A Study of China’s Censorship and Its Evasion Through the Lens of Online Gaming

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Investigation of Censorship in China

- User experience with censorship in China
  - Great firewall (GFW)

- Survey of general censorship evasion
  - No responses

- Restricted minor access to online games
  - China has hundreds of millions of gamers
  - Many of which are minors
  - Restrictions are increasingly draconian

- Idea: Censorship through online gaming restrictions lens
Gaming Restrictions

- Restrictions are increasingly draconian
  - Real name verification
  - Temporal
  - In-game purchases

- Game licensing process
Internet Censorship vs. Gaming Restrictions

- Gaming restriction restricts gaming access
  - To vulnerable minors

- GFW restricts Internet
  - To users vulnerable to Western influence

Research Questions

- How do gamers evade gaming restrictions?
- Does the GFW affect them?
- Have they attempted to evade the GFW?
- What challenges are they facing?
Methodology

- Guided by young Chinese netizens
  - With educated backgrounds

- Quantitative study: survey with 2,415 participants
  - Who played online games while minors
  - Crowdsourcing site wenjuan.com
  - Bulletin boards on Chinese universities, technical colleges
  - Chat groups of Chinese online gamers

- Semi-structured interviews with 35 participants
  - Recruited among survey respondents
  - Evaded gaming restriction while minors
Survey Findings

- 37% of respondents affected by restrictions evaded them
  - Including 33% of female respondents

- 11.5% of respondents played international games
  - 77% used GFW evasion tools or game boosters
Interview Findings

Map of Gaming Restrictions Evasion
Acquiring Adult Accounts

- Renting adult accounts
  - Rental services on search engines and e-commerce sites
  - 2-3 CNY ($0.5) per hour

  "Most game platforms don’t apply strict IP or location checks" (P216)

- Borrowing adult accounts

  "When one of my friends was not playing the game, I would type in their account name and password, then they would forward the 2FA code from their phone" (P9)

- Purchasing adult accounts
Creating Adult Accounts: Adult IDs

- Generated (Fake) IDs: avoid providing real IDs
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  "I could create an account by looking for some ID number generators on the Internet" (P262)
  ```
  - No longer works

- Purchased (Genuine) IDs
  - Sold online by their owners (voluntarily or forcibly)
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    "I can search for ID information online to create a gaming account, but links [to sites selling IDs] disappear later" (P68)
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- Family IDs
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  "I used my parents’ ID cards secretly, and later I used my adult friends’ ID cards, who never registered for the same game" (P155)
  ```
Experience with the Great Firewall (GFW)

- All interview participants aware of GFW
  - Twenty-two affected by the GFW
- Fourteen participated evaded the GFW
  - Willing to discuss

- Terminology:
  - Climb over the wall(翻墙): Evading GFW
  - Ladder(梯子): GFW Evasion Tools
Reasons to Evade GFW

Accessed Non-Gaming Sites

<table>
<thead>
<tr>
<th>Service</th>
<th># Mentioned</th>
</tr>
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<tbody>
<tr>
<td>Google</td>
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<td>YouTube</td>
<td>5</td>
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<td>Twitter</td>
<td>4</td>
</tr>
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<td>Github</td>
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<td>Pornographic site</td>
<td>3</td>
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<td>Reddit</td>
<td>1</td>
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<tr>
<td>Twitch</td>
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</tbody>
</table>
Reasons to Evade GFW (cont’d)

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Some people think censorship is mind control. I don’t buy it, so I evade the GFW to verify information from both sides. I can check if different parties are reporting the truth'' (P110)
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GFW Ladder Discovery

1. Online search for any ladder (not trusted)

   “I use homonyms or special terms to search for the ladder” (P1599)

2. Use untrusted ladder to get a trusted ladder

   “I found tutorials in Baidu Tieba. After evading the GFW, I saw other solutions promoted on YouTube videos. The videos will have VPN advertisements, and YouTubers will also promote that a particular VPN is efficient” (P155)
GFW Ladder Concerns: Reliability

- Most participants report ladder unreliability

  “There are many VPNs that are very unstable once you pay for them” (P95)

- Simultaneous failures

  “When one VPN goes down, others will not work either. But after a while, they start working again” (P87)
GFW Ladder Concerns: Privacy

- Exposure concerns
  
  "I worried that the GFW ladder stores my IP information" (P262)

- Official evasion channels
  
  "I would not watch porn via this channel, since access is definitely monitored" (P9)

- Participants revealed 18 GFW ladders
  - 16 require users to register accounts
  - Including some of the free ones
Trust in GFW Ladders

- Pay for ladders unlikely to collude with GFW
  - Download ladders after first evading GFW

  "VPN providers prefer to earn money from their tools, and try to provide more secure services, rather than hack me" (P110)

- Trust based on good communication

  "Some VPNs will send a pop up to notify me to stop browsing specific websites when the traffic is under inspection" (P110)
GFW Ladders vs. Game Boosters

- 17 participants evade the GFW to play and watch games
- Use the same tool to evade GFW and boost games

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The VPN I used allowed me to play games and visit banned sites'' (P155)
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- “VPN” used to denote any ladders
- Confusion of gaming accelerators and GFW evasion
  - Popular VPNs advertise game boosting
  - Some boosters (Steam++) partially evade GFW
Conclusions

- Investigated experience of gaming restriction and censorship evasion among online gamers in China
  - Conducted surveys with 2,415 gamers from China
  - Interviews with 35 respondents

- Desensitization of Evasion Hypothesis
  The need to evade gaming restrictions may desensitize young Chinese gamers to the fear that evading the GFW may violate the law
  - Seamless switch from gaming to Internet browsing
  - Encourage exploration of GFW-censored sites
Recommendations for CRSe Developers

- Market CRSe as game boosters
  - Increase adoption among young Chinese netizens
  - Plausible deniability of GFW evasion
  - Plausibly deniable presence of evasion-enabling software

- Popular GFW ladders attract censor attention
  - Often leads to banning efforts

- Provision popularity-limiting mechanisms
  - Rebranding
  - Capping active accounts
Questions

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Thank you!