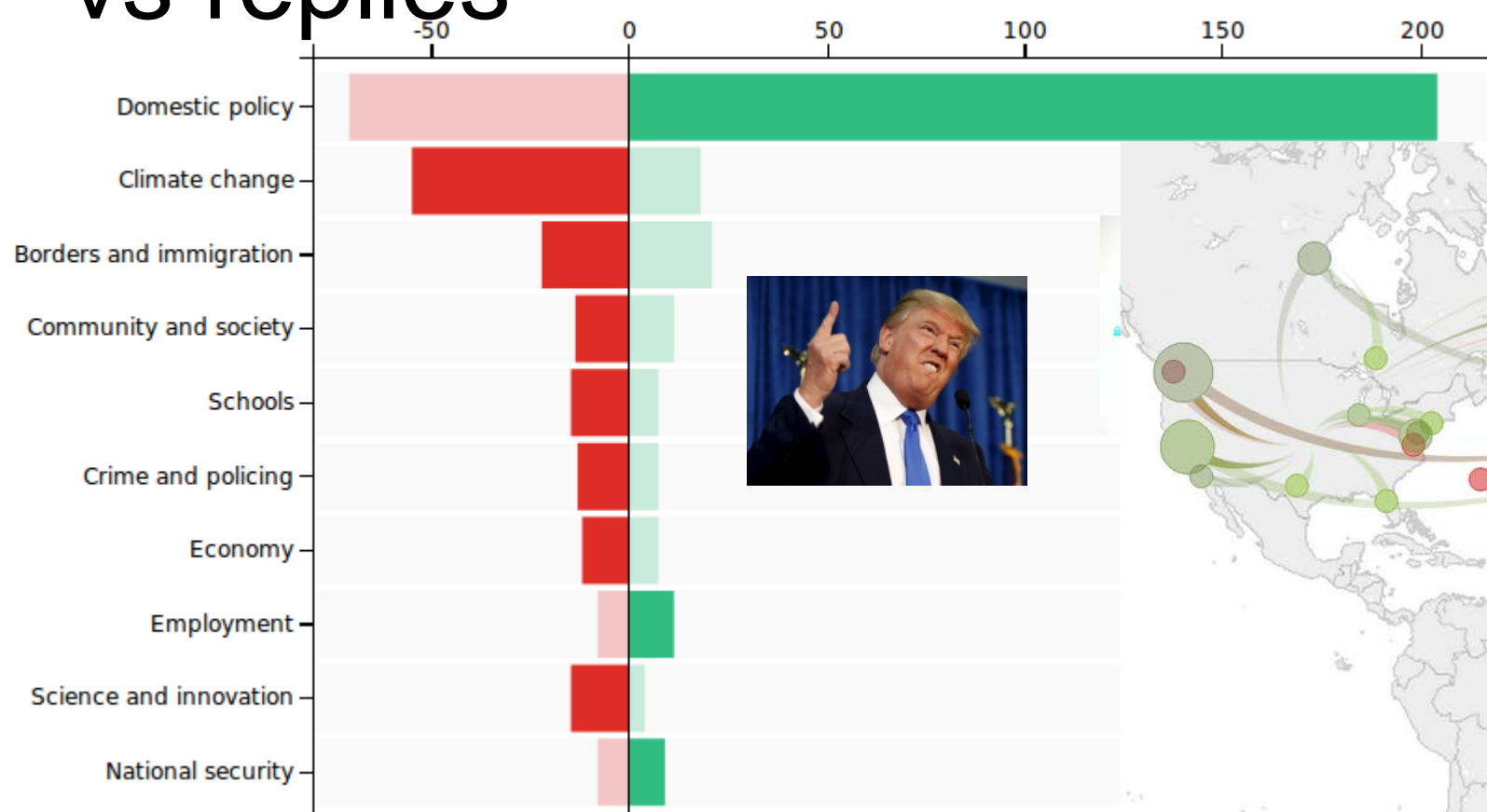
And dynamics Over Time/Location



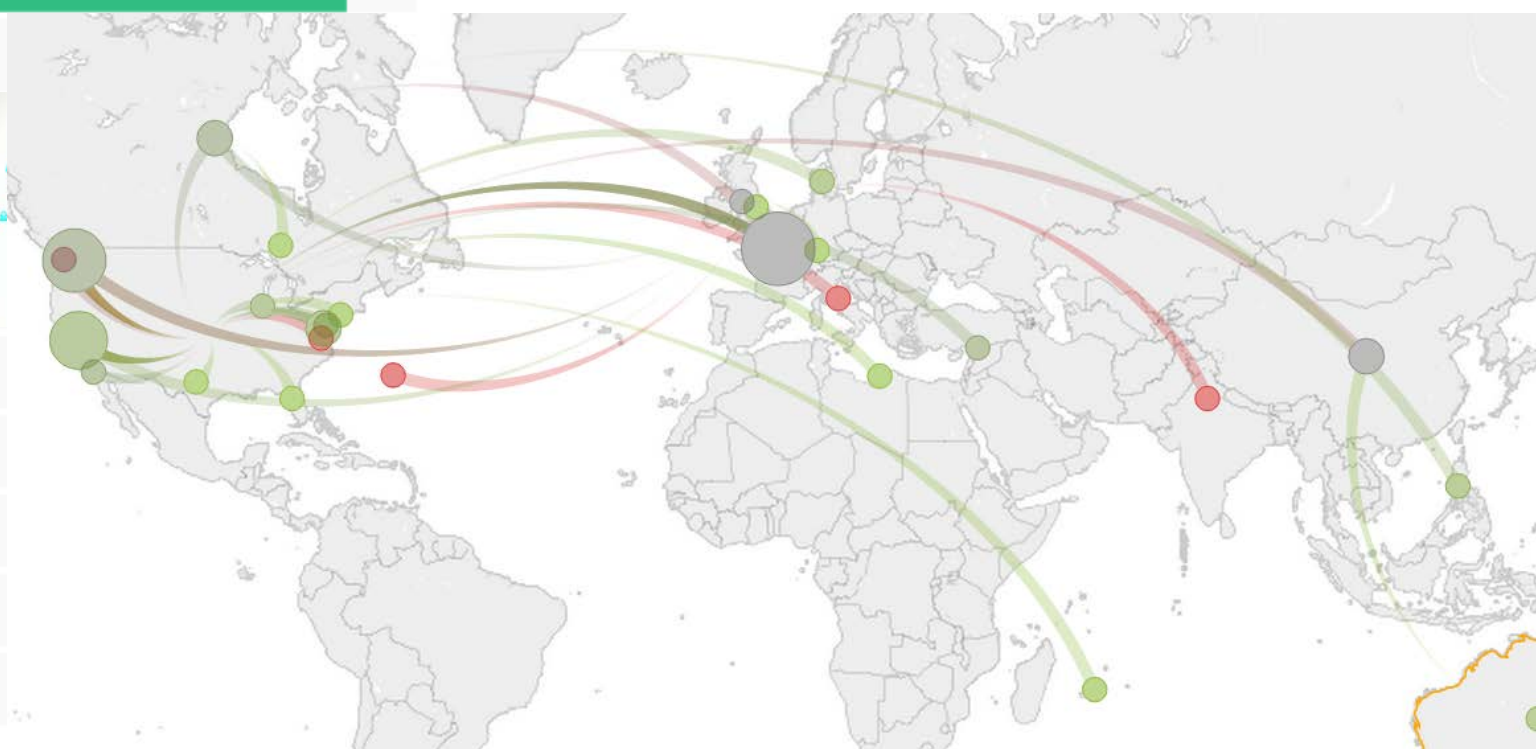
vs replies

Negative Sentiment

Positive Sentiment



Oct 18



Journalism Dashboard Prototype

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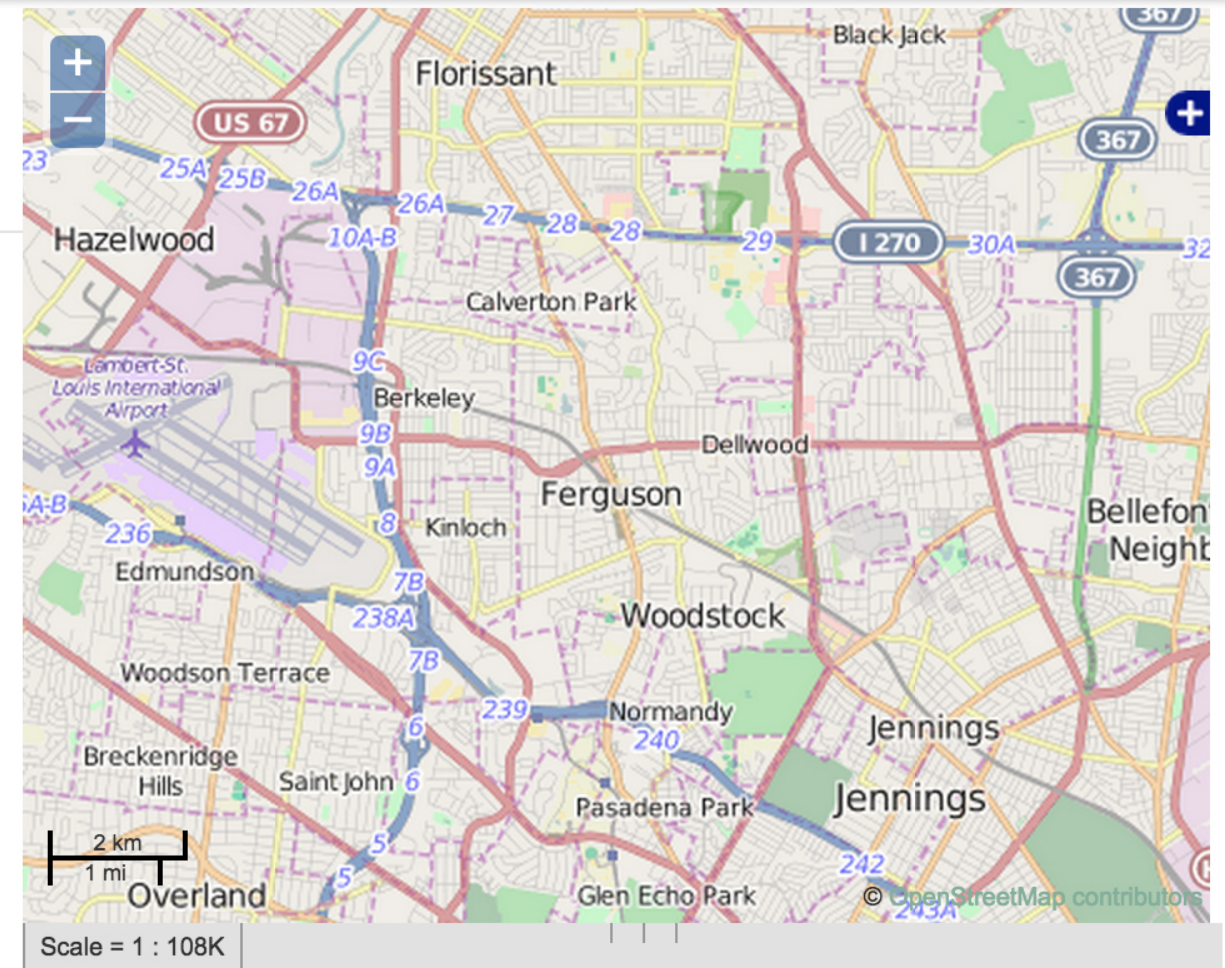
23/10/2014, 15:10

80% True

Police reports indicate Mike Brown a suspect in robbery
#Ferguson @author456

[Follow this rumour](#)

100 retweets



Acknowledgement



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Thanks!

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