Networked Organization in Occupy Protests: A Multi-Methods Approach to Big Twitter Data

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Occupy Wall Street: Is it a networked organization?

- What Kind of Network organization?
- How to assess its organizational properties?
- With so many approaches to networked organization:

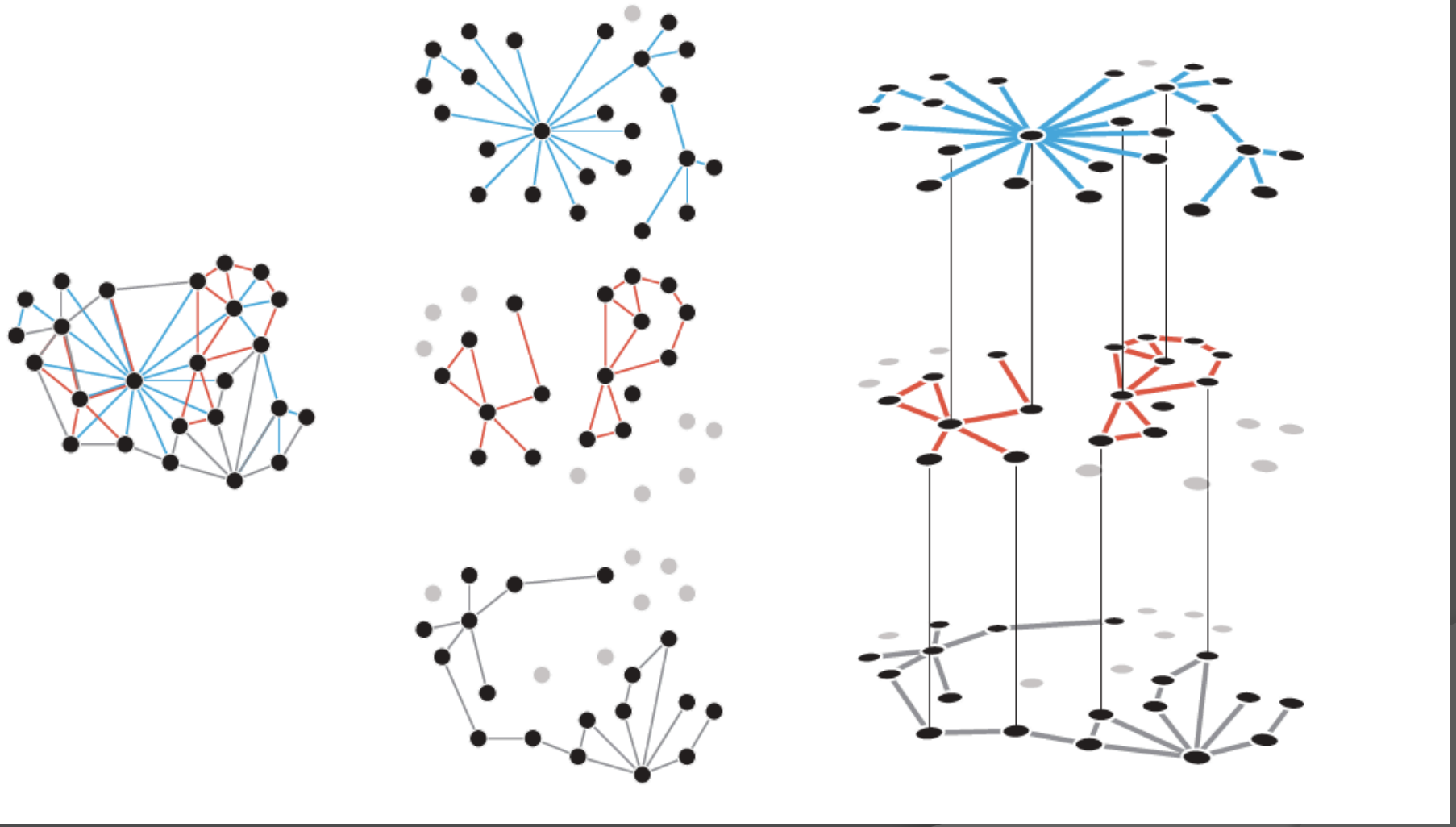
- **Org. Sociology** (Powell) –breaks with market production & org hierarchies –but asserts intentionality & f2f trust
- **Political economy** (Ostrom) - bounded community w/ issue focus
- **Communication networks** (Monge-Fulk & Contractor) – unbounded but intentional
- **International relations** (Keck & Sikkink; Mueller) – membership controlled, issue focused
- **Digital media** (Raymond, Rheingold, Castells, Benkler) – peer production & emergent networks but a huge range of org types (smart mobs, file sharing, Occupy, etc)

What are minimum properties of (networked) organizations?

1. Resource allocation
   (resources reflect org type & tasks)
2. Responsiveness of resource flows to external environment & events
3. Capable of long term internal change

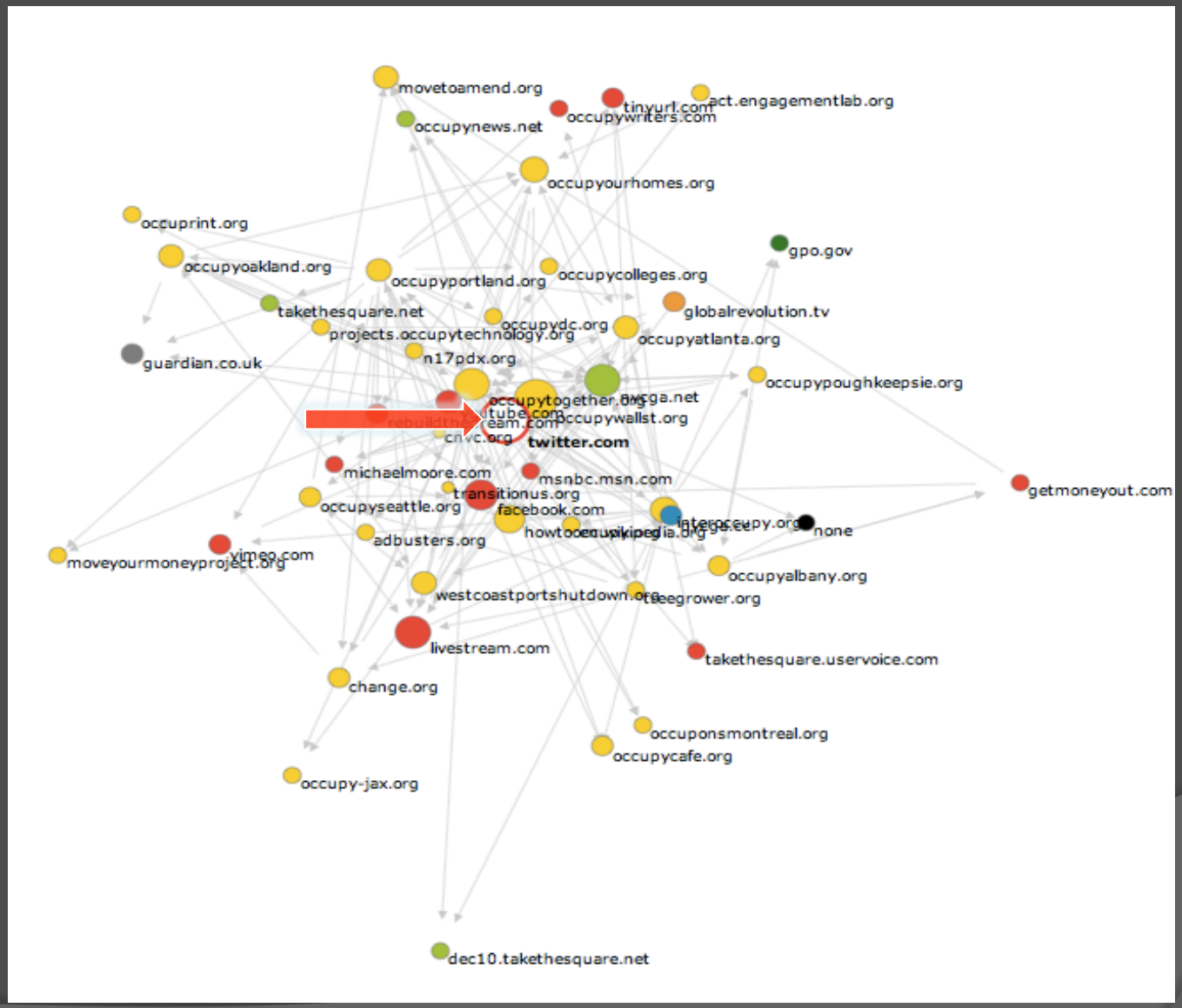
(these patterns are not always functional)

Challenge: Modeling a multi-network organization



Credits: Martin Krzywinski, Genome Sciences Center, Vancouver BC

strategy:
find an integrative network – in this case Twitter



Research design to assess organizational criteria

- Natural experiment during peak occupy activity (Oct-Dec 2011)
- Before, during, after design:
  - Main national (#ows = highest volume) + 2 different city hashtags (#occupyoakland, #occupyseattle)
  - Each experienced external events (police raids – major protest actions) at different times
- Examine shifting patterns of #s, RT, & linked (resource) content
- Links in tweets as resources:
  - News reports, live activist accounts, fundraising drives, sites coordinating campaigns and events, technology resources and developer requests, etc

Data Collection & Sampling

SoMe Lab Occupy Twitter Archive

- Oct 19-June (64+ million)
- Oct 19 – Dec 31 (20+ million) – peak occupy period

- Random samples 225 non RT'd tweets with unique URLs every other day for these #:
  - #occupy, #occupywallst, #ows, #occupyseattle, #occupyoakland
- 25,000+ URLs coded
- Coding applied back into entire SoMe Lab Occupy Twitter Archive

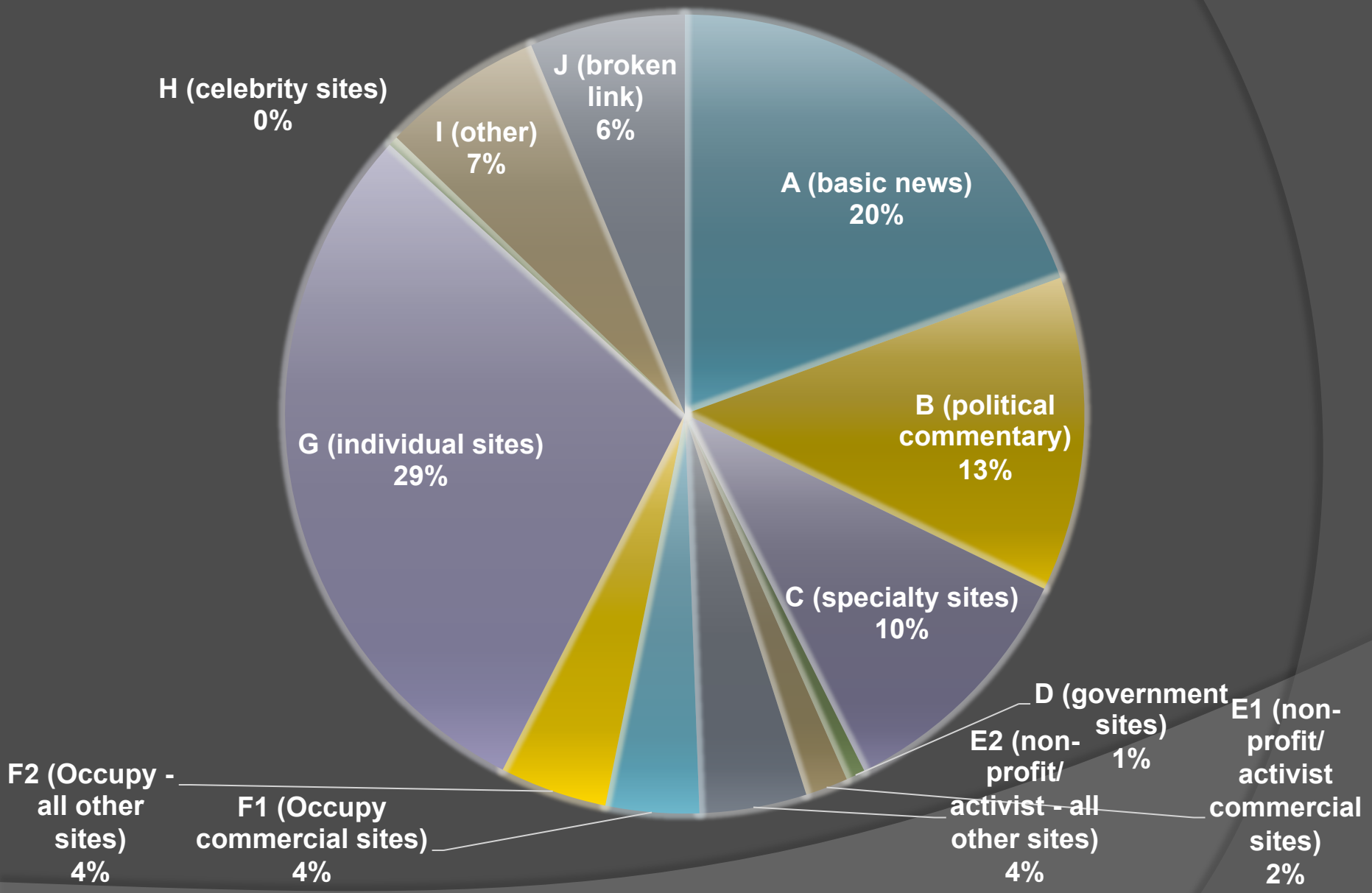
Coding Categories

- Basic News
- Political Commentary
- Specialty sites (eg kickstarter)
- Government sites
- Outside political organizations
- Occupy organization sites
- Individual sites
- Celebrity sites
- Other
- Broken links

Examples of resources

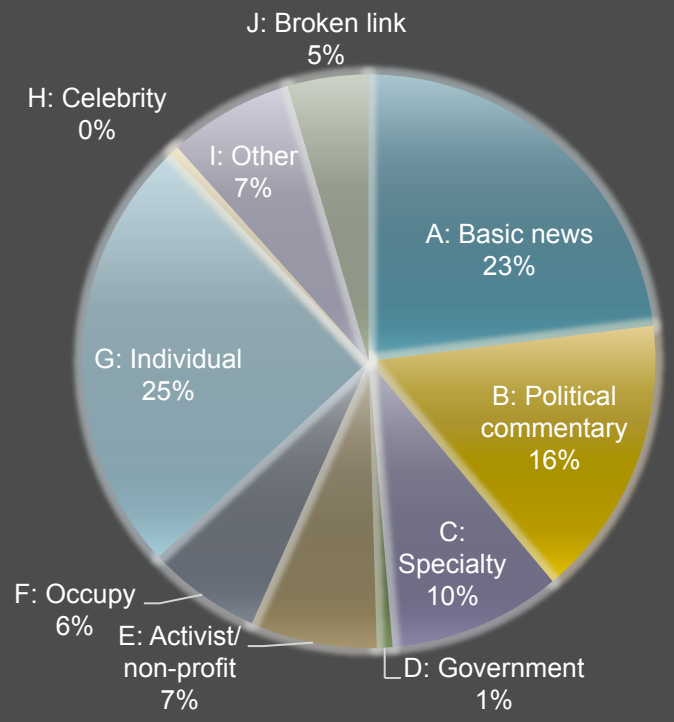
- **Category A: Basic News**
  - www.guardian.co.uk
  - www.huffingtonpost.com
  - www.nytimes.com
  - rt.com
  - www.nypost.com
  - www.salon.com
  - www.washingtonpost.com
  - www.cnn.com
  - www.youtube.com
  - www.bbc.co.uk
- **Category F: Occupy Sites**
  - Occupywallstreet.org
  - globalrevolution.tv
  - occupylsx.org
  - www.occupyboston.org
  - www.nycga.net
  - occupyoakland.org
  - occupywallstreetphotography.com
  - occupylosangeles.org
  - www.occupytheboardroom.org
  - occupystream.com

Links by Coding Category: Total Coded



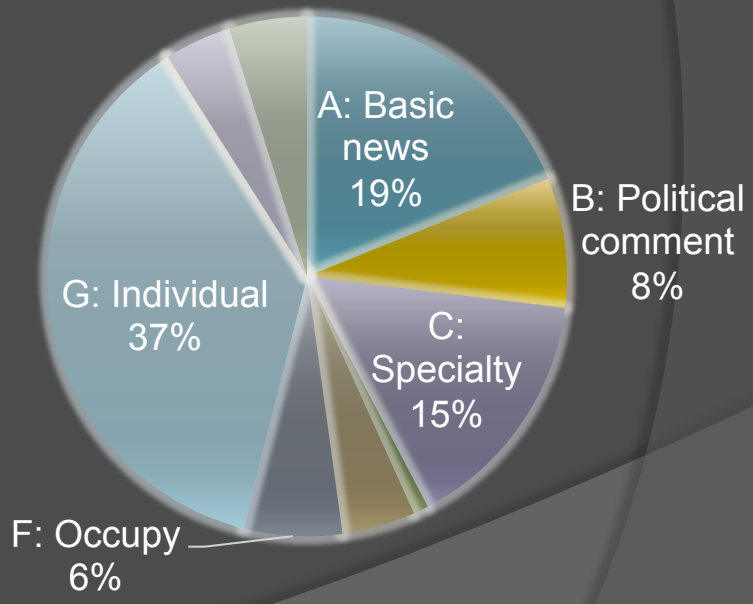
WHAT KINDS OF NETWORKED ORGANIZATIONAL PROPERTIES DO WE FIND IN OCCUPY?

Links by Category #ows, 10/19/11 through 11/18/11



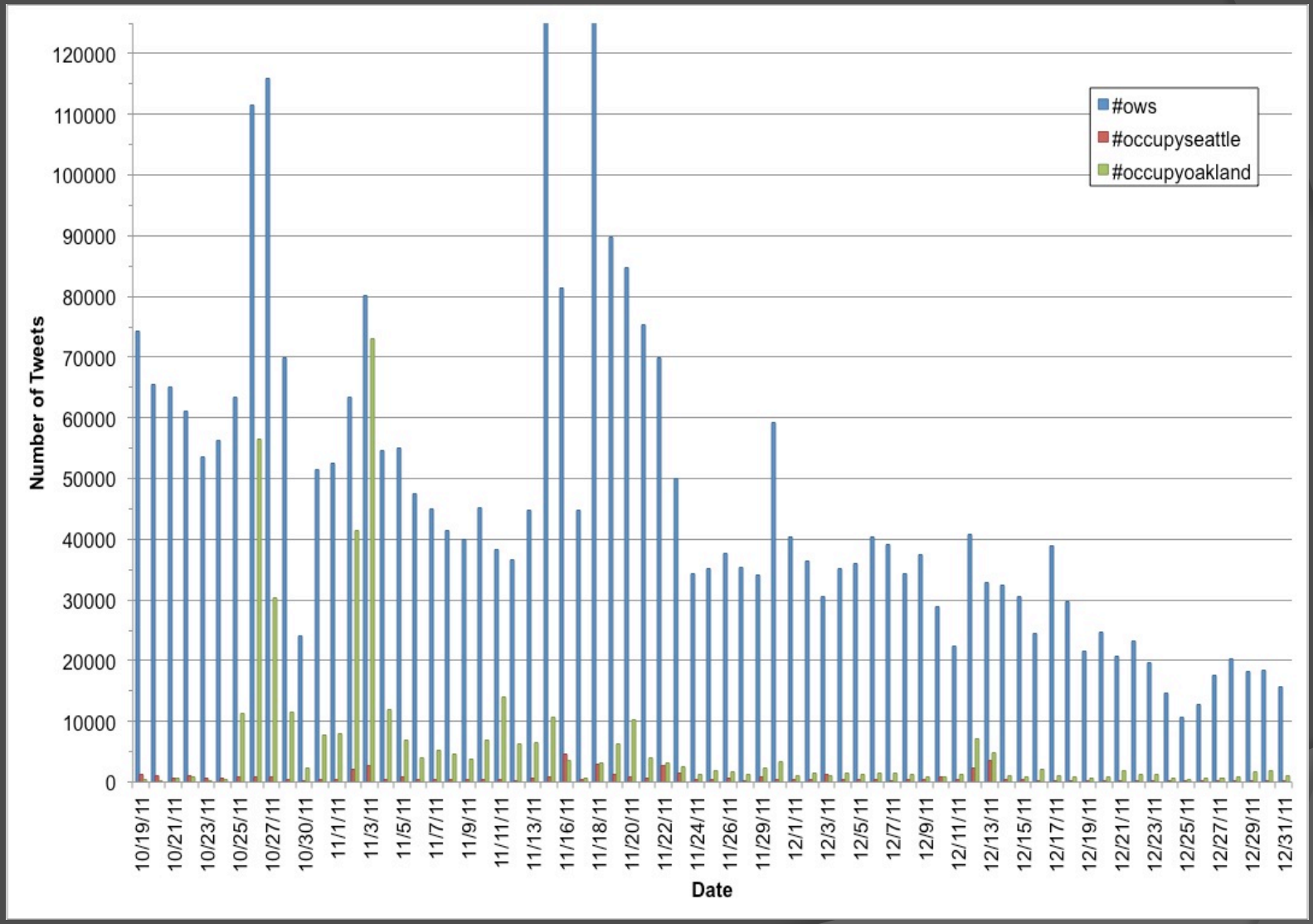
We find different resource flows in different levels of the network

Links by Category #occupyseattle, 10/19/11 through 11/18/11



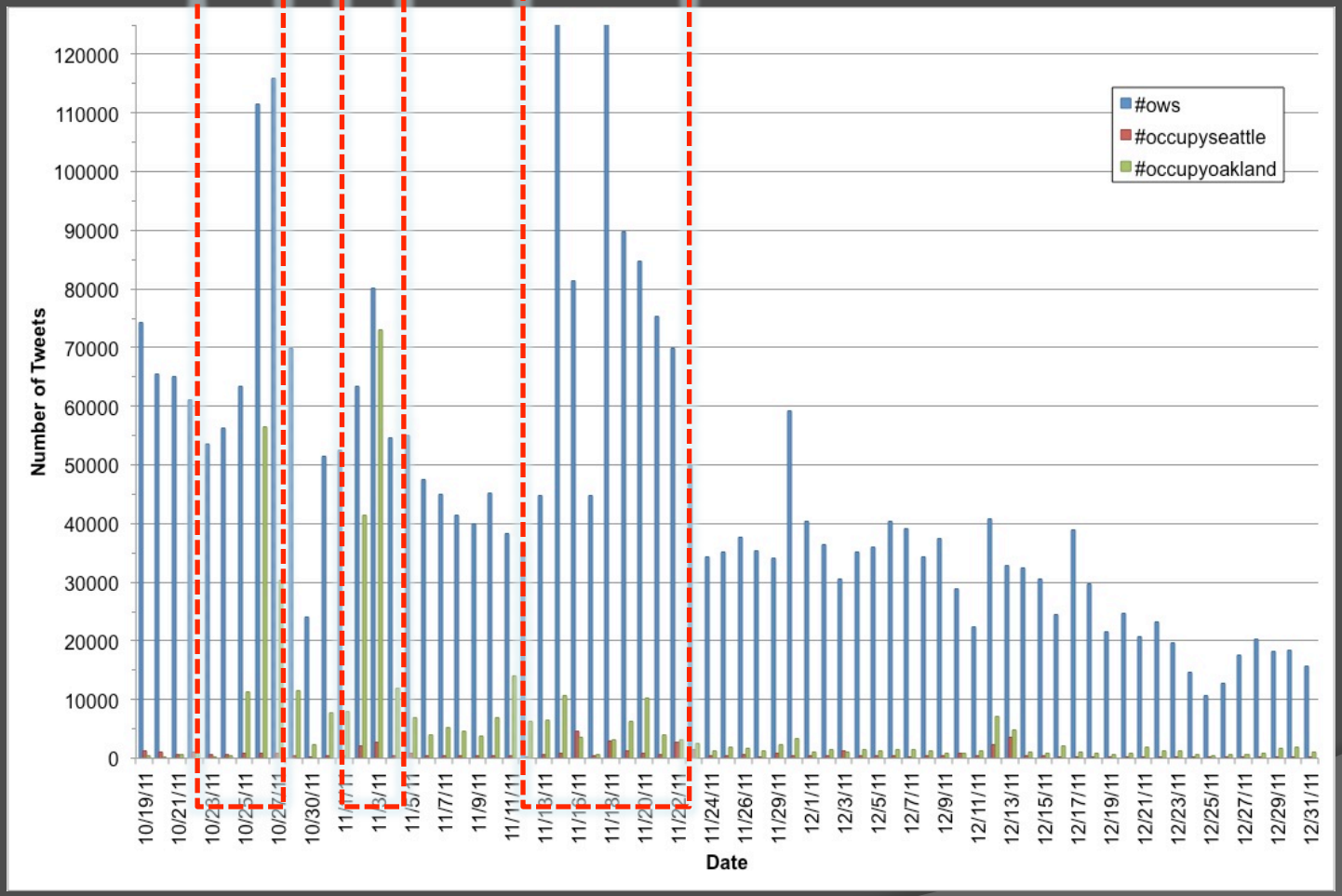
1. Resource allocation

2. Responsiveness to events

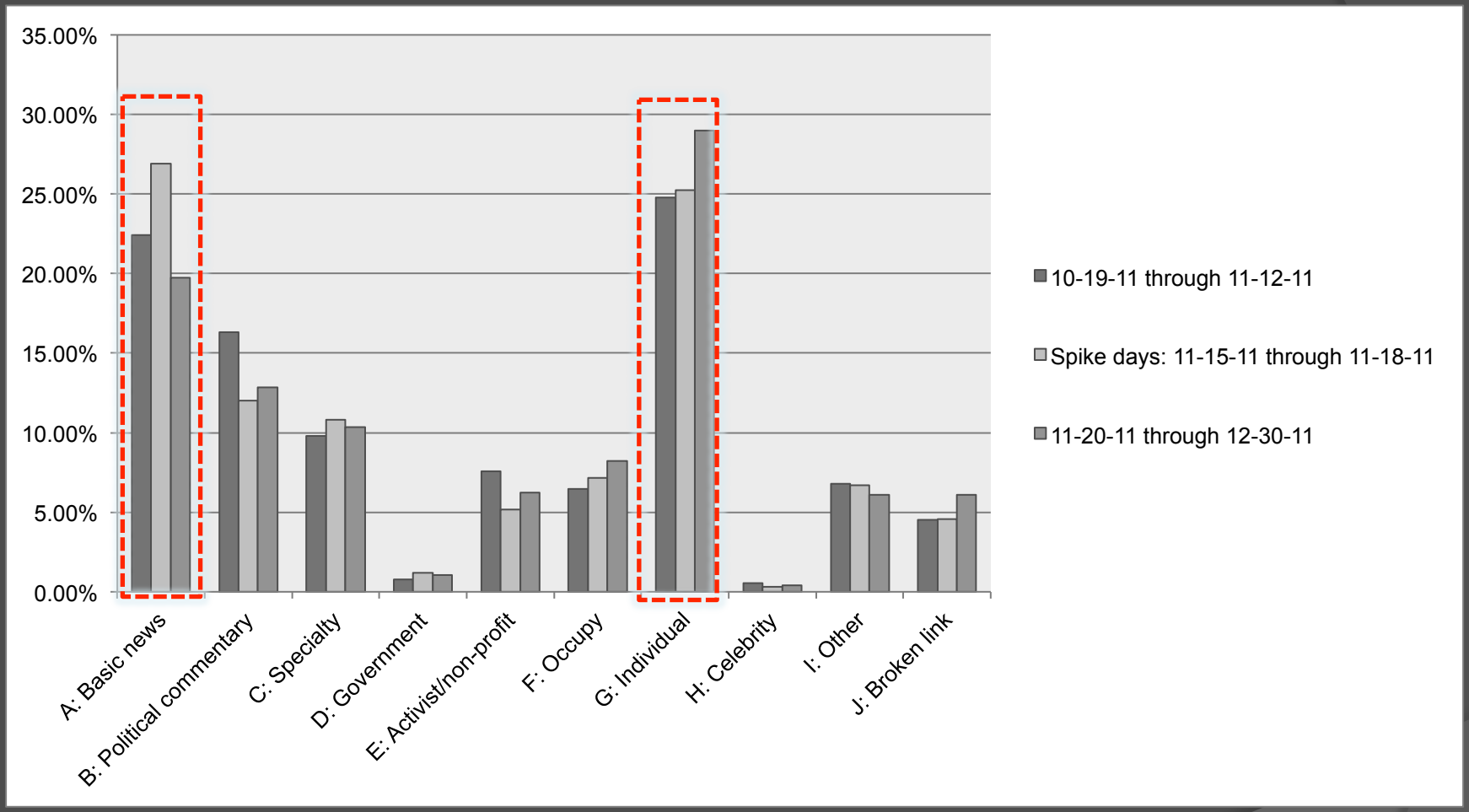


Total number of Occupy-related Tweets between 10/19/2011 and 12/31/2011

2. Responsiveness to events



Resource shifts in largest national hashtag in response to police evictions of Occupy NYC camp



Category breakdown for #ows

3. Evolving organizational process

Average Number of hashtags inserted in tweets from 3 different streams by the Type of Links they Contained (Time Period Following Zuccotti Park Police Evictions)

	A	B	E	F	G	Total:
#occupyseattle						
counts	328	140	100	345	723	1636
avg hashtags	2.31	2.84	2.198	3.02168116	3.7	
#occupyoakland						
counts	1024	403	317	867	5119	7730
avg hashtags	2.6	2.34	2.9340694	4.16370242	4.66	
#ows						
counts	28815	17965	10788	26831	42008	126407
avg hashtags	2.27	2.49	2.72728587	2.77086169	3.4	
Observed Counts:						
	A	B	E	F	G	Total:
#occupyseattle	328	140	100	345	723	1636
#occupyoakland	1024	403	317	867	5119	7730
#ows	28815	17965	10788	26831	42008	126407
Grand total:	30167	18508	11205	28043	47850	135773
Expected Counts:						
	A	B	E	F	G	Total:
#occupyseattle	363.497986	223.012587	135.014915	337.904797	576.569716	1636
#occupyoakland	1717.50576	1053.72084	637.937219	1596.57951	2724.25666	7730
#ows	28085.9963	17231.2666	10432.05	26108.52	44549.1736	126407.00
Grand total:	30167	18508	11205.00	28043.00	47850	135773.00
					p-value:	0.00
					Chi Sq:	3589.858
					df:	8

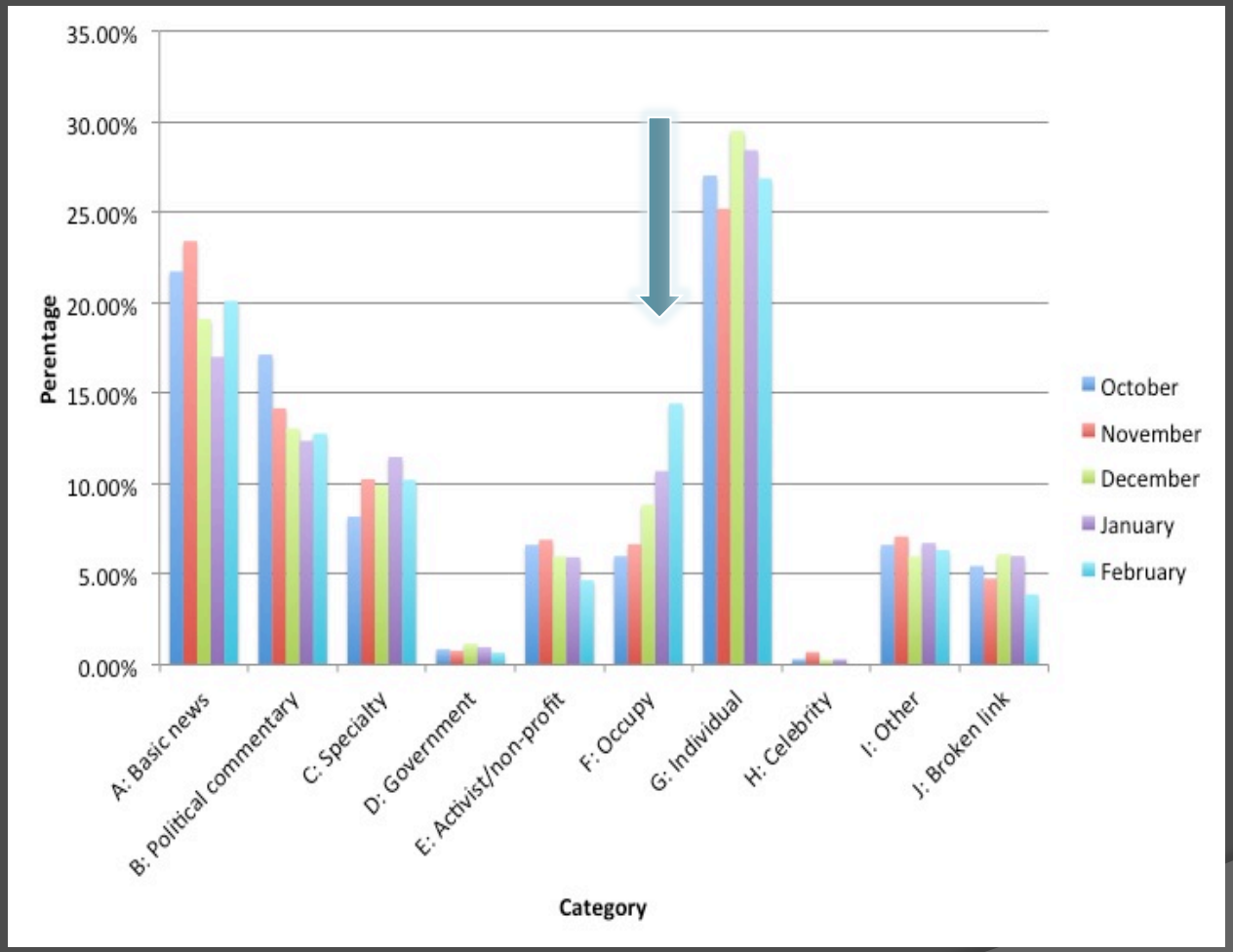
Link Categories (A,B,E,F,G) from coding sample applied back to entire archive of tweets (matching URLs in sample to whole data set)
Nov 18-Dec 31 2011.

Post eviction twitter diaspora?

We find a huge spike in # of hashtags inserted in tweets linking to individuals' sites

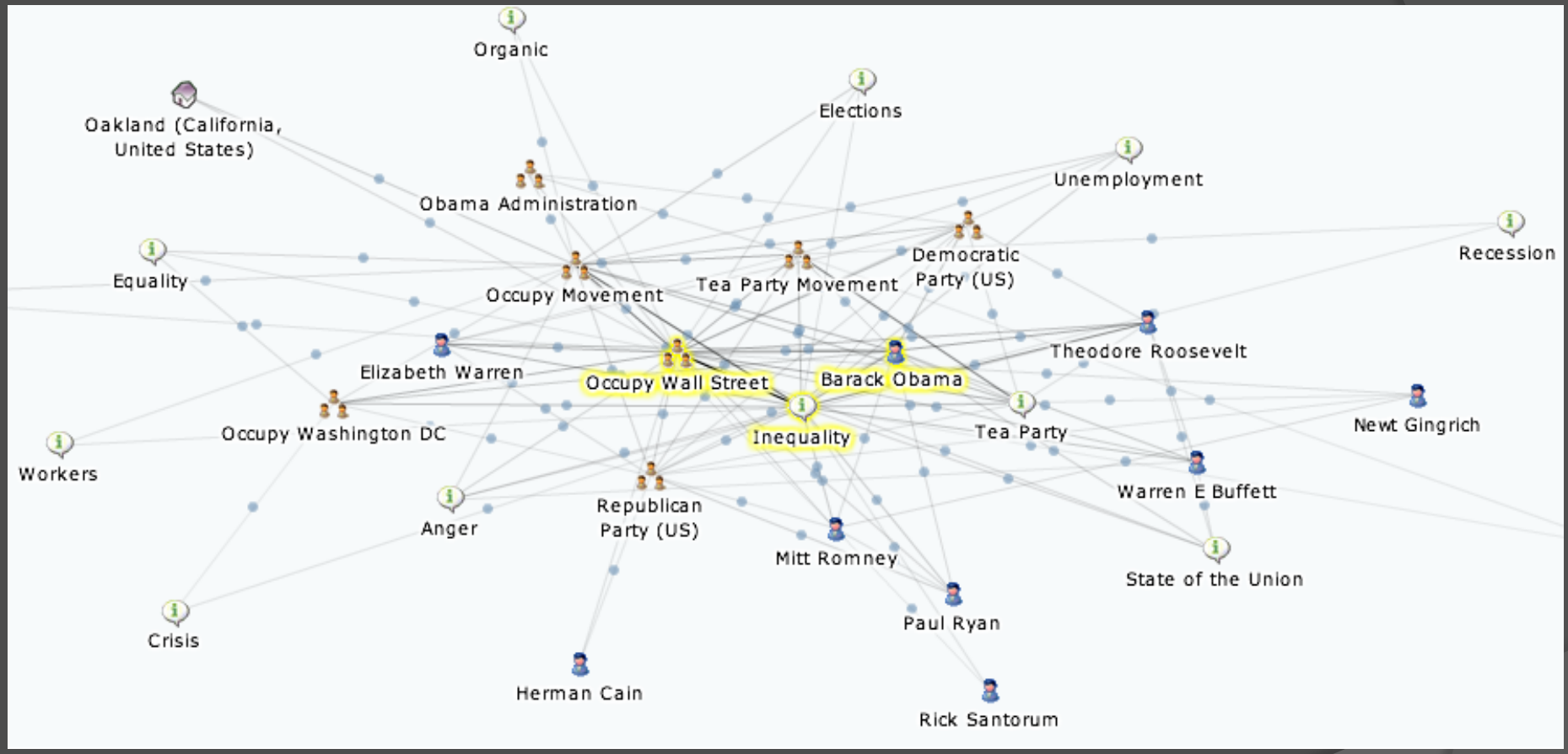
Longer term crowd resource-seeking behavior:

Tweets linking to occupy org sites increase dramatically as protests die out



Coding category breakdown by month for all coded tweets between Oct 2011-Feb 2012

Legacy of occupy: changing US discourse on inequality



Thank you!

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