

Characteristics of Friendships and Trends in Chinese Social Networks



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Motivation

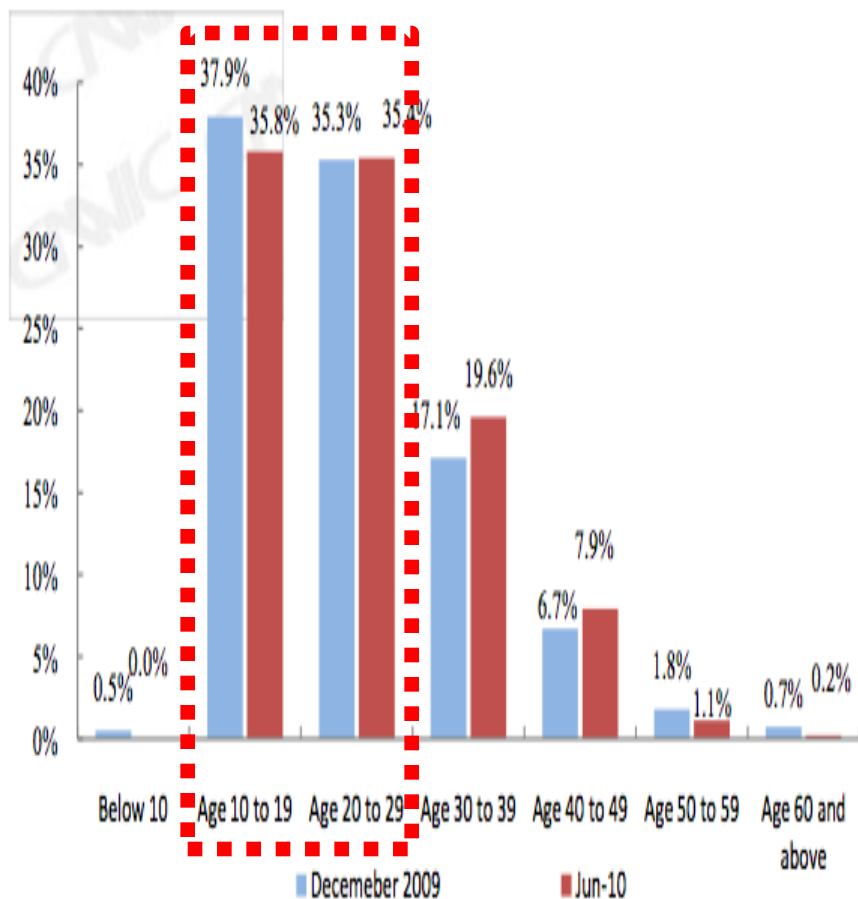
- Growing fascination with the “connectedness” of modern society
- The study of social networks
 - The study of human nature
 - More than ever we are connected to each other
- The study of online social networks
 - How are people connected in an online setting
 - Sometimes it is hard to directly observe a social network
 - Hidden/hard-to-reach populations
 - Implicit connections



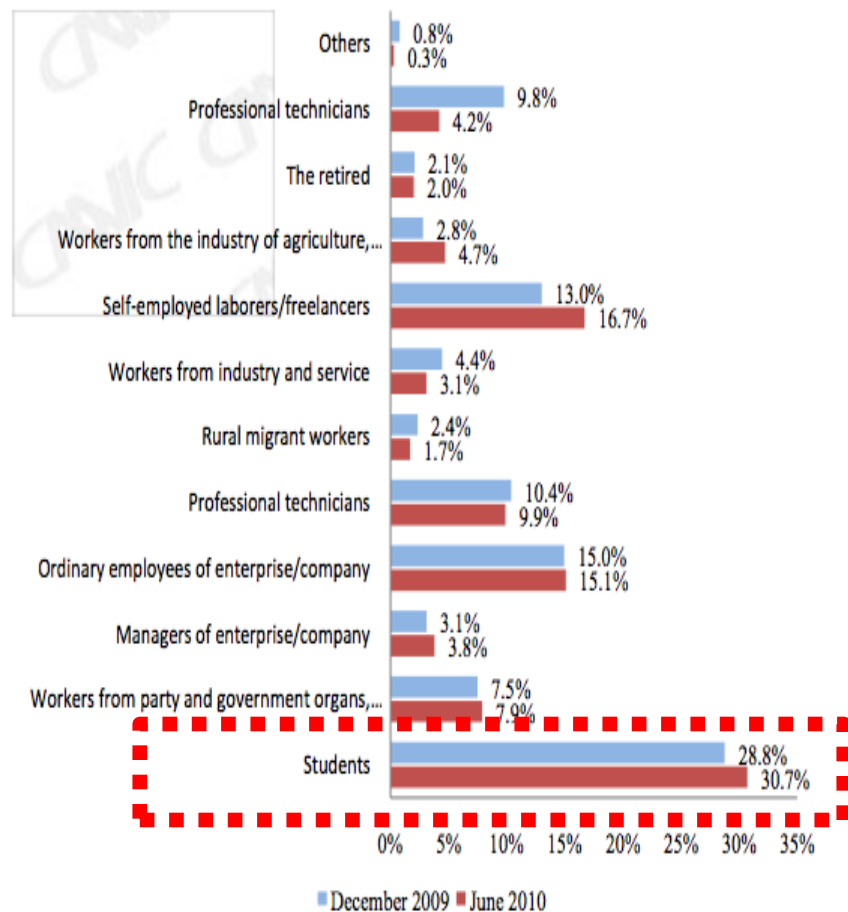
Demographics of the Internet Users in China

- In 2010, the number of Internet users in China has reached 420 millions

Age of Internet Users in China



Occupations of Internet Users in China



Censorship

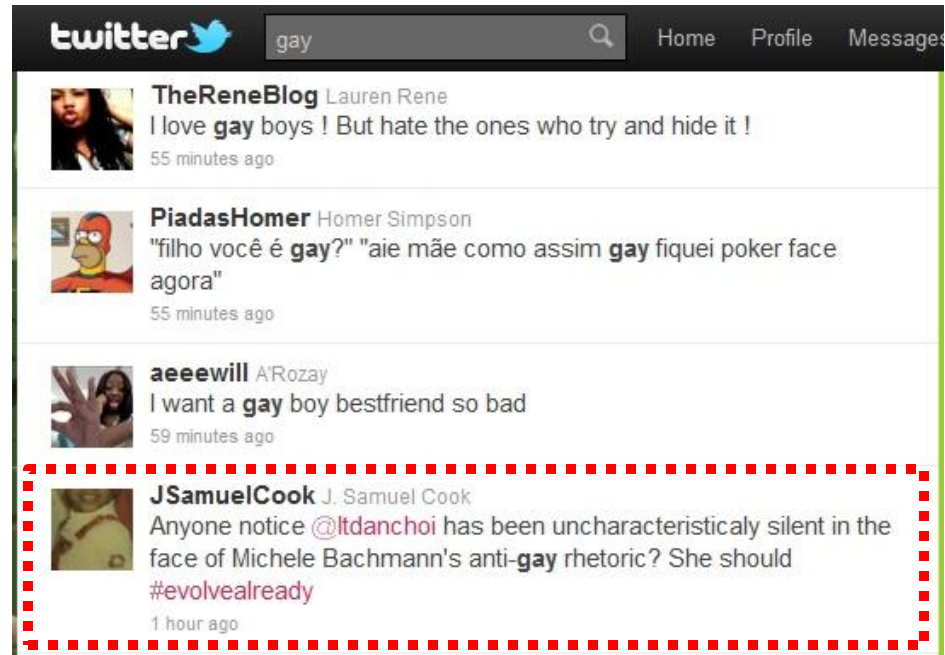
- Facebook is blocked (in China), Twitter is blocked, Blogbus is blocked, CNN is blocked...



根据相关法律法规和政策，搜索结果未予显示。

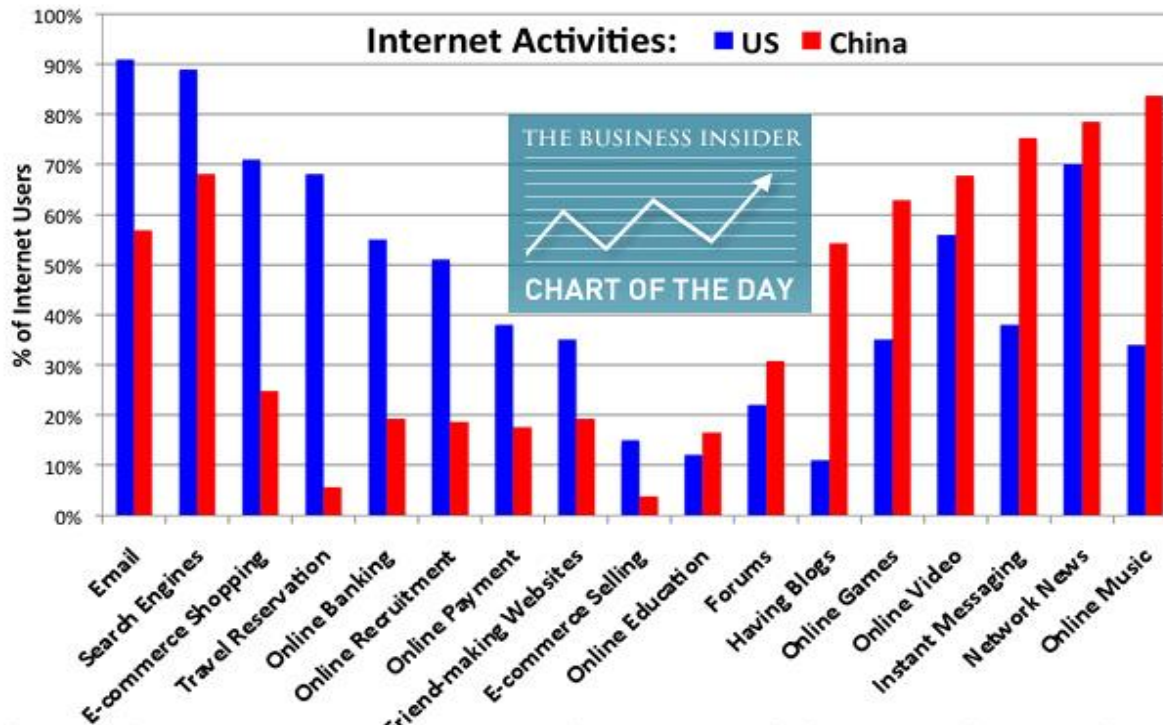
热门微博推荐

Due to the law and government policy, we can not provide result



Internet Utilization in China

- Chinese Internet users utilize the Internet to:
 - Seek out the information
 - Make friends with like-minded individuals



businessinsider.com

Source: China Internet Network Information Center & Pew Research Center



Investigating Culture Differences in Social Media

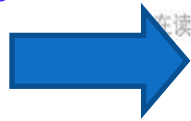
The Evolution of Friendships in Chinese Online Social Networks

- How do online relationships differ from the more traditional relationships in Chinese society?
- How do the characteristics of online relationships in the Chinese web differ from that in the general web?
- How do people in China use online social networks to share information?



The Evolution of Friendships on Douban

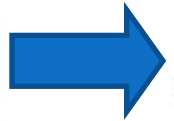
Books



我读 (8本在读 · 10本想读 · 10本读过)



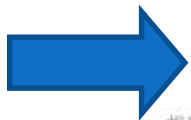
Friends



我关注的人 ... (全部92 · 朋友78)



Movies



我看 (13部想看 · 18部看过)



Online Groups



> 我被91人关注

我参加的小组(46) (全部)



Music

Brands

Analysis of the Douban Network

- Homophily

- The concept of people bonding with similar others. A social network's surrounding context can be the formation of its friendship links

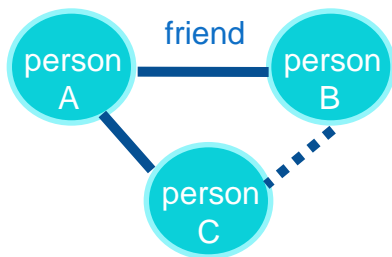
- Offline

- Foci: gender, age, religion, education

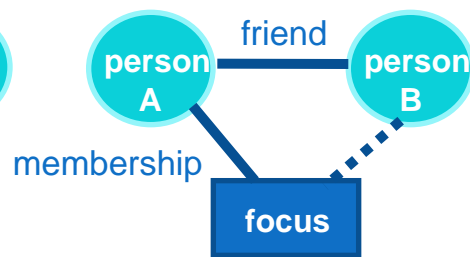
- Online

- [Backstrom et al., 2006] – LiveJournal

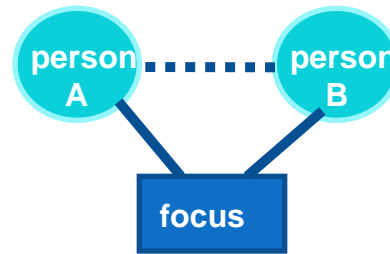
- [Crandall et al., 2008] – Wikipedia



Triadic Closure



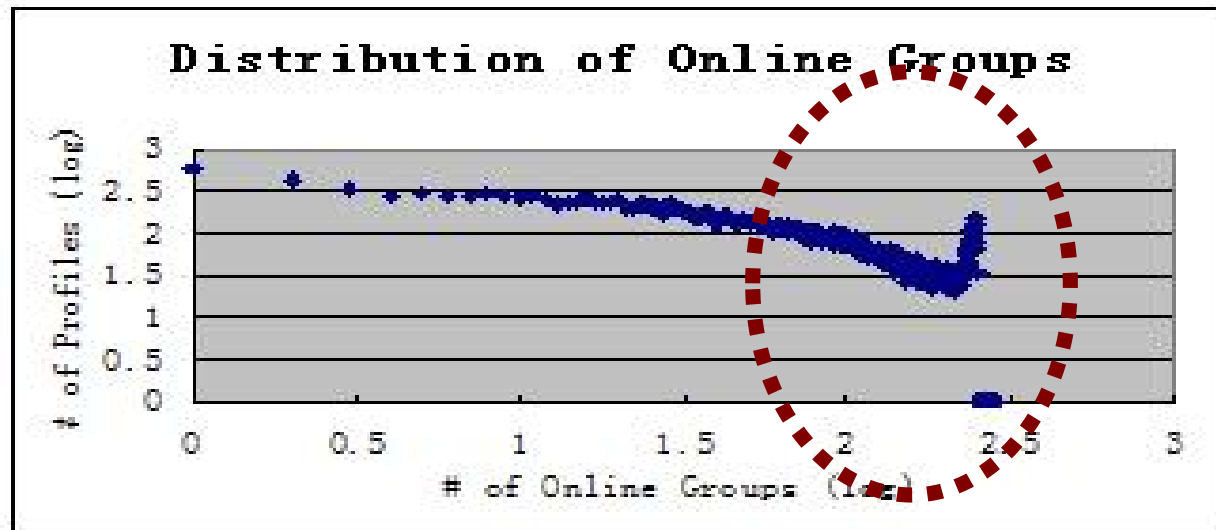
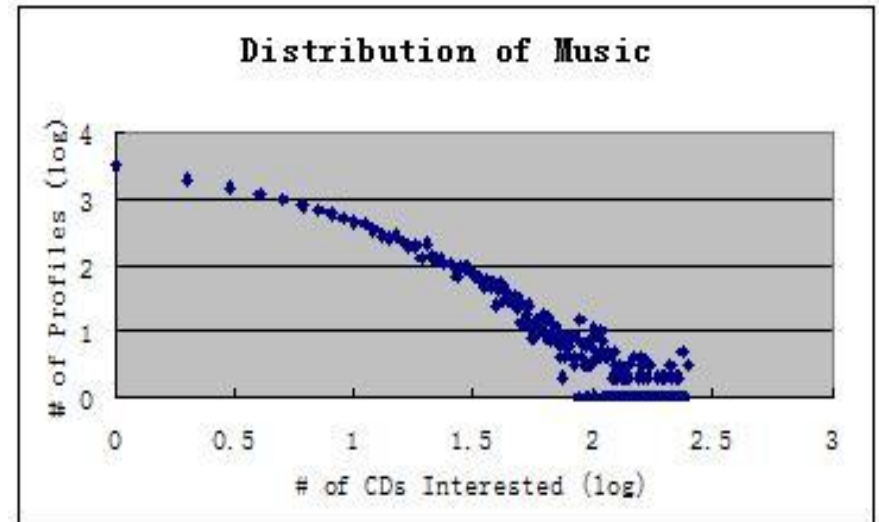
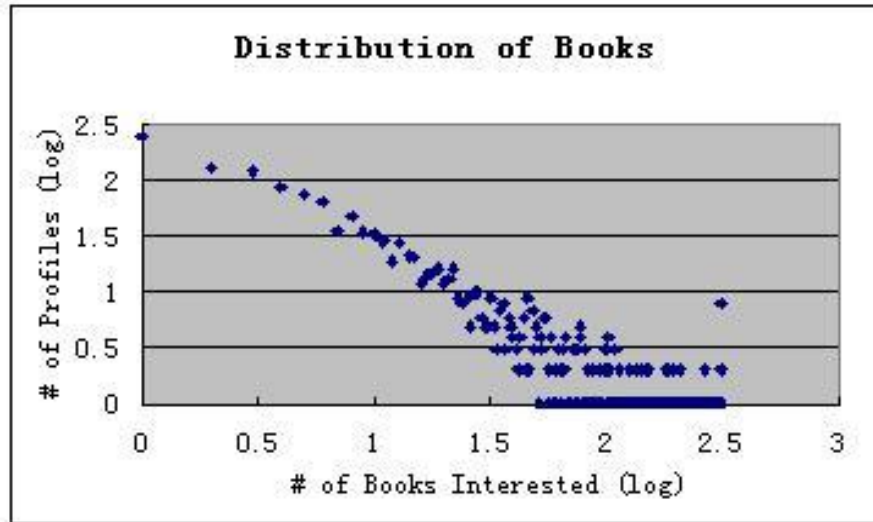
Membership Closure
(Social Influence)



Focal Closure
(Social Selection)



Statistic Analysis of User Profiles



Time Analysis of Friendships

- We look at percentage of added and deleted friendships in which the two users involved share at least one friend, music, book, movie, discussion group, or event in common

% newly added friendships with profiles that share the same friends or interests

Week	1	2	3	4	5	6	7	8	Average
Friend(s)	46.10%	50.20%	47.88%	48.07%	44.97%	46.90%	47.20%	47.45%	47.35%
Artist(s)	19.00%	14.22%	14.04%	14.08%	14.44%	14.82%	16.42%	14.82%	15.23%
Music(s)	8.50%	11.89%	8.35%	11.64%	7.35%	9.35%	11.23%	8.90%	9.65%
Book(s)	6.30%	9.33%	9.57%	9.35%	8.29%	9.50%	10.84%	9.92%	9.14%
Movies(s)	13.50%	17.08%	12.41%	14.10%	11.35%	12.92%	13.35%	16.35%	13.88%
Group(s)	81.40%	74.37%	77.43%	78.39%	79.54%	77.53%	81.34%	74.95%	78.12%
Event(s)	11.60%	7.43%	5.58%	6.59%	7.44%	6.44%	9.67%	11.05%	8.23%
Company(s)	5.00%	4.64%	4.73%	7.89%	4.23%	6.56%	4.25%	4.64%	5.24%

% newly deleted friendships with profiles that share the same friends or interests

Week	1	2	3	4	5	6	7	8	Average
Friend(s)	44.00%	35.62%	32.32%	35.22%	37.89%	41.21%	37.77%	33.65%	37.21%
Artist(s)	15.70%	10.79%	9.79%	11.14%	11.45%	8.55%	15.46%	12.23%	11.89%
Music(s)	11.60%	10.00%	9.19%	9.24%	10.23%	11.04%	9.56%	9.00%	9.98%
Book(s)	10.70%	9.10%	7.27%	8.55%	8.57%	8.43%	9.44%	9.25%	8.91%
Movies(s)	16.10%	12.58%	12.11%	14.44%	11.35%	12.44%	15.35%	13.98%	13.54%
Group(s)	75.01%	77.42%	71.88%	74.22%	77.56%	72.55%	71.22%	77.35%	74.65%
Event(s)	6.80%	4.04%	4.95%	5.21%	6.43%	4.67%	3.35%	4.44%	4.99%
Company(s)	4.00%	3.48%	3.64%	4.34%	4.44%	3.44%	4.44%	3.30%	3.88%

Time Analysis of Followers

- 76% of the users joining a discussion group do not have friends that are already members
- 85% of the new readers for any particular book have at least one friend that is already a reader
- Observations
 - Triadic closure is a major force behind the formation of online friendships
 - More friendships are formed between members of the same discussion groups
 - Users are less likely to form friendships by indicating interests in the same media items on their profiles



关系 guānxi

- A type of dyadic (two-party) relationships between individuals in the Chinese society
- *Guanxi* base
 - Same birth place, same school, friends, family members, partners...
- The exchange of resources/capital
 - feeling 情
 - trust 信/信任
- We observe that some discussion group topics can be seen as *guanxi* base in the traditional concept of *guanxi*, while others can not



郑州豆瓣 (15771)

本周日 清晨7:00【洛阳老城之旅】 <http://www.douban...>



厦门豆瓣 (40492)

我很幸运，生长在这样一个南方岛屿，春夏秋冬，日日夜夜，与...



我就喜欢随身背着我的包 (42941)

卖包买包推荐什么的请去本组小站 <http://site.douban.com/106...>



日本料理学堂【禁广告】 (66416)

来这里的朋友都是喜欢日本料理的，希望大家能在这个小组...



北京租房 (58021)

房子里的那点事.....每一个在外漂泊的人都会渴...



深圳豆瓣 (24634)

深圳豆瓣们交流地域性话题、召集聚会腐败等的根据地。 4...



蘑菇爱家居|小站上线 (30621)

蘑菇爱家居——生活，多一点美好。蘑菇小站 > <http://site...>



喝酸奶*吃水果 (72228)

每天离不开美味的酸奶和可口的水果迷恋它们的味道吃出...

Comparison to Related Work

<p>LiveJournal</p> <p>[Backstrom et al., 2006]</p>	<p>Wikipedia</p> <p>[Crandall et al. , 2008]</p>	<p>Douban</p>	<p>Chinese BBS</p> <p>[Jin, 2009]</p>
<ul style="list-style-type: none"> • Probability of an individual joining a LiveJournal community increases as the number of their friends who have already joined increases 	<ul style="list-style-type: none"> • Editors tend to share common interests prior to becoming acquainted and form friendships after editing the same Wikipedia articles 	<ul style="list-style-type: none"> • Users share common interests before joining the discussion group and form friendships after 	<ul style="list-style-type: none"> • Sub-forums: same city, same province, same profession, same interest • BBS users tend to establish friendships and participate in discussions in their corresponding sub-forums, while popular discussion topics propagate from sub-forum to sub-forum
<ul style="list-style-type: none"> • Keep in contact with existing friends • Blog posts 	<ul style="list-style-type: none"> • Interest in the topic • Collaboration 	<ul style="list-style-type: none"> • Interest in the topic • Discussion 	



Back to Our Questions

- How do online relationships differ from the more traditional relationships in Chinese society?
- How do the characteristics of online relationships in the Chinese web differ from that in the general web?



What Trends in Chinese Social Media

- We examine the key topics that trend on Sina Weibo and contrast them with our observations on Twitter
 - We discover that there is a vast difference in the content shared in China when compared to a global social network such as Twitter

The image shows a screenshot of a Sina Weibo profile page. The profile belongs to a user named "春虫虫弓米弓_Joey" (Chun Chong Chong Gong Mi Gong Joey), who is located in "海外美国" (Overseas America). The bio reads "I M Joey Chou. I Love G.E.M. 本人唔互粉。" (I M Joey Chou. I Love G.E.M. I don't follow back). The profile statistics are: 113 关注 (Followers), 356 粉丝 (Fans), and 3720 微博 (Weibos). The bio text is circled in red. The page also shows navigation options like "我的首页", "我的微博", "好友", and "模板", and a search bar. The bottom of the page has a search bar for "搜索她说的话" (Search what she says) and a "高级搜索" (Advanced Search) button.

测试版
新浪微博
weibo.com

常用导航 >>

我的首页 | 我的微博 | 好友 | 模板

搜索微博、找人 | 搜索

113 关注 | 356 粉丝 | 3720 微博

春虫虫弓米弓_Joey (设置备注)
http://weibo.com/joeyhaha

海外美国

I M Joey Chou. I Love G.E.M. 本人唔互粉。

已关注 | 取消 | 发私信 | 求关注 | @她 | 设置分组 | 更多

微博 | 她的资料

全部 | 原创 | 图片 | 视频 | 音乐

搜索她说的话 | 搜索 | 高级搜索

我和她都关注了(1)

夏达

更多 >>

Sina Weibo

转发微博。

@欧美街拍时尚: 月经从隐隐作痛到令你全身蜷曲的剧痛, 有三分之二的女性在这期间会有很不舒服的感觉。 痛经时, 双手叉腰, 两个大拇指按压在肚脐左右两边各5厘米处, 也就是带脉穴的位置, 可以立杆见影地减轻疼痛感。关爱女性健康, 男同胞们也转发一下吧

原文转发(2225) | 原文评论(137)



Retweeted 2225 times

5月30日 11:10 来自新浪微博

转发 | 收藏 | 评论

-0-太强大了。。受不了了。。。

@韩流音悦台V: 【音乐·推荐】#宋承宪##玄彬##崔智友##JYJ##Bigbang##金贤重##张根硕##2PM#聚在一起演唱一首歌, 这样的阵容会不会有些太过强大?! 那就来听听乐天免税店的主题曲《So I'm Loving You》吧~ <http://t.cn/hDCb12>

原文转发(10611) | 原文评论(1029)



5月30日 10:52 来自新浪微博

转发 | 收藏 | 评论

Trending Topics on Sina Weibo

1小时话题榜		Hourly Trending Topics		今日话题榜		本周话题榜			
1	真维斯	1057 ↑	Mentioned 1057 times in the past hour	1	美人鱼	11368 ↓	1	吸血鬼日记	20371 ↑
2	美人鱼	653 ↑		2	富士康	9354 ↓	2	乡村爱情	16896 ↑
3	天津泰达	463 ↑		3	陈翔橙	7597 ↑	3	变形金刚	16558 ↑
4	电影院	436 ↑		4	过街老鼠	6656 ↑	4	智能手机	16382 ↑
5	星巴克	429 ↑		5	NBA直播	6058 ↑	5	倩女幽魂	13170 ↑
6	教学楼	408 ↑		6	蔡依林	5994 ↓	6	微博酒吧	12883 ↑
7	杜蕾斯	384 ↑		7	电影院	5900 ↓	7	刻骨铭心	12182 ↑
8	清华大学	347 ↑		8	大本营	5718 ↓	8	马尔代夫	12156 ↑
9	端午节	295 ↑		9	鼓浪屿	4783 ↑	9	香格里拉	12131 ↓
10	歌迷会	264 ↑		10	歌迷会	4597 ↓	10	操作系统	11967 ↑
11	肯德基	253 ↑		11	刘德华	4453 ↑	11	功夫熊猫	11753 ↑
12	俱乐部	235 ↑		12	西班牙	4255 ↑	12	东方神起	10782 ↑
13	我们有一套	232 ↑		13	女主角	4226 ↓	13	巴塞罗那	10705 ↑
14	吸血鬼	229 ↑		14	俱乐部	4222 ↓	14	澳大利亚	10558 ↑
15	客户端	227 ↑		15	五月天	4024 ↑	15	凯尔特人	10494 ↓
16	诺基亚	227 ↑		16	男主角	3880 ↑	16	CSDN资源	10295 ↑
17	好心人	225 ↑		17	落汤鸡	3709 ↑	17	平板电脑	10148 ↑
18	西红柿	223 ↑		18	老天爷	3541 ↑	18	摩托罗拉	9957 ↑
19	毕业生	214 ↑		19	吸血鬼	3532 ↑	19	我现在的心情	9937 ↑
20	咖啡色	211 ↑		20	星巴克	3362 ↓	20	来不及说我爱你	9639 ↑



Trend-setters on Sina Weibo

- One of the main forms of information propagation in social networks such as Twitter and Sina Weibo is through retweets
- Trend-setters are users whose tweets consistently cause keywords to appear in the top trending keywords list
- We monitor the list of top trending keywords every hour
 - For each new top trending keywords, we retrieve the most retweeted tweets in the past hour
 - We rank the top 20 most retweeted authors appearing in at least 10 trending topics each



Top 20 Most Retweeted Users in Sina Weibo and Twitter

Table 1: Top 20 Retweeted Users in At Least 10 Trending Topics

ID	Author Description (Translated)	Verified Account	Retweets	Tweets	Topics	Retweet-Ratio
1	Urban Fashion Magazine	Yes	1194999	37	12	99583.25
2	Fashion Brand VANCL	Yes	849404	21	13	65338.77
3	Online Travel Magazine	Yes	127737	123	21	57987.48
4	Gourmet Factory	No	553586	86	12	46132.17
5	Horoscopes	No	1545955	101	38	40683.13
6	Silly Jokes	No	3210130	258	81	39631.23
7	Good Movies	No	1497968	140	38	39420.21
8	Wonderful Quotes	No	602528	39	17	35442.82
9	Global Music	No	697308	116	22	31695.81
10	Funny Jokes Countdown	No	3667566	438	121	30310.46
11	Creative Ideas	No	742178	111	25	29687.12
12	Famous Chinese singer	Yes	284600	25	10	28460
13	Good Music	No	323022	52	12	26918.5
14	Movie Factory	No	1509003	230	59	25576.32
15	Strange Stories	No	1668910	250	66	25286.52
16	Beautiful Pictures	No	435312	33	18	24184
17	Global Music	No	432444	65	18	24024.67
18	Female Fashion	No	809440	87	34	23807.06
19	Useful Tips	No	735070	153	31	23711.94
20	Funny Quizzes	No	589477	77	25	23579.08

Author	Retweets	Topics	Retweet-Ratio
vovo_panico	11688	65	179.81
cnnbrk	8444	84	100.52
keshasuja	5110	51	100.19
LadyGonga	4580	54	84.81
BreakingNews	8406	100	84.06
MLB	3866	62	62.35
nytimes	2960	59	50.17
HerbertFromFG	2693	58	46.43
espn	2371	66	35.92
globovision	2668	75	35.57
huffingtonpost	2135	63	33.88
skynewsbreak	1664	52	32
eLpais	1623	52	31.21
stcom	1255	51	24.60
la_patilla	1273	65	19.58
reuters	957	57	16.78
WashingtonPost	929	60	15.48
bbcworld	832	59	14.10
CBSnews	547	56	9.76
TelegraphNews	464	79	5.87
tweetmeme	342	97	3.52
nydailynews	173	51	3.39

Table 2: Top Retweeted Users in Twitter contributing to at least 50 trending topics each

What is "Silly Jokes"?

用导航 >>



冷笑话精选 → Silly Jokes
<http://weibo.com/hnjx>

广东广州

冷笑话, 热心肠! 每日奉送冷笑话, 微博快乐精华分享平台... 期待名人和人名猛击“关注”实在是您居家旅行的必备猛药。(投稿、指正请发链接到私信)

+ 加关注 | 发私信 | 推荐给朋友 | 引荐朋友给他

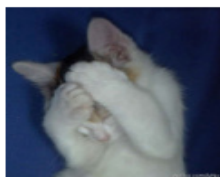
We welcome contributions

微博 他的资料

全部 原创 图片 视频 音乐

搜索他说的话 搜索 高级搜索

自习课上, 小娟放了个屁, 同学们都阵过头来, 这时暗恋她的阿天说: 是我放的! 过来一会, 小娟又放了个屁, 也暗恋她的小王也替她揽了! 可是过了一会小娟又放屁了, 这时更暗恋她的阿朋站起来说: 是我放的, 然后指着小娟说, 她以后放的屁都归我啦!



今天 00:15 来自时光机

转发(2986) | 收藏 | 评论(627)

高考都考这么多年了, 就不应该搞个周年店庆么?! 考100送20, 考200送50, 考三百送100, 考400送150, 考500送200, 600以上一律送300, 不设上限! 一本分数线77折, 考上二本可带同届考生一名, 考二本送二本体验券一张! 积分可累积.....同意的童鞋们果断转啦..... via: @原唯

→ Contribution from a follower



今天 00:02 来自新浪微博

转发(5190) | 收藏 | 评论(722)



Verified Accounts Among Top 100 Trend-setters

Rank	ID	Description
1	1757128873	Fashion web magazine
2	1643830957	Fashion brand
2	1670645393	Travel web Magazine
12	1195230310	Celebrity
21	1740006601	Celebrity
25	1730380283	Game discussion forum
26	1760945071	Chinesegroupon
42	1322920531	Celebrity
43	1771665380	Record Label
46	1266321801	Celebrity
48	1883881851	Organization (NBA China)
58	1698229264	Music web magazine
62	1642591402	Sina entertainment
70	1743374541	Images discussion forum
71	1618051664	Sina News
74	1653689003	Newspaper
75	1640601392	Sina video
82	1195031270	Celebrity
83	1835254597	Music web magazine
84	1830442653	Music web magazine
95	1765148101	Sina Fashion
96	1258256457	Celebrity
100	1596329427	Celebrity



Profile Information of Top Trend-setters

	Images(%)	Videos(%)	Links(%)	Followees	Followers	Tweets
1	70%	0%	32%	673	461398	719
2	57%	71%	0%	715	300358	2508
3	21%	0%	17%	67	597063	2600
4	30%	0%	0%	20	245026	518
5	20%	0%	0%	81	1884896	4261
6	8%	0%	0%	650	3536888	10598
7	15%	11%	0%	12	625117	804
8	46%	0%	0%	368	2338610	3605
9	0%	22%	0%	79	405847	716
10	5%	1%	0%	11	2411888	17818
11	14%	4%	0%	634	1551438	4899
12	44%	16%	0%	352	6107858	1850
13	0%	50%	0%	1136	590099	2041
14	6%	7%	0%	303	1210833	11411
15	10%	0%	1%	555	1220027	4249
16	45%	0%	0%	13	615461	1254
17	5%	40%	0%	12	496171	571
18	30%	0%	0%	60	901612	3506
19	15%	3%	0%	9	763264	2718
20	25%	0%	0%	4	853877	2362

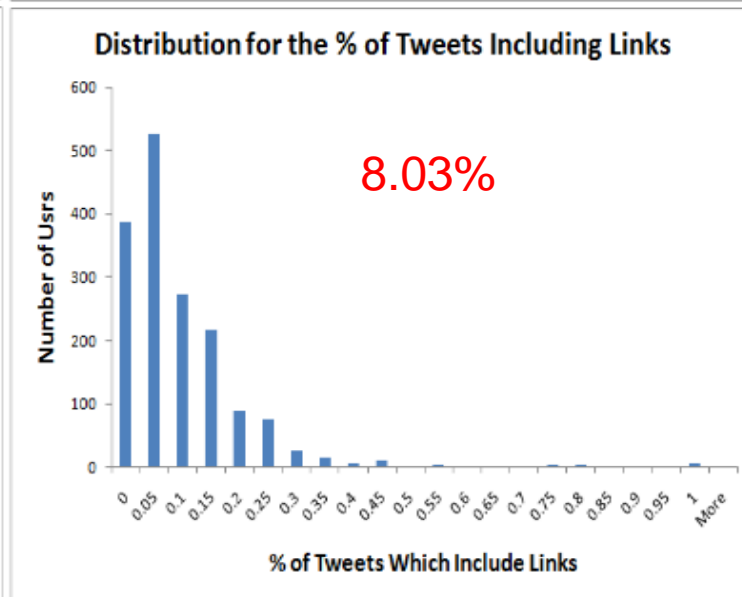
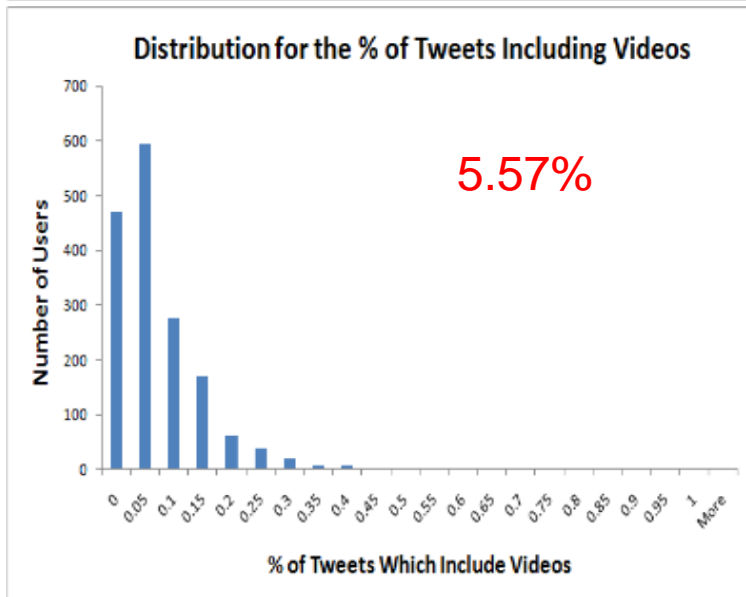
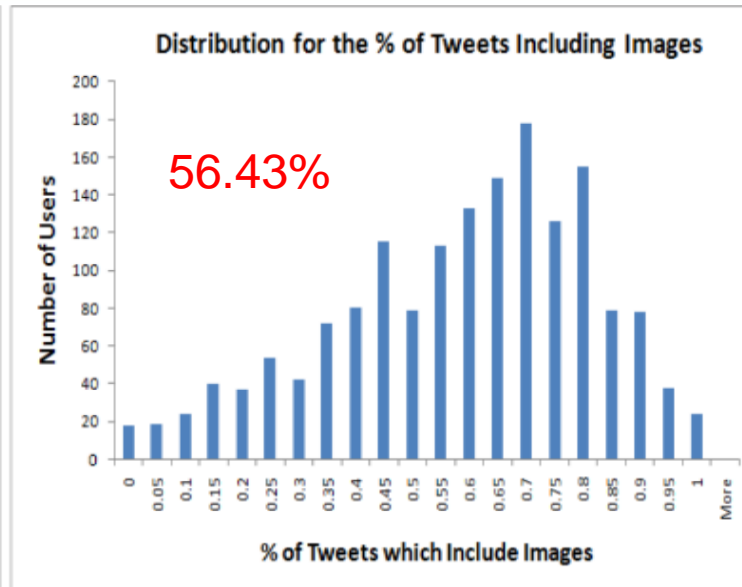
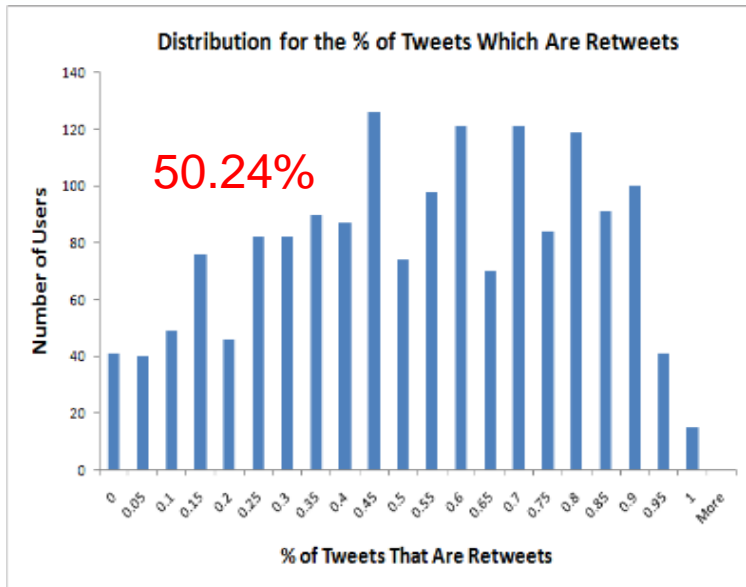
Sina Weibo

Author	Followees	Followers
vovo_panico	1069	154589
cnnbrk	41	4380908
keshasuja	0	88
LadyGonga	37	136433
BreakingNews	382	2570662
MLB	18829	1237615
nytimes	465	3250977
HerbertFromFG	763	23318
espn	286	1326168
globovision	3582	753440
huffingtonpost	4684	1042330
skynewsbreak	5	198349
eLpais	46226	572260
stcom	12	59763
la_patilla	51	306965
reuters	603	724204
WashingtonPost	284	458721
bbcworld	20	796009
CBSnews	122	1716649
TelegraphNews	238	38599

Twitter



Analysis of 1732 Random Profiles



Back to Our Questions

- How do people in China use online social networks to share information?
 - On Sina, the trends are created almost entirely due to retweets of media content such as jokes, images and videos
 - On Twitter, the trends have more to do with current global events and news stories. The effect of retweets is not as large



