RESEARCH ARTICLE

Social Desirability of Dissent: an IAT Experiment with Chinese University Students

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Abstract

Researchers have been wary about social desirability of approval in authoritarian countries, namely, the tendency for people to overreport their regime support. Few have studied the social desirability of dissent, the reverse tendency for people to underreport their regime support. This paper argues that social desirability of dissent exists among Chinese university students because 1) the Chinese government has loosened its control on speech, 2) Chinese university students experience peer pressure to be aloof from the government, 3) blatant propaganda gives regime supporters a negative image, and 4) open expression of regime support may associate one with the infamous Fifty Cent Party. We conducted an implicit association test (IAT) among 306 Chinese university students and found distinct social desirability of dissent among them. We also found that the effect of social desirability of dissent is stronger among firm regime supporters identified by the IAT than among weak supporters.

Keywords China · Political support · Social desirability · Preference falsification · IAT

When political scientists brought public opinion surveys to authoritarian countries, they were confronted with a problem—people may overreport their support for authoritarian regimes out of fear [33–35, 50–54, 63]. This problem, known as social desirability bias or preference falsification, is all too familiar to students of Chinese politics, a field where survey

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methods have entered the mainstream and kept reporting strong popular support for the communist regime. Citing the regime's repressive character, many scholars claim that the data are not to be trusted [9, 15, 41, 46].[1] Scholars who seriously scrutinized this have discovered evidence on both sides, opening opportunities and brining challenges in this burgeoning subfield [6, 8, 28, 36, 37, 48, 56, 60, 61].

However, the sole focus of this debate has been the social desirability that inflates people's political support—"social desirability of approval" as we call it. Little attention has been paid to the reverse social desirability that makes one *underreport* his or her political support, which we refer to as "social desirability of dissent." In this paper, we show that such social desirability exists among Chinese university students, a politically important group that represents a maximum of 2% of the population.[2] A small percentage notwithstanding, they constitute a politically important group that historically led pivotal political movements such as the May 4 Movement in 1919, the Red Guards Movement in 1966–1969, and the Tiananmen Protests in 1989.

To some readers, it is far-fetched, almost frivolous, to talk about social desirability of dissent in an authoritarian country. How can something be socially desirable if it pitches a person against a repressive government and get him or her in trouble? However, recent studies and historical experiences provide at least three grounds for thinking otherwise. First, the Chinese government's grip on speech has been loosening since the totalitarian era of 1950s to 1970s, and nowadays, political criticism is mostly safe in private and frequently tolerated in public. For example, King and his coauthors [32, 33] find that Chinese Internet users are highly critical of the government and their online criticism is mostly tolerated as long as no anti-government collective action is attempted. The tightened restriction on speech under Xi Jinping may have reversed this trend a bit, but it is not even close to the point of the Mao era when people were imprisoned for any expression of political disagreement.

Second, Chinese university students are under peer pressure to be cool or aloof from the authoritarian government. University students are a privileged group in Chinese society. They must pass competitive entrance exams to be admitted into a university. As mentioned above, only about 2% of China's population have college degrees. The feeling of being the "chosen" may make the Chinese college students think they are the intellectuals who should not "go with the wind" when it comes to government propaganda that is aimed at the general population. In addition, university students became critical of the regime in 1919 when the government bent over to the demands by foreign governments, in the 1960s against the bureaucratic establishment, and in 1989 when the government appeared inefficient and corrupt. Their actions may have created a deviant and rebellious collective persona to which the contemporary university students feel obliged to conform.[3]

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[1] In 2008, 88% of Chinese people reported that they fully trust or somewhat trust the national government (Asian Barometer Study II). Comparatively speaking, the level of support is high. The percentages of people who fully or somewhat trust the national government are 38 in Germany (Eurobarometer 2010), 24 in Britain (Eurobarometer 2010), 13 in France (Eurobarometer 2010), 20 in the United States (Evaluations of Government and Society Study 2010), and 12 in Japan (Asian Barometer Study III).

[2] As of 2017, China has 196 million people with college degrees and 29 million university students currently enrolled [64, 65].

[3] Please note that we are not trying to challenge the notion that Chinese college students support their government. They only tend to *underreport* such support so that they may appear independent and thoughtful.

Third, political propaganda in China is for the most part conspicuous and ineffective [23, 24]. When students openly express warm feelings toward the authoritarian regime, they risk projecting an image of being naïve and gullible, and worse, they may create the impression that they agree or sympathize with the Fifty Cent Party (五毛党), the infamous government-paid online commentators who fill cyberspace with pro-regime messages.

We propose that social desirability of dissent not only exists among Chinese university students but is an important element of their public discourse. To test this hypothesis, we conducted an implicit association test (IAT) experiment—a powerful tool to detect social desirability [17, 19]—among 306 students at a university in southwestern China in the summer of 2014. By comparing students' explicit political support reported in surveys with their implicit support captured in the IAT, which is beyond there conscious control, we found that social desirability of dissent was widespread among the students, and in addition, it was the strongest among those reporting high levels of implicit regime support.

Although our sample does not represent all university students in China, it makes important contributions to the study of public opinion and authoritarian politics. As a pioneer application of the IAT to political support, our study has developed an implicit measurement of political support, diversifying how scholars conceptualize and operationalize political support. Theoretically, our study raises the possibility that authoritarian regimes produce not only resigned supporters, but also posed moderates, especially among the well-educated subpopulation and when repression is mild. On the whole, our study calls for caution when interpreting Chinese university students' potential for challenging the authoritarian regime [13].

A more Open Speech Environment

Social desirability of dissent is unlikely if people feel dangerous to criticize their government. That seems to be the case in China under Mao Zedong, when people got persecuted for voicing criticisms [57]. This also seems to be the case in Kim's North Korea, as many North Korean defectors have testified [22]. But today's China differs from Mao's China and Kim's North Korea in significant ways. The government today still sanctions regime-challenging activities, but when it comes to speech, it takes a softer approach. Private criticisms of the government among friends and family members are common and selfdom get people in trouble. Even public criticisms are tolerated more than commonly assumed. Studies on contentious politics show that the central government tolerates or even tacitly encourages protests as a tactic to build regime support, so long as the protests do not seek to topple the communist regime [56, 66]. As a corollary, public criticisms expressed in these protests are handled by the government with leniency [39, 59]. Studies on online expressions in China show similar findings. In their study of online censorship in China, Gary King, Jennifer Pan, and Margaret E. Roberts [31] discover that the priority of online censorship is not to silence criticisms but to forestall and undercut collective action, as critical content does not make a comment more likely to be censored ([31]:326). In their online field experiment, Jidong Chen, Jennifer Pan, and Yiqing Xu [7] demonstrate that when people made demands to the government on government websites, they were more likely to get a

response if they threatened collective action or tattling to upper-level governments. By contrast, displaying loyalty were not more likely to bring responses from the government.

Peer Pressure to Be Aloof from the Regime

It has been observed that university students in the US experience a liberal peer culture. A 2015 PEW survey shows that 47% of college graduates and post-graduates identify themselves as consistently or mostly liberal, whereas only 27% identify themselves as consistently or mostly conservative [44]. Among faculty, the gap is even wider—with liberal professors outnumbering conservative professors by 5 to 1 [20, 40]. The peer pressure is manifested by how frequent conservatism is made into a target of ridicule and the uneasiness conservative students feel when expressing their true opinions [5, 12, 27, 34, 58].

The liberal peer pressure felt by American university students can help renew our perspective on the political attitudes of their Chinese counterparts. Do Chinese university students also feel peer pressure when they publicly express their political attitudes? We think they do, and the type of peer pressure we focus on is peer pressure to be aloof from the authoritarian government. Although the threshold of college admissions was lowered after 2000, students in China still have to pass demanding and competitive entrance exams to enter college. As a fraction of the population, this highly selective group may be conferred the status of the "chosen few," which comes with a social expectation that they are the intellectuals who should be skeptical of political propaganda and sparingly express warmth toward the authoritarian government. In addition, the student movements in the twentieth century may also contribute to the peer pressure to be aloof. University students waged powerful protests against the government establishments in the 1919 May 4th Movement, the 1966–1969 Red Guards Movement, and the 1989 Tiananmen Protests. The protestors' actions in these events may have created a rebellious and deviant collective persona to which the present-day university students are pressured to conform. Under this peer pressure, university students may choose to appear cool in surveys even when they harbor strong support for the government.

Our discussion above is consistent with the existing research which repeatedly shows that the college-educated are less supportive of the authoritarian government than the general public [29, 38, 43, 47, 49, 55]. Our own analysis that narrowly focuses on students attending university in 2010 finds a more remarkable pattern. As Table 5 in the appendix shows, only a minority (28.9) of students who were attending university reported that they "completely trust in the government," but the majority (53.5%) of the general public reported so. As our discussion suggests, the weaker trust exhibited by the university students should be at least partially attributed to their peer pressure to underreport their political trust.

The Negative Image of Being Indoctrinated by Propaganda

What role does political propaganda play? Chinese university students live in a media environment controlled by the authoritarian government. And they are

required to take political education courses as parts of their curricula.[4] Designed to instill pro-regime ideas, these courses are ideologically assertive but intellectually dubious. Does propaganda make it socially desirable to support the regime? If so, we should expect propaganda to offset, or even cancel out, students' peer pressure to be aloof from the regime.

Given what we know about propaganda in China, we think this is unlikely. In addition, we propose that propaganda works in the opposite way: it makes Chinese university students reluctant to openly support the regime, because doing so would project an image of being indoctrinated, an image disliked by this well-educated group. In China, it is no secret that the government actively manipulates political messages on the media. The propaganda on prime time TV news is so clumsy and conspicuous that it fails to change ordinary Chinese ([23]:420), let alone more perceptive university students [29], a finding supported by Haifeng Huang's [23] experiment. In fact, the continual existence of the ineffective propaganda is puzzling and demands explanation [23].

The Negative Image of the Fifty Cent Party

The CCP regime is not complacent with the banal propaganda tactics discussed above. In recent years, it tried softer and more sophisticated approaches like sponsoring patriotic blockbuster movies which became box office disasters [45]. Yet a better known tactic is the use of the Fifty Cent Party (五毛党), which refers to an army of government-hired commentators who populate the cyberspace with pro-regime messages. In the public lexicon, the Fifty Cent Party has a largely negative connotation [21]. People who openly support the regime, therefore, risk being associated with this infamous group.

The name of Fifty Cent Party comes from the notion that for every pro-government comment a commentator is paid 50 cents in Renminbi (around 7 US cents). Speculations about the Fifty Cent Party began in the early 2000s. Even when its existence was still in doubt, the Fifty Cent Party quickly became a derogatory label for people who praise the regime out of pragmatic or mercenary motives [62]. Underlying the label is a moral condemnation of those who enrich themselves through colluding with the government to distort truths and manipulate public opinion. In its public usage, the Fifty Cent Party often serves as a slur on supporters of the regime. A 2017 study by King, Pan, and Roberts discovers the existence of the Fifty Cent Party and unveils its several faces. It shows some common perceptions of the Fifty Cent Party to be inaccurate. For example, there is no indication that commentators are paid 50 cents, or any amount, for each of their posts; instead commentators are more likely to be government employees volunteering outside their regular jobs. More important, the commentators' priority is not to debate critics of the regime but to cheerlead for the regime or to change the subject, and even the government is eager to dissociate itself from the Fifty Cent party. For example, in response to King, Pan, and Roberts's study,

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[4] Currently, there are four mandatory courses: Principles of Marxism (马克思主义原理), Ideological and Moral Cultivation (思想道德修养), Essentials of Mao Zedong Thought (毛泽东思想概论), and Modern Chinese History (中国近现代史).

the state-run *Global Times* [16] ran an editorial that disparaged the study as a superficial understanding of China.

The foregoing discussions suggest that Chinese university students, who live in a more open speech environment, under peer pressure to be aloof from the regime, and who dislike appearing as preys of political propaganda and accomplices of the Fifty Cent Party, face social desirability of dissent in their public expression. Because the image of being simple and naïve is more closely tied to expressing extreme levels of political support, we expect social desirability of dissent to be more pronounced among die-hard regime supporters. If social desirability of dissent does exist, it should be more intense among students whose majors are especially at odds with the image of a blind regime supporter. Compared with other majors in our sample, social science majors place greater emphasis on critical thinking and sophisticated understanding on social and political issues. Therefore we expect social desirability to be stronger among social science majors.

We propose three hypotheses:

> H1: At the aggregate level, student participants show less explicit political support than implicit political support.
> H2: Students with more implicit political support are more likely to underreport explicit political support in the survey than students with less implicit political support.
> H3: Social science majors are more likely to underreport explicit political support than other majors in the survey.

Empirical Test

An Overview of the Implicit Association Test

The key to testing our hypotheses is to measure individuals' political support beyond conscious control. Such measures are relatively free from social desirability bias and can be compared with political support reported in surveys at both the aggregate and individual levels. The method we use is the implicit association test (IAT). The IAT has been widely used in social psychology to detect prejudice and racism. The attitudes gathered in surveys are "explicit attitudes" because they are verbally expressed, self-reported, and easy to manipulate. By contrast, the IAT captures implicit attitudes by measuring people's automatic responses to words and images [17]. As Dasgupta and coauthors ([11]:317) write, in an IAT, attitudes "are expressed without intention or control, although perceivers may become aware of the attitude under scrutiny during the task."

Explicit attitudes are different from implicit attitudes in at least two ways. First, people may deliberately misrepresent their attitudes under social pressure. A person secretly embracing racism may portray himself as a supporter of racial equality because it is the socially acceptable thing to do. The IAT proves be a good tool to unmask such individuals [1, 3, 17]. Second, explicit attitudes may differ from implicit attitudes even without people's intentional control, because explicit attitudes only capture the conscious parts of attitudes, while unconscious thoughts and feelings loom large in the

operation of human brain [4, 25]. Arcuri and coauthors [2] measured the implicit party preferences of undecided voters one month before the election and found that the implicit preferences strongly predicted the voters' actual voting decision.

The IAT measures implicit attitudes by assessing the strengths of associations between objects. Imagine you are sorting some photos and name tags into two baskets. You will finish the task quickly and easily if the task is to put female photos and female name tags in one basket and male photos and male name tags in the other basket. But you will be slower and make many errors if the task is instead to put female photos and male name tags in one basket and male photos and female name tags in the other basket. This is because your mind strongly associates male photos with male name tags and female photos with female name tags. The IAT puts this thought experiment in practice. For example, researchers may test people's relative preference for white and black Americans by examining the strengths of the associations between their photos on the one hand, and positive or negative words on the other hand. Thus, the male and female photos in the thought experiment become photos of white and black Americans, the male and female name tags become positive and negative words, and the two baskets become two computer keys. By observing if one finds it easier to sort white Americans and positive words on one key and black Americans and negative words on the other key researchers can know whether this person prefer white or black Americans.

Using the IAT, we are able to measure people's implicit preference for the central government relative to another target. We choose this target based on three criteria. First, it must be comparable to the central government in at least some dimension so it makes sense to say one prefers one to the other. For example, it makes no sense to compare the central government with pizzas. However, the target does not have to be comparable to the central government in every dimension. For example, Greenwald et al.'s [17] compared flowers and insects, because the former evokes positive feelings and the latter negative feelings. Second, the target must have the same meaning to different participants. For this reason, "the local government" is not a good choice because participants from different localities may have different local governments in mind during the experiment. Third, people's attitudes towards this target should be free from social desirability so that any social desirability to be detected is solely about the central government. The target we choose is university leadership. University leadership is comparable to the central government because both are governing bodies with power over the participants. University leadership has the same meaning to all our participants because they are students at the same university. Attitudes towards the university leadership should not be seriously contaminated by social desirability because a university has no strong incentive or deterrence power to compel certain responses in an academic survey. With the experiment thus designed, if a participant has better performance in sorting the central government and positive words on one computer key and university leadership and negative words on the other key, he or she has an implicit preference for the central government over the university leadership. Conversely if a participant has better performance in sorting the central government and negative words on one key and university leadership and positive words on the other key, he or she has an implicit preference for the university leadership over the central government.

Participants

In June, 2014, we conducted an experiment in a public research university in southwestern China. The second-tier status of the university provides a reasonably good representation of the typical Chinese university students in China. Three hundred and six (306) participants participated in our experiment through campus advertisement. Although we did not have a random sample, we strived for diversity with respect to gender, year in school, and major. In our sample, 51 % of them (51%) were male and 49% were female. Fifty-three percent (53%) were undergraduate students and 47% were graduate students. Forty-seven percent (47%) majored in social sciences, 35% in science or engineering, 17% in business, and 0.3% in art.

Procedure

The experiment was conducted on the computers in a computer lab and it started with an anonymous survey followed by an IAT. We put the survey before the IAT because if the IAT came first instead, the participants might sense the purpose of our experiment and intentionally square their survey answers with the IAT performance. This is less of a concern with the survey coming first because it is unlikely that participants could tell the purpose of our study through a regular survey. Even if they could, it would be very difficult for them to control their responses in the subsequent IAT. Some may argue that the survey cannot capture social desirability because students should not feel peer pressure in anonymous surveys. However, it is well known that anonymous surveys are far from immune to social desirability. In addition, it is wrongheaded to assume that peer pressure only exists when one is around his or her peers, because peer pressure may be internal and has influence when one is alone. Moreover, even if we grant that the anonymous surveys may reduce peer pressure, our survey can serve as a stronger test. If it uncovers social desirability of dissent, we will have a stronger claim that it exists.

Survey The survey was taken on computers. We put two instruments of explicit preference in the survey. The first is a 100-point feeling thermometer. We asked the participants to rate their feelings towards the center and the university, with larger numbers indicating warmer feelings. The feeling thermometers have often been criticized for being vague about what they measure [26]. To cope with this problem, we asked whether the participants fully agree, somewhat agree, are indifferent, somewhat disagree, or fully disagree with the eight statements shown below. The summary statistics of the answers are reported in Table 6 in the appendix.

1. I generally trust the decisions of the central government.
2. I generally trust the decisions of the university leaders.
3. I generally trust that the central officials will do the right thing.
4. I generally trust that the university leaders will do the right thing.
5. I trust that the central government will do the right thing even if nobody oversees it.
6. I trust that the university leaders will do the right thing even if nobody oversees it.
7. The central government is responsive to people's needs.
8. The university is responsive to students' needs.

The survey also contains questions on demographic information, school major, CCP party membership, media use, and so forth, which will be used to explain participants' misreporting of preferences. The wording of key survey questions and the summary statistics are presented in Table 7 in the appendix.

The data we gathered show a strong support for the central government and a slightly weaker support for the university. According to the feeling thermometer, the average feeling towards the central government is 68 out of 100 and the average feeling towards the university is 63 out of 100. According to the participants' attitudes towards the eight statements, the average support for the central government is 10.7 out of 16, and the average support for the university is 10.1 out of 16.

The IAT After completing the survey, the participants went on to take an IAT on the computers. Our IAT tested people's implicit association between two targets (the center and the university) on the one hand, and two attributes (positive and negative) on the other hand. Words belonging to a target or an attribute appeared on the computer screen one after another and participants were asked to sort each word using the "e" key and the "i" key. A complete list of the words is presented in Table 8 in the appendix. On the top of the screen were labels reminding the participants of what "e" and "i" were for. For example, if a participant was told that "e" stood for the center and "i" for the university, after the phrase "Foreign Ministry" appeared on the screen, the participant should press "e," since the Foreign Ministry belongs to the central government. There were a total of five blocks of tasks. Blocks 1, 2, and 4 were learning blocks meant to familiarize the participants with what the two computer keys stood for. Block 3 and 5 were critical blocks in which participants' response time and accuracy were recorded.

To reduce the bias caused by the order of blocks ([17]:1478), we randomly divided the participants into two groups and assigned different orders of blocks to these two groups. The first group took the "center + positive" and "university + negative" task before the "center + negative" and "university + positive" task. The second group took the "center + negative" and "university-positive" task before the "center + positive" and university + negative" task. Table 1 and Table 2 describe the procedures in greater details. Table 1 shows, for example, that in Block 1 (learning block), the first group of participants were to sort words of the center onto "e" and words of the university onto "i." In Block 2 (learning block), they sorted positive words onto "e" and negative words onto "i." In Block 3 (critical block), they sorted words of the center or positive words onto "e" and words of the university or negative words on "i." In Block 4 (learning block), they sorted negative words onto "e" and positive words onto "i." In Block 5 (critical block), they sorted words of the center or negative words onto "e" and words of the university or positive words onto "i."

Results

Social Desirability at the Aggregate Level To know which types of social desirability exist, we compare participants' explicit political preferences reported in the survey with their implicit political preferences captured in the IAT. If a participant has a greater preference for the center in the survey than in the IAT, it is evidence of social

Table 1 IAT trial blocks of group one (151 Participants)

Block	Type of judgment	"e" key	"i" key	Number of trials
1. Learning block	Target categorization	Center	University	10
2. Learning block	Attribute categorization	Positive	Negative	10
3. Critical block	Combined categorization	Center or positive	University or negative	30
4. Learning block	Revised target categorization	Negative	Positive	10
5. Critical block	Revised combined categorization	Center or negative	University or positive	30

desirability of approval. If a participant has a weaker preference for the center in the survey than in the IAT, it is evidence of social desirability of dissent.

We have two indicators for explicit preference. The first is the feeling thermometer indicator calculated by subtracting the feeling towards the university from the feeling towards the center, resulting in an indicator ranging from −100 to 100 (positive values indicate preferences for the center over the university, negative values indicate preferences for the university over the center, and zero indicates being neutral). The distribution is shown on the left side of Fig. 1(a).
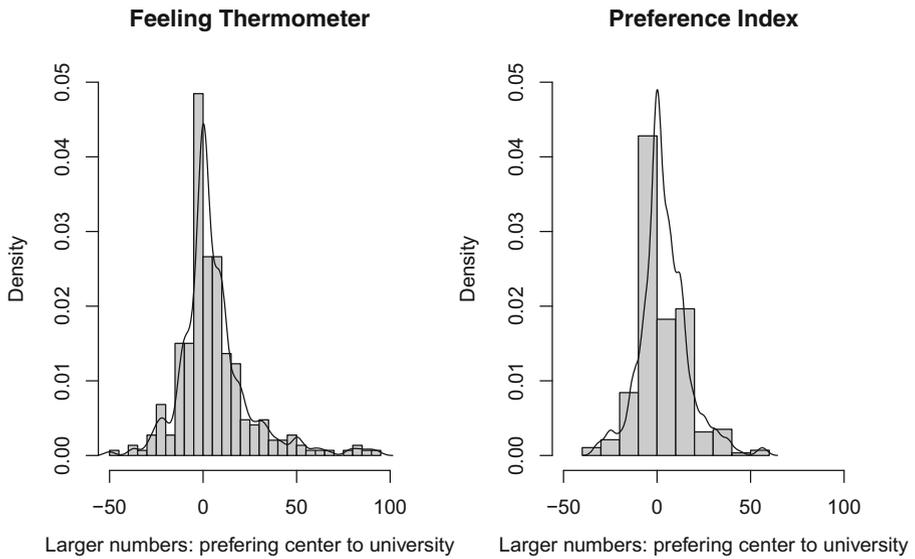
Our second indicator for explicit preference is constructed based on the participants' attitudes towards eight statements concerning the center and the university. We create an additive index for the center and an additive index for the university, with positive values indicating stronger support. Then we subtract the index for the university from the index for the center. The result is an index ranging from −16 to 16, with positive values indicating a preference for the center over the university, negative values indicating a preference for the university over the center, and zero indicating being neutral. To help visually compare this index with the indicator in Fig. 1(a), we convert it to a − 100 to 100 scale. The rescaled index is reported on the right side of Fig. 1(a).

Despite their slight right skewedness, both indicators in Fig. 1(a) show a strong central tendency toward zero. This suggests that in the survey, the participants were largely neutral in their preferences between the center and the university.

Table 2 IAT trial blocks of group two (150 participants)

Block	Type of judgment	"e" key	"i" key	Number of trials
1. Learning block	Target categorization	Center	University	10
2. Learning block	Attribute categorization	Negative	Positive	10
3. Critical block	Combined categorization	Center or negative	University or positive	30
4. Learning block	Revised target categorization	Negative	Positive	10
5. Critical block	Revised combined categorization	Center or positive	University or negative	30

(a) Two Indicators of Explicit Preferences

Feeling Thermometer   **Preference Index**

Larger numbers: prefering center to university   Larger numbers: prefering center to university

(b) Implicit Preferences

Larger numbers indicate prefering center to university
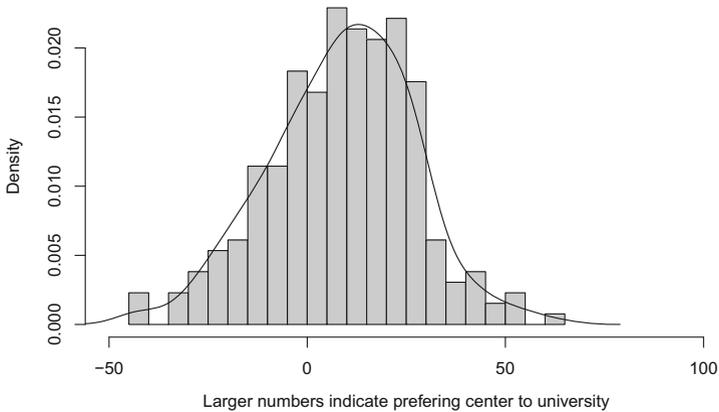
Fig. 1 Explicit preferences for the center relative to the University

Interesting patterns emerge when we turn to implicit preference. Our measure of implicit preference is the IAT score calculated based on one's response time and accuracy in the IAT experiment (full details on the algorithm are presented in Anthony G. Greenwald, Nosek, and Banaji's 2003 article) [18]. The IAT score ranges from −2 to 2, with positive values indicating preferences for the center over the university, negative values indicating preferences for the university over the center, and zero indicating being neutral. For ease of comparison between explicit and implicit preferences, we convert the IAT score to a − 100 to

Table 3 Comparing Implicit and Explicit Preference for the Central Government Relative to the University Leadership

	Mean	SD	Cohen's d*	t-score	p value	Correlation with IAT score
IAT score	0.175	0.368	0.476	8.082	0	1
Feeling thermometer	5.881	18.906	0.311	5.547	0	0.123
Survey attitudinal measure	0.592	2.069	0.286	5.031	0	0.107

d = mean/sd, IAT score and survey attitudinal measures un-rescaled

*The effect size measure d = mean/sd

100 scale. Figure 1(b) presents the distribution of the rescaled IAT score, which concentrates on a positive value. The mean of the IAT score is 0.17 and statistically different from 0 at the .05 level (see Table 3). Taken together, Figs. 1 demonstrates that social desirability of dissent exists at the aggregate level.

Table 3 shows a statistical account of Fig. 1. Specifically, it shows that our participants' implicit preferences for the center are stronger than their explicit preferences for the center. We use Cohen's d to measure the strength of preference [10]. A larger d indicates a greater preference for the center over the university. Table 3 shows that in the IAT, the participants had a greater preference for the center over the university than in the survey, as the d of the IAT score (0.476) is larger than the d of both the feeling thermometer indicator (0.311) and preference index (0.286).

Two Types of Social Desirability Detected, One Type Trumps

At the aggregate level, we have shown evidence of social desirability of dissent, but is there social desirability of approval? If so, how widespread is it? To answer these questions, we have to know which type of social desirability each participant exhibits. Towards this goal, we compare each participant's explicit preference with his or her implicit preference. Since explicit and implicit preferences have different scales, we take the z-scores for all the explicit and implicit preferences. If a participant's z-score for explicit preference is bigger than his or her z-score for implicit preference, he or she exhibits social desirability of approval. Conversely, if a participant's z-score for explicit preference is smaller than his or her z-score for implicit preference, he or she exhibits social desirability of dissent. Thus, we break all the participants into two groups, those with social desirability of approval and those with social desirability of dissent. Each participant in the former group is plotted in Fig. 2, and each participant in the latter group is plotted in Fig. 3. Circles in the figures represent implicit preferences and triangles represent explicit preferences. Comparing Figs. 2 and 3, we see that participants with social desirability of dissent outnumber participants with social desirability of approval by 1.6 to 1 (170:106).

Figures 2 and 3 also reveal a key distinction between how the two types of social desirability play themselves out among our participants. In Fig. 2, most of the
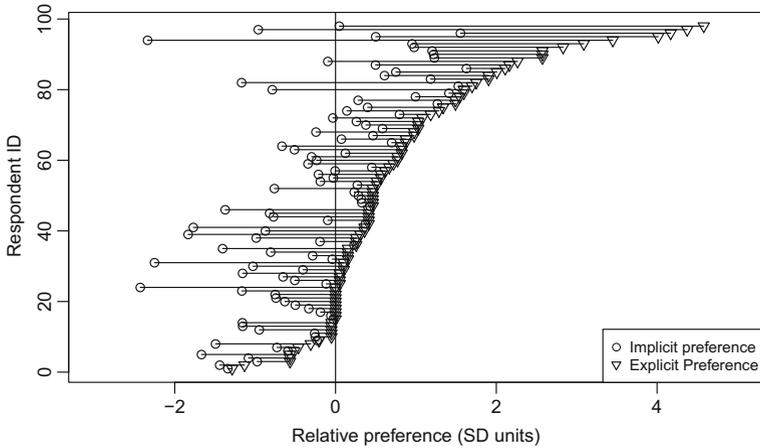
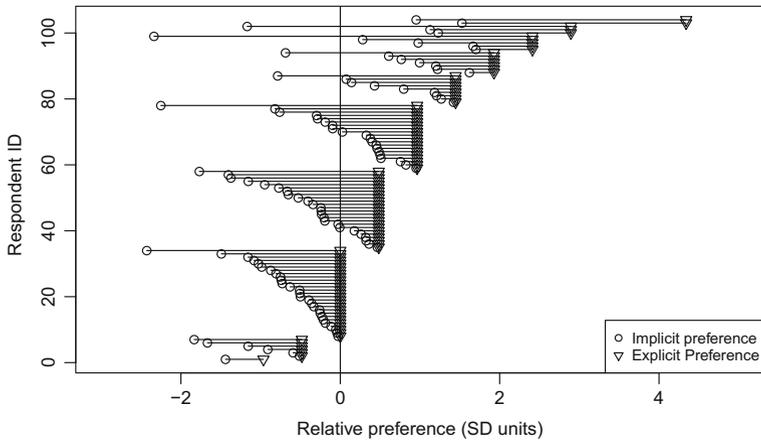Note: N = 106, explicit preference measured by feeling thermometer

Fig. 2 Individuals overreporting preferences for the center

participants with social desirability of approval have moderate preferences for the center in the IAT and stronger preferences for the center in the survey. This suggests that social desirability of approval is primarily a force that makes one appear as a more fervent supporter for the government than he or she really is. However, it is incorrect to say that social desirability of dissent is just the opposite force that makes one appear as a more severe critic of the government than he or she really is, because in Fig. 3, most participants are not severe critics of the regime by their implicit preferences, which are near zero. A more accurate interpretation of Fig. 3 is that when social desirability of dissent is at work, people would tone down their support for the regime and appear more moderate. All the essential findings from Figs. 2 and 3 are corroborated in Figs. 4
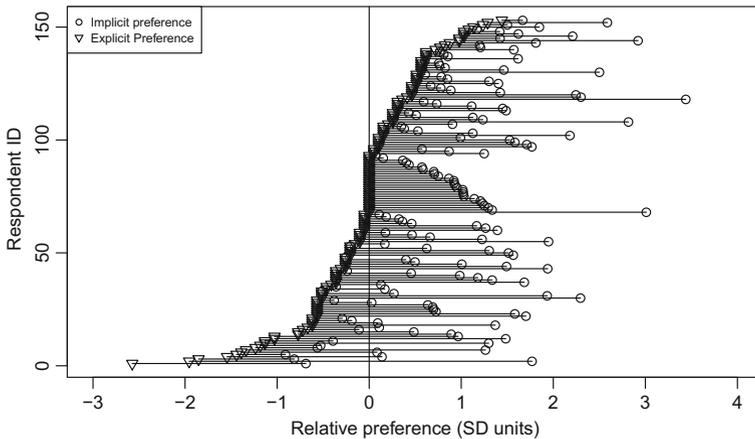
Note: N = 170, explicit preference measured by feeling thermometer

Fig. 3 Individuals underreporting preferences for the center

Note: N = 114, explicit preference measured by preference index

Fig. 4 Individuals overreporting preference for the center

and 5 which use the preference index as alternative measures of explicit preferences. *H1* is supported.

## Who Are more Influenced by Each Type of Social Desirability?

In Figs. 2, 3, 4, and 5, some horizontal lines cross zero. These are people who show an implicit preference for the university but an explicit preference for the center, or people who show an implicit preference for the center but an explicit preference for the university. In other words, the former group shows distinct social desirability of approval and the latter group shows distinct social desirability of dissent. Who are they? We specify two multinomial logistic regression models to answer this question.

The two models have the same specification, except that Model 1 uses the feeling thermometer to construct the dependent variable and Model 2 uses the preference index to construct the dependent variable. Despite the different measurements, the dependent variables in both models are whether one's implicit and explicit preferences are in the same or opposite directions. Both are categorical variables with three values: implicit and explicit preferences in the same direction (the baseline category), an implicit preference for the university and an explicit preference for the center, and an implicit preference for the center and an explicit preference for the university.[5] The independent variables include the standardized IAT score, gender, age, relative family income, school major, year in university, CCP membership, media use, and most-frequently-visited news websites (summary statistics in

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[5] Implicit and explicit preferences in the same direction: implicit measure ≥0 and explicit measure ≥0, or measure ≤0 and explicit measure ≤0.

An implicit preference for the university and an explicit preference for the center: implicit measure <0 and explicit measure >0.

An implicit preference for the center and an explicit preference for the university: implicit measure >0 and explicit measure <0.
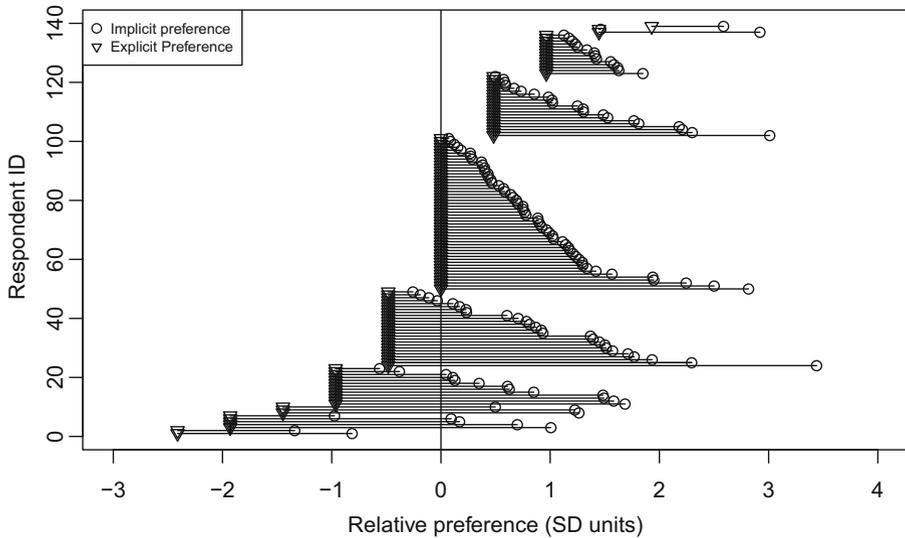
Note: N = 153, explicit preference measured by preference index

Fig. 5 Individual underreporting preference for the center

Table 6 in the appendix). If *H2* is correct that social desirability of dissent has stronger influence on diehard supporters of the CCP regime, we should expect that higher IAT scores is associated with having an implicit preference for the center and explicit preference for the university. If *H3* is correct that social science majors are more likely to underreport political support, we should observe that social science majors are more likely to have an implicit preference for the center and explicit preference for the university.

The results of both Models 1 and 2 support *H2*. In the third and fifth columns of Table 4, the coefficients of standardized IAT scores are positive and significant at the .05 level. However, against the prediction of *H3*, social science majors are not more likely than other majors to underreport their political support in surveys. This null finding suggests that we probably overestimated the social science majors' emphasis on critical thinking. Model 1 also finds that else equal, women are more likely to be influenced than men by social desirability of dissent. While this relationship does not hold in Model 2, it suggests that female students are less confident than male students in expressing socially undesirable opinions, a possibility worth probing. As for media, we find no difference between Internet users and traditional media users in their likelihood to underreport political support. However, both Models 1 and 2 find a positive association between underreporting political support and visiting commercial news portals such as Sina, Sohu, Netease, and QQ. It is unexpected that the use of social media (e.g. forums, Weibo, Weichat) decreases social desirability of dissent. The opposite effects of commercial news portals and social media may be explained by the different content on commercial news portals and social media. Commercial news portals mainly provide news produced by professional journalists, and news stories are typically followed by

Table 4 Predictors of Opposite Implicit and Explicit Preferences

	Model 1 Explicit preference measured by feeling thermometer		Model 2 Explicit preference measured by preference index	
	Implicit university & explicit center	Implicit center & explicit university	Implicit university & explicit center	Implicit center & explicit university
Intercept	−1.17	−2.81	1.29	−3.83*
	(3.46)	(2)	(3.96)	(2.08)
Standardized IAT Score	−1.97***	.42**	−1.94***	.58***
	(0.33)	(0.2)	(0.36)	(0.22)
Age	.01	−.03	−.1	.02
	(0.17)	(0.09)	(0.21)	(0.09)
Female (male = 0)	−.81	.91**	−.51	.53
	(0.55)	(0.39)	(0.57)	(0.4)
Income (1 to 6)	−.46	.25	−.13	.36
	(0.4)	(0.27)	(0.4)	(0.29)
Social science major (non-social science = 0)	.15	−.03	.2	−.59
	(0.48)	(0.37)	(0.5)	(0.4)
Year in school (1–6)	.01	.25	.08	−.2
	(0.28)	(0.17)	(0.31)	(0.19)
CCP member	−.88	.28	−.64	.93*
	(0.6)	(0.45)	(0.65)	(0.52)
Internet (traditional media = 0)	1.54	−.39	.6	.03
	(1.21)	(0.61)	(0.91)	(0.7)
Other media (traditional media = 0)	3.34**	1.41	−12.68	.6
	(1.6)	(0.94)	(869.7)	(1.06)
Website frequently visited				
State owned websites (0 to 3)	−.32	.3	−.22	.31
	(0.38)	(0.24)	(0.4)	(0.26)
Commercial news portals (0 to 3)	−.3	.33*	−.6*	.46**
	(0.3)	(0.19)	(0.35)	(0.21)
Liberal websites (0 to 1)	−.1	−.4	−.37	.57
	(0.61)	(0.4)	(0.66)	(0.39)
Oversea websites (0 to 1)	−10.74	1.4	−11.22	−.58
	(1196.61)	(1.16)	(1258.18)	(1.37)
Social media (0 to 3)	.04	−.51**	−.18	−.29
	(0.27)	(0.2)	(0.3)	(0.21)
N. of observations	265		258	

Note: Multinomial logistic regression, *** $p \leq 0.01$; ** $p \leq 0.05$; * $p \leq 0.10$, two-tail test, standard errors in parentheses; For all the models, the reference category of the dependent variable is implicit and explicit preferences in the same direction

readers' comments. The numbers of comments easily exceed ten thousand and the comments voted to the top are often cynical or critical. The tones of online comments may instill into readers a social desirability to be critical. By contrast, the content on social media is much more diverse. Most people use social media not to read news, but to share random thoughts and personal lives. Therefore, the social desirability of being critical may not be as prevalent on social media as on commercial news portals. Moreover, years in university (1–4 refer to undergraduate students and 5–6 graduate students) have no influence on underreporting political support.

When it comes to social desirability of approval, only standardized IAT score has statistically significant influence in both Models 1 and 2. Specifically, standardized IAT score is negatively associated with having an implicit preference for the university but an explicit preference for the center. This means that social desirability of approval is stronger among those who dislike the regime deep down inside. It is noteworthy that being a CCP member and visiting state-owned websites do not increase social desirability of approval, pointing to the futility of state mobilization in generating explicit political support.

Like the Government or Fear the University?

So far, we have taken the marked implicit preference for the center and the explicit indifference as evidence that people support the central government more than they profess. But one may challenge this conclusion by offering an alternative interpretation of our results: students do not underreport their support for the center; rather, they overreport their support for the university to avoid retribution or to curry favor. Because the implicit preference measured by the IAT is relative in nature, we cannot empirically reject this alternative interpretation. Nevertheless, two responses can be made.

First, as discussed earlier, one of the reasons we choose the university as the second target in the IAT is because students' attitudes towards the university are largely free from social desirability. Students pay the university and they are affiliated with the university for a limited period of time. In many ways, the university-student relationship resembles the business-client relationship in which clients do not fear the business. A university has no strong incentive or legitimate authority to punish students on the grounds that they speak against the university. In practice, such cases are rarely heard of. The pressure of a student in an anonymous survey about his or her university is conceivably weaker than the pressure of an employee in a survey about her employer, and further weaker than the pressure of a citizen in a survey about her government. One may still object that a university induces more fear than the government because the university is a concrete entity close to one's everyday life whereas the central government is an abstract concept distant from one's daily experiences. Yet students of Chinese politics find just the opposite: the Chinese do not hesitate to speak or act against the government bodies that are closer to them – the local governments [38, 42].

Second, the comparison of implicit preference to explicit preference favors our interpretation. Recall that in Fig. 4, we find that most of those who underreport their preference for the center actually tone down their preference for the center and

become a moderate. If fear really looms large in one's survey response about the university, we should observe more people to display strong preferences for the university over the center. However, as Fig. 4 shows, such people are very few.

Discussion

Before discussing the implications of our findings, let us address concerns about the representativeness of our study. Readers may fairly critique that our findings only come from one university and therefore cannot be generalized to other university students in China. We concur that we did not use probabilistic sampling, yet our use of student samples is common among IAT experiments, and we have made the best use of what is available to us as researchers.

Researchers routinely select participants from one university in IAT experiments, which are usually conducted in computer labs. In fact, the size of our sample compares favorably to the existing IAT studies. In Greenwald and coauthors' [19] meta-analysis of 184 IAT studies, only two have bigger samples than our study. More broadly, experimental studies based on nonrandom samples of university students often appear in top political science journals. And among all the laboratory experiments that appeared on the first 100 issues of the *American Political Science Review*, 81% used student ([14]:633). That said, a nationally representative IAT is certainly an ideal research design that future studies should strive for.

In addition, as King, Keohane, and Verba [30] point out, nonrandom samples can still yield valuable results if researchers are conscientious in their potential biases and faithfully report uncertainty. Although our study is not based on probabilistic sampling, we were careful about which university to choose. We decided on a second-tier institution ranked at the lower end of the top 100 universities in China. It is not an elite school, but it is reputable in several majors. In this sense, the university represents typical midrange universities in China. Our study does seem to overrepresent master's students, who constitute 44% of the sample. But it does not appear that master students would bias our results because years in university have no influence in Table 4, and there is no strong theoretical reason to think they would. Although graduate students may place a greater emphasis on critical thinking than undergraduate students, because of older ages, they should be less vulnerable to peer pressure than their younger counterparts.

Our study makes methodological and theoretical contributions to the study of comparative politics. The IAT has been a powerful tool of social psychologists to measure implicit attitudes towards gender, race, and personality [19], but it is underused in the studies of regime legitimacy, a hotbed of social desirability bias. By developing an implicit measure of political support, we hope that our study will spearhead more application of IAT to concepts sensitive to political fear in authoritarian contexts. To the extent that implicit and explicit measures differ, the attention to implicit measurements will greatly enrich scholars' theoretical understanding of important topics in public opinion research.

According to our analysis, social desirability of approval is detected among 38.4% of our participants, who tend to hold more negative feelings about the government deep inside. It adds to the burgeoning subfield of preference falsification where new evidence for preference falsification keeps emerging [28, 36]. Our

application of the IAT can serve as a template for studies that aim to find the scope of social desirability of approval among the general population. Yet as far as university students are concerned, social desirability of approval does not seem to be their predominant trait.

The predominant trait, surprisingly, is found to be social desirability of dissent. As far as we know, this is the first study that theoretically and empirically approaches social desirability in authoritarian countries on the dissent side. The existence of social desirability of dissent calls for more nuanced interpretation of Chinese university students' democratic tendency. When interpreting their pro-democracy orientations [13], we must be aware that these orientations may be inflated, and that the real political support of the general population could be even stronger than what appears in opinion surveys. Our finding also reveals a paradox about university students: they share a norm that honors critical thinking and disdains blind loyalty, yet this norm produces external conformity rather than internal change.

We think it is likely that Chinese university students are not the only group affected by social desirability of dissent, because its conditions—a more open speech environment, peer pressure to be aloof from the regime, a negative image projected by propaganda—may linger after one graduates. Of course, these conditions may fade as one ages and begins to cope with other challenges in life. Furthermore, it is possible that social desirability of dissent also exists in other authoritarian countries where the three conditions are met. But it is unlikely to exist in democracies, because absent blatant propaganda, expressing regime support in democracies should create no negative stereotype. As a consequence, social desirability of dissent may be a unique phenomenon in authoritarian countries.

Appendix

Table 5 is a summary of our analysis of the data from China General Social Survey (CGSS) 2010, in which we estimate the trust in the central government of *those who*

Table 5   Trust in the central government between those attending and those not attending university

	Not attending university	Attending university
Completely trust	53.1	28.9
Somewhat trust	36.2	53.1
Between trust and distrust	7.4	13.9
Somewhat distrust	2.5	3.1
Completely distrust	0.8	1
Total	100 (11587)	100 (194)

Entries are percentages

Data source: CGSS 2010

Table 6 Attitudes towards the central government and the university

	Frequency	Percentage	Frequency	Percentage
	I generally trust the decisions of the center		I generally trust the decisions of university leaders	
Strongly disagree	4	1.4%	1	0.4%
Somewhat disagree	2	0.7%	16	5.6%
Neutral	72	24.8%	98	34.4%
Somewhat agree	151	52.1%	130	45.6%
Strongly agree	61	21.0%	40	14.0%
Total	290	1	285	1
	I generally believe that the central officials will do the right thing		I generally believe that the university leaders will do the right thing	
Strongly disagree	6	2.1%	7	2.4%
Somewhat disagree	14	4.8%	18	6.2%
Neutral	103	35.4%	105	36.1%
Somewhat agree	131	45.0%	128	44.0%
Strongly agree	37	12.7%	33	11.3%
Total	291	1	291	1
	I believe the center will do the right thing even though nobody oversees it		I believe the university leaders will do the right thing even though nobody oversees it	
Strongly disagree	22	7.6%	21	7.3%
Somewhat disagree	47	16.2%	51	17.7%
Neutral	94	32.3%	108	37.5%
Somewhat agree	94	32.3%	79	27.4%
Strongly agree	34	11.7%	29	10.1%
Total	291	1	288	1
	The central government is responsive to people's needs		The university leaders are responsive to students' needs	
Strongly disagree	8	2.8%	7	2.4%
Somewhat disagree	12	4.1%	31	10.7%
Neutral	72	24.8%	79	27.3%
Somewhat agree	126	43.4%	105	36.3%
Strongly agree	72	24.8%	67	23.2%
Total	290	1	289	1

Table 7 Summary statistics of independent variables

	Frequency	Percentage
Gender		
Male	149	50.9%
Female	144	49.1%
Total	293	1
Year in school		
Freshman	111	37.9%
Sophomore	26	8.9%
Junior	13	4.4%
Senior	4	1.4%
Master	130	44.4%
Phd	9	3.1%
Total	293	1
Major		
Art	1	0.3%
Business	51	17.4%
Science & engineering	103	35.2%
Social science	138	47.1%
Total	293	1
Did your parents have any higher education?		
Yes	53	18.1%
No	240	81.9%
Total	293	1
Do you use smart phone?		
Yes	281	95.9%
No	12	4.1%
Total	293	1
Primary source of news		
Internet	277	87.1%
TV	19	6.0%
Newspaper	4	1.3%
Radio	5	1.6%
Other	13	4.1%
Total	318	1
News site		
State owned sites		
Xinhua	34	10.7%
Peoples	38	11.9%
Global Times	10	3.1%
CCTV	31	9.7%
Commercial sites		
QQ	211	66.1%
Sina	163	51.1%

Table 7 (continued)

	Frequency	Percentage
Sohu	69	21.6%
Netease	46	14.4%
Liberal sites		
Ifeng	80	25.1%
South	6	1.9%
Overseas sites	5	1.6%
Social media		
Forum	38	11.9%
Blog	24	7.5%
Weibo	137	42.9%
Wechat	114	35.7%
Other	24	7.5%

Age
Mean: 22.3
SD: 3.0
Min: 17
Max: 45
N. of observation: 318

Table 8 Items in IAT

Target/attribute	Words
Center (中央)	Zhongnanhai (中南海)
	Party Central Committee (党中央)
	Foreign Ministry (外交部)
	People's Bank of China (中国人民银行)
	National People's Congress (全国人民代表大会)
	Ministry of Agriculture (农业部)
	Ministry of Public Security (公安部)
University (学校)	President's office (校长办公室)
	University Party branch (校党委)
	University Youth League branch (校团委)
	Office of academic affairs (校教务处)
	Department of Student Affairs (学生工作处)
	University Security Department (校保卫处)
	University Personnel Department (校人事处)
Positive words (正面词语)	good (好)
	joy (喜乐)
	love (爱)
	peace (平安)
	wonderful (美妙)

Table 8 (continued)

Target/attribute	Words
Negative words (负面词语)	happy (快乐)
	glory (荣耀)
	laugh (欢笑)
	glad (高兴)
	bad (坏)
	pain (痛苦)
	terrible (糟糕)
	horror (恐怖)
	dirty (肮脏)
	scary (可怕)
	failure (失败)
	harm (伤害)

were attending university in 2010.[6] A respondent is coded as "attending university" if his or her highest level of education is associate or undergraduate education *and* if he or she is between 18 and 22 years old. A respondent is also coded as "attending university" if his or her highest level of education is postgraduate education *and* if he or she is between 23 and 27 years old. This coding assumes that university starts when one is 18, and an undergraduate degree takes four years, a master's degree takes two years, and doctorate degree takes three years. Although this trajectory is not followed by every Chinese student, it is the most typical one, and deviance from this typical trajectory should be infrequent and not significantly bias our estimates.

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