How Censorship in China Allows Government Criticism but Silences Collective Expression

Gary King, Jennifer Pan, Molly Roberts

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(talk at Emory University, 10/12/2012)
Chinese Censorship

The largest selective suppression of human expression in history

Content filtering: Removing individual posts by hand

Estimated numbers of censors:

\[ \approx 200,000 \]

Internal censors at individual sites like Sina.com:

up to \( \approx 1,000 \)

Internet police:

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Prevailing Wisdom: the goal of censorship: to stop government criticism

A BBC Reporter thought he found a contradiction in Chinese Premier Wen Jiabao's farewell speech: "[Premier Wen] claimed that China's leaders welcomed criticism expressed on the internet. It is 'natural for that to happen', he said. And yet he presides over a government that routinely censors the internet — and has imprisoned many who have given voice to their criticism."

We show:
- There is no contradiction; Wen Jiabao was sincere
- China allows plenty of criticism in social media
- Censorship is not "leaky & imperfect"; our understanding of it is
- The goal: stopping collective action, clipping social ties

(Gary King, Jennifer Pan, & Molly Roberts)
Our Main Point

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  (They also censor: pornography & criticism of the censors)

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Chinese Censorship

12 October 2012
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Our Data Source

crimson hexagon

KNOW MORE. KNOW WHY. KNOW HOW.
Chinese Social Media: Fractured over 1,400+ sites
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(Plus 59% from Sina Blog)
Posts Collected and Analyzed

Collect 3,674,698 social media posts in 85 topic areas over 6 months.

Random sample: 127,283 (Repeat design; Total analyzed: 11,382,221).

⇝ For each post (on a timeline in one of 85 content areas):
  Download content the instant it appears
  (Carefully) revisit each later to determine if it was censored
  Use computer-assisted methods of text analysis
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Censorship is not Ambiguous: BBS Error Page

Sorry, the host you were looking for does not exist, has been deleted, or is being investigated.
The page you requested is temporarily down. How about you go look at another page.

Jingjing, one of China's cartoon internet police
The Censors are Fast; Our Automated Methods are Faster
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Example: Shanghai Subway Crash
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Days Until Censorship, Shanghai Subway Analysis

Days After Post Was Written

Number Censored

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Chinese Censorship
For Rare Topics, Censorship Effort Appears Constant
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**Pornography**

**Criticism of the Censors**
For most topics: Censorship & Post Volume are “Bursty”
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Unit of analysis: volume burst (3 SDs greater than baseline volume)

We monitored 85 topic areas (Jan–July 2011) and found 87 volume bursts in total. Identified real world events associated with each burst.
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  - volume burst

![Graph showing burstiness of post volume with peaks in June and July and the event of Riots in Zengcheng marked on the timeline.]

Unit of analysis: volume burst

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Chinese Censorship

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For most topics: Censorship & Post Volume are “Bursty”

- Unit of analysis:
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  - (3 SDs greater than baseline volume)

**Graph:**
- **Count**
  - Count Published
  - Count Censored
  - Riots in Zengcheng

**Data:**
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The Goals of Chinese Censorship

Stop collective action

Either or both could be right or wrong.

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The Goals of Chinese Censorship

Theories. The Purpose of Censorship is to:

1. Stop criticism of the state
The Goals of Chinese Censorship

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The Goals of Chinese Censorship

Theories. The Purpose of Censorship is to:

1. Stop criticism of the state *Wrong*
2. Stop collective action

Either or both could be right or wrong.
The Goals of Chinese Censorship

Theories. The Purpose of Censorship is to:

1. Stop criticism of the state  *Wrong*
2. Stop collective action  *Right*

Either or both could be right or wrong.
Our Central Hypothesis: The Rules Censors Follow

1. Monitor many broad topic areas
2. Detect volume bursts; identify associated real world events
3. Choose events that could (or did) generate collective action
4. Censor all posts within bursts associated with these events
5. Judge individual posts for association with events, not for collective action potential (or for criticism of the state)

⇝ The government censors all posts (regardless of how critical or supportive of the state) in volume bursts associated with events with collective action potential.
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Our Evidence
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3 increasingly specific tests based on
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1. Post volume
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1. Post volume
2. Nature of the event generating each volume burst
Our Evidence

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1. Post volume
2. Nature of the event generating each volume burst
3. Content of the posts
Test 1: Post Volume

Begin with our 87 volume bursts in 85 topics areas. For each burst, calculate change in % censorship inside to outside each volume burst within topic areas – censorship magnitude.

If the goal of censorship is to stop collective action, we expect:

1. On average, % censored should increase during volume bursts.
2. Some bursts (associated with politically relevant events) should have much higher censorship.

-0.2 0.0 0.2 0.4 0.6 0.8
0 1 2 3 4 5
Censorship Magnitude
Density

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Chinese Censorship
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Test 2: Nature of Event Generating Increases in Volume

Event classification (each of which could be negative, positive, or neutral comments about the state)

- Protest or organized crowd formation outside the Internet
- Events involving individuals who have organized or incited collective action on the ground in the past;
- Topics related to nationalism or nationalist sentiment that have incited protest or collective action in the past.

(Other) News

Government Policies

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What Types of Events Are Censored?

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What Types of Events Are Censored?

Protests in Inner Mongolia
Pornography Disguised as News
Baidu Copyright Lawsuit
Zengcheng Protests
Pornography Mentioning Popular Book
Ai Weiwei Arrested
Collective Anger At Lead Poisoning in Jiangsu
Google is Hacked
Localized Advocacy for Environment Lottery
Fuzhou Bombing
Students Throw Shoes at Fang BinXing
Rush to Buy Salt After Earthquake
New Laws on Fifty Cent Party

U.S. Military Intervention in Libya
Food Prices Rise
Education Reform for Migrant Children
Popular Video Game Released
Indoor Smoking Ban Takes Effect
News About Iran Nuclear Program
Jon Hunstman Steps Down as Ambassador to China
Gov't Increases Power Prices
China Puts Nuclear Program on Hold
Chinese Solar Company Announces Earnings
EPA Issues New Rules on Lead
Disney Announced Theme Park
Popular Book Published in Audio Format

Policies
News

Collective Action
Criticism of Censors
Pornography

Censorship Magnitude
-0.2 0 0.1 0.3 0.5 0.7
Censoring Collective Action: Protests in Inner Mongolia

Gary King, Jennifer Pan, & Molly Roberts

Protests in Inner Mongolia

Count Published

Count Censored

Jan Feb Mar Apr May Jun Jul

Count

15

10

5

0

Jan Feb Mar Apr May Jun Jul
Censoring Collective Action: Ai Weiwei’s Arrest

![Graph showing count published and count censored over time]

- **Ai Weiwei arrested**

- **Count Published**
- **Count Censored**

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Low Censorship on One Child Policy

Speculation of Policy Reversal at NPC

Count

Jan Feb Mar Apr May Jun Jul

Count Published
Count Censored

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Low Censorship on News: Power Prices

Power shortages
Gov't raises power prices to curb demand

Count
Jan Feb Mar Apr May Jun Jul
Count Published
Count Censored

Gary King, Jennifer Pan, & Molly Roberts (Chinese Censorship 12 October 2012 22 / 34)
Test 3: Content of Posts

We adapted "ReadMe" (Hopkins-King) methodology to the content of censored posts in Chinese.

- Standardize encoding of Chinese text
- Eliminate punctuation and stop words
- Experiment with segmenting characters into words
- Calculate new the quantity of interest (% censored by category)

Code a validation set

ReadMe estimates: % of posts in each category

Quantity of interest: % of posts censored in a category

\[ P(\text{Censored} | \text{Category}) = P(\text{Category} | \text{Censored}) \times P(\text{Censored}) \]
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  - ReadMe estimates: % of posts in each category
  - Quantity of interest: % of posts censored in a category

\[
P(\text{Censored} | \text{Category}) = P(\text{Category} | \text{Censored}) P(\text{Censored})
\]

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Test 3: Content of Posts

We adapted “ReadMe” (Hopkins-King) methodology to the content of censored posts in Chinese

- Standardize encoding of Chinese text
- Eliminate punctuation and stop words
- Experiment with segmenting characters into words
- Calculate new the quantity of interest (% censored by category)
  - Code a validation set
  - ReadMe estimates: % of posts in each category
  - Quantity of interest: % of posts censored in a category

\[ P(\text{Censored}|\text{Category}) = \frac{P(\text{Category}|\text{Censored}) P(\text{Censored})}{P(\text{Category})} \]
“ReadMe” Algorithm Validated in Chinese
“ReadMe” Algorithm Validated in Chinese

Example: Labor Strikes, 2010 (Training set: 100; Test set: 900)
"ReadMe" Algorithm Validated in Chinese

Example: Labor Strikes, 2010 (Training set: 100; Test set: 900)
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Example: Labor Strikes, 2010 (Training set: 100; Test set: 900)
Test 3: Content of Censored and Uncensored Posts
## Predictions of State Criticism Theory

<table>
<thead>
<tr>
<th>State Critique</th>
<th>Collective Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td></td>
<td>no</td>
</tr>
<tr>
<td>no</td>
<td>Free</td>
</tr>
<tr>
<td></td>
<td>Free</td>
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</tbody>
</table>
Test 3: Content of Censored and Uncensored Posts
Predictions from Two Theories of Censorship

Predictions of **Collective Action Theory**

<table>
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<td>yes</td>
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</table>
With Collective Action, Posts that Support or Oppose the State are Censored

<table>
<thead>
<tr>
<th>Percent Censored</th>
<th>Censorship</th>
<th>Posts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ai Weiwei</td>
<td>Support</td>
<td>Criticize</td>
</tr>
<tr>
<td>Inner Mongolia</td>
<td>Support</td>
<td>Criticize</td>
</tr>
<tr>
<td>Fuzhou Bombing</td>
<td>Support</td>
<td>Criticize</td>
</tr>
</tbody>
</table>

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With Collective Action, Posts that Support or Oppose the State are Censored

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Without Collective Action, Posts that Support or Oppose the State are NOT Censored
Without Collective Action, Posts that Support or Oppose the State are NOT Censored
Uncensored Posts (w/o Collective Action Potential)
Critical of the State
Uncensored Posts (w/o Collective Action Potential)
Critical of the State

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</tr>
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<td></td>
<td><strong>CENSORED</strong></td>
</tr>
<tr>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td></td>
<td><strong>CENSORED</strong></td>
</tr>
<tr>
<td></td>
<td>no</td>
</tr>
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<td><strong>Free</strong></td>
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</tbody>
</table>
This is a city government [Yulin City, Shaanxi] that treats life with contempt, this is government officials run amuck, a city government without justice, a city government that delights in that which is vulgar, a place where officials all have mistresses, a city government that is shameless with greed, a government that trades dignity for power, a government without humanity, a government that has no limits on immorality, a government that goes back on its word, a government that treats kindness with ingratitude, a government that cares nothing for posterity...
Censored Post (with Collective Action Potential)
Supporting the State
Censored Post (with Collective Action Potential)
Supporting the State

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Censored Post (with Collective Action Potential)

Supporting the State

The bombing led not only to the tragedy of his death but the death of many government workers. Even if we can verify what Qian Mingqi said on Weibo that the building demolition caused a great deal of personal damage, we should still condemn his extreme act of retribution. The government has continually put forth measures and laws to protect the interests of citizens in building demolition. And the media has called attention to the plight of those experiencing housing demolition. The rate at which compensation for housing demolition has increased exceeds inflation. In many places, this compensation can change the fate of an entire family.

爆炸案造成他本人和多名政府工作人员死伤的悲剧，即使钱明奇在微博里所称拆迁造成的个人损失是属实的，我们也应谴责他的极端报复行为。政府在连续出台保护被拆迁者利益的政策法规，媒体也在为公平对待被拆迁者大声疾呼，各地拆迁补偿款的上升速度，大多高于商品房售价上升的速度，在不少地方，补偿款已经足以改变一个家庭的命运。
Censorship Pre-empting Collective Action: Ai Weiwei’s Arrest
Censorship Pre-empting Collective Action: Ai Weiwei’s Arrest

Mar. 29, 5 days prior

Apr. 3, Ai Weiwei Arrested

Actual % censorship

Predicted % censor trend based on 3/19–3/29 data

% of Posts Censored

Mar 19 Mar 29 Apr 08 Apr 18

0.0 0.2 0.4 0.6 0.8 1.0

2011

Gary King, Jennifer Pan, & Molly Roberts
Censorship Pre-empting Collective Action: Ai Weiwei’s Arrest

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% of Posts Censored

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Mar 19 Mar 29 Apr 08 Apr 18
0.0 0.2 0.4 0.6 0.8 1.0

Placebo Test:

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Placebo Test: Most extreme of all effects
Predicting the South China Sea Peace Agreement

![Graph showing predicted and actual censorship rates leading up to the South China Sea Peace Agreement.](image-url)
Predicting the South China Sea Peace Agreement

% of Posts Censored

Jun. 20, 5 days prior

Jun. 25, Peace Agreement

Predicted % censor trend based on 6/10–6/20 data

Actual % censorship

Jun. 12 Jun 22 Jul 02

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Predicting the South China Sea Peace Agreement

Placebo Test:

Predicted % censor trend based on 6/10–6/20 data

Actual % censorship

Jun. 20, 5 days prior

Jun. 25, Peace Agreement

% of Posts Censored

Jun 12 Jun 22 Jul 02

0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7

2011
Predicting the South China Sea Peace Agreement

- Jun. 20, 5 days prior
- Jun. 25, Peace Agreement

Predicted % censor trend based on 6/10−6/20 data

Actual % censorship

Placebo Test: Most extreme of all effects
Censorship Pre-empting Collective Action: Wang Lijun’s Demotion
Censorship Pre-empting Collective Action: Wang Lijun’s Demotion

Jan. 28, 5 days prior
Feb. 2, Wang Lijun demoted

Actual % censorship

Predicted % censor trend based on 1/18–1/28 data

Gary King, Jennifer Pan, & Molly Roberts
Censorship Pre-empting Collective Action: Wang Lijun’s Demotion

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Feb. 2, Wang Lijun demoted

Actual % censorship

Predicted % censorship trend based on 1/18–1/28 data

Placebo Test:
Censorship Pre-empting Collective Action: Wang Lijun’s Demotion

Placebo Test: Most extreme of all effects
Concluding Remarks

- The Chinese Censorship Program:
Concluding Remarks

- The Chinese Censorship Program:
  - Stops collective action not criticism
Concluding Remarks

- The Chinese Censorship Program:
  - Stops collective action not criticism
  - Reveals government intentions; predicts actions
Concluding Remarks

- The Chinese Censorship Program:
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- Our methodology:
Concluding Remarks

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  - Automated text analysis methods validated in Chinese (without translation)
Concluding Remarks

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  - Enables continuous time measurement of Chinese government censorship activities
Concluding Remarks

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  - Reveals information about state action when traditional media is silent
Concluding Remarks

- The Chinese Censorship Program:
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  - Reveals government intentions; predicts actions

- Our methodology:
  - Automated text analysis methods validated in Chinese (without translation)
  - Enables continuous time measurement of Chinese government censorship activities
  - Reveals information about state action when traditional media is silent
  - Might be applicable to other countries
For more information

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