

The Dampening Effect of Social Dominance Orientation on Awareness of Corruption: Moral Outrage as a Mediator

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Abstract The present study aimed at exploring the role of social dominance orientation (SDO) on awareness of corruption and the mediating effect of moral outrage on this relationship. To accomplish the objectives, we performed three empirical substudies with both correlational and experimental designs. In Substudy 1, SDO, moral outrage, and awareness of corruption were all measured with scales. The results indicated that SDO was negatively with moral outrage and awareness of corruption. In addition, moral outrage mediated the relationship between SDO and awareness of corruption. In Substudy 2, awareness of corruption was measured in a bribery scenario, and the results also indicated that moral outrage mediated the dampening role of SDO on awareness of corruption. In Substudy 3, SDO was manipulated by placing respondents in a dominant or a subordinate condition. The results indicated that compared with the subordinate position condition, the respondents primed by the dominant position condition reported less moral outrage and lower awareness of corruption. The three substudies consistently confirmed the dampening effect of SDO on awareness of corruption and the mediating effect of moral outrage on this relationship. The theoretical and practical implications of these findings are discussed.

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1 Introduction

Corruption is one of the most detrimental factors to economies and social development, and it has become a universal problem around the world (Aguilera and Vadera 2008; Rose-Ackerman 1999). In its resolution 58/4 of 31 October 2003, the UN General Assembly recognizes the significance of raising public awareness of corruption in fighting against corruption (UN 2003). This raises an important question: what are the underlying psychological causes of awareness of corruption? The present study seeks to address the issue. Inspired by Social dominance theory (Guimond et al. 2013; Pratto et al. 1994; Sidanius and Pratto 1999) and the research on moral outrage (Wakslak et al. 2007), we postulate that social dominance orientation (SDO, thereafter) is negatively associated with awareness of corruption, and that moral outrage mediates the dampening effect of SDO on awareness of corruption. The aim of the present study is to test these assumptions.

1.1 Awareness of Corruption

Corruption is commonly understood as misuse of public power for private gain (Ko and Weng 2011; Rose-Ackerman 1999; Treisman 2000). The World Bank considers corruption as the largest obstacle to economic and social development (Aguilera and Vadera 2008). Data from Transparency International (2013) indicated that China is a relatively corrupt country. The prevalence of corruption of government officials in China is seen as the second greatest public concern behind unemployment (He 2000). Furthermore, corruption is not only a problem of economic and political development (Swaleheen 2011), leading to cost increases and order-destruction of business transactions, but also a problem of social justice (Voliotis 2011; You 2007). It leads to losses for honest competitors, erosion of social trust (Morris and Klesner 2010; Rothstein and Uslaner 2005), and increases in inequality and poverty (Alesina and Angeletos 2005; Uslaner 2008).

Because corruption is willfully hidden, it is almost impossible to measure it directly. Instead, proxies for corruption are used (Serra and Wantchekon 2012; Song and Cheng 2012). For example, the Corruption Perception Index published by Transparency International is based on expert assessments and opinion surveys of corruption. In the similar vein, awareness of corruption refers to people's subjective views and assessments on the nature and extent corruption. People with high awareness of corruption recognize that corruption objectively exists in different time and space, distinguish corruption and non-corruption sensitively, and perceive a high severity of corruption (Bowman and Gilligan 2007; Rosenblatt 2012; Sööt and Rootalu 2012). Indeed, the subjective assessments of corruption is not the same thing as actual corruption due to the influence of cultural and individual biases (Olken 2009; Treisman 2007). However, awareness of corruption not only impacts on developing and implementing anti-corruption policies and practices (UN 2003), but also influences investment decisions, growth, and political behaviors (Mauro 1995; Treisman 2000). It is thus worth exploring the key psychological processes that underlie awareness of corruption.

1.2 Social Dominance Orientation and Awareness of Corruption

Social dominance theory (Pratto et al. 1994; Sidanius and Pratto 1999) postulates that group-based hierarchy exists in every complex society in which at least one dominant group shares proportionately more privilege, power, and resources, whereas another subordinate group is oppressed. The theory also presumes that everyone has a stable attitudinal orientation called social dominance orientation, defined as “the extent to which one desires that one’s ingroup dominate and be superior to outgroups” (Pratto et al. 1994, p. 742). People with high SDO prefer to bolster, reinforce, and maintain the social hierarchy and injustice, whereas those with low SDO want to reduce and attenuate injustice (Guimond et al. 2003; Nicol and Rounding 2013). Therefore, corruption may be justified because it often highlights corrupters’ dominant position, personal power, and prestige (You 2007). The initiation and maintenance of corruption may be coordinated by the support of group-based hierarchies (Rosenblatt 2012). Thus, we hypothesize that SDO is negatively associated with awareness of corruption (Hypothesis 1).

Furthermore, SDO was initially understood as a stable personality orientation (Pratto et al. 1994), but according to recent findings, SDO may actually be a measure of ideological beliefs (Guimond et al. 2003; Huang and Liu 2005), and the level of SDO can change over time and depending on the situation (Pratto et al. 2006). When group members obtain dominant positions or engage in comparisons with a lower subordinate group, SDO will increase and vice versa (Kugler et al. 2010). Guimond et al. (2003) found that individuals placed in a dominant social position have a higher level of SDO and more prejudice than those in an average position. Therefore, when we manipulate SDO within a similar paradigm, awareness of corruption may also be changed. Thus, we hypothesize that SDO increases when individuals are placed in a dominant position (Hypothesis 2a), which leads to a lower level of awareness of corruption, and vice versa (Hypothesis 2b).

1.3 Moral Outrage as a Mediator

If our Hypotheses 1 and 2 are valid, then the psychological processes underlying the dampening effect of SDO on awareness of corruption must be further explained. Wakslak et al. (2007) discovered that moral outrage was a mediator of Opposition to Equality (OEQ, a dimension of SDO) and support for resource redistribution (Kugler et al. 2010). Moral outrage is a form of distress mixed with cognitive, emotional, and behavioral responses involving being angry at unfair and unjust treatment, committing to helping the disadvantaged, and pursuing justice and equality (Montada et al. 1986; Salerno and Peter-Hagene 2013). When individuals are confronted with injustice and inequality, moral outrage will generally be aroused. It can be triggered as a reaction to specific unjust events (Reed 2004) and evoked by witnessing unfairness (Batson et al. 2007).

Moral outrage in turn also positively predicts perception, retribution and compensation intent (Carlsmith et al. 2002) and political intolerance (Skitka et al. 2004), and negatively predicted symbolic racism and conservatism (Kugler et al. 2010), unequal distribution (Wakslak et al. 2007) and ethical compromises (Kennedy and Kray 2013). Specifically, the greater the level of moral outrage, the higher the awareness of social injustice. Wakslak et al. (2007) indicated that when people express moral outrage, they awaken high awareness of the injustice of existing distribution policies and subsequent support for resource redistribution. However, to maintain their group benefits, higher SDO people are less likely to express moral outrage. Therefore, we hypothesize that moral outrage mediates the dampening effect of SDO on awareness of corruption (Hypothesis 3).

2 Method

To investigate the above hypotheses, we performed three distinct but interrelated sub-studies with both correlational and experimental designs. Substudy 1 used questionnaires to investigate the correlation between SDO and awareness of corruption and the effect of moral outrage on this correlation, and thereby to preliminarily test Hypotheses 1 and 3. Substudy 2 used a contextualized scenario-based measure to capture awareness of corruption, and thereby to further confirm Hypotheses 1 and 3. Substudy 3 used an experiment to manipulate SDO to test Hypotheses 2 and 3; Once Hypothesis 2a was confirmed, we used this sub-study to confirm the causal effect of SDO on awareness of corruption (Hypothesis 2b), and mediating effect of moral outrage on this relationship (Hypothesis 3).

2.1 Respondents

Totally four hundred and five respondents participated in the study. Amongst them, one hundred and seventy two undergraduates (73 females, 96 males, and 3 did not report sex) from two universities in China participated in Substudy 1. The mean age of the sample was 21.30 years old ($SD = 1.93$). One hundred and eighty three undergraduates (91 females, 88 males, and 4 did not report sex) from two universities in China participated in Substudy 2. The mean age of the sample was 21.23 years old ($SD = 1.82$). Fifty (25 females, 19 males, and 6 did not report sex) undergraduates from a university in China voluntarily participated in Substudy 3. The mean age of the sample was 21.68 years old ($SD = 1.71$). The respondents were randomly assigned into the socially dominant condition ($N = 24$) or the subordinate condition ($N = 26$). Each sample in each of the three sub-studies is independent, and each respondent only participated in one sub-study.

2.2 Measures

2.2.1 SDO

In Substudies 1 and 2, a 16-item SDO scale (Sidanius and Pratto 1999) was used to measure respondents' tendency to accept and support social hierarchy and group dominance. For example, one item was "Some groups of people are simply inferior to other groups." All items were measured on a 9-point scale, with a range from 1 (completely disagree) to 9 (completely agree); higher ratings indicate greater preference for maintaining the differences within a group. Cronbach's α was satisfactory in both Substudy 1 ($\alpha = .681$) and Substudy 2 ($\alpha = .705$).

2.2.2 Manipulation of SDO

In Substudy 3, following the research paradigm of Guimond et al. (2003), the respondents were informed that the study investigated leadership. The manipulation included two sections. In the first session, respondents were asked to complete a 21-item Leadership Skills Inventory (Townsend and Carter 1983) about leadership in organizations, with the individual questions presented sequentially on a computer. The respondents indicated their answers with a five-point Likert scale using a mouse. After completing these items, respondents were allowed to rest for 30 s, and then, they received their score on the test. Those randomly assigned to the social dominance condition learned that they had a very

high leadership score (95 out of a full score of 105), and they also received the message “Congratulations! You clearly have the profile of a leader, and you are able to hold a position with high power and responsibility.” Comparatively, those randomly assigned to a socially subordinate condition learned that they had a low score (only 30 out of 105), and they received the message “Sorry, you have the profile of a person who has quite low leadership ability, and you have little ability to hold a position with power and responsibility.” In the second session, the respondents were presented with a short 4-item version of the SDO scale (Pratto et al. 2013) to evaluate the manipulation of SDO. These items are follows: “In setting priorities, we must consider all groups”; “We should not push for group equality”; “Group equality should be our ideal”; and “Superior groups should dominate inferior groups”. Respondents were told to answer these items with a 7-point Likert scale on the computer.

2.2.3 Awareness of Corruption

In Substudies 1 and 3, an awareness of corruption measure was constructed for this study, based on the World Value Survey and General Social Survey (Davis and Smith 1991; Inglehart 2000), to measure respondents’ awareness of corruption. It consists of 5 items (see Table 1) on a scale of 1 (completely disagree) to 9 (completely agree). For example, one item was “Corruption always exists in different eras”. A mean awareness of corruption score was calculated using all five items; higher scores indicate a higher awareness of corruption. Upon testing, the construct validity of the measure was acceptable ($\chi^2/df = 2.13$, $GFI = .976$, $IFI = .969$, $CFI = .968$, and $RMSEA = .081$), and each item was strongly correlated with awareness of corruption ($ps < .001$). Cronbach’s α was satisfactory in both Substudy 1 ($\alpha = .744$) and Substudy 3 ($\alpha = .679$).

2.2.4 Awareness of Corruption Measured in a Bribery Scenario

In Substudy 2, to measure respondents’ awareness of corruption in the specific scenario (Li et al. 2006), we made some necessary modifications, changed the scenario to be a typical corruption scenario, and then asked the 4 questions (see Table 1). For example, one item was “This type of corrupt behavior is very common in society”. The responses to these items were provided on scales ranging from 1 (completely disagree) to 9 (completely agree), with higher values indicating higher awareness of corruption (Cronbach’s $\alpha = .687$). The scenario was as follows:

Imagine that you have a friend (A) who wishes to pursue his studies abroad. A charitable organization, X, has offered an overseas scholarship. It has 5 places every year, and more than 50 candidates want it. Therefore, the selection will be based on the number of hours contributed to volunteering activities. The five highest candidates will receive this scholarship. Now you are the president of the volunteers association of your university. Your friend gives you ¥2000 and hopes you aid him in receiving the scholarship. Although he did not participate in the volunteer activities of your association, he wants you, as president of the volunteers association, to provide him a false certification indicating that he has participated in volunteer activities for many hours. If you help your friend and give him the false certification, the probability that he will receive the scholarship will be greatly improved.

2.2.5 Moral Outrage

In all three substudies, the moral outrage measure (Wakslak et al. 2007) was used to measure the respondents' feelings of distress and anger over injustice. For example, one item was "I feel really angry when I learn about people who are suffering from injustice." The measure consists of 10 items answered on a scale of 1 (completely disagree) to 9 (completely agree); higher total ratings indicate greater moral outrage over social injustice. Cronbach's α was satisfactory in all the evaluated samples (values of .656–.812).

2.3 Procedure

In Substudies 1 and 2, after providing informed consent, respondents were instructed to complete several questionnaires in their classrooms, including all variable measures, and some other unrelated scales, to avoid respondents guessing the purpose of the study. After that, they were asked to report their demographic variables, such as sex, age, and birth place. Finally, each respondent was given a small gift for their participation and efforts.

In Substudy 3, all respondents were given the informed consent upon arriving at the laboratory and informed that they would participate in "two unrelated studies", the "first" being about leadership, and the "second" being about social perception. After respondents completed the "first study" on computer, they were brought into another experiment room for the "second study" by another experimenter to answer a paper-and-pencil questionnaire. To conceal the connection between the "two studies", respondents were guided by two different experimenters and completed questionnaires with different forms in different rooms. After completing the whole experiment, respondents were debriefed and each was paid RMB¥10.

3 Results

3.1 Preliminary Analyses

The descriptive statistics of all the items used to build the indexes of SDO, moral outrage and awareness of corruption can be seen in Table 1. The sex data for the respondents who did not provide this information were treated as missing values in the analyses.

To assess the effectiveness of the experimental manipulation in Substudy 3, we tested the SDO levels of all respondents. According to previous findings (Guimond et al. 2003), respondents in a socially dominant condition have higher SDO than those in a socially subordinate condition. Our results confirmed that the SDO manipulation had a significant effect ($t = -3.077$, $p = .003$, and *Cohen's d* = $-.871$). Respondents in the socially dominant condition ($M = 4.20$ and $SD = 1.166$) had higher SDO scores than those in the socially subordinate condition ($M = 3.32$ and $SD = .844$). Hypothesis 2a, which postulated that the SDO of individuals can vary depending on the situation, was confirmed.

In addition, the descriptive results for moral outrage and awareness of corruption were analyzed as a function of the experimental manipulation. As predicted, SDO manipulation had a significant negative effect on moral outrage ($t(47) = 2.382$, $p = .021$, and *Cohen's d* = $.674$), implying that respondents in the socially dominant condition ($M = 6.59$ and $SD = 1.006$) had less moral outrage than those in the socially subordinate condition ($M = 7.21$ and $SD = .824$). Respondents in the socially dominant condition also had lower awareness of corruption ($M = 7.04$ and $SD = 1.135$) than those in the socially subordinate

Table 1 Means and standard deviations for all items used to build the indexes in three studies

Items	Study 1		Study 2		Study 3			
	M	SD	M	SD	High SDO		Low SDO	
					M	SD	M	SD
<i>Social dominance orientation</i>								
1. Some groups of people are simply inferior to other groups	4.08	.905	4.19	.971	-	-	-	-
2. In getting what you want, it is sometimes necessary to use force against other groups	6.26	2.265	6.28	2.257	-	-	-	-
3. It's OK if some groups have more of a chance in life than others	3.77	2.191	3.97	2.483	-	-	-	-
4. To get ahead in life, it is sometimes necessary to step on other groups	5.60	2.010	5.84	2.089	-	-	-	-
5. If certain groups stayed in their place, we would have fewer problems	4.52	2.252	4.74	2.347	-	-	-	-
6. It's probably a good thing that certain groups are at the top and other groups are at the bottom	5.40	2.303	5.34	2.163	-	-	-	-
7. Inferior groups should stay in their place	4.19	2.232	4.20	2.210	-	-	-	-
8. Sometimes other groups must be kept in their place	3.15	2.247	3.01	2.069	-	-	-	-
9. It would be good if groups could be equal	4.69	2.453	4.74	2.394	-	-	-	-
10. Group equality should be our ideal	4.59	2.423	4.68	2.535	-	-	-	-
11. All groups should be given an equal chance in life	3.20	2.155	3.60	2.488	-	-	-	-
12. We should do what we can to equalize conditions for different groups	2.51	1.705	2.93	2.170	-	-	-	-
13. Increased social equality	2.64	1.894	2.79	1.882	-	-	-	-
14. We would have fewer problems if we treated people more equally	5.38	2.350	5.09	2.355	-	-	-	-
15. We should strive to make incomes as equal as possible	3.06	1.959	3.24	2.021	-	-	-	-
16. No one group should dominate in society	3.65	2.129	3.71	2.213	-	-	-	-
<i>Moral outrage</i>								
1. I feel really angry when I learn about people who are suffering from injustice	2.66	2.134	2.87	2.397	-	-	-	-
2. I believe that we should all work together to help those who are disadvantaged	6.65	1.218	6.70	1.200	6.59	1.006	7.21	.824
3. I feel morally outraged by social injustice	7.06	1.860	6.95	1.919	7.38	1.583	7.77	1.657
4. I resent the fact that people have to suffer unjustly the consequences of unemployment	7.54	1.719	7.57	1.682	7.75	1.391	8.31	1.350
5. I think it's shameful that people allow injustice to occur	7.08	1.761	7.29	1.769	7.21	1.532	7.58	2.082
	7.06	1.743	7.07	1.751	7.08	1.472	7.69	1.258
	6.99	1.960	7.18	1.771	6.87	1.825	7.81	1.327

Table 1 continued

Items	Study 1		Study 2		Study 3			
					High SDO		Low SDO	
	M	SD	M	SD	M	SD	M	SD
6. I am horrified when I hear about the filthy living conditions which some people must live in because they are poor	6.17	2.049	5.67	2.170	6.42	2.145	5.27	2.779
7. I don't worry very much about the problems in this world	6.06	2.155	6.22	2.235	5.29	2.196	5.92	2.153
8. I rarely feel burdened by the unfairness of this world	5.93	2.175	5.99	2.188	5.79	2.340	6.62	2.547
9. Issues of social justice rarely cross my mind	6.09	2.359	6.43	2.220	6.25	1.847	7.38	1.813
10. I tend to tune out when people talk about problems in our society	6.59	2.085	6.54	2.191	5.83	2.278	7.40	1.848
<i>Awareness of corruption (scale)</i>	7.55	1.234	—	—	7.04	1.136	7.66	1.035
1. Corruption always exists in different eras	7.82	1.828	—	—	7.79	1.769	8.42	1.332
2. Most people who have opportunities to be corrupt will be corrupt	6.96	1.791	—	—	6.21	1.587	6.62	2.174
3. At present, corruption is a very common phenomenon and spreads to almost every industry	7.88	1.673	—	—	7.33	1.761	7.96	1.536
4. The problem of corruption is very severe in today's Chinese society	7.69	1.673	—	—	7.33	1.685	7.96	1.183
5. The corruption phenomenon has appeared in universities and become more and more serious	7.38	1.808	—	—	6.54	1.978	7.35	1.573
<i>Awareness of corruption (scenario)</i>	—	—	7.37	1.322	—	—	—	—
1. The behavior of taking a bribe and helping a friend with false certification is wrong	—	—	7.15	2.056	—	—	—	—
2. This type of corrupt behavior is very common in society	—	—	7.37	1.870	—	—	—	—
3. This corrupt behavior harms the public	—	—	7.15	1.952	—	—	—	—
4. This corrupt behavior harms the interests of other candidates	—	—	7.83	1.423	—	—	—	—

condition ($M = 7.66$, $SD = 1.035$, $t(48) = 2.019$, $p = .049$, and *Cohen's* $d = .571$). Hypothesis 2b was thus confirmed.

3.2 Mediation Analyses

To examine the hypotheses that SDO was negatively associated with awareness of corruption and moral outrage mediated the relationship in each of the three substudies, we performed four-step regression analyses to the mediation model (see Fig. 1) following the criteria and recommendations to test the mediation (Baron and Kenny 1986; Holmbeck 1997).

We included the covariance paths for sex in each of our analyses of Substudies 1 and 2, because sex was marginally or significantly associated with moral outrage in the two substudies ($ps < .077$). As shown in Table 2, in all three substudies, higher SDO was negatively associated with and led to less awareness of corruption ($ps < .045$) and moral outrage ($ps < .021$), and moral outrage was negatively associated with awareness of corruption ($ps < .01$). Therefore, Hypothesis 1 was confirmed. After controlling moral outrage in Step 4, SDO did not predict awareness of corruption in Substudies 1 and 3 ($ps > .206$) and partially predicted awareness of corruption in Substudy 2 ($\beta = .157$, $t = -2.011$, $p = .049$). Hypothesis 3 was thus confirmed in all three substudies.

We also used the recommended bootstrapping method (Preacher and Hayes 2004; Shrout and Bolger 2002) to estimate the mediating effects. Five-thousand bootstrap samples were used for estimates. In Substudy 1, the 95 % confidence interval for the direct effect after controlling moral outrage was $[-.329, .118]$, whereas for the indirect effect, it was $[-.212, -.020]$, not including zero. In Substudy 2, the 95 % confidence interval for the direct effect was $[-.424, -.004]$ and that of the indirect effect was $[-.358, -.108]$, not including zero. In Substudy 3, the bootstrapped 95 % CI for the direct effect was $[-.730, .262]$, whereas for the indirect effect it was $[-.843, -.093]$, not including zero. All these results further confirmed Hypothesis 3.

The above results demonstrated that regardless of awareness of corruption was assessed either with a general scale (in Substudies 1 and 3) or a specific bribery scenario (in Substudy 2), SDO was negatively associated with awareness of corruption and moral outrage mediated the relationship. However, compared with the general scale, measuring awareness of corruption with the bribery scenario strengthened the correlations between SDO, moral outrage and awareness of corruption (see Table 2). That is because in simulated corruption scenarios, individuals have stronger ego-involvement, possess much more specific information, and their awareness of corruption is more closely impacted by SDO and moral outrage (Serra and Wantchekon 2012).

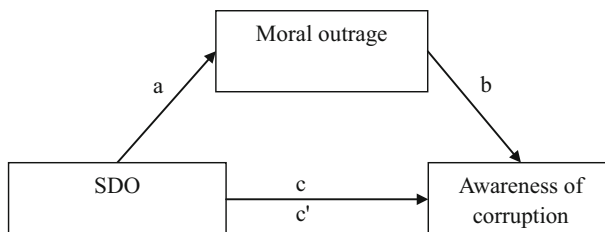


Fig. 1 Mediation model of Moral outrage in the relation between SDO and awareness of corruption

Table 2 Four-step regression analyses for the mediation model

Substudy	Regression analysis	ΔR^2	β	SE	<i>t</i>
1	SDO → awareness of corruption	.026*	-.155	.104	-2.022*
	SDO → moral outrage	.191**	-.413	.094	-5.917**
	Moral outrage → awareness of corruption	.049**	.220	.077	2.868**
	SDO, moral outrage → awareness of corruption	.054**	-.078	.113	-.934
2	SDO → awareness of corruption	.096**	-.302	.097	-4.182**
	SDO → moral outrage	.250**	-.497	.080	-7.553**
	Moral outrage → awareness of corruption	.152**	.381	.077	5.463**
	SDO, moral outrage → awareness of corruption	.171**	-.159	.107	-1.985**
3	SDO → awareness of corruption	.078*	-.280	.307	-2.019*
	SDO → moral outrage	.108*	-.328	.262	-2.382*
	Moral outrage → awareness of corruption	.104*	.322	.162	2.333*
	SDO, moral outrage → awareness of corruption	.135*	-.186	.324	-1.284

* $p < .05$, ** $p < .01$

In addition, multiple regression analyses were conducted to check whether manipulation of SDO changes the way that awareness of corruption is affected by SDO and moral outrage. The interaction of manipulation of SDO and measured SDO on moral outrage was insignificant, $p = .274$. The interaction of manipulation of SDO and measured SDO on awareness of corruption was insignificant, $p = .682$. The interaction of manipulation of SDO and moral outrage on awareness of corruption was also insignificant, $p = .954$. These results demonstrated that manipulation of SDO did not change the way that SDO and moral outrage impact awareness of corruption. Both in socially dominant and subordinate conditions, moral outrage mediated the dampening effect of SDO on awareness of corruption.

4 Discussion

The present study explored the relationships between SDO, moral outrage and awareness of corruption. It confirmed our hypotheses that SDO is negatively associated with, and leads to, variations of awareness of corruption, and that moral outrage mediates the dampening effect of SDO on awareness of corruption. The robustness of this account was evident in that the empirical analyses were based on the three substudies with different designs and measures.

To the best of our knowledge, our findings provide the first empirical evidence that SDO is negatively associated with awareness of corruption. Rosenblatt (2012) speculates that SDO contributes to individuals' low awareness of misuse of power and high willingness to maintain social hierarchy, leading to maintenance of organizational corruption. Consistent with this assumption, our findings confirm that the higher the SDO, the lower the awareness of corruption. In addition, our findings in Substudy 3 also provide further experimental evidence to support that SDO is not a stable personality trait but instead an ideological belief (Guimond et al. 2003; Huang and Liu 2005). Placing individuals in a different social position, i.e. dominant versus subordinate, can effectively change their levels of SDO, and casually lead to a dampening effect on awareness of corruption.

To the best of our knowledge, this study is also the first to confirm that moral outrage mediates the relationship between SDO and awareness of corruption, which further reveals the psychological processes behind the dampening effect of SDO on awareness of corruption. Indeed, people care about equality and justice and are unwilling to set aside justice (Wakslak et al. 2007). However, in order to maintain the status quo, dominant privileged people may dampen their anger over injustice and construct a distorted image of a just world free of severe problems, such as corruption.

Our findings also add to the growing literature suggesting that moral outrage predicts a negative attitude to injustice, such as awareness of corruption, which is consistent with the ideas of Montada et al. (1986) and Wakslak et al. (2007). Indeed, moral outrage positively predicts awareness of social injustice, activates retributive justice responses (Darley and Pittman 2003), and spurs concerted action to alter the system (Eidelson 2011). Furthermore, we should pay attention to an alternative path. Previous findings also demonstrated that moral outrage can be triggered as a reaction to specific unjust events (Reed 2004), and can be evoked by witnessing unfairness (Batson et al. 2007). Therefore, the relationship between moral outrage and awareness of social injustice may be bidirectional, in which the two characteristics reinforce each other. It is of interest to further illuminate the relationship between moral outrage and awareness of corruption in future research.

The findings from the present study are clearly applicable in the Chinese context. China's rapid economic growth has brought with it many challenges, including the pervasiveness of corruption. Lü (2000) observes that there are three common types of corruption in aspects of Chinese everyday life: graft, rent-seeking, and prebendalism. The main thread which links these different types of corruption is that corrupt government officials regard public office as a business (Van Klaveren 1989) at the expense of violating social justice. These officials, as dominant group members in China who always have high SDO, may inhibit their sensitivity and moral outrage to injustice, and are likely to be less aware of corruption and even of their own corrupt behavior. In contrast, lay people, as a subordinate group who are oppressed by the dominant group and experience more injustice, feel more moral outrage and are more sensitive to injustice (Batson et al. 2007; Deutsch and Steil 1988; Wakslak et al. 2007), and thus experience more awareness of corruption. Therefore, for those people with high SDO, if their moral outrage can be aroused through some channels, such as by supplying them with more anti-corruption information through the Internet and newspapers (Song and Cheng 2012) and extensively exposing them to prevailing ethical norms (Gong and Wang 2013), they may become more distressed and angry about corruption instead of displaying low awareness.

No research has ever been performed without limitations, and the present study is no exception. The most apparent limitation of the present study is that only awareness of corruption was measured. But awareness of corruption sometimes does not correlate well with objective and experience-based corruption (León et al. 2013; Olken 2009; Treisman 2007). In other studies, laboratory experimental methods, which can directly measure individual's willingness to engage in corrupt behavior (Serra and Wantchekon 2012), have been performed (Frank and Schulze 2000; Rivas 2013). However, because of the limitations of lab experiments and the particularity of corruption, it is still difficult to confirm whether experiment results can be extrapolated to real-world corruption (Armantier and Boly 2012). Therefore, developing methods to understand and measure "real" corruption is also a beneficial area of future research.

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References

- Aguilera, R. V., & Vadera, A. K. (2008). The dark side of authority: Antecedents, mechanisms, and outcomes of organizational corruption. *Journal of Business Ethics*, 77(4), 431–449.
- Alesina, A., & Angeletos, G.-M. (2005). Corruption, inequality, and fairness. *Journal of Monetary Economics*, 52(7), 1227–1244.
- Armantier, O. & Boly, A. (2012). *Comparing corruption in the lab and in the field in Burkina Faso and in Canada*: Mimeo, Federal Reserve Bank of New York.
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173–1182.
- Batson, C. D., Kennedy, C. L., Nord, L. A., Stocks, E., Fleming, D. Y. A., Marzette, C. M., & Zerger, T. (2007). Anger at unfairness: Is it moral outrage? *European Journal of Social Psychology*, 37(6), 1272–1285.
- Bowman, D., & Gilligan, G. (2007). Public awareness of corruption in Australia. *Journal of Financial Crime*, 14(4), 438–452.
- Carlsmith, K. M., Darley, J. M., & Robinson, P. H. (2002). Why do we punish? Deterrence and just deserts as motives for punishment. *Journal of Personality and Social Psychology*, 83(2), 284–299.
- Darley, J. M., & Pittman, T. S. (2003). The psychology of compensatory and retributive justice. *Personality and Social Psychology Review*, 7(4), 324–336.
- Davis, J. A., & Smith, T. W. (1991). *General social surveys, 1972–1991: Cumulative codebook*. Cambridge: National Opinion Research Center.
- Deutsch, M., & Steil, J. M. (1988). Awakening the sense of injustice. *Social Justice Research*, 2(1), 3–23.
- Eidelson, R. J. (2011). Inequality, shared outrage, and social change. *Peace Review: A Journal of Social Justice*, 23(1), 4–11.
- Frank, B., & Schulze, G. G. (2000). Does economics make citizens corrupt? *Journal of Economic Behavior and Organization*, 43(1), 101–113.
- Gong, T., & Wang, S. (2013). Indicators and implications of zero tolerance of corruption: The case of Hong Kong. *Social Indicators Research*, 112(3), 569–586.
- Guimond, S., Crisp, R. J., De Oliveira, P., Kamiejski, R., Kteily, N., Kuepper, B., & Tougas, F. (2013). Diversity policy, social dominance, and intergroup relations: Predicting prejudice in changing social and political contexts. *Journal of Personality and Social Psychology*, 104(6), 941.
- Guimond, S., Dambun, M., Michinov, N., & Duarte, S. (2003). Does social dominance generate prejudice? Integrating individual and contextual determinants of intergroup cognitions. *Journal of Personality and Social Psychology*, 84(4), 697–721.
- He, Z. (2000). Corruption and anti-corruption in reform China. *Communist and Post-Communist Studies*, 33(2), 243–270.
- Holmbeck, G. N. (1997). Toward terminological, conceptual, and statistical clarity in the study of mediators and moderators: Examples from the child-clinical and pediatric psychology literatures. *Journal of Consulting and Clinical Psychology*, 65(4), 599–610.
- Huang, L.-L., & Liu, J. H. (2005). Personality and social structural implications of the situational priming of social dominance orientation. *Personality and Individual Differences*, 38(2), 267–276.
- Inglehart, R. (2000). *Codebook for world values survey*. Ann Arbor: Institute for Social Research.
- Kennedy, J. A. & Kray, L. J. (2013). Who is willing to sacrifice ethical values for money and social status? Gender differences in reactions to ethical compromises. *Social Psychological and Personality Science*, 1948550613482987.
- Ko, K., & Weng, C. (2011). Critical review of conceptual definitions of chinese corruption: A formal–legal perspective. *Journal of Contemporary China*, 20(70), 359–378.
- Kugler, M. B., Cooper, J., & Nosek, B. A. (2010). Group-based dominance and opposition to equality correspond to different psychological motives. *Social Justice Research*, 23(2–3), 117–155.
- León, C. J., Araña, J. E., & de León, J. (2013). Correcting for scale perception bias in measuring corruption: An application to Chile and Spain. *Social Indicators Research*, 114(3), 995–997.

- Li, S., Triandis, H. C., & Yu, Y. (2006). Cultural orientation and corruption. *Ethics and Behavior*, 16(3), 199–215.
- Lü, X. (2000). *Cadres and corruption: The organizational involution of the Chinese communist party*. Stanford: Stanford University Press.
- Mauro, P. (1995). Corruption and growth. *The Quarterly Journal of Economics*, 110(3), 681–712.
- Montada, L., Schmitt, M., & Dalbert, C. (1986). Thinking about justice and dealing with one's own privileges: A study of existential guilt. In H. W. Bierhoff, R. L. Cohen, & J. Greenberg (Eds.), *Justice in social relations* (pp. 125–143). New York: Plenum Press.
- Morris, S. D., & Klesner, J. L. (2010). Corruption and trust: Theoretical considerations and evidence from Mexico. *Comparative Political Studies*, 43(10), 1258–1285.
- Nicol, A. A., & Rounding, K. (2013). Alienation and empathy as mediators of the relation between Social Dominance Orientation, Right-Wing Authoritarianism and expressions of racism and sexism. *Personality and Individual Differences*, 55, 294–299.
- Olken, B. A. (2009). Corruption perceptions vs. corruption reality. *Journal of Public Economics*, 93(7), 950–964.
- Pratto, F., Çıdam, A., Stewart, A. L., Zeineddine, F. B., Aranda, M., Aiello, A., & Durrheim, K. (2013). Social dominance in context and in individuals contextual moderation of robust effects of social dominance orientation in 15 languages and 20 countries. *Social Psychological and Personality Science*, 4(5), 587–599.
- Pratto, F., Sidanius, J., & Levin, S. (2006). Social dominance theory and the dynamics of intergroup relations: Taking stock and looking forward. *European review of social psychology*, 17(1), 271–320.
- Pratto, F., Sidanius, J., Stallworth, L. M., & Malle, B. F. (1994). Social dominance orientation: A personality variable predicting social and political attitudes. *Journal of Personality and Social Psychology*, 67(4), 741–763.
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers*, 36(4), 717–731.
- Reed, J.-P. (2004). Emotions in context: Revolutionary accelerators, hope, moral outrage, and other emotions in the making of Nicaragua's revolution. *Theory and Society*, 33(6), 653–703.
- Rivas, M. F. (2013). An experiment on corruption and gender. *Bulletin of Economic Research*, 65(1), 10–42.
- Rose-Ackerman, S. (1999). *Corruption and government: Causes, consequences, and reform*. Cambridge: Cambridge University Press.
- Rosenblatt, V. (2012). Hierarchies, power inequalities, and organizational corruption. *Journal of Business Ethics*, 111(2), 237–251.
- Rothstein, B., & Uslaner, E. M. (2005). All for all: Equality, corruption, and social trust. *World Politics*, 58(01), 41–72.
- Salerno, J. M., & Peter-Hagene, L. C. (2013). The interactive effect of anger and disgust on moral outrage and judgments. *Psychological Science*, 24(10), 2069–2078.
- Serra, D., & Wantchekon, L. (2012). *New advances in experimental research on corruption*. Bingley: Emerald Group Publishing.
- Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: New procedures and recommendations. *Psychological Methods*, 7(4), 422–445.
- Sidanius, J., & Pratto, F. (1999). *Social dominance: An intergroup theory of social hierarchy and oppression*. Cambridge: Cambridge University Press.
- Skitka, L. J., Bauman, C. W., & Mullen, E. (2004). Political tolerance and coming to psychological closure following the September 11, 2001, terrorist attacks: An integrative approach. *Personality and Social Psychology Bulletin*, 30(6), 743–756.
- Song, X., & Cheng, W. (2012). Perception of corruption in 36 major Chinese cities: Based on survey of 1,642 experts. *Social Indicators Research*, 109(2), 211–221.
- Sööt, M. L., & Rootalu, K. (2012). Institutional trust and opinions of corruption. *Public Administration and Development*, 32(1), 82–95.
- Swaleheen, M. (2011). Economic growth with endogenous corruption: An empirical study. *Public Choice*, 146(1–2), 23–41.
- Townsend, C. D., & Carter, R. I. (1983). The relationship of participation in FFA activities and leadership, citizenship, and cooperation. *Journal of the American Association of Teacher Educators in Agriculture*, 24(1), 20–25.
- Transparency International. (2013). Corruption Perceptions Index 2013, from <http://www.transparency.org/cpi2013/results>
- Treisman, D. (2000). The causes of corruption: A cross-national study. *Journal of Public Economics*, 76(3), 399–457.

-
- Treisman, D. (2007). What have we learned about the causes of corruption from ten years of cross-national empirical research? *Annual Review of Political Science*, 10, 211–244.
- UN. (2003). Resolution 58/4 of 31 October: United Nations Convention against Corruption, from <http://www.un-documents.net/a58r4.htm>
- Uslaner, E. M. (2008). *Corruption, inequality, and the rule of law*. Cambridge: Cambridge University Press.
- Van Klaveren, J. (1989). The concept of corruption. *Political corruption: A handbook*, 25.
- Voliotis, S. (2011). Abuse of ministerial authority, systemic perjury, and obstruction of justice: Corruption in the shadows of organizational practice. *Journal of Business Ethics*, 102(4), 537–562.
- Wakslak, C. J., Jost, J. T., Tyler, T. R., & Chen, E. S. (2007). Moral outrage mediates the dampening effect of system justification on support for redistributive social policies. *Psychological Science*, 18(3), 267–274.
- You, J.-S. (2007). *Corruption as injustice*. Paper presented at the annual meeting of the American Political Science Association, Chicago, August.