The Olympic effect on American attitudes towards China:
Beyond personality, ideology, and media exposure

PETER HAYS GRIES, H. MICHAEL CROWSON, & TODD SANDEL

This paper explores the impact that increased exposure to China during the two and a half weeks of the Beijing Olympics had on American attitudes towards China. A large N longitudinal survey revealed a significant increase in negative attitudes towards China from the beginning to the end of August 2008. Statistical analysis revealed no dominant explanation for this change, however. Instead, personality (openness), ideology (social dominance orientation and right wing authoritarianism), and media exposure each had a small impact on changing attitudes. Further research (including a follow up experiment manipulating the valence of media coverage of China) suggested both the possibility of an “efficiency effect,” whereby China’s very success in both hosting and competing in the Olympics generated increased American anxiety about China, and a “cheating effect,” whereby stories about Chinese underage gymnasts and deception (e.g. lip syncing while another child actually sang during the Opening Ceremonies) diffused broadly through social networks, uniformly and negatively impacting American attitudes towards China.

During the lavish Opening Ceremonies of the 2008 Beijing Olympics, a massive scroll was unfurled across the center of Beijing’s Olympic Stadium. NBC’s Olympic commentators explained that it was blank to symbolize the Chinese people’s desire to wipe clean foreign misconceptions about China. This would allow the Beijing Games to create a new, and presumably better, international impression of China. Indeed, as several performers danced across the scroll, an impressive image of a beautiful Chinese landscape was slowly revealed – with an incongruous smiley sun added at the very end to the top right corner.

1 Peter Hays Gries, H. Michael Crowson, and Todd Sandel all teach and conduct research at the University of Oklahoma. Gries is the Harold J. & Ruth Newman Chair and Director of the Institute for U.S.-China Issues. Crowson is Associate Professor of Educational Psychology. Sandel is Associate Professor of Communications.

Forthcoming, Journal of Contemporary China, 2010
For the Chinese government, the Beijing Olympics would clearly be a difficult balancing act. On the one hand, they wished to impress the world with the achievements of 30 years of “Reform and Opening.” Over USD 40 billion was poured into beautiful new stadiums and sporting facilities. A massive new airport terminal was built. Factories were shut down to reduce air pollution. “Our Olympics” clearly became a symbol of national pride. The pressure was therefore on the Chinese government to put on a spectacular show; if they failed, there would be many disgruntled Chinese nationalists, and the Chinese Communist Party’s (CCP) legitimacy would suffer.

On the other hand, the Chinese government was concerned not to frighten the foreigners. Ever since the emergence of “China threat” discourse in East, Southeast, and South Asia in the mid-1990s, China has sought to persuade its neighbors that China’s rise is “peaceful”: there is no need for China’s neighbors to engage in external balancing, allying with each other or the U.S., to counter an increasingly strong China. Perhaps even more importantly, China has been extremely attentive to its image in the U.S., wary of provoking American anxiety about its rise. China’s recent “harmonious world” rhetoric grew both out of earlier discourse on a “harmonious society” that sought domestic stability, and out of the earlier “peaceful development” rhetoric that sought to reassure the world about China’s dramatic growth.

The Beijing Olympic Committee was therefore stuck between a rock and a hard place. It needed both to impress the world to appease Chinese nationalists at home, but also to reassure the world that an impressive China was not a threatening China. In many ways it was the “debutante’s dilemma”: How does one step out into international society and show off one’s coming of age without arousing anxiety or jealousy?

This paper explores the impact that the Games had on American attitudes towards China. Would the American people’s increased exposure to China during the two and a half weeks of the Beijing Olympics leave them favorably impressed by China’s size, efficiency, and modernization? Or would they be left scared by China’s size, efficiency, and modernization? Would American attitudes towards China, in short, improve, worsen, or remain unchanged as a result of increased exposure during the Beijing Olympics?

Specifically, we sought answers to two questions. First and foremost, would there be a significant improvement, as the Chinese government clearly desired, in American attitudes towards the Chinese people (i.e. prejudice), the Chinese government, and preferred U.S. China
policies? Second, what individual differences in personality, ideology, or media exposure might be associated with any changes in attitudes?

We designed a pair of surveys to find out.

**STUDY ONE**

**METHOD**

During the first week of August, just before the Beijing Olympics began on August 8, 2008, 2,584 members of a middle-American state university community completed an online survey. 1,135 of those participants (44%) also completed a second survey three weeks later just after the Olympics had concluded. In both cases, participants were given the option of entering a drawing to win tickets to home football games.² The 1,135 in the final sample did not include 271 participants who did not finish the second survey, were not U.S. citizens, or were Chinese-Americans (excluded because some may have only recently moved from China). Both online surveys began with consent forms that explained to participants the nature of the study, its voluntary nature, and the anonymity of the data collected. The ethical standards of the American Political Science and American Psychological Associations (APSA and APA) were strictly followed during data collection and analysis.

The final sample ($N=1,135$) for the purpose of our longitudinal design included 482 undergraduate students, 202 graduate students, 106 faculty members, and 345 members of the university staff (of whom 31 did not attend college). There were slightly more women ($N=583$) than men ($N=552$). The sample, surprisingly, was perfectly balanced in terms of political party affiliation with 429 Republicans and 429 Democrats (277 chose “Independent or none”). Ages ranged from 18 to 72, with a mean age of 31.92 ($SD=13.29$). In terms of ethnicity, the sample was 83.8% white, 2.5% African-American, 3.0% non-Chinese Asian-American, 2.7% Latino/a, 5.7% Native American, and 2.3% “other.”

All survey designs have their strengths and weaknesses. Our survey respondents were all from one university community, and the majority was from a single mid-America state (many students were from other states). We therefore need to be cautious about generalizing from such data about the absolute levels of say, anti-Chinese prejudice, among all Americans. However, our core interest is not in the absolute levels of specific opinion, for which national

² This incentive did introduce a degree of self-selection bias. However, the degree of that bias is arguably less than that of the many Internet polling companies who pay their participants $5 per survey.
survey data would be more appropriate. Instead, our interest is in the relative levels of different variables at different points in time. Our design therefore emphasizes construct or internal validity to ensure that any changes we observe actually reflect the concepts being examined. Nonetheless, we believe we have also achieved a reasonable degree of external validity. This is not a small student-only sample, but a large, diverse, sample of American adults well balanced in terms of age, gender, and ideology. As Nicholson-Crotty and Meier have persuasively argued, single state studies are appropriate when the measurement advantages outweigh costs to generalization.³ For instance, Cooper, Knotts, and Haspel have very recently utilized a single state study to provide broad insights into the role that letters to the editor play in American political participation.⁴

MEASURES

Unless otherwise noted, the questions that composed the following scales were on seven-point Likert scales, ranging from 1 (“strongly disagree”) to 7 (“strongly agree”). They were largely balanced in terms of positively and negatively worded items.

**Dependent variables (China measures repeated before and after the Olympics)**

*Prejudice (PREJ) scale.* A scale composed of four “The Chinese people are…” statements. Two were positive (“friendly” and “trustworthy”) and reverse coded, and two were negative (“devious” and “dishonest”). Higher values on the total scale indicate greater prejudice or negative attitudes towards the Chinese people.

*Negative Attitudes towards the Chinese government (NEGGOV) scale.* A scale composed of four “The Chinese government is…” items, using the same four adjectives used in the prejudice scale. Higher values on the full scale reveal more negative attitudes towards the Chinese government.

*Containment policies towards China (CONTAIN) scale.* A three item scale tapping respondents’ preferred U.S. China policy. It included “The best way to deal with China is to build up our military to counter Chinese power,” and two reverse coded items, “Our

---

⁴ Christopher Cooper, H. Gibbs Knotts, and Moshe Haspel, “The content of political participation: letters to the editor and the people who write them,” *PS: Political Science and Politics*, (January 2009), pp. 131-137.
government should adopt a friendlier foreign policy towards China” and “The U.S. government should engage China through an active diplomacy that seeks to improve the relationship between our two countries.” Higher values on this scale indicate a preference for tougher U.S. policies towards China.

Olympic hosting. A single “China should NOT have been awarded the Olympic Games” statement. Sought to tap the normative issue of whether China deserved to host the Olympics.

**Independent variables (capturing individual differences)**

In addition to the standard demographic questions about gender, age, ethnicity, and education, we were interested to see whether individual differences in personality, ideology, and/or media exposure would have an impact on any changes in attitudes towards China.

The “Big 5” personality inventory. An abbreviated 10 item-inventory developed by Gosling, Rentfrow, and Swann was utilized in this study to measure the Big Five personality dimensions of Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience.\(^5\) For the purposes of this study, however, only Openness to Experience was included as a predictor of changing attitudes toward China. Openness to Experience refers to both “depth, scope, and permeability of consciousness” and “the need for variety and experience.”\(^6\) The two items measuring participants’ openness in this study were, “I see myself as someone who is open to new experiences, complex” and “I see myself as someone who is conventional, uncreative” (reverse coded). Higher values indicated greater experiential openness.

Social dominance orientation (SDO) scale. SDO refers to an individual’s preference for hierarchy and accompanied by a desire for one’s social group(s) to dominate over others.\(^7\) This factor was tapped using three items: “It’s probably a good thing that certain groups are at the top and others are at the bottom,” “To achieve one’s goals, sometimes it is necessary to use force against other groups,” and “It would be good if all social groups could be equal” (reverse coded). Higher scores on this scale indicate a greater tendency to hold socially dominant attitudes.

---


Right wing authoritarianism (RWA) scale. RWA refers to a syndrome comprised of three covarying attitudes: conventionalism, or the tendency to subscribe to conventional social norms, values, and beliefs; authoritarian submission, or the tendency to submit to established social authorities; and authoritarian aggression, or the tendency to aggress against social outgroups. This construct was tapped using two items that inter-correlated highly in our previous research, “The only way our country can get through the crisis ahead is to get back to our traditional values, put some tough leaders in power, and silence the troublemakers spreading bad ideas” and “Our country will be destroyed someday if we do not smash the perversions eating away at our moral fiber and traditional beliefs.” Higher scores on the measure indicate greater levels of right wing authoritarianism.

Media Exposure. Given the prejudice literature’s finding that both the quantity and quality of intergroup contact matters, we decided to measure both the quantity and quality of media exposure during the two weeks of the Olympic Games. However, only quantity of media exposure was utilized as predictor variables in the current study.

Exposure Quantity (ExposeSports, ExposeChina) was tapped with two items asking “Over the two weeks of the Beijing Olympics, on average approximately how many hours a day did you spend listening, watching, or reading about” 1) “Olympics / sport coverage” (ExposeSports), and 2) “non-sports China coverage” (ExposeChina)? The response categories for both questions were on four point scales, with higher numbers indicating greater exposure.

RESULTS

Table 1 displays the means, standard deviations, alphas and Ns for our three China scales and single Olympic hosting item. T1 and T2 refer to Time 1 immediately prior to the Olympics, and T2 refers to Time 2 immediately after the Olympics. The table reveals that while our three item “containment” scale had only a modest internal reliability (Cronbach’s $\alpha_{T1} = .66$; $\alpha_{T2} = .58$), our four item “prejudice” and “NegGov” scales each had very good internal reliabilities (Cronbach’s $\alpha_{T1} = .86$, $\alpha_{T2} = .85$; $\alpha_{T1} = .84$, and $\alpha_{T2} = .85$).


9 “Cronbach’s $\alpha$” indexes the proportion of reliability, as opposed to measurement error, associated with a scale. Values generally range between 0 and 1, with higher numbers corresponding to more consistency in measurement of the construct being measured by a scale.
Table 1 also reveals that while the mean scores on negative attitudes toward the Chinese government, (NegGov $M_{T1}=4.81$; $M_{T2}=4.92$) were slightly above the scale midpoint of four, the means on both our prejudice ($M_{T1}=2.58$; $M_{T2}=2.78$) and containment ($M_{T1}=2.69$; $M_{T2}=2.93$) measures were considerably below scale midpoints. Overall, our American participants held positive attitudes towards the Chinese people, and largely endorsed a friendlier foreign policy towards China; they cannot, therefore, be said to have been either “prejudiced” or to have advocated a China policy of “containment.”

It is noteworthy that while the prejudice and NegGov scales were composed of the same four statements, differing only on their referent ("The Chinese people are..." vs. “The Chinese government is...” “trustworthy/devious/friendly/dishonest”), the mean scores on NegGov ($M_{T1}=4.81$; $M_{T2}=4.92$) were much higher than those on prejudice toward the Chinese people ($M_{T1}=2.58$; $M_{T2}=2.78$). Indeed, a paired samples t-test at T1 reveals that the difference between the two means was statistically significant and very large, $t(1127) = -54.411, p < .001$\(^{10}\). A paired samples t-test at T2 reveals an equally large difference, $t(1124) = -51.596, p < .001$. This surprisingly large difference between attitudes towards the Chinese people and attitudes towards their government calls into question the utility of even discussing American attitudes towards a single “China.” It also challenges the meaning of opinion data from commonly used feeling thermometers tapping attitudes towards China’s “country and its people.”\(^{11}\)

[Insert Figure 1 about here]

**The Olympic Effect**

Table 1 and Figure 1 reveal that mean scores on our three dependent China scales all increased over the two weeks of the Beijing Olympics. A repeated measures analysis of variance (ANOVA) revealed a small but statistically significant increase in negative attitudes towards the Chinese government, $F(1,1118)=15.50, p<.001, \eta_p^2=.014$\(^{12}\). Similarly, scores on our “prejudice” measure also increased significantly, $F(1,1134)=54.69, p<.001, \eta_p^2=.046$, with the effect size falling in the small-to-moderate range. The greatest change we observed,

---

\(^{10}\) Here and elsewhere in the paper, “$p$” represents a probability value referring to the likelihood of incorrectly judging an effect as significant where none actually exists. For the current test, $p<.001$ means that the probability of observing a difference in means this great by chance is assumed to be less than .1%. Effects are typically considered to be “statistically significant” when $p \leq .05$.


\(^{12}\) $\eta_p^2$ (or partial eta-square) provides a global index of the size of the observed difference in means. Small and medium effects are represented by values around .01 and .06, respectively. Large effects are represented by values around .14 or greater.
The “Olympic Effect” / 8

however, pertained to scores on the containment measure. Desire for U.S. containment of China increased significantly over time, $F(1,1122)=102.74, p<.001, \eta_p^2=.084$, with the effect size falling in the moderate-to-large range.

Finally, the mean scores on our “China should NOT have been awarded the Olympic Games” item also changed significantly, but in a negative direction, $F(1,1123)=50.52, p<.001$. In other words, over the two weeks of the Olympics, there was a shift towards increased agreement that China should have been awarded the Olympics. The effect size of that change, $\eta_p^2=.038$, however, was still fairly modest.

**Predicting changes in attitudes and policy preferences**

What factors might explain these changing attitudes towards China? To answer this question, we ran a series of hierarchical multiple regressions, including the above-mentioned four China measures at Time 2 as our dependent variable, and their corresponding Time 1 measures as our independent variables during each first step.\(^\text{13}\) We then added our key individual difference variables – personality (i.e. openness to experience), ideology (RWA and SDO), and media exposure (i.e., ExposureSports and ExposureChina) – as predictors during each second step. This statistical approach has the advantage of allowing us to control for stability in our China measures over time while also allowing us the opportunity to focus on potential predictors of change.\(^\text{14}\) Specifically, the control of “autoregression effects” (Time 1 scores predicting Time 2 scores on the same variable) allows us to explore how individual difference variables impacted changes across time in our China measures.\(^\text{15}\)

[Insert Table 2 about here]

The results for each hierarchical regression analysis are displayed in Table 2, with only those predictors that were statistically significant displayed. Because all autoregression effects

---

\(^{13}\) Unlike simultaneous multiple regression in which a set of predictor variables are simultaneously used to predict an outcome variable, hierarchical multiple regression allows for the study of the incremental contributions (i.e., explanatory power) of predictor variables from one step to the next.


were statistically significant during step 1, with R-square values ranging from .36 - .46, we confine our discussion here to the impact of the individual differences variables in step 2.

In the first set of analyses predicting Time 2 prejudice scores, we found right-wing authoritarianism (RWA) to be a positive predictor of Time 2 prejudice scores and openness to experience to be a negative predictor of those scores. Although the magnitude of these effects was small, RWA was associated with increases, and openness to experience was associated with decreases, in prejudice levels over time.

In our second set of analyses exploring changes in negative attitudes towards the Chinese government, we found higher scores on social dominance orientation (SDO) and openness to experience to be associated with more negative attitudes toward the Chinese government at Time 2. Once again, the effects tended to be small with persons holding more socially dominant attitudes and exhibiting greater experiential openness being more likely to show increases in their negative attitudes toward the Chinese government over time.

In our third set of analyses, we found three individual difference factors, in addition to Time 1 containment scores, to be statistically significant predictors of Time 2 containment scores: SDO, RWA, and exposure to sports. Higher scores on RWA and SDO were both associated with greater support for containment at Time 2, whereas greater exposure to sports was associated with less support for containment. Of the three significant individual differences predictors, RWA appears to have exhibited the largest effect.

In our fourth and final set of regression analyses, we found that RWA, exposure to sports, and exposure to China were all statistically significant predictors of scores on the negative attitudes toward China’s Olympic hosting item. RWA and general media exposure to China were positively associated opposition to China’s hosting of the Olympics at Time 2. Exposure to sports, however, was negatively associated with opposition to China’s hosting of the Olympics at Time 2. In short, RWA and general media appeared to contribute to increases in opposition to Olympic hosting. On the other hand, the more Olympic sports our participants watched, the more they believed that China deserved to host the Olympics. Once again, RWA was the strongest individual differences factor related to scores on the dependent variable.

**DISCUSSION**

---

16 In regression terminology, R-square represents the proportion of variance in the outcome variable that is accounted for by the predictor(s).
What best explains the above reported pattern of findings?

The regression analyses revealed that right wing authoritarianism (RWA) was a positive predictor of increasing prejudice but not of increasingly negative attitudes toward the Chinese government. The converse was the case with respect to social dominance orientation (SDO): it positively predicted increasing negative attitudes toward the Chinese government but not increasing prejudice. This may reflect differences in the nature of perceived threat between those who are high in RWA and SDO. Duckitt (2006) has argued that persons high in RWA are more inclined to respond to threats that challenge cherished in-group conventions and values, as well as social stability, whereas those high in SDO are more likely to respond to competitive threats to in-group status.17 Perhaps increased prejudice against the Chinese among persons high in RWA reflects greater concern about challenges that the Chinese people may pose to cherished American values and beliefs, while more negative attitudes toward the Chinese government among those high in SDO reflect a perception that China’s rise ultimately poses a competitive threat to America’s status at the top of the international order.

We also found, intriguingly, that while openness to experience was positively related to increasingly negative attitudes toward the Chinese government, it was negatively related to increasing prejudice toward the Chinese people. Previous research has amply demonstrated that openness to experience tends to be negatively related to prejudice.18 Presumably, those persons who score high on openness are more likely to embrace, rather than fear, new and novel experiences, such as contact with Chinese people. But why was openness related positively to increasingly negative attitudes toward the Chinese government? It may be the case that those participants who were higher in openness to experience were more attuned and receptive to negative information about China’s government during the Olympics, such as the scandal about underage Chinese gymnasts.

With respect to our containment variable, we found that both SDO and RWA were positive predictors of increases from pre- to post-Olympics. Given that RWA and SDO were shown in our data to predict negative attitudes toward the Chinese people and the Chinese government, respectively, it is not surprising that they also would predict negative action.

tendencies toward China. Furthermore, these results are consistent with previous research indicating that both RWA and SDO are linked to aggressiveness toward social outgroups more generally. In an international context, this may translate into the endorsement of tougher foreign policies, such as those represented in our containment measure. Those persons higher on RWA and SDO in this study were more likely to endorse the adoption of more aggressive containment policies toward China.

Despite observing significant score increases in scores on containment, prejudice, and negative attitudes toward China’s government, we found that scores on opposition to China’s hosting the Olympics actually decreased over the same period. Why? We suggest an efficiency argument: China clearly hosted an impressive Olympics – one marked by precision performances during the opening and closing ceremonies, as well as an impressive makeover to the entire city of Beijing, from the spectacular new Beijing airport terminal to the gorgeous new Olympic Stadium. Americans saw China’s impressive modernization first-hand. Ironically, it may have been precisely this new awareness of Chinese efficiency and modernization that may have contributed to increased negative attitudes toward China’s government and people, and an increased endorsement of containment.

Another notable finding from our regression analysis was that exposure to sports was negatively associated with support for increased containment and with opposition to China’s hosting of the Olympics. In other words, greater sports exposure was associated with a reduction in negative attitudes. We believe this was due to the extremely positive depiction of Chinese culture and society on NBC’s networks that covered the Olympics. Those who wished only to watch Olympic sports nonetheless were exposed to numerous human interest stories that were almost uniformly positive about Chinese culture, society, and economy. For instance, NBC’s prime time Olympic coverage each evening frequently included feel good stories by NBC commentator Mary Carrillo on China’s lovely pandas, kites, food, medicine, calligraphy, etc.

Exposure to non-sports China coverage, however, was associated with greater levels of disagreement that China should have hosted the Olympics. Was this a product of media bias? Our second survey included a question about whether respondents felt that the non-sports coverage of China they watched was largely positive or negative. While 35% claimed that

---

China coverage was “balanced,” 38% described it as “slightly negative,” while 19% depicted it as “slightly positive.” This subjective evidence suggests that the U.S. media’s non-sports coverage of China during the Olympics was perceived to lean slightly to the negative.

To further explore this issue of media bias, we conducted a content analysis of 350 non-sports American media reports on China during the Beijing Olympics. The content analysis revealed a slight positive bias: 42% of the stories were positive in tone, 32% were neutral, and just 26% were negative in tone. Furthermore, the major network TV news coverage focused largely on cultural topics (88 of 143, or 61.5% of all TV stories), and was strongly positive in tone, with 62% of 143 stories being positive in tone, and just 17% negative in tone. Content analysis thus suggests a largely positive tone to U.S. media coverage, driven by positive culture stories on network television. The survey and content analysis evidence thus point in opposite directions, suggesting that any overall media effect was mixed.

Could there be factors other than personality, ideology, and media exposure that contributed to the increase in negative attitudes towards China over the course of the Olympics? Informal interviews conducted during the Olympics suggested that many Americans were concerned about the possibility that the female Chinese gymnasts that were the American team’s primary competition were underage, thereby violating the sport’s rules for participation in the Olympics. To study the possible impact of perceptions of cheating on any changes in our dependent measures, we included a question about cheating in our second post-Olympics survey: “Cheating appears to occur in many sports across many countries. Do you think that the Chinese Olympic team cheated more or less than other national teams during the recent Olympics?” Responses were on a seven point Likert scale ranging from 1, “cheated much less,” to 7, “cheated much more.” We ran multiple regressions with the results of this cheating item and Time 1 scores on prejudice, negative attitudes toward the Chinese government, and containment scores as predictors of Time 2 scores on these variables, respectively. The resulting models were all statistically significant ($p$’s < .001) with $R$-square values ranging from .393 to .492. In all three models, the perception that China cheated more than other countries contributed significantly (standardized $\beta$’s ranging from .111 to .230) to increased negative attitudes – albeit modestly.

In short, individual differences in personality, ideology, and media exposure all played a small but significant role in explaining the decline in American attitudes towards China over the course of the Olympics Games in August 2008. However, the lack of a smoking gun raised
questions about both the broad impact of media exposure, and the specific impact of the
gymnastics cheating controversy. We therefore designed a follow up experiment to further
explore these two issues.

STUDY TWO

PARTICIPANTS AND DESIGN

In a second study 180 American citizens were randomly assigned to complete one of
four online surveys in the fall of 2008. Of this sample, 51 were undergraduate students at the
same mid-American research university sampled in study 1. The remaining 129 were recruited
from around the United States through e-mails sent by other students at the same university.
The resulting mixed student-national sample included two more men (N=89) than women
(N=87) (four did not report their gender), and included more Democrats (N=70) than
Republicans (N=57), although a mean of 3.76 on a seven point liberal-conservative scale
suggests ideological balance. In terms of ethnicity, the sample was 74.4% white, 8.9% African-
American, 2.8% non-Chinese Asian-American, 2.2% Latino/a, 5.6% Native American, and
3.3% “other.”

Our experimental design has a number of advantages. By randomly assigning our
participants to one of four conditions, we were able to experimentally control for alternative
explanations such as gender, age, and race because those variables can be presumed to be
randomly distributed among the conditions. As Rose McDermott has argued, “experiments
offer a unique opportunity to make a clear causal argument… which is why it has been
differentially adopted by the hard sciences, psychology, and behavioral economics as the gold
standard method of choice.”20 We believe that experiments should be more widely adopted in
political science as well. Due to random assignment, we can feel more confident that the results
we did obtain in our experiment were caused by the variable that differs between the samples, a
claim that is impossible to make in purely correlational designs.

MANIPULATIONS

Participants were randomly assigned to one of four conditions: positive valence,
negative valence, cheating, and control. Those in the first three manipulation conditions
watched one of three short NBC video clips before rating on a scale of one to seven a series of

statements designed to tap their attitudes towards China. Those in the control condition did not watch a video, but rated the same statements about China.

The three videos were carefully chosen and presented to minimize any extraneous variables that might complicate interpretation of the results. In terms of content, the three videos were chosen to be as similar to each other as possible on all dimensions except for the dimension under manipulation. All three were produced by and shown on NBC and were two to three minutes long. Two shared some common video footage, and two shared the same narrator, NBC reporter Brian Engel. In terms of presentation, the videos were viewed on blank white webpages so that there would be no peripheral matter to distract the viewer. The videos were also cleansed of any embedded advertisements that could have influenced viewers.

A two minute “Parks of Beijing” video segment was chosen for the positive valence condition. Filled with attractive images of life in Beijing’s parks, the narrator gushed in praise of the “picture perfect” scenery and her “favorite part”: the “sense of community” among Chinese children, retirees, and other Chinese citizens enjoying the parks. “Silent Protests” was chosen for the negative valence condition. Three minutes long and narrated by NBC reporter Richard Engel, it used some of the very same footage as the “Parks of Beijing” segment, including images of a circus elephant in one park. But it was tough minded, discussing police detentions and showing images of interviews and deceit among Chinese security officials. For the cheating condition, we chose a two minute segment, also narrated by Richard Engel, discussing the underage Chinese gymnasts’ scandal. The focus was on Chinese Olympian He Kexin, who had been listed for earlier Junior Olympian competitions as born in 1994 and hence eligible for the Junior Olympics. In 2008, however, her birth date was listed as 1992, making her 16 and eligible to compete in the Beijing Olympics. Engel even interviewed Shaun Johnson, a member of the U.S. women’s gymnastics team that came in second to He and the possibly underage Chinese in the team competition. Engel’s narrative emphasized that the alleged cheating raised the issue of fairness in the competition.

**DEPENDENT MEASURES**

*Prejudice (PREJUDICE) scale.* As in the longitudinal surveys discussed above, a scale composed of four “The Chinese people are…” statements was used to tap prejudice. Two were positive (“friendly” and “trustworthy”) and reverse coded, and two were negative (“devious” and “dishonest”).
Negative Attitudes towards the Chinese government (NEGGOV) scale. A scale composed of four “The Chinese government is...” items, using the same four adjectives used in the prejudice scale.

Cheating item. A single statement, “During the recent Beijing Games, the Chinese Olympic team cheated more than other national Olympics teams did,” was rated on a seven point strongly disagree (1) to strongly agree (7) scale. Higher scores indicate a perception of greater Chinese cheating.

RESULTS

Table 3 displays the means, standard deviations, internal reliability coefficients, and Ns for our prejudice and negative attitudes towards the Chinese government (NegGov) scales, as well as the single Olympic cheating item. Once again our two attitudes scales had good (α=.81 and α=.82) internal reliabilities. Table 3 once again reveals mean scores on NegGov (M=4.84) at slightly above the scale midpoint of four, while the means on prejudice (M=2.86) were considerably below scale midpoints, suggesting a largely positive attitude towards the Chinese people. A paired samples t-test again revealed the difference between the two means to be statistically significant and large, \( t(179) = -19.45, p < .001 \). The cheating item mean of 4.16 is close to the scale midpoint, with a large standard deviation of 1.62, suggesting a varied but balanced range of opinions about whether the Chinese Olympic team cheated more or less than other Olympic teams.

So, did our three video clip manipulations have an impact on attitudes towards the Chinese people and their government, and perceptions of Chinese cheating? A multivariate analyses of variance (MANOVA) revealed that they did, Wilks’ Lambda = .857, \( F(423, 9) = 3.088, p = .001 \). The effect size, \( \eta_p^2 = .05 \), was moderate. As Table 4 and Figure 2 reveal, compared to the control group which did not watch video clips, those watching valenced clips were impacted in the expected directions. Those watching the positive clip about how nice Beijing parks and people are reported lower levels of prejudice, negative attitudes toward the Chinese government, and perceptions of cheating than subjects in the control condition. Conversely, subjects who watched the negative clips about the repression of protest during the Olympics exhibited higher levels of prejudice, negative attitudes toward the Chinese
government, and perceptions of Chinese cheating. Finally, those who watched the video clip about the gymnastic cheating scandal exhibited the expected higher levels of negative attitudes than those in the control condition.

**DISCUSSION**

What do the results of our video clip experiment add to our understanding of why American attitudes towards China worsened over the course of the Olympics? Can the experiment, in other words, help us better interpret the results of our large longitudinal survey?

First, we were puzzled by the lack of a more pronounced media effect. As Table 2 revealed, media exposure had no impact on the deterioration of attitudes towards the Chinese government and people, and only had a small impact on changing containment and Olympics hosting scores. Our experiment revealed that the short-term impact of media exposure was as expected, improving attitudes when the coverage is positive (Beijing parks video), and worsening attitudes when the coverage is negative (protest parks, cheating videos). We can, therefore, rule out the possibility that all coverage, regardless of valence, has a similarly positive or negative short-term impact.

Our content analysis of non-sports media coverage of China during the Olympics (reported above) revealed that the prevalence of positive culture stories on television contributed to an overall positive tone in U.S. media coverage. How do we square that with survey respondents’ own assessments that media coverage during the Games was slightly negative? We believe that the results of our cheating video manipulation provide a clue to resolving this contradiction: it may be that in the onslaught of media exposure, some stories become particularly salient and gain greater traction than other stories. Certain stories, like the lip syncing during the Opening Ceremonies and the perceived unfairness of the alleged underage gymnasts, may gain particular salience and become hot topics discussed word of mouth and on the Internet, having an impact beyond what media attention to the subject would appear to suggest.

[Insert Figure 3 about here]

To explore this hypothesis, we entered the phrases “underage gymnastics” and “China cheating” into Google Trends, an internet tool that allows users to track month to month changes in the number of times keywords were searched for using the search engine Google
over the last five years. Figure 3 displays the results. There was a huge spike in searches for these two phrases in the month of August 2008, but not enough interest in them over the rest of the five year period to even appear on the chart. While Google Trends does not provide absolute values for the monthly search numbers (no scale for the vertical axis in Figure 3), the Google AdWords Keyword Tool does.\textsuperscript{21} Entering other search terms like “chopstick” or “chopsticks” that have a relatively constant rate of monthly searches into both tools and comparing them with our phrases allows us to approximate that “underage gymnastics” and “China cheating” were each searched approximately 100,000 times during the month of August 2008. Entering “lip synching” into the Google Trends tool similarly reveals that the phrase was searched for more in August 2008 than at any time since the Ashley Simpson lip synching incident of October 2004. In short, there is considerable evidence that there was a great deal of interest among internet users in the gymnastics and lip synching incidents.

\textbf{CONCLUSIONS}

The primary and most striking finding of this study is that American attitudes towards China hardened over the course of just two and half weeks of increased exposure to China during the Olympic Games. As Figure 1 reveals, negative attitudes towards the Chinese government, the Chinese people, and preferences for a tougher U.S. China policy all increased significantly following the Games, with effect sizes ranging from small to moderate ($\eta^2_p$=.014, .046, and .084 respectively). Given that the Chinese government invested tens of billions of dollars in both giving Beijing a facelift and putting on a great Olympics, our finding that American attitudes towards China actually declined is particularly striking.

Less clear is the durability of these changes. While it is arguably remarkable that such a consistent change in attitudes could occur over just two and half weeks, it is not clear from our data whether the changes will prove enduring, or whether attitudes will soon return to the pre-Olympic levels. Further surveys are needed to address this question.

Why did attitudes towards the Chinese government deteriorate the least of our three China measures? First, their levels were already the highest and thus had the least room to worsen. Second, the strong impact of Liberal ideology on American attitudes towards the Chinese government (Communism is often depicted in U.S. discourse as the antithesis of

\textsuperscript{21} See https://adwords.google.com/select/KeywordToolExternal.
American Liberty) likely makes them less malleable to change than attitudes towards the Chinese people and foreign policy preferences.

While there was no single “smoking gun” explaining the striking decline in American attitudes toward China, we found that all three sets of predictors (i.e., personality, ideology, and media exposure) played a small but significant role in the longitudinal study. We believe that this finding supports the argument for greater interdisciplinary research in the social sciences. Political scientists, psychologists, and communications/media studies scholars clearly all have something important to contribute to the understanding of questions as complex as changes in real world attitudes.

As Table 2 reveals, the Big 5 personality dimension of openness to new experience was negatively related to increasing prejudice scores, but positively related to increasing scores on negative attitudes toward the Chinese government. Deep personality has been shown to have an impact on foreign policy attitudes. That increasing exposure to Chinese people improved attitudes towards them among subjects high in openness is consistent with scholarship that has found that openness tends to be negatively associated with prejudicial attitudes. Those higher in openness may also have been more impacted by the cheating and deception scandals, leading to greater negative attitudes towards the Chinese government.

Table 2 also reveals that our two ideological measures, right wing authoritarianism (RWA) and social dominance orientation (SDO) contributed to increases in prejudice and negative attitudes towards the Chinese government respectively. As noted above, Americans high in RWA may express more prejudice due to a greater concern about the threat that the Chinese people may pose to cherished American values and beliefs. Those Americans high in SDO, meanwhile, may view China’s rise as a competitive threat to America’s status at the top of the international order, leading them to express more negative attitudes toward the Chinese government. Table 2 also shows that both RWA and SDO contributed to increasing support for a tougher U.S. foreign policy towards China. Given that both RWA and SDO have been linked to aggressiveness toward social outgroups in general, it is not surprising that it is associated

---


with the endorsement of tougher foreign policies, such as those represented in our containment measure.

Finally, Table 2 also shows that media exposure had a mixed and limited impact on the containment and Olympics hosting items, with exposure to sports negatively associated with increasing containment scores and negatively related to increasing agreement that China should not have been awarded the Olympics, and exposure to China positively related to the Olympics hosting item. These three effects were all quite small in size, however.

What explains the lack of a larger and more consistent impact of media exposure on changing attitudes? We suggest a “cheating effect” that may have operated in two ways. First, although our content analysis of American media coverage of China during the Games revealed a slightly positive tone, driven by “feel good” Chinese culture stories on NBC, when we asked our survey respondents at the end of August about the overall tone of the media they watched, they felt it was slightly negative. We believe that this inconsistency is the result of the greater salience of some stories over others. Human interest stories about calligraphy and Chinese dumplings may not have had as great an impact as stories about the controversies over underage gymnasts and one child lip synching while another actually sang offstage during the Opening Ceremonies. Second, the “cheating effect” on declining American attitudes may also have operated by word of mouth, not just around office water coolers, but also over the Internet. Google Trends, which showed a large spike of interest in these topics in August 2008 (see Figure 3), provides circumstantial evidence of a role of the Internet in spreading the cheating story beyond what direct media coverage would suggest.

To further test for a possible “cheating effect” we took advantage of the fact that two of the adjectives used in our prejudice and negative attitudes towards the Chinese government scales were “trustworthy” and “dishonest.” We therefore conducted paired samples t-tests on these items and the remaining two “devious” and “friendly” items to see whether there was greater change of the former over the latter. Although all t-tests were statistically significant ($p<.05$), of the government items, “dishonesty” scores rose the most, while “friendly” scores actually increased as well. Of the prejudice items, “trustworthiness” decreased the most, followed by an increase in “dishonesty,” with “friendliness” exhibiting the least change from Time 1 to Time 2. This pattern of results at the individual item level suggests that the overall changes in prejudice and negative attitudes towards the Chinese government scores were
largely driven by perceptions of increased dishonestly and lack of trustworthiness. This would seem to further support our “cheating effect” argument.

In addition to the “cheating” effect, we have also suggested the possibility of an “efficiency” effect on changing American attitudes. Prior to the Olympics, most Americans likely had a general sense that China was large and growing. During the Olympics, however, many Americans saw first hand the remarkable results of three decades of Chinese “reform and opening.” Television brought China’s modernization right into American living rooms, and likely impressed most Americans with both the beautiful Chinese athletic facilities as well as the efficiency with which the Games were run. Respondents disagreed with the statement, “China should NOT have been awarded the Olympics” more after the Olympics than before it, suggesting that they increasingly believed China to be a nation worthy of hosting the Games. Seeing such a “modern” China may have undermined many American’s view of America as special in regard to technology and modernity. For Americans to view themselves as “superior” in the world technologically may require other countries like China to be perceived as less technologically advanced. In short, by staging such a wonderful Games, Chinese organizers may have inadvertently contributed to greater American anxiety and wariness towards China.

China did not just put on an impressive Games; the Chinese Olympic team also competed impressively. Although the American media consistently emphasized that the U.S. won the most total medals during the Olympics, 989 of 1,135 (87%) respondents to the second late August survey correctly chose China as the country that won the most gold medals. While such a high percentage of correct answers does not provide enough variance for us to statistically test the impact of this knowledge on changing attitudes, that such a high percentage of our respondents knew that China won the most gold medals suggests that Americans were attuned to the medals competition, and that it may have contributed to increasing American anxiety towards China. China may have been a victim of its own athletic success.

American popular culture also provides anecdotal evidence to support the “efficiency” hypothesis. A South Park episode illustrates the fears that Zhang Yimou’s Opening Ceremony, with its spectacle of huge numbers of drummers and dancers performing in unison, may have generated among Americans ideologically suspicious of conformity and jealous of their individual Liberty. “The China Probrem” episode opens with animated images from the Opening Ceremonies, highlighting 2008 drummers beating menacingly. The character Catman is dreaming, and wakes up yelling, “No, Chinese, no! Somebody has to stop them… They’re
going to take over the world… No, leave us alone… They Chinese are going to get me, there are two billion of them and their economy is getting better and with their advances in technology they’re going to bring down America!…”24

Similarly, it is not surprising that when Rob Riggle of The Daily Show with Jon Stewart, in a segment from Beijing, half-jokingly called China our new “benevolent overlords,” he showed actual footage of the same 2008 PLA drummers beating in unison, “Authoritarian-awesome!”25 To Americans who value individual Liberty and fear state tyranny, the image of massive numbers of efficient Chinese performers in perfect rows and columns drumming in perfect unison likely evoked fears of an all-powerful state that would deny the individual his or her Liberty.

In sum, deteriorating American attitudes towards China over the month of August 2008 may have been the product of both Chinese successes and Chinese failures. First, the “efficiency hypothesis” suggests that China’s sporting prowess and the very success of the Games and China’s modernization more broadly may have contributed to growing American wariness towards China. Like the landscape scroll displayed during the Opening Ceremonies, China was impressive. The smiley sun added to it, however, was insufficiently reassuring that an impressive China would not become a threatening China. Second, the “cheating hypothesis” suggests that a few poor decisions made by Chinese gymnastics coaches and Opening Ceremony decision makers also undermined China’s image before the American public.

Table 1: Descriptive statistics: means, standard deviations, alphas, and Ns for China scales (national internet & community hardcopy samples)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>$Mean_{T1}$</th>
<th>$SD_{T1}$</th>
<th>$α_{T1}$</th>
<th>$Mean_{T2}$</th>
<th>$SD_{T2}$</th>
<th>$α_{T2}$</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>PREJ</td>
<td>Prejudice (negative attitudes towards the Chinese people)</td>
<td>2.58</td>
<td>.96</td>
<td>.855</td>
<td>2.78</td>
<td>1.04</td>
<td>.85</td>
<td>4</td>
</tr>
<tr>
<td>NEGGOV</td>
<td>Negative attitudes towards the Chinese Government</td>
<td>4.81</td>
<td>1.05</td>
<td>.837</td>
<td>4.92</td>
<td>1.114</td>
<td>.85</td>
<td>4</td>
</tr>
<tr>
<td>CONTAIN</td>
<td>Containment (preference for tough China policies)</td>
<td>2.69</td>
<td>.93</td>
<td>.635</td>
<td>2.93</td>
<td>.95</td>
<td>.58</td>
<td>3</td>
</tr>
<tr>
<td>OLYMP</td>
<td>“China should not have been awarded the Olympic games.”</td>
<td>3.69</td>
<td>1.78</td>
<td>n/a</td>
<td>3.39</td>
<td>1.76</td>
<td>n/a</td>
<td>1</td>
</tr>
</tbody>
</table>
### Table 2: Four hierarchical regressions predicting stability and change in levels of prejudice, negative attitudes towards the Chinese government, containment, and Olympics hosting

<table>
<thead>
<tr>
<th>Model</th>
<th>Predicting</th>
<th>Step</th>
<th>B (SE)</th>
<th>Beta</th>
<th>sr^2</th>
<th>R^2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Prejudice</td>
<td>1</td>
<td>Time 1 Prejudice</td>
<td>.649(.026)***</td>
<td>.600</td>
<td>.600</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>Time 1 Prejudice</td>
<td>.602(.028)***</td>
<td>.557</td>
<td>.521</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Time 1 RWA</td>
<td>.066(.016)**</td>
<td>.110</td>
<td>.099</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Time 1 Openness</td>
<td>-.082(.022)**</td>
<td>.028</td>
<td>.025</td>
</tr>
<tr>
<td>2</td>
<td>NegGov</td>
<td>1</td>
<td>Time 1 NegGov</td>
<td>.714(.025)***</td>
<td>.661</td>
<td>.661</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>Time 1 NegGov</td>
<td>.701(.025)***</td>
<td>.650</td>
<td>.641</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Time 1 SDO</td>
<td>.061(.022)**</td>
<td>.069</td>
<td>.062</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Time 1 Openness</td>
<td>.046(.027)***</td>
<td>.040</td>
<td>.039</td>
</tr>
<tr>
<td>3</td>
<td>Containment</td>
<td>1</td>
<td>Time 1 Containment</td>
<td>.664(.024)***</td>
<td>.652</td>
<td>.652</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>Time 1 Containment</td>
<td>.664(.024)***</td>
<td>.652</td>
<td>.652</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Time 1 SDO</td>
<td>.062(.018)**</td>
<td>.085</td>
<td>.076</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Time 1 RWA</td>
<td>.075(.014)**</td>
<td>.138</td>
<td>.120</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Time 1 ExposureSports</td>
<td>-.046(.020)*</td>
<td>-.052</td>
<td>-.051</td>
</tr>
<tr>
<td>4</td>
<td>“China should not have been awarded the Olympics”</td>
<td>1</td>
<td>Time 1 Olympics</td>
<td>.622(.024)***</td>
<td>.628</td>
<td>.628</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>Time 1 Olympics</td>
<td>.617(.024)**</td>
<td>.623</td>
<td>.613</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Time 1 RWA</td>
<td>.147(.026)**</td>
<td>.146</td>
<td>.133</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Time 1 ExposureSports</td>
<td>-.134(.039)**</td>
<td>-.082</td>
<td>-.080</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Time 1 ExposureChina</td>
<td>.107(.053)*</td>
<td>.048</td>
<td>.047</td>
</tr>
</tbody>
</table>

Note. ***p<.001, **p<.01, *p<.05, \( p \leq .05 \) (one-tailed). sr^2=squared semipartial correlation.
Table 3. Descriptive statistics: means, standard deviations, alphas, and Ns for prejudice and NegGov scales, and Olympic cheating item

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Mean</th>
<th>SD</th>
<th>α</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>PREJUDICE</td>
<td>Prejudice (negative attitudes towards the Chinese people)</td>
<td>2.86</td>
<td>1.03</td>
<td>.81</td>
<td>4</td>
</tr>
<tr>
<td>NEGGOV</td>
<td>Negative attitudes towards the Chinese government</td>
<td>4.84</td>
<td>1.07</td>
<td>.82</td>
<td>4</td>
</tr>
<tr>
<td>CHEATED</td>
<td>“During the recent Beijing Games, the Chinese Olympic team cheated more than other national Olympics teams did.”</td>
<td>4.16</td>
<td>1.62</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Table 4: Means, Standard Deviations (in parentheses), and Ns for prejudice, negative attitudes towards the Chinese government, and the perception of Chinese Olympic cheating by Experimental Condition

<table>
<thead>
<tr>
<th>Condition</th>
<th>Prejudice</th>
<th>NegGov</th>
<th>Cheated</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>2.77 (.13)</td>
<td>4.72 (.13)</td>
<td>4.09 (.21)</td>
<td>58</td>
</tr>
<tr>
<td>Positive</td>
<td>2.59 (.16)</td>
<td>4.37 (.16)</td>
<td>3.71 (.25)</td>
<td>41</td>
</tr>
<tr>
<td>Negative</td>
<td>2.79 (.17)</td>
<td>5.24 (.17)</td>
<td>4.20 (.27)</td>
<td>35</td>
</tr>
<tr>
<td>Cheat</td>
<td>3.26 (.15)</td>
<td>5.11 (.15)</td>
<td>4.61 (.24)</td>
<td>46</td>
</tr>
</tbody>
</table>
FIGURES

Figure 1. The Olympic effect on Negative Attitudes towards the Chinese Government, Containment, prejudice, and Olympics scores

![Figure 1](image1)

Figure 2: Mean Levels of Prejudice, Negative Attitudes towards the Chinese Government, and Assessment of Chinese Olympic Cheating by Experimental Condition.

![Figure 2](image2)
Figure 3: Interest in gymnastics cheating scandal.