



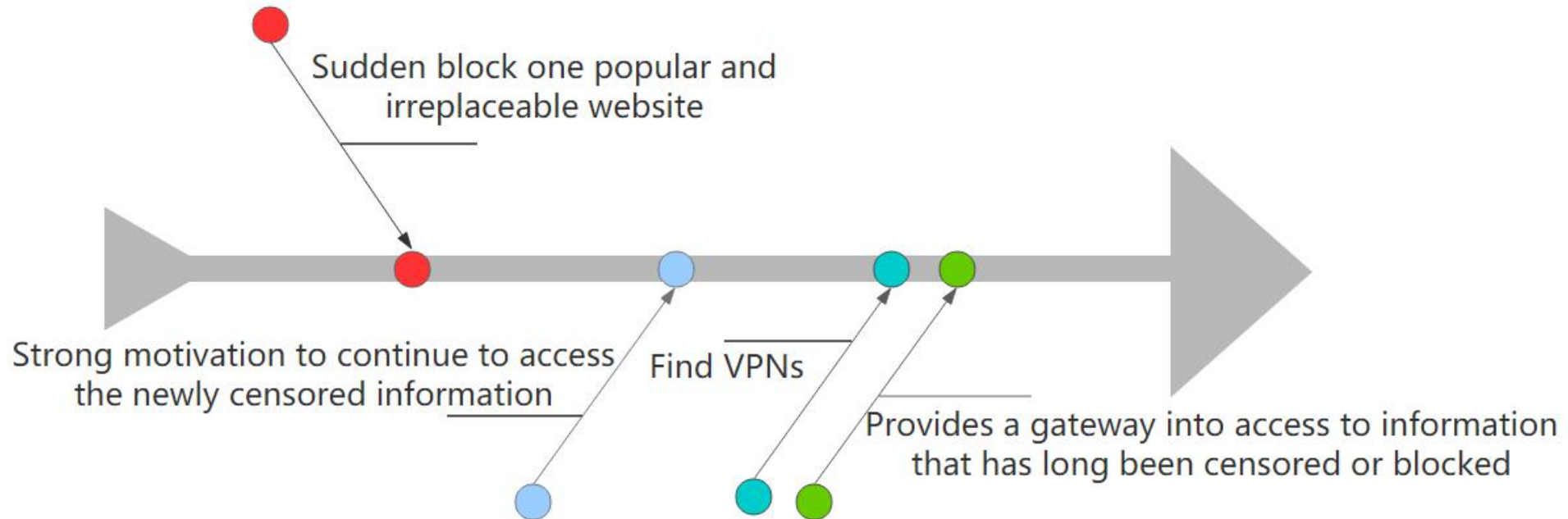
How Sudden Censorship Can Increase Access to Information

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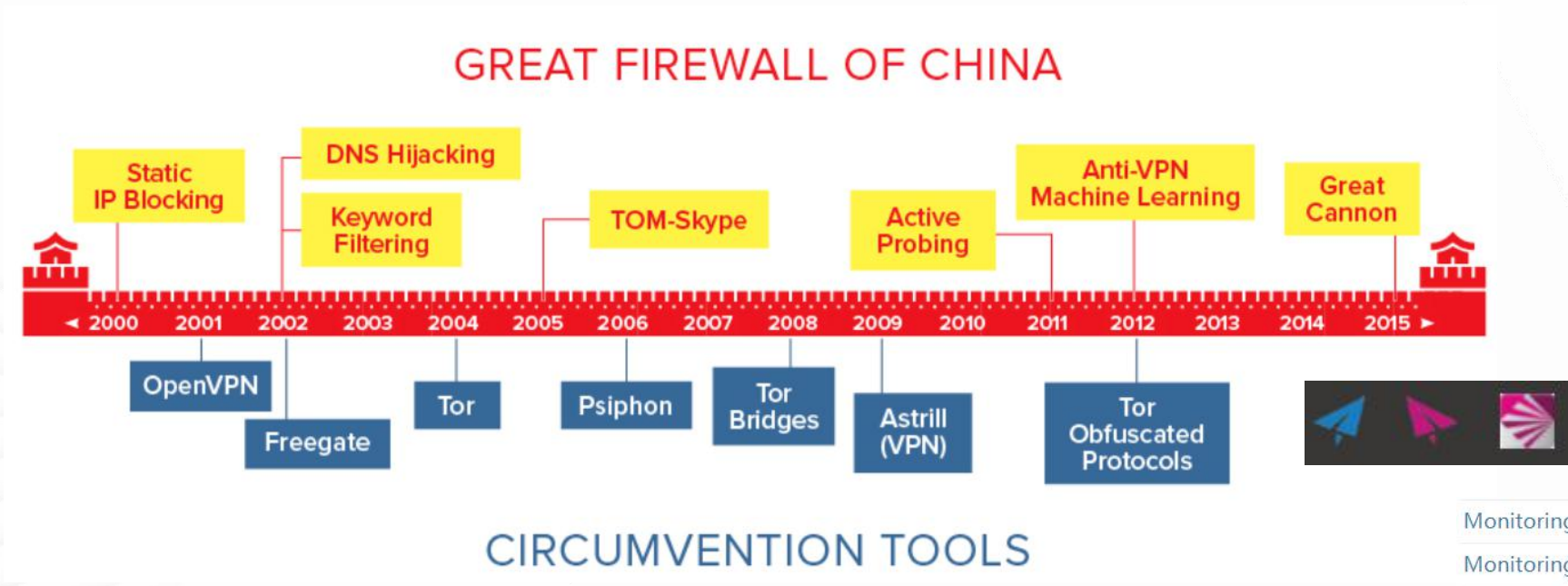
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Theory: Gateway effects

- Sudden censorship has the capability to politicize and empower previously apathetic citizens, and can increase information access among those people.*



Background: Online Censorship in China



Through VPN/Tor/proxy(SS(Shadowsocks)/SSR/V2ray etc.), people in mainland China could access all websites that the government deems objectionable.

Monitoring 826 Alexa Top 1000 Domains	151 are blocked in China
Monitoring 109816 Domains	9680 are blocked in China
Monitor 1006 Google Sites	735 are blocked in China
Monitoring 40307 HTTPS	8461 are blocked in China
Monitoring 21635 IP Addresses	2809 are blocked in China
Monitor 411540 URLs	80995 are blocked in China
Monitoring 34635 Weibo Searches	2549 are blocked in China
Monitoring 1239 Wikipedia Pages	1139 blocked in China

The data



Background: Instagram was allegedly blocked in China on September 29, 2014, in reaction to the large-scale protests in Hong Kong, which began on September 26, 2014

- A sample of 419,279 geo-located **Instagram posts** from mainland China, between September 1, 2014 and October 30, 2014.
- Application download statistics from the app tracker App Annie to directly measure how much the Instagram block spurred new **downloads of censorship evasion technology**.
- Measure new application downloads that direct to blocked websites, such as **Facebook and Twitter**. In addition, we collect 2,321,861 geo-located Twitter posts from mainland China
- A sample of 238,918 geo-located social media posts from **Sina Weibo**, the Chinese version of Twitter
- Page views of blocked **Chinese-language Wikipedia pages** before and after the Instagram block using Wikipedia page view data

Research design

Question	Test
1. Do users evade censorship to access Instagram?	Number/proportion of Instagram users who <i>continue</i> to access site after block
2. Does total censorship evasion increase?	VPN application download ranks
3. Do users access other, already blocked information?	Facebook/Twitter application download ranks, active Twitter users, Twitter sign-ups, Wikipedia page views
4. Do users absorb and engage with blocked political information?	Mentions of Hong Kong protests on Twitter, number of followers of Twitter activists and media, lasting discussions of political topics

Table 1: *Empirical tests.*

Finding-Who Typically Evades Censorship?

160,000 Twitter users who tweet each day from mainland China, 0.026% of Internet user

90,000 Twitter users tweet each day from Hong Kong, about 1.7% of user

3%-15% of Chinese Internet users engage in censorship evasion

Words Associated with Twitter		Words Associated with Weibo	
1	im: i'm	自己: myself	
2	发布: released	知道: know	
3	香港: Hong Kong	今天: today	
4	刚刚: just	播放: play	
5	照片: photos	生活: life	
6	北京: Beijing	努力: work hard	
7	good: good	别人: others	
8	the: the	看看: watch	
9	night: night	mv: mv	
10	中心: center	时候: time	
11	和平: peace	什么: what	
12	apple: Apple	永远: forever	
13	day: day	通过: through	
14	my: my	快乐: happy	
15	国际: international	开心: happy	
16	will: will	坚持: persistence	
17	公民: citizens	喜欢: like	
18	政府: government	没有: none	
19	中国: China	事情: situation	
20	happy: happy	我们: we	
21	人民: the people	明星: stars	
22	see: see	生日: birthday	
23	自由: freedom	觉得: think	
24	国家: country	现在: now	
25	like: like	心里: in my heart	

Table 2: *Words most associated with Twitter and Weibo users, mutual information.* This figure shows that Chinese language Twitter users were more likely to use political words than Weibo users.

Finding-Direct effects of the Instagram block

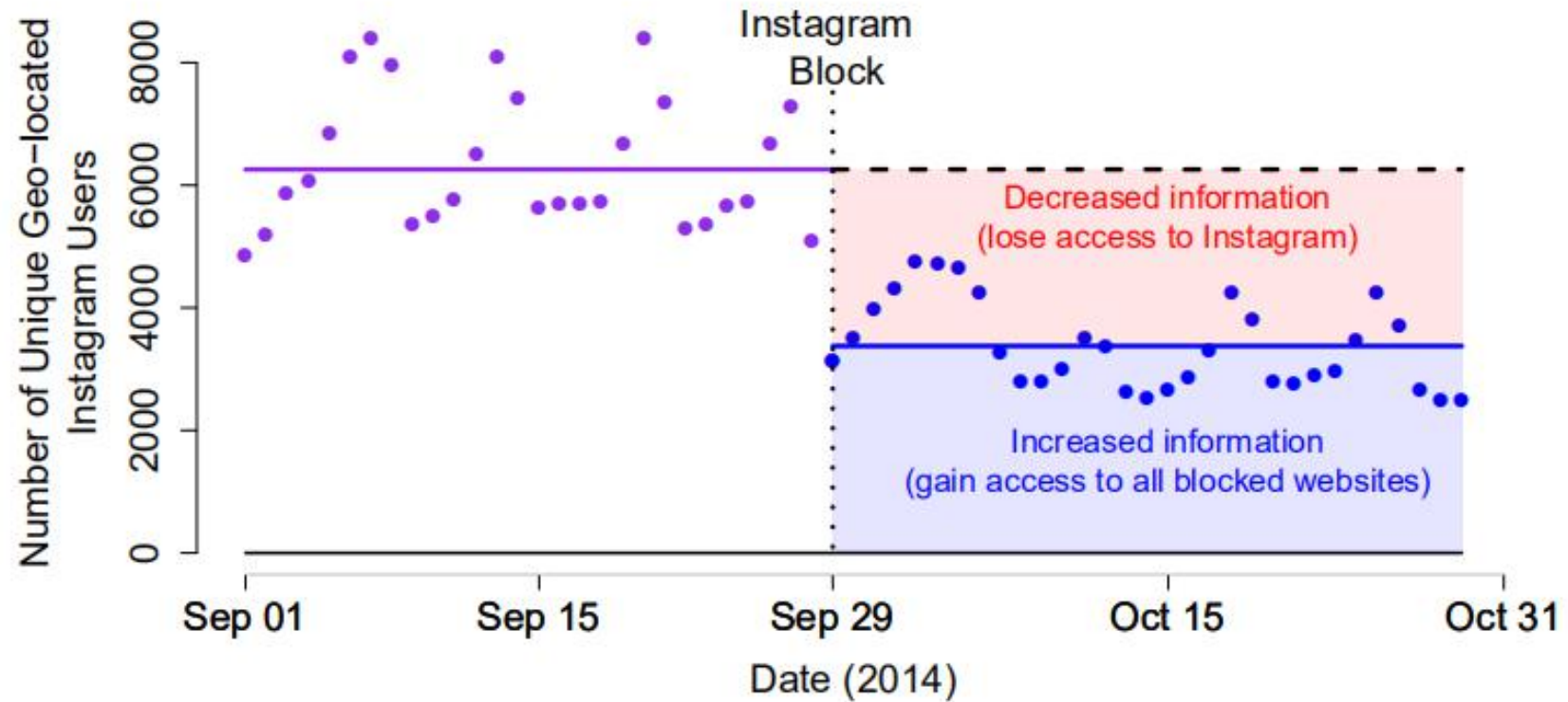


Figure 1: *The Instagram block's effect on the number of unique Instagram users geo-locating from mainland China.*

Potentially 1 million unique users posting to Instagram from China every day before the block

Finding-Effects of the Instagram block on VPN acquisition

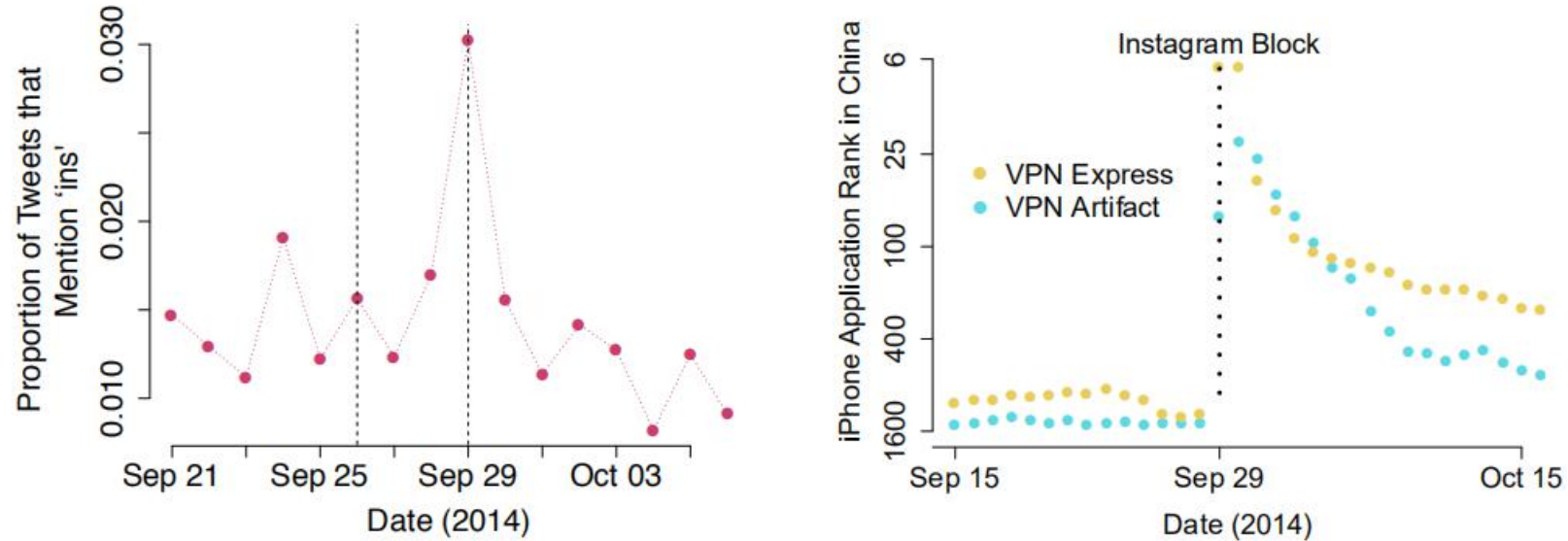


Figure 2: *Left: Proportion of Tweets from China mentioning 'ins' by day. Right: The Instagram block's effect on the rank of VPN applications on iPhones from mainland China, from AppAnnie.com.*

On September 29, 2014, four of the top ten downloaded free productivity applications in China were VPNs.

Finding-Expanded Access to Blocked Websites

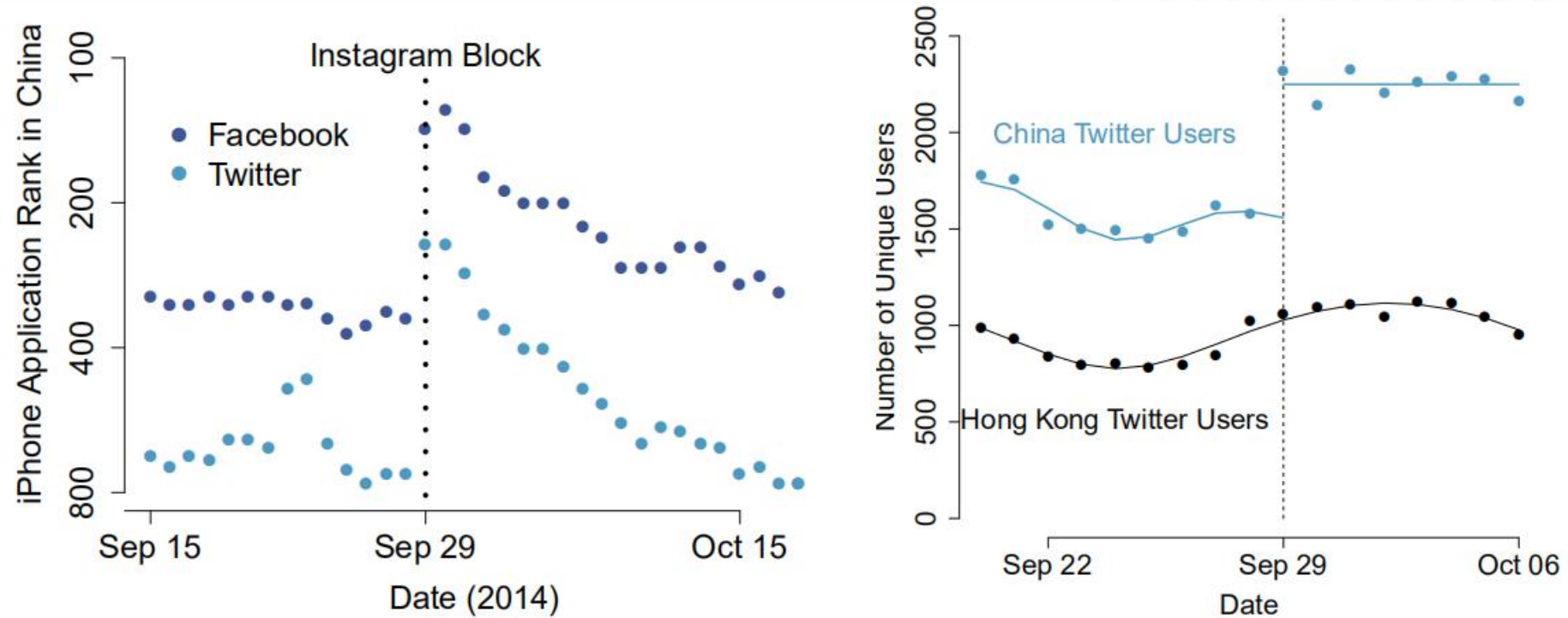


Figure 3: *Left: The Instagram block's effect on the rank of Facebook and Twitter on iPhones from mainland China, from AppAnnie.com. Right: Comparison of tweets per day from Mainland China and Hong Kong before and after the Instagram block.*

On the day of the Instagram block, the rate of Twitter new user account creation in China jumped more than 600%.

Finding-Politicization

Approximately 160,000 more page views of blocked Wikipedia pages on September 29th

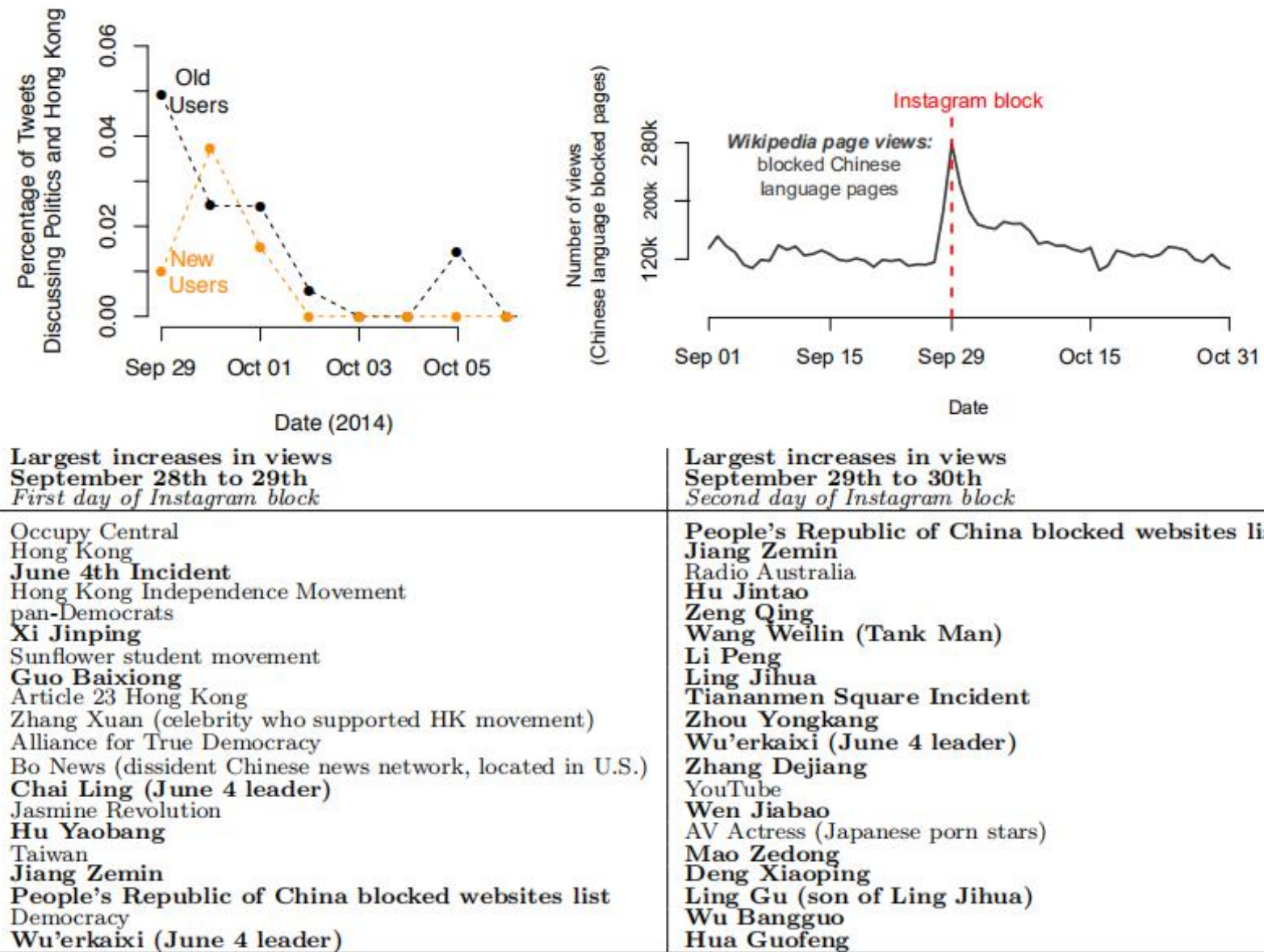


Figure 5: Left: Tweets that mention politics in Hong Kong, comparison of new users and old users. Right: Page views for Chinese language Wikipedia pages blocked in China. Bottom: Changes in Wikipedia views.

Finding-Did the effects persist?



We chose Liu Xiaobo because a mention of him was unambiguously political and explicitly censored in Mainland China

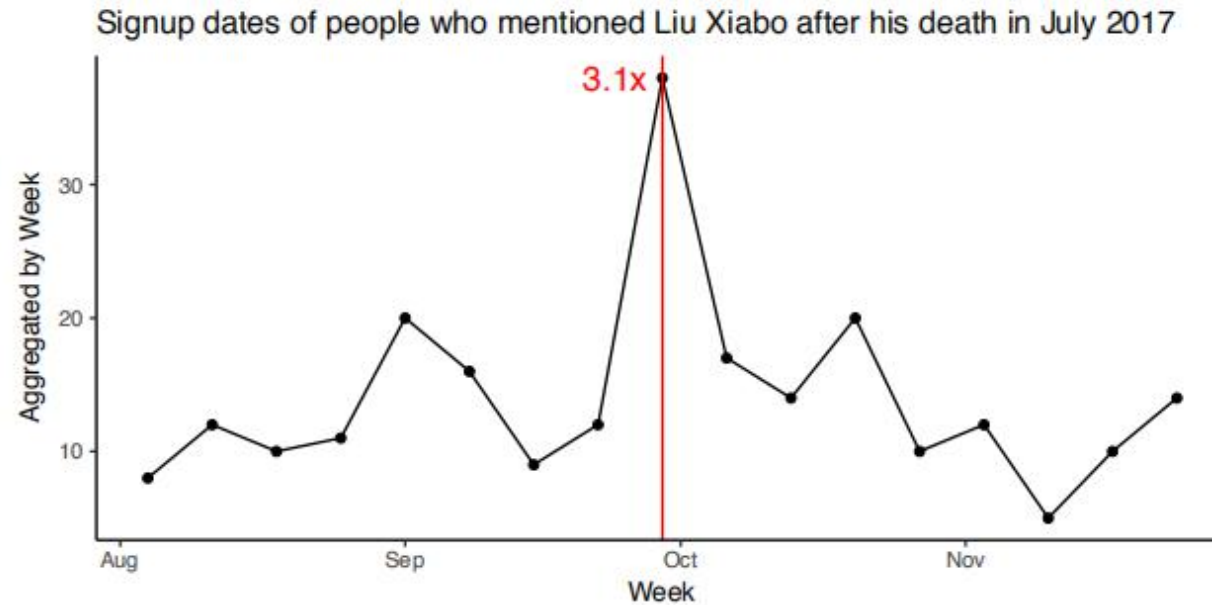


Figure 6: *Instagram block post-mortem: Did the effects persist?* This figure shows the number of Chinese language Twitter users by sign-up date who mentioned democracy activist and Nobel Peace Prize laureate Liu Xiaobo on Twitter after his death in July 2017. The number of people who discussed his death and signed up for Twitter after the Instagram block on the week of September 29 was about three times higher compared to the weekly average of users who signed up from August through September 2014.

Conclusion

Gateway effects:

Expansions in censorship to previously uncensored websites can incentivize citizens to invest in censorship evasion technology, and begin engaging in political conversations, long-time blocked social media sites and networks.

Gateway effects situations:

1. when censorship is sudden enough to disrupt citizen habits
2. when the newly censored information is difficult to substitute with uncensored alternatives
3. when there is low probability for punishment for evasion

Jojje Olsson ✓

@jojjeols

Swedish writer in Asia since 2007. If you ask the Chinese ambassador to Sweden, I produce "false and exaggerated content intended to maliciously smear China".



The New York Times ✓ @nytimes · Jan 10

One man spent 15 days in a detention center. The police threatened another' s family. A third was chained to a chair for 8 hours of interrogation.

Their offense: tweeting.



月光博客 @williamlong · Jan 4

首例翻墙网民被行政处罚 t.cn/EG5TBgq

56

46

100



Jojje Olsson ✓ @jojjeols · Jan 9

China has now started to **punish** individuals for using **VPN** to circumvent its internet censorship. Approximately 20-30 million people in **China** uses **VPN**; will they all get punished?

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Thank you

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