

# Information Occupation: Using information science to explore social movements

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## Introduction

We explore how the Occupy Wall Street social movement developed and utilized information communication technologies over a nine month period beginning in September 2011.

Specifically, we perform a network analysis of Twitter data sets, analyze Twitter volume over time, and apply a combination of ethnographic and cyber-ethnographic methods to understand OWS' information practices.



## Historical Background

Beginning in the early 1990s, there have been a variety of different political movements that have effectively accumulated coverage and support as a result of Internet activism and other newer forms of social media.

The ability to send information from one part of the world to another instantaneously created a powerful platform available for people to voice their opinions and form global alliances with others.

### The EZLN movement

- On January 1, 1994 the Zapatista National Army (EZLN) went out into the jungle to take possession of a series of towns in Chiapas, Mexico.
- It was fueled by indigenous' loss of land, and also by five hundred years of being passively ignored and cruelly silenced.

### Protests in Iran

- Presidential election between Mahmoud Ahmadinejad of the Abadgaran party and Mir-Hossein Moussavi of the Independent Reformist Party on June 12, 2009
- Sparked tension between government supporters and opposition groups in Iran
- Ahmadinejad eventually won, and speculation about possible flaws in the voting process initiated a series of protests in the country.
- Government placed restrictions on all forms of Iranian media in an attempt to censor coverage from protests.

### Arab Spring

- Youth driven, pro-democracy uprisings in Middle East and North Africa beginning on December 18, 2010.
- Rulers have been forced from power, civil uprisings have erupted, and major protests broken out.
- Major slogan is "the people want to bring down the regime."

Source: <http://advocacy.globalvoicesonline.org/2011/04/27/mena-journalists-cyber-activists-in-the-line-of-fire/>

## Occupy Beginnings

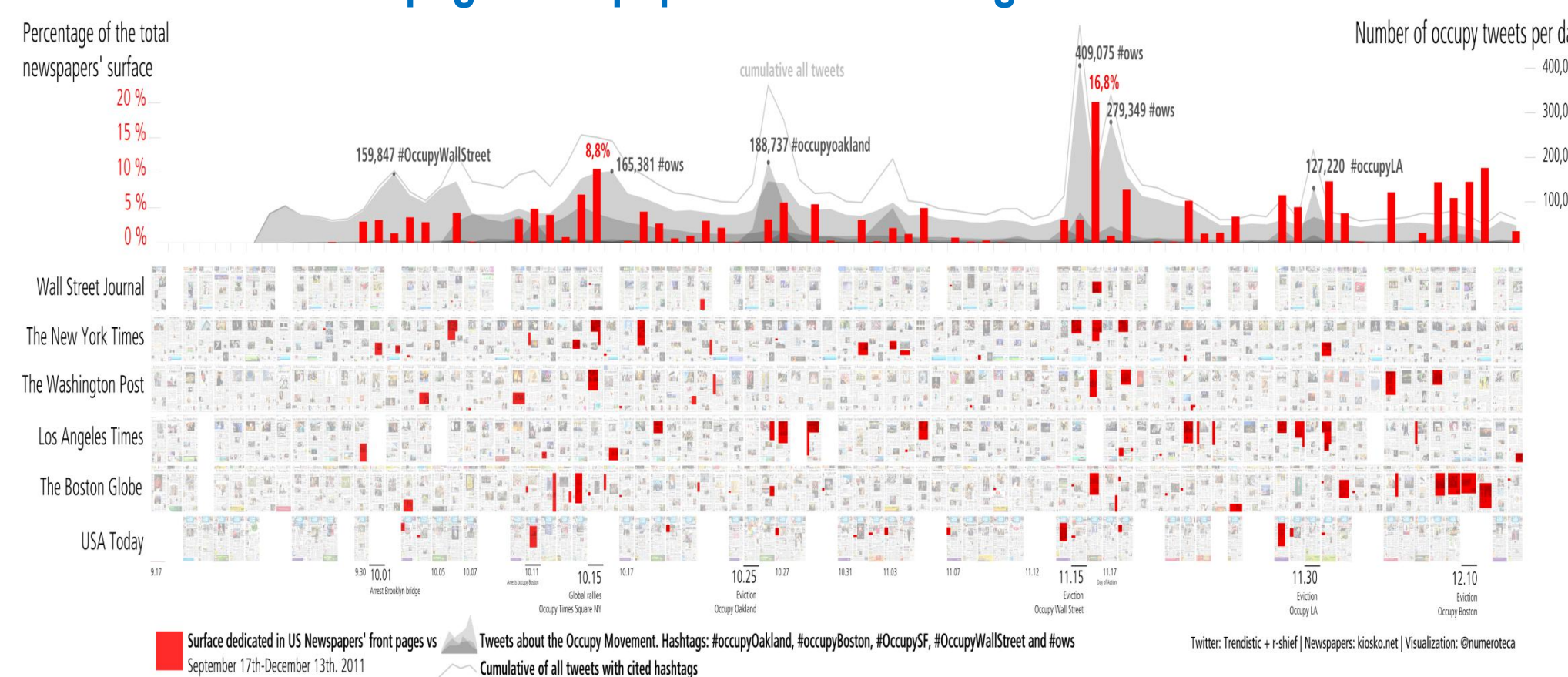
Occupy Wall Street engaged in outreach efforts primarily leveraging Twitter and Facebook from July 15 – September 17, 2011.

- Included journalist Amy Goodman, author/activist John Perkins, politician Van Jones, and rap icon Lupe Fiasco. Combined, they have over 1.1 million Twitter followers.

Increases in sustained participation due to two critical events and increased mainstream media reporting:

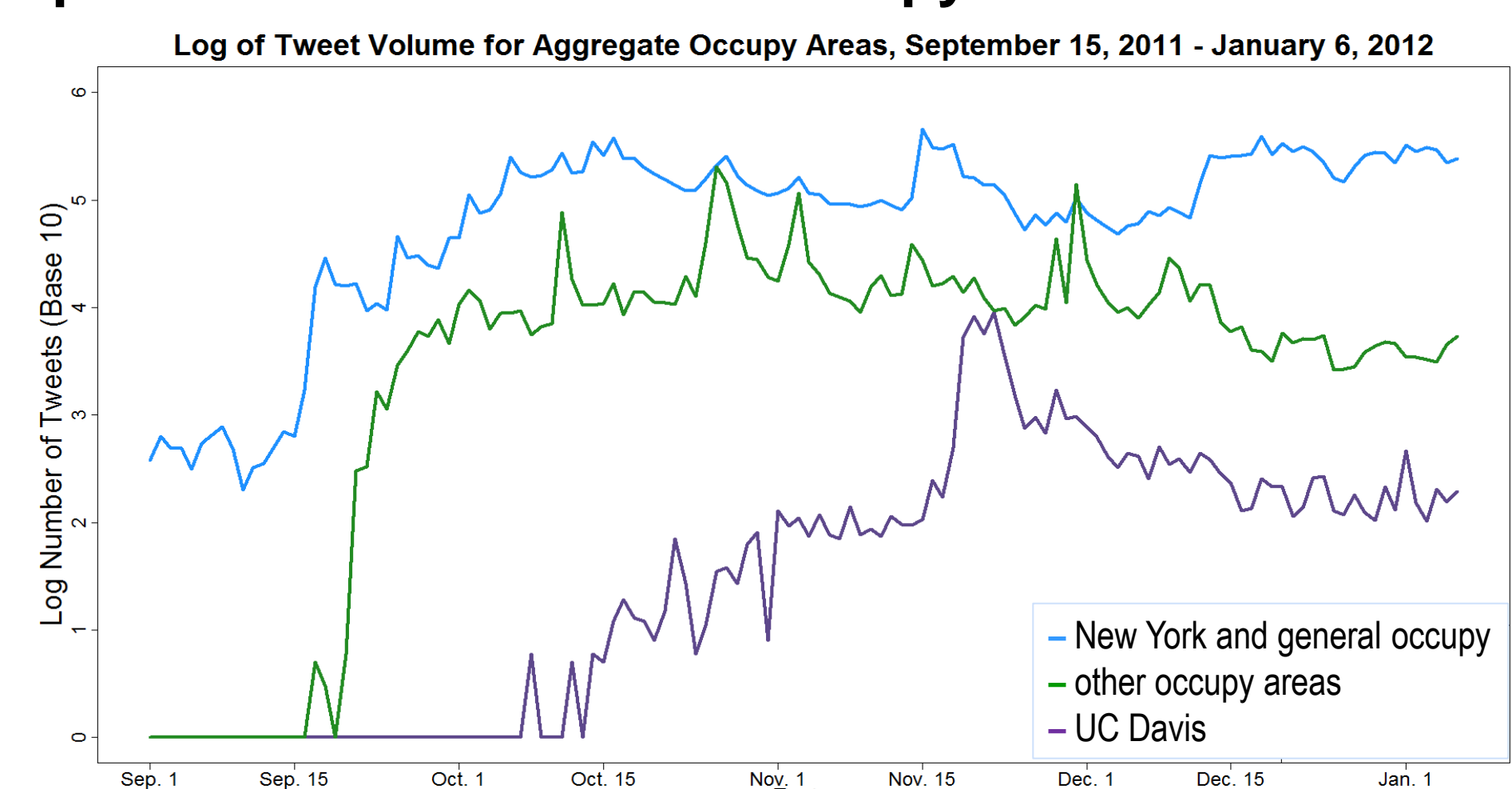
- Pepper-spray incident on September 24, 2011
- Mass arrests of 700 demonstrators on Brooklyn Bridge October 1, 2011

### Front page newspaper media coverage vs. Twitter



## Twitter Volume & Sentiment Over Time

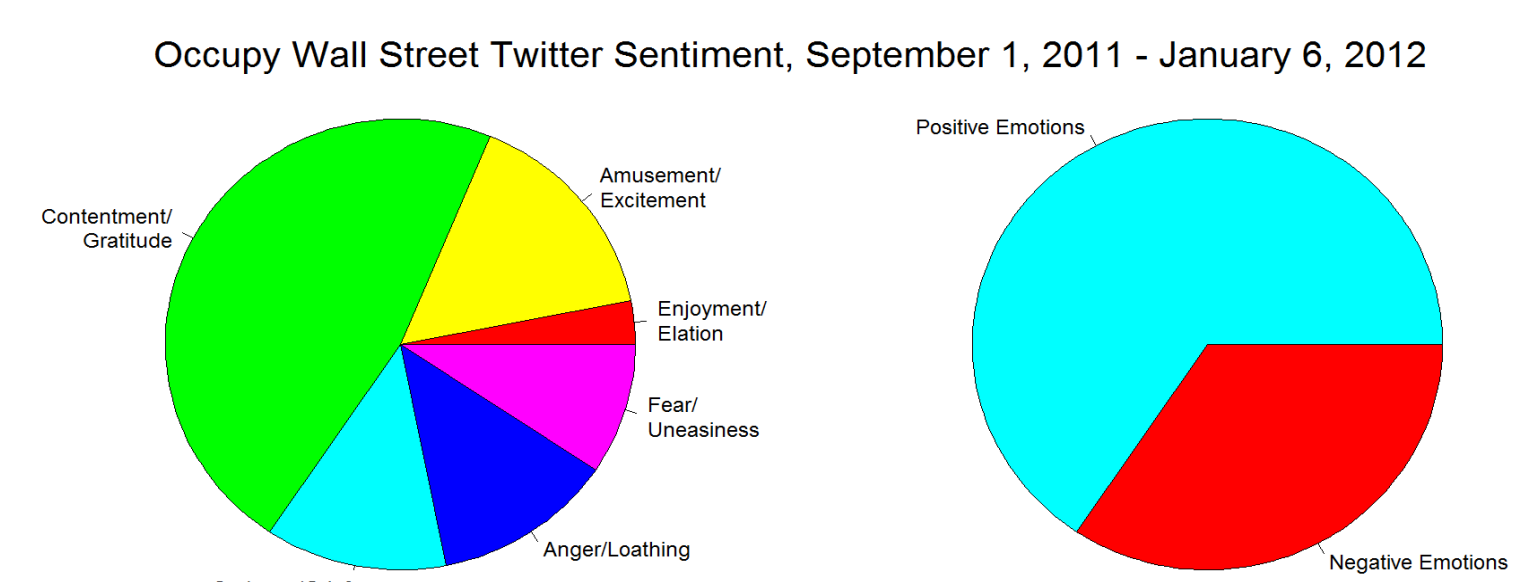
Tweet volume over time can be used to demonstrate how social media has been used as a tool to quickly spread information in the Occupy movement.



### Findings:

- Tweet volume for each of the groups moves in somewhat the same way: a swift rise at the beginning, then a series of peaks and troughs, and a gradual leveling out.
- Some of the peaks correspond across all three groups of data. Each peak can be linked with an iconic image that spread around the Internet as the tweets did.

### Twitter Sentiment



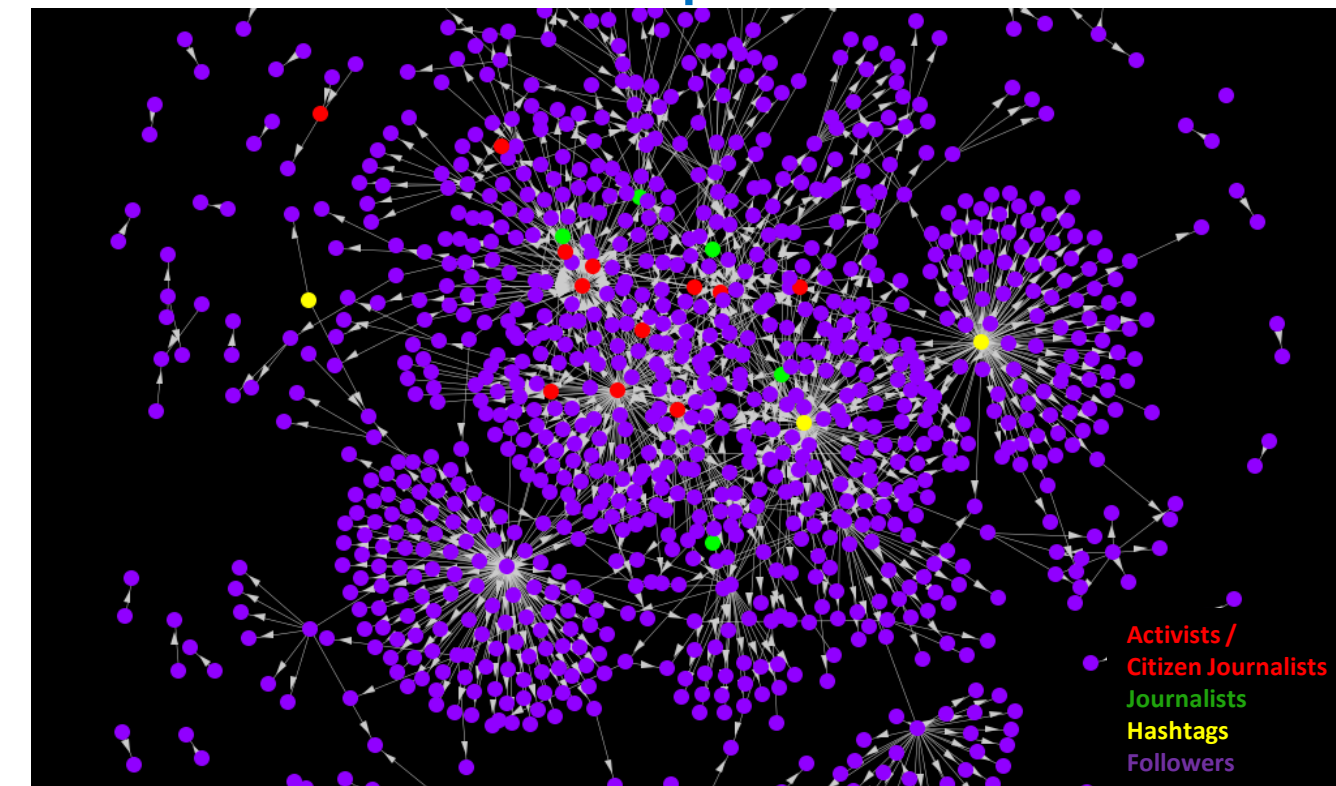
- While the mainstream media's response to the Occupy protests was largely based on negative events and emotions, citizen journalism enabled by Twitter was quick, abundant, and included more positive sentiment than negative.

## Network Visualization & Analysis

We perform a network analysis of a small portion of the Occupy Wall Street movement on Twitter during the April 1 and May 1 2012 actions.

- Using a list that we compiled of 17 activists/citizen journalists and 5 journalists (selected by the researchers based on their Twitter behavior and OWS involvement), we map a network of tweets and retweets.

### Network Visualization of April 1 OWS Twitter Network

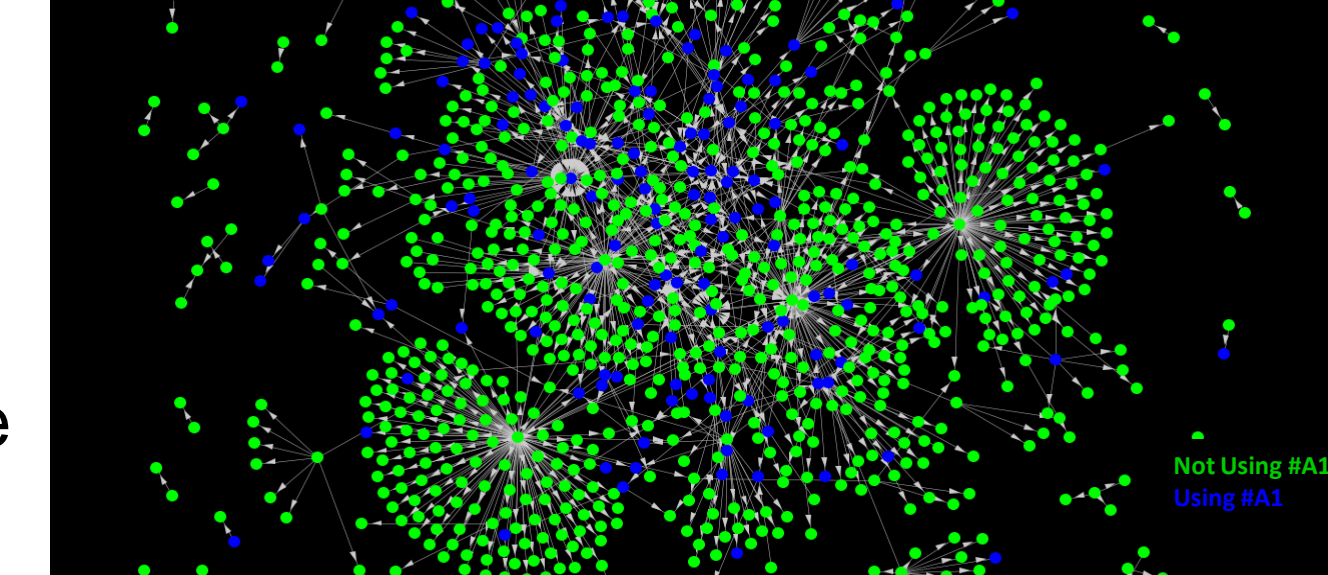


- April 1 data set: 1077 unique users and 1609 retweets
- May 1 data set: 14,372 unique users and 42,919 retweets

### Findings:

- A Twitter user can be influential and central in a network if she is:
  - an active retweeter and/or
  - one whose tweets are actively retweeted
  - the two are not mutually exclusive
- Certain tweeters whom were not on our list of hypothesized influential tweeters ended up being very central in the network. Example: Anonymous
- Those tweeting using the #A1 hashtag do tend to be more central in the network, particularly if we use betweenness centrality, in-degree centrality, or in-closeness centrality measures.

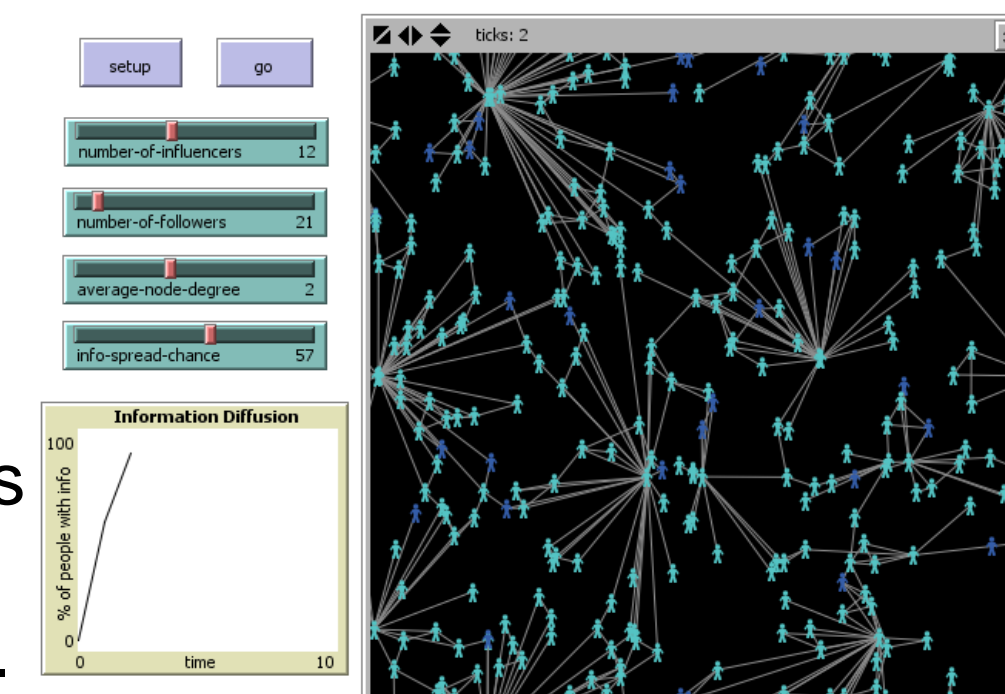
### Network Visualization of April 1 OWS Twitter Network Showing Usage of #A1 Hashtag (closeup)



### Agent-Based Simulation

#### Findings:

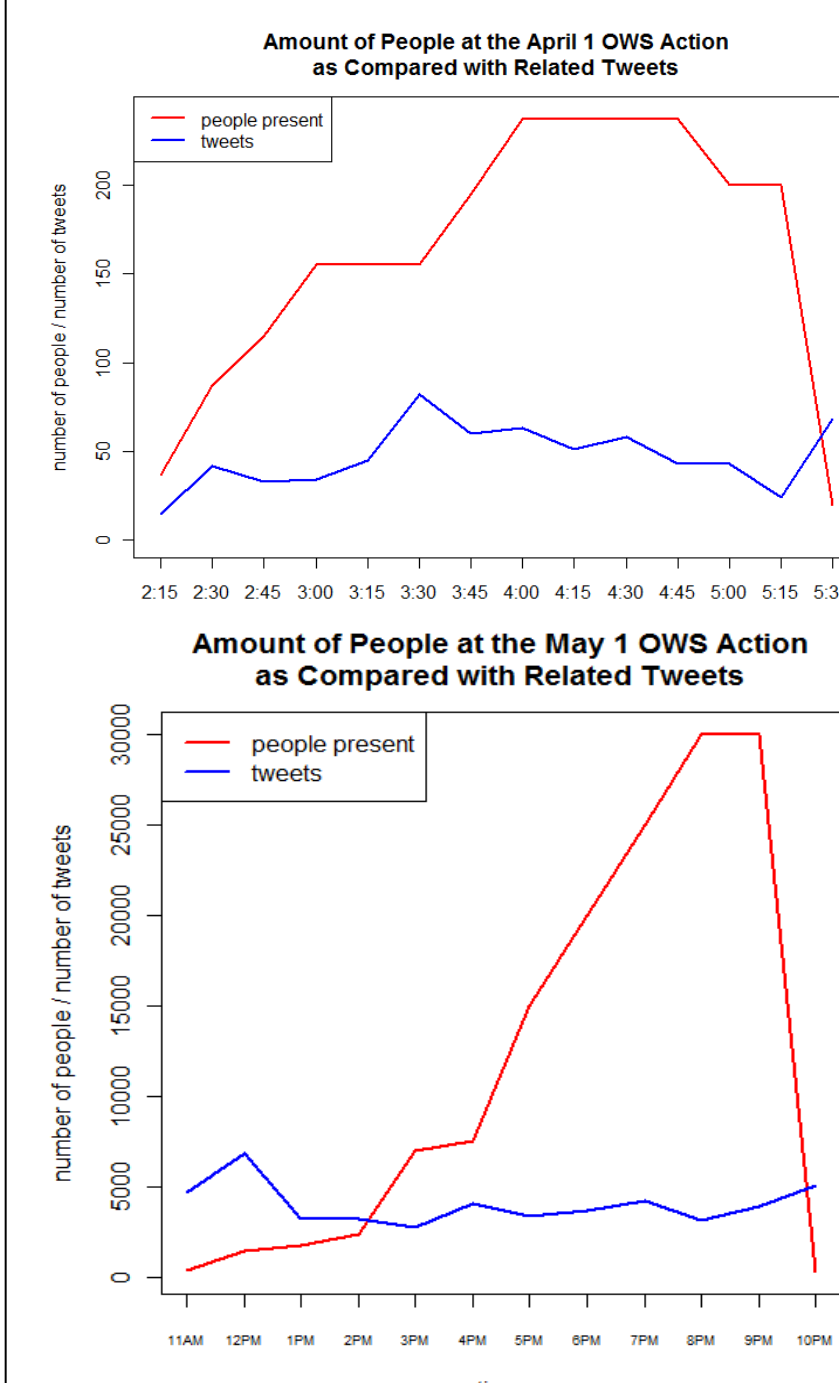
- This simulation demonstrates the rapid diffusion of information that is possible with Twitter and other means of social media.



### Tweet Volume Compared with People Present

#### Findings:

- We see peaks in Twitter activity just before the number of people at the action increases to its maximum, and just after the number of people present decreases substantially.
- Twitter activity occurs most often before and after an action, while the Twitter activity subsides during the most active times of the protest.



## Occupy's Ecosystem

### Physical System

- Liberty Square Park (Zuccotti) in downtown Manhattan.
- Working Groups encampments placed in areas around park (e.g. – Media, TechOps, People's Kitchen, People's Library).

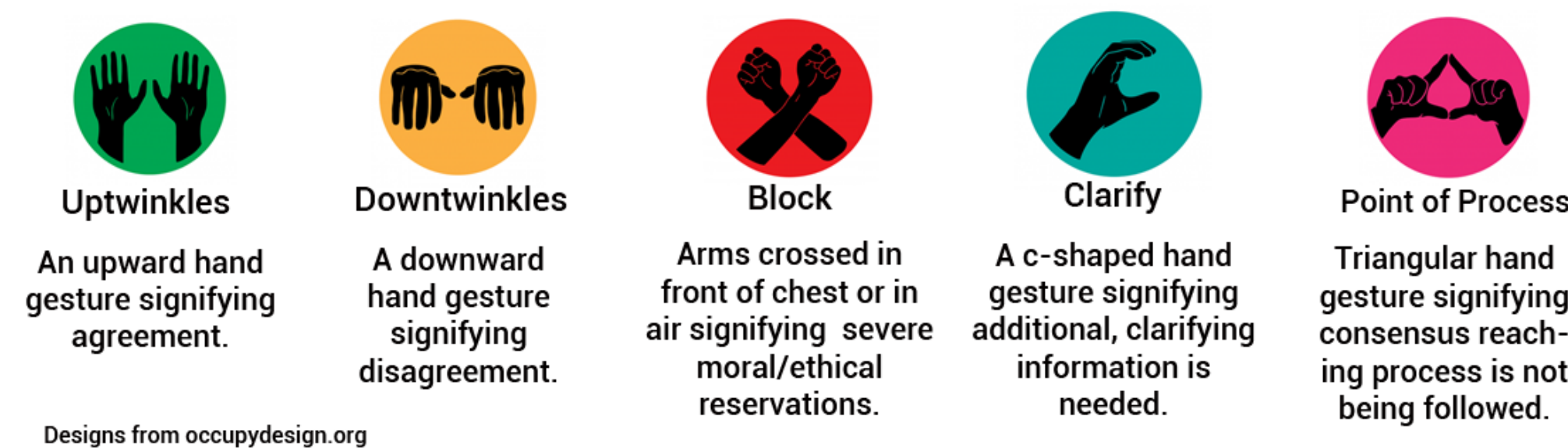
### Technical System

- Freedom Network Foundation towers provided Wi-Fi in park.
- Mobile devices (iPads, iPhones, and Androids) assumed variety of roles.

### Socio-technical System

- General Assemblies were central decision making body.
- Working Groups brought proposals to General Assemblies.
- NYCGA.net, a social networking site, developed to support this infrastructure. Other social media used to disseminate ideas, reinforce Occupy identity, and strengthen community.

### Community Informatics



## Discussion

Occupy's Ecosystem and information practices support the following findings from previous research:

- Online experiences significantly reinforce social networks even while simultaneously connecting actors with others who hold opposing views (Norris, 2004).
- New applications will change the very nature of social action. Webs of trust reinforced by mutual monitoring, graduated sanctions, and dissemination of positive and negative reputation information (Rheingold, 2004).
- Lines between physical worlds & cyber worlds becoming increasingly less blurred. Sense of space, shared practices, shared resources and support, shared identities, and interpersonal relationships strengthened in real life and online (Baym, 2010).
- Uses of ICTs lead to multiple and sometimes paradoxical effects (Sawyer, 2005).

Researchers recommend combination of ethnographic/cyber-ethnographic methods and network analysis to understand phenomena in other disciplines such as behavioral economics, sociology, anthropology, and civic cultural politics.

## Sources / Contact Information / Acknowledgements

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