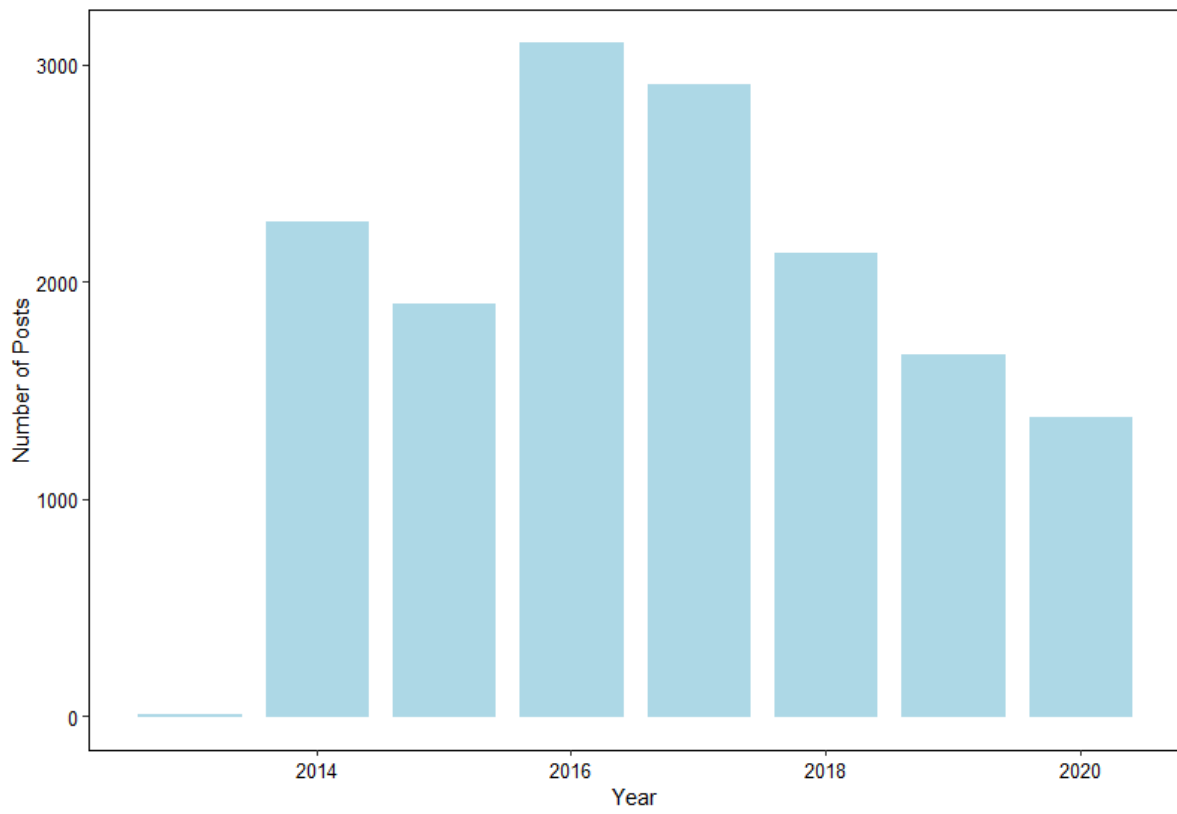


# Supplementary Material

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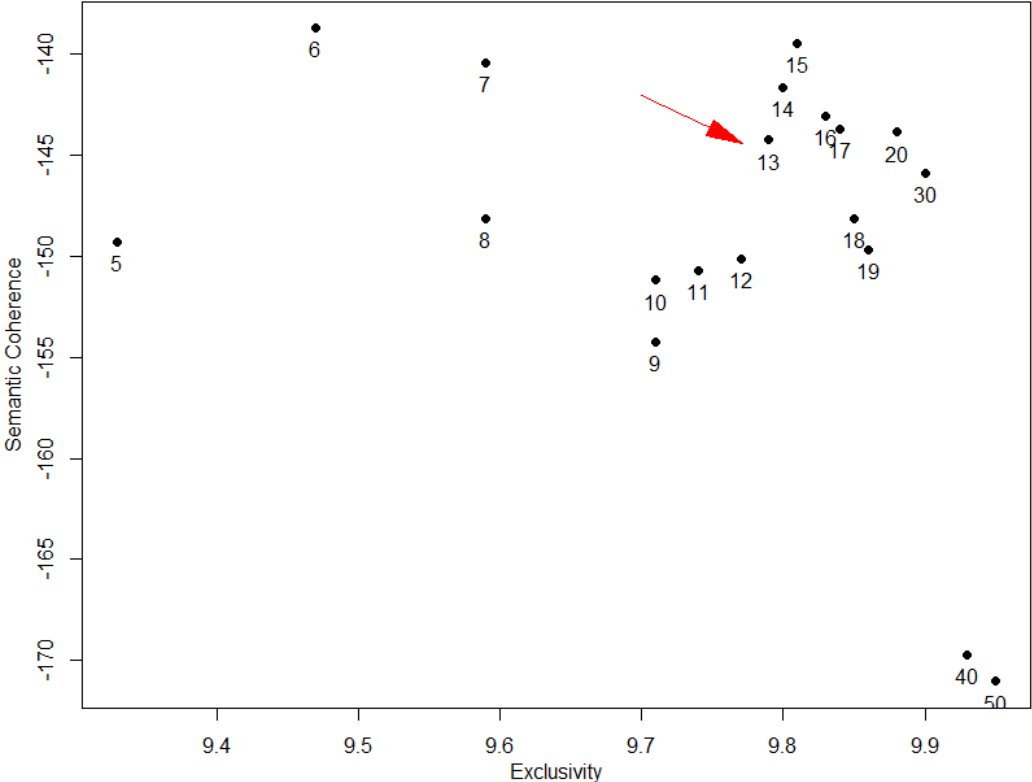
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Figure A1: Distribution of the CYL Central Committee Weibo Posts (2013-2020)



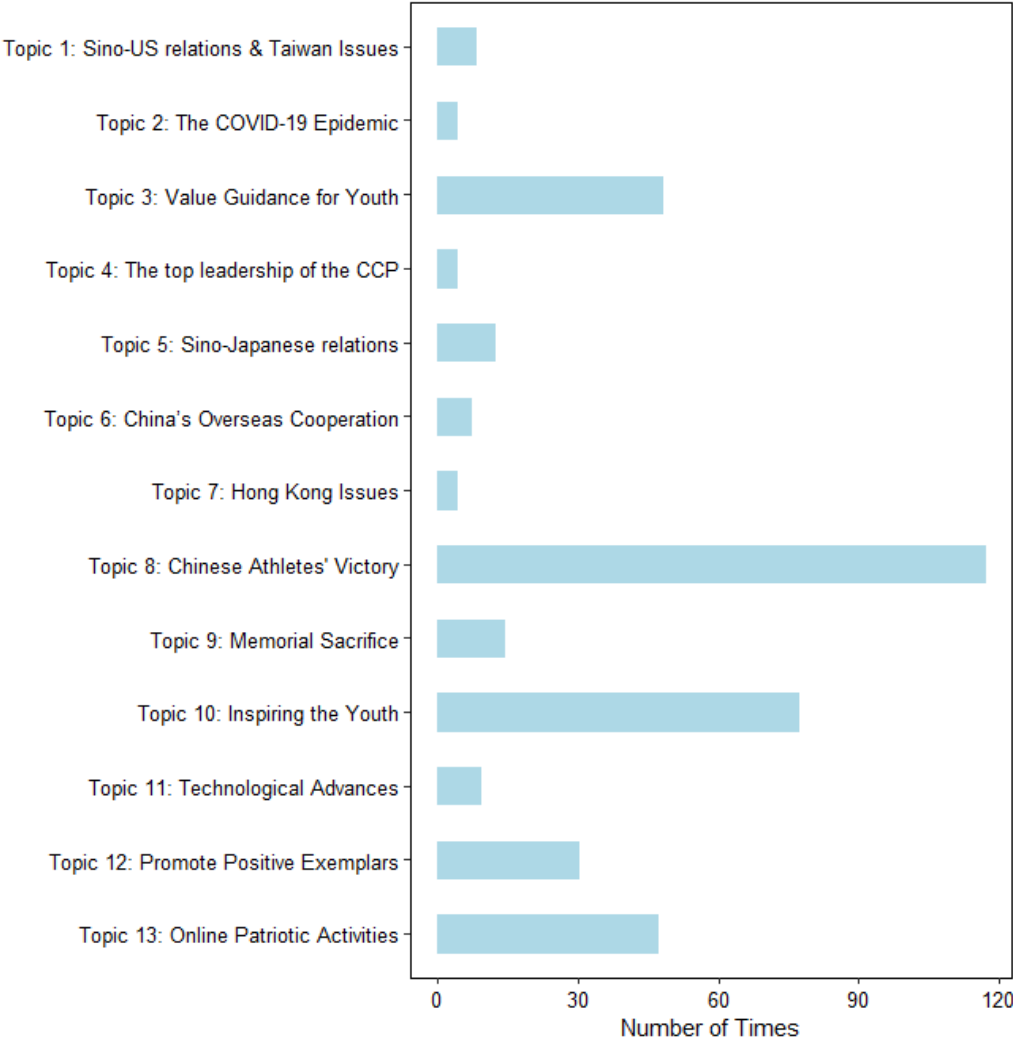
Given that the STM is an unsupervised machine-learning algorithm, researchers should evaluate an appropriate number of topics before the practice. There is no one-size-fits-all answer for choosing the number of topics; interpretability is an important justification in practice (Blei 2012). Based on interpretability as well as model selection criteria such as semantic coherence and exclusivity (for review, see Roberts, Stewart, and Tingley 2019), we suggest that the CYL Weibo corpus can be reasonably categorized into 13 topics. Specifically, we have calculated and compared the metrics of semantic coherence and exclusivity with 5 to 50 as the number of topics, and as Figure A2 indicates that choosing 13, 14, 15, 16, 17, or 20 as the number of topics generated similar results. We finally chose 13 as the number of topics (i.e.,  $K$ ), to implement the topic model because of the favorable interpretability of the results it yielded.

**Figure A2: Model Selection for the STM**



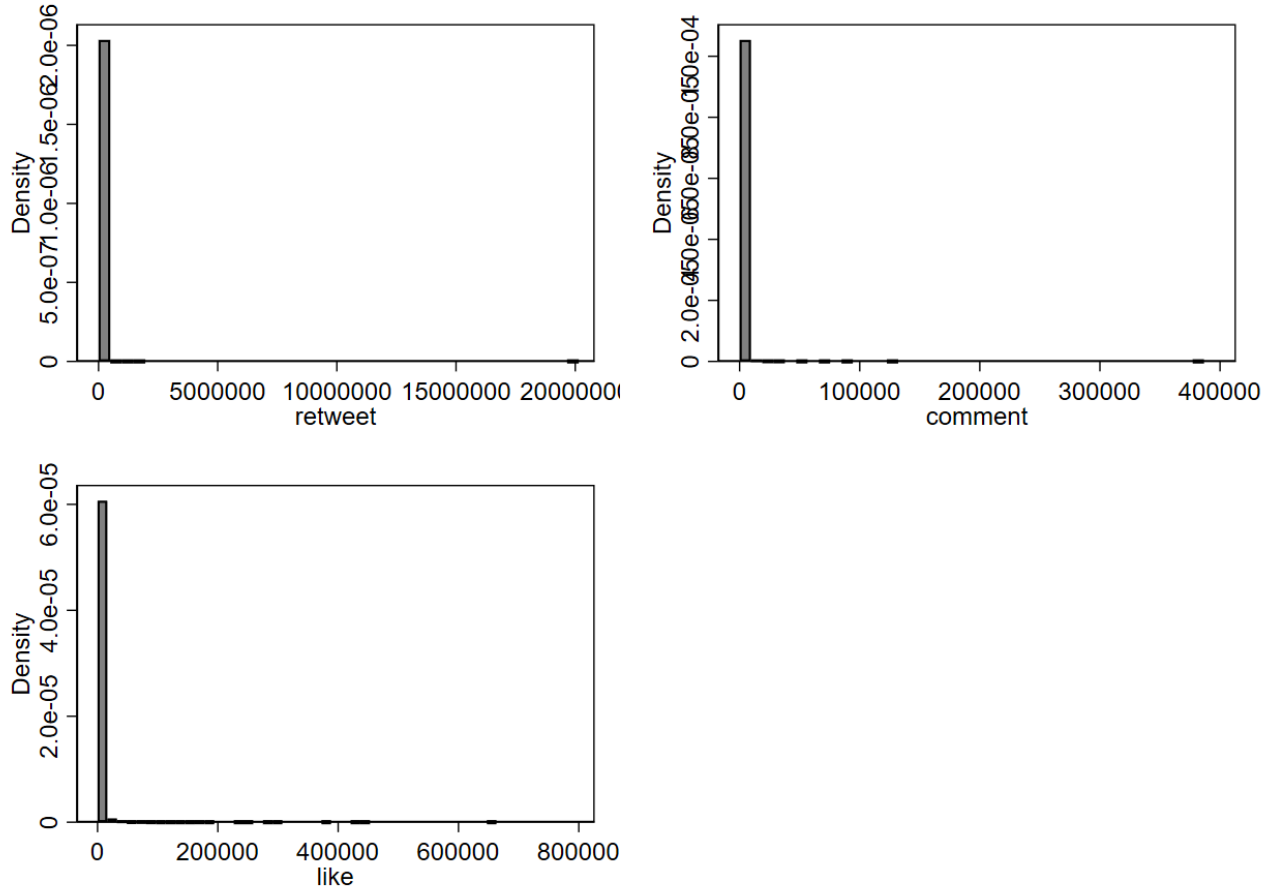
*Notes:* The larger semantic coherence and exclusivity scores predict more fitting models.

**Figure A3: Number of Celebrity Mentions per Topic**



*Notes:* The bar plot depicts the number of times that each topic mentions (i.e., @) pop idols in the posts.

Figure A4: The Density of Audience Feedback



*Notes:* The figure plots the density of three major proxies of the audience’s feedback, i.s., retweet, comment, and like. Given all three variables follow a long-tail distribution, we winsorize the top 2.5% and bottom 2.5% of the data points to avoid the influence of extreme observations.

Table A1: Original Versions of Quoted Weibo Posts

Account	Weibo in English	Weibo in Chinese	URL
Han Geng	I love you, China.	我爱你，中国！	<a href="https://bit.ly/31XHTMU">https://bit.ly/31XHTMU</a>
CYL Central Committee	Karry Wang: the craziest thing after becoming famous was to go to Tiananmen Square to watch the flag rising in the early morning. It was a kind of inexplicable happiness that others could not understand...The excitement in my heart is unspeakable.	【王俊凯：成名之后做的最疯狂的事，就是凌晨骑车去天安门看升旗】那是一种莫名的，别人理解不到的开心...内心的振奋无法言说。	<a href="https://bit.ly/4426HpK">https://bit.ly/4426HpK</a>
Lay Zhang	China, not even a bit can be left behind	中国一点也不能少	<a href="https://bit.ly/3JjtJ3j">https://bit.ly/3JjtJ3j</a>
CYL Central Committee	During the interview, Lay Zhang said, "The year 2035 may seem far away, but it is not far away. The Chinese nation...to build a socialist modern power, and the young people, let us work harder and harder."	接受采访时，艺兴说：“2035年看似遥远其实不远，中华民族也即将迎来从小康社会到基本实现现代化，再到全面建成社会主义现代化强国，新一代的年轻人，让我们一起努力努力再努力，让这一天早日到来吧！”	<a href="https://bit.ly/43Jh55T">https://bit.ly/43Jh55T</a>
CYL Central Committee	This morning, Sun Yang completed the men's 1500m freestyle final with illness, and swam the best result of the year. The trip to Rio has come to an end, with one gold and one silver. About Sun Yang, about injuries, about 1500, about drug testing, here is everything you want to know.	今日凌晨，孙杨带病完成男子1500米自由泳决赛，并游出了今年最好成绩。里约之旅，至此落幕，一金一银，有目共睹，而场外，波澜未平。关于孙杨，关于伤病，关于1500，关于药检，这里有你想知道的一切。	<a href="https://bit.ly/3SVQn4M">https://bit.ly/3SVQn4M</a>
CYL Central Committee	Do you remember an experiment conducted by a Sweden? He tried to stand a coin on a Beijing-Shanghai high-speed train for 8 minutes. Japan is not convinced, which is understandable. After all, they are the first country worldwide to build high-speed railway. They are currently competing with China's high-speed railway around the world. So they conducted a similar experiment on their most advanced 700-series Shinkansen. But the result is...	还记得，有位瑞典人将一枚硬币立在京沪高铁上8分钟不倒的试验吗？日本表示不服，可以理解，毕竟人家是世界上第一个建设高铁的国家，目前正在全球跟中国高铁进行竞争PK，于是在他们目前最先进的700系新干线上进行了试验，结果...	<a href="https://bit.ly/3b01pG7">https://bit.ly/3b01pG7</a>
CYL Central Committee	Japan's right-wing APA Hotel's statement that it will not withdraw its book has made everyone angry. So what is the Japanese right wing? What is the history of the Japanese right wing? What is the main idea of the Japanese right wing? Only knowing the enemy and knowing yourself can ensure you be victorious in every battle!	日本右翼下的APA酒店声明不撤书令世人愤怒。那么何为日本右翼？日本右翼的发展史是怎样的？日本右翼的主要思想又是什么？只有知己知彼才能百战不殆！	<a href="https://bit.ly/3CvH2JL">https://bit.ly/3CvH2JL</a>
CYL Central Committee	An article tells you: why Zhao Wei, Leon Dai and <i>No Other Love</i> have been generally condemned and boycotted by netizens.	一篇文告诉你：赵薇、戴立忍及《没有别的爱》为什么遭网友普遍谴责抵制	<a href="https://bit.ly/3cKybXM">https://bit.ly/3cKybXM</a>

**Table A2: Chinese Names of Frequently Mentioned Accounts**

Name in English	Name in Chinese
TFBOYS-Karry Wang	@TFBOYS-王俊凯
TFBOYS-Roy Wang	@TFBOYS-王源
Lay Zhang	@努力努力再努力x (张艺兴)
People's Daily	@人民日报
CCTV News	@央视新闻
Global Times	@环球时报
Niguang Fei-Xing	@逆光飞行
CD Rev	@天府事变
Lei Xiying	@雷希颖
Capital Cybersecurity Police	@首都网警
Ministry of Public Security	@公安部打四黑除四害
Department of Defense	@国防部发布
the Memorial Hall	@侵华日军南京大屠杀遇难同胞纪念馆
Ziguang Pavilion	@紫光阁
the CRCC	中国铁建
the CYL Shandong Committee	@山东共青团
the CYL Fujian Committee	@共青团福建省委
the CYL Tibetan Committee	@西藏共青团
the United Nations	@联合国
the SCO	@上海合作组织
Tsinghua University	@清华大学

Interacting with party media accounts, such as retweeting their posts and mentioning them in the text, is a common practice used by accounts of government agencies and government-affiliated organizations on Weibo. In contrast, frequent interaction with pop celebrities is not the case. To better illustrate this point, we scraped all of the original Weibo posts produced by two representative official accounts, “@Chinese Police Online” (中国警方在线) and “@Women’s Voice” (女性之声), from the date of their creation until the end of 2020. The former account was set up by the Ministry of Public Security in 2011 and has been the most influential Weibo account affiliated with the government for many years,<sup>42</sup> while the latter account was set up in 2014 and is owned by the All-China Women’s Federation, an organization affiliated with the party-state that is responsible for assisting the government in women’s work. We have counted the number of party media and pop idols’ accounts mentioned by the Chinese Police Online and Women’s Voice, as well as the specific number of posts. Then we compare them with the statistics from the CYL. Table A3 depicts that mainstream media Weibo accounts have been frequently mentioned by all three official accounts, with the number of posts mentioning mainstream media accounts exceeding 25% across the three accounts. Yet, pop celebrities have been rarely mentioned in posts by the Chinese Police Online and Women’s Voice, especially in contrast to the CYL’s posts. This comparison clearly shows that, compared to other official accounts, the CYL has kept a significantly closer tie with pop idols on Weibo in order to effectively implement its particular propaganda strategy.

**Table A3: Comparison between the CYL and Two Representative Official Accounts**

	Group	Number of Accounts	Number of Times (Proportion)	Number of Posts
The CYL	Pop Idols	112	2,688 (17.5%)	15,373
	Media	93	4,278 (27.8%)	
The Chinese Police Online	Pop Idols	26	104 (0.2%)	4,1696
	Media	95	10,675 (25.6%)	
The Women’s Voice	Pop Idols	53	704 (5.7%)	12,331
	Media	89	3,576 (29.0%)	

*Notes:* The table provides a comparison of the differences in Weibo operation strategies between the CYL and the other two representative official accounts. Although all three accounts frequently mention mainstream media, the CYL noticeably interacts with pop idols much more frequently than the other two accounts.

<sup>42</sup>Data source: [https://www.thepaper.cn/newsDetail\\_forward\\_2802674](https://www.thepaper.cn/newsDetail_forward_2802674).



**Table A4: The Top 10 Words of Each Topic in Chinese**

Topic	Topic Labels	Top 10 Words
1	Sino-US relations & Taiwan Issues	美方(The US) 外交部发言人(Foreign Ministry Spokesperson) 华春莹(Hua Chunying) 台湾(Taiwan) 中方(China) 大陆(Mainland China) 耿爽(Geng Shuang) 台独(Taiwan Independence) 关税(Tariffs) 王毅(Wang Yi)
2	The COVID-19 Epidemic	疫苗(Vaccine) 病例(Confirmed Cases) 检测(Test) 公司(Company) 信息(Information) 新冠病毒(Novel Coronavirus) 未成年人(Minors) 调查(Investigation) 新冠肺炎(Coronavirus Pneumonia) 冠状病毒(Coronavirus)
3	Value Guidance for Youth	创业(Start an Undertaking) 青年>Youth) 志愿(Volunteer) 中国青年(Chinese Youth) 代言(Endorsement) 核心价值观(Core Socialist Values) 清朗(Purification) 青少年(Teens) 团委>Youth League Committees) 志愿者(Volunteers)
4	The top leadership of the CCP	会议(Conference) 群团(Mass Organizations) 改革(Reform) 总书记(General Secretary) 中共中央(The CCP Central Committee) 召开(Convene) 座谈会(Symposium) 重要讲话(Important Speech) 深化改革(Deepening Reform) 李克强(Li Keqiang)
5	Sino-Japanese relations	南京大屠杀(Nanjing Massacre) 抗战(Resistance) 抗日战争(Anti-Japanese War) 日军(Japanese Army) 幸存者(Survivors) 勿忘(Don't Forget) 纪念(Commemorate) 抗日(Anti-Japanese) 胜利(Victory) 纪念馆(Memorial Hall)
6	China's Overseas Cooperation	文化(Culture) 发展(Development) 大会(General Assembly) 传统(Tradition) 一带一路(The Belt and Road Initiative) 复兴(Rejuvenation) 更加(More) 改革开放(Reform and Opening Up) 现代化(Modernization) 合作(Cooperation)
7	Hong Kong Issues	示威者(Protesters) 香港(Hong Kong) 暴徒(Rioters) 止暴制乱(Stop Violence and Curb Disorder) 警察(Police Force) 消防员(Firefighters) 被困(Trapped) 港独(Hong Kong Independence) 澳门(Macau) 内地(Mainland China)
8	Chinese Athletes' Victory	选手(Player) 中国队(Chinese Team) 冠军(Champion) 奥运会(Olympics) 世锦赛(World Championships) 谣言(Rumor) 夺冠(Win the Championship) 比赛(Competition) 运动员(Athlete) 金牌(Gold Medal)
9	Memorial Sacrifice	维和(Peacekeeping) 训练(Training) 海军(Navy) 部队(Troops) 空军(Air Force) 志愿军(Volunteers) 抗美援朝(Resist US Aggression and Aid Korea) 中国人民解放军(PLA) 遗骸(Remains) 战机(Fighter Aircraft)
10	Inspiring the Youth	青春>Youth) 生活(Life) 梦想(Dream) 学生(Student) 孩子(Child) 大学(College) 人生(Life) 希望(Hope) 努力(Effort) 阳光(Sunshine)
11	Technological Advances	卫星(Satellite) 航天(Aerospace) 研制(Develop) 运载火箭(Launch Vehicle) 一号(No. 1) 发射(Launch) 中国航天(China Aerospace) 北斗(Beidou) 试验(Test) 院士(Academician)
12	Promote Positive Exemplars	妈妈(Mother) 雷锋(Lei Feng) 父母(Parents) 春节(Chinese New Year) 感谢(Thanks) 女孩(Girl) 医生(Doctor) 护士(Nurse) 家人(Family) 女儿(Daughter)
13	Online Patriotic Activities	祖国(Motherland) 国旗(National Flag) 爱国(Patriotic) 中国人(Chinese) 祝福(Blessing) 合个影(Group Photo) 五星红旗(Five-Star Red Flag) 骄傲(Pride) 瞬间(Moment) 偶像(Idol)

**Table A5: Summary Statistics**

Variable	Obs.	Min	Max	Mean	S.D.
Retweet	15,356	0	2,0149,438	2495.095	163551.300
Comment	15,356	0	386644	627.3423	3957.425
Like	15,356	0	663264	2717.685	11105.870
Topic	15,356	1	13	6.847	3.681
Celebrity mentions	15,356	0	1	0.025	0.156
Post length	15,356	5	489	119.922	46.512

*Notes:* The table presents the results of descriptive statistics of the outcome, explanatory, and control variables.

**Table A6: Relationship between Topics and Audience Feedback**

	Negative Binomial Regression					
	Retweet		Comment		Like	
	(1)	(2)	(3)	(4)	(5)	(6)
<b>Panel A: Topics</b>						
<i>Non-nationalistic topics (Topics 2, 3, 4, 6, 9, 10, 12) as the reference</i>						
Topic 1:	0.120***	0.172***	0.485***	0.515***	0.303***	0.332***
Sino-US relations & Taiwan Issues	(0.036)	(0.035)	(0.045)	(0.045)	(0.092)	(0.090)
Topic 5:	0.534***	0.568***	0.449***	0.471***	0.382***	0.408***
Sino-Japanese relations	(0.035)	(0.061)	(0.062)	(0.061)	(0.048)	(0.048)
Topic 7:	-0.031	0.023	0.333***	0.367***	0.318***	0.353***
Hong Kong Issues	(0.040)	(0.039)	(0.037)	(0.036)	(0.039)	(0.055)
Topic 8:	0.237***	0.209***	0.428***	0.408***	0.459***	0.410***
Chinese Athletes' Victory	(0.032)	(0.033)	(0.033)	(0.034)	(0.029)	(0.030)
Topic 11:	-0.098***	-0.049*	-0.125***	-0.095***	0.068**	0.102***
Technological Advances	(0.029)	(0.028)	(0.028)	(0.027)	(0.027)	(0.027)
Topic 13:	0.408***	0.316***	0.374***	0.313***	0.740***	0.682***
Online Patriotic Activities	(0.048)	(0.063)	(0.063)	(0.063)	(0.083)	(0.086)
<b>Panel B: Post Features</b>						
Celebrity mentions (yes = 1)		0.918***		0.769***		0.821***
		(0.047)		(0.066)		(0.087)
Post length		-0.002***		0.0004		-0.001***
		(0.000)		(0.000)		(0.000)
Observations	15,356	15,356	15,356	15,356	15,356	15,356
Year FE	Y	Y	Y	Y	Y	Y
Pseudo R2	0.021	0.024	0.049	0.051	0.065	0.067

*Notes:* The table presents the standardized coefficients. Robust standard errors are reported in parentheses. \*, \*\*, and \*\*\* represent significance at 10%, 5%, and 1% levels, respectively.

**Table A7: The Heterogeneity of Celebrity Mentioning Effects across Nationalistic Topics**

	Negative Binomial Regression		
	Retweet	Comment	Like
	(1)	(2)	(3)
<i>Panel A: Topic 1 (Sino-US &amp; Taiwan Issues)</i>			
Celebrity mentions	1.054*** (0.273)	0.733*** (0.160)	0.676*** (0.166)
Controls	Y	Y	Y
Year FE	Y	Y	Y
Observations	1,238	1,238	1,238
Pseudo R2	0.019	0.024	0.018
<i>Panel B: Topic 5 (Sino-Japanese Relations)</i>			
Celebrity mentions	0.857*** (0.116)	0.734*** (0.146)	0.637*** (0.134)
Controls	Y	Y	Y
Year FE	Y	Y	Y
Observations	1,277	1,277	1,277
Pseudo R2	0.008	0.025	0.051
<i>Panel C: Topic 7 (Hong Kong Issues)</i>			
Celebrity mentions	0.935*** (0.324)	0.696*** (0.090)	0.524** (0.214)
Controls	Y	Y	Y
Year FE	Y	Y	Y
Observations	952	952	952
Pseudo R2	0.012	0.029	0.038
<i>Panel D: Topic 8 (Chinese Athlete's Victory)</i>			
Celebrity mentions	0.188** (0.089)	-0.017 (0.066)	0.376*** (0.057)
Controls	Y	Y	Y
Year FE	Y	Y	Y
Observations	1,108	1,108	1,108
Pseudo R2	0.015	0.018	0.023
<i>Panel E: Topic 11 (Technological Advances)</i>			
Celebrity mentions	1.147*** (0.252)	1.008*** (0.250)	0.633*** (0.221)
Controls	Y	Y	Y
Year FE	Y	Y	Y
Observations	1,369	1,369	1,369
Pseudo R2	0.013	0.024	0.022
<i>Panel F: Topic 13 (Online Patriotic Activities)</i>			
Celebrity mentions	0.940*** (0.128)	0.860*** (0.145)	0.760*** (0.152)
Controls	Y	Y	Y
Year FE	Y	Y	Y
Observations	621	621	621
Pseudo R2	0.018	0.036	0.041

*Notes:* The table presents the standardized coefficients. Robust standard errors are reported in parentheses. \*\* and \*\*\* represent significance at 5% and 1% levels, respectively.

## Discussion on the Features and Representative Posts of Nationalistic Topics

The primary objective of “pride-oriented” nationalistic propaganda is to inspire ordinary people’s national pride by emphasizing or exaggerating China’s achievements in various fields. To this end, the CYL has extensively covered Chinese athletes’ victories in the Olympic Games, World Championships, and other important sports tournaments, and in the process has actively interacted with popular celebrities. In addition, technological achievements have also been used by the CYL to evoke national pride. For example, high-speed rail is presented as a symbol of China’s technological superiority. In a post, the CYL mentioned that a Swede conducted a coin experiment (letting it keep balance) on a high-speed train in China, and the coin kept balance for more than eight minutes, before showing a video of someone conducting a similar experiment in Japan, but failing several times (see Table A1 in the Appendix for the original text). By comparison, the post tried to leave an impression that China’s high-speed rail technology is superior to Japan’s. Meanwhile, the CYL launched several online patriotic activities to bolster the national pride of young netizens. To maximize the engagement of ordinary people, the CYL makes full use of the influence of pop celebrities, either by interacting with them to promote activities and/or inviting them to attend in person, such as the cases of TFboys and Lay Zhang we mentioned in the main text.

Furthermore, “hostility-oriented” nationalism is also vital for the CYL to steer public opinion. Due to historical reasons and territorial disputes over the Diaoyu islands, China-Japan relations have been tense since 2012 (Cairns and Carlson 2016). To drive people’s attitudes toward Japan, around 10% of the postings released by the CYL each year are on topics related to Japan, and these posts mainly asked people not to forget Japan’s invasion. For example, on the grounds of the APA event,<sup>43</sup> the CYL in a post introduced the history of Japanese right-wing forces and their threat to China and regional stability, and the post was viewed over 1 million times as of the end of 2021.<sup>44</sup> Similarly, the trade war and an array of other disputes have strained the Sino-US

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<sup>43</sup>The Japanese hotel group APA placed books denying the Nanjing massacre in its room in 2017.

<sup>44</sup>See Table A1 in the Appendix for the original text.

relationship over the last few years. When the Trump administration imposed high tariffs and sanctions on Chinese goods, the CYL sped up the anti-US propaganda on the internet, which can be reflected by the steep rise of the Topic 1 curve after the year 2018 in Figure 2 of the main text.

Cross-strait relations have also deteriorated since the election of the pro-independence DPP in early 2016. The proportion of anti-Taiwan independence content, therefore, in the CYL's nationalistic propaganda increased, and the tone of Weibo posts about this topic became increasingly harsh. On July 6, 2016, the CYL released a post accusing Leon Dai (戴立忍), a Taiwanese actor set to participate in a Mainland movie, of advocating for Taiwan independence (See Table A1 in the Appendix for the original text). This post quickly evolved into a large-scale online collective action calling for a complete ban on Leon Dai and other Taiwan's pro-independence celebrities. This event played a significant role in building the CYL's "heroic image" of anti-Taiwan independence among young netizens. Following that, the CYL routinely released posts criticizing the DPP authorities and emphasizing the importance and inevitability of cross-strait reunification. Likewise, because of the Anti-ELAB movement, the topic relating to Hong Kong issues became the primary focus of the CYL's propaganda in 2019. In a number of posts, the CYL condemned the demonstrators as rioters and expressed steady support for the Hong Kong government and police forces. Simultaneously, the CYL kept a close tie with hyperpatriotic groups such as "Fangirls" that defended China in cyberspace against Hong Kong's dissenters and Western forces.

## Notes on Construction of the Explanatory Variables

Here we discuss how we use the STM outcomes to estimate the topic categorization for each post, i.e., the explanatory variable of the statistical analysis. Specifically, after running the STM, each post would be given an assessment of the probability of being attributed to each topic, with a value ranging from 0 to 1. For each post, we compared the probabilistic values of 13 topics and assigned the post to the topic with the highest value. Since we dropped stop words and non-literal symbols before running the STM, a small number of rows containing only stop words and symbols became empty. Removing them, the observations we finally obtained are 15,356.

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