

Digital Manifestations

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Abstract

We present the comparative analysis into locations of events in the city of London and the locations of tweets posted that relate to those events. Twitter, a social media site, allows users to post sentences publically (up to 140 characters) which can be seen by any other Twitter user and the location of the tweet can be identified. This paper compares the events of the first week of the London Olympics 2012 with its corresponding tweets. In relation to this, two questions are posed: are the tweeters' location correlative to the corresponding event they are talking about and how does the movement of twitter users manifest over time. By filtering users and keywords, and mapping the tweets, results show that there is a strong positive correlation to where the event is happening physically and where people are tweeting about it. By tracking user movements, trends are also identified concerning how people move around the city with four main patterns.

Two questions are asked and two hypotheses are suggested to initiate the analysis;
1) are events in the city geographically correlative to its associated digital manifestation? The hypothesis to this question is the suggestion that people do not necessarily tweet where the physical event is happening.
2) how does the movement of the digital users correlate to the constituent event? users that are using social media do not move within the city in accordance to the beginning and end of the event. The choice of medium for the research The choice of medium for the research is **twitter** and the choice of city events is the **London Olympic Games 2012** as the most recent, most internationally popular event within London.

Mapping Twitter Data

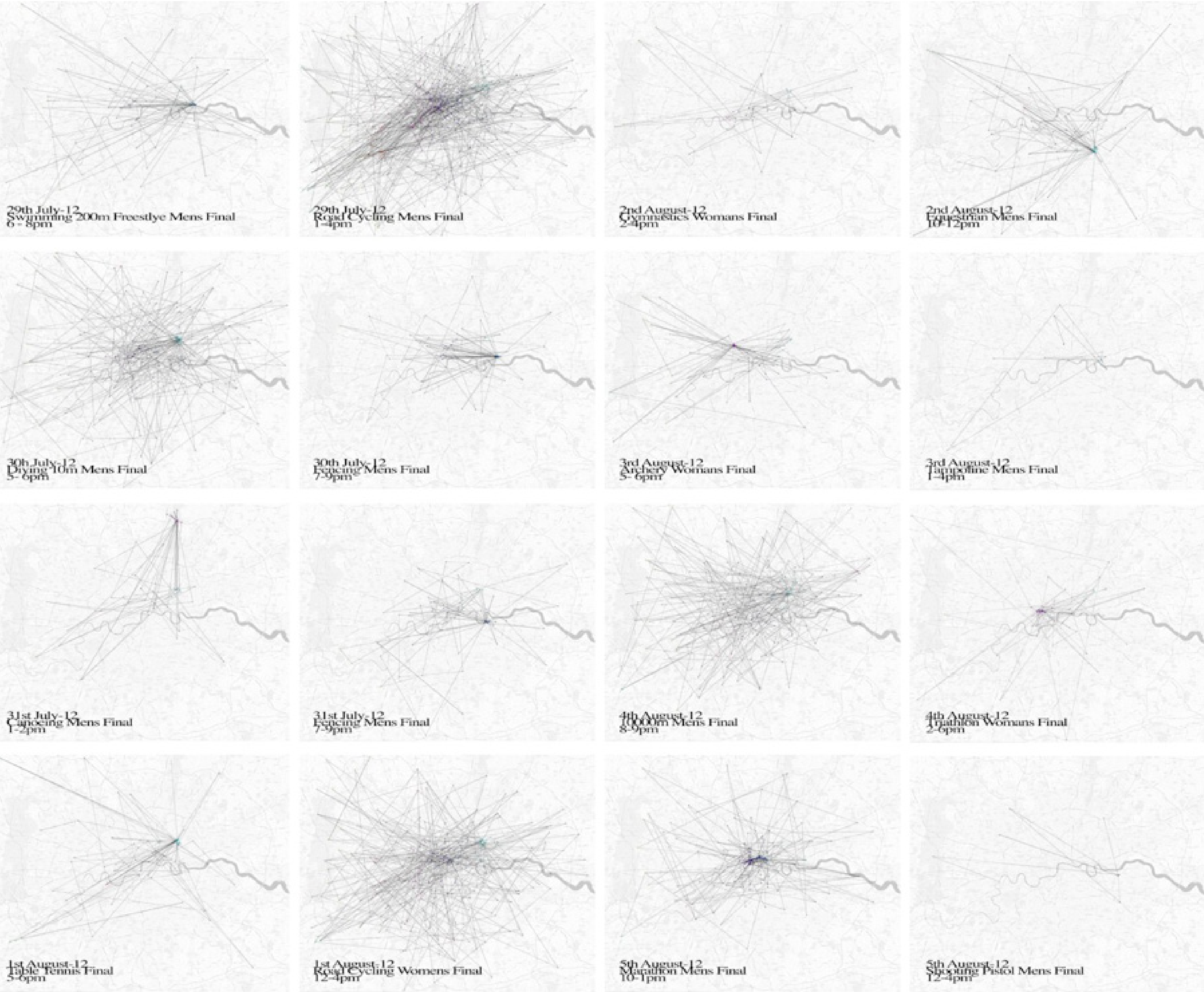
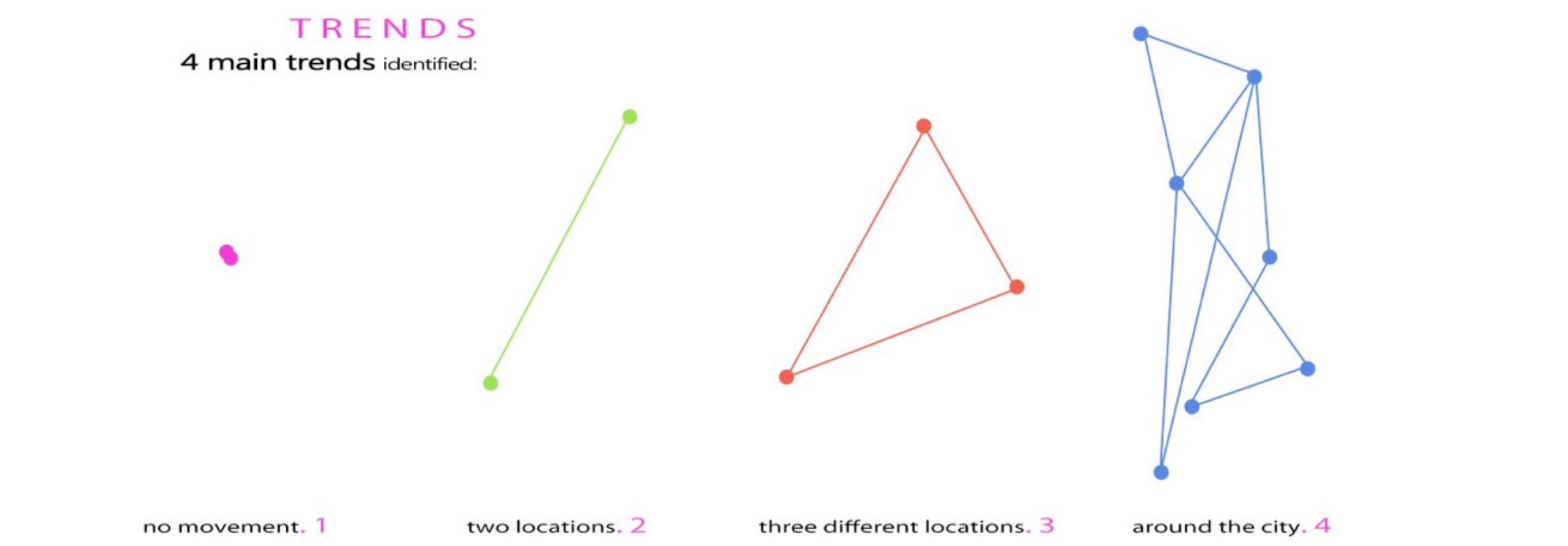
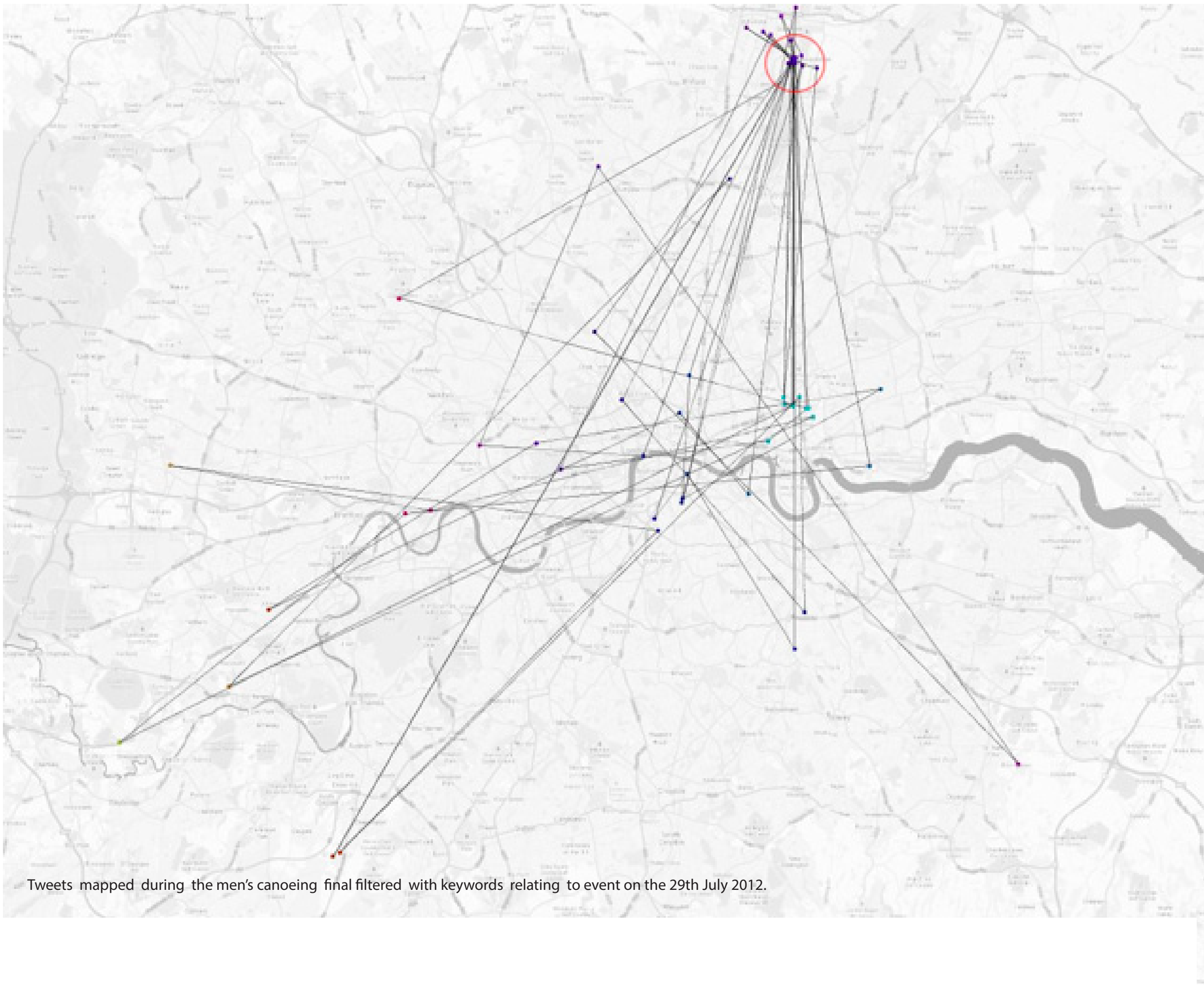
Twitter data was sourced and converted into visuals for comparative analysis. A 'file' containing all geo-located tweets within the 1st week of the Olympics was sourced with each string of data containing: username of 'tweeter, tweet itself, latitude, longitude & timestamp of the tweet.

Two research methods were devised:

- 1) tweets were mapped in relation to their position, time sequentially and at the time of the physical event itself.
- 2) The more advanced task of tracking users and their tweets was instigated to investigate the correlation of user movement from twitter and the physical event. This method would require a more sophisticated initial filtering of tweets to 'departmentalise' the data into its constituent users.

System architecture for visualising the geolocation of tweets is split into:

- 1) Import Twitter data (CSV file),
- 2) Split relevant data into arrays (time, latitude, longitude, tweet string),
- 3) Split 'tweet string' and filter arrays according to string content (e.g. keyword),
- 4) Map data according to timestamp and position at time of event.



References

- Cheng, Z, Caverlee, J & Lee, K 2010, You are where you tweet: a content-based approach to geo-locating twitter, CIKM '10 Proceedings of the 19th international conference on Information and knowledge management, ACM, New York.
- CASA 2012, geo-tagging tweets in a one-week period from July 29th to August 5th in 2012, CASA.
- Procter, R. How 2.6m tweets were analysed to understand reaction to the riots, viewed March 19th 2013

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