

# Social Exchange of Cultural Capital: Knowledge Power on Twitter

Tyler Horan

Department of Sociology  
New School for Social Research  
New York City, US

<http://www.tylerhoran.com>

horat351@newschool.edu

# Twitter Networks

- Directed Social Graph
  - In-degree (Following), Out-Degree (Followers)
- Social Capital
  - Accumulated value in social relationships
  - Growth indicative in a user's out-degree value.
- Cultural Capital
  - Cultural knowledge expressed as content in status messages

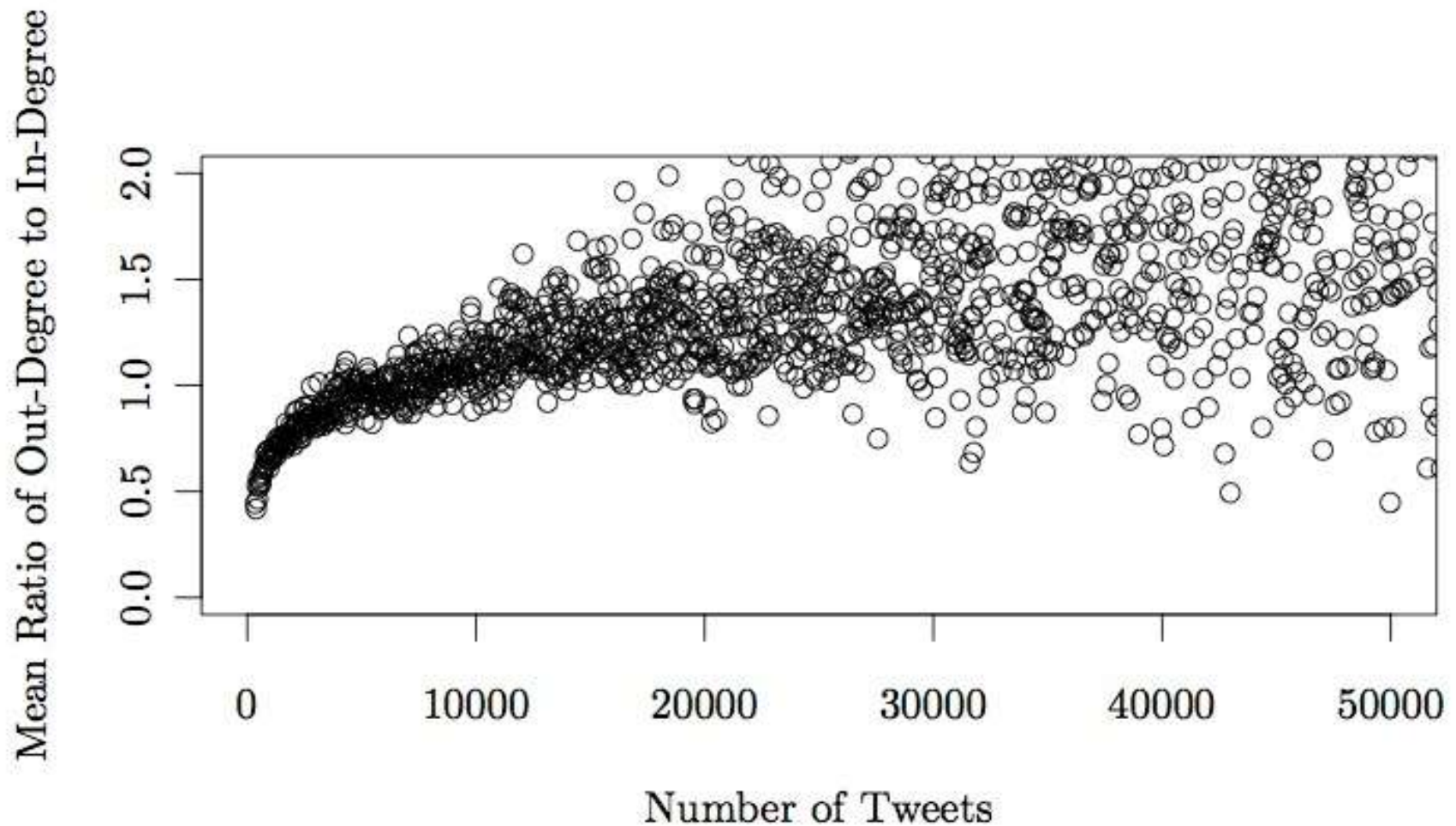
# Hypotheses

- How does *activity* and *content* affect the distribution of users' networks?
  - H1: Networks increase in size exponentially with followers and following figures in relative equivalence.
  - H2: Topics with high volume of discussants have members with larger networks.
- How does social capital increase and what is the social *rationale* behind the increase?
  - H3: An increase in followers is brought about by discussion of topics relating to marginal utility for other users.

# Methods

- Quantitative Data Collection
  - Scrape of all tweets for 1 week (n=20,287,198)
  - Content Topic Identification
    - OpenCalais semantic learning (document categorization) from random sample.
- Qualitative Data Collection
  - 20 interviews with prolific twitter community leaders in New York and San Francisco.

# Activity and Friend/Follower Balance

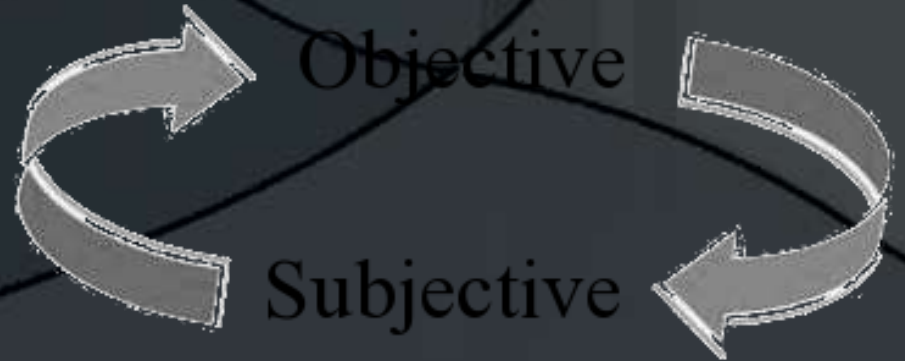


# Distribution of Discussion Content

Category	n	Out-Degree(SD)	In-Degree(SD)	Ratio	Total Tweets
Business & Finance	7696	343.4(425.8)	330.2(452.0)	1.040	7,468(18,393)
Disaster & Accident	1734	298.0(376.1)	298.5(373.9)	0.998	6,604(11,617)
Health, Medical & Pharma	3819	312.5(395.2)	301.2(389.6)	1.038	7,398(15,152)
Labor	2168	271.1(368.6)	255.8(380.5)	1.060	6,321(15,114)
Law & Crime	10530	309.7(391.5)	300.6(415.6)	1.030	8,155(18,414)
Politics	4640	306.3(388.4)	306.9(387.0)	0.998	6,939(15,246)
Technology & Internet	16341	309.2(402.1)	308.2(437.6)	1.003	7,124(16,881)
War & Conflict	1408	306.3(389.5)	306.1(406.2)	1.001	7,002(13,443)
Education	2827	288.8(361.6)	300.9(377.2)	0.960	7,039(14,102)
Entertainment & Culture	17462	319.0(389.7)	320.7(394.0)	0.995	6,680(12,968)
Environment	4965	288.2(366.4)	290.3(364.4)	0.993	6,785(12,093)
Hospitality & Recreation	15997	323.2(398.9)	308.4(393.3)	1.048	6,750(13,102)
Human Interest	34918	300.6(376.3)	314.8(390.1)	0.955	6,582(12,312)
Religion & Belief	8361	315.1(390.1)	319.3(392.0)	0.987	6,076(10,937)
Social Issues	5565	301.7(374.8)	310.7(387.4)	0.971	6,603(11,809)
Sports	9610	299.0(380.9)	310.0(390.1)	0.964	6,830(13,589)
Weather	1648	292.4(376.0)	285.0(374.4)	1.026	7,108(15,673)

# Rationale of Follower Expansion

- Move from subjective to objective in understanding of information on Twitter
- Accounts with high followers are maintained by the social value of the information rather than its marginal utility of content.



# Conclusions

- How does *activity* and *content* affect the distribution of users' networks?
  - H1: Networks increase in size exponentially with followers and following figures in relative equivalence. TRUE
    - Increased activity does lead to larger network size.
  - H2: Topics with high volume of discussants have members with larger networks. FALSE
    - Aside from discussion of *Business & Finance*, content does not affect network size.



## Conclusions (Contd)

- How does social capital increase and what is the social *rationale* behind the increase?
  - H3: An increase in followers is brought about by discussion of topics relating to marginal utility for other users. FALSE
    - Social value trumps marginal utility.