



# Who Watches (and Shares) What on YouTube? And When?

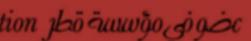
## Using Twitter to Understand YouTube Viewership

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Member of Qatar Foundation  الخصوصي

# Motivation



Justin Bieber

@justinbieber

Follow

so many activities it is making my  
head spin! haha  
[youtube.com/watch?v=l9-jN8...](https://www.youtube.com/watch?v=l9-jN8...)

Reply Retweet Favorite More

YouTube



Step Brothers- 'Activities'

My favorite clip from the movie Step Brothers. Credit in video to Columbia Pictures. Copyright Columbia Pictures [2009]

# Motivation

1st large-scale study of  
combination of  and 

provides **insights** on  
*WHO* watches *WHAT* and *WHEN*

# Twitter and YouTube Dataset



- Data acquisition  
06/06/13 – 06/08/13
- **17Mln** tweets,  
**87K** accounts
- Demographics,  
interests, behaviour



Inter-event  
time



- Data acquisition  
07/07/13 – 08/01/13
- **5Mln** distinct videos
- Categories, likes,  
dislikes, views,  
Freebase topics

**Data is available!**

<http://tinyurl.com/YoutubeAndTwitter>

# Who Watches What?



demographics



behaviour



interests



politics

gender

social

sports

left/right

location

sharing

music

occupation

influence

tech/gaming

# Demographics



share **more popular** videos than



share videos **slower** than



share videos **faster** than



# Behaviour



social

correlates most with **decrease** in



sharing

correlates most with **increasing**  
interest in

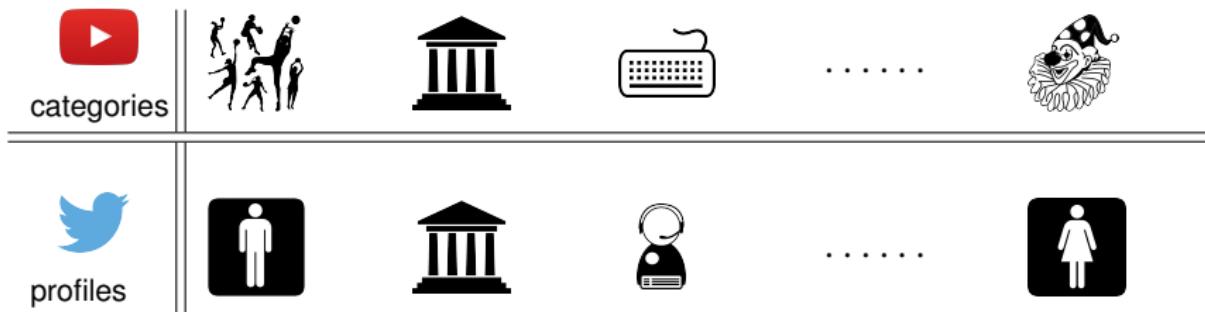


influence

correlates most with **increase** in

Video  
Popularity

# Interests



**Clustering** by YouTube categories reveals Twitter groups:

sports/male, entertainment/female,  
“new junkies”/tech kids, news & politics, ...

Twitter and YouTube **interests are aligned**

# Political Alignment

RANK	LEFT	RIGHT	APOITICAL
1	Minecraft	Barack Obama	Minecraft
2	Call of Duty II	Alex Jones	Call of Duty II
...	...	...	...
6	Film	Ron Paul	Hip hop music
...	...	...	...
13	Album	Police	Call of Duty
14	Call	Mitt Romney	Video blog
15	Song	Russia Today	Episode
...	...	...	...
25	Heavy metal	Boston	NBA
...	...	...	...
27	Episode	US NSA	Super Junior
...	...	...	...
29	Justin Bieber	Bomb	Pokemon
30	Barack Obama	Train	Music

**Right-aligned users share more politically charged content.**  
**Left-leaning users are similar to apolitical.**

# Who Watches What and When?

## by user groups

promotional accounts

non-promotional accounts

## by video content

News & Politics

Gaming

Pets & Animals

## by user activity

amount of shares

# Promotional accounts



A Spanish Life (@spanish\_life)

3-bed 2-bath Bungalow for Sale in Bungalow, Los Montesinos, Alicante Region, Spain:  
[youtu.be/bUAh36N3Qwg?a](http://youtu.be/bUAh36N3Qwg?a) via @YouTube

Reply Retweet Favorite More

YouTube

3-bed 2-bath Bungalow for Sale in Bungalow, Los Montesinos, Alicante Region, Spain



A Spanish Life

Home Videos Playlists Discussion About

Recent uploads

Thumbnail	Title	Length
	3-bed Apartment for Sale in Altea, Alicante, Costa ...	0:42
	3-bed Apartment for Sale in Gandia, Valencia, Spain	0:26
	3-bed Apartment for Sale in Valencia, Spain	0:41

semi-matching usernames  
obvious...

# Promotional accounts



Mallikharjun Patnala  
@MaLiBaBu1987

I added a video to a @YouTube playlist [youtu.be/hTiqalewkik?a](https://youtu.be/hTiqalewkik?a)  
Political Antakshari || Rahul Gandhi  
|| Narendra Modi || Kejriwal ||

View translation

Reply Retweet Favorite More

YouTube

Political Antakshari || Rahul Gandhi || Narendra

teluguone

Home Videos Playlists Channels Discussion About

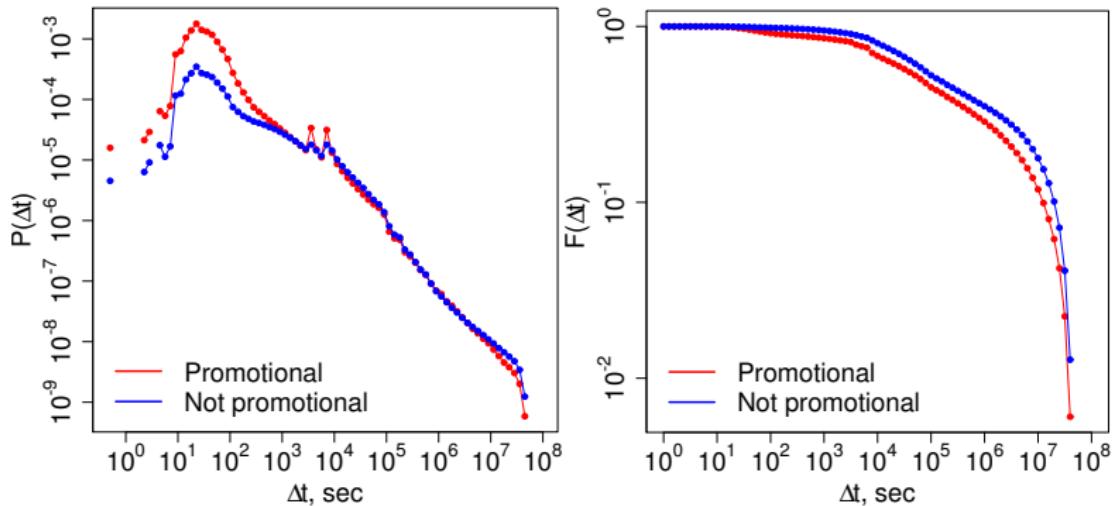
Political Antakshari || Rahul Gandhi || Narendra Modi || Kejri...  
1,762 views 1 day ago  
Political Satire/Political Parodies/Political Humor

Funny Satirical Video on Latest Happenings in Indian Politics

Non-Stop Comedy - <http://www.youtube.com/user...>  
Animated Rhymes Stories -

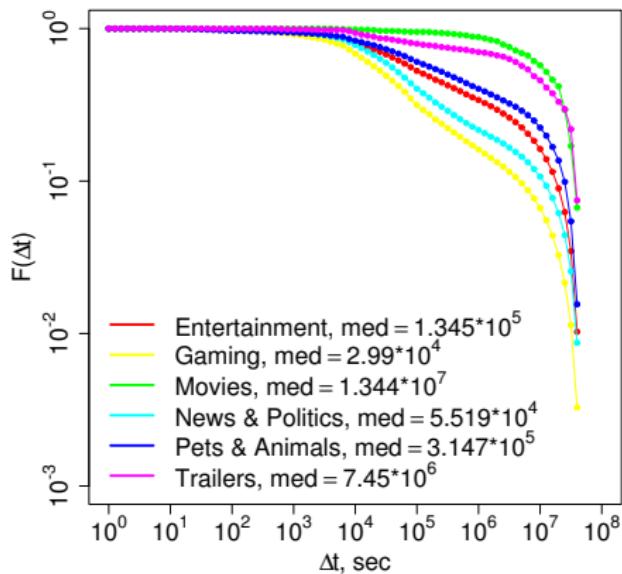
non-matching usernames  
not so obvious...

# ... by user groups



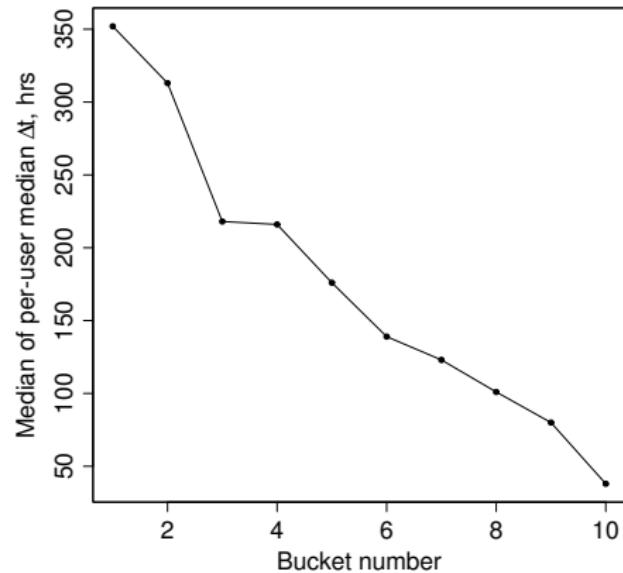
**Promotional** accounts share videos 20 hours **earlier** than  
**non-promotional** accounts

# ... by content



**News & Politics** videos are shared **faster** than **Movie & Trailers**

# ... by user activity



Users **sharing more videos share faster**

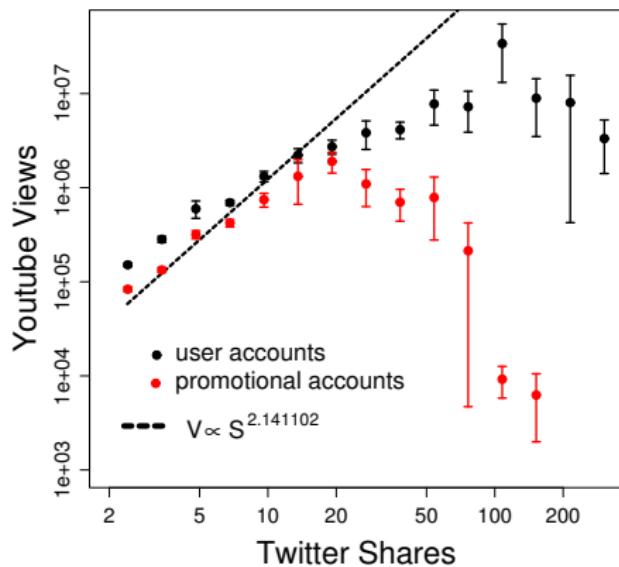
# Video Popularity Analysis

Amount of Shares	First-order Exposure	Social Impact	Second-order Exposure	Share of Voice
✓✓	✓	✓✓✓	✓✓	✗

Among five metrics of Twitter attention  
**social impact** i.t.o. retweets is  
the best predictor for the video popularity

**FoF** is better predictor for the video popularity  
than **mere** amount of **followers**

# Shares vs. Popularity



**Information overload or spamming behavior  
in promotional accounts is detected**

# Chair of Systems Design @ ETH Zürich

Interdisciplinary group ...

... involved in data-driven modeling ...

... of social, socio-technical and socio-economic systems



... where complex networks meet computer science!



**QCRI is hiring!**  
**iweber@qf.org.qa**

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# Q&A

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# WSDM2014 Peer Production/Data Analysis

Is a Picture Really Worth a Thousand Words? - On the Role of Images in E-commerce

Visualizing Brand Associations from Web Community Photos

Inferring the Impacts of Social Media on Crowdfunding

A Better World for All: Understanding and Promoting Micro-finance Activities in Kiva.org

On Image Ranking in Heterogeneous Social Media

Detecting Non-Gaussian Geographical Topics in Tagged Photo Collections