ORCA – Online Research @ Cardiff

Cultural Differences in Psychological Reactance: Responding to Social Media Censorship

Andy H. Ng[1], Mohammad S. Kermani[2], & Richard N. Lalonde[3]

1. Sabanci University, 2. University of Ottawa, 3. York University

Andy Ng (corresponding author)

Postal address: School of Management, Sabanci University, Orta Mahalle, Üniversite

Caddesi No:27 Orhanlı, Tuzla, Istanbul, 34956, Turkey

Telephone number: 90-216-483-9704

Email address: andyng@sabanciuniv.edu

ORCID ID: 0000-0003-0220-0850

Mohammad Kermani

Postal address: Telfer School of Management, University of Ottawa, 55 Laurier St. East,

Ottawa, ON K1N 6N5, Canada

Richard Lalonde

Postal address: Department of Psychology, York University, 4700 Keele Street, Toronto,

ON M3J 1P3, Canada

Word count: 6,926

Abstract

In this research, we examined cultural differences in psychological reactance in response to a threat of social media censorship among two collectivistic cultural groups (East Asian Canadians, Iranian Canadians) and one individualistic cultural group (European Canadians). Results indicated that, compared with European Canadians and East Asian Canadians, Iranian Canadians exhibited psychological reactance to a greater degree when the threat came from the government. This cultural difference was mediated by direct and indirect experience with censorship but not independent vs. interdependent self-construal. When the threat came from a student, however, there were no cultural differences in psychological reactance. These results are consistent with the notion that Iranians have more salient experiences with restriction of information access, and thus have a heightened sensitivity to the freedom threat of social media censorship when it came from a powerful source. This research highlights the importance of going beyond self-construal when analyzing cultural variations in psychological reactance.
Word count: 152

Cultural Differences in Psychological Reactance: Responding to Social Media Censorship

People believe that they are free to engage in reasonable behaviors. Communication research conducted mostly in Western countries suggests that when this freedom to act is taken away from an individual, he or she would experience psychological reactance (Brehm and Brehm 1981; see Rosenberg and Siegel 2018 for a review). Conceived of as a "motivational state directed toward the re-establishment of the free behaviors which have been eliminated or threatened with elimination" (Brehm 1966, p. 9), psychological reactance leads to an increased likelihood to engage in the forbidden behavior (boomerang effect; Brehm and Brehm 1981; Engs and Hanson 1989; Quick et al. 2013) or associate with someone who engages in the forbidden behavior (vicarious boomerang effect; Quick and Stephenson 2007). Psychological reactance can also be manifested in increased positive attitude toward the prohibited behavior as well as accentuated anger toward the source of threat (Brehm 1966; Rain 2013; Wicklund 1974). Furthermore, people are more likely to experience psychological reactance if the concerned freedom is considered important and the source of the threat has the authority to impose the behavioral restriction or interference (Brehm and Brehm 1981; Pennebaker and Sanders 1976). Overall, psychological reactance is an important theory to explain why mass communication effort (e.g., anti-drug messages) sometimes not only fails to curtail, but ironically increases, problematic behaviors that are detrimental to the individual as well as the society (e.g., Hornik et al. 2008; Ringold 2002; Yzer et al. 2003). For instance, despite that the National Youth Anti-Drug Media Campaign, conducted from 1998 to 2004 in the US, cost almost $1 billion, there was no evidence to suggest that this 6-year behavioral censorship campaign had any favorable effects; moreover, there was some evidence to suggest that, during a one-year period in the

course of this campaign, more exposure to the campaign ads led to *more* marijuana initiation

among youths between the ages of 12.5 and 18 years (Hornik et al. 2008).

Information censorship imposes restriction on an individual's freedom to fully access

information and hence should result in psychological reactance. In an earlier study on censorship

and attitude change, it was found that when participants were told that an upcoming speech was

censored (vs. not censored), their attitude changed in favor of the censored speech to a higher

degree before hearing it. This was presumably because censorship threatened participants'

freedom to access the information in its entirety (Worchel 1992; Worchel and Arnold 1973).

Additional studies have also found evidence for the boomerang effect following attempted

censorship of TV programs (Bushman and Stack 1996) and music (Simmons 1992).

Nevertheless, there is also evidence to suggest that censorship may not always induce

psychological reactance; in fact, it may have the opposite effect under certain contexts. For

instance, Hayes and Reineke (2007) demonstrated that in the U.S., government censorship of

images containing dead U.S. soldiers led to a *reduced* interest in viewing the censored images for

Americans who liked the advocator of such a censorship policy but not for those who did not like

the advocator (their interests in viewing those images were the same regardless of the presence

of government censorship in this study).

Brehm (1966) initially claimed that psychological reactance cannot be directly measured

and thus can only be inferred. However, subsequent research conceptualized psychological

reactance as a measurable motivational state that is characterized by a combination of negative

emotional and cognitive responses. These responses would in turn lead to the above-mentioned

psychological consequences (Dillard and Shen, 2005). For example, participants who had been

exposed to a high- (vs. low-) threat message advocating flossing had a less positive attitude

toward flossing and a lower intention to floss, and these effects were mediated by a composite index of anger and negative thoughts (Dillard and Shen 2005). Conceptually similar findings were also obtained in a study using alcohol ban as the message topic (Rains and Turner 2007). As with Dillard and Shen (2005), the current study will be examining reactance as a psychological state.

Culture and Psychological Reactance

Freedom threats are conceptualized as threats to sense of self (Graupmann 2018); restriction of individual freedom threatens the sense of self that one is an independent autonomous agent who is capable of making his or her own choice, or to act according to one's internal volition, resulting in the motivational state of psychological reactance. Although this sense of self is indeed predominant in Western individualistic cultures (e.g., U.S., Canada, the Netherlands, France), cross-cultural psychological research has consistently challenged the view that this independent sense of self (independent self-construal) is equally prominent in many non-Western collectivistic cultures (e.g., Taiwan, Indonesia, South Korea, Mexico) (Hofstede et al. 2010; Markus and Kitayama 1991, 2010; Triandis 1995). In many non-Western collectivistic cultures, the predominant sense of self is interdependent (interdependent self-construal); that is, people who engage in these collectivistic cultural contexts primarily see themselves as part of ingroups that are composed of interconnected close others (e.g., parents, relatives, friends, coworkers) (Markus and Kitayama 1991, 2010; Yuki 2003).

If the self is construed differently in collectivistic cultures with less emphasis being put on independence and autonomy, psychological reactance, as a motivated response to individual freedom threat, should be less pronounced, relative to what has been found in individualistic cultures. There is empirical evidence to support this proposition. For instance, in an experiment

conducted by Savani and colleagues (2008; Study 5), American and Indian participants were first asked to choose a pen to use and eventually take home. For some participants, however, after they had chosen their pen, their choice was usurped and they were given another pen instead. All participants then evaluated the pen that was either freely chosen or assigned as a replacement. It was found that American participants evaluated the pen more positively when it was freely chosen than when it was assigned as a replacement. Indian participants, on the other hand, did not show this effect. This suggests that Indians are less threatened by restriction of freedom to choose. Likewise, Kim and colleagues (2017) showed that when assertive language (i.e., "must", "should", "ought") was used in a message to promote recycling, threatening individual freedom to act otherwise, American participants exhibited psychological reactance by reporting less positive attitude toward recycling than when non-assertive language (i.e., "could", "might want to", "worth") was used in the otherwise-identical message, whereas South Korean participants did not exhibit such psychological reactance.

Going beyond documenting cultural group differences, the specific link between self-construal and psychological reactance has been confirmed. In the U.S., it was observed that participants with a more prominent independent self-construal (or less prominent interdependent self-construal) were more likely to exhibit psychological reactance in response to a threat to their individual freedom to access dental care products with fluoride (Jonas et al. 2009). Finally, these cultural differences in psychological reactance can be moderated by the source of the threat. For example, Graupmann and colleagues (2012) showed that Taiwanese participants did not exhibit psychological reactance when their freedom of choice was restricted by the ingroup; in fact, they assimilated their preferences to that of their ingroup. When their freedom of choice was

threatened by an outgroup, however, they showed psychological reactance by increasing the attractiveness of an eliminated option.

Whether the absence of psychological reactance in response to individual freedom threat in collectivistic cultures, where people tend to construe themselves interdependently, generalize to the Iranians is currently unknown. The Iranian culture is considered relatively collectivistic, emphasizing interdependence with family and community as the dominant cultural value (Bierbrauer et al. 1994; Hofstede et al. 2010). According to Hofstede and colleagues (2010), on a scale from 0 (highly collectivistic) to 100 (highly individualistic), the U.S. (91) and Canada (80) were found to be relatively individualistic whereas Iran (41), China (20), and South Korea (18) were found to be relatively collectivistic. Nevertheless, in addition to the primary sense of self that is shared by members of a cultural group, there may be other factors that can shape how the degree of psychological reactance varies across cultural groups. One such factor may be prior experience with freedom threat.

Many theorists have suggested that everyday experiences and practices constitute cultural systems that people inhabit (Adams and Markus 2004; Kroeber and Kluckholn 1952; Markus and Hamedani 2007; Markus and Kitayama 2010; Shweder 2003). Based on this view of culture, the psychological study of cultural differences is grounded on the mutual constitution of the self and the cultural context (i.e., experiences, practices, institutions, and products that are shared by members of a cultural group). The collective experience of freedom threats (e.g., censorship) and the active resistance to such threats can be viewed as an artifact of the cultural context in which individuals engage. Using social media censorship as a threat to the individual freedom of accessing information in its entirety, the primary goal of the present research is to examine the

role of prior censorship experience on cultural group differences in psychological reactance, in addition to what would be predicted by self-construal, focusing on the Iranian culture.

An essential element of modern democracies is "the independence of public sphere that operates as an intermediary system between state and society" (Habermas 2006, p.412). Social media devoid of censorship is key to this element, allowing freedom of communication, including that of potentially sensitive political topics (Dohle and Bernhard 2014). The Iranian Government views social media as a threat to national security and thus many major social media platforms, such as Facebook and Twitter, are officially blocked (Pizzi 2013; Shirazi 2010). This censorship experience elicits a considerable amount of resistance as Iranians are actively finding ways to circumvent these restrictions. For example, approximately 7 out of 10 individuals in Iran between the ages of 15 and 29 reported the use of virtual private networks (VPN) to bypass internet censorship (ISNA 2014). As many Iranians have direct or indirect experience with censorship (Mollanazar 2011; Pizzi 2013; Shirazi 2010), they may be especially sensitive to issues around repression of freedom to access information, resulting in a heightened level of psychological reactance in response to censorship, despite the general collectivistic characteristics of the Iranian culture.

The Present Study

The purpose of the present study was to examine cultural group differences in psychological reactance in response to a social media censorship threat, focusing on the Iranian cultural group. Due to their recent experience with censorship (Pizzi 2013), we expected that Iranians would be especially likely to experience psychological reactance in response to a threat of social media censorship. We included two cultural groups to which to compare the Iranian cultural group – people from European and East Asian cultural backgrounds. Consistent with the

literature (e.g., Jonas et al. 2009; Pascual et al. 2012), we expected that individuals from

European North American (vs. East Asian) cultural backgrounds would exhibit a higher degree

of psychological reactance because of higher level of independent self-construal. Taken together,

we expected that participants from an Iranian cultural background would exhibit more

psychological reactance than would participants from European cultural backgrounds, who in

turn would exhibit more psychological reactance than would participants from East Asian

cultural backgrounds. Moreover, psychological reactance and its cultural group variations might

be more likely to exist when the threat to freedom is relatively high (vs. low). And we predicted

that level of threat would interact with cultural group in determining psychological reactance,

such that psychological reactance would be more likely to differ across cultural groups when the

level of threat was relatively high (i.e., when the threat came from the Government, which had

the authority to impose the behavioral restriction) than when the level of threat was relatively

low (i.e., when the threat came from a student).

Method

This study was conducted in Canada and culture was operationalized as self-identified

cultural background.

Participants

Seventy-five Iranian Canadians (49 female, 22 male, 4 did not report gender; $M_{age} = 20.6$,

$SD_{age} = 3.44$), 132 European Canadians (91 female, 38 male, 3 did not report gender; $M_{age} = 20.0$,

$SD_{age} = 3.93$), and 87 East Asian Canadians (69 female, 16 male, 2 did not report gender; $M_{age} =$

20.2, $SD_{age} = 3.32$) completed this study. Of the 75 self-identified Iranian Canadian participants,

14 (19%) were born in Canada, 54 (72%) were born in Iran, and 7 (9%) were born in another

country (e.g., Norway). Of the 132 self-identified European Canadian participants, 116 (88%)

were born in Canada, 16 (12%) were born in the U.S. or a European country (e.g., Bulgaria). Of

the 87 self-identified East Asian Canadian participants, 50 (57%) were born in Canada, 37 (43%)

were born in an East Asian country (e.g., China, Taiwan, South Korea). Both gender proportion,

χ^2 (2, N = 285) = 3.87, p = .15, and age[1], F(2, 278) = 0.49, MSE = 13.24, p = .62, did not differ

among the three cultural groups. Participants were recruited from a psychology undergraduate

participant pool in a Canadian university.

Procedure and Measures

This study was conducted online. Consenting participants first answered a few

demographic questions (e.g., gender, age, ethnicity). Following this, they were randomly

assigned to either the *low* threat or the *high* threat condition in which they read a passage on

social media censorship (see Appendix A). The passage was purportedly written by a first-year

student (low threat condition) or the Canadian Government (high threat condition), promoting

social media censorship. After reading the passage, participants completed the following

measures in the order presented and were subsequently debriefed.

State Reactance. Similar to Dillard and Shen (2005), state reactance in response to the

passage on social media censorship was conceptualized as negative affective and cognitive

responses, and was measured using nine items created for this experimental context (Iranian

Canadians: α = .77; European Canadians: α = .78; East Asian Canadians: α = .64) (e.g., "The

writing irritated me"; "The writing aggravated me"; "I think people should have the right to

information"; "I think that every individual has the right to take part in social protests") (see

Appendix B). These items were rated on a 7-point Likert scale (1 = strongly disagree; 7=

strongly agree).

---

[1] Thirteen participants did not report their age.

Trait Reactance. Trait reactance was assessed using the Hong Reactance Scale (HRS; Hong and Faedda 1996). This measure consists of 11 items (Iranian Canadians: α = .83; European Canadians: α = .79; East Asian Canadians: α = .68), rated on a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree). A sample item is "I become angry when my freedom of choice is restricted".

Attitude toward censorship. Attitude toward censorship was measured using nine items (Iranian Canadians: α = .75; European Canadians: α = .84; East Asian Canadians: α = .74) from the General Censorship (GC) subscale[2] of the Attitude Toward Censorship Questionnaire (ATCQ; Hense and Wright 1992), rated on a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree). A sample item is "College officials have the right to ban persons with extreme views from speaking on campus."

Self-construal. Independent and interdependent self-construals were measured using the Self Construal Scale (SCS; Singelis 1994). This scale contains 12 items to measure independent self-construal (Iranian Canadians: α = .81; European Canadians: α = .72; East Asian Canadians: α = .79) and 12 items to measure interdependent self-construal (Iranian Canadians: α = .79; European Canadians: α = .78; East Asian Canadians: α = .71), assessed with a 7-point Likert scale (1 = strongly disagree; 7 = strongly agree). Sample items include: "I enjoy being unique and different from others in many respects" (independent self-construal) and "It is important for me to maintain harmony with my group" (interdependent self-construal).

Censorship experience. We used two questions to probe participants' experience of censorship. The first question was "Have you or anyone that you personally know experienced any type of social media censorship?" The second question was "Have you ever read a book or

---

[2] The original subscale has 11 items but we eliminated two outdated items (e.g., "Homosexual relationships should not be depicted in television shows).

watched a movie with the knowledge that it was censored in some form?" Participants who answered "yes" to either question were scored as having direct or indirect censorship experience whereas participants who answered "no" to both questions were scored as not having any direct or indirect censorship experience.

Results

State Reactance

A 3 (Culture: Iranian vs. European vs. East Asian) × 2 (Threat: Low vs. High) between-subjects ANOVA indicated that there was no main effect of Culture, $F(2, 288) = 0.29$, $MSE = 0.79$, $p = .75$, $\eta_p^2 < .01$, or Threat, $F(1, 288) = 1.46$, $MSE = 0.79$, $p = .23$, $\eta_p^2 = .01$. As anticipated, the interaction effect between Culture and Threat emerged, $F(2, 288) = 4.46$, $MSE = 0.79$, $p = .01$, $\eta_p^2 = .03$. Simple main effect analyses revealed that the effect of Culture was significant in the high threat condition, $F(2, 288) = 4.42$, $MSE = 0.79$, $p = .01$, $\eta_p^2 = .03$. As hypothesized, Iranian Canadians ($M = 4.95$, $SD = 0.93$) experienced psychological reactance to a higher degree[3], compared with European Canadians ($M = 4.52$, $SD = 0.98$), $p = .04$, and East Asian Canadians ($M = 4.45$, $SD = 0.76$), $p = .03$. Contrary to previous research, however, the latter two groups did not differ from each other, $p = .97$. In the low threat condition, the effect of Culture was not significant, $F(2, 288) = 1.03$, $MSE = 0.79$, $p = .36$, $\eta_p^2 = .01$ (Iranian Canadians: $M = 4.32$, $SD = 0.86$; European Canadians: $M = 4.58$, $SD = 0.98$; East Asian Canadians: $M = 4.62$, $SD = 0.65$), consistent with our expectation. From another angle, while state reactance was higher in the high (vs. low) threat condition for Iranian Canadians, $p < .01$, there was no difference in state reactance between the two conditions for European Canadians, $p = 69$, and East Asian Canadians, $p = .38$ (see Figure 1).

---

[3] All post-hoc analyses were conducted with Sidak correction; presented p-values are adjusted p-values.

- Insert Figure 1 here –

Trait Reactance

A one-way (Culture: Iranian vs. European vs. East Asian) between-subjects ANOVA

revealed a significant effect of Culture on trait reactance,[4] $F(2, 289) = 3.69$, $MSE = 0.27$, $p =$

.03, $\eta_p^2 = .03$. Iranian Canadians ($M = 3.31$, $SD = 0.57$) exhibited higher levels of trait reactance

than did European Canadians ($M = 3.11$, $SD = 0.56$), $p = .03$, and marginally higher levels of

trait reactance than did East Asian Canadians ($M = 3.13$, $SD = 0.39$), $p = .10$, while the

difference between the latter two groups was not significant, $p = .99$.

Attitude toward Censorship

A one-way (Culture: Iranian vs. European vs. East Asian) between-subjects ANOVA

revealed a significant effect of Culture on attitude toward censorship, $F(2, 291) = 5.42$, $MSE =$

0.40, $p = .01$, $\eta_p^2 = .04$. East Asian Canadians ($M = 2.50$, $SD = 0.53$) had less negative attitudes

toward censorship, compared with Iranian Canadians ($M = 2.18$, $SD = 0.62$), $p = .01$, and

European Canadians ($M = 2.29$, $SD = 0.70$), $p < .05$, while the latter two groups did not differ

from each other, $p = .59$.

Self-Construal

Following previous research (e.g., Holland et al. 2004; Jonas et al. 2009), we first z-

standardized the scores for independent and interdependent self-construals and took the

difference between them with higher scores indicating relatively more independence (or less

interdependence). A one-way (Culture: Iranian vs. European vs. East Asian) between-subjects

---

[4] Data from one Iranian Canadian participant and one East Asian Canadian participant were removed because they were 3 *SD*s below the mean of their respective cultural group.

ANOVA revealed a significant effect of Culture on self-construal, $F(2, 291) = 3.79$, $MSE = 1.53$,

$p = .02$, $\eta_p^2 = .03$. European Canadians ($M = 0.22$, $SD = 1.28$) were more independent (or less

interdependent) than East Asian Canadians ($M = -0.21$, $SD = 0.90$), $p = .04$, but not Iranian

Canadians ($M = -0.13$, $SD = 1.46$), $p = .14$, while the latter two groups did not differ from each

other, $p = .97$. Although the difference between European Canadians and Iranian Canadians fell

short of statistical significance, the overall result pattern was consistent to Hofstede and

colleagues (2010).

Moreover, as results indicated that Iranian Canadians and East Asian Canadians were

similarly independent (or interdependent), the enhanced state reactance among Iranian Canadians

in response to social media censorship purportedly advocated by the Canadian government (i.e.,

the high threat condition) should not be attributed to self-construal. Indeed, when self-construal

was controlled for, our main finding regarding state reactance remained virtually the same, $F(2,$

$287) = 4.49$, $MSE = 0.79$, $p = .01$, $\eta_p^2 = .03$.

In addition, we tested whether self-construal was related to trait reactance. There indeed

was a significant association between self-construal and trait reactance, $r(292) = .14$, $p = .02$,

such that participants who were more independent (or less interdependent) reported higher levels

of trait reactance.[5] As European Canadians (scored as 1) were more independent (or less

interdependent) than East Asian Canadians (scored as 0), we used bootstrapping technique with

5,000 resamples to test the indirect effect of culture on trait reactance, through the effect of self-

construal. This indirect effect was significant (point estimate = .06; 95% confidence interval of

.02 to .12).

Censorship Experience

---

[5] Using this composite measure of independence/interdependence allows for a direct comparison between the present results and that of Jonas and colleagues (2009). If analysed separately, trait reactance was positively correlated with independence, $r(292) = .12$, $p = .049$, but not with interdependence, $r(292) = -.05$, $p = .36$.

As expected, there was a cultural difference in censorship experience. Iranian Canadians (54.67%) were more likely to report having direct or indirect censorship experience, compared with European Canadians (35.61%) and East Asian Canadians (22.99%),[6] χ^2 (2, $N = 294$) = 17.52, $p < .001$, Cramer's $V =. 24$.

Mediational Role of Censorship Experience on the Relationship between Culture and State Reactance

As Iranian Canadians (vs. European Canadians and East Asian Canadians) had more psychological reactance toward social media censorship in the high threat condition as well as past censorship experience, we conducted mediational analyses to examine whether past censorship experience could explain the relationship between culture and state reactance using a bootstrapping technique with 5,000 resamples. Culture (Iranian = 1 vs. European and East Asian = 0) was the independent variable; censorship experience (presence = 1 vs. absence = 0) was the mediator; state reactance was the dependent variable. Censorship experience was a significant predictor of psychological reactance, $t(156) = 3.72$, $p < .001$, $d = 0.60$. Moreover, the indirect effect of culture on psychological reactance, mediated through the effect of censorship experience was significant (point estimate = .22; 95% confidence interval of .08 to .47).

Discussion

In the current research, we examined psychological reactance across cultures and found that Canadians of Iranian (vs. European and East Asian) cultural background experienced more psychological reactance when faced with a censorship threat that came from the Canadian

---

[6] Censorship is prevalent in China (Xu and Albert 2017). Hence, we also looked at East Asian Canadian participants who were born in China and thus potentially had more experience with censorship, compared with East Asian Canadian participants who were born in other countries. Thirteen (14.94%) participants of our East Asian Canadian sample were born in China. Among these participants, three (23.08%) of them had prior censorship experience. For the remaining 74 (85.06%) participants of our East Asian Canadian sample who were born in other countries, including Canada, 17 (22.97%) had prior censorship experience, which did not differ from their counterparts who were born in China, $p = .99$. This unexpected null finding, however, should be interpreted with caution due to the extremely small size of our Chinese-born East Asian Canadian sub-sample.

government, but not when the same threat came from a student. In addition, Iranian Canadians

and East Asian Canadians were similarly independent (or interdependent) and our main finding

held when self-construal was statistically controlled for, suggesting that the enhanced reactance

among Iranian Canadians in the high threat condition could not be explained by self-construal.

Instead, through mediational analyses, we found that prior experience with censorship among our

Iranian Canadian participants contributed to their heightened levels of psychological reactance.

Paralleling our main finding, Iranian Canadians reported higher levels of trait reactance than did

European Canadians and East Asian Canadians. This pattern of results suggests that the

heightened level of psychological reactance among people of Iranian cultural background

generalizes across domains and situations and does not seem to be related to self-construal.

     Our basic findings regarding self-construal are generally consistent with the literature

(e.g., Hofstede et al. 2010). European Canadians scored higher on independence (or lower on

interdependence) than did East Asian Canadians, with Iranian Canadians scoring nominally

closer to East Asian Canadians than European Canadians. Yet, there were no differences in state

or trait reactance between European Canadians and East Asian Canadians. These findings, on the

surface, seem to be at odds with some previous research which suggests a link between

independent self-construal and psychological reactance (e.g., Savani et al. 2008; Pascual et al.

2012).

     With regard to state reactance in response to the threat of social media censorship from

the Canadian government, one possibility is that our experimental manipulation was not strong

enough to induce reactance for both European Canadians and East Asian Canadians. Although

the passage advocating social media censorship was purportedly obtained from a government

website, participants from these two cultural groups might still perceive the message as merely a

suggestion that is not likely to actually happen. In other words, the threat to freedom was still believed to be extremely low or practically non-existent. If this is the case, then the motivational state of psychological reactance was not likely to be induced in the first place and thus it should not be moderated by independent orientation. Supporting this possibility, there was no difference in state reactance between the high threat (i.e., government) and the low threat (i.e., student) conditions for both European Canadians and East Asian Canadians. Assuming that the student passage did not induce any freedom threat in our participants (i.e., the low threat condition is practically a no threat condition), the current results imply that our Iranian (vs. European and East Asian) Canadian participants perceived higher levels of threat in the high threat condition.

Trait reactance, on the other hand, was found to be associated with more independence (or less interdependence). In addition, an indirect effect of culture on trait reactance, through the effect of self-construal, was observed in the current study, consistent to previous research (Jonas et al. 2009). Unlike Jonas et al., however, there was no cultural group differences in trait reactance between our European Canadian and East Asian Canadian participants. This lack of direct effect, when combined with the significant indirect effect, suggests that there might be an opposing indirect effect involving an unmeasured variable operating in the current sample (Rucker et al. 2011).

Limitations and Future Research Directions

First, we used a student sample in the current study. Although using student participants does not necessarily weaken external validity of a study (Druckman and Kam 2011), it remains desirable to examine in future research the generalizability of our results to people of other age groups and social classes.

Second, we tested Iranian Canadian participants (mean percentage of life spent in Iran was 41.15%) instead of Iranian nationals.[7] The likelihood of experiencing censorship in the past should be lower for our Iranian Canadian sample than for people who have lived in Iran for their entire lives. From this perspective, we might expect a stronger effect when we examine cross-national differences. On the other hand, some of our Iranian Canadian participants might have deliberately chosen to migrate to Canada because of lack of freedom in their home country. From this perspective, our Iranian sample might be biased toward a strong desire for freedom and thus accentuating the cultural effect. In future research, it would be desirable to collect data in Iran to see how psychological reactance might differ between Iranians living in Iran and Iranians living in North America.

Third, while there are different types of censorship in different media, we measured our participants' censorship experience in general using a limited number of media (book, movie, social media). In future research, it would be ideal to include additional items to cover specific types (e.g., political) of censorship as well as other media (e.g., television) to more fully cover participants' censorship experience.

Fourth, in addition to explicit censorship, there might be subtle biases or inaccuracies in media. In future research, it would be informative to examine how perceiving such biases or inaccuracies in media might influence psychological reactance.

Finally, although we have explained in the current paper cultural group differences in psychological reactance by showing the mediating role that censorship experience played (i.e., cultural group → censorship experience → psychological reactance), we did not examine the

---

[7] Within the Iranian Canadian cultural group, we tested whether country of birth (Iran vs. not Iran) would moderate the effect of threat on state reactance. Results revealed that whereas the main effect of threat was statistically significant, $p = .01$, the main effect of country of birth, $p = .63$, and the interaction effect between country of birth and threat, $p = .63$, were not. The results regarding country of birth, however, should be interpreted with caution due to the very small sub-sample of Iranian Canadians who were born outside of Iran ($n = 21$).

mechanism through which censorship experience translated into psychological reactance (i.e.,

censorship experience → ? → psychological reactance). One possible mechanism is that having

more censorship experience would make it easier or more realistic to imagine the freedom

restriction that censorship imposes, which in turn, would lead to a greater level of psychological

reactance. Another possible mechanism is that having more censorship experience would

increase people's sensitivity to threat to freedom restriction, which in turn, would lead to a

greater level of psychological reactance. Future research can test these and other possibilities in a

serial mediation model to further increase our understanding of cultural group differences in

psychological reactance.

Conclusions

The current study contributes to our understanding of psychological reactance by

showing how it varies across an individualistic culture and two collectivistic cultures that are

explained by their members' prior experiences in restriction to information access in the form of

censorship. Overall, our results suggest some differences in psychological reactance between two

Asian cultures and highlight the importance of going beyond the broad dimension of

individualism versus collectivism when analyzing cultural variations in psychological reactance.

Compliance with Ethical Standards

Conflict of interest: On behalf of all authors, the corresponding author states that there is no conflict of interest.
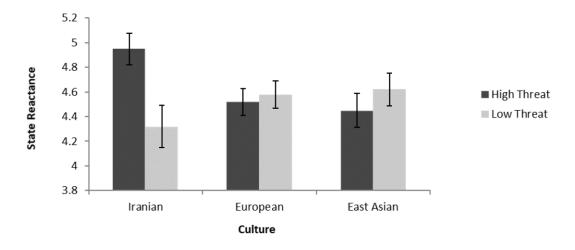
Ethical approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

Informed consent: Informed consent was obtained from all individual participants included in the study.

Data Availability

The datasets generated during and/or analysed during the current study are available from the

corresponding author on reasonable request.

Note: Error bars indicate standard errors.

Fig. 1 Psychological reactance as a function of culture and threat.

References

Adams, G., & Markus, H. R. (2004). Toward a conception of culture suitable for a social

    psychology of culture. *The psychological foundations of culture*, 335-360.

Bierbrauer, G., Meyer, H., & Wolfradt, U. (1994). Measurement of normative and evaluative

    aspects in individualistic and collectivistic orientations: The cultural orientation scale

    (COS). *Individualism and collectivism: Theory, method, and applications.* (pp. 189-199)

    Sage Publications, Inc, Thousand Oaks, CA.

Brehm, J. W. (1966). A theory of psychological reactance. New York, NY: Academic Press.

Brehm, S. S., & Brehm, J. W. (1981). *Psychological reactance: A theory of freedom and control*.

    New York, NY: Academic Press.

Bushman, B. J., & Stack, A. D. (1996). Forbidden fruit versus tainted fruit: Effects of warning

    labels on attraction to television violence. *Journal of Experimental Psychology: Applied*,

    2, 207-226. doi:10.1037/1076-898X.2.3.207

Dillard, J. P., & Shen, L. (2005). On the nature of reactance and its role in persuasive health

    communication. *Communication Monographs*, *72*, 144-168.

    doi:10.1080/03637750500111815

Dohle, M., & Bernhard, U. (2014). Presumed online media influence and support for censorship:

    Results from a survey among German parliamentarians. *International Journal of Public

    Opinion Research, 26*, 256-268. doi:10.1093/ijpor/edt027

Druckman, J. N., & Kam, C. D. (2011). Students as experimental participants: A defense of the

    'Narrow Data Base.' In J. N. Druckman, D. P. Green, J. H. Kuklinski, & A. Lupia (Eds.),

    Cambridge Handbook of Experimental Political Science. New York: Cambridge

    University Press.

Engs, R., & Hanson, D. J. (1989). Reactance Theory: A Test with Collegiate Drinking.

      Psychological Reports, 64, 1083–1086. doi:10.2466/pr0.1989.64.3c.1083

Graupmann, V. (2018). Show me what threatens you, and I can tell who you are: Perception of

      threat and the self. *Self and Identity*, *17*, 407-417. doi:10.1080/15298868.2017.1412346

Graupmann, V., Jonas, E., Meier, E., Hawelka, S., & Aichhorn, M. (2012). Reactance, the self,

      and its group: When threats to freedom come from the ingroup versus the

      outgroup. *European Journal of Social Psychology, 42*, 164-173. doi:10.1002/ejsp.857

Habermas, J. (2006). Political communication in media society: Does democracy still enjoy an

      epistemic dimension? the impact of normative theory on empirical research.

      Communication Theory, 16, 411-426. doi:10.1111/j.1468-2885.2006.00280.x

Hayes, A. F., & Reineke, J. B. (2007). The effects of government censorship of war-related news

      coverage on interest in the censored coverage: A test of competing theories. *Mass

      Communication & Society, 10*, 423-438. doi:10.1080/15205430701580581

Hofstede, G. H., Hofstede, G. J., & Minkov, M. (2010). *Cultures and Organizations: Software of

      the Mind: Intercultural Cooperation and its Importance for Survival* (3rd ed.). New York,

      NY: McGraw-Hill.

Holland, R. W., Roeder, U., van Baaren, R. B., Brandt, A. C., & Hannover, B. (2004). Don't

      stand so close to me: The effects of self-construal on interpersonal closeness.

      Psychological Science, 15, 237-242. doi:10.1111/j.0956-7976.2004.00658.x

Hong, S., & Faedda, S. (1996). Refinement of the Hong Psychological Reactance

      Scale. *Educational and Psychological Measurement, 56*, 173-182.

      doi:10.1177/0013164496056001014

Hornik, R., Jacobsohn, L., Orwin, R., Piesse, A., & Kalton, G. (2008). Effects of the National

    Youth Anti-Drug Media Campaign on youths. *American Journal of Public Health, 98*,

    2229-2236. doi:10.2105/AJPH.2007.125849

Jonas, E., Graupmann, V., Kayser, D. N., Zanna, M., Traut-Mattausch, E., & Frey, D. (2009).

    Culture, self, and the emergence of reactance: Is there a "universal" freedom? *Journal of

    Experimental Social Psychology*, *45*, 1068-1080. doi:10.1016/j.jesp.2009.06.005

Kim, Y., Baek, T. H., Yoon, S., Oh, S., & Choi, Y. K. (2017). Assertive Environmental

    Advertising and Reactance: Differences Between South Koreans and Americans. *Journal

    of Advertising*, *46*(4), 550-564.

Kroeber, A. L., & Kluckhohn, C. (1952). Culture: A critical review of concepts and

    definitions. *Papers. Peabody Museum of Archaeology & Ethnology, Harvard University*.

Markus, H. R., & Hamedani, M. G. (2007). Sociocultural psychology. *Handbook of cultural

    psychology*, 3-39.

Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion,

    and motivation. *Psychological Review, 98*, 224-253. doi:10.1037/0033-295X.98.2.224

Markus, H. R., & Kitayama, S. (2010). Cultures and selves: A cycle of mutual

    constitution. *Perspectives on psychological science*, *5*, 420-430.

    doi:10.1177/1745691610375557

Mollanazar, H. (2011). Text Screening (Censorship) in Iran: A Historical Perspective. *Iranian

    Journal of Applied Language Studies*, *3*, 159-186.

Pascual, A., Oteme, C., Samson, L., Wang, Q., Halimi-Falkowicz, S., Souchet, L., . . . Joule, R.

    (2012). Cross-cultural investigation of compliance without pressure: The "you are free to.

    . ." technique in france, ivory coast, romania, russia, and china. *Cross-Cultural Research:*

The Journal of Comparative Social Science, 46, 394-416.

doi:10.1177/1069397112450859

Pennebaker, J. W., & Sanders, D. Y. (1976). American graffiti: Effects of authority and

reactance arousal. *Personality and Social Psychology Bulletin, 2*, 264-267.

Pizzi, M. (2013, November 5). Iranian leaders sign on to social media, call for end to Twitter

ban. Retrieved from http://america.aljazeera.com/articles/2013/11/5/iranian-govt-

signingontosocialmedia.html

Quick, B. L., & Stephenson, M. T. (2007). The Reactance Restoration Scale (RRS): A measure

of direct and indirect restoration. *Communication Research Reports*, *24*, 131-138.

doi:10.1080/08824090701304840

Quick, B. L., Shen, L., & Dillard, J. P. (2013). Reactance theory and persuasion. *The SAGE

handbook of persuasion: Developments in theory and practice*, 167-183.

Rains, S. A. (2013). The nature of psychological reactance revisited: A meta-analytic review.

Human Communication Research, 39, 47-73. doi:10.1111/j.1468-2958.2012.01443.x

Rains, S. A., & Turner, M. M. (2007). Psychological reactance and persuasive health

communication: A test and extension of the intertwined model. *Human Communication

Research*, *33*(2), 241-269. doi:10.1111/j.1468-2958.2007.00298.x

Ringold, D. J. (2002). Boomerang effects in response to public health interventions: Some

unintended consequences in the alcoholic beverage market. *Journal of Consumer Policy,

25*, 27–63.

Rosenberg, B. D., & Siegel, J. T. (2018). A 50-year review of psychological reactance theory:

Do not read this article. *Motivation Science*, *4*, 281-300. doi:10.1037/mot0000091

Rucker, D. D., Preacher, K. J., Tormala, Z. L., & Petty, R. E. (2011). Mediation analysis in social psychology: Current practices and new recommendations. *Social and Personality Psychology Compass, 5*, 359-371. doi:10.1111/j.1751-9004.2011.00355.x

Savani, K., Markus, H. R., & Conner, A. L. (2008). Let your preference be your guide? Preferences and choices are more tightly linked for North Americans than for Indians. *Journal of personality and social psychology*, *95*, 861-876. doi:10.1037/a0011618

Shirazi, F. (2010). The emancipatory role of information and communication technology: A case study of internet content filtering within Iran. *Journal of Information, Communication and Ethics in Society, 8*, 57-84. doi:10.1108/14779961011024819

Shweder, R. A. (2003). *Why do men barbecue?: Recipes for cultural psychology*. Harvard University Press.

Simmons, B. K. (1992). The effect of censorship on attitudes toward popular music. *Popular Music & Society*, *16*, 61-67. doi:10.1080/03007769208591497

Singelis, T. M. (1994). The measurement of independent and interdependent self-construals. *Personality and Social Psychology Bulletin*, *20*, 580-591. doi:10.1177/0146167294205014

Triandis, H. C. (1995). *Individualism and Collectivism*. Boulder, CO: Westview Press.

Wicklund, R. A. (1974). *Freedom and reactance*. Potomac, MD: Lawrence Erlbaum.

Worchel, S. (1992). Beyond a commodity theory analysis of censorship: When abundance and personalism enhance scarcity effects. *Basic and Applied Social Psychology, 13*, 79-92. doi:10.1207/s15324834basp1301_7

Worchel, S., & Arnold, S. E. (1973). The effects of censorship and attractiveness of the censor

      on attitude change. *Journal of Experimental Social Psychology*, *9*, 365-377.

      doi:10.1016/0022-1031(73)90072-3

Xu, B., & Albert, E. (2017, February 17). Media censorship in China. *Council on Foreign*

      Relations. Retrieved from https://www.cfr.org/backgrounder/media-censorship-china

Yuki, M. (2003). Intergroup Comparison versus Intragroup Relationships: A Cross-Cultural

      Examination of Social Identity Theory in North American and East Asian Cultural

      Contexts. *Social Psychology Quarterly, 66*, 166-183. doi:10.2307/1519846

Yzer, M. C., Cappella, J. N., Fishbein, M., Hornik, R., & Ahern, R. K. (2003). The effectiveness

      of gateway communications in anti-marijuana campaigns. *Journal of Health*

      Communication, 8, 129-143. doi:10.1080/10810730305695

Appendix A – Stimuli Used in the Experiment

Low Threat Condition (Fellow Student)

The wide spread use of social media has led to tremendous changes in how people communicate and share information. The advantages of social media are endless but unfortunately social media has also become a medium for ill-intentioned individuals wanting to harm others. This misuse of social media is not an uncommon phenomenon in Canada as witnessed in the various protests across the nation (e.g. G20 riots, Vancouver Stanley Cup riots, Occupy movement and Quebec student protests), in which certain groups and individuals used social media to organize and encourage violence.

A solution that can decrease the negative impacts of social media is to actively monitor and sometimes censor social media networks to prevent violence and hate speech, and to identify individuals who may pose a threat to public security. This strategy has proved to be effective in England, where in the 2011 riots the BlackBerry Messenger (BBM), an internet based instant messenger, was used to organize riots across England. The government eventually intervened by temporarily shutting down the BBM network to prevent the rioters from organizing mass gatherings and putting a stop to what came to be known as the "BlackBerry riots".

Censoring Social Media can be helpful in protecting our society from groups' and individuals' intent on anarchy who have caused millions of dollars in damages to cities across Canada. During the "BlackBerry" riots, the Prime Minister of the UK David Cameron said, "Everyone watching these horrific actions will be struck by how they were organized via social media. Free flow of information can be used for good. But it can also be used for ill. And when people are using social media for violence we need to stop them."

High Threat Condition (Canadian Government)[8]

The wide spread use of social media has led to tremendous changes in how people communicate and share information. The advantages of social media are endless but unfortunately social media has also become a medium for ill-intentioned individuals wanting to harm others. This misuse of social media is not an uncommon phenomenon in Canada as witnessed in the various protests across the nation (e.g. G20 riots, Vancouver Stanley Cup riots, Occupy movement and Quebec student protests), in which certain groups and individuals used social media to organize and encourage violence.

A solution that can decrease the negative impacts of social media is for the government to actively monitor and sometimes censor social media networks to prevent violence and hate speech, and to identify individuals who may pose a threat to public security. This strategy has proved to be effective in England, where in the 2011 riots the BlackBerry Messenger (BBM), an internet based instant messenger, was used to organize riots across England. The government eventually intervened by temporarily shutting down the BBM network to prevent the rioters from organizing mass gatherings and putting a stop to what came to be known as the "BlackBerry riots".

Censoring Social Media can be helpful in protecting our society from groups' and individuals' intent on anarchy who have caused millions of dollars in damages to cities across Canada. During the "BlackBerry" riots, the Prime Minister of the UK David Cameron said, "Everyone watching these horrific actions will be struck by how they were organized via social media. Free flow of information can be used for good. But it can also be used for ill. And when people are using social media for violence we need to stop them." It would be beneficial if the Canadian government could implement a similar strategy.

---

[8] This study was done when a conservative government was in power and social media censorship was a somewhat realistic possibility.

Appendix B – State Reactance Measure

1.   The passage tried to manipulate its readers.

2.   The writing was biased.

3.   The writing irritated me.

4.   The writing aggravated me.

5.   I think the government should monitor social media networks. (reversed)

6.   I think the government should have the power to shut down social media networks.

        (reversed)

7.   I think the government should censor social media networks. (reversed)

8.   I think every individual has the right to partake in social protests.

9.   I think people should have the right to free information.